MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN

Final Environmental Impact Report

Appendices

Prepared for
City of Menlo Park, California

April 2012
(Certified June 5, 2012)

ESA



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Final Environmental Impact Report

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Prepared for
City of Menlo Park, California

April 2012
(Certified June 5, 2012)

225 Bush Street
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208581

APPENDIX A

Notice of Preparation (NOP) and NOP Comment Letters

Notice of Preparation of an Environmental Impact Report for the El Camino Real/Downtown Specific Plan City of Menlo Park

Notice is hereby given that the City of Menlo Park will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the El Camino Real/Downtown Specific Plan (Specific Plan). The City of Menlo Park is requesting comments on the scope and content of this EIR.

A Scoping Session will be held on **December 15, 2009** at the Menlo Park City Council Chambers. The Scoping Session is part of the EIR scoping process during which the City solicits input from the public and other agencies on specific topics that they believe should be addressed in the environmental analysis. Written comments on the scope of the EIR may also be sent to:

Thomas Rogers, Associate Planner
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, CA 94025
throgers@menlopark.org

Due to the time limits mandated by State law, comments must be received ***no later than 30 days*** after receipt of this notice.

Project Location: The Specific Plan area (project site) is located in the City of Menlo Park in San Mateo County. The project site is located along El Camino Real from Watkins Avenue in the north to San Francisquito Creek in the south. It extends east to the Caltrain right-of-way and around the Caltrain Menlo Park Station to Alma Street, and it extends west along Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue to approximately University Drive. El Camino Real is designated as State Route (SR) 82, under Caltrans jurisdiction, and is one of the primary arterial roadways and commercial corridors of the San Francisco Peninsula. Caltrain is the major commuter rail line serving the San Francisco Peninsula, and it connects Menlo Park with San Francisco to the north and San Jose and Gilroy to the south. **Figure 1** shows the location of the project site.

Project Description:

The El Camino Real/Downtown Specific Plan will establish a framework for private and public improvements on El Camino Real and in Downtown Menlo Park for the next several decades. The plan's focus is on the character and density of private infill development, the character and extent of enhanced public spaces, and circulation and connectivity improvements. It will include a strategy for implementation of public realm and other infrastructure improvements.

The overall intent of the El Camino Real/Downtown Specific Plan is to enhance community life, character and vitality through mixed use infill projects sensitive to the small-town character of Menlo Park, an expanded public realm and improved connections across El Camino Real. The Specific Plan is the result of an extensive community engagement process, and uses as its basis the El Camino Real/Downtown Vision Plan, which was unanimously accepted by the City Council on July 15, 2008. The release of the Draft Specific Plan is currently targeted for early Spring 2010.

As relayed through sample graphics (**Figures 2 and 3**), the Specific Plan will:

- Retain the existing downtown "village" character by keeping buildings consistent with the existing fabric (2-3 stories) and requiring building modulation and upper story step-backs;
- Increase downtown activity, foot traffic and transit use through an enhanced public realm, mixed-use infill projects, including residential uses, and higher densities of development, particularly near the commuter rail station;
- Enhance community life through an integrated network of widened sidewalks, particularly along Santa Cruz Avenue, promenades, pocket parks and public gathering spaces;
- Enhance east-west connectivity, particularly across El Camino Real, through sidewalk extensions and other sidewalk improvements while accommodating through traffic along the arterial corridor, and enhances crossing of the railroad tracks through grade-separated pedestrian and bicycle connections; and
- Afford infill development of empty lots along El Camino Real through increased allowable densities (3-5 stories in station area and west side south of Ravenswood Avenue; 2-3 stories elsewhere) coupled with building modulation and step-back requirements.

The EIR: The EIR will be prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) and the CEQA *Guidelines*. The EIR will provide information sufficient to evaluate the proposed Specific Plan and its potential to cause significant effects on the environment; examine methods of reducing environmental impacts; and identify alternatives to the proposed Specific Plan. The EIR will be a program-level EIR of planned public improvements and a maximum future development potential. Future individual projects will be subject to additional environmental review, in particular of site-specific attributes (such as heritage trees). The EIR will include the following:

- Introduction
- Summary
- Project Description
- Environmental Setting, Impacts, and Mitigation Measures
- Alternatives

- Impact Overview and Growth-Inducing Impacts
- Cumulative Impacts
- Report Preparers

Probable Environmental Effects: The EIR will analyze whether the proposed project would have significant environmental effects in the following areas:

- **Aesthetic Resources:** the analysis will discuss the impacts of new development in terms of height and intensity, and the potential for increased light and glare impacts on the existing setting.
- **Air Quality:** the analysis will discuss the local and regional air quality impacts from project related construction and demolition, and impacts from new development and traffic.
- **Biological Resources:** the analysis will discuss the impacts of construction and demolition activities on nesting birds, the general potential for removal of heritage and/or mature trees, and San Francisquito Creek on the southern edge of the project site.
- **Cultural Resources:** the analysis will discuss the impacts of the Specific Plan on known historic buildings, and the potential for construction and demolition activities to disturb archaeological and cultural resources.
- **Geology, Soils, and Seismicity:** the analysis will discuss the potential for construction and demolition activities to expose soils to erosion, and the Specific Plan development to expose people to seismic risk.
- **Greenhouse Gas Emissions:** the analysis will discuss the potential for the Specific Plan to generate greenhouse gases that have a significant impact on the environment, and the potential for conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.
- **Hazardous Materials and Hazards:** the analysis will discuss areas of potential soil or groundwater contamination, and the potential for construction and demolition activities to expose people to hazardous materials.
- **Hydrology and Water Quality:** the analysis will discuss the potential for the Specific Plan development to exceed the capacity of stormwater drainage systems or violate water quality standards or waste discharge requirements. The analysis will also discuss any impacts on San Francisquito Creek and the Atherton Channel.
- **Land Use and Planning Policy:** the analysis will discuss the potential for the Specific Plan to divide an existing community, or conflict with applicable land use policy and plans.
- **Noise:** the analysis will discuss the impacts of noise from construction and demolition activities as well as potential new activities generated by the

Specific Plan development. The analysis will also discuss the impacts of noise from the existing rail operations on the occupants of new development.

- **Population and Housing:** the analysis will discuss the potential for the Specific Plan to induce substantial population growth or displace existing housing, businesses, or people.
- **Public Services and Utilities:** the analysis will discuss the potential for the Specific Plan to result in an increase in public services such as, fire and police protection, solid waste, water supply, and wastewater disposal services.
- **Recreation:** the analysis will discuss the potential for the Specific Plan development to result in an increase in the use of existing recreational facilities to the detriment of those facilities, or the need to create new recreational facilities.
- **Transportation, Circulation and Parking:** the analysis will discuss the impacts of construction traffic and the potential for the Specific Plan development to increase traffic load and capacity on the street system and result in inadequate emergency access or parking capacity. The analysis will review the specific intersections and roadway segments listed in Exhibit A. The analysis will also examine the impacts of the Specific Plan on pedestrian/bicycle activity and transit service.

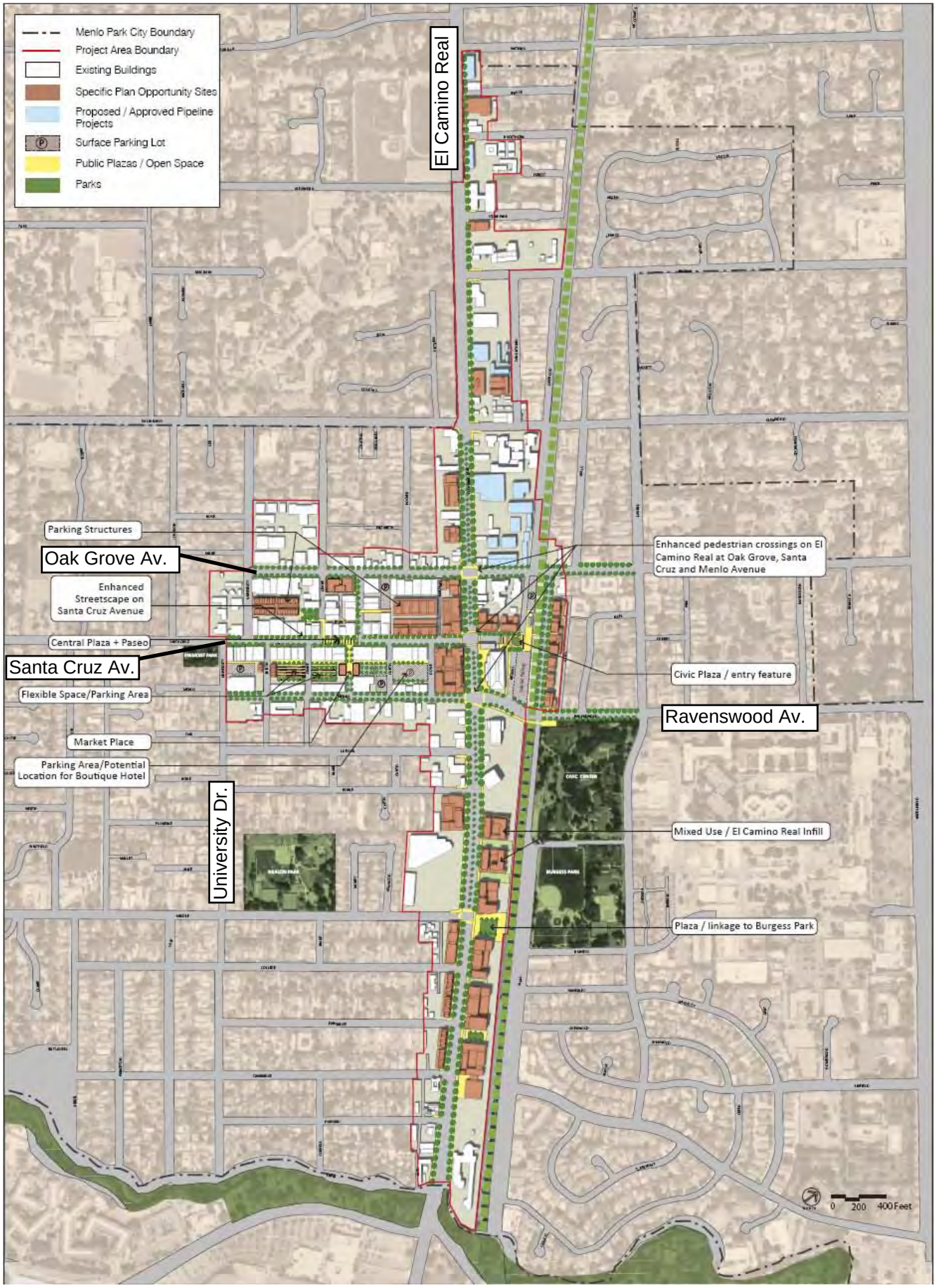
The Specific Plan is not anticipated to result in significant impacts in the following areas:

- Agricultural Resources
- Mineral Resources

The project site is an urban infill area and the above resources do not exist on the site. Detailed analysis of agricultural and mineral resources will not be included in the EIR.

_____ ___December 8, 2009___

Thomas Rogers, Associate Planner Date
City of Menlo Park



SOURCE: City of Menlo Park

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 1
Project Location



SOURCE: Perkins + Will; City of Menlo Park

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 2
Downtown Detail



SOURCE: Perkins + Will; City of Menlo Park

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 3
Massing Detail

Rogers, Thomas H

From: kay slocum [kslocum@ix.netcom.com]
Sent: Sunday, December 13, 2009 2:37 PM
To: Rogers, Thomas H
Cc: _CCIN; _Planning Commission; rhcronin@att.net
Subject: Comments for Environmental Review of the El Camino Real/Downtown Plan
Importance: High

Mr. Rogers,
My husband and I have lived in Menlo Park for over 16 years as home owners in the downtown neighborhood. I am emailing you to express our deep concern about many aspects of the Specific Plan. Regards the environmental review, Menlo Park can not sustain 3-5 level parking garages, 3-story apartment buildings and boutique hotels. There is no need to cut down trees, destroy habitat, create excessive demand for water, increase traffic congestion and bring more autos to destroy our air quality. These actions will not enhance our community life. I am opposed to negatively impacting the environment in this way.

I support smart change and I am opposed to change that will destroy the character of Menlo Park. If we observe and learn from the mistakes of other communities, we would predict that the outcome will be to destroy the economic viability of current businesses and destroy convenient access to services for residents and shoppers. I have lived in other communities where similar plans resulted in heavy traffic and inconvenience and destroyed the downtown. I do not want to see that same result here.

A smart alternative would be to allow the market to take a normal course; investors will act independently to find new purposes for abandoned businesses and land on El Camino Real.

Finally, I believe that such a significant, proposed alteration to our way of life in Menlo Park be put to the citizens for a vote. To describe this project as having "unprecedented levels of public outreach and participation" is, at best, a public relations stretch; the three community workshops in 2009 involved approximately 380 community members and some of them were recurring participants. You have not obtained an adequate representation of the views of all stakeholders in the community who live, vote, own businesses and pay taxes in Menlo Park.

Sincerely,

Kay Slocum
1259 Hoover Street
Menlo Park

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5518
FAX (510) 286-5559
TTY 711

Flex your power!
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January 14, 2010

SM082262
SCH#2009122048

Mr. Thomas Rogers
City of Menlo Park
Community Development Department
Planning Division
701 Laurel Street
Menlo Park, CA 94025

Dear Mr. Rogers:

EL CAMINO REAL DOWNTOWN SPECIFIC PLAN – NOTICE OF PREPARATION

Thank you for including the California Department of Transportation (Department) in the environmental review process for the City of Menlo Park, El Camino Real Downtown Specific Plan. The following comments are based on the Notice of Preparation. As the lead agency, the City of Menlo Park is responsible for all project mitigation, including any needed improvements to state highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Required roadway improvements should be completed prior to issuance of the Certificate of Occupancy. Since an encroachment permit is required for work in the state right of way (ROW), the Department will not issue a permit until our concerns are adequately addressed. We strongly recommend that the City work with both the applicant and the Department to ensure that our concerns are resolved during the environmental process and in any case prior to submittal of a permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

Community Planning

The Department encourages the city to locate housing near major mass transit nodes, in addition to having a citywide street configuration that facilitates walking and biking. We also recommend that the City refer to, "Reforming Parking Policies to Support Growth," a Metropolitan Transportation Commission study funded by the Department for sample parking ratios and strategies that support smart growth and transit oriented development. Doing so will encourage alternate forms of transportation, reduce regional vehicle miles traveled and alleviate future traffic impacts on the state highways.

Encroachment Permit

Please be advised that any work or traffic control that encroaches onto the state ROW requires an encroachment permit that is issued by the Department. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating state ROW must be submitted to: Office of Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans during the encroachment permit process. See the website link below for more information. http://www.dot.ca.gov/hq/traffops/developserv/permits/

Please feel free to call or email Aprile Smith of my staff at (510) 286-5518 or aprile_smith@dot.ca.gov with any questions regarding this letter.

Sincerely,

Lisa Carboni

LISA CARBONI
District Branch Chief
Local Development – Intergovernmental Review

c: State Clearinghouse

Rogers, Thomas H

From: ag lee [aglarpc8@hotmail.com]
Sent: Thursday, January 07, 2010 7:47 PM
To: Rogers, Thomas H; _CCIN
Subject: Menlo Park: Downtown Specific Plan / EIR Comments

TO: Thomas Rogers, Planning Division;
Menlo Park City Council

RE: Menlo Park: Downtown Specific Plan / EIR Comments

DATE: January 7, 2010

Below are my concerns and recommendations regarding the planning for downtown Menlo Park.

Our present plazas work well, attracting the public (including those from neighboring communities) with their ease of access and convenience. Shoppers, especially women, prefer open space to parking structures.

If employee parking were provided elsewhere, close to 600 spaces would be freed for customers and clients in our plazas.

Proposed parking structures in Plaza 1 and Plaza 3 would be difficult to access. Consider the traffic impacts of vehicles arriving from northbound or southbound El Camino and those arriving along Santa Cruz, coming from the Sand Hill/Santa Cruz intersection, and the routes they would need to travel to find a parking structure space.

Plaza 1 (behind post office): Access to the proposed structure would be difficult. In addition, the large structure in Plaza 1 leaves little room for delivery vehicles and trash pick-up trucks for the surrounding businesses. It also will create a pollution concentration greater than any we currently have in the downtown area. This does not appear to be a good location for a major parking garage. Such a garage would be better placed along El Camino.

Plaza 2 (Oak Grove): Parking in this part of the downtown is already challenging. Mixed use will make it even worse. However, this is a site that would lend itself well to a parking garage, with at least 1 level underground and 1 or 2 above ground. Nearby restaurants, businesses and professional offices would benefit. It has the advantage of having potentially 3 access points (Crane, Chestnut, and Oak Grove), all convenient to El Camino and Santa Cruz traffic. It is within easy walking distance of major downtown destinations.

Plaza 3 (University, between Santa Cruz and Oak Grove): The mixed use parking/townhouses increases the number of downtown residents without providing adequate parking for residents. Most 2-person residences need two parking spaces; if the occupants have children, a commuter car and a larger vehicle to

carry kids and their gear are likely minimum requirements. This structure would tower over neighboring structures. As designed, all vehicles would have to enter and exit from University Avenue, given that access from Crane appears be blocked.

Plaza 5 (between Evelyn and Crane): Loss of access to this very busy area serving Draeger's, Peet's, and local businesses would increase traffic problems. We know the Menlo Avenue/University intersection to be dangerous, given the number of auto accidents there. Fewer available parking spaces would increase traffic congestion. Any new buildings should provide some underground parking to offset parking. That Draeger's shares its loading zone with customer parking needs to be considered, too.

Plaza 6 (between Crane and Chestnut, near Menlo Avenue): This area, behind Wells Fargo, is the home of the Sunday Farmers Market which attracts hundreds of shoppers, some from as far away as Burlingame and Sunnyvale. While here, they also shop at our downtown stores and go to lunch in Menlo Park.

The Farmers Market has no home space in the plan provided. A sizeable section of the space it now uses is shown in the plan as mixed-use buildings; the only access to this Plaza would be from Crane due to the proposed "covered market" and pedestrian-only designation for Chestnut between Santa Cruz and Menlo Avenues. The downtown needs this entire plaza for surface parking and/or event use. It needs easy vehicular access from both Crane and Chestnut. In addition, there is a fine heritage tree endangered by the proposed plan.

Plaza 7 (adjacent Trader Joe's): Shoppers at Trader Joe's and businesses on Santa Cruz use this area heavily. The planned changes on Chestnut would complicate shopper parking and limit much-needed delivery and trash-removal access. We already have serious traffic problems on Menlo Avenue about 5 pm, when shoppers' vehicles line up to get into parking at or near Trader Joe's.

Plaza 8 (behind Left Bank and Walgreens): At least 4 restaurants, various businesses, and a major drugstore/pharmacy use this parking plaza. It seems hardly the place for the suggested boutique hotel. Instead, we should be improving access to Walgreen's, given that its pharmacy is located at the back of the building.

Request:
Please organize the EIR request to include options or alternatives so that the community can make comparisons, in terms of their Environmental Impact.

Aldora Lee
Menlo Avenue

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Rogers, Thomas H

From: Couperus [couperusj@sbcglobal.net]
Sent: Thursday, January 07, 2010 8:18 PM
To: Rogers, Thomas H
Cc: _CCIN
Subject: ** EIR Comments - El Camino/Downtown Specific Plan
Importance: Low

EIR Comments – El Camino/Downtown Specific Plan

The following are impacts, which I believe need to be studied by the EIR consultant for the El Camino/Downtown Specific Plan. While it's understood that some of the structures described in the Emerging Plan may not in fact end up in the Specific Plan, or may be moved to other locations, they are nevertheless in the plan now described on the City's website, and for that reason I have addressed each one as if they will be in the Final Specific Plan.

Plaza 1 (post office plaza):

The Emerging Plan proposes a 5-level parking structure on this plaza, removing all but approximately 45 surface parking spaces. The proximity of this plaza to El Camino means that cars entering Oak Grove to access the parking garage will back up El Camino traffic at peak traffic times. (Maloney Lane, which currently provides access to Plaza 1 already produces this impact.) The parking structure (the largest one proposed) is to accommodate 465 cars. Access is going to be a problem because cars cannot enter the plaza from El Camino onto Santa Cruz Avenue when traveling north, since you cannot turn left onto Santa Cruz Avenue from El Camino in this direction. The other entrance to Plaza 1 off of Oak Grove is the surface parking area that must be retained as surface parking (according to historical records in which the previous owner sold this property to the City with the stipulation that "it be used solely and exclusively for parking purposes.") Chestnut Lane also contains a private parking area for the nearby businesses, making it a narrow two-way access to Plaza 1 and a parking structure. Construction over an 18-month to 2-year period will make parking problematic in this area and create additional traffic congestion in the downtown area generally. If a parking structure is built in Plaza 1, how will the very large delivery and garbage trucks be able to gain access to the back entrances of the stores that back on to this plaza?

Plaza 2 (Oak Grove Plaza):

The removal of all surface parking on this plaza and replacement by a mixed-use building will create more demand for parking elsewhere. The proposed residential units and retail will create additional car trips and require underground parking to accommodate the new residents. Shared parking between residents and shoppers generally does not work out in practice unless there is a very generous number of new spaces created. An example immediately across the street at 724-726 Oak Grove Avenue illustrates the unworkability of this concept. The underground parking for this mixed-use development was intended to serve patients, clients and residents. When residents protested that they were unable to use their parking spots during the day, the building owner installed a gate 'for residents only', which meant that patients had to find parking elsewhere – in the public parking plazas and along neighborhood streets. The 9 above-ground parking spaces are wholly inadequate for the number of medical, dental, and financial offices in this building. The additional pressure on the existing parking resources that has resulted has been detrimental.

With the loss of all 95 surface parking places in Plaza 2, together with the attendant need for additional parking for the mixed use build-out – how much on-site underground public parking will be required to adequately provide for the new development? Has this been considered?

Plaza 3 (behind Flegel's):

The proposed "pocket park" appears to eliminate the entrance to Plaza 3 from Crane Street. The City originally acquired this property, which provides ingress and egress to Plaza 3 "for the purpose of establishing off street motor vehicle parking places, including property rights of way necessary or convenient for ingress thereto or egress therefrom." (Resolution No. 1812) This plaza is already heavily used by attendees of the nearby church and shoppers.

The elimination of an entrance will force all vehicles to enter the plaza from University Drive. A parking structure in this plaza, together with townhomes on top (which will add more parking demand and create more car trips) will increase traffic dramatically on University Drive. Large delivery and garbage trucks must be able to gain access to the backs of the retail stores. This will be made much more difficult with construction of a parking garage. Disruption to the immediate area due to construction over an 18-month to 2-year period will be inevitable and traffic congestion in the area will result. Parking on streets close to downtown, which has caused complaints from neighbors in the past, will be exacerbated. Again, if town homes are built atop of the parking garage, this will create additional demand for parking spaces, which are already in short supply and the 375 spaces created will be inadequate to serve the needs of the shoppers, residents, and the church across the street, which plans for additional development on its property. My understanding is that the church does not plan to add more on-site parking for its future development, but would instead contribute toward the building of the parking structure. If this is the case, the 370 spaces in this plaza will be totally inadequate for the amount of new development.

Plaza 4 (next to Draeger's):

Loss of access from Evelyn Street into this very busy and cramped parking area will cause severe congestion and added parking demand with the proposed construction of a mixed-use building in this plaza. The increased demand will very likely impact street parking in the nearby neighborhoods surrounding downtown. There is constant turnover of parking spaces in this parking plaza, which is needed by shoppers. A mixed-use building in this plaza will create more parking demand, add to congestion, and create access and circulation problems. Would the proposed mixed-use building provide on-site underground public parking?

Plaza 5 (behind Posh Bagel):

The proposed mixed-use building in this plaza will remove a portion of the current parking immediately behind the buildings on Santa Cruz Avenue. Large delivery and garbage trucks need convenient access to the backs of these buildings. The proposed location of the mixed-use building in this plaza will remove this convenient parking and add more demand for parking spaces. Would the proposed mixed-use building provide on-site underground public parking?

Plaza 6 (behind Wells Fargo):

A covered marketplace in this plaza will increase parking demand and impact the parking in this plaza. With the proposed closure of Chestnut Street to create a paseo, vehicles will be unable to access Plaza 6 from Chestnut. The covered marketplace, if positioned as currently shown, will cause the removal of a heritage oak tree and prevent vehicle access behind the building at Menlo Avenue and Chestnut. The covered marketplace will impact the existing Sunday Farmers Market and the businesses on Santa Cruz Avenue and Menlo Avenue by reducing parking and limiting access to this plaza only from Crane Street. Would the covered marketplace provide on-site underground public parking?

Plaza 7 (next to Trader Joe's):

The proposed covered marketplace in this plaza will severely impact one of the most crowded parking plazas in the downtown – the location of Trader Joe's. Besides increasing parking demand, it, in combination with the Chestnut Street closure, will cut off vehicle access from Chestnut Street. This will very likely cause traffic tie-ups and additional congestion. The amount of parking in this plaza, which is already heavily impacted, will be substantially worsened by the combined loss of parking due to the covered marketplace and the additional demand placed on it by the new use. Would this covered marketplace provide on-site underground public parking?

Plaza 8 (behind Left Bank):

A proposed boutique hotel in this location would eliminate much needed surface parking in a plaza, which is in most need of easy convenient surface parking, especially at lunch and dinner time. Access to the plaza would be severely compromised by the addition of a hotel. Should a hotel be built in this plaza, the net gain of 167 new parking spaces in the downtown, according to the Emerging Plan, would be reduced significantly – potentially a gain of only 22 spaces if this plaza is completely built out.

The following table was derived from the Emerging Plan and shows the net gain in parking spaces for downtown:

DOWNTOWN PARKING SPACES

	Existing	Proposed	Net Gain (Loss)
Plaza 1	249	† 510	261
Plaza 2	95	0	(95)
Plaza 3	212	†† 370	158
Plaza 4	105	80	(25)
Plaza 5	150	125	(25)
Plaza 6	136	111	(25)
Plaza 7	94	60	(34)
Plaza 8	145	*145	0
†††**On Street**	138	90	(48)
Total	1324	1491	167

† 465 spaces in Parking Garage and 45 surface parking
†† All spaces in Parking Garage and no surface parking
††† Parking spaces along Santa Cruz Avenue

* 145 spaces could be lost if a boutique hotel is built

The addition of 1537 more residents in the downtown area and 929 new jobs will adversely impact parking, circulation, access, and traffic by increasing the number of car trips. Infrastructure to support this additional growth is insufficient. Schools are already maxed out. The addition of more children will impact the existing school population and the desire to keep classroom size small. This could also lead to the redrawing of school boundary lines.

Elimination of 48 prime parking spaces in order to widen sidewalks will impact parking, traffic, and circulation.

The removal of 65% of the easy convenient surface parking, according to the parking chart in the

Emerging Plan, will severely impact downtown parking – forcing more cars into less convenient parking garages and into surrounding neighborhoods.

Not included in the Emerging Plan is a statement that any new construction in Downtown requires on-site parking. If this is not a requirement, parking in the downtown will be a nightmare. The current plan is at odds with the policy statement in the Land Use Element of the General Plan:

> "New development shall not reduce the number of existing parking spaces in the Assessment District, on P-zoned parcels or private property where parking is provided in lieu of Assessment District participation."

In addition to changing the zoning for the surface parking plazas to permit high-density infill development, the Emerging Plan also recommends a zoning change to permit three-story buildings in the downtown. Again, if such a zoning change is made to allow three-story buildings, will these developments provide on-site public parking? If not, there will be a further degradation of parking in the downtown.

The net gain of 167 spaces, possibly as low as 22 if the boutique hotel is built in Plaza 8, is not worth the disruption and increased demand for infrastructure to support the build-out. If implemented as now described, there will be a change in the character of the downtown from a small town to city-like atmosphere.

Again, the Emerging Plan is at odds with the current General Plan, which spells out in the Land Use Element the goal of the downtown to:

> "Strengthen Downtown as a vital and competitive shopping area while encouraging the preservation and enhancement of Downtown's historic atmosphere and character."

The Plan as envisaged will substantially reduce (in some cases remove completely) the surface parking spaces in all eight of the downtown parking plazas. Even if multi-story parking structures are erected to partially mitigate this loss, then at best, the net impact will lead to a tighter concentration of incoming and outgoing traffic with resulting congestion. The resulting stop-and-go traffic will exacerbate air pollution and add to the overall carbon footprint of downtown commerce.

On top of this, the increased density of inhabitants in the downtown (as a result mixed-use residential being placed there) will place an even greater load (both parking and traffic) on this area adding to the pollution and carbon footprint.

Thus there is a two-fold impact. First, relocating all of the current surface parking into one or two concentrated structures has its impact in traffic density, resulting congestion and increased air pollution. Secondly, locating housing (more downtown inhabitants) where the parking plazas once were, will add another layer of traffic with associated congestion, pollution, and carbon footprint on top of a system that has already been compromised.

Nancy Couperus, Property Owner
859-869 Santa Cruz Avenue, Menlo Park

January 1, 2010

Thomas Rogers, Associate Planner

City of Menlo Park

Dear Mr. Rogers:

I attended the final workshop meeting for the proposed Downtown Plan. According to the moderator this Plan, if approved, would add 1,500 permanent people to the downtown area. That would be caused by the Plan's proposal of adding to the height of the buildings on Santa Cruz Avenue by having retail on the ground floor, offices on the second floor and condos or apartments on the third floor.

It is my estimate that at least 1,000 cars would be added to the area. The Environmental Impact would be disastrous because of increased traffic congestion in addition to the fume emissions from the cars. The moderators said the new tenants would not need cars because the they would be close enough to walk to shops or they could walk to the train station. Don't you believe it! Americans are in love with their cars. For example: the seniors living in The Sequoias in Portola Valley are still driving their own cars in spite of vans available that will take them anywhere in the area.

We do not need more cars in downtown Menlo Park.

Sincerely,

Lee Boucher

Downtown Property Owner

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From: Martin & Barbara Seaney <mandbseaney_at_(domain_name_was_removed)>
Date: Tue, 15 Dec 2009 16:04:19 -0800

Kay Slocum's letter has expressed my views exactly. To eliminate so much surface parking would be a negative move as far as accessibility and convenience go. As far as I'm concerned, our efforts should be directed to ameliorating the El Camino stretch through Menlo Park, both the road and empty, shabby buildings.

Barbara Seaney
2415 Sharon Oaks Drive
Menlo Park

Received on Tue Dec 15 2009 - 16:11:44 PST

This message: [Message body]
Next message: Swagit: "** Swagit Newsletter: December 2009"
Previous message: Amanda Hope: "San Francisco Nonprofit Leadership Series (board development)"

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Rogers, Thomas H

From: Henry Riggs [hlriggs@comcast.net]
Sent: Tuesday, December 15, 2009 4:48 PM
To: _CCIN
Cc: Rogers, Thomas H
Subject: Specific Plan EIR context

Honorable Mayor and Council members,

In looking at the scope for the Specific Plan EIR, I hope the context will be: How will the ramifications of the coming plan compare with a future under the status quo?

There is no doubt that, eventually, abandoned sites will get built upon, and currently that is a mostly political process dependant on the Council of the moment, given these projects will often seek a Development Agreement. Meanwhile our older buildings, typically from
1949 or 1950, are in many cases far from Green.

There is little doubt that continuing population and economic pressures will result in more building in Menlo Park. An example
question: where and how will we live when large numbers of us
retire? These lifestyles will significantly affect the environment.
Large, low-occupancy homes are a bit like single occupancy vehicles.

A key purpose of our Specific Plan, then, is to manage these
pressures and resulting growth for the sake of our quality of life.
We should be getting at the least an organized plan that will encourage walking and biking, discourage dependancy on cars and support our shared assets, from infrastructure to parks and recreation space. Together, these make our environment.

Henry Riggs
Callie Lane

Rogers, Thomas H

From: Margaret Petitjean [MPetitjean@webtv.net]
Sent: Tuesday, December 15, 2009 1:27 PM
To: _CCIN; Rojas, Glen; McClure, William; Taylor, Charles W; Steffens, Kent D; Rogers, Thomas H; _Planning Commission
Cc: citz4dBAbate@webtv.net; stophorns@webtv.net
Subject: Agenda Item 11/15/09: El Camino/Downtown Visioning

Hon. Mayor and Council Members, et al

It is gratifying to see from the e-mail log that there are serious questions re the above, many of which I have expressed in the past.

My main criticism is that not enough consideration was given to the following fact:

Internal combustion engines are at their least efficiency when idling and diesel and other fuels in present use are the major cause of pollution which is a serious public health hazard

This city must take control of the traffic by ensuring its free flow at its greatest efficiency; i.e: grade separating the trains from vehicle traffic and synchronizing the lights along El Camino.

Until the trains are electrified, other vehicles are cleaner, and traffic and train idling all over town is lessened we are breathing excessive poisons from the engines, brake linings and rubberized tires.
It is not safe for the unprotected.

Transit-oriented development close to trains and traffic is at risk and this project is putting the cart before the horse.

I attended every meeting during the last few months expressing always my opposition to the voices raised in favor of the plans for T.O.D. bicycling and walkability near transit.

These few voices were for the most part commissioners and the usual activists. the loudest of whom has now left town thankfully.

While I concur with those who feel that not enough residents were involved in the process it was not due to lack of effort on the part of city staff, but rather the lack of interest in those who are too busy, too satisfied, or fail to keep up with the programs and plans all listed on the city's website.

Unfortunately, there are thousands of residents in Menlo Park who do not have personal computers or even know how to use them. They, as I do, trust that our city management will see to it that only those qualified with certification in their fields will be hired to analyze and make the tough decisions. There is a need to reach every household however when involving public opinion.

There are too many unqualified business people, commissioners and council members, past and present, with their own agendas, who attempt to run this city and succeed in creating excruciating processes which defeat all purposes.

Have they all read and studied the seven elements of the mandated general plans, do they understand the costs and environmental consequences of their wish-lists?

May we have a management and staff of planners, certified in their fields, whom we can trust, so that there will be less involvement of the unqualified general public with a misplaced sense of entitlement?

Essential services for health, safety and welfare of the residents of the city should be paramount. I'll vote for that!

Margaret Petitjean, Menlo Park

Rogers, Thomas H

From: Robert Ekedahl [rde17@pacbell.net]
Sent: Tuesday, December 15, 2009 12:41 PM
To: _CCIN; Rogers, Thomas H
Subject: El Camino/Downtown Specific Plan

Dear Mayor Cline and Council Members:

We've watched and participated in the Visioning process for downtown and have concluded that the end product may have been highjacked by developer and city staff vested interests. While we are pleased that the council has conducted such a review, the massive scope of the end result is not what the residents of Menlo Park need or desire.

We very much enjoy our small town atmosphere and see no reason to change it. Clearly many of the properties require upgrading but that should only be done within reasonable limits. We appreciate the current mix of one and two story buildings on Santa Cruz but three stories would destroy the character of our downtown. . Some three story building would however be acceptable along El Camino.

The addition of hundreds of residents will also have major negative impact as will multi-story parking structures. Except for noontime (and holiday) parking we see no need for parking structures.

Further it is premature, and a waste of time, energy and money, to continue the visioning process of the railroad side of El Camino until the High Speed Rail plans are finalized. We favor tunneling, routing further toward the bay, or stopping HSR in San Jose.

Robert and Diana Ekedahl
2 Chateau Drive
Menlo Park, CA 94025
Phone: 650-324-2667
Fax: 650-324-2667
email: rde17@pacbell.net



Menlo Park City Council Email Log

[By Date] [By Message] [By Subject] [By Author]

ECR/Downtown Scoping session

This message: [Message body] [More options]
Related messages: [Next message] [Previous message]

From: Patti L Fry <pattilfry_at_(domain_name_was_removed)>
Date: Tue, 15 Dec 2009 08:05:38 -0800

Dear Council,
It is difficult to provide feedback for the El Camino Real/Downtown Specific Plan because there is not specific information about what "the project" is. Without this, it's difficult to provide feedback on the scope of the EIR and Alternatives to be studied. According to the 12/15/09 staff report attachments, the attachments are "sample graphics". That begs the question of what other graphics could there be? The graphics are not very readable online or printed, by the way.

Some considerations for your discussion:

- What sort of parking garages are planned, where and where not, how many maximum? The analysis of potential impacts (e.g., on traffic flow, aesthetics, shadowing, etc.) depend on more specific information. Are these entirely below ground? What is above ground? What if there were only one (a suggested Alternative)? What if it were underneath structures or public space (a suggested Alternative) rather than becoming an above-ground structure?
- Where else could a covered market be - if there is one - and where not? In previous public comment, several suggested this be located in the train station area (a suggested Alternative).
- Where else could a boutique hotel be - if there is one - and where not? It doesn't make much sense to place it in what is currently one of the busiest parking lots in town (behind Left Bank, Su Hong To Go, and Walgreen's)
- Where are the enhancements to bicycle safety and east/west bicycle routes? I see very little. What about studying one-way streets for Oak Grove and Menlo to allow more room for full bike lanes in the center of town (a suggested Alternative)?
- The traffic analysis needs to include Alma intersections and flows in/out of specific parking lots. The latter is mentioned partly because the sample graphics show parking lots next to Draeger's and Trader Joe's have blocked aisles that would affect parking lot congestion as well as ingress/egress issues. Both lots are highly used by cars and shoppers with carts, and already can affect traffic flow on city streets when the lots are clogged.
- Potential scenarios of HSR and Caltrain should be addressed. Desirable uses and impacts would vary greatly depending what happens. I personally think it's absurd to put a park between El Camino and the train tracks

because of air pollution and noise. If trains were underground, however, that might be an appropriate use.

- There is virtually no information about types of uses of "the project". The specifics will affect greatly traffic flow, parking requirements, and vibrancy. Note that the staff report omits mention of vibrancy from USES. The ultimate vibrancy of the study area depends most on the specific types of uses allowed - what, how much, and where.
- The analysis of impacts on Climate Change, referenced as impacts on Greenhouse Gas Emissions, should address the city's goal of adhering to at least the U.S. Mayors' Climate Protection Agreement
- The baseline for analyzing growth and impacts is the current population and current General Plan, not what is proposed or what has been projected by other organizations. This is already a built-out community.

I am unable to attend this meeting. I hope it's just one of several in which the specifics of the Specific Plan and "the project" are made more clear. Then it would be possible to identify clear Alternatives.

Respectfully,

Patti Fry
Menlo Park resident and former Planning Commissioner

Received on Tue Dec 15 2009 - 08:13:36 PST

This message: [Message body]
Next message: shoqraq.com: "** Take the chance"
Previous message: PAAIA: "** Passing the Torch of Success"

Contemporary messages sorted: [by date] [by thread] [by subject] [by author]

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Rogers, Thomas H

From: Dave Fundakowski [dfun47@comcast.net]
Sent: Monday, December 14, 2009 1:49 PM
To: Rogers, Thomas H
Subject: Proposed development style for El Camino (with examples)

Dear Mr Rogers,

As the Associate Planner for Menlo Park, I would like to make a recommendation regarding the proposed redevelopment/rezoning of El Camino through Menlo Park. I have made the comments below on Community Input forms and on a few public forums such as Town Square in the Almanac. I have pasted those remarks here for your consideration. I am not a developer or builder, so I do not know the correct term for the type of development I am proposing, but have described it below and included two links to examples in Google Maps. These areas in Midtown Palo Alto and Berkeley represent a style of mixed use development that allows multi-story buildings that don't create a tunnel effect, allows good traffic flow, landscaping, off-street parking and looks nice.

I hope you, in your official capacity, are not prohibited from reviewing or suggesting this type of development for consideration. I also hope that the links work when you recieve this email.

Please feel free to call me if you'd like to discuss or ask questions.

Dave Fundakowski
Atherton, Ca

==========

Posted by Interested neighbor, a resident of the Atherton: Lindenwood neighborhood, on Nov 23, 2009 at 1:47 pm

I just wanted to pitch this idea again. --in a forum that seems to get a fair amount of viewing and comments. I think there is an opportunity to improve the El Camino Corridor as part of this downtown revital(visual)isation.

By building combination retail (below)/office or housing (above) setback from El Camino, with its own traffic lane and strip of diagonal parking separated from El Camino by a planted area, such as in along portions of Shattuck Ave. in Berkeley or Middlefield Rd in midtown Palo Alto, you can have 1) a good mix of retail, office and housing, 2) mix of small and larger retail (if you wish), 3) 3 lanes of traffic on ECR both northbound and southbound, 4) more parking than the current configuration of lanes on ECR allows. In fact, setback 75 or 100 feet from the current outer lanes of ECR, 3 or more story buildings would not produce the tunnel effect on ECR that some people worry about. There'd also be more opportunities for plantings and a wider pedestrian walkway.

This configuration let's you build up and not look too urbanized. Obviously, this takes away some of the developable area on each parcel; and would require some carefully written zoning rules. This loss of developable area could be compensated for by an increase in the height limit.

Just a thought. Seems like it would have some beneficial aspects along ECR. What do you think? For a good example look on Google Maps at Shattuck Avenue between Allston Way and Kittredge St. (approx 2 blocks west of Cal's memorial stadium)

To see the areas mentioned above paste the following links (with any spaces deleted) into your browser:

Palo Alto: http://www.google.com/maps?f=q&source=s_q&hl=en&geocode=&q=palo+alto,+ca&sll=37.868521,-122.267803&sspn=0.001258,0.002261&ie=UTF8&hq=&hnear=Palo+Alto,+Sa

nta+Clara,+California&t=h&ll=37.433361,-122.129066&spn=0.001286,0.002261&z=19

Berkeley: http://www.google.com/maps?f=q&source=s_q&hl=en&geocode=&sll=37.0625,-95.677068&sspn=41.224889,74.091797&ie=UTF8&hq=&hnear=Berkeley,+Alameda,+California&t=h&layer=x&g=berkeley,+ca&ll=37.868521,-122.267803&spn=0.001258,0.002261&z=19

==========

Dave Fundakowski
Atherton, Ca



Menlo Park City Council Email Log

[By Date] [By Message] [By Subject] [By Author]

Downtown Improvement? Plan

This message: [Message body] [More options]
Related messages: [Next message] [Previous message]

From: Barbara Mason <babs412_at_(domain_name_was_removed)>
Date: Sun, 13 Dec 2009 21:52:05 -0800

I, unfortunatley, will be unable to make the meeting on 12/15/09. The holiday season seems to be an unusual time to have a meeting of such importance to this community. I would like to go on record as saying, once again, if it's not broken why fix it. We have seen what downtown redevelopment has done to some of our neighboring communities. Menlo Park has been able to keep it's village feel without jeopardizing the downtown merchants. In fact, it seems to me we have more businesses moving in than moving out as in the case of Palo Alto and Redwood City. I would like to hear more from the merchants regarding some of these plans. As a long time resident (1953) I've seen many changes, but through them all we have maintained a downtown area that far surpasses any others on the peninsula. It is one that gives us a sense of community and a feeling of safety. If you want to talk about putting parking structures on El Camino (where perhaps the employees from the downtown area could park) and perhaps a hotel and mixed-use in the "ghost town area" of the used car lots much like what was done on the south side of Oak Grove between El Camino and Merrill Street ...I'm all for that. But why are you proposing high density (addition of 1,500 people) to the downtown area when we have all the "emptiness" along El Camino? There is a lot of money being proposed (and already spent) on these studies and I think before you continue in this process, you need to poll the residents along with the businesses that will be affected by this. I would like to add, that I love Menlo Park and feel a great sense of pride when I drive or walk down Santa Cruz Avenue. Barbara Mason
Liberty Park Avenue

Received on Sun Dec 13 2009 - 22:00:09 PST

This message: [Message body]
Next message: Trailblazer Communications: "Litigation Request!!!"
Previous message: Bob Mascall: "El Camino Downtown Specific Plan"

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Menlo Park City Council Email Log

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downtown plan

This message: [Message body] [More options]
Related messages: [Next message] [Previous message]

From: frank carney <fmcarney_at_(domain_name_was_removed)>
Date: Mon, 14 Dec 2009 09:28:07 -0800

Dear Council:
As one of the founders of the Menlo Park Farmers' Market, I am concerned about the extent of the plans for development of our downtown district. Please remember Menlo's charm as a town is because it is NOT Santana Row, Ferry Plaza, Redwood City etc. Some of the Plan's proposals: boutique hotel, enclosed daily market, and large parking structures, appear to be rather grandiose for a town of 30,000. Many visitors from other communities on the Peninsula express delight in our current Market and downtown. They are dismayed when they view the Consultants overly grand designs. Please maintain the small town quality of our downtown for the next generation to enjoy.

Margaret Carney at fmcarney_at_yahoo.com, 322 6868, 340 Claremont Way.



Received on Mon Dec 14 2009 - 09:36:06 PST

This message: [Message body]
Next message: Denise Krane: "Reservations Regarding the Specific Plan"
Previous message: Trailblazer Communications: "Litigation Request!!!"

Contemporary messages sorted: [by date] [by thread] [by subject] [by author]

[Home] [By Date] [By Message] [By Subject] [By Author] [05/06 Archive] [07/08 Archive][Watch City Council Meetings]

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Rogers, Thomas H

From: Bob Mascall [bobmascall@gmail.com]
Sent: Sunday, December 13, 2009 8:56 PM
To: Rogers, Thomas H
Subject: El Camino Downtown Specific Plan

Dear Mr. Rogers,

Please consider the following when making decisions on the Downtown Specific Plan:

1.) Environmental review should first and foremost have an economic impact element attached to the review.
Have we not learned anything from the recent financial meltdown? This economic impact element should consider all of the ramifications of the disruption caused by the massive government development project proposed in the El Camino Downtown Specific Plan. This portion of the review should also consider the cost of lawsuits that are certain to ensue when implementation begins.

2.) On a positive note: Planning for the future is a good endeavor.
3.) To the negative: When government goes past planning to execution it is a bad endeavor.

While we agree with making changes to restrictive building height limitations, and eliminating limitations on individual property owners for maximizing the usage of their properties in order to increase retail, office and apartment dwellings in the downtown area, we believe this goal is best achieved by re-creating an atmosphere whereby the marketplace achieves the goals as opposed to those goals being pursued by our government.

If it is viable for a hotel, a covered market or apartment buildings in the downtown area, then a developer that believes in such a project's viability should acquire the property to accomplish this goal through marketplace channels and develop said project without the government (City of Menlo Park) playing developer with the taxpayers and current property owners money.

We propose, that if the consultant hired to provide the Downtown Specific Plan is in such great belief that this plan is the best approach for the future of Downtown Menlo Park, then that consultant should take that belief to the marketplace and form a development company to achieve their vision.

We respectively request elimination of any public/private development element to the downtown plan.
We also respectively request inclusion of the economic impact element to the environmental impact element.

Sincerely,

--
Bob and Susan Mascall
Owners: 657-659 Oak Grove Avenue

Rogers, Thomas H

From: Denise Krane [dkkrane@yahoo.com]
Sent: Monday, December 14, 2009 10:00 AM
To: _Planning Commission
Subject: Reservations Regarding the Specific Plan

Dear Members of the Menlo Park Planning Commission,

Although the planners likely had in mind only the best for Menlo Park, I find the Specific Plan is not representative of what the community as a whole holds ideal. For this reason, the community should put to a vote all changes proposed via the Specific Plan so every resident can have a definite say. Such a vote would show respect for all who live in Menlo Park and would be a just way to proceed on a matter that affects everyone living here. Currently, the proposal was set in place without adequate discussion and input from many individuals, and so the plan cannot represent the true, collective hopes for the community.

My husband and I moved to Menlo Park specifically because of its downtown area. We have always adored its accessibility and how practical the area is overall. When we heard about the Specific Plan, we felt greatly disappointed. As it is now, Menlo Park is designed for residents; hence its practicality and charm. In contrast, many of the proposed changes, such as a boutique hotel, do not cater to residents and would, for that reason, not enhance the community-based atmosphere so prevalent within downtown Menlo Park.

In addition, when parking garages rise above or next to stores and homes, they become a focal point and affect greatly the aesthetics of any area. Ultimately these garages would also challenge the neighborhood's progressive characteristics, making the neighborhood more like any other car-dependent area rather than the pleasantly walkable locale it now is. In addition, I have concerns that moving parking further away from the convenient streel-level and the centrally located plazas where it now is, would actually drive business away from downtown stores. Those individuals who currently drive to shops and grocers in downtown Menlo Park might well take their business elsewhere if parking becomes a battle or if they are faced with walking several blocks to a parking garage after having done their shopping.

The Specific Plan seems to have been put in place without many knowing about it and certainly with only a few having a clear voice. Since these changes are quite major and affect so much public space, they need to be rethought and put to the test via a vote.

Sincerely,

Denise K. Krane and Benjamin J. Levy

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

RECEIVED
JAN 13 2010
CITY OF MENLO PARK
BUILDING

January 5, 2010

Thomas Rogers
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Re: Notice of Preparation, Draft Environmental Impact Report (DEIR)
El Camino Real Downtown Specific Plan
SCH# 2009122048

Dear Mr. Rogers:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC or Commission) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at at-grade highway-rail crossings. In addition, projects may increase pedestrian movement at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The CPUC has concerns with vehicle queuing at the Oak Grove Avenue and Ravenswood Avenue railroad crossings, due to the close proximity of Alma Street, which runs parallel to the tracks. Motorists turning left from Alma Street can potentially block the intersection, causing queuing of vehicles for northbound traffic on Oak Grove Avenue and Ravenswood Avenue. Queuing problems could be worsened as a result of project-generated traffic.

There are two options to reduce the risk of queuing onto the tracks:

- Signalization of the intersections of Oak Grove Avenue and Alma Street, and Ravenswood Avenue and Alma Street, to better control the flow of traffic near the railroad crossings. Signalization of the intersections with a presignal configuration to stop motorists prior to the crossing would reduce queuing issues.

- Install raised concrete medians on both approaches of the Oak Grove Avenue railroad crossing to reduce queuing issues caused by motorists turning towards the crossing from both Alma Street and Derry Lane by preventing the turn movement. Raised concrete medians also reduce the risk of gate drive-around incidents.

Thank you for your consideration of these comments. If you have any questions in this matter, please contact Felix Ko, CPUC Rail Crossings Engineering Section, at (415) 703-3722.

Sincerely,

Daniel Kevin

Daniel Kevin
Regulatory Analyst
Consumer Protection and Safety Division

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maziar Movassaghi
Acting Director
700 Heinz Avenue
Berkeley, California 94710-2721

Arnold Schwarzenegger
Governor

RECEIVED
JAN 26 2010
CITY OF MENLO PARK
BUILDING

January 20, 2010

Mr. Thomas Rogers, Associate Planner
City of Menlo Park
Community Development Department, Planning Division
701 Laurel Street
Menlo Park, California 94025
throgers@menlopark.org

Dear Mr. Rogers:

Thank you for the opportunity to comment on the Notice of Preparation of the El Camino Real Downtown Specific Plan draft Environmental Impact Report (EIR). As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a potential Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any required remediation activities which may be required to address any hazardous substances release.

The draft EIR "Hazardous Materials and Hazards" section should include historical assessments of past land uses to determine whether hazardous substances may have been released into the soil at the site. Based on that information, sampling may be necessary to determine whether there is an issue which will need to be addressed in the CEQA compliance document. If hazardous substances have been released, they will need to be addressed as part of this project.

For example, if the remediation activities include the need for soil excavation, the CEQA document should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should be there an accident at the Site.

DTSC and the Regional Water Quality Control Boards (Regional Boards) signed a Memorandum of Agreement, March 1, 2005 (MOA) aimed to avoid duplication of efforts among the agencies in the regulatory oversight of investigation and cleanup activities at Brownfields Sites. Under the MOA, anyone requesting oversight from DTSC or a Regional Board must submit an application to initiate the process to assign the appropriate oversight agency. The completed application and site information may be submitted to either DTSC or Regional Board office in your geographical area. The application is available at http://www.calepa.ca.gov/brownfields/MOA/application.pdf.

If you have any questions, please contact me at (510) 540 - 3812 or email me at ychan@dtsc.ca.gov.

Sincerely,

Ying Wai (Kenneth) Chan
Hazardous Substances Scientist
Brownfields and Environmental Restoration Program – Berkeley Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P. O. Box 3044
Sacramento, California 95812-3044
State.clearinghouse@opr.ca.gov

Alyssa De La Cruz
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806
ADelacr1@dtsc.ca.gov

Nancy Ritter
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806
nritter@dtsc.ca.gov

N-S Street	E-W Street	Signalized	Jurisdiction
El Camino Real	Atherton Ave/Fair Oaks Ln	Y	Caltrans/Atherton
El Camino Real	Encinal Ave	Y	Caltrans/Atherton/Menlo Park
El Camino Real	Glenwood Ave/Valparaiso Ave	Y	Caltrans/Atherton/Menlo Park
El Camino Real	Oak Grove Ave	Y	Caltrans/Menlo Park
El Camino Real	Santa Cruz Ave	Y	Caltrans/Menlo Park
El Camino Real	Menlo Ave/Ravenswood Aves	Y	Caltrans/Menlo Park
El Camino Real	Roble Ave	Y	Caltrans/Menlo Park
El Camino Real	Middle Ave	Y	Caltrans/Menlo Park
El Camino Real	Cambridge Ave	Y	Caltrans/Menlo Park
El Camino Real	Sand Hill Rd	Y	Caltrans/Palo Alto
Laurel St	Oak Grove Ave	Y	Menlo Park
Laurel St	Ravenswood Ave	Y	Menlo Park
University Dr	Valparaiso Ave	Y	Menlo Park/Atherton
University Dr	Oak Grove Ave	N	Menlo Park
University Dr	Santa Cruz Ave	Y	Menlo Park
University Dr	Santa Cruz Ave	N	Menlo Park
University Dr	Menlo Ave	N	Menlo Park
Middlefield Rd	Marsh Rd	Y	Atherton
Middlefield Rd	Encinal Ave	N	Atherton
Middlefield Rd	Glenwood Ave/Linden Ave	N	Atherton
Middlefield Rd	Oak Grove Ave	Y	Atherton
Middlefield Rd	Ravenswood Ave	Y	Menlo Park/Atherton
Middlefield Rd	Ringwood Ave	Y	Menlo Park/Atherton
Middlefield Rd	Linfield Dr	N	Menlo Park
Middlefield Rd	Willow Rd	Y	Menlo Park
Gilbert Ave	Willow Rd	Y	Menlo Park
Coleman Ave	Willow Rd	Y	Menlo Park
Durham St	Willow Rd	Y	Menlo Park
Bay Rd	Willow Rd	Y	Caltrans/Menlo Park
Bay Rd	Marsh Rd	Y	Menlo Park
Florence St/Bohannon Dr	Marsh Rd	Y	Menlo Park
Scott Dr	Marsh Rd	Y	Menlo Park
Orange Ave/Santa Cruz Ave	Avy Ave/Santa Cruz Ave	N	Menlo Park
Santa Cruz Ave/Alpine Ave	Sand Hill Rd	Y	Menlo Park

Roadway	Extents	
Encinal Ave	El Camino Real	Middlefield Rd
Valparaiso Ave	Delfino Way	El Camino Real
Glenwood Ave	El Camino Real	Laurel St
Oak Grove Avenue	University Dr	Middlefield Rd
Santa Cruz Ave	Alameda de las Pulgas	Merrill Way
Menlo Ave	University Dr	El Camino Real
Ravenswood Ave	El Camino Real	Middlefield Rd
Middle Ave	Olive St	El Camino Real
Oak Ave	Sand Hill Rd	Olive St
Willow Rd	Laurel St	Middlefield Rd
Olive St	Oak Ave	Middle Ave
University Dr	Middle Ave	Oak Grove Ave
Laurel St	Willow Rd	Ravenswood Ave
Middlefield Rd	Willow Rd	Ringwood Ave
Waverley St	Laurel St	Linfield Dr
Linfield Dr	Waverley St	Middlefield Rd
Note: full analysis extents listed here. Roadways will be broken into logical individual segments as part of the Draft TIA.		

APPENDIX B
Shadow Study



Downtown 3/21 9am



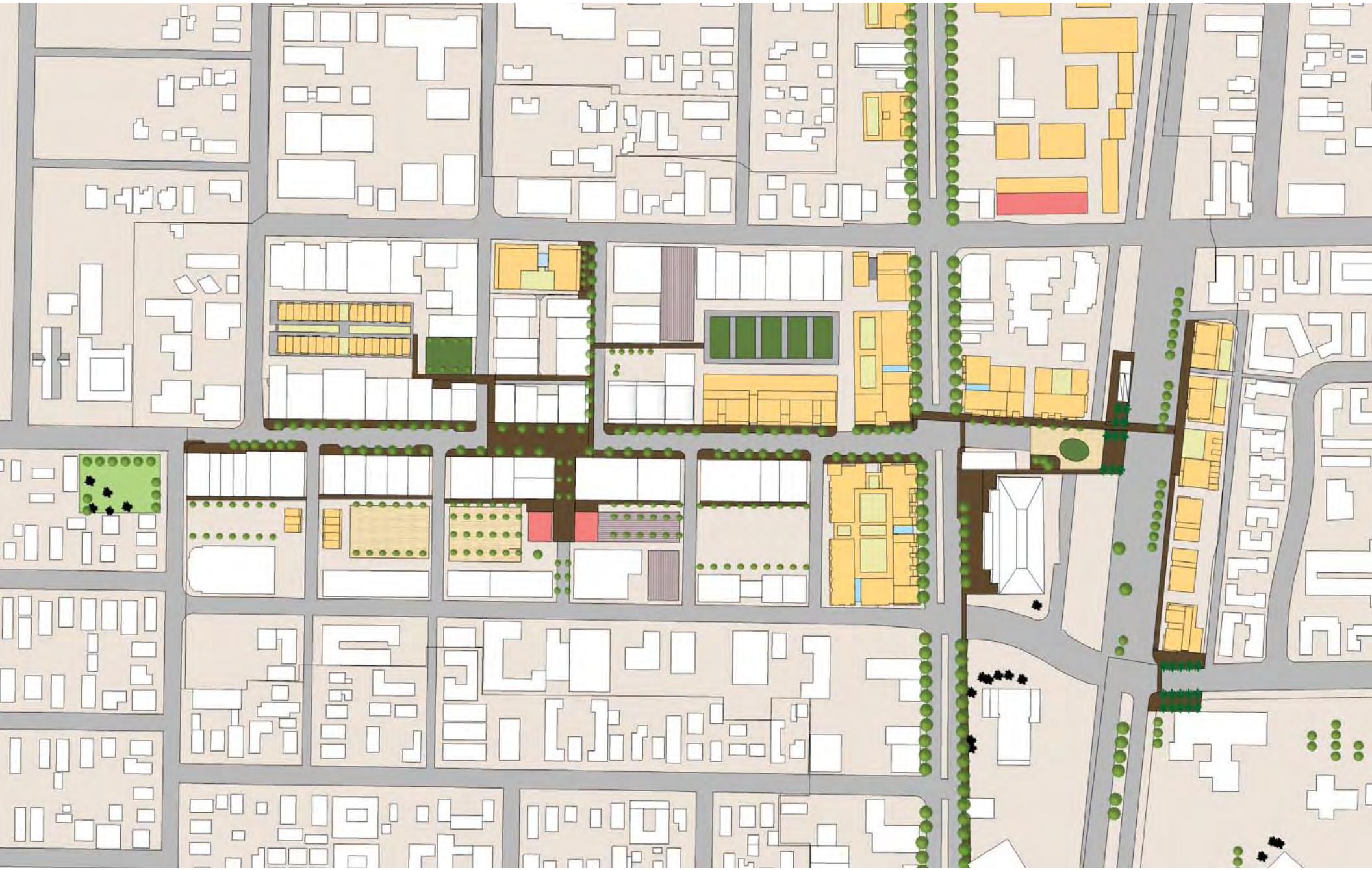
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Downtown 6/21 9 am



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Downtown 12/21 9am



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Downtown 12/21 3pm



El Camino Real South 3/21 9am



El Camino Real South 3/21 12pm



El Camino Real South 3/21 3pm



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El Camino Real North-Central 03/21 9am



El Camino Real North-Central 03/21 12pm



El Camino Real North-Central 03/21 3pm



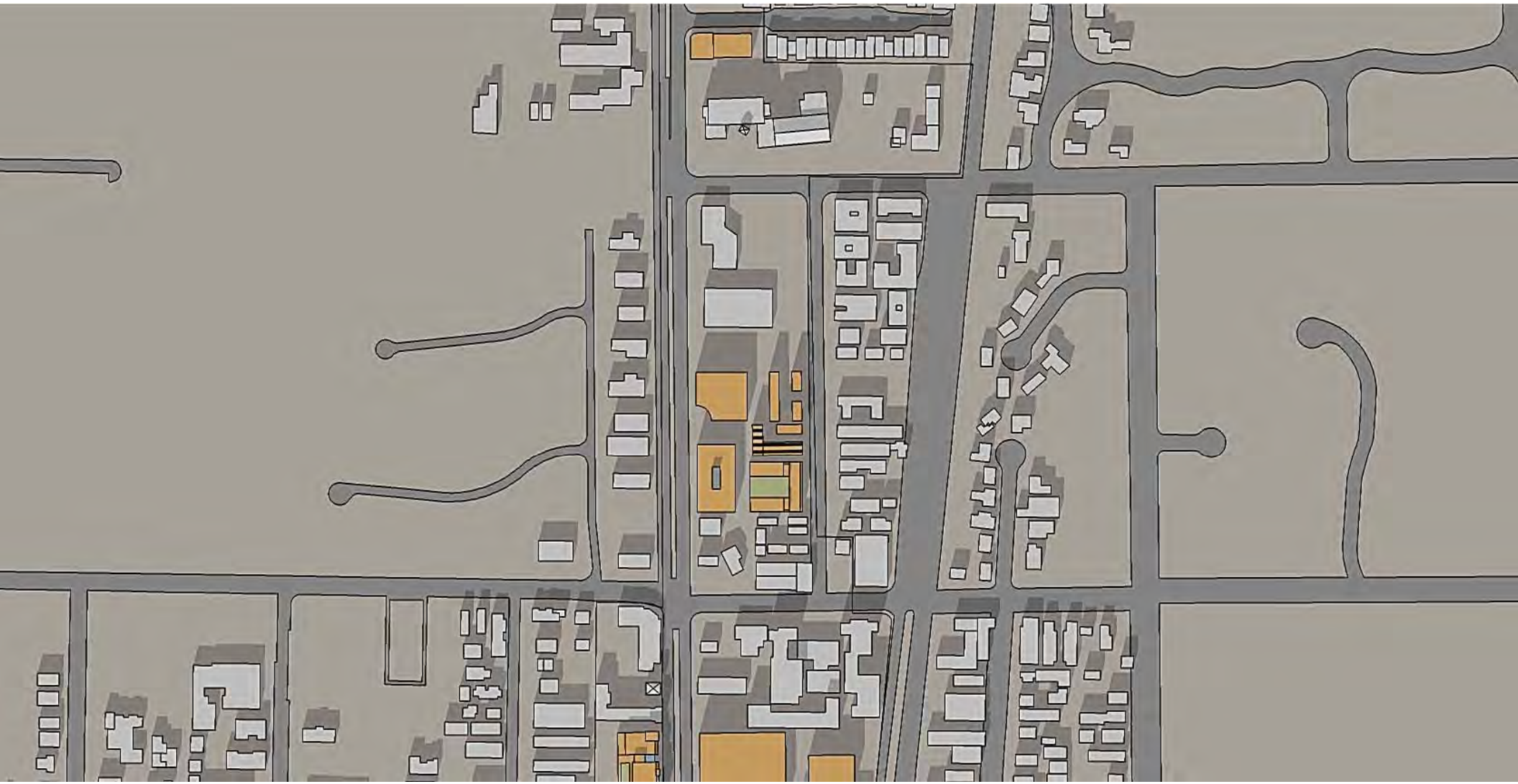
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El Camino Real North 3/21 3pm



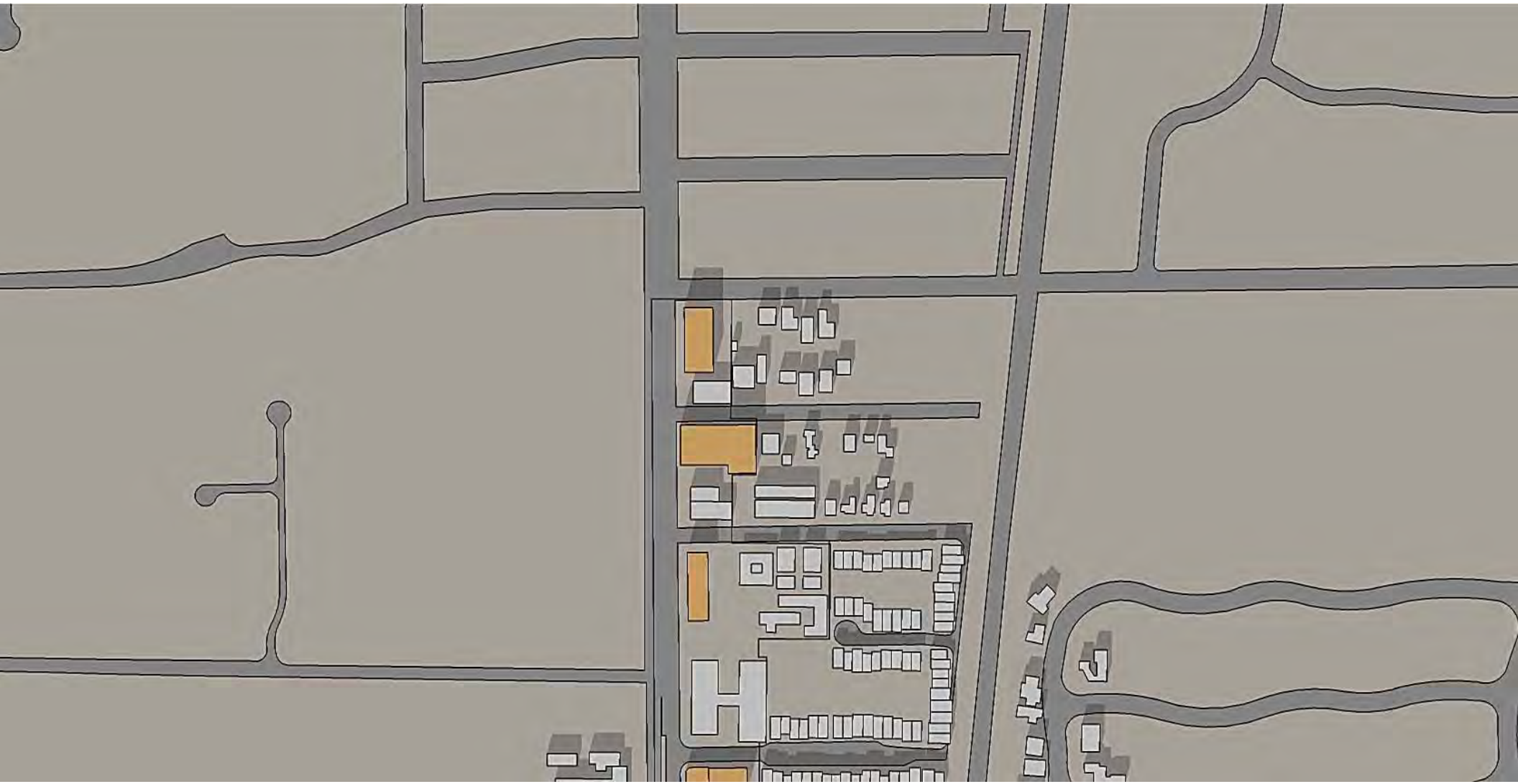
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El Camino Real North 12/21 12pm



El Camino Real North 12/21 3pm

APPENDIX C
Air Quality and Greenhouse Gases

AIR QUALITY

Toxic Air Contaminant Health Risk Screening Analysis

Caltrain

Baseline locomotive emissions were determined using emission factors derived from CARB's Roseville Railyard Study and rail traffic estimates derived from the current Caltrain schedule. The California High Speed Rail may utilize this right-of-way once operational; however, no emissions were assumed for these trains as they would be electric rather than diesel driven.

On March 14, 2008, the EPA adopted new, more stringent, emissions standards for locomotives. The new EPA rule (regulation) will reduce DPM emissions in several ways. It tightens emission standards for existing locomotives when they are remanufactured; sets near-term engine-out emission standards (Tier 3) for newly built locomotives; and will set longer-term standards (Tier 4) for newly built-locomotives that reflect the application of high-efficiency after-treatment technology.

The regulatory impact analysis of the new EPA rule includes estimates of annual $PM_{2.5}$ emissions from locomotives for the years 2008 through 2040 as a result of the new regulation. Based on these estimates, 2040 emissions would be approximately 83 percent lower than 2008 emissions (U.S. EPA, 2008). For purposes of this analysis, emissions reductions were interpolated out to 2044 where an 85 percent reduction was reached. From 2044 on it was assumed that emissions rates would remain at 85 percent of 2008 levels and that no further reductions would occur. This is a conservative analytic assumption since further reductions are feasible and may be mandated by the EPA in the future. Based on these assumptions, average annual emissions over a 70-year lifetime would be approximately 68 percent lower than baseline emission rates. Such reductions were incorporated into this analysis to determine risk at new sensitive receptors associated with implementation of the Specific Plan.

Annual average DPM concentrations from locomotives were modeled using the EPA dispersion model AERMOD. Emissions were modeled as a series of volume sources along a 1.5 mile stretch to simulate emissions from trains while in motion. Two point sources were used to model idling emissions from trains while they are stopped at the station. It was assumed that the average idling time of each train would be approximately two minutes. Meteorological data from the San Carlos meteorological station, supplemented with opaque cloud cover data from the Oakland International Airport, were used to process hourly surface data files for use in AERMOD. Receptors were modeled at distance of 15, 50, 100, 150, 200, 250, 300, and 400 meters (approximately 50 to 1,300 feet [¼ mile]) from the track centerline. Based on modeling results,

the highest concentration of DPM would be approximately 0.16 $\mu g/m^3$ and would occur 15 meters (50 feet) east of the track centerline near the Menlo Park Caltrain Station.

The maximum incremental cancer risk from exposure to DPM was calculated following the guidelines established by California Office of Environmental Health Hazard Assessment in conjunction with the BAAQMD's Health Risk Screening Analysis (HRSA) Guidelines (calculations are provided in Appendix B). The equation used to determine exposure to DPM through inhalation is demonstrated below:

$$\text{Dose-inhalation} = \frac{C_{air} * \{DBR\} * A * EF * ED * 10^{-6}}{AT}$$

Where:

Dose-inh	= Dose of the toxic substance through inhalation in milligrams per kilogram of body weight per day (mg/kg-day)
10^{-6}	= Micrograms to milligrams conversion, Liters to cubic meters conversion
C_{air}	= Concentration in air ($\mu g/m^3$)
{DBR}	= Daily breathing rate (L/kg body weight – day)
A	= Inhalation absorption factor
EF	= Exposure frequency (days/year)
ED	= Exposure duration (years)
AT	= Averaging time period over which exposure is averaged in days (25,550 days for a 70 year cancer risk)

Modeling results described above were used to represent the concentration of DPM in the air (C_{air}). For the purpose of this analysis, risk was evaluated based on the assumption that the maximally exposed individual (MEI) would be a residential receptor; this represents a conservative analytic assumption. The BAAQMD recommended 80th percentile adult breathing rate of 302 L/kg-day was used in the equation and the exposure frequency and duration were assumed to be 350 days per year and 70-years respectively. The inhalation absorption factor was assumed to be 1.

To determine incremental cancer risk the estimated dose through inhalation was multiplied by cancer potency slope factor for DPM, 1.1 $(mg/kg\text{-}day)^{-1}$. As shown below, risk at the nearest residential receptor was estimated to be 50.9 in one million.

Cancer Risk at the MEI (based on residential exposure assumptions)

$$\text{Dose-inhalation} = \frac{0.16\ \mu g/m^3 * 302\ L/kg\text{-}day * 1 * 350\ days/year * 70\ years * 10^{-6}}{(25{,}550\ days)}$$

$$= 46.3 * 10^{-6}$$

$$\text{Cancer Risk} = 46.3 * 10^{-6}\ mg/kg\text{-}day * 1.1\ (mg/kg\text{-}day)^{-1}$$

$$= 50.9 * 10^{-6}$$

~ 50.9 in one million

Studies by CARB indicate that people in California spend over 90 percent of their time indoors, and that total exposure levels of particulate matter in residences without heating, ventilating, and air conditioning (HVAC) systems equipped with filtration systems are actually about one third lower than levels outside. Thus, the expected maximum incremental cancer risk indoors at the MEI only would be about 33.9 in one million. This maximum risk is greater than the CEQA significance threshold established by the BAAQMD of 10 in one million for an individual source, therefore impacts would be potentially significant.

In order to reduce maximum incremental cancer risks to less than 10 in one million, residential units within 250 meters of the centerline of the railroad right-of-way would have to be equipped with air filtration systems to reduce DPM levels. According to ASHRAE Standard 52.2 Test Procedures, filters that fall into the Minimum Efficiency Reporting Value (MERV) rating of 14 or higher reduce DPM levels by approximately 85 percent. If residential units within 300 meters of the railroad are equipped with filtration systems meeting a MERV 14 rating, with control efficiency of 85 percent or greater, the maximum cancer risks from DPM associated with Caltrain operations would be reduced to 7.6 in-one-million; therefore, impacts would be less than significant with implementation of Mitigation Measure AIR-5 (see below).

In addition to cancer risk, DPM has non-cancer chronic effects on the respiratory system. The non-cancer adverse health risk for chronic (long-term) exposure, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from the proposed Plan emissions to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. RELs are expressed in units of $\mu g/m^3$ for inhalation exposure and represent the concentration at or below which no adverse health effects are anticipated following exposure. The ratio (referred to as the Hazard Quotient) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall Hazard Index for that organ system. Overall Hazard Indices are calculated for each organ system. If the overall Hazard Index for the highest-impacted organ system is greater than one, then the impact is considered to be significant. OEHHA has assigned diesel exhaust a chronic REL of 5.0 $\mu g/m^3$. This REL represents the level below which exposure to diesel exhaust would not result in adverse health effects to the respiratory system.

Based on an REL of 5.0 $\mu g/m^3$, risk from exposure to DPM associated with rail operations would be 0.032 (0.16 $\mu g/m^3$ / 5.0 $\mu g/m^3$). This would be well under the significance threshold of 1.0 and impacts would be less than significant even without implementation of Mitigation Measure AIR-5.

It is important to note that the Caltrain 2025 Project would provide for the conversion of diesel-hauled to electric-hauled trains. There would be a limited number of diesel locomotive operations for certain passenger routes; however, Caltrain has estimated that the electrification project would reduce air pollutant emissions from trains by approximately 90 percent. This reduction would lessen cancer risk from DPM in the Specific Plan area to less than 10 in one million.

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\cls\Application Data\Urbemis\Version9a\Projects\Menlo Park GHG.urb924

Project Name: Menlo Park Specific Plan GHG Analysis

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	3.12	2.45	29.03	0.07	12.26	2.33	6,726.07
Strip mall	1.72	1.74	19.10	0.05	9.11	1.72	4,867.95
General office building	1.37	1.29	14.51	0.04	6.80	1.29	3,654.73
TOTALS (tons/year, unmitigated)	6.21	5.48	62.64	0.16	28.17	5.34	15,248.75

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	66.25	6.90	dwelling units	1,060.00	7,314.00	39,135.02
Strip mall		42.94	1000 sq ft	91.80	3,941.89	29,142.41

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
General office building		11.18	1000 sq ft	240.00	2,683.20	21,740.63
					13,939.09	90,018.06

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.1	0.0	100.0	0.0
Light Truck < 3750 lbs	12.5	0.0	99.2	0.8
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.6	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.9	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.3	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.2	34.4	65.6	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	5.3	6.4	5.0	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults

Home-based work urban trip length changed from 10.8 miles to 5.3 miles

Home-based shop urban trip length changed from 7.3 miles to 6.4 miles

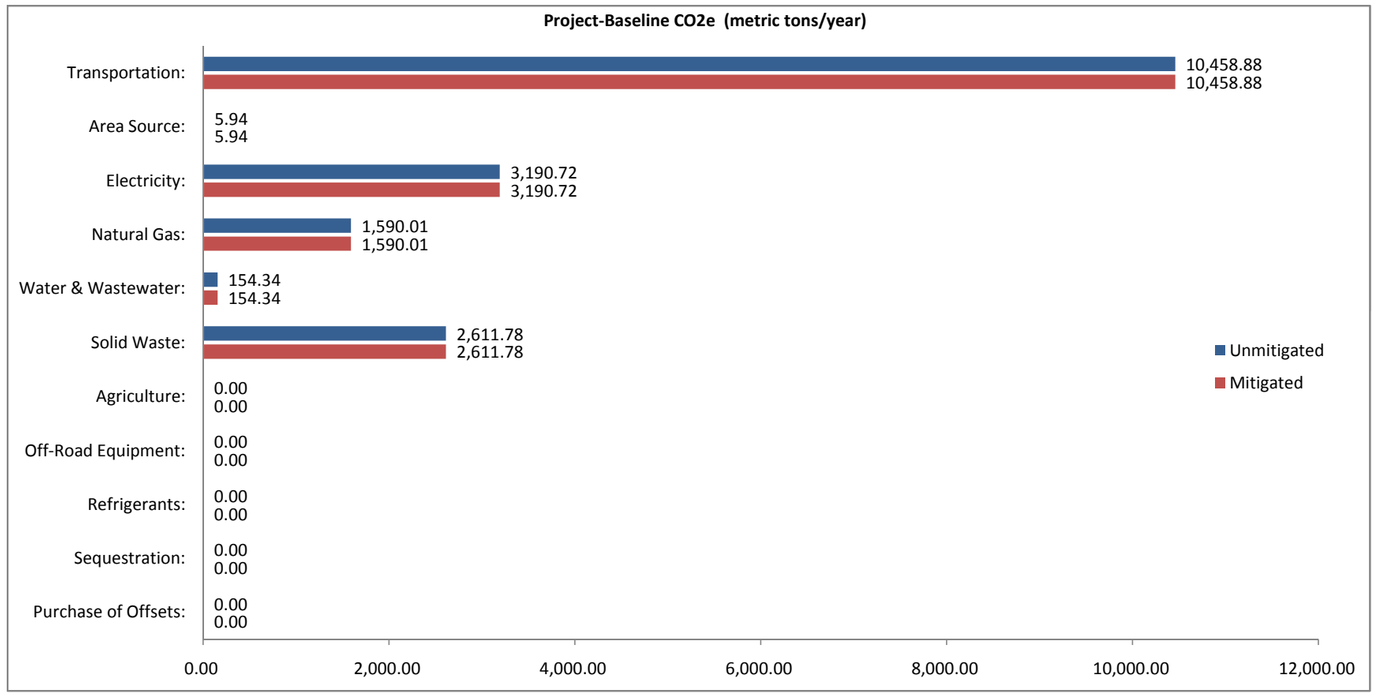
Home-based other urban trip length changed from 7.5 miles to 5 miles

Summary Results

Project Name: Menlo Park Specific Plan GHG Analysis
Project and Baseline Years: 2030 N/A

Results	Unmitigated Project-Baseline CO2e (metric tons/year)	Mitigated Project-Baseline CO2e (metric tons/year)
Transportation:	10,458.88	10,458.88
Area Source:	5.94	5.94
Electricity:	3,190.72	3,190.72
Natural Gas:	1,590.01	1,590.01
Water & Wastewater:	154.34	154.34
Solid Waste:	2,611.78	2,611.78
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	18,011.67	18,011.67

Baseline is currently: **OFF**
Baseline Project Name:
Go to Settings Tab to Turn On Baseline



APPENDIX D
Water Supply Assessment

Water Supply Assessment

for water service provided by

California Water Service Company, Bear Gulch District

to the

City of Menlo Park

El Camino Real/Downtown Specific Plan Project

April 2011

1410 Rocky Ridge Drive
Roseville, CA 95661
916.782.7275

TABLE OF CONTENTS

ACRONYMS/ABBREVIATIONS IV

1.0 INTRODUCTION 1-1

1.1 Project Location, Land Use, Zoning and Project Elements and Characteristics 1-1

1.1.1 Regional Location 1-1

1.1.2 El Camino Real/Downtown Specific Plan Location 1-1

1.1.3 El Camino Real/Downtown Specific Plan Project Components 1-3

1.2 Water Supply Planning 1-4

1.3 Water Supply Planning Under Senate Bills 610 and 221 1-5

1.3.1 Senate Bill 610 Water Supply Assessment 1-6

2.0 WATER SUPPLY 2-1

2.1 Climate 2-1

2.2 Water Supply Entitlements, Water Rights and Contracts 2-1

2.3 Introduction to the Water Supply Sources 2-2

2.3.1 Surface Water Rights 2-2

2.4 SFPUC Regional Water System 2-3

2.5 Water Supply Reliability, Improvements and Planning 2-4

2.5.1 San Francisco Public Utilities Commission Regional Water Supply and Demand Planning 2-4

2.5.2 Water System Improvement Program and the Phased Water System Improvement Program Variant 2-5

2.5.3 Water Supply Sources for Cal Water and Bear Gulch District 2-7

2.6 Total Water Supplies 2-14

3.0 WATER DEMAND ANALYSIS 3-1

3.1 Proposed Project Water Demand 3-1

3.2 Historical System Demand - Bear Gulch District Historical Demand 3-2

3.3 System Demand Forecasts and Bear Gulch District Growth Scenarios 3-2

3.3.1 Projected Growth Association of Bay Area Governments 2009 Projections (Households) 3-4

3.3.2 Projected Growth Association of Bay Area Governments 2009 Projections (Jobs-Employment) 3-5

3.3.3 Total Projected Growth Association of Bay Area Governments 2009 Projections (Households -Jobs) with Bear Gulch District Service Area 3-7

3.4 Comparison of Available Water Supplies versus Demand 3-8

3.4.1 Cal Water and Bear Gulch District Supply and Demand Considerations 3-8

3.4.2 Supply and Demand in a Normal Year based on Bear Gulch District's 2010 Draft Urban Water Management Plan Projections. 3-8

3.4.3 Supply and Demand in a Normal Year with Association of Bay Area Governments 2009 Projections 3-9

3.4.4 System-wide Supply and Demand Comparison in Normal, Single Dry and Multiple Dry Years with No Net Gain in Demand 3-11

3.4.5 Mandatory Conservation to Balance Supply and Demand 3-13

3.5 Water Conservation Best Management Practices 3-13

3.5.1 Dry-Year Shortage and Demand Reduction 3-15

4.0 SUPPLEMENTAL SUPPLY PROGRAMS 4-1
4.1 Supply Reliability Projects (Cal Water and BAWSCA) 4-1
4.1.1 Cal Water and Bear Gulch District Actions 4-1
4.1.2 Long-Term Reliable Water Supply Strategy 4-2
5.0 SUMMARY AND CONCLUSION 5-1
5.1 WSA Findings 5-2
6.0 REFERENCES 6-1

APPENDICES

Appendix A: ABAG Growth Projections for Menlo Park and Water Demand Projection Calculations

Appendix B: Bear Gulch District 2005 UWMP Section 4 Water Shortage Contingency Plan

Appendix C: Long-Term Reliable Water Supply Strategy Executive Summary

LIST OF TABLES

Table 1-1: El Camino Real/Downtown Specific Plan Envisioned Development Program ... 1-4
Table 2-1: City of Menlo Park Climate Summary 2-1
Table 2-2: Supply Sources and System-Wide Reductions 2-2
Table 2-3: Contracts/Agreements, Allocations, Plans and Programs 2-10
Table 2-4: Normal Year Supplies for Cal Water; and Bear Gulch District 2-14
Table 3-1: City of Menlo Park El Camino Real-Downtown Specific Plan Area (proposed project) Land Use and Water Demand 3-1
Table 3-2: El Camino Real/ Downtown Specific Plan Area Land Use and Water Demand from Association of Bay Area Governments 2009 Projections (Most Conservative Estimates for Growth) 3-2
Table 3-3: Bear Gulch District Historical and Current Water Use (SFPUC and local surface water) 3-2
Table 3-4: Service Area Projected Growth and Water Demand 3-3
Table 3-5: Association of Bay Area Governments 2009 Projections Household Growth and Projected Water Demand 3-4
Table 3-6: Association of Bay Area Governments 2009 Projections Employment (Jobs) Growth and Projected Water Demand 3-6
Table 3-7: Bear Gulch District Water Demand Projections from Association of Bay Area Governments 2009 Projections 3-7
Table 3-8: Bear Gulch District 2010 Draft UWMP Normal Year Supply and Demand Projections (mgd) 3-9
Table 3-9: Normal Year Bear Gulch District Supply & Demand Projections (mgd) 3-10
Table 3-10: 2010–2035 Supply and Demand Comparison for Normal and Critical Dry and Multiple Dry Years under with 20% Systemwide Reductions to BAWSCA Members - No Net Demand Increase Scenario with No Conservation 3-11
Table 3-11: Stages of Demand Management 3-15

LIST OF FIGURES

Figure 1-1: Project Location 1-2
Figure 1-2: Bear Gulch District's Service Area and Proposed Project Area 1-9
Figure 2-1: Regional Water Supply System 2-4
Figure 2-2: BAWSCA Members 2-8
Figure 4-1: Water Supply Management Project Classifications 4-4

ACRONYMS/ABBREVIATIONS

AF	acre-feet
AFY	acre-feet per year
BAWSCA	Bay Area Water Supply and Conservation Agency
Cal Water	California Water Service Company
gpd	gallons per day
MG	million gallons
mgd	million gallons per day
proposed project or ECR/D Specific Plan	El Camino Real / Downtown Specific Plan Project
San Francisco	City and County of San Francisco
SFPUC	San Francisco Public Utilities Commission
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

1.0 INTRODUCTION

The City of Menlo Park is conducting an environmental review under the requirements of the California Environmental Quality Act for the proposed El Camino Real/Downtown Specific Plan Project (proposed project or ECR/D Specific Plan). This water supply assessment (WSA) will provide information for use in the California Environmental Quality Act analysis for this proposed project. The environmental review for the proposed project includes an assessment of the available water supply to serve the proposed project along with existing and planned future uses. The requirements for a WSA are set forth in the California Water Code Sections 10910 et seq.

A WSA connects water supply and land use planning with the environmental review process. The law also reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. The core of this law is an assessment of whether available water supplies are sufficient to serve the demand generated by a project, as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions.

This WSA provides information on the available water supply to serve the proposed project based on California Water Code Sections 10631, and 10910 et seq.

This document is divided into five main sections: Introduction, Water Supply Sources, Demand Analysis and Comparison, Supplemental Supplies and Summary and Conclusion. The Introduction describes the proposed project and water supply planning under California Water Code 10910 et seq.

1.1 Project Location, Land Use, Zoning and Project Elements and Characteristics

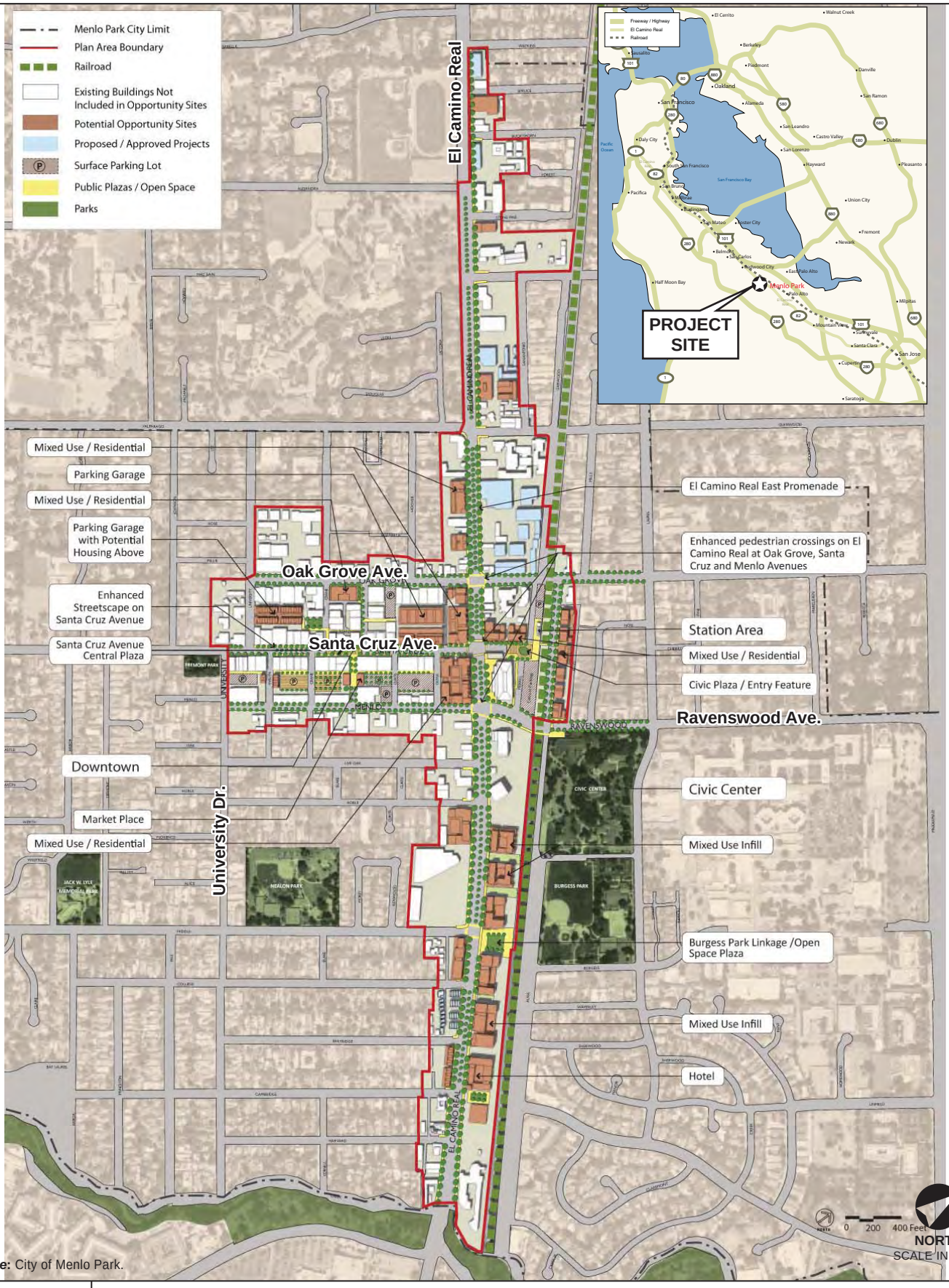
1.1.1 Regional Location

The City of Menlo Park is located approximately 30 miles south of San Francisco on the San Francisco Peninsula. Figure 1-1 shows the location of the Specific Plan area as well as key elements of the development program as envisioned in the ECR/D Specific Plan.

The City of Menlo Park street grid is offset from exact compass directions. Streets that run relatively parallel to El Camino Real and the Caltrain tracks are described as running north (toward San Francisco) and south (toward San Jose). Similarly, streets that run relatively parallel to Santa Cruz Avenue and San Francisquito Creek are described as running east (toward the San Francisco Bay) and west (toward the Santa Cruz Mountains). The location of uses, buildings, and views are similarly described according to these directions.

1.1.2 El Camino Real/Downtown Specific Plan Location

The ECR/D Specific Plan area is located along the length of El Camino Real within the City limits. It extends east to the Caltrain right-of-way and around the Caltrain Menlo Park Station to Alma Street, and it extends west along Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue to approximately University Drive. El Camino Real is designated as State Route 82 under California Department of Transportation jurisdiction, and is one of the primary arterial roadways and commercial corridors of the San Francisco Peninsula.



***Source*:** City of Menlo Park.

FIGURE **1-1**

Regional Location and Plan Area

The ECR/D Specific Plan covers approximately 130 acres and includes the El Camino Real corridor, the Caltrain station area, and the city's downtown core centered on Santa Cruz Avenue. The Menlo Park Civic Center, which houses the local government buildings and Burgess Park, is located southeast of downtown, across from the Caltrain right-of-way. Residential neighborhoods and institutional uses surround and are adjacent to the ECR/D Specific Plan boundaries.

1.1.3 El Camino Real/Downtown Specific Plan Project Components

The ECR/D Specific Plan establishes a framework for private and public improvements on El Camino Real, in the Caltrain station area and in downtown Menlo Park for the next several decades. The Plan's focus is on the character and extent of enhanced public spaces, the character and density of private infill development and circulation and connectivity improvements. The overall intent of the ECR/D Specific Plan is to preserve and enhance community life, character and vitality through public space improvements, mixed-use infill projects sensitive to the small-town character of Menlo Park and improved connections across El Camino Real. The ECR/D Specific Plan is intended to:

- Encourage infill development of vacant and underutilized lots along El Camino Real through increased densities, coupled with strict building modulation and ground-floor and upper-story setback requirements that both attenuate the mass and scale of larger buildings and create wider public sidewalks;
- Retain the existing "village" character downtown by keeping buildings low and requiring varied building massing, including upper story setbacks;
- Increase downtown activity, foot traffic and transit use through enhanced public spaces, mixed-use infill projects (including residential uses) and higher densities of development near the commuter rail station;
- Enhance community life through an integrated network of widened sidewalks, promenades, pocket parks and public gathering spaces; and
- Enhance east-west connectivity across El Camino Real through sidewalk extensions and other sidewalk improvements, while accommodating north-south vehicular through-traffic, and across the railroad tracks through grade-separated pedestrian and bicycle connections.

The ECR/D Specific Plan's guiding principles are:

- Enhance Public Space;
- Generate Vibrancy;
- Sustain Menlo Park's Village Character;
- Enhance Connectivity; and
- Promote Healthy Living and Sustainability.

1.1.3.1. Specific Plan Project Components

The ECR/D Specific Plan area occupies one of Menlo Park's most prominent arterial corridors and the City's downtown core, and includes a Caltrain station from which service is provided to San Francisco and San Jose. According to the available information, the proposed project area covers approximately 130 acres. Table 1-1 illustrates the development program for the project

area as envisioned in the ECR/D Specific Plan. Each of these development types would require new water service within the proposed project area. The projected development program indicates only one potential development concept for the purposes of environmental review. The exact build-out will take place incrementally and will likely vary from the initial projection over the 30-year time frame.

Table 1-1: El Camino Real/Downtown Specific Plan Envisioned Development Program

Land Use/Development Type	Area/Space	Unit
Residential	680	Dwelling Units
Retail Space	91,800	Square Feet
Commercial Space	240,820	Square Feet
Hotel/Lodging	380	Rooms

Source: City of Menlo Park and ESA, April 2010.

1.2 Water Supply Planning

California has many different processes through which the development and/or maintenance of water supplies are planned for and managed on local and regional levels. In that context municipalities, special districts, wholesale suppliers will develop and use various planning documents to not only understand but to also guide preservation and allocation of the local and regional water resources. Urban Water Management Plans (UWMPs), Groundwater Management Plans, Integrated Regional Water Management Plans, Municipal Service Reviews and water resources components of General Plans all integrate a degree of regional planning of water supply and demand. The following are brief descriptions of the plans mentioned above.

- UWMPs, pursuant to California Water Code sections 10610 et seq. are long-range water supply and demand planning documents that provide a connection between land use planning and available water supplies. The plans should make every effort to ensure the appropriate level of reliability in a water service area sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years.
- Groundwater Management Plans are adaptive management tools and represent a critical step in establishing a framework for maintaining a sustainable groundwater resource for the various users overlying the basins. The Groundwater Management Plans are consistent with the provisions of California Water Code sections 10750 et seq. Groundwater Management Plans are developed in a consensus-based process, and include stakeholders throughout the overlying basins.
- Integrated Regional Water Management Plans are collaborative efforts to manage all aspects of water resources in a region. Integrated Regional Water Management Plans cross jurisdictional, watershed, and political boundaries; involve multiple agencies, stakeholders, individuals, and groups; and attempt to address the issues and differing perspectives of all the entities involved through mutually beneficial solutions.
- Municipal Service Reviews are comprehensive studies designed to better inform Local Area Formation Commission's, local agencies, and the community about the provision of municipal services. Service reviews capture and analyze information about the governance structures and efficiencies of service providers and identify opportunities for greater coordination and cooperation between providers. The Municipal Service Review is a prerequisite to a Sphere of Influence determination and may also lead a Local Area Formation Commission to take other actions under its authority.

- General Plans are required by California law for local governments. The General Plan is designed to guide the long-term physical development and conservation of a local jurisdiction's land and environment through a framework of goals, policies, and implementation programs. The General Plan also provides a foundation for more detailed plans and implementation programs to be conducted, such as area or community plans, zoning ordinances, and specific plans.

To complement these large-scale planning processes, California enacted Senate Bills 610 and 221 in 2002, both of which emphasize the interrelationships between land use and water supply planning, and require the incorporation of water supply and demand analysis at the earliest possible stage in the planning process for sizeable land use projects. These statutes primarily apply to the planning of water supplies and identification of sources for defined "projects" (California Water Code, Section 10912) in the case of Senate Bill 610 and for individual residential subdivision projects of more than 500 units in the case of Senate Bill 221. Senate Bill 610 amended portions of the California Water Code, including Section 10631, which contains the Urban Water Management Planning Act, and added Sections 10910, 10911, 10912, 10913, and 10915, which describe the required elements of a WSA to be prepared and relied upon during the California Environmental Quality Act process. WSAs are prepared in connection with the environmental review process for defined "projects" (generally very similar to "projects of statewide, regional, or area wide significance," as defined in "California Environmental Quality Act Guidelines" Section 15206), and provide information (along with Environmental Impact Report analysis) to be considered by agency decision-makers at the time of project approval. Nothing in Senate Bill 610 prevents a city or county from approving a proposed project even in the face of information concluding that there is not sufficient water supply for build-out of the project. Senate Bill 221 requires completion of a Water Supply Verification prior to the approval of certain major subdivision maps. Under Senate Bill 221, cities and counties may not approve final subdivision maps absent a showing of water supply availability for the amount of development to be authorized by the tentative map. A condition requiring such a showing must be included within the approved tentative subdivision map.

Under both laws, agencies are required to consider water demands over a 20-year planning horizon, taking into account normal, single dry, and multiple dry water year scenarios in light of the water provider's existing and planned future uses, including agricultural and manufacturing uses.

1.3 Water Supply Planning Under Senate Bills 610 and 221

As the "public water system" that supplies water to portions of the City of Menlo Park including the proposed project area, California Water Service Company (Cal Water) is required to prepare WSAs and Water Supply Verifications, under the requirements of Senate Bills 610 and 221, and the Government Code (Sections 65867.5, 66455.3 and 66473.7). There are three primary areas to be addressed in a WSA: (1) a description of all relevant water supply entitlements, water rights, and/or water contracts; (2) a description of the available water supplies and the infrastructure, either existing or proposed, to deliver the water; and (3) an analysis of the demand placed on those supplies, by the project, and relevant existing and planned future uses in the area. Where the description of existing water supply entitlements, water rights, and/or water contracts shows insufficient water supplies to serve the proposed project as well as existing and planned uses over the 20-year planning horizon, additional information is required to describe how and where sufficient supplies may be obtained. Such information must include the estimated costs, financing methods, and regulatory approvals needed to obtain new supplies, as well as a projected time frame for obtaining them.

As stated previously, under Senate Bill 221, cities and counties may not approve final subdivision maps absent a showing of water supply availability for the amount of development to be authorized by the tentative map. The project, as proposed does not include consideration for approval of a tentative map; therefore, Senate Bill 221 is not applicable.

Senate Bill 610, which is applicable to certain large projects subject to California Environmental Quality Act or considered a "project" under California Water Code Section 10912(a) or (b), builds on the information that is typically contained in an UWMP. The amendments to California Water Code Section 10631 were designed to make WSAs and UWMPs consistent. A key difference between the WSAs and UWMPs is that UWMPs are required to be updated every five years, in years ending with either zero or five, while WSAs are required as part of the environmental review process for large-scale qualifying projects. As a result, the 20-year planning horizons for each type of document may cover slightly different planning periods. Additionally, not all water providers who must prepare a WSA under Senate Bill 610 are required to prepare an UWMP because only public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year (AFY) must prepare UWMPs.

1.3.1 Senate Bill 610 Water Supply Assessment

The Senate Bill 610 WSA process involves answering the following questions:

- Is the project subject to the California Environmental Quality Act?
- Is it a project under Senate Bill 610?
- Is there a public water system?
- Is there a current UWMP that accounts for the project demand?
- Is groundwater a component of the supplies for the project?
- Are there sufficient supplies available to serve the project over the next 20 years?

1.3.1.1. "Is the Project Subject to the California Environmental Quality Act?"

The first step in the Senate Bill 610 process is determining whether the project is subject to the California Environmental Quality Act. Senate Bill 610 amended Public Resources Code Section 21151.9 to read: "Whenever a City or county determines that a project, as defined in Section 10912 of the Water Code, is subject to this division [i.e., California Environmental Quality Act], it shall comply with part 2.10 (commencing with Section 10910) of Division 6 of the Water Code" as it requires the lead agency to determine if the project is subject to the California Environmental Quality Act.

The City of Menlo Park has determined that the proposed project is a project subject to the California Environmental Quality Act. The information contained in this assessment will be used to inform and support the Environmental Impact Report for the ECR/D Specific Plan, and will be appended thereto.

1.3.1.2. "Is It a Project Under Senate Bill 610?"

The second step in the Senate Bill 610 process is to determine if a project meets the definition of a "Project" under California Water Code Section 10912(a). Under this section, a "Project" is defined as meeting any of the following criteria:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

Alternately, in California Water Code Section 10912(b) if a public water system has less than 5,000 service connections, the definition of a "Project" also includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system.

The proposed project is a mixed-use project that would include one or more of these elements listed above, specifically, "the proposed project exceeds residential development of more than 500 dwelling units" and for that reason, it meets the requirements as a "Project" under the California Water Code. As a result, a WSA pursuant to California Water Code Section 10912 (a) will need to be prepared prior to completion of the Environmental Impact Report.

1.3.1.3. "Is There a Public Water System?"

The third step in the Senate Bill 610 process is determining if there is a "public water system" to serve the project. Section 10912(c) of the California Water Code states: "[A] public water system means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections."

Cal Water is an investor-owned public utility supplying water service to 1.7 million Californians through over 440,000 connections. Its 25 separate water districts serve over 50 communities from Chico in the north to the Palos Verdes Peninsula in Southern California. Cal Water's operations for individual service districts are regulated by the California Public Utilities Commission. The California Public Utilities Commission sets different tariff rates for each of Cal Water's individual districts. Cal Water incorporated in 1926, and has provided water service to the Bear Gulch District since 1936.

The Bear Gulch District is located in San Mateo County approximately 30 miles south-southeast of the City of San Francisco. The area served by Bear Gulch District includes the communities of Atherton, Portola Valley, Woodside, portions of Menlo Park including the ECR/D Specific Plan area, and adjacent unincorporated portions of San Mateo County including; West Menlo Park, Ladera, North Fair Oaks, and Menlo Oaks. The Bear Gulch District's system is bordered on the

north by Redwood City; on the east by Palo Alto, Stanford University, and unincorporated Santa Clara County; and on the south and west by unincorporated San Mateo County.

The Bear Gulch District is a public water system that serves approximately two-thirds of the City of Menlo Park's water users. In calendar year 2004, Bear Gulch District had an annual average of 17,383 connections, and then in 2005, the District acquired the Los Trancos County Water District. At that time Los Trancos County Water District had 272 existing service connections, which increased the Bear Gulch District average annual service connection count in calendar year 2006 to 17,725. In 2009 Cal Water acquired two more systems in the Bear Gulch District area; the Skyline County Water District, which added 477 accounts and the Woodside Mutual Water Company, which added 43 accounts but no additional demand since Woodside Mutual Water Company was already purchasing water from Cal Water. The Bear Gulch District served an annual average 18,089 accounts in calendar year 2009; and expects to serve an annual average of 18,492 in calendar year 2010.

The Bear Gulch District and Cal Water's Bayshore Districts (Mid-Peninsula and South San Francisco) along with the 27 member agencies of the Bay Area Water Supply and Conservation Agency (BAWSCA) receive purchased treated water from the San Francisco Public Utilities Commission's (SFPUC) Regional Water System. The BAWSCA members purchase approximately two-thirds of the water delivered through Regional Water System and the balance is delivered to the City and County of San Francisco and its Retail customers. Further discussion of the SFPUC, its Regional Water System and BAWSCA appear in Section 2.0 of this WSA.

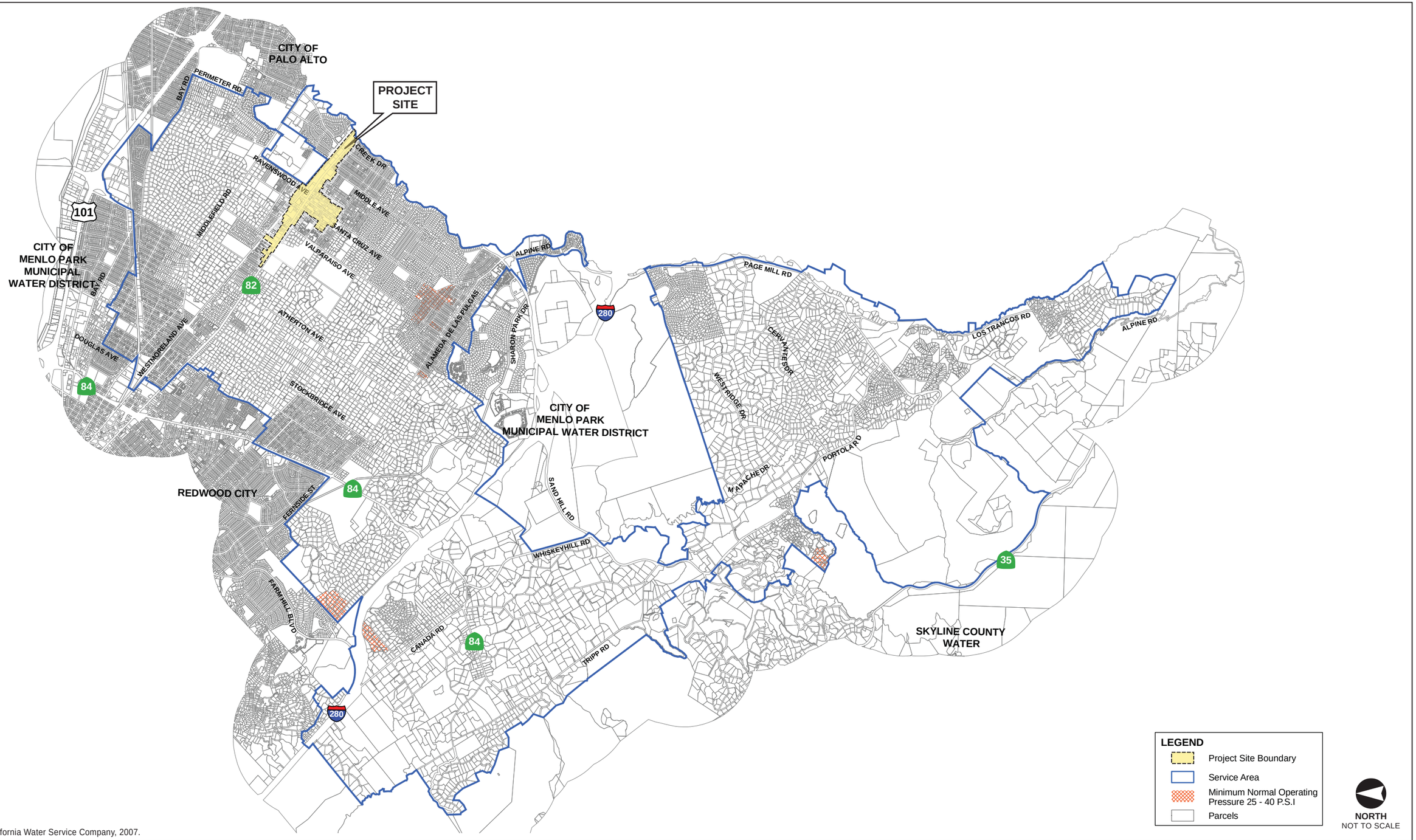
Figure 1-2 illustrates the Bear Gulch District's service area and its relationship to the City of Menlo Park, and the proposed project area.

1.3.1.4. "Is There a Current Urban Water Management Plan That Accounts for the Project Demand?"

Step four in the Senate Bill 610 process involves determining if there is a current UWMP that considers the projected water demand for the project area. The California Water Code requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFY must prepare an UWMP, and the plan must be updated at least every five years on or before December 31, in years ending in five and zero. Cal Water prepared and approved an UWMP for the Bear Gulch District in 2005. Recent legislation in November 2009 resulted in Department of Water Resources extending the 2010 UWMP deadline. Adoption of the next update of the UWMP is now due on or before July 1, 2011. The UWMP is currently under revision for the required 2011 Update.

California Water Code Section 10910 (c)(2) states: "If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g) [i.e., the WSA]." The Bear Gulch District 2005 UWMP is currently available online at the Department of Water Resources website.

When the 2005 UWMP was prepared, the UWMP did not specifically identify the then unknown redevelopment potential of the proposed project area; therefore, this WSA analyzes the change in demand at the project site under the proposed project. The specific water demands associated with this proposed project were not explicitly accounted for in the UWMP; however, the Bear Gulch District forecasted growth within its service area through 2030 and potential demand associated with this new growth based on the best available data in 2005.



Source: California Water Service Company, 2007.

FIGURE **1-2**

CWSC Bear Gulch District Service Area

Recently, the Association of Bay Area Governments completed its 2009 Projections[1] report that forecasts growth to 2035 and this new growth exceeds the growth projected in the 2005 UWMP. Therefore, new demand generated by the new growth in the 2009 Projections was not contemplated in the 2005 UWMP and needs to be evaluated in this WSA. Section 3 discusses water demand within the Bear Gulch District service area.

1.3.1.5. "Is Groundwater a Component of the Supplies for the Project?"

According to the requirements of Senate Bill 610, if groundwater is identified as a possible source, Section 10910 (f) of the California Water Code also applies, as such, a description of the groundwater basin or basins from which the proposed project will be supplied must be included in the WSA. Groundwater is a small component of the SFPUC's Retail supply but is not used to provide water to any of the Wholesale customers including Cal Water's Bear Gulch District. Furthermore, Bear Gulch District does not pump or use local groundwater. Cal Water has considered the use of groundwater in the Integrated Long Term Water Supply Plan that it is currently finalizing and found that due to the low potential yield and high capital cost of development of this supply it is not practical as a source of water supply for the project area or the Bear Gulch District's service area.

Cal Water's Groundwater Storage & Recovery Project is a conjunctive use program under proposal with the SFPUC. However, it does not yield additional quantities of water for Cal Water's service areas on the San Francisco Peninsula. The conjunctive use program instead takes advantage of times when there is surplus surface supplies to store a portion of that surplus underground through in-lieu operations and then when surface supplies are scarce the groundwater can be extracted. Reliability is increased but supply availability is not.

The Integrated Long Term Water Supply Plan has considered other alternative sources of supply including conservation, groundwater, desalinization and water transfers. Of these, conservation will extend the supply available to Cal Water service area served by the SFPUC. Desalinization and water transfers have the greatest economical potential to provide addition new sources. Cal Water has begun efforts to locate and negotiate for the delivery of water through water transfers since this supply appears to be the most likely to generate results in the shortest period of time; however, at this time no sources have been formalized and there remains a great deal of work required to gain final acceptance. Desalinization has greater risk of failure given the many environmental hurdles and economic obstacles that may stand in the way of success.

1.3.1.6. "Are There Sufficient Supplies to Serve the Project Over the Next 20 Years?"

California Water Code Section 10910(c)(4) states: "If the City or county is required to comply...the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the City or county (in this case, Cal Water) for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

[1] Association of Bay Area Governments 2009 Projections Report.

This section briefly discusses the results of the different analyses conducted as part of this WSA. Discussion items 1 - 4 below provide a synopsis of the results and conclusion. Further detailed discussions appear in Section 3.0. The conclusion is found in Section 5.

1. In years with normal or above-normal precipitation (years of normal supply), based on the analysis in this WSA it is likely that the Bear Gulch District would have supplies available within its water supply portfolio (imported water, local surface water and Cal Water Individual Supply Guarantee) to serve the proposed project's development plus existing demand and planned future uses between 2010 and 2035.
2. As modeled in Section 3.4.2 (Tables 3-8 and 3-9), over the 25-year planning horizon projected demand in the Bear Gulch District would exceed projected supply in normal years. Although water use efficiencies and conservation measures would hold demand to 12.30 million gallons per day, which would effectively balance demand against supply and no projected shortfall would occur.
3. As presented in Section 3.4.4, the SFPUC could curtail system-wide water deliveries by 20 percent when specific critical dry year events occur or when multiple dry years prevail, which jeopardizes the availability of water supplies. Notably, in some low-precipitation situations, SFPUC typically requests voluntary 10 percent demand reductions. In the event that SFPUC reduces its deliveries by 20 percent, Cal Water and the Bear Gulch District would have insufficient water supplies to meet the projected water demand associated with development at the project site, in addition to existing and planned future uses within the service area of the Bear Gulch District. In these instances, Cal Water, through its water shortage contingency plan can also impose supply curtailments and implement subsequent stages of demand reductions to balance demand against curtailed supplies.
4. As a result of the analyses conducted in this WSA, it appears based on the functional uniqueness of the supply operations within the Regional Water System, only under specific dry year conditions when treated water deliveries are curtailed by 20 percent could a potential supply shortfall occur. This WSA concludes that Cal Water and the Bear Gulch District have adequate supplies to meet customer demand in all years including the demand of the proposed project, maximum development under the Association of Bay Area Governments 2009 Projections and existing and planned future uses. In the event of a supply shortfall when deliveries are curtailed by 20 percent, Cal Water, through its water shortage contingency plan, can impose supply curtailments and subsequent stages of demand reductions to balance demand against curtailed supplies.

The next step in the Senate Bill 610 process is to prepare the actual assessment of the available water supplies, including the availability of these supplies in all water-year conditions over a 20-year planning horizon pursuant to California Water Code 10910(c)(3), and an assessment of how these supplies relate to project-specific and cumulative demands over that same 20-year period. The best available planning information used in this WSA incorporated Association of Bay Area Governments' 2009 Projections (growth to 2035) and draft water planning data from Cal Water (forecasted to 2040). Although 20-year projections are required by California Water Code 10910(c)(3) for consistency with the Association of Bay Area Governments 2009 Projections the planning period in this WSA is 25 years and covers the years 2010 to 2035.

There are three primary areas addressed in a WSA:

- relevant water supply entitlements, water rights, and water contracts;
- a description of the available water supplies;
- analysis of the demand placed on those supplies, both by the project and on a cumulative basis.

Water entitlements and contracts are addressed in Section 2, demand analysis is discussed in Section 3, alternative supplies in Section 4, and results and conclusions in Section 5. Section 6 provides references for the preparation of the WSA.

2.0 WATER SUPPLY

This section presents the local climate conditions and reviews the Bear Gulch District's water supply sources, entitlements, water rights and contracts.

2.1 Climate

Menlo Park has a Mediterranean climate with cool, wet winters and warm, dry summers. Climatic statistics are shown in Table 2-1. Rainfall in the area averages 15.28 inches per year and is generally confined to the "wet" season from late October to early May.

Table 2-1: City of Menlo Park Climate Summary

Month	Maximum Average Temperature (°F)	Minimum Average Temperature (°F)	Average Monthly Rainfall (inches)
January	57.5	39.0	3.23
February	61.3	41.3	2.88
March	64.1	43.2	2.22
April	68.4	44.8	0.99
May	72.8	48.5	0.37
June	77.4	52.5	0.08
July	78.2	54.8	0.02
August	78.5	55.0	0.05
September	78.2	52.8	0.18
October	73.1	48.0	0.71
November	64.5	42.5	1.86
December	58.0	38.2	2.69
Annual Average	**69.3**	**46.7**	**15.28**

Source: City of Menlo Park. 2005. Urban Water Management Plan. p. 4.

According to the Department of Water Resources, eleven droughts have occurred in California since 1850.[2] The year 1977 is recognized as the driest single year of California's measured hydrologic record. The most recent multi-year statewide drought took place between 1987 and 1992. Droughts exceeding three years are relatively rare in Northern California; however, even localized droughts in Northern California have extensive repercussions for water agencies dependent upon Sierra Nevada snowpack and spring runoff.

Most recently, the winter and spring of 2010 were considerably wetter than previous years and the snowpack was above 100 percent; however, snowmelt runoff has been reduced by highly porous mountain soils and the previous three years of strained storage have influenced total surface water supplies.

2.2 Water Supply Entitlements, Water Rights and Contracts

California Water Code Section 10910(d)(1) states: "The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the

[2] Department of Water Resources. Background: Droughts in California. http://watersupplyconditions.water.ca.gov/background.cfm, accessed September 2007.

City or county (in this case, Cal Water) if either is required to comply...under the existing water supply entitlements, water rights or water service contracts."

2.3 Introduction to the Water Supply Sources

The SFPUC of the City and County of San Francisco (San Francisco) currently delivers an annual average of approximately 265 mgd to retail and wholesale customers primarily within the San Francisco Bay Area. Approximately 85 percent of that water supply is provided by the Hetch Hetchy delivery system, which diverts water from the Tuolumne River in the Sierra Nevada. The balance (of approximately 15 percent) comes from runoff in the Alameda Creek watershed, which is stored in the Calaveras and San Antonio reservoirs, and runoff from the San Francisco Peninsula, which is stored in the Crystal Springs, San Andreas, and Pilarcitos reservoirs (which also provide storage for water delivered from the Hetch Hetchy Project and its delivery system).

Table 2-2 shows the quantities and volumes of supply and the respective percentages. The table also shows the approximate volume of supply when a 20 percent system-wide reduction is imposed by the SFPUC on the Retail and Wholesale customers within the regional Bay Area conveyance system over multiple dry years. The frequency and criteria for these reductions is discussed later in this section (see page 2-11, 2-12).

Table 2-2: Supply Sources and System-Wide Reductions

SFPUC Water Sources	Normal Year Supply Source			Approximate Multiple Dry-Year Supply Source (20% System-wide Reduction)	
	Origin/System	mgd	Approximate % of Supply	mgd	Approximate % of Supply
Local Source	Alameda System[a]	39.75	15	14.84	7
	Peninsula System[b]				
Imported Source	Hetch Hetchy System[c]	225.25	85	197.16	93
	Total	**265.00**	**100**	**212.00**	**100**

Notes:
a. Calaveras Reservoir, San Antonio Reservoir.
b. Crystal Springs Reservoirs, San Andreas Reservoir, Pilarcitos Reservoir.
c. Hetch Hetchy Reservoir, Lake Lloyd, Lake Eleanor, New Don Pedro Reservoir, Tuolumne River System.
Source: San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

2.3.1 Surface Water Rights

San Francisco holds pre-1914 appropriative water rights to store and deliver water from the Tuolumne River in the Sierra Nevada and locally from the Alameda and Peninsula watersheds. San Francisco also diverts and stores water in the San Antonio Reservoir under an appropriative water right license granted by the State Water Resources Control Board in 1959.

Appropriative water rights allow the holder to divert water from a source to a place of use not connected to the water source. These rights are based on seniority and use of water must be reasonable, beneficial, and not wasteful. In 1914, California established a formal water rights permit system, which is administered by the State Water Resources Control Board. The State Water Resources Control Board has sole authority to issue new appropriative water rights but cannot define property rights created under a pre-1914 appropriative water right.

The 1912 Freeman Report identified the ultimate diversion rate from the Tuolumne River to the Bay Area as 400 mgd[3] (448,220 AFY) and San Francisco used this as the basis for designing the export capacity of the Hetch Hetchy project for water supply deliveries to San Francisco. San Francisco has sufficient water rights for current diversions and the ultimate planned diversion rate of the Hetch Hetchy Project.

The federal Raker Act, enacted on December 19, 1913, grants to San Francisco rights-of-way and public land use on federal property in the Sierra Nevada Mountains to construct, operate, and maintain reservoirs, dams, conduits, and other structures necessary or incidental to developing and using water and power. It also imposes restrictions, and specific terms and conditions on San Francisco use of the Hetch Hetchy Reservoir. In terms of water rights, in order to divert water from the Tuolumne River there exists a requirement that San Francisco recognize the senior water rights of the Turlock and Modesto Irrigation Districts. Specifically, the Raker Act requires San Francisco to bypass certain flows through its Tuolumne River reservoirs to Turlock Irrigation District and Modesto Irrigation District for beneficial use. By agreement, San Francisco, Turlock Irrigation District, and Modesto Irrigation District have supplemented these Raker Act obligations to increase the Turlock Irrigation District and Modesto Irrigation District entitlements to account for other senior Tuolumne River water rights and to allow San Francisco to "pre-pay" Turlock Irrigation District and Modesto Irrigation District their entitlement by storing water in the Don Pedro water bank. San Francisco is required to bypass inflow to Turlock Irrigation District and Modesto Irrigation District sufficient to allow these districts to divert 2,416 cubic feet per second (cfs) or natural daily flow, whichever is less, at all times (as measured at La Grange), except for April 15 to June 13, when the requirement is 4,066 cfs or natural daily flow as measured at La Grange, whichever is less. Other terms and conditions specific to this WSA are presented in Section 2.5.2.

2.4 SFPUC Regional Water System

In 1934, in order to create the Regional Water System, San Francisco combined its newly operational Hetch Hetchy water conveyance system and the existing Spring Valley system on the San Francisco Bay Peninsula, which it had recently acquired with the purchase of the Spring Valley Water Company. With this acquisition, San Francisco also gained water rights to local diversions off existing streams on San Francisco peninsula that were originally held by the Spring Valley Water Company.

Currently, the Regional Water System delivers water to 2.5 million users in Tuolumne, Alameda, Santa Clara, San Mateo, and San Francisco counties. As introduced above, the Regional Water System delivers an annual average of approximately 265 mgd[4] – of this, 81 mgd serves the Retail customers within the City and County boundaries of San Francisco and the other 184 mgd is delivered to the Wholesale customers based primarily on the San Francisco Bay Peninsula, and then the Wholesale customers sell water to its consumers within the individual service areas.

[3] San Francisco made numerous water-rights filings on the Tuolumne River between 1901 and 1911. The Tuolumne River water-rights filings support a *prima facie* diversion rate well over 400 mgd. The 1912 Freeman Report, which provided the basis for San Francisco's proposals to Congress to develop the Hetch Hetchy Project, identified 400 mgd as the ultimate diversion from the Tuolumne River. SF Planning Department, pg 2-39, SFPUC Water System Improvement Program PEIR

[4] Total Regional Water System deliveries in FY07/08 were 256.7 mgd

The Regional Water System is a complex system, shown in Figure 2-1, and supplies water from two primary sources:

- Tuolumne River through the Hetch Hetchy Reservoir; and
- Local runoff into reservoirs in Bay Area reservoirs in the Alameda and Peninsula watersheds.

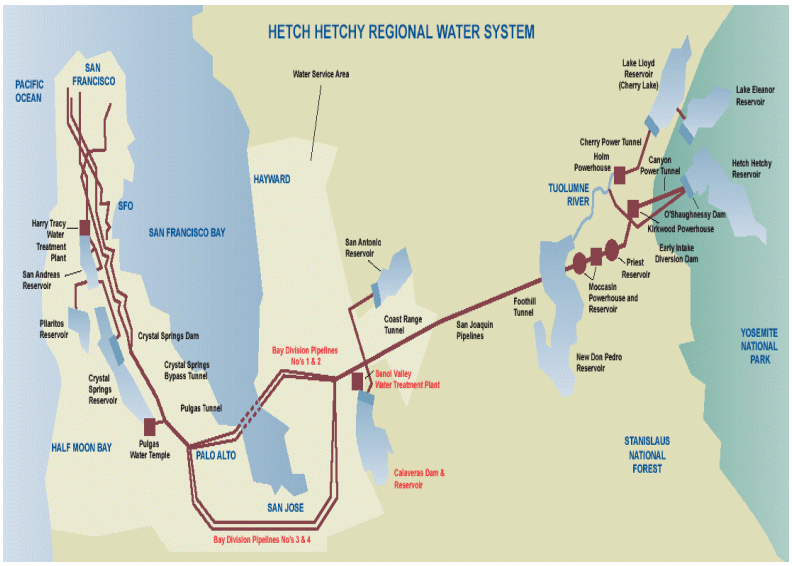


Figure 2-1: Regional Water Supply System

Water from Hetch Hetchy Reservoir, through the Hetch Hetchy facilities represents the majority of the water supply available to the SFPUC. During drought periods of low precipitation in the San Francisco Bay Area, water from the Hetch Hetchy system can amount to over 93 percent of the total water delivered through the Regional Water System.

Bay Area reservoirs provide on average approximately 15 percent of the water delivered by the SFPUC Regional Water System. The local watershed facilities are operated to conserve local runoff for delivery. On the San Francisco Peninsula, the SFPUC utilizes Crystal Springs Reservoir, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, the SFPUC constructed the Calaveras Reservoir and San Antonio Reservoir. In addition to capturing runoff, San Antonio, Crystal Springs, and San Andreas reservoirs also provide storage for Hetch Hetchy diversions. The local watershed facilities also serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

2.5 Water Supply Reliability, Improvements and Planning

2.5.1 San Francisco Public Utilities Commission Regional Water Supply and Demand Planning

SFPUC uses of 83 years of climate data to model water supply reliability. In any given year, the Bear Gulch District (BGD) has a 10.8 percent probability of at least a 9.94 percent shortage and a 4.8 percent probability of a 21.6 percent shortage, given the modeling circumstances and assumptions for 2010.[5] Over the 83 years of climate data, the modeling showed five years of

[5] SFPUC. Water Supply Reliability letter, June 1, 2005.

consecutive demand shortfalls based on the 1988-1992 drought climatological condition. Demand shortfalls stretched to six years based on 2030 demand. In early winter of any year, SFPUC can begin to estimate water supply conditions for the next year using known and anticipated precipitation and snowpack conditions. These factors are used by SFPUC to determine whether the regional supply system will be capable of meeting SFPUC customer demand. Consequently, if the supply system appears incapable of meeting system-wide demand due to drought (dry year conditions), the SFPUC is expected to declare a water shortage by March 31 of that year.[6] As total water demand on the regional water system grows, the effects, brought on by these water shortages could increase both in frequency and in magnitude.

In fall 2002, the SFPUC in conjunction with the BAWSCA embarked on a comprehensive water demand projections study to assess 2030 water demand in the wholesale customers' service area. This Wholesale Customer Demand Study documents the methodology used and the resulting 2030 water demand projections. The SFPUC also investigated the potential for water conservation savings and recycled water potential in the wholesale and retail service areas in conjunction with the water demand forecasts. The Wholesale Customer Demand Study projects that total demand on SFPUC supplies will increase by 19 percent by 2030.[7]

To improve dry-year supplies and ensure that the future water needs of its Retail and Wholesale customers will be met in a more reliable (through infrastructure improvements) and sustainable (through water use efficiency improvements) manner, the SFPUC has undertaken water supply projects in the Water System Improvement Program. In addition, the SFPUC is looking to diversify and enhance San Francisco's water supply portfolio through the development of local water supplies, such as recycled water, groundwater, and water conservation.

2.5.2 Water System Improvement Program and the Phased Water System Improvement Program Variant

The Water System Improvement Program is a multi-billion dollar, multi-year, capital program to upgrade the Regional Water System. The program will deliver improvements that enhance the SFPUC's ability to continue to provide reliable, affordable, high quality drinking water to its 27 wholesale customers and regional Retail customers in Alameda, Santa Clara, and San Mateo counties, and to 800,000 Retail customers in San Francisco, in an environmentally sustainable manner.

Upon implementation, the Water System Improvement Program would improve the regional system with respect to water quality, seismic response, water delivery, and water supply to meet water delivery needs in the service area through the year 2030 and would establish level of service goals and system performance objectives. The Water System Improvement Program would implement a proposed water supply option, modify system operations, and construct a series of facility improvement projects. The proposed program area spans seven counties—Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo, and San Francisco.

As required under the California Environmental Quality Act, the San Francisco Planning Department prepared a Program Environmental Impact Report for the Water System Improvement Program. The Program Environmental Impact Report evaluated the potential environmental impacts of the proposed Water System Improvement Program and identified potential mitigations to those impacts. The Program Environmental Impact Report also

6 San Francisco Public Utilities Commission. 2005. Urban Water Management Plan.

7 San Francisco Public Utilities Commission. 2004. *Wholesale Customer Demand Projection Technical Report*. Prepared by URS. p. 5-2.

evaluated several alternatives to meet the SFPUC service area's projected increase in water demand to 300 mgd between now and 2030. The water supply improvement options investigated included 10 alternatives using various water supply combinations from the local watersheds; the Tuolumne and Lower Tuolumne; ocean desalination; and additional recycled water, groundwater, and conservation.

The Program Environmental Impact Report was certified by the San Francisco Planning Commission on October 30, 2008. On the same day the SFPUC adopted the Phased Water System Improvement Program Variant option, discussed below. (Appendix B contains the SFPUC Commission Agenda Item for approval of the Program Environmental Impact Report.)

2.5.2.1. Phased Water System Improvement Program Variant Discussion

The SFPUC requested that the Program Environmental Impact Report include environmental assessment of four variants to the Water System Improvement Program. The Water System Improvement Program variants are essentially the same as the proposed program except for minor differences in water supply sources or rationing limits. The variants are not intended to serve as California Environmental Quality Act alternatives, which are discussed separately in the Program Environmental Impact Report. The evaluation of the variants is provided to allow decision-makers to compare the environmental impacts of the variants to those of the Water System Improvement Program.

Of the four variants, the San Francisco Planning Department studied the Phased Water System Improvement Program Variant as part of the environmental analysis. The SFPUC identified this variant in order to consider a program scenario that involved full implementation of all proposed Water System Improvement Program facility improvement projects to insure that the public health, seismic safety, and delivery reliability goals were achieved as soon possible, but phased implementation of a water supply program to meet projected water purchases through 2030. Deferring the 2030 water supply element of the Water System Improvement Program until 2018 would allow the SFPUC and its wholesale customers to focus first on implementing additional local recycled water, groundwater, and demand management actions while minimizing additional diversions from the Tuolumne River. This strategy allowed the SFPUC to proceed with implementation of the projects within Water System Improvement Program while minimizing potential challenges on the Program Environmental Impact Report from the environmental community. The Phased Water System Improvement Program Variant establishes a mid-term planning milestone in 2018 when the SFPUC would reevaluate water demands through 2030 in the context of then-current information, analysis and available water resources. The SFPUC currently delivers an annual average of approximately 265[8] mgd from local watersheds (Peninsula and Alameda Creek) and the Tuolumne River Watershed. By 2030, demand on the SFPUC system is expected to increase to an annual average of 300 mgd. The Water System Improvement Program Variant would meet the projected 2018 purchase requests of 285 mgd from the Regional Water System by capping purchases from the watersheds at 265 mgd; the remaining 20 mgd would be met through water efficiencies and conservation, water recycling and local groundwater use—10 mgd by Wholesale Customers and 10 mgd in San Francisco. Before 2018, the SFPUC and the Wholesale Customers will engage in a new planning process to reevaluate water system demands and supply options, including conducting additional studies and environmental reviews necessary to address water supply needs after 2018.

[8] Total Regional Water System deliveries in FY07/08 were 256.7 mgd. The SFPUC uses 265.0 mgd as its target daily delivery for planning purposes and to comply with its diversion limitations off the Tuolumne River and within the Regional Water System capacities.

The Phased Water System Improvement Program Variant includes the following key program elements:

- Full implementation of all Water System Improvement Program facility improvement projects.
- Water supply delivery to Regional Water System customers through 2018 only of 265 mgd average annual target delivery originating from the watersheds. This includes 184 mgd for the Wholesale Customers and 81 mgd for the Retail Customers.
- Water supply sources include: 265 mgd average annual from the Tuolumne River and local watersheds and 20 mgd of water conservation, recycled water and local groundwater developed within the SFPUC's service area (10 mgd Retail; 10 mgd wholesale).
- Dry-year water transfers of 2 mgd within the Westside Groundwater Basin Conjunctive Use Project.
- Re-evaluation of 2030 demand projections, potential Regional Water System purchase requests and water supply options by December 31, 2018 and a separate SFPUC decision in 2018 regarding Regional Water System water deliveries after 2018.
- The ability to impose financial penalties is included in the new Water Supply Agreement to limit water sales to an average annual of 265 mgd from the watersheds.[9]

2.5.3 Water Supply Sources for Cal Water and Bear Gulch District

The water furnished to customers in the Bear Gulch District is a combination of purchased water and treated surface water.

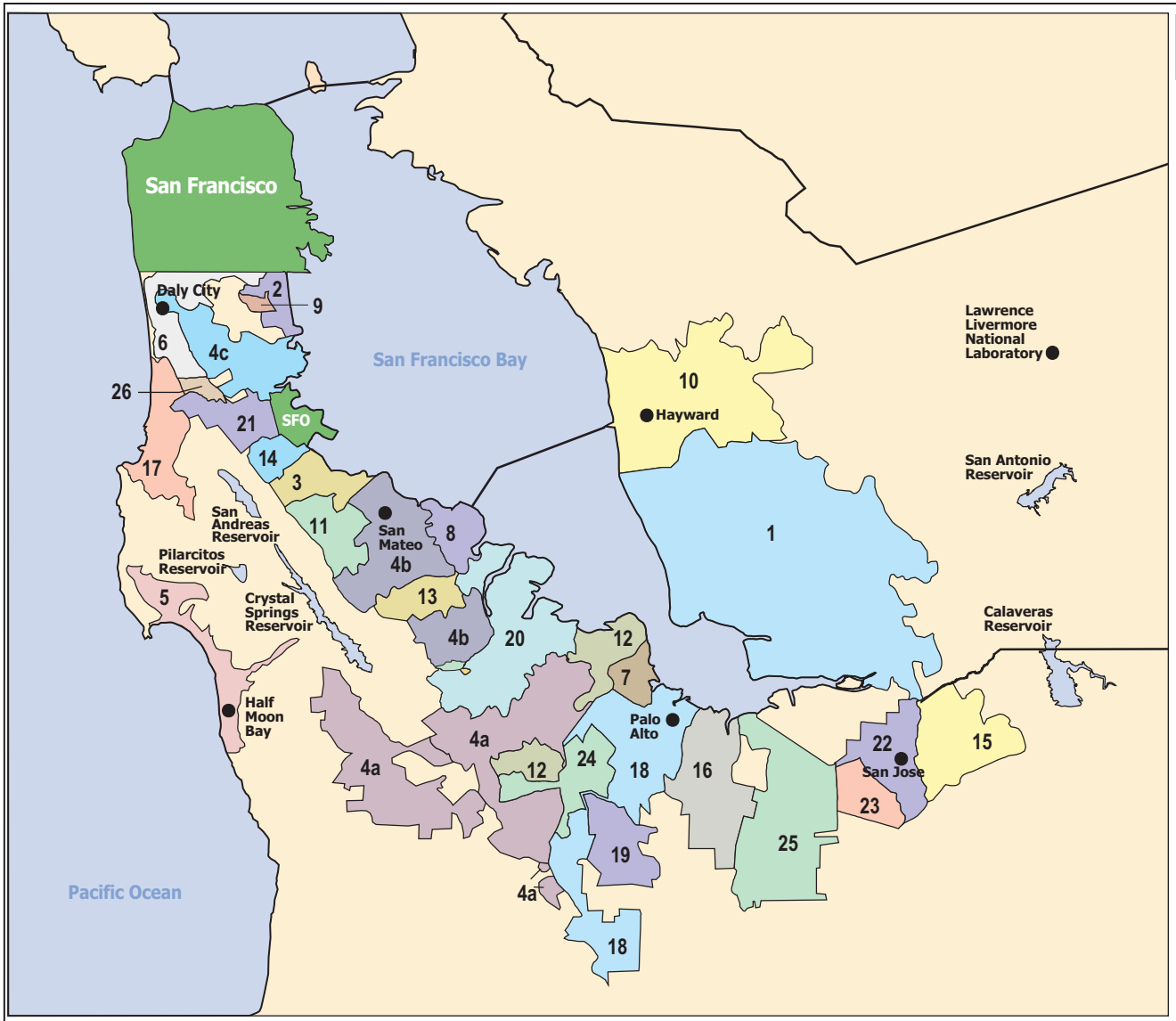
2.5.3.1. Imported Purchased Water from SFPUC

The Bear Gulch District along with Bayshore Districts (Mid-Peninsula and South San Francisco) of Cal Water receives purchased treated water from the Regional Water System. The federal Raker Act prevents privately-owned utilities, like Cal Water, from receiving water from the Hetch Hetchy system, but allows purchases of treated water from local supply sources, such as the local watershed storage reservoirs discussed in Section 2.3. As such, by utilizing the storage and conveyance systems within the Regional Water System, the SFPUC serves all its Retail and Wholesale water demands with an integrated operation of imported water from Hetch Hetchy and/or locally produced Bay Area water.

2.5.3.2. Water Contracts and Agreements

In 1984, the SFPUC executed the Settlement Agreement and Master Water Sales Contract with the 27 member agencies of the BAWSCA. Figure 2-2 presents the entire BAWSCA family of agencies, the Cal Water districts are shown in purple. The BAWSCA members purchase approximately two-thirds of the water delivered by the SFPUC system and the balance is delivered to the City and County of San Francisco and its retail customers. The Settlement

[9] The Agreement allows the SFPUC to purchase additional water from the Regional Water System. If combined Retail and Wholesale Regional Water System deliveries exceed 265 mgd, the SFPUC Retail customers would be required to pay an Environmental Surcharge for Regional Water System deliveries over 265.mgd and surcharge financial penalties are passed on to the agency with excessive usage.(Total Regional Water System deliveries in FY07/08 were 256.7 mgd).



BAWSCA MEMBERS

Agency Name	Agency Number
Alameda County Water District	1
City of Brisbane	2
City of Burlingame	3
Cal Water Service Co. - Bear Gulch	4a
Cal Water Service Co. - Mid-Peninsula	4b
Cal Water Service Co. - SSF	4c
Coastside County Water District	5
City of Daly City	6
East Palo Alto	7
Estero Municipal Improvement District	8
Guadalupe Valley Municipal Improvement District	9
City of Hayward	10
Town of Hillsborough	11
City of Menlo Park	12
Mid-Peninsula Water District	13
City of Millbrae	14
City of Milpitas	15
City of Mountain View	16
North Coast County Water District	17
City of Palo Alto	18
Purissima Hills Water District	19
City of Redwood City	20
City of San Bruno	21
City of San Jose	22
City of Santa Clara	23
Stanford University	24
City of Sunnyvale	25
Westborough Water District	26

NORTH
NOT TO SCALE

***Source*:** BAWSCA, 2009.

FIGURE **2-2**
BAWSCA Members and CWSC Districts

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Menlo Park El Camino Real-Downtown Specific Plan WSA

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Agreement and Master Water Sales Contract primarily addresses the rate-making methodology used by SFPUC in setting wholesale water rates for its wholesale customers, in addition to addressing water supply and water shortages within the regional water system. The Settlement Agreement and Master Water Sales Contract provides 184 mgd as an annual average of "Supply Assurance" to all BAWSCA wholesale customers, but is subject to reductions in the event of droughts, water shortage, earthquake, other acts of God or system maintenance and rehabilitation.[10] Each member holds an individual water supply contract and the Settlement Agreement and Master Water Sales Contract governs the contract. The original twenty-five year contract ended on June 30, 2009.

The SFPUC approved the new twenty-five year contract, now known as the Water Supply Agreement, in June 2009 and the BAWSCA agencies completed their approval of the Water Supply Agreement in October 2009. This new Water Supply Agreement expires on June 30, 2034. Section 7.01 of the 1984 Settlement Agreement and Master Water Sales Contract states "Supply Assurance continues in effect indefinitely, even after expiration of the MSA in 2009" and this is still the case in the new Water Supply Agreement. The condition is a reflection of case law, which holds that a municipal utility acts in a trust capacity with respect to water supplied to outside communities (*Durant v. City of Beverly Hills*, 39 Cal. App. 2d 133, 102 P.2d 759 (1940); and *Hansen v. City of San Buenaventura*, 42 Cal. 3d 1172 (1986)). In other words, entire communities have developed in reliance on these water supplies. Consequently, the Supply Assurance of up to 184 mgd will survive the termination of the Water Supply Agreement and the Individual Contracts.

Additional agreements and plans have been developed over the last twenty-five years and are summarized in Table 2-3. The Water Supply Agreement now includes an Individual Supply Guarantee for most Wholesale customers. The Individual Supply Guarantee establishes the minimum quantity of water the SFPUC will supply to each Wholesale customer during times of normal supply. The Water Supply Agreement does not guarantee that SFPUC will meet peak or hourly demands if the individual Wholesaler's annual usage exceeds the Individual Supply Guarantee. The Individual Supply Guarantee helps the Wholesaler plan for future demands and growth within their service area; for that reason, the Individual Supply Guarantee transcends the Water Supply Agreement expiration and continues indefinitely. The Individual Supply Guarantee for Cal Water secures 35.68 mgd for Normal year deliveries.[11] However, some Wholesale agencies (Hayward) have been guaranteed the ability to increase water demands at the potential expense of other communities. Hayward and San Francisco executed a contract in 1962. This contract does not place a limit on Hayward's supply and SFPUC is contractually bound to meet these increasing demands. The contract stipulates that if Hayward purchases 22.1 mgd for three consecutive years, then SFPUC will recalculate the supply deliveries to the other BAWSCA agencies with an appropriate reduction. This has the potential in the future to affect the Individual Supply Guarantee for other communities, such as Cal Water. It should be noted that Hayward's 2007-2008 average annual supply purchase quantity was 19.1 mgd and in 2008-2009 Hayward's average annual purchase was 18.57 mgd – 2.5 mgd less than the 22.1 mgd delivery threshold. These purchase reductions are indicative of positive demand reductions and would suggest that over the long-term, due to continued water use efficiencies that Hayward may not reach the 22.1 mgd threshold three years in a row.

[10] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 23.

[11] Bay Area Water Supply and Conservation Agency. March 2007. Annual Survey: FY 2005-06. p. 15.

Table 2-3: Contracts/Agreements, Allocations, Plans and Programs

Document	Contract Source/ Agreement	Wholesalers	Year Established	Supply Quantity	Expiration	Terms of Plan/Contract/Agreement
Settlement Agreement & Master Sales Contract	City and County of San Francisco	All members	1984; 2009	184 mgd (annual avg.)	2034	Rate making methodology, wholesale rates for wholesale customers; addresses water supply and water shortages; doesn't guarantee SFPUC will peak daily or hourly demands when customer usage exceeds the Supply Assurance Allocation (see - Section Supply Reliability)
Individual Water Supply Contract	City and County of San Francisco	Cal Water	1984;2009	35.68 mgd	2034	Establishes terms and conditions to deliver water. Appendix A
Individual Supply Guarantee	City and County of San Francisco	All members	1994	184 mgd (annual avg.)	Continues indefinitely	Quantified SFPUC's obligation to supply water to its individual wholesale customers (all members adopted the Supply Assurance Allocation; each wholesale customer has a specified quantity)
		Bear Gulch District	1994	Portion of 35.68 mgd (approx. 11.81 mgd)	Continues indefinitely	SFPUC can meet the demands of customers in years of average and above-average precipitation. Appendix A
Water Supply Master Plan	SFPUC	BAWSCA Suburban Wholesale Members	2000	219 mgd due to recent operating restrictions on Calaveras Dam	N/A	Planning/guiding document - identified Water System Improvement Program, Capital Improvement Program - cooperative effort b/w SFPUC and BAWSCA
Water Supply Improvement Program	SFPUC	Regional Water System	Program Environmental Impact Report Certified October 30, 2008	Identifies water supply options to meet projected 2030 demand of 300 mgd	N/A	SFPUC capital improvement program to "firm-up" supplies and ensure supply reliability to meet customer purchase requests during both drought and non-drought years; 35 mgd demand increase expected by 2030; options include increased diversions and conservation, water recycling, and groundwater supply programs
Water Shortage Allocation Plan	BAWSCA	Menlo Park	2000	Allocates 20% System-Wide Reduction	2018	Two Tier Plan, 1) Allocates and distributes Water b/w SFPUC and BAWSCA - based on level of supply shortage. 2) Allocates the collective wholesale customer share. Allocation is based on Supply Assurance Allocation, purchases during 3 years preceding adoption of the WSAP, and rolling averages of purchases during 3 years immediately preceding onset of shortage

Source: Developed by PBS&J January 2006 – Updated June 2009.

In addition, the communities of San Jose and Santa Clara are also included in the Suburban Wholesalers and receive portions of the 184.0 mgd from SFPUC allocated to wholesale customers. Each community has been granted 4.5 mgd for a total of 9.0 mgd of the 184.0 mgd. This routinely creates issues with regard to allocating supply shortages and could potentially affect the supply deliveries to Cal Water and the other Wholesalers in times of Regional Water System reductions.

In terms of water supply reliability, the SFPUC's UWMP assumes "firm" delivery "as amount the system can be expected to deliver during historically experienced drought periods."[12] The 1987 to 1992 drought is the basis for this plan, plus an additional period of limited water availability.[13] The SFPUC plans its water deliveries assuming that the worst drought experience is likely to reoccur and then adds an additional period of limited water availability. An 8.5-year drought scenario is referred to as the "design drought" and is ultimately, the basis for SFPUC water resource planning and modeling. The "design drought" is based on the 1986-1992 drought plus 2.5 years of "prospective drought", which includes 6 months of recovery period.[14]

In 2000, the SFPUC Water Supply Master Plan identified a 239 mgd annual average delivery over a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies.[15] Currently, under existing operations, the SFPUC system has a firm delivery capability of 219 mgd.[16] This firm delivery decrease is due to the 2001 California Department of Safety of Dams operational restrictions on Calaveras Dam. It should be stated that actual annual deliveries greatly exceed 219 mgd – in fact, in 2007-2008 the SFPUC delivered approximately 257.8 mgd.

However, as of this writing, the environmental review for the Calaveras Dam Replacement project is currently on-going. Other repairs and improvements at Calaveras Reservoir have been completed or soon will be. It should also be noted that the Sunol Valley Water Treatment Plant, located at Calaveras Reservoir is scheduled for expansion and storage capacity improvements; in fact, the Draft Environmental Impact Report is currently being circulated for public review. Upon completion of the expansion, the treatment plant will be able to sustainably produce and deliver 160 mgd, which further improves SFPUC's ability to deliver firm supplies to the retail and wholesale customers.

According to the SFPUC's 2005 UWMP, there is sufficient water to meet all expected future demand in normal and wet hydrologic periods; however, the Water Supply Agreement allows the SFPUC to curtail deliveries during droughts, emergencies and scheduled maintenance activities.[17] SFPUC system operations are designed to allow sufficient water remaining in SFPUC reservoirs after six years of drought to provide some ability to continue delivering water, although at significantly reduced levels.[18] This differs from the "design drought", which is a water supply planning tool and as previously stated is based on the 1986-1992 drought plus 2.5 years of "prospective drought", which includes 6 months of recovery period.[19] In order to meet current demand in the San Francisco Bay area, SFPUC is currently delivering an annual

12 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

13 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

14 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

15 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

16 City and County of San Francisco: San Francisco Planning Department. June 2007. *Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 5.1-12.

17 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 15.

18 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 20.

19 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

average of 265 mgd,[20,21] about 46 mgd above firm delivery capabilities; consequently, if SFPUC declares a shortage, rationing would be necessary. Rationing is voluntary for up to a 10-percent system-wide reduction, but mandatory at greater than a 10-percent reduction. The SFPUC used the historical hydrologic record from 1920 to 2002 (83 years) to assess the availability of water supplies in the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced. Under 2005 conditions (year of available data), there is a 7.3 percent probability of a 10 percent system wide shortage and a 9.8 percent probability of a 20 percent system wide shortage.[22] However, water supply reliability is expected to increase following Crystal Springs and Calaveras Reservoir improvements expected to be completed by 2012.[23] These improvements would allow surface water storage of an additional 58,700 acre-feet (AF) at Calaveras Reservoir and 11,100 AF at Crystal Springs-essentially adding 69,800 AF of stored water.

The SFPUC and the Wholesale members developed a long-term strategy to accommodate or rectify the potential of future water shortages throughout its Wholesale and Retail operations.[24] The methodology for determining water supply reliability during drought years is the Water Shortage Allocation Plan. The Master Water Supply Agreement allocates water between SFPUC retail customers and BAWSCA (Tier 1) and allows BAWSCA to develop a formula to allocate water among its members (Tier 2) for system-wide shortages up to 20 percent. In 2010, BAWSCA members agreed on a Tier 2 allocation formula that will remain in effect until 2018. In 2018, BAWSCA members could extend the current formula or modify it if need be. If BAWSCA members are unable to agree unanimously on a Tier 2 allocation formula, the BAWSCA Board will set the formula.

Under the current Water Supply Agreement, reductions to Wholesale customers are to be based on each agency's proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplanted by a water conservation plan agreed to by all parties. The Water Supply Allocation Plan formula described hereafter is currently being renegotiated by the BWSCA membership. The Water Supply Allocation Plan was necessary because the Settlement Agreement and Master Water Sales Contract's default formula discouraged the wholesale customers from reducing purchases during normal or wet years by applying demand management programs (conservation measures) or pursuing alternative supplies (groundwater, water recycling, transfers, etc.). The Water Supply Allocation Plan somewhat addressed this issue by basing the allocation formula on the three immediate years preceding the shortage and allowing transfers of banked water credits (water within a drought allotment that is not used).

The Water Supply Allocation Plan has two components. The Tier One component of the Water Supply Allocation Plan allocates water between San Francisco and the Wholesale customer agencies collectively. In a called 20 percent reduction by the SFPUC, the City and County of San Francisco will only face an 18 percent reduction. The Tier Two component of the Water Supply Allocation Plan allocates the collective Wholesale customer shares among each of the 26 Wholesale customers and each Wholesaler receives a different share. The Tier Two allocation is based on a formula that considers three factors, the first two of which are fixed:

20 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

21 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

22 City and County of San Francisco: San Francisco Planning Department. June 2007. *Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 9-13.

23 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 27.

24 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan.* p. 22.

(1) each agency's Individual Supply Guarantee from SFPUC, with certain exceptions, and (2) each agency's purchases from SFPUC during the three years preceding adoption of the Plan. The third factor is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.[25]

Cal Water's Individual Supply Guarantee is 35.68 mgd; this is its share of the 184 mgd allocated for the BAWSCA members.[26,] The SFPUC 2004 Wholesale Customer Water Demand Projections study analyzed water demands associated with each customer sector and then forecasted demands over a twenty-five year (2005 – 2030) planning horizon. The Tier One (SFPUC to BAWSCA) and Tier Two (BAWSCA to retailer agencies) allocation plans were used to determine supply reductions in single and multiple dry year scenarios. The Water Supply Agreement allocates wholesale supplies up to 184.0 mgd to 2018 and due to the limitations on the Regional Water System Tier One supplies are held constant to 184 mgd through 2035.

Prior to 2018, SFPUC will re-assess its regional supply capacities in order to evaluate the Regional Water System's reliability - at that point in time, SFPUC, in its efforts to provide water supply projections to the BAWSCA agencies is likely to present new water supply planning data out to 2030 or 2035. Because water use efficiency and conservation efforts are needed to accommodate new growth throughout the Bay Area and it is unknown how or if new supplies would be available in the Regional Water System, this WSA is holding the Wholesale supplies at 184.0 mgd and Cal Water's Individual Supply Guarantee to 35.68 mgd.

2.5.3.3. Bear Gulch District's Surface Water Supply (Local Watershed)

The Bear Gulch District manages and produces its own local surface water supplies within its service area. These local supplies are collected from the Bear Gulch Creek via two diversion facilities and stored in Bear Gulch Reservoir.[27] Diversions are limited in time and quantity of use by the State Water Resources Control Board through a license on the lower Station 3 diversion (Application A006753, License 005441) and a permit on the upper diversion (Application A014313, Permit 008816). This surface water is then treated at the outlet of the Bear Gulch Reservoir prior to entry into the distribution system.[28]

The surface water is treated at the Bear Gulch District's treatment facility located adjacent to the Bear Gulch Reservoir. The water is clarified, filtered, and chloraminated in compliance with the Surface Water Treatment Rule and the Safe Drinking Water Act, and then pumped into the distribution system. The treatment plant, which was placed into operation in 1977, has a rated capacity of 6 mgd. The annual production ranges from a high of 2,812 AF (916 million gallons [MG]) to a low of 319 AF (103 MG) per year. The 25-year average (1980 to 2004) is 1,280 AFY. It should be noted that production from the Bear Gulch Reservoir is entirely dependent on annual precipitation and stormwater run-off in the area. In its 2005 UWMP the Bear Gulch District used 1,534 AFY (1.37 mgd) as its projected supplies from the Bear Gulch surface water system; however, these projections significantly overestimated the actual annual supply. New data in the Bear Gulch District's 2010 draft UWMP worksheets uses the 10-year average of 1,271 AFY or 1.12 mgd from the Bear Gulch Reservoir, and it more consistent with 25-year average of 1,280 AF listed above. This WSA recognizes the importance of choosing a reliable number to use for long-term planning purposes and based on the available data also recognizes that surface water supplies would be available at reduced quantities. Although, the 10-year

[25] San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan.* p. 81.

[26] Bay Area Water Supply and Conservation Agency. January 2010. Annual Survey: FY 2008-09.

[27] Bear Gulch District 2005 UWMP, page 25.

[28] Bear Gulch District 2005 UWMP, page 26.

average may overestimate the surface water supplies, for consistency purposes this WSA also uses 1,271 AFY (1.12 mgd) in its presentation of supply sources.

2.6 Total Water Supplies

Table 2-4 summarizes Cal Water and the Bear Gulch District's total water supplies now and over the 25-year planning period from 2010-2035. In 2010, the Bear Gulch District can access an annual average 12.30 mgd from all sources (SFPUC purchased water [11.18 mgd] and local surface water [1.12 mgd]). As discussed previously, for conservative water planning purposes supplies from SFPUC are held constant over the 25-year planning horizon due to the diversion limitations placed on the Regional Water System (Total 35.68 mgd: 11.18 mgd for Bear Gulch District and 24.50 for Bayshore Districts).[29] These supplies are assumed to be available in the quantities listed in Table 2-4. As stated above, surface water supplies from the Bear Gulch Reservoir are held to 1.12 mgd, which is the daily average from the Bear Gulch Reservoir projected in normal, single dry and multiple dry years as identified in the Bear Gulch District 2005 UWMP. The Bear Gulch District intends to use these supplies to meet its customer demands.

Table 2-4: Normal Year Supplies for Cal Water; and Bear Gulch District

Years	FY 2008-09 (Actual)	2010	2015	2020	2025	2030	2035
Individual Supply Guarantee from SFPUC							
AFY	39,966.7	39,764	39,764	39,764	39,764	39,764	39,764
MGD	35.68	35.68	35.68	35.68	35.68	35.68	35.68
Bear Gulch District (mgd)							
SFPUC-Imported Water	12.77	11.18 [a]	11.18 [a]	11.18 [a]	11.18 [a]	11.18 [a]	11.18 [a]
Local Surface Water	0.542	1.12	1.12	1.12	1.12	1.12	1.12
Total	**13.31**	**12.30**	**12.30**	**12.30**	**12.30**	**12.30**	**12.30**
Bayshore Districts (mgd) [cities of San Carlos, San Mateo, Colma and South San Francisco]							
SFPUC-Imported Water	23.33	24.50 [b]	24.50 [b]	24.50 [b]	24.50 [b]	24.50 [b]	24.50 [b]
Local Groundwater[c]	0.279	1.2	1.2	1.2	1.2	1.2	1.2
Total	**23.60**	**25.70**	**25.70**	**25.70**	**25.70**	**25.70**	**25.70**
Cal Water Combined Totals (mgd)							
Cal Water -SFPUC Imported Water Subtotal (Individual Supply Guarantee)	36.10	35.68	35.68	35.68	35.68	35.68	35.68
Local Water Sources Subtotal	0.82	2.32	2.32	2.32	2.32	2.32	2.32
Total Supply	**36.92**	**38.0**	**38.0**	**38.0**	**38.0**	**38.0**	**38.0**

Notes:

a. Assumes Supply from SFPUC does not change after 2018 and Cal Water's supply from SFPUC remains at the current Supply Assurance Allocation of 35.68 mgd through 2035.

b. 2010 - 2030 Supply from SFPUC is the difference b/w Bear Gulch District's annual amount and Cal Water's Supply Assurance Allocation for year each year. This assumes that SFPUC's Supply Assurance Allocation to Cal Water of 35.68 mgd remains unchanged before and after 2018.

c. The actual production in 2008-2009 of groundwater in South San Francisco was constrained by treatment plant renovation and Health Department reauthorization. Anticipated future use is 1.2 to 1.37 mgd depending on outcome of the negotiations with SFPUC on the GWSRP (conjunctive use.

Source: 2005 Bear Gulch District UWMP; 2010 Draft UWMP Worksheets and PBS&J, July 2010

[29] Bear Gulch District 2005 UWMP, Appendix C last Worksheet – used for planning purposes

3.0 WATER DEMAND ANALYSIS

This section shows the calculated water demand for the proposed project as well as projected demand for the entire system and then compares the demand to the supply.

3.1 Proposed Project Water Demand

The expected water use of the proposed project was determined by analyzing similar land uses and assigning a demand factor for each use. This analysis evaluates the net demand at the project-level within the ECR/D Specific Plan area. Build-out of the proposed project is expected to occur incrementally over the next 30 years, as changes in the development market create opportunities for redevelopment. However, for conservative water supply planning purposes water demand in the project area is assumed to occur immediately and is added to existing demand to present the quantitative data needed to analyze current and future demand within the Bear Gulch District's service area. Projected demand generated by the proposed project (680 residential units and 1,357 new jobs), existing demand and planned future uses are extended over a 25-year planning horizon. This methodology provides for consistency with the Association of Bay Area Governments 2009 Projections for population, household and jobs growth throughout the regional Bay Area.

The demand factors were formulated based on data from current and historical uses at similar facilities in Northern California and the San Francisco Bay Area; however, installation of water efficient fixtures throughout the new facilities and use of drought-tolerant landscaping materials could further reduce on-site water demand from the proposed development components.

Table 3-1, based on the growth projected in the ECR/D Specific Plan, shows the proposed land uses that could occur at the project site as a result of implementation of the proposed project. The land uses, as shown in Table 3-1, would potentially create a net increase in water demand of 222 AFY or an average demand of 198,296 gallons per day (gpd) (0.20 mgd).

Table 3-1: City of Menlo Park El Camino Real-Downtown Specific Plan Area (proposed project) Land Use and Water Demand

Specific Plan Land Uses (Net Increases)	Area or Type	Units	Water Demand Factor	Gallons per Day	MGD	AFY
Residential Development-Multiple Family	680	DU[a]	112 gpd/DU[c]	76,160	0.08	85.31
Retail Space	91,800	sf[b]	0.53 gpd/sf	48,654	0.05	54.50
Commercial Space	240,820	sf	0.10 gpd/sf	24,082	0.02	26.98
Hotel-Lodging Facilities	380	Rooms	130 gpd/room	49,400	0.05	55.34
Net Change in Water Demand	~	~	~	198,296	0.20	222.12

Notes:

a. DU = Dwelling Units

b. sf = square feet

c. Residential water demand factors provided by ESA (demand generated by multiple family units in Santa Clara County) April 2009.

Source: City of Menlo Park and ESA April 2010 Based on preliminary demand data from PBS&J water demand factors-can be modified to reflect water efficient landscaping and hardware fixtures, Green Building Objectives or LEED certification, etc.

Association of Bay Area Governments, in its efforts to capture and project the most comprehensive growth information throughout the Bay Area has also considered the potential growth in the project area. The ECR/D Specific Plan area and twelve other areas in San Mateo County were identified by Association of Bay Area Governments as Priority Growth Areas in its 2009 Projections. This data creates another projected growth scenario that could occur as a

result of redevelopment at the project site. Based on this land use information, the growth projection (residential units and new jobs) within the project area estimates a more densely utilized area. In this case, the proposed project site, as shown in Table 3-2, would potentially create a net increase in water demand of 379 AFY or an average demand of 338,719 gpd (0.34 mgd). This is a worst-case growth scenario but would also be considered the most conservative for water supply planning purposes. As such, the potential demand associated with Association of Bay Area Governments Projections 2009 is used throughout the remainder of this WSA and is embedded in the water demand generated throughout the Bear Gulch District's service area.

Table 3-2: El Camino Real/ Downtown Specific Plan Area Land Use and Water Demand from Association of Bay Area Governments 2009 Projections (Most Conservative Estimates for Growth)

Priority Growth Area (Net Increases)	Area or Type	Units	Water Demand Factor	Gallons per Day	MGD	AFY
Residential Development - Multiple Family	1,065	DU[a]	112 gpd/DU[b]	119,280	0.12	133.61
Jobs - Employment (Retail – Commercial with Office Space)	5,173	Jobs	42.42[c] gpd/ employee	219,439	0.22	245.80
Net Change in Water Demand				338,719	0.34	379.41

Notes:
a. DU = Dwelling Units
b. Residential water demand factors provided by ESA (demand generated by multiple family units in Santa Clara County) April 2009.
c. SFPUC average daily use per employee (SFPUC Water Supply Availability Study, October 2009).
Source: Based on preliminary demand data from PBS&J water demand factors

3.2 Historical System Demand - Bear Gulch District Historical Demand

Table 3-3 presents the water uses in the Bear Gulch District's service area from 2000-2009 and shows the annual average change over this same year period. Information in Table 3-3 was obtained from Cal Water during preparation of this WSA. The table shows demand fluctuating over the last five years but remaining at or near 13.10 mgd.

Table 3-3: Bear Gulch District Historical and Current Water Use (SFPUC and local surface water)

	2000[a]	2005[a]	2006[a]	2007[a]	2008[a]	2009[a]
Accounts	17,289	17,608	17,725	17,745	17,797	18,089
Acre-Feet/Year	14,149	13,527	13,858	15,554	15,510	15,425
Million Gallons/Day	12.63	12.08	12.37	13.89	13.85	13.77

Source: Cal Water Bear Gulch District Staff July 2010

3.3 System Demand Forecasts and Bear Gulch District Growth Scenarios

As shown in Table 3-4, the water demands projected to year 2035 will be met by treated water purchases from SFPUC. Currently, Cal Water is preparing its 2010 UWMP for release in July 2011. Although the Bear Gulch District's projected water demands include growth beyond current demand, the projections include growth in demand from new employment centers, residential housing units and other projects similar to the proposed project.

Table 3-4: Service Area Projected Growth and Water Demand

Bear Gulch District Draft 2010 UWMP Demand Projections						
	2010	2015	2020	2025	2030	2035
Projected Growth Scenario 1 (best-case water savings)						
Connections	18,027	18,457	18,898	19,350	19,814	20,291
AFY	9,693	9,938	10,191	10,452	10,721	10,999
MGD	8.65	8.87	9.10	9.33	9.57	9.82
Projected Growth Scenario 2 (Bear Gulch District's reasonable water savings)						
Connections	18,027	18,457	18,898	19,350	19,814	20,291
AFY	13,413	13,755	14,107	14,471	14,848	15,237
MGD	11.97	12.28	12.59	12.92	13.26	13.60

Source: Bear Gulch District 2010 Preliminary Draft UWMP.

Table 3-4 shows the possible growth in demand in the Bear Gulch District's service area based on the number of connections that would come online over the next 25 years. These two scenarios projected total demand through 2035.

In Projected Growth Scenario 1 ("best-case water savings"), the long-term average growth pattern[30] was combined with the lowest annual demand per service values.[31] This water savings scenario combines the anticipated growth in connections and a best-case water use efficiency and conservation. As presented in the table the number of connections increases from 18,027 in 2010 to 20,291 in 2035 - while demand also increases, water use efficiencies effectively keep demand from increasing at a rapid rate. In 2035, demand under this scenario is expected to be 10,999 AFY or 9.82 mgd. (below 2010 water use due to aggressive conservation savings). Under this best-case water savings scenario, it would appear that the Bear Gulch District would not contribute to Cal Water exceeding its Individual Supply Guarantee because Bear Gulch District customer demand is held well-below its current (2010) demand of 13.77 mgd. However, this would ultimately depend greatly upon the success of Cal Water's Bayshore District's water demand management programs and the ability to reduce customer demand to keep customer demand below Cal Water's Individual Supply Guarantee.

In Projected Growth Scenario 2 ("reasonable water savings"), the long-term average growth pattern was also combined with the average annual demand per service values. This scenario combines the anticipated growth in connections and a more realistic and reasonable water use efficiency program. As presented in the table the number of connections increases from 18,027 in 2010 to 20,291 in 2035 - while demand also increases, water use efficiencies effectively keeps demand from increasing at a rapid rate. In 2035, demand under this reasonable water savings scenario is expected to be 15,237 AFY (13.60 mgd) – only 0.45 mgd greater than current (2010) use due to a constant water use efficiency program. Under this reasonable water savings scenario, the Bear Gulch District could possibly contribute to Cal Water exceeding its Individual Supply Guarantee but this depends greatly upon the success of Cal Water's

[30] The long-term growth pattern was derived from the ten-year period 1994 to 2004. This period resulted in an overall annual average service connection growth rate of 0.24 percent. This pattern also employed the customer class factor in projecting service connection increases. Bear Gulch District 2005 UWMP page 46

[31] In forecasting total system demand, the projected number of services for each customer class was multiplied by the minimum, average, and maximum demand per service for that customer class. This process was employed because of the significantly greater than average demand per service associated with certain uses. Residential and commercial demand is approximately 220,000 and 350,000 gallons per year per service, respectively, while the annual demand per service for multifamily residential, industrial, government and other uses all approach or exceed 1 million gallons per service per year. Bear Gulch District 2005 UWMP page 46

Bayshore District's water demand management programs and the ability to keep customer demand below Cal Water's Individual Supply Guarantee.

In should be noted that a third water demand scenario ("no conservation scenario") was presented in the Bear Gulch District's 2005 UWMP and duplicated in its Draft 2010 UWMP. This no conservation scenario consisted of a long-term average growth pattern applied to the highest annual demand per service connection. This scenario combined the anticipated growth in connections with growth in demand without conservation or conservation achievements. However, due to the water conservation achievements required in Senate Billx7-7 (the Water Conservation Act of 2009) (10 reduction percent per capita by 2015 and 20 percent per capita by 2020) it is not necessary to show a demand scenario absent of water use efficiency or conservation measures to reduce demand.

3.3.1 Projected Growth Association of Bay Area Governments 2009 Projections (Households)

Table 3-5 demonstrates the Association of Bay Area Governments 2009 Projections estimated growth that can be expected to occur in the ECR/D Specific Plan area (a Priority Growth Area) within the City of Menlo Park and throughout Bear Gulch District's service area beginning now and extending over the 25-year planning horizon to 2035. With this information, this WSA developed a long term growth rate (within the Bear Gulch District service area) of 0.6 percent per year or 108 new household every year or 540 new households every 5 years that is expected over this 25-year period.

Table 3-5: Association of Bay Area Governments 2009 Projections Household Growth and Projected Water Demand

Cities and Communities		2010	2015	2020	2025	2030	2035	Total New HH[e]
Menlo Park customers served by Bear Gulch District	Maximum Projected households in the ECR/D SP area[a]	762	975	1,188	1,401	1,614	1,827	1,065
	Existing plus Projected Households[b]	9,305	9,742	10,178	10,585	11,037	11,528	2,223
Atherton		2,490	2,510	2,530	2,540	2,560	2,580	90
Portola Valley		1,730	1,740	1,730	1,750	1,760	1,780	50
Woodside		2,030	2,040	2,040	2,050	2,050	2,060	30
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks[c]		1,211	1,273	1,334	1,396	1,457	1,519	308
Total Household Projections		16,766	17,305	17,812	18,321	18,865	19,467	2,701
Total Water Demand (mgd)[d]		11.07	11.13	11.19	11.25	11.31	11.37	0.3

Notes:
a. In Bear Gulch District service area and within City of Menlo Park boundaries
b. City of Menlo Park 2005 UWMP & Association of Bay Area Governments 2009 Projections
c. Estimated at 15% of unincorporated County projections as calculated and projected by PBS&J, June 2010.
d. Existing Demand + Projected Water Demand from Growth Projections (mgd)
e. HH = Households

In the unincorporated areas of San Mateo County, Association of Bay Area Governments forecasted growth of 2,050 new households between 2010 and 2035. This WSA estimated that new households in these incorporated areas of San Mateo County (Menlo Oaks, North Fair Oaks, Ladera and West Menlo Park) served by the Bear Gulch District would accommodate approximately 15 percent of the 2,050 new households or 308 new residences. It should be noted that these estimates were based on the best available data and no additional information or detailed information was available through the San Mateo County Long-Range Planning Department. Appendix A presents the tables that support these estimates.

Water demand associated with forecasted growth in households is shown in Table 3-5 as well. The water demand shown in 5-year increments is estimated to increase over the same 25-year planning period. Demand was generated by first determining a baseline from the existing daily demand and then developing a demand that can be expected to occur from new households projected in the Bear Gulch District's service area.

To develop the additional water demand generated by new households that would be served by Bear Gulch District, this WSA assumed that all new households would be multiple-family units similar in type and scale as those anticipated within the ECR/D Specific Plan area. These residences would be constructed at underutilized parcels or implemented through redevelopment actions as is the case with the proposed project. This WSA estimated that each new multiple family unit would demand approximately 112 gpd. As shown in the total water demand line in Table 3-5, growth in water demand of 0.06 mgd can be anticipated in each 5-year increment over the 25-year planning horizon. Over the entire 25-year period 0.3 mgd is anticipated based on buildout of new households in the Bear Gulch District service area.

3.3.2 Projected Growth Association of Bay Area Governments 2009 Projections (Jobs-Employment)

Table 3-6 demonstrates the Association of Bay Area Governments 2009 Projections estimated growth in Jobs (Employment) that can be expected to occur in the Bear Gulch District's service area and the ECR/D Specific Plan area beginning now and extending over the 25-year planning horizon. In fact, employment in the proposed project area is expected to increase by 5,173 jobs, from 2,611 in 2010 to 7,784 in 2035, which accounts for the majority of new jobs in the Bear Gulch District's service area. In the unincorporated areas of San Mateo County, the Association of Bay Area Governments in its 2009 Projections forecasts employment opportunities and this includes the four communities of Menlo Oaks, North Fair Oaks, Ladera and West Menlo Park served by Bear Gulch District. However, precise estimates in the four communities were not included. In order to account for potential jobs these four communities were compared to jobs forecasted in the cities of Atherton (100 jobs), Portola Valley (160 jobs) and Woodside (50 jobs). From that point, this WSA assumed that 100 new job opportunities would occur in these four areas. This assumption seems reasonable by comparison as no additional information or detailed information was available through the San Mateo County Long-Range Planning Department. San Mateo County Long-Range Planning assumes no rezoning and existing community plans are held in place, which accounts for only small incremental growth in these communities. See Appendix A for the tables that support these estimates.

As shown in Table 3-6, the first two lines present the projected new connections and associated demand that could occur as forecasted in the Bear Gulch District 2005 UWMP. Over the 25-year planning horizon Bear Gulch District estimated fewer than twenty new CII (Commercial, Industrial and Institutional) accounts plus Other (temporary connections) that would be

connected in its service area. The demand associated with these new connections is estimated to increase from 1,758 AFY to 1,787 AFY.

Table 3-6: Association of Bay Area Governments 2009 Projections Employment (Jobs) Growth and Projected Water Demand

	2010	2015	2020	2025	2030	2035
2005 UWMP						
CII plus Other Connections [a,b]	1,436	1,439	1,441	1,443	1,451	1,453
CII plus Other Demand (AFY)[b]	1,758	1,764	1,770	1,776	1,782	1,787
CII plus Other Demand (mgd)[b]	1.57	1.58	1.58	1.59	1.59	1.60
Draft 2010 UWMP (reasonable water savings)						
CII Connections plus Other[c]	1,465	1,523	1,584	1,648	1,714	1,785
CII Connections plus Other (AFY)[c]	1,928	2,011	2,099	2,193	2,292	2,398
CII Connections plus Other (mgd)[c, d]	1.72	1.80	1.87	1.96	2.05	2.14
Association of Bay Area Governments 2009 Projections (Growth in Employment and Jobs)						
Total Growth in Jobs	37,383	37,718	38,122	40,435	42,850	45,173
Projected Water Demand (mgd)[f]	1.59	1.60	1.62	1.72	1.82	1.92

Notes:

a. CII = Commercial, Industrial and Institutional; Other represents temporary connections for construction or similar purposes.

b. Bear Gulch District 2005 UWMP, Table 5.4-1

c. Bear Gulch District Draft 2010 UWMP, Worksheet 10.

d. Converted to mgd for comparison purposes. Bear Gulch District Draft 2010 UWMP, Worksheet 10.

e. Calculated growth in jobs from Association of Bay Area Governments 2009 Projections in the Bear Gulch District service area including the proposed project area.

f. Estimated water demand based Growth in Jobs forecasted by Association of Bay Area Governments 2009 Projections growth over prior 20 years.

Table 3-6 also presents data for CII plus Other connections based on Bear Gulch District's Draft 2010 UWMP worksheets. The Bear Gulch District forecasts that CII plus Other connections would be 1,465 in 2010 and increase to 1,785 connections in 2035 for an increase of 320 new connections or 471 AF over the 25-year period. In terms of million gallons per day these projections begin at 1.72 mgd in 2010 and increase to 2.14 mgd over the same period.

As shown in Table 3-6, total jobs in the Bear Gulch District's service area are expected to increase from approximately 37,383 in 2010 to 45,173 in 2035. This is an increase of 18 percent over the existing jobs. As presented above, 61 percent of this growth comes from new jobs in the proposed project area. In terms of water demand, based on an average daily demand per employee of 42.42 gpd,[32] water demand in the Employment sector (Commercial, Industrial and Institutional) associated with the growth in jobs is also expected to increase from an annual average of 1.59 mgd (2010) to 1.92 mgd in 2035.

As shown in Table 3-6 each growth scenario shows demand increases based on growth in jobs or connections from CII plus Others. Because the Bear Gulch District's 2005 UWMP is five years old, the projected number of new connections and associated demand appears to be low. In fact, the 2008-2009 BAWSCA Annual Survey shows 1,530 connections from CII plus Others in the Bear Gulch District's service area and demand associated with these connections was reported at 1,781 AFY or 1.59 mgd. By comparison the existing demand of 1.59 is roughly the same as demand forecasted in 2025, 2030 and 2035. Going forward, the 2005 UWMP growth scenario is not reliable.

[32] SFPUC Water Supply Availability Study (October 2009)

The Draft 2010 UMWP estimates show demand in 2010 at 1.72 mgd (1,928 AFY) which is above the 2008-2009 BAWSCA Annual Survey by nearly 0.2 mgd and increases every year culminating in 2035 at 2.14 mgd. This growth in demand adds another 0.42 mgd over the same 25-year period. Under this scenario demand in 2010 begins above the existing demand reported in the Annual Survey and appears to overstate the number of new connections and the demand associated with these new connections. For these reasons this Draft 2010 UMWP scenario is also not a best-case jobs growth scenario.

Therefore, for consistency purposes, this WSA chose to use the water demand associated with the growth in demand from the jobs projected in the Association of Bay Area Governments 2009 Projections, which includes the jobs expected to occur as a result of implementation of the ECR/D Specific Plan. This methodology more closely relates to the anticipated demand generated by jobs in the Bear Gulch District service area as presented in the 2008-2009 BAWSCA Annual Survey (1.59 mgd) and then demand builds incrementally based on the number of new jobs created in the Bear Gulch District service area over the 25-year planning horizon between 2010 and 2035 that are projected in Association of Bay Area Governments' 2009 Projections.

3.3.3 Total Projected Growth Association of Bay Area Governments 2009 Projections (Households -Jobs) with Bear Gulch District Service Area

Table 3-7 shows the total demand that can be expected to occur in the Bear Gulch District's service area (including the ECR/D Specific Plan area) based on the growth projected in the Association of Bay Area Governments 2009 Projections. The information in Table 3-7 is the sum of the data from Table 3-5 and Table 3-6. These data show water demand is expected to increase every year without conservation efforts to control demand. In 2010 direct demand within the Bear Gulch District service area is anticipated to be 12.66 mgd with unaccounted-for water losses associated with new demand, this increases to 13.20 mgd.

Table 3-7: Bear Gulch District Water Demand Projections from Association of Bay Area Governments 2009 Projections

	2010	2015	2020	2025	2030	2035
Total Household Projections [a]	16,766	17,306	17,846	18,387	18,927	19,467
1 Current Household Demand[b] (mgd)	11.01	11.01	11.01	11.01	11.01	11.01
2 Water Demand from Association of Bay Area Governments household projections[c]	11.07	11.13	11.19	11.25	11.31	11.37
Association of Bay Area Governments 2009 Projections (Jobs Growth)[d]	37,383	37,718	38,122	40,435	42,850	45,173[b]
3 Demand from Employment (mgd)[e]	1.59	1.60	1.62	1.72	1.82	1.92 [b]
4 Subtotal Water Demand in Bear Gulch District Service Area (mgd) (lines 1,2 & 3)	**12.66**	**12.73**	**12.81**	**12.97**	**13.13**	**13.29**
5 Losses (mgd) (increment from new demand at households and Jobs)	0.54	0.54	0.55	0.55	0.56	0.57
Total Projected Water Demand in Bear Gulch District Service Area with losses (mgd) (lines 4,5)	**13.20**	**13.27**	**13.35**	**13.52**	**13.69**	**13.86**

Notes:

a. Table 3-5: Association of Bay Area Governments 2009 Projections Household Growth and Projected Water Demand

b. Based on existing household demand per day of 655 gpd/account with losses

c. Table 3-5: Association of Bay Area Governments 2009 Projections Household Growth and Projected Water Demand 112 gpd/unit

d. Table 3-6: Association of Bay Area Governments 2009 Projections Employment (Jobs) Growth and Projected Water Demand

e. CII plus Other incremental growth over prior 20 years and projected for 42.42 gpd per employee (SFPUC assumptions Water Supply Availability Study October 2009)

Actual demand from BAWSCA's 2007-2008 Annual Survey stated demand within the Bear Gulch District's service area at 13.14 with unaccounted-for water losses. It should be noted that conservation and efficient water use practices are not incorporated into this table, but new household demand is assumed to be 112 gpd, slightly greater than SFPUC's water efficient multiple-family assumptions of 98.7 gpd per household (or 49.35 gpd per capita assuming two people per household). Therefore, it appears that these projections are in line with other regional water supply planning agencies and would be considered reasonable forecasts of potential water uses over the 25-year planning horizon.

3.4 Comparison of Available Water Supplies versus Demand

Section 10910(c)(3) of the California Water Code states, "the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available for normal, dry and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses."

3.4.1 Cal Water and Bear Gulch District Supply and Demand Considerations

In order to present a conservative water supply analysis, the supply and demand models in this section assume that the supplies from the SFPUC would be held to 11.18 mgd and surface water from the Bear Gulch District's Bear Gulch Reservoir is limited to 1.12 mgd (Total Supply 12.30 mgd). With this understanding, each growth in demand scenario is compared to the Bear Gulch District's available supplies. Furthermore, this WSA recognizes that the Bear Gulch District could use additional supplies within its Individual Supply Guarantee to meet demand and because the aggregated demand within the BAWSCA members has not reached its maximum of 184.0 mgd, no supply limitations are being enforced. Therefore, Cal Water could purchase supplemental supplies from the SFPUC. In fact, Cal Water did this in 2009 to meet demand.[33]

3.4.2 Supply and Demand in a Normal Year based on Bear Gulch District's 2010 Draft Urban Water Management Plan Projections.

Table 3-4 above shows the possible growth in demand in the Bear Gulch District's service area based on number of connections that would come online over the next 25 years. These growth scenarios projected total demand through 2035. In the 2005 UWMP, the Bear Gulch District assumed that supplies would increase in every year; however, as stated previously those anticipated increases can no longer be forecasted and relied on due to the limitations placed on the Regional Water System.

During preparation of this WSA, Cal Water provided draft versions of its 2010 UWMP Worksheets to help develop an up-to-date projection of potential new connections and the associated demand. Each scenario shown in Table 3-8 illustrates the number of new connections that are expected to come online over the next 25-years. In addition, each scenario shows a comparison of supply and demand related to the growth in connections.

If demand were to increase moderately as shown in Scenario 1, then the Bear Gulch District can expect supply to exceed demand in every year over the 25-year planning horizon even with the SFPUC supplies held to 11.18 mgd. In order for this to occur the customers in the Bear Gulch District service area would need to use water more efficiently and reduce demand to

[33] 2008-2009 BAWSCA Annual Survey, Table 2B.

levels below the current (2010) demand. Moreover, according to the Bear Gulch District 2005 UWMP demand reductions at this rate are not likely to occur over a long period of time.

Table 3-8: Bear Gulch District 2010 Draft UWMP Normal Year Supply and Demand Projections (mgd)

	2010	2015	2020	2025	2030	2035
Scenario 1						
Connections/Accounts	18,027	18,457	18,898	19,350	19,814	20,291
Projected Demand	8.65	8.87	9.10	9.33	9.57	9.82
Projected Supply (based on 2018 Regional Water System delivery limitations - starting with 2010)	12.30	12.30	12.30	12.30	12.30	12.30
Difference (Surplus/Deficit)	3.65	3.43	3.2	2.97	2.73	2.48
Scenario 2						
Connections/Accounts	18,027	18,457	18,898	19,350	19,814	20,291
Projected Demand	11.97	12.28	12.59	12.92	13.26	13.60
Projected Supply (based on 2018 Regional Water System delivery limitations - starting with 2010)	12.30	12.30	12.30	12.30	12.30	12.30
Difference (Surplus/Deficit)	0.33	0.02	-0.29	-0.62	-0.96	-1.3

Source: Bear Gulch District 2010 Draft UMWP Worksheet 10.

In Scenario 2 demand in the Bear Gulch District commences at 11.97 mgd in 2010 and increases to 13.60 mgd in 2035. This scenario appears to represent a more realistic grows in demand pattern because it begins closer to the current (2010) demand and grows incrementally from that point to 2035. As shown in 2020 and continuing through to 2035 demand is expected to outstrip supply. In 2020, this shortfall is as little as 0.29 mgd, and grows to 0.62 mgd in 2025 and then reaches a 1.3 mgd deficit in 2035. This is due to the fact that demand from projected growth in the service area is increasing beyond the rate of available supply; mainly due to the fact that supplies from SFPUC are held to 11.18 mgd.

Notably, Scenario 2 utilizes some degree of conservation along the way; however, greater water saving yields would need to occur to balance demand against supply. Section 3.5 discusses the programs that Cal Water has in place to achieve district wide water savings.

3.4.3 Supply and Demand in a Normal Year with Association of Bay Area Governments 2009 Projections

This WSA developed water supply and demand models to compare different demand scenarios [Refer to Sections 3.3 through 3.4.2] against supplies available to the Bear Gulch District. Table 3-9 uses the demand data from Table 3-7 to show the possible growth in demand in the Bear Gulch District's service area based on the number of connections that would come online over the next 25 years. In the 2005 UWMP, the Bear Gulch District assumed that supplies would increase in every year; however, those anticipated increases can no longer be forecasted and relied on due to the limitations placed on the Regional Water System. Under the potential growth scenario shown in Table 3-9, demand would outstrip supply in every year beginning in 2010 and extending to 2035.

As shown in Table 3-9, even with demand reductions (compared to existing demand of 13.14 mgd) of 8.9 percent in 2010, 6.5 percent in 2015, and 0.4 percent in 2020, demand exceeds supply. As modeled, additional conservation measures and water use efficiencies

would be necessary. In order to meet demand, the Bear Gulch District could use some of its remaining supplies within its Individual Supply Guarantee of 35.68 mgd or could purchase water

Table 3-9: Normal Year Bear Gulch District Supply & Demand Projections (mgd)

	2010	2015	2020	2025	2030	2035
Bear Gulch District Supply Sources[a]	12.30	12.30	12.30	12.30	12.30	12.30
Demand without losses [b]	12.66	12.73	12.81	12.97	13.13	13.29
Difference (Deficit)	-0.36	-0.43	-0.51	-0.67	-0.83	-0.99
Supply transfer from Cal Water Bayshore Districts	0.36	0.43	0.51	0.67	0.83	0.99
Supplemental Supply from SFPUC	0.36	0.43	0.51	0.67	0.83	0.99

Notes:
a. Table 2-4: Normal Year Supplies for Cal Water; and Bear Gulch District
b. Table 3-7: Bear Gulch District Water Demand Projections from Association of Bay Area Governments 2009 Projections
Source: PBS&J June 2010.

from another local Wholesale water supplier. In addition, under normal years, as shown in Table 3-9, the Bear Gulch District could purchase supplemental supplies from the SFPUC to meet its projected demand shortfall.

This projected supply and demand situation is similar to the situation that occurred in the Bear Gulch District in 2008 and 2009. As presented in the BAWSCA Annual Survey total demand in Cal Water's service area was 36.81 mgd. Of that demand, 36.1 mgd was met by SFPUC supply, which exceeds Cal Water Individual Supply Guarantee by 0.42 mgd. The Bear Gulch District contributed 12.59 mgd to this situation or 34.87 percent. According to the 2005 UWMP, Bear Gulch District's percent of SFPUC supply averages approximately 32 percent and the Bayshore District utilizes the remaining balance (68 percent) of the supply from SFPUC.

As modeled in Table 3-9 a water supply deficit could occur and also presents two possible methods to overcome the shortfall. The Bear Gulch District could transfer supply from the Bayshore District, or, if that supply is unavailable, then the Bear Gulch District would need to purchase supplemental supplies from the SFPUC. The Water Supply Agreement allows for water transfers between BAWSCA members without surcharges, assuming the transfer amount remains below the agency's Individual Supply Guarantee. In dry years due to provisions in the Water Supply Allocation Plan, usage above an agency's drought allocation will result in surcharges. The Water Supply agreement does allow transfers of unused drought allocations among BAWSCA members.

In order for the Bear Gulch District and Cal Water to avoid additional purchases from the SFPUC, Cal Water and Bear Gulch District could impose stricter water conservation measures on its customers and begin to balance supply through service area demand reductions. At this point, even though Cal Water has implemented the Best Management Practices outlined in the California Urban Water Conservation Council, it is difficult to state with certainty that these practices would reduce demand to a point that balances with supply. Therefore, this WSA assumes that increasing demand could exceed fixed supplies in all years; however, as stated in Section 3.4.1 in normal years Cal Water can draw from its Individual Supply Guarantee supplies in any of its service areas, transfer water from another BAWSCA member or purchase supplemental supplies from the SFPUC. In terms of potential supply deficits, it is more likely that actual supply shortfalls would occur when specific critical dry year events occur or when multiple dry years prevail and SFPUC reduces its deliveries by 20 percent. In this case, Cal Water would need to plan for sufficient supply to meet forecasted demand.

3.4.4 System-wide Supply and Demand Comparison in Normal, Single Dry and Multiple Dry Years with No Net Gain in Demand

In most cases, with the exception of the modeled supply and demand projections in Table 3-8 and Table 3-9 above, the SFPUC can meet the current and future demands of its Retail and Wholesale customers in years of normal and above-normal precipitation. The Water Supply Agreement and Water Supply Allocation Plan allow the SFPUC to reduce water deliveries to Wholesale customers during periods of declared water shortages. The SFPUC used the historical hydrologic record from 1920 to 2002 to compare water supplies and demands into the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced.

Table 3-10 includes the projected future supply and demand by varying hydrologic conditions over the 25-year planning horizon through 2035, as required by Senate Bill 610. As previously discussed, SFPUC can deliver an average of 239 mgd based on a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies and can meet the demand of its Retail and Wholesale customers.[34] Currently, under existing operations, the SFPUC system has a firm delivery capability of 219 mgd.

Table 3-10: 2010–2035 Supply and Demand Comparison for Normal and Critical Dry and Multiple Dry Years under with 20% Systemwide Reductions to BAWSCA Members - No Net Demand Increase Scenario with No Conservation

	Normal Year Purchase Request		20% System-wide Reductions to BAWSCA Members and Cal Water							
			A Critical Dry (Year 1)		Multiple Dry Year Event					
					Year 2		Year 3		Year 4	
	mgd	%	mgd	20%	mgd	20%	mgd	20%	mgd	20%
SFPUC/BAWSCA Allocation	184.0	100%	115.5	62.5%	115.5	62.5%	115.5	62.5%	115.5	62.5%
Cal Water Individual Supply Guarantee (Allocation)[a,b]	35.68	100%	24.04	66.8%	24.04	66.8%	24.04	66.8%	24.04	66.8%
Cal Water Demand[c]	35.68		35.68		35.68		35.68		35.68	
Difference	0.00	100%	-11.64	33.2%	-11.64	66.8%	-11.64	66.8%	-11.64	66.8%

Notes:

a. BAWSCA Allocation based on the 2009 Settlement Agreement and Master Water Sales Contract currently being approved by all parties in interest. Pursuant to the 2009 Settlement Agreement and Master Water Sales Contract, BAWSCA and its member agencies will receive 184 mgd. After 2018 SFPUC could obtain additional supplies from the Tuolumne River watershed; however, at this time that remains an unknown. Therefore, in order to meet potential growth now and beyond 2018 to 2030, BAWSCA and its member agencies must optimize conservation measures and pursue local water supply sources, i.e. groundwater, stormwater and recycled water. The Settlement Agreement and Master Water Sales Contract determined that the BAWSCA members are responsible for obtaining 25 mgd collectively.

b. The tentative agreement among BAWSCA members is to use the results of Case 16A. It shows that in a 20% system-wide shortage, the average reduction among BAWSCA members is 26.88%. Cal Water would get a reduction of 33.2%.Source: BAWSCA Table 1 REVISED - DRIP Case 16A Results Plus Options 1, 2 (corrected), and 3 (corrected) to Address EPA Needs.

c. Total for Bayshore and Bear Gulch Districts.

In recent years, the SFPUC has delivered 265 mgd, and in fiscal year 2007 – 2008, SFPUC delivered approximately 254 mgd – these are above the firm delivery capabilities of 219 mgd. In terms of water supply reliability, the SFPUC's UWMP assumes "firm" delivery "as amount the system can be expected to deliver during historically experienced drought periods."[35] In recent years (2007-2009), when many water suppliers declared drought conditions in their service areas, SFPUC did not declare a drought and did not impose a limitations or supply reductions

[34] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

[35] San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

on the Regional Water System. As such, SFPUC was able to deliver adequate supply to meet all demand. It should be noted that during this 2007-2009 period, SFPUC did request a voluntary 10 percent reduction from the BAWSCA members.

As shown in Table 3-10, only in normal or above-normal precipitation years can SFPUC meet the demand generated in Cal Water's service areas – this assumes that demand is held to 35.68 mgd even with planned growth or no net gain in water demand. However, as shown Table 3-10, within the next 25 years during critical dry and over multiple dry years when a 20 percent system-wide reduction could be imposed, SFPUC is incapable of sufficiently meeting Cal Water's demand, including the net increase in demand generated by the proposed project. In fact, under a 20 percent system-wide reduction even without implementation of new projects throughout SFPUC's service area, SFPUC is incapable of meeting local and regional demands under these dry year conditions. Under present regional water supply conditions, if a critical dry year is declared and SFPUC imposes a 20 percent system-wide reduction, water supplies to BAWSCA would be reduced to approximately 115.5 mgd[36]; as such, the BAWSCA members would be required to reduce their individual demands according to the Tier Two Water Supply Allocation Plan formula (Section 2 of this WSA).

As shown in Table 3-10, Cal Water would need to reduce its system-wide demand to 24.04 mgd and conserve 11.64 mgd in order to balance supply and demand. In order to achieve this level of savings, Cal Water and the Bear Gulch District would need to implement more aggressive water use efficiencies and increase the level of conservation as would all other Wholesale agencies.

As presented in Section 1.3, new growth is expected throughout the Bay Area including the service areas of Cal Water as identified in the Association of Bay Area Governments 2009 Projections; therefore, it also is assumed that water demand would increase as a result of this growth. This WSA considered the growth in the Bear Gulch District's service area (Section 3) and assumes growth in other areas would increase as well. However, the degree of new demand that would be generated in the Bayshore District and all other areas within SFPUCs service area is beyond the scope of this WSA. This type of regional analysis would need to be prepared by the SFPUC in the context of the SFPUC's entire Regional Water System i.e., the 2010 update of its UWMP; therefore, this WSA cannot accurately forecast the level of new demand that could be generated in Cal Water's Bayshore District or in the other wholesale peninsula agencies. This WSA modeled the demand scenarios to present a potential situation that is most likely to occur within the Bear Gulch District's service area.

As discussed in Section 2.5.1.1., the Phased Water System Improvement Program Variant establishes a mid-term planning milestone in 2018 when the SFPUC would reevaluate water demands through 2030 in the context of then-current information, analysis and available water resources. Before 2018, the SFPUC and the Wholesale Customers will engage in a new planning process to reevaluate water system demands and supply options, including conducting additional studies and environmental reviews necessary to address water supply needs after 2018.

The Phased Water System Improvement Program Variant would meet the projected 2018 purchase requests of 285 mgd from the Regional Water System by capping purchases from the watersheds at 265 mgd; the remaining 20 mgd would be met through water efficiencies and

[36] The tentative agreement among BAWSCA members is to use the results of Case 16A. It shows that in a 20% system-wide shortage, the average reduction among BAWSCA members is 26.88%. Cal Water would get a reduction of 33.2%.Source: BAWSCA Table 1 REVISED - DRIP Case 16A Results Plus Options 1, 2 (corrected), and 3 (corrected) to Address EPA Needs.

conservation, water recycling and local groundwater use—10 mgd by Wholesale Customers and 10 mgd in SFPUC Retail service area. As such, efficient use of water and more effective conservation measures are necessary to keep demand at current levels and also reduce demand further over the next eight years to accommodate new growth. In this case, for conservative water supply planning purposes, the WSA forecasts a supply shortfall without additional conservation in order to present the need for greater water savings.

3.4.5 Mandatory Conservation to Balance Supply and Demand

As shown in Table 3-10, Cal Water would need to reduce its system-wide demand to 24.04 mgd and conserve 11.64 mgd in order to balance supply and demand. In order to achieve this level of savings, Cal Water and the Bear Gulch District would need to implement more aggressive water use efficiencies and increase the level of conservation in order to balance supply and demand as would all other Wholesale agencies.

Senate Billx 7-7 (the Water Conservation Act of 2009) calls for reducing demand by 10 percent conservation per capita in 2015 and 20 percent by 2020. Assuming the Bear Gulch District could achieve as much as 20 percent conservation in dry years when regional supplies are reduced by 20 percent, then further aggressive conservation may not be necessary. This assumes that SFPUC reductions to Cal Water would be based on Bear Gulch District's Individual Supply Guarantee of 35.68 mgd and not the previous year's deliveries since the Water Supply Allocation Plan encourages annual demand reductions.

3.5 Water Conservation Best Management Practices

Water conservation is a method available to reduce water demand, thereby reducing water supply needs for the Bear Gulch District. The unpredictable water supply and ever-increasing demand on California's complex water resources have resulted in a coordinated effort by the Department of Water Resources, water utilities, environmental organizations, and other interested groups to develop a list of urban Best Management Practices for conserving water. This consensus-building effort resulted in a Memorandum of Understanding Regarding Urban Water Conservation in California, as amended September 16, 1999, among parties, which formalizes an agreement to implement these BMPs and makes a cooperative effort to reduce the consumption of California's water resources. The Memorandum of Understanding is administered by the California Urban Water Conservation Council. The Memorandum of Understanding was recently revised to reflect current conditions, new technologies and methodologies to use water more efficiently and improve conservation efforts.

The Memorandum of Understanding requires that a water utility implement only the Best Management Practices that are economically feasible. If a Best Management Practice is not economically feasible, the water utility may request an economic exemption for that Best Management Practice. The Best Management Practices as defined in the Memorandum of Understanding are generally recognized as standard definitions of water conservation measures. The Cal Water is a signatory of the Memorandum of Understanding. As a signatory of the Memorandum of Understanding, Cal Water has agreed to implement the Best Management Practices as defined in Exhibit 1 of the Memorandum of Understanding that are cost beneficial and complete such implementation in accordance with the schedule assigned each Best Management Practice. Cal Water must submit to the California Urban Water Conservation Council a report every two years describing Best Management Practice implementation.

The following Best Management Practices outlined by the California Urban Water Conservation Council and other demand management programs that are currently in effect to reduce demand in the event of supply cutbacks, include:

1. Water Survey Programs for Residential Customers;
2. Residential plumbing retrofit;
    - Water Conservation Kits (high-efficiency showerheads, hose nozzles, etc)
    - Residential High-Efficiency Toilet Rebates
3. Leak reductions through constant maintenance, system repair audits, leak detection, and repair;
4. Metering with commodity rates for all new connections and retrofit of existing connections;
5. Large landscape conservation programs and incentives;
6. High-efficiency washing machine rebate programs;
7. School education programs, and public outreach, includes water efficient landscaping;
    - Restaurant Table Tents
    - Radio Public Service Announcements
    - Fact Sheets
    - Direct Mailers/Bill Inserts
    - Resource Action Programs – Water Wise Program
    - Disney Planet Challenge (Collaborating Partner)
8. Conservation programs for commercial, industrial, and institutional accounts.
    - Rebates Programs for:
    - High-Efficiency Toilet; High-Efficiency Clothes Washers; High-Efficiency Urinal; Pressurized Waterbroom; and, X-Ray Film Processor Re-Circulation System
9. Conservation pricing;
10. Water conservation coordinator;
11. Water waste prohibition;
12. Residential ultra-low-flush toilet replacement programs; and
13. System Pressure Control Program.

These programs and conservation measures are currently in affect by Cal Water and the Bear Gulch District. Each of these programs along with new programs outlined in the forthcoming Bear Gulch District's 2010 UWMP would work to reduce customer demand and reduce or eliminate the supply shortfalls. Unfortunately, it is not possible to quantify the water savings associated with these programs; however, over the 1987-1992 drought, Cal Water observed water-savings of up to 25 percent in its service areas.[37]

[37] Bear Gulch District 2005 UWMP, p. 43.

3.5.1 Dry-Year Shortage and Demand Reduction

Pursuant to the Urban Water Management Planning Act (California Water Code Section 10632), water suppliers with an existing dry year shortage contingency plan can implement subsequent stages of demand reduction measures listed in its UWMP as a strategy to balance supply and demand.

Section 4 of the Bear Gulch District's 2005 UWMP is the dry year shortage contingency plan that allows Cal Water to reduce water deliveries to customers and implement demand reductions during periods of water shortage. (Section 4 of the UWMP is Appendix B. Therefore, to overcome the potential supply deficit expected to occur when SFPUC reduces its deliveries by 20 percent during specific critical dry years or over multiple dry years, Cal Water would follow its adopted water shortage contingency plans to implement drought-planning sequences and associated operating procedures that subsequently initiate different levels of demand management relative to regional water supply rationing imposed by the SFPUC.

The Cal Water has developed a four-stage rationing plan as shown in Table 3-11. The plan includes voluntary and mandatory stages. Because of its investor-owned status, approval from the California Public Utilities Commission must be obtained prior to implementation of mandatory restrictions.[38]

Table 3-11: Stages of Demand Management

Stage	Customer Demand Reduction	Percent Reduction
1	Voluntary	10%
2	Voluntary or Mandatory	20%
3	Mandatory	35%
4	Mandatory	50%

Source: Bear Gulch District 2005 UWMP, Table 4.1-1, page 35.

3.5.1.1. Cal Water Demand Management Actions

The following outline lists the actions to be taken during periods when a reduction in consumption is required:

Stage 1

1. Cal Water and Bear Gulch District maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, monthly bill inserts, and conservation messages printed in local newspapers.
2. Educational programs in area schools are also ongoing.

Stage 2

1. Cal Water and Bear Gulch District will aggressively continue its public information and education programs.
2. Ask consumers for 10 to 20 percent voluntary or mandatory water use reductions.

[38] Bear Gulch District 2005 UWMP, p. 35.

3. Prior to implementation of mandatory reductions, obtain approval from California Public Utilities Commission.
4. Lobby for passage of drought ordinances by appropriate governmental agencies.

Stage 3

1. Implement mandatory reductions after receiving approval from the California Public Utilities Commission.
1. Maintain rigorous public information campaign explaining water shortage conditions.
3. Water use restrictions go into effect; prohibited uses can include watering resulting in gutter flooding, using a hose without shutoff device, filling of pools or fountains, etc.
4. Limiting landscape irrigation by restricting the hours of the day and or days of the week during which water for irrigation can be used.
5. Monitor production weekly for compliance with necessary reductions.
6. Installation of a flow restrictor on the service line of customers who consistently violate water use restrictions.

Stage 4

1. All of steps taken in prior stages intensified.
2. Discontinuance of water service to customers who consistently violate water use restrictions.
3. Monitor production daily for compliance with necessary reductions.
4. More restrictive conditions for, or a prohibition of, landscape irrigation.

4.0 SUPPLEMENTAL SUPPLY PROGRAMS

According to the requirements of California Water Code Section 10910(c)(3), the WSA shall include a discussion of "whether the public water system's total projected water supplies available…will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses." According to the requirements of California Water Code Section 10911(a), if the results of the assessment conclude that the water supplies are, or will be, insufficient, the WSA shall include plans for acquiring additional water supplies. Those plans may include, but are not limited to, information on costs, financing, permits, and timeframes.

In years of normal supply, Cal Water has sufficient supplies within its supply portfolio to meet demand over the 25-year planning horizon. As discussed in the previous section, water supplies are insufficient to meet projected demands of the proposed project, in addition to existing and planned uses within the Bear Gulch District and Cal Water when the SFPUC reduces its deliveries by 20 percent under specific critical dry events or over multiple-dry years. In fact, water supplies are insufficient to meet current demands in the Bear Gulch District and Cal Water under these same dry years conditions without implementation of the proposed project or growth projected in the Association of Bay Area Governments 2009 Projections.

Based on a determination of insufficient supplies, it is necessary to investigate the potential for acquiring additional supplies to serve Cal Water, the Bear Gulch District and the proposed project and/or projected demand associated with the Association of Bay Area Governments 2009 Projections. There are several alternative supply actions, which could be implemented by Cal Water to assist water supply planning for the projected 25-year horizon.

In addition, BAWSCA has completed the Phase I Scoping Report for the Long-Term Reliable Water Supply Strategy. This report marks the completion of the first step in the development and implementation of BAWSCA's Long-Term Reliable Water Supply Strategy to reliably meet the projected normal and drought year water needs of the BAWSCA member agencies and their customers through 2035.

4.1 Supply Reliability Projects (Cal Water and BAWSCA)

Projects or programs Cal Water and BAWSCA are investigating to improve local supplies are discussed below.

4.1.1 Cal Water and Bear Gulch District Actions

The Bear Gulch treatment plant's design capacity is 6.0 mgd. If adequate water was available and the plant could operate continuously through the year, it could produce as much as 2,190 million gallons (mg) (6,720 AF). The Cal Water established an operational guideline, restricting drawdown of the reservoir level to a rate of 0.3 feet per day as recommended by the California Division of Dam Safety. This guideline limits the treatment plant operation when inflow to the reservoir is minimal, to between 1.0 and 2.0 mgd.

As part of the Water Supply Master Plan, Cal Water is presently studying methods to increase supplies from the watershed and the potential for using groundwater sources. Improvements to the diversion facility at the Woodside Diversion Dam have been designed and scheduled for installation. These improvements will enable the Company to obtain accurate stream flow data at this facility, thus gaining a better understanding of the dynamics of this stream, permitting more efficient operation of the diversion facility, and allowing further study of potential facility improvements.

In the sense of maximizing production from the treatment plant and maximizing diversions and storage, the most advantageous period of time to operate the treatment plant would be in the winter when flows from the diversion facilities are being received. However, during such rainy periods the demand for water in the portion of the distribution system that receives treatment plant water generally drops significantly. The Bear Gulch District and Cal Water is investigating methods of increasing the seasonal distribution of treated water in order to maximize the treatment plant efficiency. The investigation includes determining the feasibility of deliveries to other water utilities, expanding the area effectively served by the treatment plant, and investigating the validity of the operational guideline on reservoir drawdown.

4.1.2 Long-Term Reliable Water Supply Strategy

The Long-Term Reliable Water Supply Strategy is proceeding in three phases: Phase I (now complete) defined the magnitude of the water supply issue and the scope of work for the Long-Term Reliable Water Supply Strategy; Phase II will continue the development of the Long-Term Reliable Water Supply Strategy through detailed analysis of the water supply management projects, and development of the implementation plan for the Long-Term Reliable Water Supply Strategy; and Phase III will include the implementation of specific water supply management projects of the Long-Term Reliable Water Supply Strategy.[39]

A variety of potential water supply management projects are available to meet the supply need. These projects represent the building blocks for the water supply management portfolios (portfolios) that will be developed and evaluated in Phase II of the Long-Term Reliable Water Supply Strategy.[40]

The initial inventory of possible projects to be evaluated in Phase II was developed based on the following principle: *"The Strategy will not result in any uncompensated or involuntary reallocation of agency assets."*[41]

The following approach was then used to develop the initial project inventory:[42]

- An initial project list was compiled based on review of BAWSCA member agency 2005 UWMPs and other publically-available documents (many of which are more than five years old);
- Based on the document review, projects that could potentially be developed to create new sources of supply were identified;
- Based on the document review, potential projects were identified where either there appeared to be the potential to increase project yield beyond what an agency had planned to meet its own needs, or where the project timeline could potentially be accelerated to bring the supply online sooner than currently planned; and
- BAWSCA member agencies removed, added, and updated projects to be evaluated in Phase II of the Long-Term Reliable Water Supply Strategy. Projects that will not be evaluated were removed from the inventory by member agencies.

[39] Long-Term Reliable Water Supply Strategy, page ES-1
[40] Long-Term Reliable Water Supply Strategy, page 4-1
[41] Long-Term Reliable Water Supply Strategy, page 4-1
[42] Long-Term Reliable Water Supply Strategy, page 4-2

The projects are categorized based on the source of water. These potential sources include groundwater, recycled water, water transfers, surface water and reservoirs, desalination, expanded conservation, and localized water capture and reuse. Figure 4-1[43] presents which source types provide potable and/or non-potable supply, have the ability to meet normal or drought year demands, and are located within or outside the BAWSCA service area.[44]

[43] Long-Term Reliable Water Supply Strategy, page 4-3
[44] Long-Term Reliable Water Supply Strategy, page 4-2

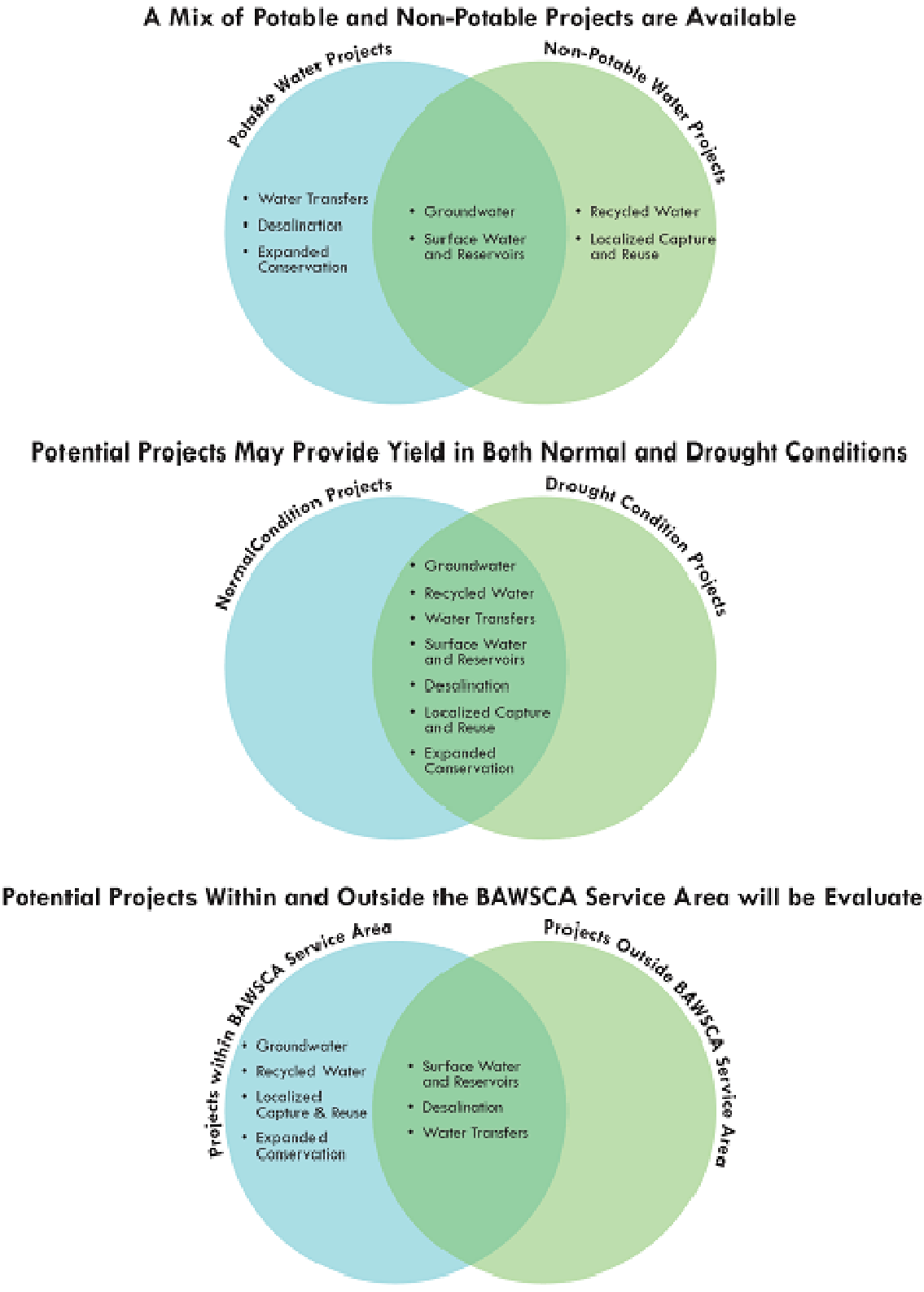


Figure 4-1: Water Supply Management Project Classifications

5.0 SUMMARY AND CONCLUSION

Implementation of the ECR/D Specific Plan (0.20 million gallons per day) or maximum density scenario based on the ABAG 2009 Projections (0.34 mgd) would result in net increases in the average demand of about 1.5 and 2.7 percent respectively, of the Bear Gulch District's service area demand in 2010 and out to 2035.

In years with normal or above-normal precipitation (years of normal supply), based on the analysis in this WSA it is likely that the Bear Gulch District would have supplies available within its water supply portfolio (imported water, local surface water and Cal Water Individual Supply Guarantee) to serve the proposed project's development plus existing demand and planned future uses between 2010 and 2035.

A significant challenge remains within the regional water supply and demand context as well as throughout California; growth in demand is projected to occur while statewide supplies are waning. Regionally, as growth continues within the BAWSCA member service areas, demand will incrementally reach BAWSCA's 184.0 mgd maximum. As stated in the BAWSCA Long-Term Water Supply Strategy document.

> If the water supplies currently available to the BAWSCA member agencies continue to be unreliable and subject to cutbacks, then existing and future customers will be increasingly affected. This is not only true under normal conditions, but is exacerbated during drought events. ...The water supply challenges faced by the BAWSCA member agencies are regional and not limited to individual cities or water districts as the residents and voters in one community typically work or own businesses in another community within the BAWSCA service area. Therefore, a water supply shortfall in one BAWSCA agency that results in loss of jobs or other impacts can detrimentally affect the customers of another BAWSCA agency, even if that agency itself is not facing a supply shortfall.[45]

As modeled in Section 3.4.2 (Tables 3-8 and 3-9), over the 25-year planning horizon projected demand in the Bear Gulch District would exceed projected supply in normal years. Although water use efficiencies and conservation measures would hold demand to 12.30 million gallons per day, which would effectively balance demand against supply and no projected shortfall would occur.

As presented in Section 3.4.4, the SFPUC could curtail system-wide treated water deliveries by 20 percent only when specific critical dry year events occur or when multiple dry years prevail, which further jeopardize the availability of water supplies. In most low-precipitation situations, SFPUC typically requests voluntary 10 percent demand reductions. In the event that SFPUC reduces its deliveries by 20 percent, Cal Water and the Bear Gulch District would have insufficient water supplies to meet the projected water demand associated with development at the project site, in addition to existing and planned future uses within the service area of the Bear Gulch District. In these instances, Cal Water, through its water shortage contingency plan can also impose supply curtailments and implement subsequent stages of demand reductions to balance demand against curtailed supplies.

As presented in Section 4, BAWSCA is actively planning and investigating numerous ways to improve supply reliability and reduce demand within its service areas. Although these efforts are in the early planning stages, it would appear, based on the projects and programs presented in the Strategy document that even modest success in these efforts would improve water supply reliability on the Peninsula.

[45] Long-Term Reliable Water Supply Strategy, p. ES-2.

Although there is an anticipated increase in the SFPUC supply reliability as a result of SFPUC implementing the capital improvements in the WSIP or increases of annual diversions from the Tuolumne River under existing water rights after 2018, demand in the SFPUC service area will continue to increase. In terms of water supplies purchased through SFPUC to 2018, BAWSCA's collective Regional Water System demand can only increase to an annual average of 184 mgd as agreed upon in the Water Supply Agreement. Demand (above 184 mgd) associated with new growth in the BAWSCA member agency's service areas has to be met with local supply improvements and conservation measures as discussed in Sections 2.5.1.1 and 3.6.

As discussed in Section 2.5.1.1, the WSIP Phased Variant Program EIR was certified in October 2008. As of this writing, many of the SFPUC system reliability improvements are currently underway; others are currently undergoing environmental review but have not yet received environmental clearance to proceed. Without the assumed increase in the SFPUC system reliability, the effects of water supply shortfalls would increase; conservation would be necessary in over 50 percent of all years.

As a result of the analyses conducted in this WSA, it appears based on the functional uniqueness of the supply operations within the Regional Water System, only under specific dry year conditions when treated water deliveries are curtailed by 20 percent could a potential supply shortfall occur. Therefore, this WSA concludes that Cal Water and the BGD have adequate supplies to meet customer demand in all years including the demand of the proposed project, maximum development under the ABAG 2009 Projections and existing and planned future uses. In the event of a supply shortfall when deliveries are curtailed by 20 percent, Cal Water, through its water shortage contingency plan can impose supply curtailments and subsequent stages of demand reductions to balance demand against curtailed supplies.

5.1 WSA Findings

Regarding the availability of water supplies to serve the proposed project, beginning in 2010 this WSA finds as follows:

- In years of normal and above-normal precipitation combined with development of the SFPUC's local WSIP water supply sources, Cal Water and the BGD have adequate supplies to serve the proposed project, maximum development under the ABAG 2009 Projections and existing and planned future uses.
- In critical dry and multiple-dry-year events, when the SFPUC could impose 20 reductions in its supply, Cal Water and the BGD have in place a water shortage contingency plan to balance supply and demand. With a water shortage contingency plan in place, plus the addition of supplies developed through the BAWSCA Long-Term Water Supply Strategy combined with SFPUC's WSIP improvements, this WSA finds that Cal Water and the BGD have sufficient water supplies available to serve its customers including the demand of the proposed project, maximum development under the ABAG 2009 Projections and existing and planned future uses.

6.0 REFERENCES

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APPENDICES

Appendix A:	**ABAG Growth Projections for Menlo Park and Water Demand Projection Calculations**
Appendix B:	**Bear Gulch District 2005 UWMP Section 4 Water Shortage Contingency Plan**
Appendix C:	**Long-Term Reliable Water Supply Strategy Executive Summary**

APPENDIX A

ABAG Growth Projections for Menlo Park and Water Demand Projection Calculations

San Mateo County Population

Jurisdictional Boundary	2000	2005	2010	2015	2020	2025	2030	2035
Atherton	7,194	7,300	7,400	7,500	7,600	7,600	7,600	7,600
Belmont	25,123	25,500	25,700	26,400	26,900	27,700	28,100	28,600
Brisbane	3,597	3,700	3,900	4,600	5,300	6,100	7,000	7,700
Burlingame	28,158	28,300	28,400	29,900	31,700	32,900	34,000	35,100
Colma	1,187	1,500	1,600	1,700	1,800	1,900	1,900	2,000
Daly City	103,625	104,800	105,600	111,700	118,000	122,700	129,700	136,900
East Palo Alto	29,506	32,200	32,700	34,900	37,100	39,200	41,400	43,300
Foster City	28,803	29,900	30,100	31,000	31,700	32,300	33,000	33,600
Half Moon Bay	11,842	12,600	13,000	13,200	13,400	13,600	13,800	13,900
Hillsborough	10,825	11,000	11,100	11,500	12,000	12,500	13,000	13,400
Menlo Park	30,785	30,700	31,700	33,300	34,600	35,800	36,700	38,500
Millbrae	20,718	20,900	21,600	22,600	23,600	24,700	25,700	26,700
Pacifica	38,390	38,700	39,000	39,100	39,300	39,500	39,600	39,700
Portola Valley	4,462	4,500	4,500	4,500	4,500	4,500	4,500	4,500
Redwood City	75,402	75,100	76,100	79,800	84,400	88,700	92,400	96,200
San Bruno	40,165	41,400	43,000	45,600	48,600	51,200	53,400	55,800
San Carlos	27,718	28,200	28,400	29,400	30,900	32,000	32,700	33,300
San Mateo	92,482	94,700	95,200	100,200	105,700	111,100	116,200	121,500
South San Francisco	60,552	61,700	63,200	66,600	69,700	72,500	75,200	77,700
Woodside	5,352	5,600	5,700	5,600	5,600	5,700	5,700	5,700
Unincorporated	61,277	63,600	65,400	67,800	68,900	70,200	71,200	71,300
San Mateo County	**707,163**	**721,900**	**733,300**	**766,900**	**801,300**	**832,400**	**862,800**	**893,000**

San Mateo County Households

Jurisdictional Boundary	2000	2005	2010	2015	2020	2025	2030	2035
Atherton	2,413	2,440	2,490	2,510	2,530	2,540	2,560	2,580
Belmont	10,418	10,640	10,740	10,980	11,240	11,450	11,640	11,880
Brisbane	1,620	1,690	1,730	2,040	2,330	2,690	3,070	3,410
Burlingame	12,511	12,610	12,700	13,310	13,940	14,580	15,220	15,860
Colma	327	440	460	470	480	490	500	520
Daly City	30,777	31,210	31,540	33,230	34,950	36,700	38,600	40,520
East Palo Alto	6,976	7,620	7,780	8,280	8,790	9,300	9,790	10,260
Foster City	11,613	12,090	12,210	12,610	12,930	13,250	13,570	13,880
Half Moon Bay	4,004	4,330	4,440	4,500	4,560	4,640	4,680	4,730
Hillsborough	3,689	3,750	3,810	3,950	4,090	4,250	4,410	4,560
Menlo Park	12,387	12,410	12,850	13,340	13,850	14,350	14,880	15,430
Millbrae	7,956	7,980	8,200	8,510	8,830	9,150	9,490	9,820
Pacifica	13,994	14,160	14,320	14,360	14,410	14,480	14,550	14,600
Portola Valley	1,700	1,720	1,730	1,730	1,740	1,750	1,760	1,780
Redwood City	28,060	28,220	28,600	29,900	31,400	32,920	34,540	36,260
San Bruno	14,677	15,210	15,820	16,640	17,500	18,360	19,230	20,130
San Carlos	11,455	11,710	11,830	12,250	12,760	13,230	13,540	13,840
San Mateo	37,338	38,400	38,700	40,760	43,140	45,620	48,090	50,580
South San Francisco	19,677	20,130	20,640	21,750	22,840	23,920	25,010	26,090
Woodside	1,949	2,010	2,030	2,040	2,040	2,050	2,050	2,060
Unincorporated	20,563	21,300	21,780	22,520	23,000	23,500	23,790	23,830
San Mateo County	**254,104**	**260,070**	**264,400**	**275,680**	**287,350**	**299,220**	**310,970**	**322,620**

San Mateo County Jobs

Jurisdictional Boundary	2000	2005	2010	2015	2020	2025	2030	2035
Atherton	2,830	2,540	2,590	2,610	2,630	2,650	2,670	2,690
Belmont	7,710	6,880	7,080	8,110	9,170	10,280	11,330	12,390
Brisbane	7,440	8,180	8,640	10,250	12,180	14,300	16,420	18,500
Burlingame	28,180	22,430	22,890	24,700	26,720	29,050	32,130	34,880
Colma	3,150	3,180	3,240	3,450	3,700	3,950	4,200	4,450
Daly City	16,450	17,230	17,940	20,800	24,300	26,800	29,160	31,580
East Palo Alto	3,040	2,150	2,300	3,440	5,060	6,120	6,800	7,080
Foster City	18,480	14,230	14,510	15,310	16,220	17,230	18,130	19,140
Half Moon Bay	5,270	5,100	5,190	5,420	5,650	5,880	6,120	6,360
Hillsborough	2,130	1,660	1,680	1,800	1,930	2,060	2,190	2,330
Menlo Park	36,130	25,880	26,350	26,670	27,080	30,010	33,060	35,990
Millbrae	7,020	6,880	7,050	7,660	8,450	9,340	10,300	11,200
Pacifica	5,570	6,180	6,350	6,750	7,010	7,280	7,490	7,750
Portola Valley	1,670	1,740	1,750	1,790	1,830	1,850	1,880	1,910
Redwood City	57,980	50,200	51,230	55,030	58,520	62,740	66,600	70,250
San Bruno	17,050	13,860	14,130	15,420	17,540	20,070	22,550	24,990
San Carlos	19,590	15,560	15,930	16,950	18,280	19,850	21,370	22,770
San Mateo	50,840	44,500	45,450	49,120	53,760	58,670	63,070	67,290
South San Francisco	45,150	42,240	43,080	45,350	48,290	52,390	55,840	59,470
Woodside	2,420	2,450	2,510	2,520	2,530	2,540	2,550	2,560
Unincorporated	48,490	44,280	46,430	50,220	53,550	56,790	59,430	62,280
San Mateo County	**386,590**	**337,350**	**346,320**	**373,370**	**404,400**	**439,850**	**473,290**	**505,860**

San Mateo County Priority Development Areas

	Population		Households		Jobs	
	2010	2035	2010	2035	2010	2035
El Camino Real	141,400	217,710	50,984	78,654	74,096	142,450
Bayshore Neighborhood	4,175	6,779	1,505	2,449	685	1,216
Mission Street Corridor to Colma BART	2,288	7,850	825	2,836	1,113	4,723
Menlo Park El Camino Real Corridor and Downtown	2,113	5,058	762	1,827	2,611	7,784
Millbrae Station Area	451	1,988	162	718	930	3,244
Downtown Redwood City	2,423	10,014	874	3,618	6,557	10,143
San Bruno Transit Corridors	11,169	20,937	4,027	7,564	4,868	12,713
San Carlos Railroad Corridor	915	4,147	330	1,498	1,169	5,116
Downtown San Mateo	1,422	4,524	513	1,634	4,414	7,122
San Mateo Rail Corridor	153	5,875	55	2,123	1,457	5,931
San Mateo El Camino Real	153	4,954	55	1,790	1,604	4,890
San Francisco/San Mateo Bi-County Area	71	3,693	25	1,334	1,600	3,218
Total San Mateo County PDAs	**151,288**	**246,787**	**54,549**	**89,158**	**84,720**	**165,299**

Note: Individual PDA totals do not add up to end total. Several PDAs overlap in geography. End total has been adjusted for geographic overlaps.

APPENDIX A: Growth Project Calculations from ABAG 2009, and 2005 UWMPs

		2009 ABAG BGD Service Area							
	2005	2010	2015	2020	2025	2030	2035	hange (2010-2035)	
Populations									
Atherton		7400	7500	7600	7600	7600	7600	200	
Proposed Project Area with Majority of Growth in MP portion of BGD		2113	2702	3291	3880	4469	5058	2945	589.00
Portola Valley		4500	4500	4500	4500	4500	4500	0	
Woodside		5700	5600	5600	5700	5700	5700	0	
Subtotal		19713	20302	20991	21680	22269	22858	3145	
Unincorporated San Mateo Cty (Totals)		65400	67800	68900	70200	71200	71300	5900	
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks		65400	65577.12	65754.24	65931.36	66108.48	66285.6	885.6	
Totals									

Households	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	hange (2010-203	**15%**
Atherton	2440	2490	2510	2530	2540	2560	2580	90	
Proposed Project Area with Majority of Growth in MP portion of BGD		762	975	1188	1401	1614	1827	1065	213
Menlo Park with proposed project area	12,410	12,850	13,340	13,850	14,350	14,880	15,430		
Portola Valley	1720	1730	1740	1730	1750	1760	1780	50	
Woodside	2010	2030	2040	2040	2050	2050	2060	30	
Subtotal	6170	18660	20605	21338	22091	22864	23677	5017	
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks (estimated at 15% of unincorporated County projections)	3195	3267	3378	3450	3525	3569	3575	308	
Unincorporated San Mateo Cty (Totals)	21300	21780	22520	23000	23500	23790	23830	2050	307.5
									61.5

Jobs	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	hange (2010-2035)	
Atherton	2540	2590	2610	2630	2650	2670	2690	100	
Proposed Project Area with Majority of Growth in MP portion of BGD	2611	2611	3645.6	4680.2	5714.8	6749.4	7784	5173	1034.6
Menlo Park	19814	20174	20419	20732	22976	25311	27554		0.2344
Portola Valley	1740	1750	1790	1830	1850	1880	1910	160	0.7656
Woodside	2450	2510	2520	2530	2540	2550	2560	50	
Subtotal	29155	29635	30984	32403	35730	39160	42498	12863	
Unincorporated San Mateo Cty (Totals)		46430	50220	53550	56790	59430	62280	15850	100
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks	10160	10360	10380	10400	10420	10440	10460	100	total jobs in 4 areas
Totals (Subtotal plus 31 new HH each year in W.MP, Ladera, N. FO and MO)	36703.7	37383.6	37718.6	38122.4	40435.7	42850.7	45173.9	7790.4	
Current Jobs synomous with Atherton Jobs (same locals in and around Menlo Park and Stanford) and project of jobs. Population, Households and Jobs are the best guess estimates based on conversation with W. Gibson at San Mateo Cty Long-range Planning considering the ABAG 2009 Projections with incremental growth in these areas met through SFR, small MFR and no zoning changes. All existing Community Plans are held in place.									
Limited by redevelopment assume no significant growth in Jobs									

Households									
Demand Totals from ABAG 2009 Projections		2009 ABAG BGD Service Area							
		2010	**2015**	**2020**	**2025**	**2030**	**2035**		**112**
Households with Project (all MF Residential)		0	0	0	0	0	0		**42.42**
Household Water Demand (gpd)		-	-	-	-	-	-		1.00E+06
		-	-	-	-	-	-		365
Jobs with Project		37383.56	37718.552	38122.448	40435.656	42850.736	45173.944		
Jobs Water Demand (gpd)		1,585,810.62	1,600,020.98	1,617,154.24	1,715,280.53	1,817,728.22	1,916,278.70		
		1.59	1.60	1.62	1.72	1.82	1.92		

APPENDIX A: Growth Project Calculations from ABAG 2009, and 2005 UWMPs

Total Water Demand (Existing plus new growth)		1.59	1.60	1.62	1.72	1.82	1.92		
Annual (gallons in millions)		578.82	584.01	590.26	626.08	663.47	699.44		
		1776.336039	1792.253687	1811.445413	1921.360967	2036.117123	2146.507843		

Households								
Menlo Park (2005 UWMP Residential connections)								
	2001	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Residential Household Projections from Menlo Park (2005 MP UWMP) (growth percentage used for years ending in "5"	3,473	3,545	3,598	3,672	3,765	3,843	3,902	3,983
Total Household Projections from BGD 2005 UWMP	12,387	16,316	16,526	16,739	16,954	17,172	17,392	17,632
Menlo Park with proposed project area (ABAG 2009 Projections)	12,410	12,850	13,340	13,850	14,350	14,880	15,430	
Residential Household Projections from Menlo Park (2005 MP UWMP) (growth percentage used for years ending in "5"	3,473	3,545	3,598	3,672	3,765	3,843	3,902	3,983
Total Households in Menlo Park w/o HH in MPMWD service area (MP 2005 UWMP & ABAG 2009 Projections)	8,937	9,305	9,742	10,178	10,585	11,037	11,528	

1106

BGD Residential Service connections in Menlo Park (2005 BGD UWMP)
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks

USE THIS ONE							Change (2010 and 2035)	
Households	**2,010**	**2,015**	**2,020**	**2,025**	**2,030**	**2,035**	**25**	
Atherton	2,490	2,510	2,530	2,540	2,560	2,580	90	
Proposed Project Area with Majority of Growth in MP portion of BGD	762	975	1,188	1,401	1,614	1,827	1,065	
Total Households in Menlo Park w/o HH in MPMWD service area (MP 2005 UWMP & ABAG 2009 Projections) with Proposed Project	9,305	9,742	10,178	10,585	11,037	11,528	2,223	
Portola Valley	1,730	1,740	1,730	1,750	1,760	1,780	50	
Woodside	2,030	2,040	2,040	2,050	2,050	2,060	30	
Subtotal	15,555	16,032	16,478	16,925	17,407	17,948	2,393	
West Menlo Park, Ladera, North Fair Oaks and Menlo Oaks (estimated at 15% of unincorporated County projections)	1,211	1,273	1,334	1,396	1,457	1,519	308	308
Total Household Projections	16,766	17,305	17,812	18,321	18,865	19,467	2,701	1235
		538	507	509	544	602		

Total Connections								
BGD 2005 UWMP Scenario 2 (Preferred Growth) Total	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	
Connections		17,962.00	18,178.00	18,395.00	18,615.00	18,839.00	X	
AFY		12,399.00	12,542.00	12,686.00	12,832.00	12,981.00	X	
MGD		11.07	11.20	11.33	11.46	11.59	X	
HH Connections	16,316	16,526	16,739	16,954	17,172	17,392	17,632	
BGD 2005 UWMP Scenario 2 (Preferred Growth) Total Water								
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	0.987292751
HH Connections	16,316	16,526	16,739	16,954	17,172	17,392	17,632	
BGD 2005 UWMP AFY	10,507.0	10,641.0	10,778.0	10,916.0	11,057.0	11,199.0	11353.5	1.00E+06
BGD 2005 UWMP MGD	9.4	9.5	9.6	9.7	9.9	10.0	10.1	365
Total Household Projections (ABAG 2009 Projections in BGD Service Area)	9365	18822	19410	19928	20450	20976	21523	2700 325851
Difference is New Connections in BGD Service Area (Assume MF)		2,296.14	2,671.00	2,973.56	3,278.00	3,583.60	3,890.50	
Demand from New Connections in BGD Service Area (assume MF at 98.7 gpd) GPD		257,168.22	299,152.00	333,038.57	367,136.00	401,363.59	435,736.00	

APPENDIX A: Growth Project Calculations from ABAG 2009, and 2005 UWMPs

Demand from New Connections in BGD Service Area (assume MF at 98.7 gpd) MGD		0.26	0.30	0.33	0.37	0.40	0.44	
Total HH New Demand in BGD Service (MGD)		9.76	9.92	10.08	10.24	10.40	10.57	
estimated based on incremental growth over prior 20 years								

USE THIS ONE								
Jobs	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	
CII Connections plus Other (BGD 2005 UWMP)	1433	1436	1439	1441	1443	1451	1453	20
BGD 2005 UWMP AFY	1,753.0	1,758.0	1,764.0	1,770.0	1,776.0	1,782.0	1,787.0	
BGD 2005 UWMP MGD	1.565	1.569	1.575	1.580	1.586	1.591	1.6	
Total Growth in Jobs from ABAG 2009 Projections	36703.7	37383.6	37718.6	38122.4	40435.7	42850.7	45173.9	
	1.56	1.59	1.60	1.62	1.72	1.82	1.92	
estimated based on CCI plus Other incremental growth over prior 20 years								

Jobs (based on 2007-2008 BAWSCA Survey)	**2005 (assume a**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**		
CII connections plus Other (FY 2007-2008) based on 2007-2008 BAWSCA Survey		1530	1534	1538	1542	1546	1550	1530	4
AFY		1781.24							
MGD		1.59	1.60	1.62	1.72	1.82	1.92		Connections
Total Growth in Demand between jobs and HH (row 91 and row 99)									0.0060
									0.6
Households (based on 2007-2008 BAWSCA Survey)		**2010**	**2015**	**2020**	**2025**	**2030**	**2035**		**2010**
HH Connections with long term growth rate		16766	17306	17846	18387	18927	19467	2701	16766
MGD based on growth rate and 655 gpd/account based on current usage		11.01	11.34	11.69	12.04	12.40	12.75	540.1710345	655
AFY		12332.78	12697.44	13093.76	13490.08	13886.40	14282.72		
total		12.60							
plus losses									
CII based on jobs projected by ABAG 2009 Projections									

USE THIS ONE		**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	check line
Households (based on 2007-2008 BAWSCA Survey) HH Connections with long term growth rate of 0.006% per year or 108 new HH every year or 540 new HH every 5 years		16766	17306	17846	18387	18927	19467	540
MGD based on growth rate and 655 gpd/account based on current usage		11.01	11.01	11.01	11.01	11.01	11.01	
Water Demand with additional ABAG HH Growth Projections of 540 new units every 5 years (112 gpd/unit from Santa Clara data)		11.07	11.13	11.19	11.25	11.31	11.37	0.30
CII Connections based on 2007-2008 BAWSCA Survey with incremental growth		1530	1534	1538	1542	1546	1550	
Growth in Jobs from ABAG 2009 Projections		37383.6	37718.6	38122.4	40435.7	42850.7	45173.9	
Growth in Demand based 42.42 gpd per employee (SF assumptions)		1.59	1.60	1.62	1.72	1.82	1.92	0.33
HH and Jobs Projected Water Demand in BGD Service Area		12.66	12.73	12.81	12.97	13.13	13.29	0.63
Losses at 4.26%		0.25	0.25	0.25	0.25	0.25	0.25	0.63
Total Projected Water Demand in BGD Service Area with losses		12.91	12.98	13.06	13.22	13.38	13.54	

60480
0.06
0.07
262269
4.100%
4.09%
4.089617972

APPENDIX B

Bear Gulch District 2005 UWMP Section 4 Water Shortage Contingency Plan

4 Water Shortage Contingency Plan

California Water Service Company has and currently meets the demand for the Bear Gulch District. However, the sources for the district may be limited due to climate changes in addition to unforeseen failures or forces of nature, such as earthquakes or regional power failures. During such events, significant shortages in water supply may occur. As such, a contingency plan for significant shortages is described in the following section.

4.1 Stages of Action

California Water Service Company has developed a four-stage rationing plan. The plan includes voluntary and mandatory stages. Approval from the CPUC must be obtained prior to implementation of mandatory restrictions, section 4.1.2.

Table 4.1-1: Consumption Reduction Methods (Table 27)

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Voluntary	1	10
Voluntary or Mandatory	2	20
Mandatory	3	35
Mandatory	4	50

4.1.1 Actions to Be Undertaken By California Water Service Company

The following outline lists the actions to be taken during periods when a reduction in consumption is required:

Stage 1

- California Water Service Company maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, monthly bill inserts, and conservation messages printed in local newspapers.
- Educational programs in area schools are also ongoing.

Stage 2

- California Water Service Company will aggressively continue its public information and education programs.
- Ask consumers for 10 to 20 percent voluntary or mandatory water use reductions.
- Prior to implementation of mandatory reductions, obtain approval from CPUC.
- Lobby for passage of drought ordinances by appropriate governmental agencies.

Stage 3

- Implement mandatory reductions after receiving approval from CPUC.
- Maintain rigorous public information campaign explaining water shortage conditions.

- Water use restrictions go into effect; prohibited uses can include watering resulting in gutter flooding, using a hose without shutoff device, filling of pools or fountains, etc.
- Limiting landscape irrigation by restricting the hours of the day and or days of the week during which water for irrigation can be used.
- Monitor production weekly for compliance with necessary reductions.
- Installation of a flow restrictor on the service line of customers who consistently violate water use restrictions.

Stage 4

- All of steps taken in prior stages intensified.
- Discontinuance of water service to customers who consistently violate water use restrictions.
- Monitor production daily for compliance with necessary reductions.
- More restrictive conditions for, or a prohibition of, landscape irrigation.

4.1.2 Mandatory Prohibitions

Due to California Water Service Company's investor-owned status, it is not authorized to pass any ordinances. However, conservation ordinances have been implemented by municipalities at the urging of California Water Service Company (see Appendix F). California Water Service Company's Bear Gulch District participates with 29 other member agencies in the Bay Area Water Supply and Conservation Agency. The Agency coordinates school education and public information programs, as well as other water management activities.

Should conditions warrant mandatory reductions, California Water Service Company will request authority to add Tariff Rule 14.1, Mandatory Water Conservation Plan (see Appendix E), to existing tariffs for a district. Included in Rule 14.1 is Section A. Conservation - Nonessential or Unauthorized Water Use which prohibits use of water for filling or refilling of swimming pools, use of water that results in flooding or runoff in gutters, etc.

4.1.3 Consumption Limits

California Water Service Company maintains extensive water use records on individual metered customer accounts. These records are reviewed in the districts on a daily basis to identify potential water loss problems.

4.1.4 Monitoring Procedure during Periods of Water Shortages

The following procedures will take place during all stages of water shortages:

- Daily production figures are reported to and monitored by the district managers on a daily basis.
- Allocation for each customer is the percentage of the quantity of water used by such customer during the comparable billing periods during the historical base period (usually a non-drought year). Customer classes may have differing allocations. Percentage reductions may vary seasonally.

- Each customer will be notified of their allotment for the succeeding three months in their monthly bill. Any customer may appeal their allocation on the basis of use or incorrect calculation. Appeals shall be processed in the district on a case by case basis.
- No customer will receive a monthly allocation of less than 6 CCF (hundred cubic feet) and no dwelling unit will receive a monthly allocation of less than 4 CCF.

4.1.5 Penalties or Charges for Excessive Use

For all customers, an excess use penalty per CCF of water used in excess of the applicable allocation during each billing period shall be charged. A distinction may be made between residential and non-residential penalties. California Water Service Company, after one written warning, shall install a flow-restricting device on the service line of any customer observed by Cal Water personnel to be using water for any non-essential or unauthorized use defined in Section A of Tariff Rule 14.1 (see Appendix E).

Table 4.1-2: Penalties and Charges (Table 28)

Penalties or Charges	Stage When Penalty Takes Effect
Written warning	1
Flow-restricting device	3
Discontinuance of water service	4

4.1.6 Analysis of Revenue and Expenditure Impacts

California Water Service Company is an investor-owned water utility and, as such, is regulated by the CPUC. On March 8, 1989, the Commission instituted an investigation to determine what actions should be taken to mitigate the effects of water shortages on the State's regulated utilities and their customers. In decision D. 90-07-067, effective July 18, 1990, the Commission authorized all utilities to establish memorandum accounts to track expenses and revenue shortfalls caused both by mandatory rationing and by voluntary conservation efforts. Subsequently, D. 90-08-55 required each class A utility (more than 10,000 connections) seeking to recover revenues from a drought memorandum account to submit for Commission approval, a water management program that addresses long-term strategies for reducing water consumption. Utilities with approved water management programs were authorized to implement a surcharge to recover revenue shortfalls recorded in their drought memorandum accounts.

However, the Commission's Decision 94-02-043 dated February 16, 1994, states:

> *10. Now that the drought is over, there is no need to track losses in sales due to residual conservation.*
> *11. The procedures governing voluntary conservation memorandum accounts (see D.92-09-084) developed in this Drought Investigation will no longer be available to water companies as of the date of this order.*
> *12. Procedures and remedies developed in the Drought Investigation that are not specifically authorized for use in the event of future drought in these Ordering Paragraphs will no longer be available to water*

companies as of the date of this order except upon filing and approval of a formal application.
(CPUC Decision 94-02-043, Findings of Fact, paragraphs 10-12)

It was at this time that Cal Water significantly curtailed conservation activities in its districts. At the time that triggers for voluntary or mandatory reductions should occur in the future, Cal Water will determine if a filing to the CPUC is necessary to enforce the reductions and to begin tracking lost sales from the required reductions.

4.1.7 Implementing the Plan

Section 357 of the Water Code requires that suppliers that are subject to regulation by the CPUC shall secure its approval before imposing water consumption regulations and restrictions required by water shortage emergencies.

4.1.8 Supply Shortage Triggers

The majority of the Bear Gulch District's water supply is purchased from the SFPUC. Rationing stages will be implemented at the request of SFPUC due to any reduction of supply. Triggers stated herein automatically implement the appropriate stage of Action unless the CPUC adopts findings to implement a less restrictive Stage. Shortages may trigger a change in stage at any time.

4.2 Shortage Allocation Plan

The SFPUC can meet the demands of its retail and wholesale customers in years of average and above-average precipitation. The Master Contract allows the SFPUC to reduce water deliveries to wholesale customers during periods of water shortage. Under the Master Contract, reductions to wholesale customers are to be based on each agency's proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplanted by a water conservation plan agreed to by all parties.

The Master Contract's default formula discouraged SFPUC's wholesale customers from reducing purchases from SFPUC during periods of normal water supply through demand management programs or development of alternative supplies. To overcome this problem, SFPUC and its wholesale customers adopted an Interim Water Shortage Allocation Plan (IWSAP) in calendar year 2000 (Appendix H). This IWSAP applies to water shortages up to 20% on a system-wide basis and will remain in effect through June 2009.

The IWSAP has two components. The Tier One component of the IWSAP allocates water between San Francisco and the wholesale customer agencies collectively. The IWSAP distributes water between two customer classes based on the level of shortage.

Table 4.2-1: Shortage Allocation Plan		
Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Suburban Purchasers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The Tier Two component of the IWSAP allocates the collective wholesale customer share among each of the 28 wholesale customers. This allocation is based on a formula that takes three factors into account, the first two of which are fixed: (1) each agency's Supply Assurance from SFPUC, with certain exceptions, and (2) each agency's purchases from SFPUC during the three years preceding adoption of the Plan. The third factor is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.

The IWSAP allows for voluntary transfers of shortage allocations between SFPUC and any wholesale customer and between wholesale customer agencies. Also, water "banked" by a wholesale customer, through reductions in usage greater than required, may also be transferred.

The IWSAP will expire in June 2009 unless extended by San Francisco and the wholesale customers. The projected amount of water which California Water Service Company expects to receive from SFPUC during dry years after 2010 [shown in Table 4.2-2] has been calculated by SFPUC on the assumption that the Plan will in fact be extended.

Table 4.2-2: SFPUC System Wide Cutback						
		Purchase Request Year 2005	One Critical Dry Year	Multi Dry Years		
				Year 1	Year 2	Year 3
System -Wide Shortage in Percent		0%	10%	10%	20%	20%
BAWSCA Allocation	MGD	177.9	157.4	157.4	136.8	136.8
	AFY	199,273	176,310	176,310	153,235	153,235
CalWater	MGD	38.25	31.32	31.32	27.23	27.23
	AFY	42,845	35,083	35,083	30,501	30,501
CalWater Percent Reduction From Normal		0.0%	18.1%	18.1%	28.8%	28.8%

Currently, the IWSAP does not have any provisions for system wide cut backs for greater then 20%. If a severe drought or a catastrophic event should occur, and such cut back is mandatory, SFPUC, BAWSCA, and other water agencies/users would renegotiate the IWSAP and determine the percentage of water that would be allocated to California Water Service Company.

APPENDIX C

Long-Term Reliable Water Supply Strategy Executive Summary

Executive Summary

The Bay Area Water Supply and Conservation Agency's (BAWSCA's) water management objective is to ensure that a reliable, high quality supply of water is available where and when people within the BAWSCA service area need it. BAWSCA is developing a strategy to meet the projected water needs of its member agencies through 2035 and to increase their water supply reliability under normal and drought conditions. A reliable supply of water is required to support the health, safety, employment, and economic opportunities of the existing and expected future residents in the BAWSCA service area and to supply water to the agencies, businesses, and organizations that serve those communities.

The Long-Term Reliable Water Supply Strategy (Strategy) is proceeding in three phases: Phase I (now complete) defined the magnitude of the water supply issue and the scope of work for the Strategy; Phase II will continue the development of the Strategy through detailed analysis of the water supply management projects, and development of the implementation plan for the Strategy; and Phase III will include the implemention of specific water supply management projects of the Strategy.

Water Demands in the BAWSCA Service Area are Projected to be Greater than Supplies

The number of people living and working within the BAWSCA service area is projected to increase by approximately 400,000 (i.e., 22 percent) between now and 2035 (Maddaus 2009). Even after accounting for savings associated with the existing and planned water conservation activities, water demands within the BAWSCA service area are projected to exceed available supplies after 2018. Up to 25 million gallons per day (mgd) of additional water supply may be needed by 2035 to meet the needs of the current and future residents, businesses, and organizations in normal years. Even more water (i.e., up to 76 mgd) will be needed each year during extended drought conditions.

Existing Water Supplies are Subject to Reductions

The San Francisco Public Utilities Commission (SFPUC) Regional Water System provides approximately two-thirds of the BAWSCA service area water supply. This source of supply can be, and has been, affected by a variety of factors including drought, regulatory actions, policy decisions, and climate change. The extent and frequency of such impacts in the future are uncertain.[1]

[1] The July 2009 Water Supply Agreement presents the wholesale customer share of SFPUC supply under different drought conditions (City and County of San Francisco and Wholesale Customers 2009). Under normal conditions, wholesale customers receive 69.4% of the total available supply, or 184 mgd of 265 mgd. For the largest cutback evaluated, a 20% reduction in supply system-wide (212 mgd available), wholesale customers would receive 62.5% (or 132.5 mgd) of the overall SFPUC supply available. This 20% system-wide drought reduction

Many of the member agencies also have other water supply sources in addition to their SFPUC supplies. These sources of supply, especially those originating in the Delta, are also subject to cutbacks during drought, and even under normal hydrologic conditions. These reductions in supply may be even more severe than the effect on the SFPUC supply.

The Consequences of Supply Shortfalls are Regional and Severe

Without sufficient water supplies to meet projected future needs on an average annual basis, future residential and economic development could be curtailed within the BAWSCA service area and relocated elsewhere. This could mean loss of new housing, jobs, manufacturing, and community services. This could occur under normal conditions.

If the water supplies currently available to the BAWSCA member agencies continue to be unreliable and subject to cutbacks, then existing and future customers will be increasingly affected. This is not only true under normal conditions, but is exacerbated during drought events. Water supply cutbacks, when they occur, have significant economic and lifestyle impacts to residents and businesses.

The 2007 study, "An Economic Evaluation of the Water Supply Reliability Goal in the SFPUC Water System Improvement Plan," prepared by William Wade, Ph.D., a resource economist, estimated that a subset of industrial sectors that are particularly sensitive to curtailments in water supply (i.e., computer/electronic manufacturers, food and beverage manufacturers, and biotechnology) would be significantly affected by drought. The impact of a 20% water supply deficiency on shipments from these industries located in the wholesale customer service area was estimated at nearly $7.7 billion annually, for each year the drought persists. (Wade 2007)

The water supply challenges faced by the BAWSCA member agencies are regional and not limited to individual cities or water districts as the residents and voters in one community typically work or own businesses in another community within the BAWSCA service area. Therefore, a water supply shortfall in one BAWSCA agency that results in loss of jobs or other impacts can detrimentally affect the customers of another BAWSCA agency, even if that agency itself is not facing a supply shortfall.

BAWSCA's Strategy to Address the Identified Regional Water Supply Issues

BAWSCA is developing the Strategy to quantify when, where, and how much additional supply reliability and new water supplies are needed throughout the BAWSCA service area through 2035. The Strategy will then identify water supply

---

132.5 mgd) of the overall SFPUC supply available. This 20% system-wide drought reduction scenario results in a total 28% reduction in supplies for wholesale customers. Individual agency cutbacks may be higher depending on the allocation of the reduced supply.

management projects that can be cost-effectively implemented by a single member agency, by a collection of the member agencies, or by BAWSCA in an appropriate timeframe to meet the identified needs.

In all instances, and in accordance with a key BAWSCA principle, the water supply management projects that are developed as part of this Strategy will be paid for by those agencies that benefit from their development.

Actions by BAWSCA and Member Agencies are Required to Implement the Strategy

Success of the Strategy will depend on timely and appropriate actions by the BAWSCA Board and by the individual member agencies. Progress on the development of the Strategy will be monitored closely to ensure that a reliable, high quality supply of water is available where and when people within the BAWSCA service area need it.

Principles Inform Strategy Development

Based on discussions with member agency representatives, five principles have been identified that will continue to inform the development of the Strategy:

1. The Strategy must add value to BAWSCA member agency customers.

2. The Strategy must provide certainty for future planning and development.

3. The Strategy must not result in the uncompensated or involuntary reallocation of member agency assets.

4. The Strategy must be consistent with water transfer provisions of the Water Supply Agreement (WSA) between the SFPUC and its Wholesale Customers.

5. The projects that are developed as part of the Strategy will be paid for based upon cost allocation methods that will be agreed upon by BAWSCA and the member agencies.

A Wide Range of Water Supply Management Projects will be Evaluated in Phase II

The inventory of possible water supply management projects to be evaluated in Phase II was developed pursuant to the principle that no project would result in any uncompensated or involuntary reallocation of member agency assets. The project inventory was developed based on:

- Reviewing BAWSCA member agency 2005 Urban Water Management Plans (UWMPs)[2] and other publically-available documents;

- Identifying those projects that could create new sources of supply;

- Identifying those projects with a potential to increase yield beyond what an agency had planned to meet its own needs, or with a potential to accelerate the schedule to bring the supply online sooner than currently planned; and

- Incorporating review comments from BAWSCA member agencies regarding the update, addition or removal of projects to be evaluated in Phase II of the Strategy.

The identified projects are categorized based on their source of water. These potential sources include groundwater, recycled water, water transfers, surface water and reservoirs, desalination, expanded conservation, and localized water capture and reuse. Supply sources may differ in their ability to provide potable or non-potable supply or meet normal or drought year demands.

Furthermore, the identified projects have been classified based on their current level of development and location (i.e., within and outside of the BAWSCA service area), two characteristics critical to understanding how to incorporate projects into the long-term Strategy. Each project has therefore been classified as one of four types:

1. *Existing projects within the BAWSCA service area* that are under development by, or in partnership with, a BAWSCA member agency and that may have the potential to be expanded or to have the project timeline accelerated to either offset additional demand within the service area of the BAWSCA agency(ies) that is involved in the project, or to offset the demand of another BAWSCA agency(ies) through a sale, exchange, or transfer;

2. *Planned projects within the BAWSCA service area* that have been identified by a BAWSCA member agency which may have the potential to be expanded or to have the project timeline accelerated to either offset additional demand within the service area of the BAWSCA agency(ies) that is involved in the project, or to offset the demand of another BAWSCA agency(ies) through a sale, exchange, or transfer;

3. *Potential future new projects within the BAWSCA service area* that have not been specifically identified by a BAWSCA member agency to date, but that may have the potential to be developed to either offset additional demand within the service area of the BAWSCA agency(ies) that is involved in the project, or to offset the demand of another BAWSCA agency(ies) through a sale, exchange, or transfer; and

[2] Brisbane, Guadalupe Valley Municipal Improvement District, Purissima Hills Water District, Skyline County Water District (now part of California Water Service Company), and Stanford University did not complete UWMPs due to their small service areas.

4. *Existing, planned, or potential projects outside the BAWSCA service area* that may have the potential to be developed, to be expanded, or to have the project timeline accelerated to offset the demand of a BAWSCA agency(ies) through a sale, exchange, or transfer.

Strategy Evaluation Framework

In order to effectively evaluate and rank the potential water supply management projects, a decision process has been developed that is transparent, adaptable, and defensible. The decision process includes four levels of screening and evaluation:

1. *Preliminary "Fatal Flaw" Screening* – This step identifies those individual water supply management projects that either cannot be completed in time to meet the future demands of the BAWSCA member agencies within the Strategy planning horizon (i.e., by 2018 or 2035), or those projects with environmental impacts that would likely prohibit their implementation.

2. *Individual Water Supply Management Project Evaluation* – Individual water supply management projects will be grouped into supply categories (e.g., desalination, surface water, etc.). Each water supply management project will then be assessed using evaluation criteria to establish their relative ranking within each supply category. This will allow for accurate comparison of similar projects and will aid in the development of different water supply management portfolios.

3. *Portfolio Development* – Since no single water supply management project is likely to meet the future supply need, multiple water supply management projects will be combined into portfolios formulated to meet the entire supply need. Multiple portfolios will be developed to satisfy different objectives (e.g., least cost, 100% drought reliability, etc.) that will be identified for the Strategy. Additionally, because the portfolios will likely include multiple supply sources, they will increase the water supply diversity within the BAWSCA service area.

4. *Portfolio Evaluation* – This step will involve the assessment of the different water supply management portfolios based on the evaluation criteria. This will provide decision makers with the information needed to make informed decisions about supply management costs, impacts, benefits, and where to expend additional resources to gather additional information (e.g., field investigations).

Evaluation criteria have been developed to evaluate the water supply management projects and portfolios during the development of the Strategy. The proposed evaluation criteria address the Strategy planning objectives including: 1) increasing supply reliability; 2) providing a high level of water quality; 3) reducing cost impacts; 4) increasing potable water use efficiency; 5) reducing environmental impacts; and 6) increasing implementation potential.

The evaluation criteria will be used as part of an interactive decision process. BAWSCA and the member agencies will provide input on project and portfolio evaluation, criteria weighting, and other factors during the Phase II evaluation process.

Phasing of Work Streamlines Strategy Development

The Strategy is being developed in three phases. Phase I of the Strategy has been the development of the scope for the Strategy, including the development of this Report.

Phase II is the continutation of the Strategy through the development and analysis of alternative water supply management projects and groups of projects (portfolios) to meet the water supply needs of the member agencies in normal and drought years.

Developing specific recommendations and an implementation plan will require an extensive amount of analysis. This analysis is required to: 1) develop sufficient information on the water supply management projects, many of which are only identified as potential concepts, to ensure that the projects are feasible; and 2) develop a similar level of project-specific information to allow comparison between the projects.

Approach To Strategy Development Consists Of Multiple Phases

- Phase I – Scoping Report
- Phase II A – Develop Near-Term Recommendations
- Phase II B – Develop Mid-Term Projects and Conduct Field Investigations
- Phase II C – Develop Long-Term Recommendations
- Phase III – Implementation of Specific Water Supply Management Projects Identified as Part of the Strategy

Based on the information gathered for this Report (i.e., water demands, supply needs, potential projects and the evaluation framework) a phased approach seems most appropriate to identify potential opportunities to best address near-term normal and drought year supply needs, while concurrently developing a strategy to address the longer-term supply needs. The Phase II Strategy development process has three sub-phases:

- *Phase II A – Develop Near-Term Recommendations* – The work in Phase II A focuses on identifying and developing initial recommendations for implementation of near-term member agency and regional projects that will help member agencies meet normal and drought supply needs over the next decade. In addition, as part of Phase II A, recommendations will be made for potential mid-term projects that could be implemented during Phase II B or II C. Furthermore recommendations for field work that will be required to further characterize and demonstrate the feasibility of projects and will identification of the projects that will be includedin Phase II C (i.e., more detailed development and analysis) will be made in Phase II A.

- *Phase II B – Develop Mid-Term Projects and Conduct Field Investigations* –Phase II B will evaluate mid-term projects that were identified in Phase II A that should move forward as soon as possible, but that may require limited additional analysis or support. In addition, this phase includes the field and other investigations that are required to estimate certain project yields, feasibility, and cost. Phase II Bwill be performed after the initial evaluation of the project alternatives is completed in Phase II A, but could possibly occur before the completion of Phase II A. By phasing the Strategy this way, the field investigations will be focused on a limited number of potentially viable projects where the investigations are required to confirm their feasibility and other key information (i.e., yield).

- *Phase II C – Develop Long-Term Recommendations* – Phase II C will include updating of BAWSCA member agencies' supply need information and further evaluation of potential projects to meet the long-term supply out to 2035. Phase II C will also incorporate the Phase II A and Phase II B work into the development of an implementation plan to meet the near- and long-term supply needs for the member agencies for normal and drought conditions.

Phase III will be the implementation of specific water supply management projects identified as part of the Strategy. These projects may be developed by individual member agencies, groups of member agencies, or by BAWSCA and the BAWSCA board on behalf of the member agencies.

Figure ES-1 indicates the schedule for the Phase II work.

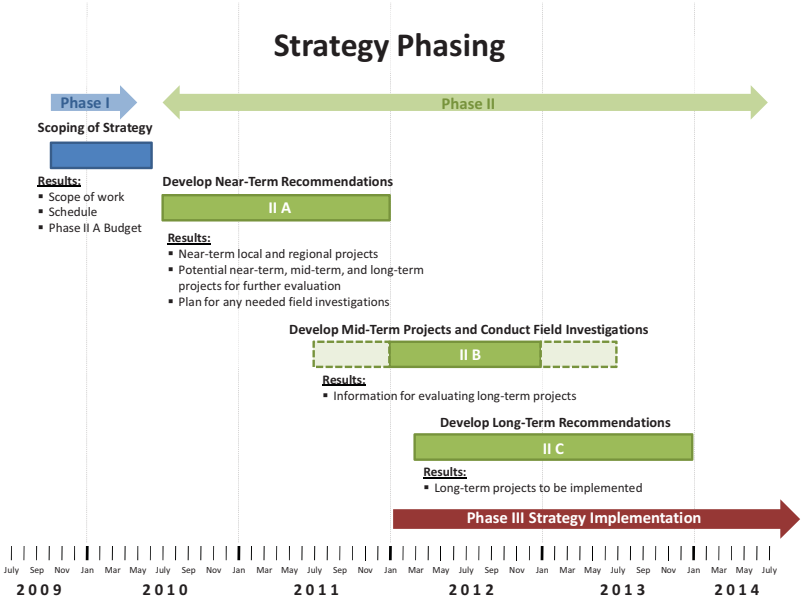


Figure ES-1
Strategy Phasing and Schedule

Phase II Scope Elements

The anticipated scope elements for Phases II A, B, and C are summarized in Table ES-1. Section 8 describes these phases and tasks in more detail.

Table ES-1: Anticipated Scope Elements	
Phase II A - Develop Near-Term Recommendations	
Task	***Description***
1	Update Water Demand and Supply Need
2	Update Agency Project Information
3	Update Regional Project Information
4	Perform Fatal Flaw Analysis and Screening of Agency and Regional Projects
5	Develop Tools to Evaluate Projects and Portfolios
6	Evaluate and Compare Projects and Portfolios
7	Develop Recommendations for Near-Term Projects, Phase II B Mid-Term Projects and Field Investigations, and Phase II C Long-Term Projects and Portfolios
8	Develop Scope and Budget for Phase II B
9	Develop Preliminary Scope and Budget for Phase II C Long-Term Recommendations
10	Prepare Phase II A Report
11	Project Management
Phase II B - Develop Mid-Term Projects and Conduct Field Investigations	
Task	***Description***
1	Finalize Work Plans, Bid Documents and Access Agreements
2	Field Investigations for Agency Projects
3	Field Investigations for Regional Projects
4	Support for Implementing Mid-Term Projects
5	Stakeholder Outreach (As needed)
6	Project Management
Phase II C – Develop Long-Term Recommendations	
Task	***Description***
1	Update Local Agency Need and Supply Information Based on Agency Updates
2	Determine Specific Supply Need by Agency and Region
3	Update Agency and Regional Project Information Based on Phase II B Field Work and Analysis
4	Update Economic Information for Agencies and Projects
5	Develop Portfolios to Address Near- and Long-term Supply Needs
6	Compare and Rank Projects and Portfolios
7	Develop Recommendations
8	Prepare Implementation Plan (Long-Term Recommendations)
9	Stakeholder Outreach
10	Project Management

The Phase II work will include additional technical expertise, including technical, environmental, and planning specialists to perform this work. The level of involvement required in each of these areas will depend on the specific projects that

are carried through the multiple phases, and level of analysis required to develop and evaluate them. The areas of expertise are summarized in Table ES-2.

Table ES-2
Technical Expertise Requirements for Phase II

Specialty	Sub-Area
Treatment Processes	Water quality
	Water treatment
	Desalination treatment
	Wastewater treatment
	Process engineers
Infrastructure	Pipeline engineers
	Electrical engineers
	Mechanical engineers
	Structural engineers
	Cost estimators
	Schedulers
Water Rights	Legal counsel
	Water rights experts
Water Transfers	Water transfer planners/facilitators
	Legal counsel
Groundwater	Groundwater modelers
	Hydrogeologists
Reservoirs	System modelers
	Hydrologists
	Distribution system modelers
Economics	Economists
	Systems engineers
	Rate specialists
Planning	Land use planners
	Water conservation specialists
	Rain/stormwater capture and greywater specialists
	Legal/institutional/permitting specialists
Environmental Analysis	California Environmental Quality Acta and National Environmental Policy Act specialists
Grant Writers	State and Federal grant specialists

Phase I Conclusions

BAWSCA members are faced with potentially significant water supply shortfalls under normal and drought conditions. The extent of the shortfalls depend on a variety of variables. BAWSCA has undertaken this project to develop a strategy for addressing member agency needs/priorities and potential future water supply projects. The Strategy will be supported by a process for formulating the projects into water supply management portfolios and systematically evaluating them against criteria that reflect BAWSCA and member agency priorities and concerns.

Phase I of the Strategy involved quantifying the projected water supply need out to 2035, defining the evaluation that will be used to evaluate and select the preferred

APPENDIX E

Traffic Impact Study

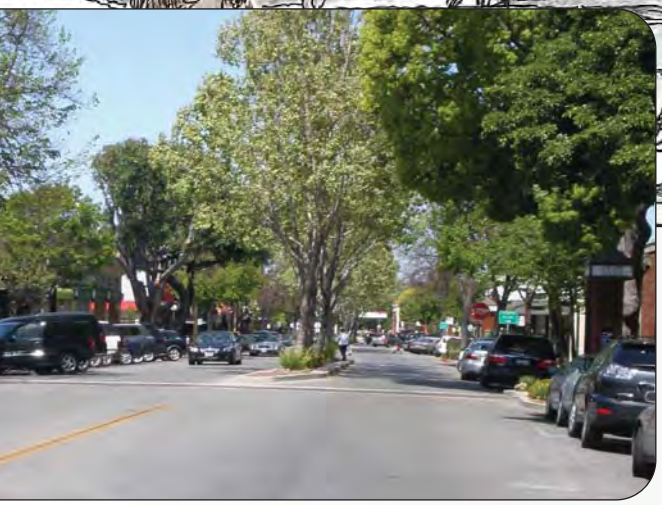
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April 2010

Menlo Park

El Camino Real / Downtown Specific Plan:

Transportation Impact Analysis

Prepared for:
The City of Menlo Park
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April 2, 2010

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TABLE OF CONTENTS

Executive Summary ..... **i**
Project Description i
Scope of the Analysis ii
Analysis Results iii
Other Topics vi

1. Introduction **1**
Project Description 1
Scope of Analysis 4
Analysis Scenarios 6
Level of Service Methods 6
Regulatory Setting and Level of Service Standards 9
Significance Criteria 10
Report Organization 12

2. Existing Conditions **13**
Existing Roadway Network 13
Existing Transit Service 14
Existing Pedestrian and Bicycle Facilities 18
Existing Traffic Volumes 24
Existing Intersection Levels of Service 24
Existing Freeway Segment Levels of Service 28
Downtown Parking 28

3. Specific Plan Transportation Improvements **31**
Bicycle Improvements 31
Pedestrian Improvements 33
Transit Improvements 35
Parking Garages 35
Roadway System Modifications 35

4. Specific Plan Travel Demand Characteristics **37**
Land Use Travel Demand and Traffic Projections 37
Trip Distribution and Assignment 41
Specific Plan Transportation Improvements 41

5. Existing Plus Project Conditions **46**
Existing Plus Project Intersection Levels of Service 46
Existing Plus Project Roadway Segment Analysis 54
Existing Plus Project Freeway Segment Levels of Service 56
Existing Plus Project Impacts 58

6. Cumulative (2035) Conditions **59**
Cumulative Traffic Estimates 59
Cumulative (2035) Transportation Improvements 59
Cumulative (2035) Intersection Levels of Service 60
Cumulative (2035) Roadway Segment analysis 69
Cumulative (2035) Freeway Segment Levels of Service 71
Cumulative (2035) Impacts 73

7. Transit, Bicycle, Pedestrian, and Parking Analysis **75**
Transit 75
Bicycle System 75

Pedestrian System 75
Parking 76

8. Mitigation Measures 79
Intersections 79
Roadway Segments 90
Transportation Demand Management (TDM) 91

9. General Plan Compliance and Other Study Issues 93
General Plan Compliance 93
Railroad Crossings 95
Parking Structure Construction 96

10. Vehicle Miles of Travel 97
Specific Plan VMT 98

References 99

APPENDICES

Appendix A: Menlo Park Intersection and Roadway Segment Significance Criteria

Appendix B: Existing Traffic Volumes

Appendix C: Intersection Level Of Service Calculations

Appendix D: Cumulative Traffic Volumes

Appendix E: Traffic Signal Warrant Analysis

LIST OF FIGURES

Figure 1 Illustrative Site Plan and Subarea Boundaries 3
Figure 2 Study Intersections and Roadway Segments 7
Figure 3 Existing Transit Service 15
Figure 4 SamTrans Average Weekday Daily Ridership 17
Figure 5 Existing Pedestrian Facilities 19
Figure 6 Existing and Planned Bicycle Facilities 23
Figure 7 Existing AM and PM Peak-Hour Intersection Levels of Service 27
Figure 8 Downtown Off-Street Parking Facilities (Parking Plazas) 30
Figure 9 Specific Plan Bicycle Improvements 32
Figure 10 Specific Plan Pedestrian Improvements 34
Figure 11a Project Trip Assignment 43
Figure 11b Project Trip Assignment 44
Figure 11c Project Trip Assignment 45
Figure 12 Existing Plus Project AM and PM Peak-Hour Intersection Levels of Service 53
Figure 13 Cumulative AM and PM Peak-Hour Intersection Levels of Service 67
Figure 14 Cumulative Plus Project AM and PM Peak-Hour Intersection Levels of Service 68
Figure 15a Intersection Mitigation Measures 84
Figure 15b Intersection Mitigation Measures 85
Figure 16 VMT Relationships 98

LIST OF TABLES

Table ES-1: Proposed Land Use Changes by Sub Area ii

Table ES-2: Summary of Intersection Mitigation Measures iv

Table 1: Proposed Land Use Changes by Sub Area 2

Table 2: Level of Service Criteria for Signalized Intersections 8

Table 3: Level of Service Criteria for Unsignalized Intersections 8

Table 4: Level of Service Criteria for Freeway Segments 9

Table 5: Existing Intersection Levels of Service 25

Table 6: Existing Downtown Public Parking Supply (Spaces) 29

Table 7: Trip Generation Rates 38

Table 8: Transit Trip Reductions 39

Table 9: Summary of Trip Generation Estimates by Sub Area 40

Table 10: Directions of Approach and Departure 42

Table 11: Existing Plus Project Intersection Levels of Service 47

Table 12: Existing Plus Project Roadway Levels of Service 55

Table 13: Existing Plus Project Freeway Levels of Service 57

Table 14: Cumulative Intersection Levels of Service 61

Table 15: Cumulative Plus Project Roadway Levels of Service 70

Table 16: Cumulative Plus Project Freeway Levels of Service 72

Table 17: Existing and Future Downtown Parking Supply 77

Table 18: Summary of Intersection Mitigation Measures 82

Table 19: Railroad Crossing Queues 95

EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the proposed El Camino Real/ Downtown Specific Plan for Menlo Park, California. The overall goal of the Specific Plan is to "establish a framework for private and public improvements on El Camino Real and in Downtown Menlo Park for the next several decades." Its intent is "to enhance community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small-town character of Menlo Park, and improved connections across El Camino Real."

The TIA identifies potentially significant adverse impacts of the proposed Specific Plan on the surrounding transportation system and recommends mitigation measures in compliance with the California Environmental Quality Act (CEQA) and assesses the Specific Plan's consistency with transportation-related General Plan goals and polices. The Specific Plan is a planning document. Therefore, the analysis in this document is a program-level analysis and may be supplemented with project-specific analyses.

PROJECT DESCRIPTION

The portions of the Specific Plan addressed in this report are the added travel demand generated by the envisioned land use development and the transportation components presented on the Illustrative Site Plan. Descriptions of the transportation components are presented in Chapter 3 and are summarized below:

- Widened sidewalks on El Camino Real and Santa Cruz Avenue
- Pedestrian paseo on Chestnut Street
- New bike lanes and bike routes
- New train track pedestrian and bicycle underpass or overpass near Santa Cruz Avenue
- New downtown parking structures

Table ES-1 summarizes the proposed land use changes by subarea: El Camino Real North, El Camino Real South, Downtown, and Station areas. These changes represent the potential amount of development that could occur with the Specific Plan; they do not represent actual proposed development projects.

TABLE ES-1: PROPOSED LAND USE CHANGES BY SUB AREA

Land Use[1]	Downtown	Station Area	El Camino South	El Camino North	Total
Existing Development Anticipated to be Removed (Occupied Space)					
Commercial/Office (sf)	23,500 sf	39,700 sf	5,000 sf	0	68,200 sf
Retail (sf)	77,050 sf	27,500 sf	147,000 sf	28,100 sf	279,560 sf
Hotel (rooms)	0	0	0	0	0 rms
Residential (du)	0	0	0	0	0 dus
Proposed Land Uses					
Commercial/Office (sf)	36,400 sf	0	221,020 sf	51,600 sf	309,020 sf
Retail (sf)	144,715 sf	59,000 sf	142,925 sf	25,200 sf	371,840 sf
Hotel (rooms)	80 rms	0	300 rms	0	380 rms
Residential (du)	257 dus	133 dus	192 dus	98 dus	680 dus
Net Added Uses					
Commercial/Office (sf)	12,900 sf	(39,700 sf)	216,020 sf	51,600 sf	240,820 sf
Retail (sf)	67,665 sf	31,500 sf	(4,465 sf)	(2,900 sf)	91,800 sf
Hotel (rooms)	80 rms	0	300 rms	0	380 rms
Residential (du)	257 dus	133 dus	192 dus	98	680 dus

Notes:
1. sf = square feet, dus = dwelling units, rms = rooms

Source: Perkins + Will, 2010.

SCOPE OF THE ANALYSIS

The operations of 34 study intersections, 32 roadway segments, and 4 freeway segments were evaluated for the following scenarios:

Scenario 1: *Existing Conditions* – Existing traffic conditions using volumes obtained from counts.

Scenario 2: *Existing Plus Project Conditions* – Existing volumes plus net new traffic generated by the anticipated development levels envisioned in the Specific Plan and presented in Table 1. This scenario is the basis from which project impacts are identified for California Environmental Quality Act (CEQA) purposes.

Scenario 3: *Cumulative (2035) No Project Conditions* – Cumulative conditions represent long range conditions and include existing peak-hour volumes multiplied by a twenty-year growth factor to represent regional growth plus traffic generated by approved and pending development projects in Menlo Park.

Scenario 4: *Cumulative (2035) Project Conditions* – Traffic volumes from Scenario 3 plus traffic generated by anticipated development levels envisioned in the Specific Plan. This scenario is the basis from which cumulative project impacts are identified for California Environmental Quality Act (CEQA) purposes.

ANALYSIS RESULTS

Roadway System

The Specific Plan land use program would add approximately 13,600 daily vehicle trips, with 900 during the AM peak hour and 1,350 during the PM peak hour, to the surrounding roadway system. These added vehicle trips will cause significant impacts at 6 intersections and 9 roadway segments under Existing plus Project Conditions and 15 intersections and 14 roadway segments under Cumulative plus Project Conditions. No freeway impacts were identified.

Intersection mitigation measures are summarized in Table ES-2. Mitigations for roadway segment impacts would require adding travel lanes and widening roadways throughout Menlo Park. As the City is built out, there is little opportunity to widen roadways within the available right of way. Therefore, widening would require property acquisition. Due to the number of affected properties and financial implications, roadway segment impacts are considered significant and unavoidable. However transportation demand management programs designed to reduce the amount of added traffic would be required by new development projects in the Specific Plan area.

Transit

The Specific Plan is estimate to add 330 daily Caltrain riders and 80 daily bus riders. Both Caltrain and the buses currently have available capacity to accommodate these additional riders. All of the potential developments in the land use program are within ¼ mile of a transit stop. Therefore, the Specific Plan will have a less-than-significant impact to transit.

TABLE ES-2:
SUMMARY OF INTERSECTION MITIGATION MEASURES

Intersection	Existing Traffic Control	Mitigation	Included in TIF Program	Impact Reduction	
				E+P	C+P
3. El Camino Real & Glenwood/ Valparaiso Avenues (Ct/At/MP)	Signal	• Add WB right-turn lane	YES	-	✓*
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/RT lanes	Signal	• Add 2nd SB left-turn lane • Modify SB right-turn lane to a shared through/right-turn lane • Create third southbound receiving lane • Add 3rd NB through lane • Add EB left-turn lane, right-turn lane, and modify approach to L-T-T-R • Change EB/WB signal phasing from split to protected left-turn movements	YES[1]	-	X*
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/o SB RT lane	Signal	• Add 2nd SB left-turn lane • Add 3rd NB through lane • Add EB left-turn lane, right-turn lane, and modify approach to L-T-T-R • Change EB/WB signal phasing from split to protected left-turn movements	YES[1]	-	0*
8. El Camino Real & Middle Avenue (Ct/MP)	Signal	• Add 2nd NB left-turn lane	YES	-	✓*
12. Laurel Street & Ravenswood Avenue (MP)	Signal	• Add EB right-turn lane	YES	-	✓*
15. University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	• Signalize intersection and interconnect with University Drive (S) & Santa Cruz Avenue	NO	✓	✓
18. Middlefield Road & Marsh Road (At)	Signal	• Add 2nd WB left-turn lane and a 2nd receiving lane on the southern leg of the intersection	NO	-	✓*
19. Middlefield Road & Encinal Avenue (At)	Side Street Stop	• Signalize intersection • Add EB right-turn lane	NO	✓*	✓*
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	• Signalize intersection	NO	✓	✓
22. Middlefield Road & Ravenswood Avenue (MP/At)	Signal	• Add SB right-turn lane & modify approach to T-R	YES	-	✓*
24. Middlefield Road & Linfield Drive (MP)	Side Street Stop	• Signalize intersection	NO	-	✓

TABLE ES-2:
SUMMARY OF INTERSECTION MITIGATION MEASURES

Intersection	Existing Traffic Control	Mitigation	Included in TIF Program	Impact Reduction	
				E+P	C+P
25. Middlefield Road & Willow Road (MP)	Signal	Existing plus Project Improvements • Add 2nd WB left-turn lane & modify WB approach to L-L-T-R • Change EB/WB signal phasing from split to protected left-turn movements Additional Cumulative plus Project Improvements • Add 2nd SB left-turn lane & modify SB approach to L-L-T-T/R • Change NB/SB signal phasing from split to protected left-turn movements	YES	✓*	X*
27. Coleman Avenue & Willow Road (MP)	Signal	• Restripe SB approach to L-T/R	NO	-	✓
28. Durham Street & Willow Road (MP)	Signal	• Add SB left-turn lane • Change NB/SB signal phasing from permitted to protected left-turn movements	NO	-	X*
29. Bay Road & Willow Road (MP)	Signal	• Add 2nd SB left-turn lane	NO	-	✓*
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	• Signalize intersection	NO	✓	✓

Notes:

1. All modifications are identified in the City's Transportation Impact Fee program except adding the third northbound through lane. This lane has been identified as mitigation for other pending development projects in the city.

WB = Westbound EB = Eastbound NB = Northbound SB = Southbound SE = Southeast

- No modification necessary: intersection operates at its standard or better

✓ Improves vehicular operations to the intersection's LOS standard or better

X Does not improve vehicular operations to the intersection's LOS standard or better but the impact is reduced

0 Not sufficient to fully mitigate impact

* Modification may not be feasible due to additional right-of-way acquisition or other factors

Source: Fehr & Peers, 2010.

Bicycles

The Specific Plan provides new bicycle facilities (bike routes and bike lanes) and does not contain design aspects that would cause an increased potential for bicycle/vehicle conflicts. Therefore the Specific Plan has less-than-significant bicycle impacts.

Pedestrians

The Specific Plan provides enhanced pedestrian facilities. However, the proposed parking structures located in downtown Menlo Park would have driveways that cross sidewalks. Therefore the parking structures should be designed to have adequate sight distance at the driveways and/or pedestrian warning systems to ensure that there are no pedestrian impacts.

Parking

The development parcels outside of the downtown will be required to provide an adequate amount of parking on-site. The Specific Plan calls for parking garages to be built downtown to accommodate the parking demand generated by new downtown development, and to provide replacement parking for parking spaces that would be removed by improvements, such as wider sidewalks on Santa Cruz Avenue. The amount of parking in the parking garages is more than enough to accommodate the added demand and replacement parking and would therefore be able to accommodate further growth.

The Specific Plan includes a monitoring program to determine if and when the parking structures would be needed. The Specific Plan provides bicycle parking as well. Therefore the Specific Plan has a less-than-significant parking impact.

OTHER TOPICS

The TIA also addresses other topics related to the Specific Plan including General Plan policy compliance, queuing at at-grade railroad crossings, and parking structure construction. The Specific Plan complies with the transportation-related goals and policies of the City of Menlo Park General Plan. Vehicle queues are projected to extend to the at-grade railroad crossing locations, particularly under Cumulative Conditions. The City of Menlo Park should work with the California Public Utilities Commission to ensure adequate warning devices and turning movement restrictions are provided. A construction management plan, including a parking management plan, will be needed during construction of the parking structures to minimize their impacts.

1. INTRODUCTION

This report presents the results of the transportation impact analysis (TIA) for the proposed El Camino Real/ Downtown Specific Plan for Menlo Park, California. The overall goal of the Specific Plan is to "establish a framework for private and public improvements on El Camino Real and in Downtown Menlo Park for the next several decades." Its intent is "to enhance community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small-town character of Menlo Park, and improved connections across El Camino Real." The Illustrative Site Plan showing the extent of the Specific Plan area, extending along El Camino Real within the City limits including the Downtown plus the area around the Caltrain Station, is shown on **Figure 1**.

The purpose of the TIA is to describe the transportation benefits of the Specific Plan, identify potentially significant adverse impacts of the proposed Specific Plan on the surrounding transportation system and to recommend mitigation measures in compliance with the California Environmental Quality Act (CEQA), and to assess the Specific Plan's consistency with transportation-related General Plan goals and polices. The Specific Plan is a planning document and does not propose individual land use projects or infrastructure changes. Therefore, the analysis in this document is at the appropriate level of detail for a plan and may be supplemented with project-specific analyses.

PROJECT DESCRIPTION

The portions of the Specific Plan that are addressed in this report are the added travel demand generated by the envisioned land use development and the transportation components identified below and presented on the Illustrative Site Plan on **Figure 1**. General descriptions of the transportation components are:

- Widened sidewalks on El Camino Real and Santa Cruz Avenue
- Pedestrian paseo on Chestnut Street
- New bike lanes and bike routes
- New train track pedestrian and bicycle underpass or overpass near Santa Cruz Avenue
- New downtown parking structures

Table 1 summarizes the proposed land use changes by subarea: El Camino Real North, El Camino Real South, Downtown, and Station areas[1]. These changes represent the potential amount of development that could occur with the Specific Plan; they not represent actual proposed development projects. The boundaries of the subareas are shown on **Figure 1**.

[1] These are land use change summaries. The trip generation and assignment estimates are based on more-detailed land use data such as removing an existing auto dealership and motel in the El Camino Real South subarea.

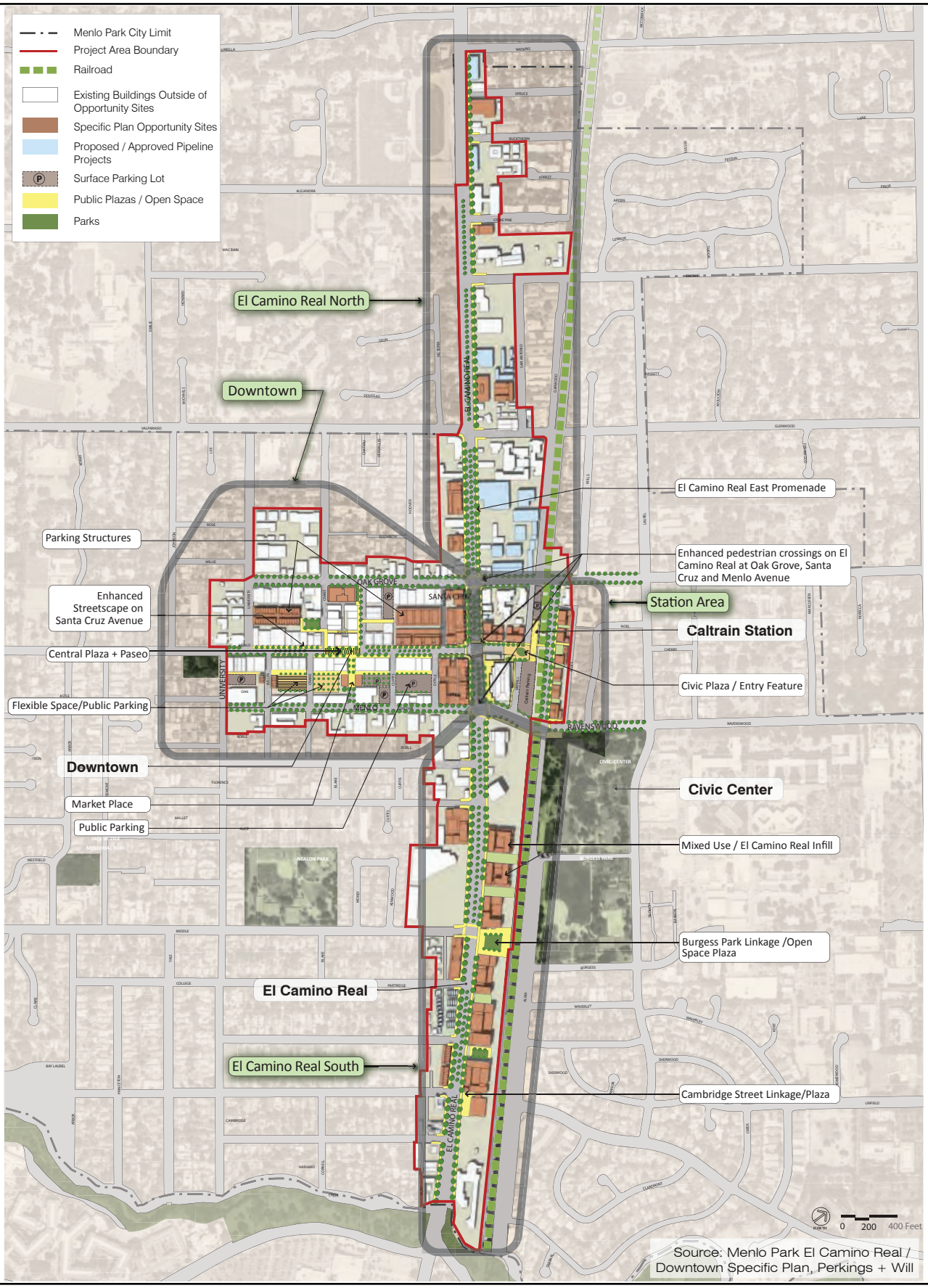
TABLE 1: PROPOSED LAND USE CHANGES BY SUB AREA

Land Use[1]	Downtown	Station Area	El Camino South	El Camino North	Total
Existing Development Anticipated to be Removed (Occupied Space)					
Commercial/Office (sf)	23,500 sf	39,700 sf	5,000 sf	0	68,200 sf
Retail (sf)	77,050 sf	27,500 sf	147,000 sf	28,100 sf	279,560 sf
Hotel (rooms)	0	0	0	0	0 rms
Residential (du)	0	0	0	0	0 dus
Proposed Land Uses					
Commercial/Office (sf)	36,400 sf	0	221,020 sf	51,600 sf	309,020 sf
Retail (sf)	144,715 sf	59,000 sf	142,925 sf	25,200 sf	371,840 sf
Hotel (rooms)	80 rms	0	300 rms	0	380 rms
Residential (du)	257 dus	133 dus	192 dus	98 dus	680 dus
Net Added Uses					
Commercial/Office (sf)	12,900 sf	(39,700 sf)	216,020 sf	51,600 sf	240,820 sf
Retail (sf)	67,665 sf	31,500 sf	(4,465 sf)	(2,900 sf)	91,800 sf
Hotel (rooms)	80 rms	0	300 rms	0	380 rms
Residential (du)	257 dus	133 dus	192 dus	98	680 dus

Notes:

2. sf = square feet, dus = dwelling units, rms = rooms

Source: Perkins + Will, 2010.



El Camino Real / Downtown Specific Plan TIA

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March 2010
SJ09-1089

Illustrative Site Plan and Subarea Boundaries

Figure 1

SCOPE OF ANALYSIS

The project transportation benefits include the enhanced pedestrian and bicycle facilities and development located within walking distance of a major transit station, the Menlo Park Caltrain station. These attributes will encourage travel to be made by green forms of transportation - walking, bicycling and transit – which produce fewer greenhouse gas emissions (GHGs).

Project impacts were evaluated following the guidelines of the City of Menlo Park, the City/County Association of Governments of San Mateo County (C/CAG), and the California Department of Transportation (Caltrans). Roadway system impacts were evaluated at selected intersections and roadway segments, as shown on **Figure 2.**

Study Intersections

The study intersections are listed below. The jurisdictions controlling the intersections are listed in parentheses after each intersection[2].

1. El Camino Real & Atherton Avenue/Fair Oaks Lane (Ct/At)
2. El Camino Real & Encinal Avenue (Ct/At/MP)
3. El Camino Real & Glenwood Avenue/Valparaiso Avenue (Ct/At/MP)
4. El Camino Real & Oak Grove Avenue (Ct/MP)
5. El Camino Real & Santa Cruz Avenue (Ct/MP)
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP)
7. El Camino Real & Roble Avenue (Ct/MP)
8. El Camino Real & Middle Avenue (Ct/MP)
9. El Camino Real & Cambridge Avenue (Ct/MP)
10. El Camino Real & Sand Hill Road (Ct/PA)
11. Laurel Street & Oak Grove Avenue (MP)
12. Laurel Street & Ravenswood Avenue (MP)
13. University Drive & Valparaiso Avenue (MP/At)
14. University Drive & Oak Grove Avenue (MP)
15. University Drive & Santa Cruz Avenue (MP)
16. University Drive & Santa Cruz Avenue (MP)
17. University Drive & Menlo Avenue (MP)
18. Middlefield Road & Marsh Road (At)
19. Middlefield Road & Encinal Avenue (At)
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)
21. Middlefield Road & Oak Grove Avenue (At)
22. Middlefield Road & Ravenswood Avenue (MP/At)
23. Middlefield Road & Ringwood Avenue (MP/At)
24. Middlefield Road & Linfield Drive (MP)
25. Middlefield Road & Willow Road (MP)
26. Gilbert Avenue & Willow Road (MP)
27. Coleman Avenue & Willow Road (MP)

[2] Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto

28. Durham Street & Willow Road (MP)
29. Bay Road & Willow Road (Ct/MP)
30. Bay Road & Marsh Road (MP)
31. Florence Street/Bohannon Drive & Marsh Road (MP)
32. Scott Drive & Marsh Road (MP)
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)
34. Santa Cruz Avenue/Alpine Avenue & Sand Hill Road (MP)

Study Roadway Segments

The study roadway segments are listed below:

1. Encinal Avenue from El Camino Real to Laurel Street
2. Encinal Avenue from Laurel Street to Middlefield Road
3. Valparaiso Avenue from Delfino Way to San Mateo Drive
4. Valparaiso Avenue from San Mateo Drive to University Drive (North)
5. Valparaiso Avenue from University Drive (North) to El Camino Real
6. Glenwood Avenue from El Camino Real to Laurel Street
7. Oak Grove Avenue from University Drive (North) to El Camino Real
8. Oak Grove Avenue from El Camino Real to Laurel Street
9. Oak Grove Avenue from Laurel Street to Middlefield Road
10. Santa Cruz Avenue from Alameda de las Pulgas to Orange Avenue
11. Santa Cruz Avenue from Orange Avenue to Olive Street
12. Santa Cruz Avenue from Olive Street to San Mateo Drive
13. Santa Cruz Avenue from San Mateo Drive to University Drive (South)
14. Santa Cruz Avenue from University Drive (South) to El Camino Real
15. Santa Cruz Avenue from El Camino Real to Merrill Way
16. Menlo Avenue from University Drive (South) to El Camino Real
17. Ravenswood Avenue from El Camino Real to Laurel Street
18. Ravenswood Avenue from Laurel Street to Middlefield Road
19. Middle Avenue from Olive Street to San Mateo Drive
20. Middle Avenue from San Mateo Drive to University Drive (South)
21. Middle Avenue from University Drive (South) to El Camino Real
22. Oak Avenue from Sand Hill Road to Olive Street
23. Willow Road from Laurel Street to Middlefield Road
24. Olive Street from Oak Avenue to Middle Avenue
25. University Drive (South) from Middle Avenue to Santa Cruz Avenue
26. University Drive (North) from Santa Cruz Avenue to Oak Grove Avenue
27. Laurel Street from Willow Road to Waverley Street
28. Laurel Street from Waverley Street to Ravenswood Avenue
29. Middlefield Road from Willow Road to Linfield Drive
30. Middlefield Road from Linfield Drive to Ringwood Avenue
31. Waverley Street from Laurel Street to Linfield Drive
32. Linfield Drive from Waverley Street to Middlefield Road

Study Freeway Segments

The study freeway segments are:

1. US 101 North of Marsh Road
2. US 101 South of Willow Road
3. I-280 North of Sand Hill Road
4. I-280 South of Alpine Road

The segment of US 101 between Marsh Road and Willow Road and the segment on I-280 between Sand Hill Road and Alpine Road were not evaluated as the Specific Plan will not add traffic to these segments.

ANALYSIS SCENARIOS

The operations of the study intersections and freeway segments were evaluated for the following scenarios:

Scenario 1: *Existing Conditions* – Existing traffic conditions using volumes obtained from counts.

Scenario 2: *Existing Plus Project Conditions* – Existing volumes plus net new traffic generated by the anticipated development levels envisioned in the Specific Plan and presented in Table 1. This scenario is the basis from which project impacts are identified for California Environmental Quality Act (CEQA) purposes.

Scenario 3: *Cumulative (2035) No Project Conditions* – Cumulative conditions represent long range conditions and include existing peak-hour volumes multiplied by a twenty-year growth factor to represent regional growth plus traffic generated by approved and pending development projects in Menlo Park.

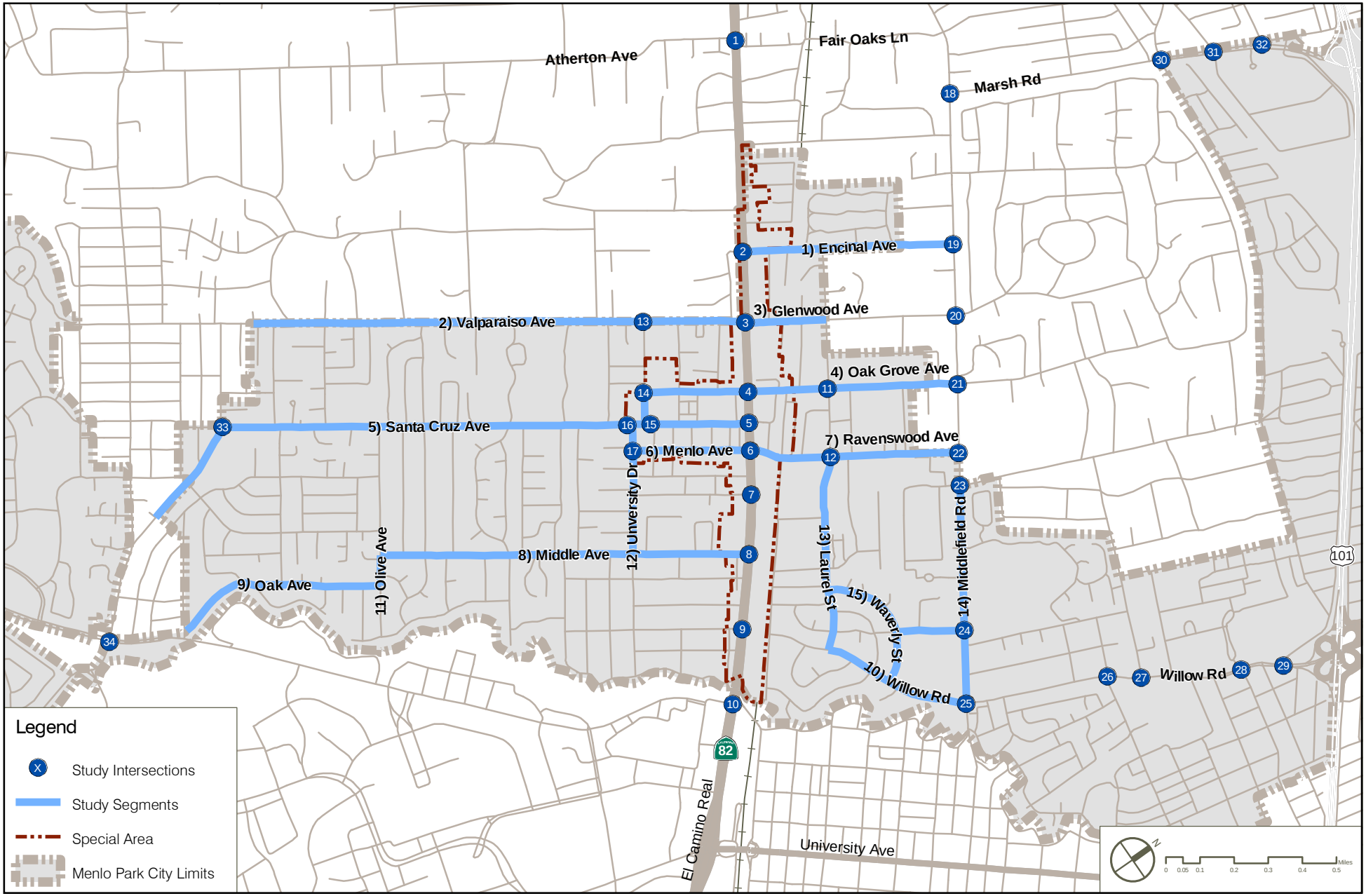
Scenario 4: *Cumulative (2035) Project Conditions* – Traffic volumes from Scenario 3 plus traffic generated by anticipated development levels envisioned in the Specific Plan. This scenario is the basis from which cumulative project impacts are identified for California Environmental Quality Act (CEQA) purposes.

LEVEL OF SERVICE METHODS

Operations of the study intersections were evaluated with level of service (LOS) calculations. Level of service is a qualitative description of roadway operations from the driver's perspective and ranges from LOS A, with free flow operations and little or no delay, to LOS F, with stop-and-go operations and excessive delays.

Signalized Intersections

The LOS method for signalized intersections described in Chapter 16 of the 2000 *Highway Capacity Manual* (HCM) published by the Transportation Research Board was applied in this analysis. This method evaluates a signalized intersection's operations based on average control delay. The City provided Fehr & Peers with a Traffix model which was used to evaluate all intersections in this analysis. **Table 2** summarizes the relationship between delay and LOS for signalized intersections.



El Camino Real / Downtown Specific Plan TIA

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March 2010
SJ09-1089

Study Intersections and Roadway Segments

Figure 2

TABLE 2:
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10 to 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20 to 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35 to 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55 to 80
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80

Source: Transportation Research Board, *Highway Capacity Manual - Special Report 209,* 2000.

Unsignalized Intersections

Unsignalized intersections (all-way stop controlled and side-street stop controlled) are evaluated using the 2000 *Highway Capacity Manual* – Special Report 209 (Chapter 17) method. Operations are defined by the average control delay per vehicle (measured in seconds) for each stop-controlled movement. This incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop controlled intersections, the delay reported in this study is represented for the worst-case minor street approach. For all-way stop controlled intersections, the level of service is represented by the average control delay for the whole intersection. **Table 3** summarizes the relationship between delay and LOS for unsignalized intersections. The ranges are lower than signalized intersections as drivers accept lower delays at unsignalized intersections.

TABLE 3:
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay	≤ 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual - Special Report 209*, 2000.

Freeway Segments

Freeway mainline operations were evaluated using the 2000 HCM volume-to-capacity ratio method, per San Mateo City/County Association of Governments (C/CAG) guidelines. The level of service descriptions and the maximum volume-to-capacity (V/C) ratio for each LOS designation are presented in **Table 4**.

TABLE 4:
LEVEL OF SERVICE CRITERIA FOR FREEWAY SEGMENTS

Level of Service[a]	Description	Volume-to-Capacity Ratio
A	Free flow operations with average operating speeds at, or above, the speed limit. Vehicles are unimpeded in their ability to maneuver.	0.30
B	Free flow operations with average operating speeds at the speed limit. Ability to maneuver is slightly restricted. Minor incidents cause some local deterioration in operations.	0.50
C	Stable operations with average operating speeds near the speed limit. Freedom to maneuver is noticeably restricted. Minor incidents cause substantial local deterioration in service.	0.71
D	Speeds begin to decline slightly with increasing flows. Freedom to maneuver is more noticeably restricted. Minor incidents create queuing.	0.89
E	Operations at capacity. Vehicle spacing causes little room to maneuver but speeds exceed 50 mph. Any disruption to the traffic stream can cause a wave of delay that propagates throughout the upstream traffic flow. Minor incidents cause serious breakdown of service with extensive queuing. Maneuverability is extremely limited.	1.00
F	Operations with breakdowns in vehicle flow. Volumes exceed capacity causing bottlenecks and queue formation.	N/A

[a] Freeway mainline LOS based on a 65 mph free-flow speed.

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

REGULATORY SETTING AND LEVEL OF SERVICE STANDARDS

The minimum acceptable LOS standards for intersections, roadway segments, and freeway segments vary based on their classification (type of facility) and jurisdiction that controls the transportation facility. The LOS standards listed below apply to the analysis of the Specific Plan. These thresholds will be used in future analysis to determine significant impacts and help to develop appropriate mitigation measures.

City of Menlo Park

The City of Menlo Park's minimum acceptable level of service for signalized and unsignalized intersections is LOS C for collector street intersections and LOS D for arterial street intersections and local approaches to Caltrans-controlled intersections. The criteria used to assess impacts at signalized (and unsignalized) intersections are presented on **Figure A-1** in **Appendix A.** The City of Menlo Park evaluates roadway segments by comparing the amount of traffic added by a project to the existing average daily traffic (ADT) volume based on facility type (local, collector, or arterial street). The flow chart describing the assessment procedure and significance criteria is included as **Figure A-2** in **Appendix A.**

San Mateo County Congestion Management Program

The San Mateo City and County Association of Governments C/CAG developed LOS thresholds for roadways on the designated Congestion Management Program (CMP) network. The CMP facilities in the study area are US 101, I-280, and El Camino Real (SR 82). The CMP LOS threshold is LOS F for the segments of US 101 in the study area. The CMP LOS threshold is LOS D for the study segments of I-280. El Camino Real in Menlo Park has a CMP LOS threshold of LOS E.

California Department of Transportation (Caltrans)

In the *Guide for the Preparation of Traffic Impact Studies* (2002), Caltrans defines the LOS standards for State-operated facilities. Caltrans defines the following LOS standards:

- Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D
- If an existing State-operated facility is operating at less than LOS C, the existing LOS should be maintained

Caltrans staff has indicated that Caltrans considers any increase in traffic to a state-operated facility operating at an unacceptable level of service is considered a significant impact. For the purpose of the Specific Plan transportation analysis, mainline segments of US 101 and I-280 are evaluated based on the CMP threshold and the El Camino Real intersections are evaluated based on the City of Menlo Park's thresholds.

SIGNIFICANCE CRITERIA

The criteria used to determine whether project impacts rise to the level of significance are based on the City's Transportation Impact Analysis (TIA) guidelines, C/CAG CMP guidelines, and criteria from City of Menlo Park environmental impact reports.

Roadway/Traffic System

The Specific Plan would create a significant impact related to traffic if one or more of the following criteria are met or exceeded:

- A project is considered to have a potentially "significant" traffic impact if the addition of project traffic causes an intersection on a collector street operating at LOS A, B, or C to operate at LOS D, E or F; or an increase of 23 seconds or greater in average vehicle delay; whichever comes first. A potentially significant impact shall also include a project that causes an intersection on arterial streets or local approaches to state controlled intersections operating at LOS A, B, C, or D to operate at LOS E or F or have an increase of 23 seconds or greater, whichever comes first.
- A project is considered to have a potentially "significant" traffic impact if the addition of project traffic causes an increase of more than 0.8 seconds (4 seconds for intersections in the Town of Atherton) of average delay to vehicles on all critical movements for intersections operating at LOS D, E or F prior to the addition of project traffic for collector streets and LOS E or F for arterial streets. For local approaches to state controlled intersections, a project is considered to have a potentially "significant" impact if the addition of project traffic causes an increase of more than 0.8 seconds of average delay to vehicles on the most critical movements for intersections operating at LOS E or F prior to the addition of project traffic.
- At signalized intersections within the City of Palo Alto, the addition of project traffic causes a regional intersection operating at LOS E or better to operate at LOS F; or cause an intersection currently operating at LOS F to increase in critical movement delay of four (4) seconds or more, and increase the critical volume-to-capacity (v/c) ratio by 0.01 or more.

- On minor arterial streets, a traffic impact may be considered potentially significant if the existing Average Daily Traffic Volume (ADT) is: (1) greater than 18,000 (90% of capacity), and there is a net increase of 100 trips or more in ADT due to project related traffic; (2) the ADT is greater than 10,000 (50% of capacity) but less than 18,000, and the project related traffic increases the ADT by 12.5% or the ADT becomes 18,000 or more; or (3) the ADT is less than 10,000, and the project related traffic increases the ADT by 25%.

- On collector streets, a traffic impact may be considered potentially significant if the existing ADT is: (1) greater than 9,000 (90% of capacity), and there is a net increase of 50 trips or more in ADT due to project related traffic; (2) the ADT is greater than 5,000 (50% of capacity) but less than 9,000, and the project related traffic increases the ADT by 12.5% or the ADT becomes 9,000 or more; or (3) the ADT is less than 5,000, and the project related traffic increases the ADT by 25%.

- On local streets, a traffic impact may be considered potentially significant if the existing ADT is: (1) greater than 1,350 (90% of capacity), and there is a net increase of 25 trips or more in ADT due to project related traffic; (2) the ADT is greater than 750 (50% of capacity) but less than 1,350, and the project related traffic increases the ADT by 12.5% or the ADT becomes 1,350; or (3) the ADT is less than 750, and the project related traffic increases the ADT by 25%.

- On freeway segments, a traffic impact may be considered potentially significant if the addition of project traffic causes a freeway segment to operate worse than its adopted CMP LOS standard, or adds traffic equivalent to 1 percent of the segment's capacity for segments violating the CMP LOS standard prior to the addition of project traffic.

Transit System

The Specific Plan would create a significant impact related to transit service if either of the following criteria are met or exceeded:

- The project would generate a substantial increase in transit riders that cannot be adequately served by existing transit services, or

- The project would generate demand for transit services in an area that is more than ¼ mile from existing transit routes.

Bicycle System

The Specific Plan would create a significant impact related to the bicycle system if either of the following criteria are met or exceeded:

- The project would not provide adequate bicycle facilities to connect to the area circulation system, or

- The project design would cause increased potential for bicycle/vehicle conflicts.

Pedestrian System

The Specific Plan would create a significant impact related to the pedestrian facilities if either of the following criteria are met or exceeded:

- The project would not provide adequate pedestrian facilities to connect to the area circulation system, or
- Vehicles would cross pedestrian facilities on a regular basis without adequate design and/or warning systems, causing safety hazards.

Parking

A parking impact would be considered significant if:

- The project fails to provide a sufficient quantity of parking for vehicles.
- The project increases off-site parking demand above that which is provided in the immediate project area.
- The project fails to provide a sufficient quantity of parking for bicycles.

REPORT ORGANIZATION

Chapter 2 describes the Existing Conditions for transportation facilities, including parking, in the study area. Chapter 3 presents the proposed transportation system changes in the Specific Plan and Chapter 4 addresses the travel demand generated by added development anticipated in the Specific Plan. The Existing Plus Project Conditions analysis is presented in Chapter 5.

Cumulative conditions, both with and without the Specific Plan, are presented in Chapter 6. Chapter 7 presents the transit, bicycle, pedestrian, and parking analysis. Mitigation measures for the project and cumulative scenarios are presented in Chapter 8. Chapter 9 addresses General Plan compliance and other transportation issues of the Specific Plan. Vehicle Miles of Travel (VMT) estimates to be used in greenhouse gas (GHG) emissions analysis are presented in Chapter 10.

2. EXISTING CONDITIONS

This chapter describes the existing transportation conditions in the study area. It discusses auto, pedestrian, bicycle, and transit facilities in the study area and presents parking conditions in the Downtown.

EXISTING ROADWAY NETWORK

Regional access to Menlo Park is provided by two freeways - US 101 and I-280 – and one State Highway, El Camino Real (SR 82). Marsh Road, Middlefield Road, Ravenswood Avenue, Sand Hill Road, and Willow Road connect the freeways with the Specific Plan area. The locations of these roadways and other more local roadways are shown on **Figure 2**. Detailed descriptions of the key roadway facilities are presented below.

Freeways

US 101 (Bayshore Freeway) is an eight-lane north-south freeway that connects San Jose with San Francisco. It has two interchanges that serve Menlo Park - Willow Road and Marsh Road. There are high occupancy vehicle (HOV) lanes on this freeway in the Menlo Park area. The average daily traffic (ADT) volume for this roadway is approximately 178,000 vehicles.

I-280 (Junipero Serra Freeway) is also an eight-lane north-south freeway that connects San Jose with San Francisco. Its interchanges with Alpine Road and Sand Hill Road provide access to Menlo Park. There are no HOV lanes on this freeway in the Menlo Park area. The ADT for this roadway is approximately 98,000 vehicles.

Arterial Roadways

El Camino Real (SR 82) is a major north-south primary arterial that connects San Jose with San Francisco. It enters the city just north of Sand Hill Road as a six-lane arterial, becomes a four-lane arterial near downtown Menlo Park, and exits the city as a five-lane arterial (three southbound lanes and two northbound lanes) north of Encinal Avenue. The ADT for this roadway is approximately 38,000 vehicles.

Marsh Road is an east-west arterial roadway that connects Bayfront Expressway with Middlefield Road. It enters the city as a six-lane primary arterial at Bayfront Expressway, becomes a minor four-lane arterial at the US 101 interchange. The ADT for this roadway ranges from approximately 21,500 to 33,500 vehicles depending on the location.

Middlefield Road is a minor north-south arterial roadway that extends from Sunnyvale to Redwood City. It enters the city at San Francisquito Creek south of Willow Road as a four-lane arterial and narrows to a two-lane arterial at Ravenswood Avenue. The ADT for this roadway is approximately 20,000 vehicles.

Ravenswood Avenue is a minor east-west two-lane arterial roadway. It extends between Middlefield Road and El Camino Real near downtown Menlo Park. This roadway is one of four east-west roadways in the city that crosses the Caltrain railroad tracks. The ADT for this roadway is approximately 20,000 vehicles. Ravenswood Avenue becomes Menlo Avenue west of El Camino Real and is discussed in further detail below.

Sand Hill Road is a primary east-west arterial roadway that connects I-280 with El Camino Real. It enters the city west of I-280 as a two-lane arterial and widens to a four-lane arterial between I-280 and Arboretum Road. It is two lanes wide between Arboretum Road and El Camino Real. The ADT for the portion of this roadway in Menlo Park is approximately 30,000 vehicles.

Santa Cruz Avenue is a minor east-west two-lane arterial roadway. It extends between Sand Hill Road and the Menlo Park Caltrain Station. This roadway serves as the “main street” in downtown Menlo Park. The ADT for this roadway in the downtown area is approximately 8,000 vehicles.

Valparaiso Avenue is a minor east-west two-lane arterial roadway extending from approximately Alameda de las Pulgas to El Camino Real. This roadway serves as the northern city boundary between El Camino Real and Delfino Way. The ADT for this roadway is approximately 13,000 vehicles. Valparaiso Avenue becomes Glenwood Avenue east of El Camino Real and is discussed below.

Willow Road is an east-west arterial roadway. It extends from Bayfront Expressway, as a primary four-lane arterial, becomes a minor two-lane arterial at the US 101 interchange, and ends as a two-lane collector at Alma Street. The ADT for this roadway east of Middlefield Road is approximately 26,000 vehicles.

Collector Roadways

Alma Street is a north-south two-lane collector roadway. It extends from south of Willow Road, parallels the Caltrain railroad tracks on the east side of the railway, to Oak Grove Avenue. The ADT for this roadway between Oak Grove Avenue and Ravenswood Avenue is approximately 1,500 vehicles.

Encinal Avenue is an east-west two-lane collector roadway. It extends from Middlefield Road in the Town of Atherton to El Camino Real. This roadway is one of four east-west roadways in the city that crosses the Caltrain railroad tracks. The ADT for this roadway is approximately 4,500 vehicles.

Glenwood Avenue is an east-west two-lane collector roadway. It extends from east of Middlefield Road in the Town of Atherton to El Camino Real. This roadway is one of four east-west roadways in the city that crosses the Caltrain railroad tracks. The ADT for this roadway is approximately 5,800 vehicles. Glenwood Avenue becomes Valparaiso Avenue west of El Camino Real.

Menlo Avenue is an east-west two-lane collector roadway. It extends between University Drive and El Camino Real. The ADT for this roadway is approximately 8,000 vehicles. Menlo Avenue becomes Ravenswood Avenue east of El Camino Real.

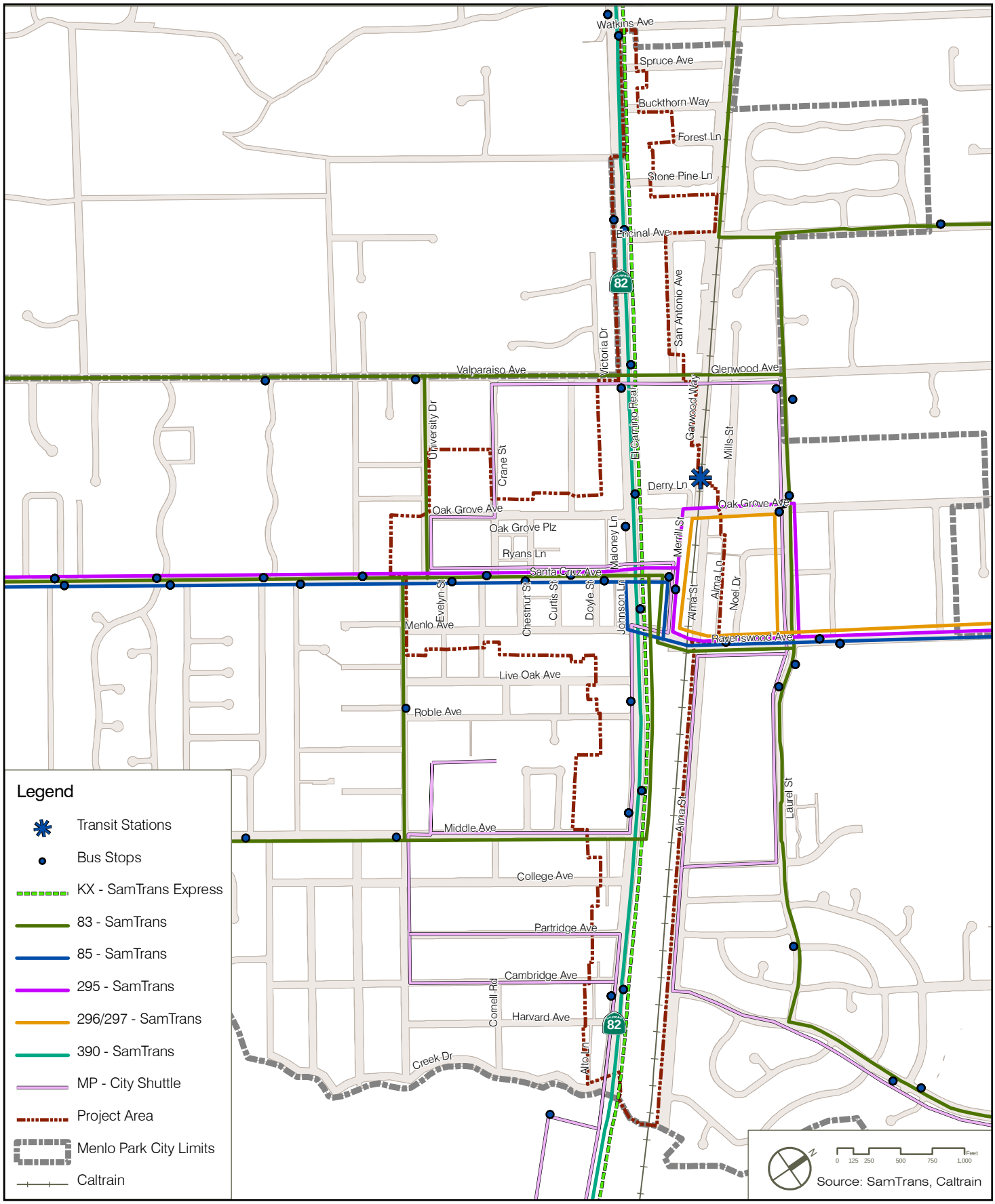
Middle Avenue is an east-west two-lane collector roadway. It extends between Olive Street and El Camino Real. The ADT for this roadway is approximately 8,000 vehicles.

Oak Grove Avenue is an east-west two-lane collector roadway. It extends from east of Middlefield Road in the Town of Atherton to University Drive in downtown Menlo Park. This roadway is one of four east-west roadways in the city that crosses the Caltrain railroad tracks. The ADT for this roadway is approximately 7,000 vehicles west of El Camino Real and 9,000 vehicles to the east.

University Drive is a north-south two-lane collector roadway that has two discrete segments on the west side of downtown. The first segment extends from south of Middle Avenue to Santa Cruz Avenue. The second segment extends from Santa Cruz Avenue approximately 150 feet east of the first segment to Valparaiso Avenue. The ADT for this roadway is approximately 7,000 vehicles.

EXISTING TRANSIT SERVICE

The City of Menlo Park encourages the use of transit as an alternative mode of transportation and is served by two major transit providers: Caltrain and the San Mateo County Transit District (SamTrans). Caltrain provides commuter rail service and SamTrans provides local and regional bus service. Local shuttles are also provided in Menlo Park during commute hours by Caltrain and during mid-day hours by the City. Both shuttles operate on weekdays (Monday through Friday) only. Transit service and facilities - bus routes, major bus stops, Caltrain tracks, and the Caltrain station - are shown on **Figure 3**.



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March 2010
SJ09-1089

Existing Transit Service

Figure 3

Caltrain Commuter Rail Service

Caltrain is owned by the Peninsula Corridor Joint Powers Board, operated under contract with Amtrak, and managed under contract with SamTrans. Caltrain operates 50 miles of commuter rail between San Francisco and San José with limited service trains to Morgan Hill and Gilroy during weekday commute periods. On weekdays, Caltrain operates approximately 100 trains per day of local, limited stop, and Baby Bullet express services in both directions. The travel time between Menlo Park and San Francisco is approximately 60 minutes and the travel time between Menlo Park and San Jose is approximately 40 minutes for local and limited stop services. Caltrain's Baby Bullet express service makes it possible to travel between Menlo Park and San Francisco or San Jose in less than 45 minutes or 25 minutes, respectively. Caltrain offers 22 weekday commute-hour bullet trains, which serves Menlo Park southbound in the morning and northbound in the evening. On weekends, Caltrain operates approximately 30 trains per day with local stops only. Lockable, sheltered bike parking is provided adjacent to the station platform, and convenient bus and shuttle access is provided at the nearby bus transfer facility.

The Menlo Park Caltrain Station is the tenth busiest Caltrain station and is located east of El Camino Real between Ravenswood Avenue and Santa Cruz Avenue. Currently, approximately 1,450 passengers board and alight daily at the Menlo Park Caltrain station, including approximately 100 daily passengers with bikes.

Caltrain Short-Range Transit Plan

Planned short-range improvements to Caltrain focus on a strategy called the State of Good Repair which will concentrate on a systematic approach in optimizing the current system's condition and performance. These planned improvements include upgrading signaling and communications systems, replacing old bridges, enhancing approach speeds and flexibility at the San Francisco terminus, and eliminating all of the remaining hold-out stations. These stations are areas where trains are required to wait while another train is in the main station and therefore increase service delays. Planned long-range improvements to Caltrain include electrification of the entire line to improve operating efficiency and provide environmental benefits.

SamTrans Bus Service

SamTrans operates bus service in San Mateo County. There are 48 routes in the county that can be categorized as community, express, BART connection, Caltrain connection, and BART and Caltrain connection routes. These routes serve approximately 14,630,000 annual riders. Most bus routes typically operate along major arterial corridors and operate from early morning into the late evening.

Routes Serving Menlo Park

Route KX provides service between Palo Alto and San Francisco via El Camino Real and US 101. Headways are between approximately 15 to 60 minutes on weekdays and 20 to 60 minutes on weekends. This route serves approximately 2,500 daily riders.

Route 83 provides service within the City of Menlo Park via a variety of roadways, providing service to all local public schools. This route operates on schooldays only, and headways vary between 2 and 75 minutes. This route serves approximately 580 daily riders.

Route 85 provides service between Menlo Park and Woodside via Santa Cruz Avenue, Alpine Road, and Portola Road. Headways are between approximately 30 to 120 minutes on weekdays. This route only operates in the morning between 6:30 am and 8:00 am and in the afternoon between 12:00 pm and 4:30 pm. This route serves approximately 180 daily riders.

Route 295 provides service between San Mateo and Menlo Park via a variety of roadways. Headways are between approximately 30 to 60 minutes on weekdays and this route does not operate on weekends. This route serves approximately 1,240 daily riders.

Route 296 provides service between East Palo Alto and Redwood City via Clarke Avenue, Bay Road, Willow Road, and Middlefield Road. Headways are between approximately 30 to 60 minutes on weekdays and approximately 60 minutes on weekends. This route serves approximately 2,300 daily riders.

Route 297 provides service between Palo Alto and Redwood City via University Avenue, Bay Road, and Middlefield Road. Headways are approximately 60 minutes on both weekdays and weekends. This route only operates during the late evening, overnight and early morning hours. The route does not operate mid-day. This route serves approximately 70 daily riders.

Route 390 provides service between Palo Alto and Daly City via El Camino Real. Headways are between approximately 30 to 60 minutes on both weekdays and weekends. This route serves approximately 6,980 daily riders.

Route 397 provides service between Palo Alto and San Francisco via University Avenue, Bay Road, Middlefield Road, El Camino Real, Millbrae Avenue, Bayshore Boulevard, and Mission Street. Headways are approximately 60 minutes on both weekdays and weekends. This route only operates to San Francisco during the overnight and early morning hours. This route is an extension of Route 297, and it does not operate mid-day. This route serves approximately 200 daily riders.

Average weekday ridership for selected routes is shown on **Figure 4**.

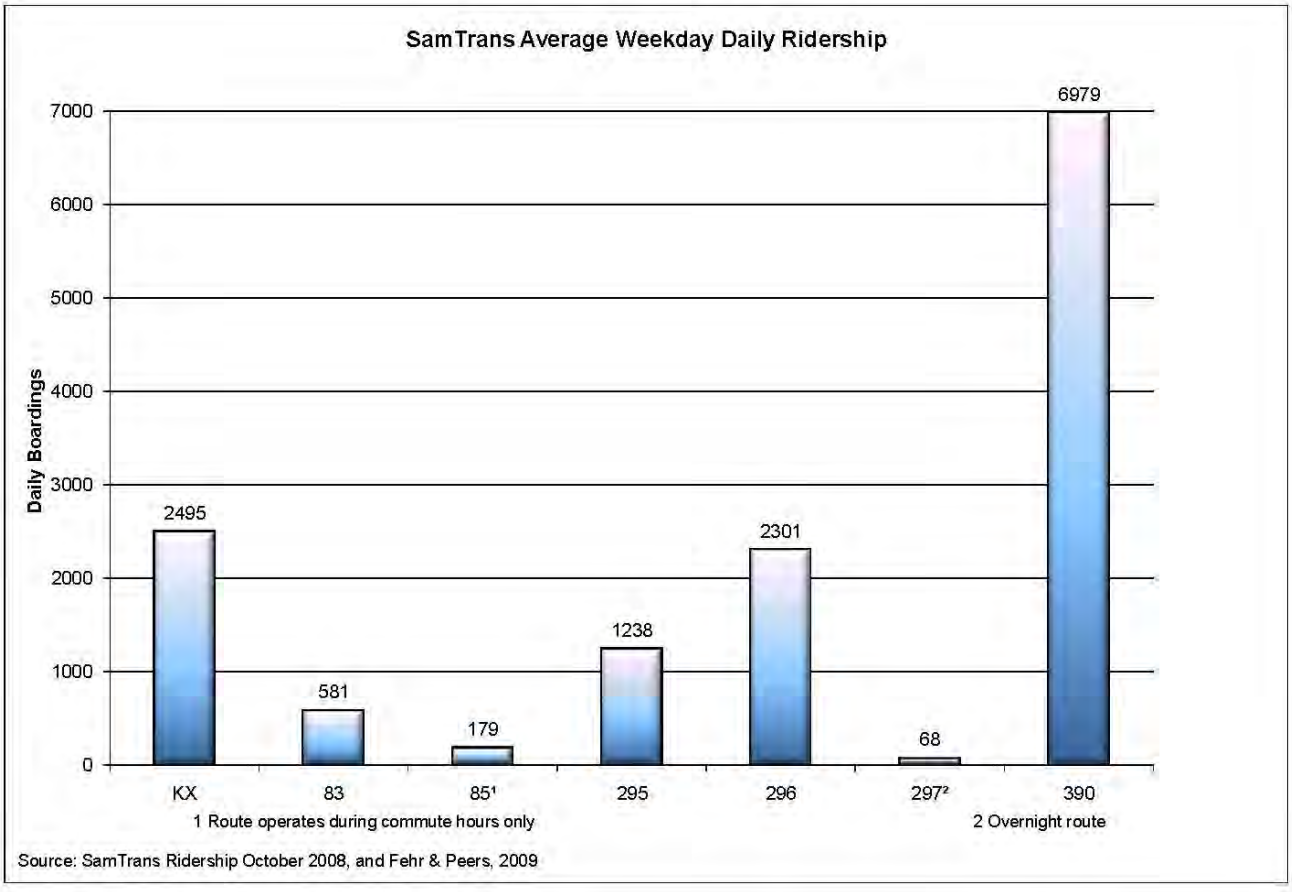


Figure 4 SamTrans Average Weekday Daily Ridership

SamTrans Short Range Transit Plan

Planned short-range improvements to SamTrans service focus on optimizing the current system's condition and performance. These planned improvements include vehicle replacement, vehicle expansion, adding TransLink and other fare collection equipment, installing information technology, and planning for Transit Oriented Development (TOD).

Planned development envisioned in the Specific Plan and located in the Caltrain Station area or in the Downtown near El Camino Real is considered to be a TOD as it is within a reasonable walking distance of the Menlo Park Caltrain station. Development on El Camino Real that is clustered around SamTrans bus stations would also be considered as TODs.

Shuttle Service

Local shuttle service in Menlo Park is provided by Caltrain and the City of Menlo Park. Each shuttle service is described below.

Caltrain Shuttles

Free shuttles are provided between the Menlo Park Caltrain Station and employment centers east of US 101 on either Marsh Road or Willow Road. These shuttles are also open to the public. Headways are based on train arrivals and departures at the Menlo Park Caltrain Station and the shuttles operate during commute periods on weekdays only.

City of Menlo Park Shuttles

Free shuttles are provided via the Menlo Park Mid-day Shuttle service within Menlo Park and adjacent cities. These shuttles serve the Stanford Medical Center, Stanford Shopping Center, downtown Menlo Park, Menlo Park Caltrain Station, Menlo Park Library, VA Medical Center, and Menlo Park Senior Center. The shuttles are open to the public. Headways are approximately 60 minutes and the shuttles operate during mid-day hours on weekdays only.

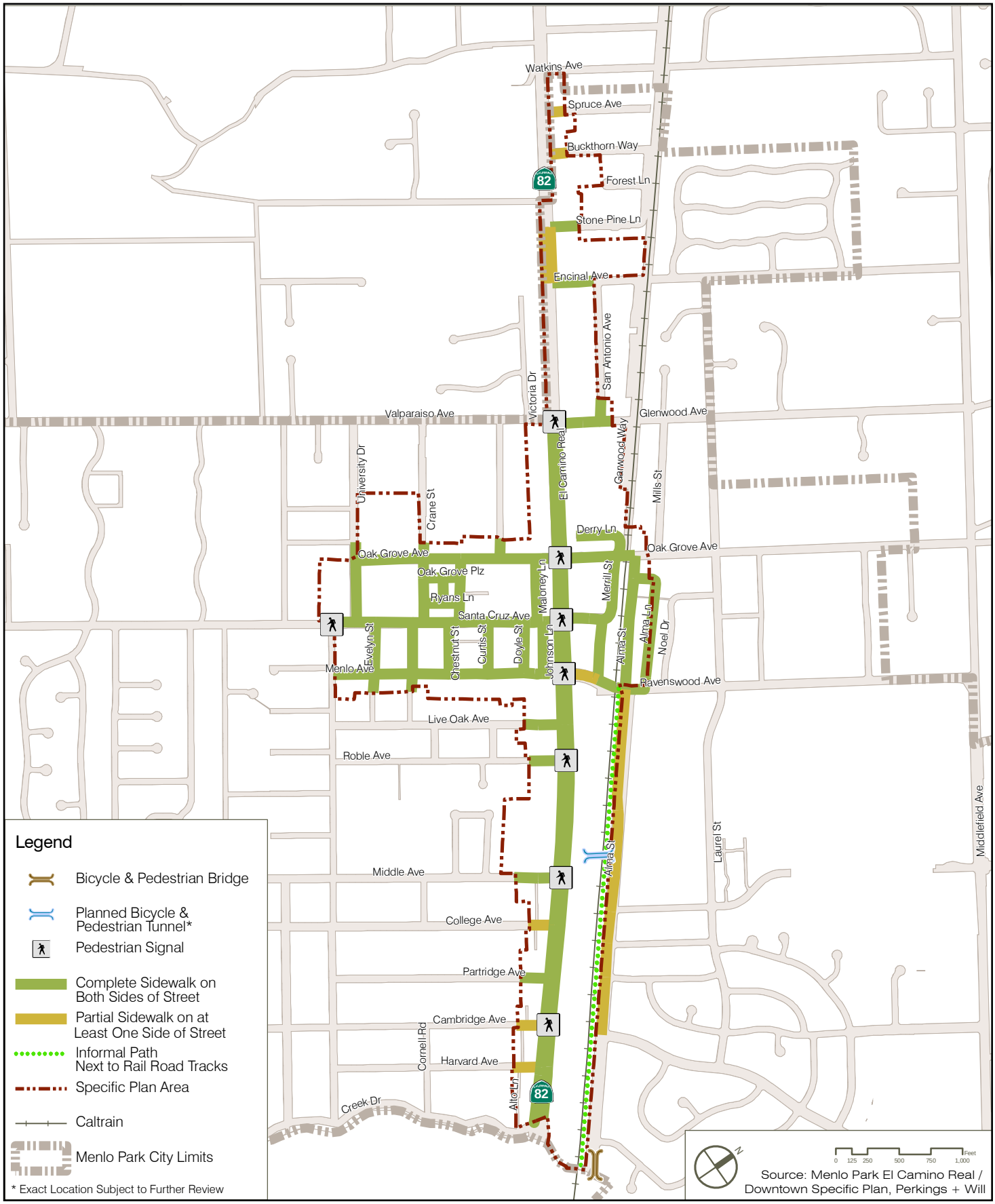
EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Walking and bicycling are actively used by Menlo Park residents, and comprise an important mode of transportation for the City. According to the 2000 Census data, 5.9% of Menlo Park residents commute to work by bicycle or walking, which is 2.2% and 3.3% higher than both the averages for California and the United States, respectively.

Pedestrian Facilities

The pedestrian facilities generally included within the study area are off-street paths, sidewalks along roadways, pedestrian signals, and crosswalks. Two (2) main types of crosswalks exist: marked (striped) crosswalks and unmarked (no striping) crosswalks. Although pedestrians have the right to cross at any legal crosswalk whether marked or unmarked, this section focuses on marked crosswalks – both controlled and uncontrolled. Controlled, marked crosswalks include those striped and controlled by a traffic/pedestrian signals or stop signs. Uncontrolled, marked crosswalks can exist mid-block or at intersections with side-street stop control only (or all-way yield control intersections with low volumes).

As shown on **Figure 5**, the sidewalk network is nearly complete within the focused downtown area along Santa Cruz Avenue and the area to the south. These areas have the most concentrated centers of pedestrian activity. The west side of El Camino Real just north of the city limits (fronting Menlo College) is missing sidewalks. An informal off-street path is provided along the east side of the Caltrain tracks from the San Francisquito Creek bicycle/pedestrian bridge at Alma Street to Ravenswood Avenue.



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March 2010
SJ09-1089

Existing Pedestrian Facilities Inside Specific Plan Area

Figure 5

Signalized Crosswalks

Pedestrian signals exist at all of the signalized intersections within the study area. Traffic signals at the El Camino Real intersections at Oak Grove Avenue, Santa Cruz Avenue, and Menlo Avenue-Ravenswood Avenue also include audible pedestrian signals.

Crosswalks are marked at all signalized intersections, although crossings on some legs of the signalized intersections have been closed to reduce vehicular delays, including:

- El Camino Real/Encinal Avenue – south leg
- El Camino Real/Menlo Avenue-Ravenswood Avenue – south leg
- El Camino Real/Roble Avenue – north leg
- El Camino Real/Middle Avenue – south leg
- El Camino Real/Cambridge Avenue – south leg
- Santa Cruz Avenue/University Drive – west leg

Uncontrolled Crosswalks

Within or near the Specific Plan Area, several marked, uncontrolled (mid-block) crosswalks exist, including:

- Across El Camino Real near Stone Pine Lane-Alejandra Avenue and Watkins Avenue-Isabella Lane
- Across Ravenswood Avenue at Alma Street
- Across Santa Cruz Avenue, near Curtis Street, Crane Street, and Evelyn Street
- Across Oak Grove Avenue near Hoover Street and Merrill Street
- Across Menlo Avenue near Chestnut Street and Doyle Street
- Across Alma Street near Library and Civic Center entrance

While several of the uncontrolled crosswalks on City streets include high visibility striping and advance signage, the El Camino Real crossings are striped in the standard style (two parallel lines) with no advance warning signs or other enhancements to increase visibility. The Ravenswood Avenue crossing at Alma Street has flags for pedestrians to carry as they cross the street and in pavement flashers to increase visibility.

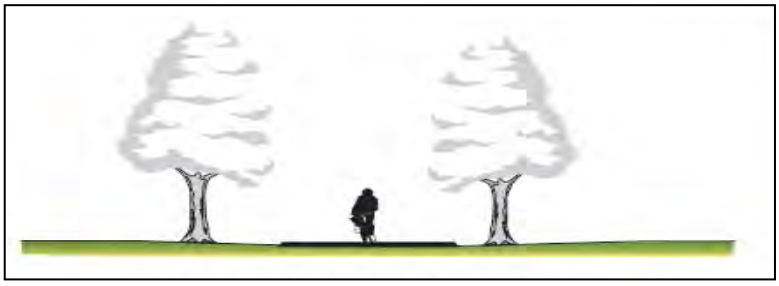
Santa Cruz Avenue Crosswalks

Marked crosswalks (both controlled and uncontrolled) within the downtown core along Santa Cruz Avenue are enhanced with colored, stamped pavement and are striped with two parallel lines. Many of these crossing locations include curb extensions to improve lines of sight between drivers and pedestrians and to shorten the pedestrian crossing distance. Along Santa Cruz Avenue and adjacent streets, pedestrian activity is frequent; thus, crossings are anticipated by most drivers, who were observed generally to yield to pedestrians.

Bicycle Facilities

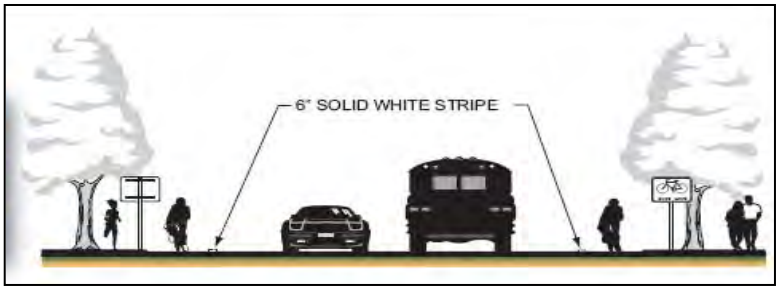
Caltrans standards (Chapter 1000: Bikeway Planning and Design of the *Highway Design Manual*, 2001) provide for three distinct types of bikeway facilities, as described below and shown on the accompanying figures.

- *Class I Bikeway (Bike Path)* provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.





- *Class II Bikeway (Bike Lane)* provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.





- *Class III Bikeway (Bike Route)* provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

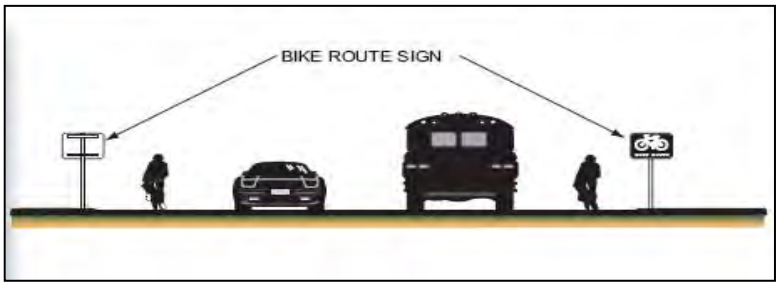




Figure 6 shows the existing and planned bicycle facilities in and near the Specific Plan area as identified in the January 2005 *Menlo Park Comprehensive Bicycle Development Plan*. No formal Class I bike paths exist in the Specific Plan area, although an informal off-street path parallels the Caltrain tracks from the bicycle/pedestrian bridge at Alma Street over San Francisquito Creek to Ravenswood Avenue. Roadways with existing and planned Class II bike lanes and Class III bike routes are listed below:

Existing Class II Bike Lanes

- Valparaiso Avenue, between Alameda de las Pulgas and El Camino Real
- Glenwood Avenue, between El Camino Real and Laurel Street
- Santa Cruz Avenue, between Orange Avenue and University Drive
- Encinal Avenue, between Caltrain tracks and Middlefield Road
- Laurel Street, between Encinal Avenue and north of Burgess Avenue
- Ravenswood Avenue, between Noel Drive and Middlefield Road
- Alma Street, between Ravenswood Avenue and San Francisquito Creek (south City limit)
- Willow Road, between Alma Street and Durham Street

Planned Class II Bike Lanes

- El Camino Real, between Encinal Avenue and north City limit

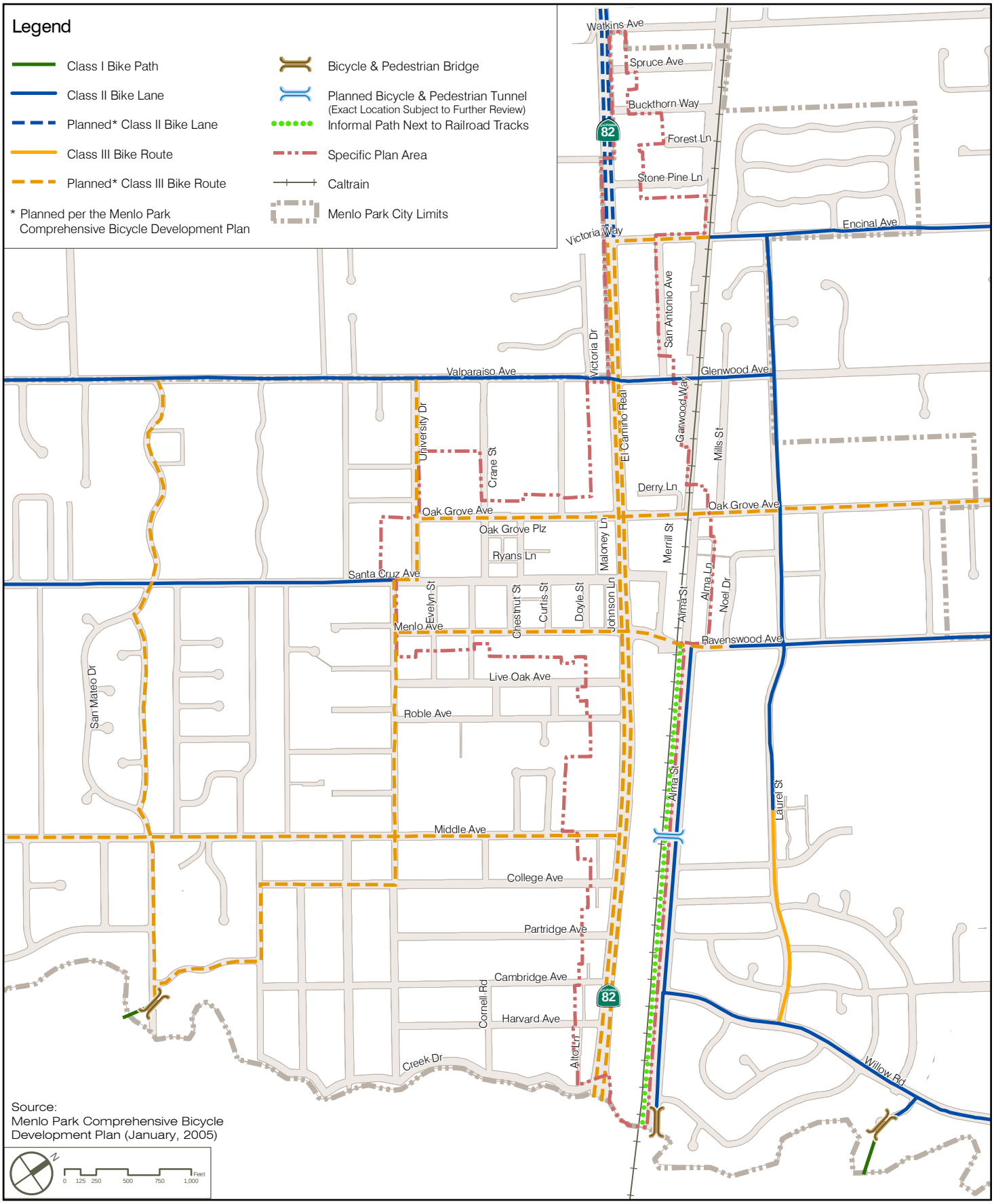
Existing and Planned Bike Routes

A class III bike route is provided on Laurel Street between Willow Road and north of Burgess Avenue. Class III bike routes are planned along these segments:

- El Camino Real, between Encinal Avenue and south City limit
- Encinal Avenue, between El Camino Real and Caltrain tracks
- Glenwood Avenue,
- Oak Grove Avenue, between University Drive and Middlefield Road
- University Drive, between Valparaiso Avenue and College Avenue
- Middle Avenue, between Olive Street and El Camino Real
- College Avenue, between Arbor Road and University Drive
- San Mateo Drive, between Valparaiso Avenue and San Francisquito Creek (south City limit)

Bicycle/Pedestrian Bridges and Undercrossings

Several bicycle and pedestrian bridges and undercrossings also are provided or planned near the Specific Plan Area. Existing bridges are provided at San Mateo Drive, Alma Street and Willow Place over San Francisquito Creek along the south edge of the City. A planned undercrossing of the Caltrain tracks is under consideration just north of Middle Avenue. This undercrossing project is currently on-hold pending resolution of the alignment for the planned high speed rail line.



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March 2010
SJ09-1089

Existing & Planned Bicycle Facilities

Figure 6

EXISTING TRAFFIC VOLUMES

This section discusses the traffic volumes used to evaluate existing roadway operations for the El Camino Real/Downtown Menlo Park Specific Plan transportation impact analysis.

Intersection Volumes

Intersection operations were evaluated during the morning (AM) and evening (PM) commute periods, when traffic volumes are highest. The City of Menlo Park conducted traffic counts for two-hour periods, 7:00 am to 9:00 am and 4:00 pm to 6:00 pm, in 2009 and early 2010. The highest one-hour measured volumes during each of these periods (the AM and PM peak hour volumes) were used in the intersection analysis. These volumes are shown on **Figures B-1a, -1b, and -1c** in **Appendix B**. Intersection lane configurations and traffic control devices (stop signs or traffic signals) are also shown on these figures.

Roadway Segment Volumes

Daily volumes were used to evaluate roadway segment impacts. The existing volumes used in the analysis were provided by the City of Menlo Park and are presented in **Table B-1** in **Appendix B**.

Freeway Segment Volumes

Freeway segments on US 101 and I-280 were evaluated per the San Mateo County Congestion Management Program (CMP) requirements. Existing peak hour volumes were obtained from Caltrans 2008 AADT Counts and adjusted using Caltrans' Peak Hour Volume Data Report. Existing freeway segment levels of service were obtained from the *San Mateo County Congestion Management Program 2009 Traffic Level of Service and Performance Measure Monitoring Report (2009 CMP Monitoring Report)*.

EXISTING INTERSECTION LEVELS OF SERVICE

The existing lane configurations and the peak-hour turning movement volumes on **Figures B-1a through B-1c** were used to calculate the level of service for each of the study intersections during the AM and PM peak hours. The results of the intersection analysis are presented in **Table 5**, and are shown graphically on **Figure 7**.

Level of service calculation sheets are contained in **Appendix C** of this report. These calculation sheets include detailed input data and report the delay experienced by vehicle drivers for the intersection as a whole, on each approach, and for individual movements. An intersection approach corresponds to the leg of an intersection (i.e. a four-legged intersection has four approaches) and movements refer to the permitted turns (left, through, right) at each approach of the intersection. Most of the study intersections currently operate at levels better than their level of service threshold. The exceptions are:

- The eastbound approach of the intersection of Middlefield Road and Encinal Avenue during both the AM and PM peak hours
- The eastbound approach of the intersection of Middlefield Road and Glenwood Avenue/Linden Avenue during both the AM and PM peak hours

TABLE 5:
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	Average Delay[1]	LOS[2]	LOS Threshold
1. El Camino Real & Atherton Avenue/Fair Oaks Lane (Ct/At)	Signal	AM PM	39.8 35.9	D D	D
2. El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	18.2 16.3	B B	D
3. El Camino Real & Glenwood Avenue/Valparaiso Avenue (Ct/At/MP)	Signal	AM PM	33.0 38.8	C D	D
4. El Camino Real & Oak Grove Avenue (Ct/MP)	Signal	AM PM	31.8 29.4	C C	D
5. El Camino Real & Santa Cruz Avenue (Ct/MP)	Signal	AM PM	9.7 22.5	A C	D
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP)	Signal	AM PM	40.5 44.1	D D	D
7. El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	11.0 13.9	B B	D
8. El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	29.0 27.8	C C	D
9. El Camino Real & Cambridge Avenue (Ct/MP)	Signal	AM PM	11.3 12.3	B B	D
10. El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	26.5 34.0	C C	E
11. Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	13.3 11.5	B B	C
12. Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	13.6 11.9	B B	D
13. University Drive & Valparaiso Avenue (MP/At)	Signal	AM PM	13.1 15.5	B B	D
14. University Drive & Oak Grove Avenue (MP)	All-way Stop	AM PM	10.0 11.2	B B	C
15. University Drive & Santa Cruz Avenue (MP)	All-way Stop	AM PM	31.5 19.0	D C	D
16. University Drive & Santa Cruz Avenue (MP)	Signal	AM PM	12.2 15.0	B B	D
17. University Drive & Menlo Avenue (MP)	All-way Stop	AM PM	13.5 12.4	B B	C
18. Middlefield Road & Marsh Road (At)	Signal	AM PM	24.7 26.9	C C	D
19. Middlefield Road & Encinal Avenue (At)	Side Street Stop	AM PM	**72.0** **46.5**	**F** **E**	D
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	AM PM	**55.8** **>150**	**F** **F**	D

TABLE 5:
EXISTING INTERSECTION LEVELS OF SERVICE

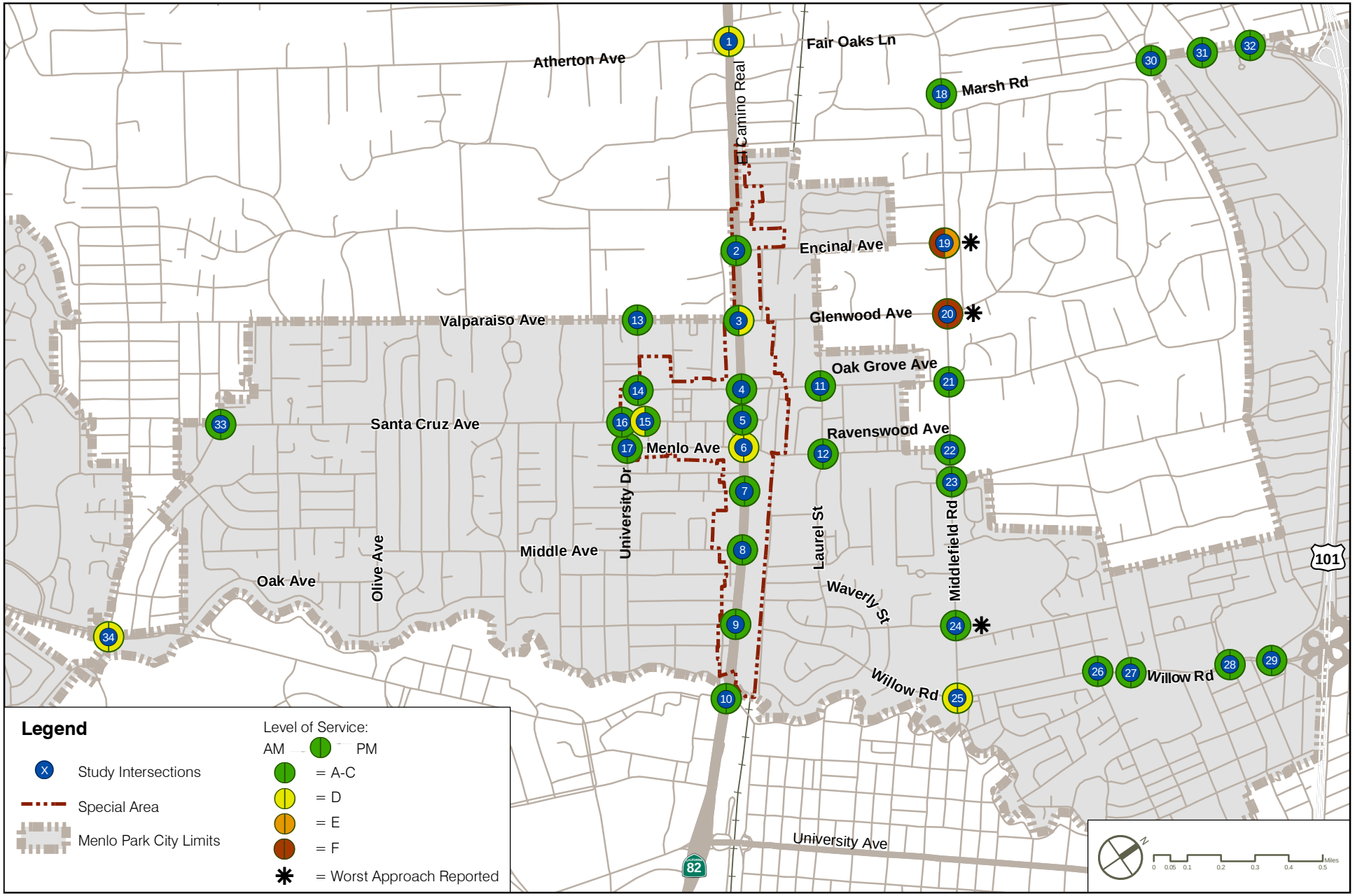
Intersection	Traffic Control	Peak Hour	Average Delay[1]	LOS[2]	LOS Threshold
21. Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	11.6 9.3	B A	D
22. Middlefield Road & Ravenswood Avenue (MP/At)	Signal	AM PM	22.7 28.1	C C	D
23. Middlefield Road & Ringwood Avenue (MP/At)	Signal	AM PM	27.8 26.5	C C	D
24. Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	21.4 15.9	C C	D
25. Middlefield Road & Willow Road (MP)	Signal	AM PM	41.6 53.5	D D	D
26. Gilbert Avenue & Willow Road (MP)	Signal	AM PM	12.4 10.4	B B	D
27. Coleman Avenue & Willow Road (MP)	Signal	AM PM	18.2 9.8	B A	D
28. Durham Street & Willow Road (MP)	Signal	AM PM	12.9 21.2	B C	D
29. Bay Road & Willow Road (Ct/MP)	Signal	AM PM	20.7 18.6	C B	D
30. Bay Road & Marsh Road (MP)	Signal	AM PM	16.5 14.2	B B	D
31. Florence Street/Bohannon Drive & Marsh Road (MP)	Signal	AM PM	16.4 20.7	B C	D
32. Scott Drive & Marsh Road (MP)	Signal	AM PM	14.1 18.6	B B	D
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM PM	21.6 24.1	C C	D
34. Santa Cruz Avenue/Alpine Avenue & Sand Hill Road (MP)	Signal	AM PM	42.8 45.1	D D	D

Notes:

1. Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
2. LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* delay methods for signalized and unsignalized intersections.

Unacceptable operations are indicated in **bold** type.

Source: Fehr & Peers, 2010.



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March 2010
SJ09-1089

Existing Intersection Levels of Service

Figure 7

EXISTING FREEWAY SEGMENT LEVELS OF SERVICE

Existing freeway operations were obtained from The 2009 San Mateo County CMP Monitoring Report. The levels of service were based on average speeds obtained from travel time surveys. The study segments of US 101 are currently operating at LOS F (with the exception of northbound US 101 during the AM peak hour which is operating at LOS D). Northbound I-280 in the study area is operating at LOS A/B during the AM peak hour and LOS D during the PM peak hour. In the southbound direction, I-280 is operating at LOS C during the AM peak hour and LOS A/B during the PM peak hour. Therefore, selected segments are currently operating at their CMP LOS standards.

DOWNTOWN PARKING

The Specific Plan will affect parking conditions in the Downtown area. Potential future development in the other subareas within the Specific Plan area will provide parking on-site according to the adopted code or modifications provided by the Specific Plan. Those modifications are based on industry standards and therefore are anticipated to provide sufficient parking to meet the demand of those uses. Parking impacts in the other subareas will be less than significant and no additional parking analyses for those areas were conducted.

The existing parking supply and demand was surveyed by Wilbur Smith Associates for the 2009/2010 downtown parking study currently underway and is summarized in this section. The existing public parking supply in the downtown core[3] area consists of 1,186 spaces on the public parking plazas and 409 spaces on-street, for a total of 1,595 public spaces. Additional spaces are provided in private parking lots. The parking plaza locations are shown on **Figure 8**. The numbers of parking spaces in each parking plaza, and on selected block faces are presented in **Table 6**.

The existing peak parking demand in the downtown core measured by Wilbur Smith Associates on weekdays is 1,260 parked vehicles (or occupied spaces). The percent of occupied spaces steadily increases during the morning, reaches a peak of about 80 percent between 12:00 noon and 2:00 pm and then steadily decreases. Approximately 65 percent of spaces are occupied at 5:00 pm. The peak occupancy measured on a Saturday was 63 percent at 1:00 pm. The practical capacity of downtown areas is usually between 85 and 90 percent occupied spaces. Downtown Menlo Park approaches this limit for a few hours each weekday, based on data collected in November 2009.

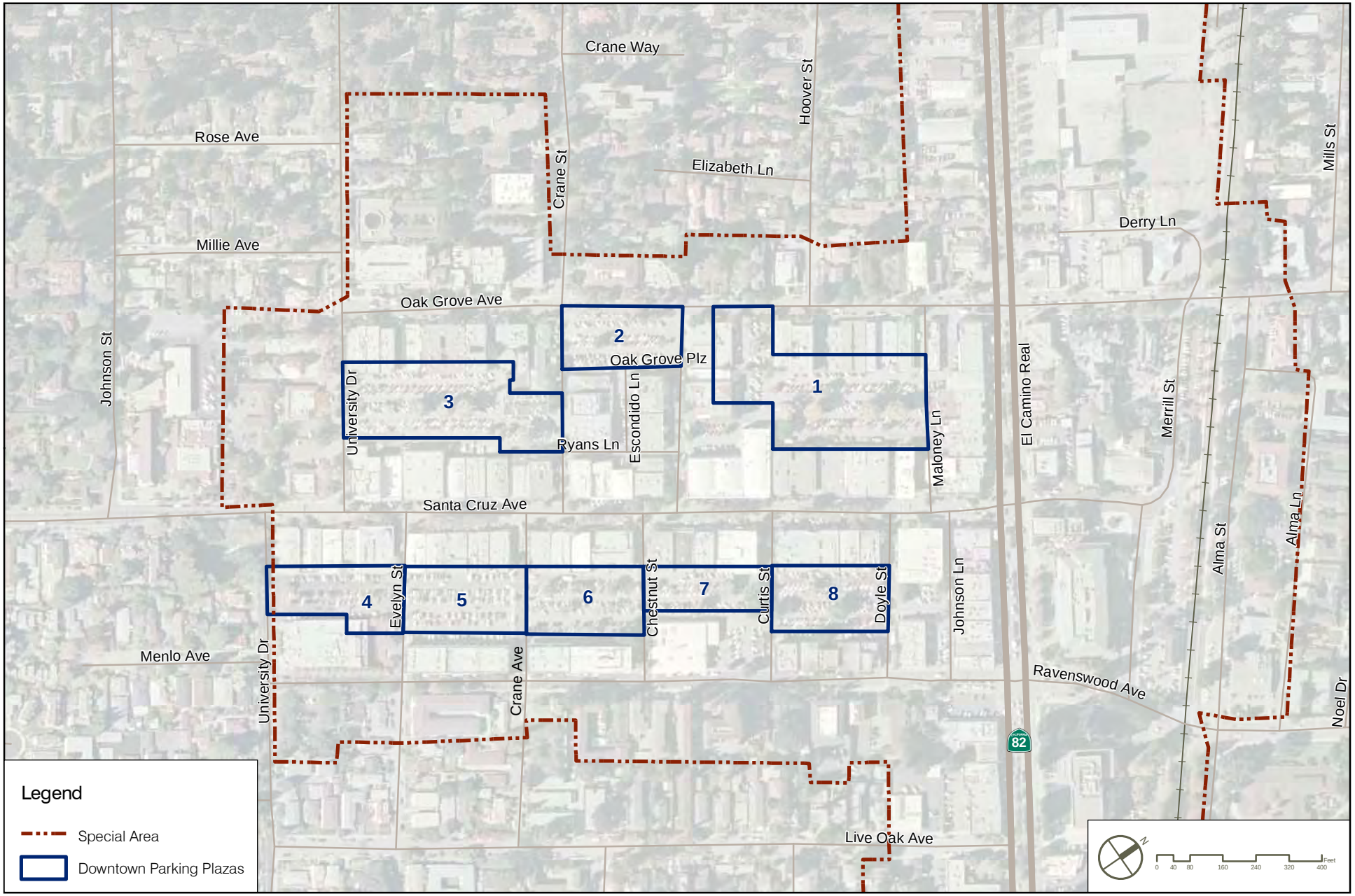
The parking demand in downtown Menlo Park may be higher during more robust economic conditions. For example, according to the 2007 *MTC Smart Growth Parking Policy Study*, the weekday midday peak parking occupancy in the downtown commercial core was approximately 84 percent. The 1999 *Downtown Parking Study* reported a peak occupancy of 89 percent.

[3] The downtown core area is bounded by Oak Grove Avenue, El Camino Real, Menlo Avenue, and University Drive.

TABLE 6:
EXISTING DOWNTOWN PUBLIC PARKING SUPPLY (SPACES)

Parking Location	Supply[1]
Parking Plazas	
Parking Plaza 1	249
Parking Plaza 2	95
Parking Plaza 3	212
Parking Plaza 4	105
Parking Plaza 5	150
Parking Plaza 6	136
Parking Plaza 7	94
Parking Plaza 8	145
Total	1,186
On-Street Spaces	
Santa Cruz Avenue	116
Chestnut Street North	26
Chestnut Street South	17
Oak Grove Avenue	80
Other Streets	170
Total	409
Downtown Core Area Total	1,595

Notes:
1. Draft *2009-2010 Downtown Menlo Park Parking Study*, Wilbur Smith Associates.



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March 2010
SJ09-1089

Downtown Parking Plazas

Figure 8

3. SPECIFIC PLAN TRANSPORTATION IMPROVEMENTS

This chapter presents a summary of the planned bicycle, pedestrian, and transit improvements proposed as a part of the El Camino Real/Downtown Specific Plan. It also discusses the proposed parking garages and potential changes to the roadway system needed to accommodate these improvements and changes to provide access to development parcels.

BICYCLE IMPROVEMENTS

This section describes the bicycle network improvements to be used by cyclists to access the Specific Plan Area and the amenities that will be provided to encourage safe and convenient bicycling.

Bicycle Facilities

In addition to encouraging bicycle transportation by improving the destinations, design, and amenities within the downtown and along El Camino Real, the Specific Plan proposes four new bicycle facilities in addition to those in the 2005 *Menlo Park Comprehensive Bicycle Development Plan* by Alta Planning (City's *Bicycle Development Plan*). These facilities will improve connectivity between the residential areas to the west, the downtown, and other regional destinations. They will also provide bicycle facilities that parallel El Camino Real through the downtown area to provide an alternative north-south bicycle route.

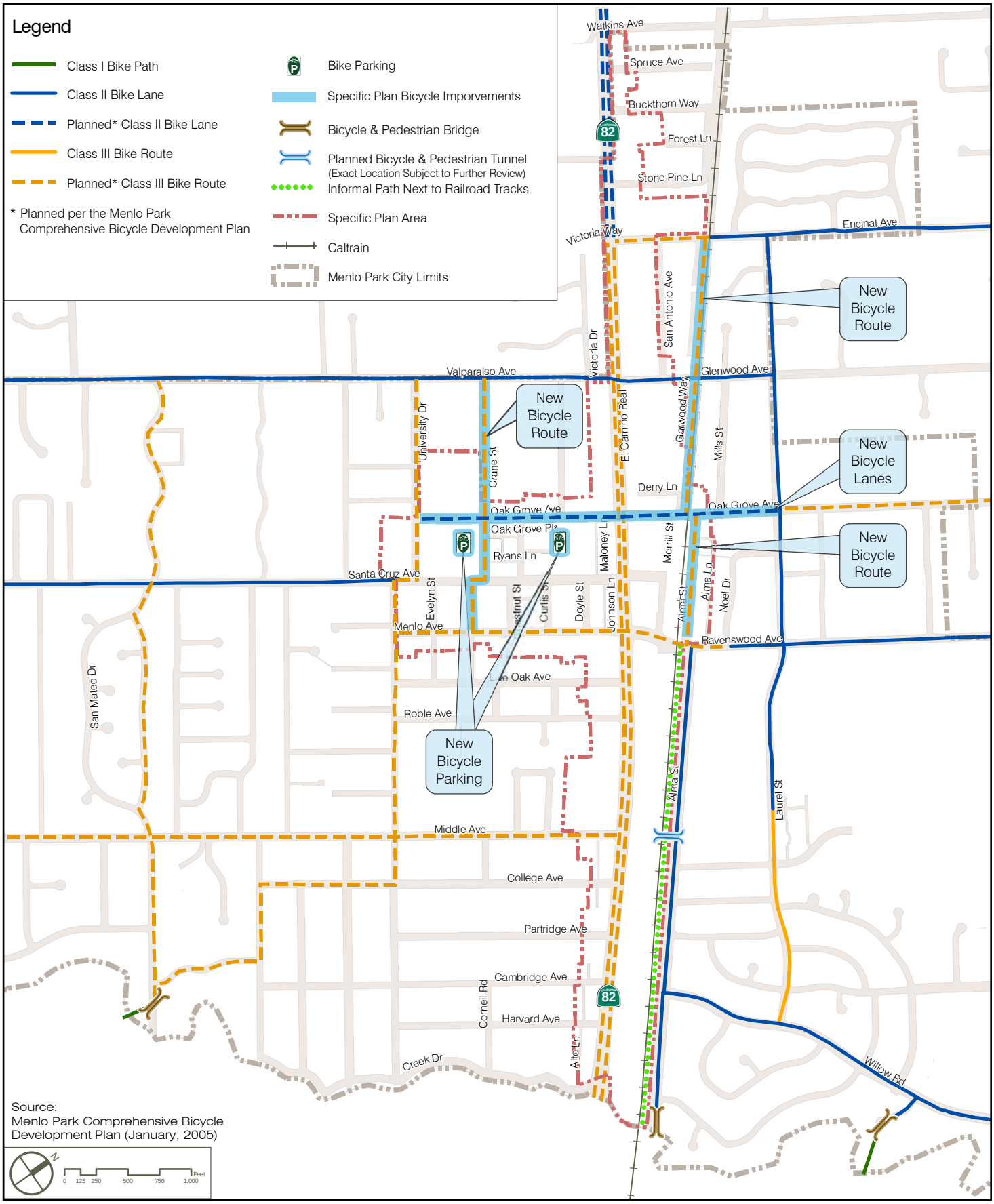
Figure 9 depicts the existing and planned bicycle facilities plus those recommended by the Specific Plan, which are described below:

Bicycle lanes on Oak Grove Avenue between University Drive and Laurel Street. This section of Oak Grove Avenue was identified as a bike route in the City's *Bicycle Development Plan.* The Specific Plan recommends an upgrade to bike lanes to provide bicycle access to the downtown and to improve east-west bicycle connectivity. The bike lanes are intended to also direct cyclists to cross El Camino Real at Oak Grove Avenue instead of Menlo Avenue/Ravenswood Avenue, due to lower traffic volumes. The bike lanes will require the removal of parking spaces on one side of the street (approximately 60 spaces with 35 of them in the downtown area).

Bike route on Crane Street between Valparaiso Avenue and Menlo Avenue. The bike route on Crane Street will direct cyclists from the bike lanes on Valparaiso Avenue and Oak Grove Avenue and the bike route on Menlo Avenue into the downtown.

Bike route on Garwood Way from Oak Grove Avenue to Encinal Avenue. This section of bike route plus the section on Alma Street below will provide a bicycle facility that is parallel to El Camino Real by connecting to the bike lanes on Alma Street to the south. Cyclists could then use the bike route on Encinal Avenue to the future bike lanes on El Camino Real north of Encinal Avenue.

Bike route on Alma Street between Oak Grove Avenue and Ravenswood Avenue. This future bike route would connect the bike lanes on Alma Street south of Ravenswood Avenue to the future bike lanes on Oak Grove Avenue.



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March 2010
SJ09-1089

Specific Plan Bicycle Improvements

Figure 9

Bicycle Amenities

The Specific Plan includes the following bicycle amenities:

- Sharrows to supplement pavement markings on Class III facilities to indicate where bicyclists should ride to avoid the "door zone" next to parked vehicles
- Renovation of the currently closed bicycle storage building at the Caltrain station by modifying the locks
- New bicycle parking facilities in the proposed parking garages
- New bicycle parking racks in the plan area in new pocket parks, on the Chestnut Paseo, and along Santa Cruz Avenue

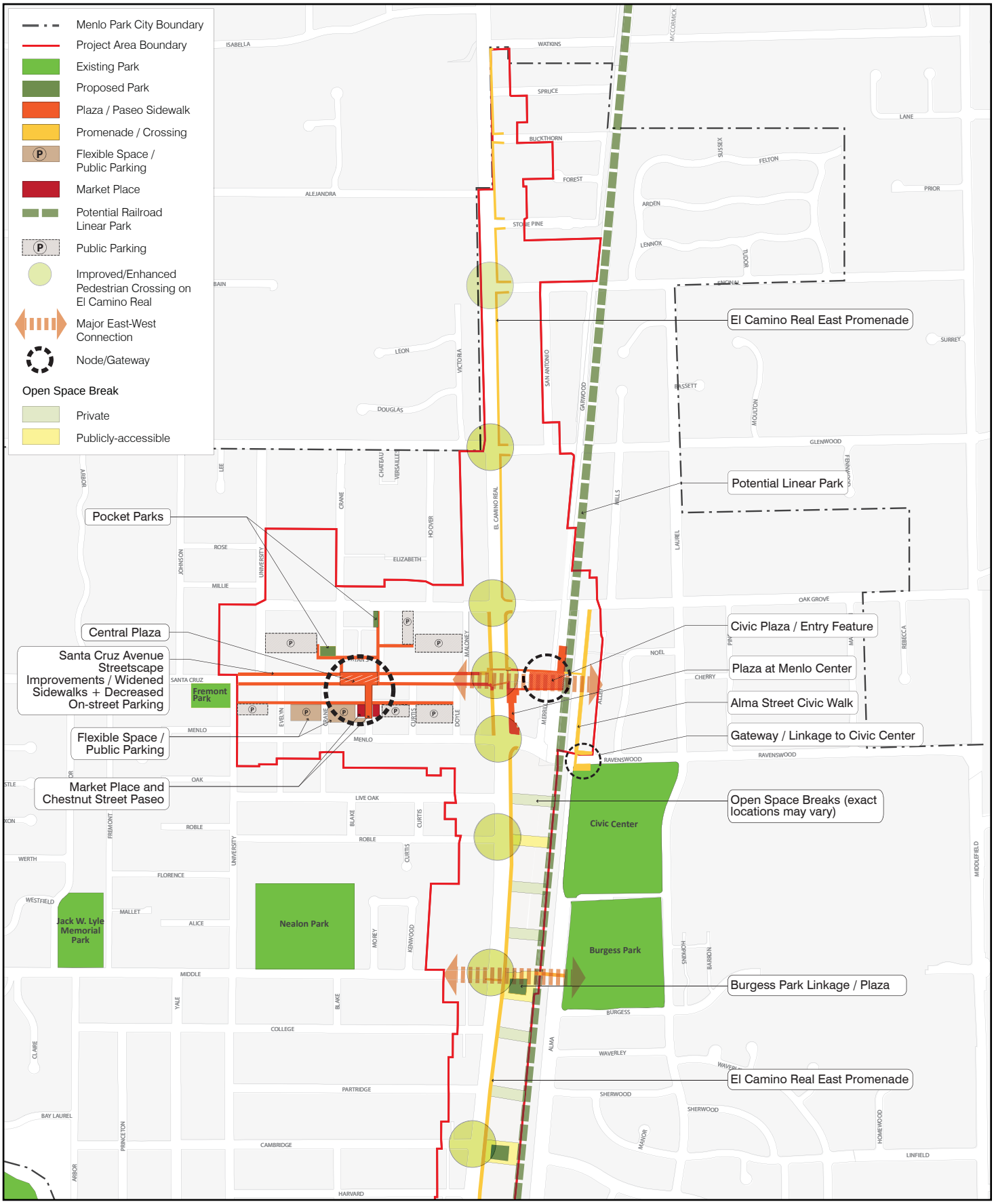
PEDESTRIAN IMPROVEMENTS

The new development and redevelopment in the Specific Plan will increase the number of pedestrians in the downtown and on El Camino Real. Improvements, shown on Figure 10 and described in this section, will provide added pedestrian facilities to accommodate existing pedestrians plus the added pedestrian traffic. They will also increase the pedestrian friendliness of the Specific Plan Area.

Pedestrian Network

Pedestrian connectivity improvements contained in this Specific Plan include:

- Widened sidewalks and a central plaza on Santa Cruz Avenue
- A paseo or "pedestrian street" on Chestnut Street south of Santa Cruz Avenue
- Parking garage and pocket park connections including widened sidewalks on Crane Street and Chestnut Street north of Santa Cruz Avenue
- South parking plazas pedestrian link – a continuous shaded pathway on the south side of the buildings bordering the south parking plazas
- Station area east-west pedestrian linkages
- "Civic Walk" linkage to the civic center on Alma Street
- Widened sidewalks on El Camino Real
- Grade-separated railroad track crossings near Santa Cruz Avenue and Middle Avenue
- Improved pedestrian connectivity across El Camino Real by slightly narrowing the vehicle travel lanes and enhancing pedestrian crossings at key locations (up to eight intersections). Enhancements could include special pavement treatments, crosswalk striping, and potential curb extensions. Curb extensions, if selected, could require the removal of right-turn lanes at a few locations, including the northbound right-turn lane at Oak Grove Avenue, and the southbound right-turn lanes at Oak Grove, Santa Cruz, and Menlo Avenues.



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April 2010
SJ09-1089

Specific Plan Pedestrian Improvements

Figure 10

Pedestrian Amenities

The Specific Plan proposes improving pedestrian comfort and accommodation by implementing the following:

- Countdown timers for all pedestrian signal heads in the downtown area
- High visibility crosswalks to more clearly delineate pedestrian crossing areas
- Extended time for pedestrians to cross El Camino Real during off-peak traffic times, particularly at Santa Cruz Avenue
- Pedestrian way-finding signage

TRANSIT IMPROVEMENTS

Fixed-route bus service in the Plan Area is currently provided by San Mateo County Transit District (SamTrans). Shuttle bus service is funded by the City and County Association of Governments of San Mateo County (C/CAG), San Mate County Transportation Authority (SMCTA), the Joint Powers Board (JPB), and City of Menlo Park. The Specific Plan proposes to support transit improvements via the following:

- Accommodate potential BRT service in accordance with the ongoing Grand Boulevard Initiative to serve added travelers on El Camino Real
- Increase shuttle service to serve added travel demand, improve east-west connectivity and reduce demand for parking in the plan area based on available funding
- Continue employer-sponsored programs that support and increase transit use

PARKING GARAGES

The Specific Plan contains two potential future parking garages to accommodate future demand generated by new downtown land uses considered in the Specific Plan, to provide replacement parking for existing spaces that may be removed to accommodate public amenities (such as widened sidewalks on Santa Cruz Avenue), and to accommodate other future growth. The two garages would be located on Parking Plazas 1 and 3. There are two options for the parking garage on Plaza 3: Option 1 includes residential units (and their dedicated parking spaces) and Option 2 includes just parking spaces. The numbers of spaces in each option are:

- Plaza 1 Garage (650 spaces on 5 levels)
- Plaza 3 Garage
    - Option 1 (370 spaces on 3.5 levels)
    - Option 2 (650 spaces on 5 levels)

The Specific Plan land use program corresponds to Option 1 for the Plaza 3 garage. Option 2 would provide parking for additional growth in the downtown beyond the land use program contained in the Specific Plan.

ROADWAY SYSTEM MODIFICATIONS

The roadway system modifications that may be needed to accommodate the Specific Plan pedestrian circulation improvements would be removing the northbound right-turn lane at Oak Grove Avenue, and the southbound right-turn lanes at Oak Grove, Santa Cruz, and Menlo Avenues to accommodate potential curb extensions.

The intersection of El Camino Real and Middle Avenue would be modified to provide access to the development parcels on the east side of El Camino Real. The modifications include adding a southbound left-turn lane, changing the eastbound approach to a left-turn lane and a shared though/right-turn lane, restriping the outside northbound through lane to a shared through/right-turn lane, constructing the westbound approach, and modifying the traffic signal to signalize all approaches with protected left-turn phasing.

4. SPECIFIC PLAN TRAVEL DEMAND CHARACTERISTICS

The Specific Plan will affect travel in Menlo Park in two general ways: (1) the new development that will occur because of the land use changes will increase travel demand, particularly vehicle traffic which is the primary travel mode in Menlo Park, and (2) the transportation system changes will cause some minor mode shifts and traffic diversions. The increases in travel demand due to the new land uses and the associated amount of added traffic to the study locations on surrounding roadway system are addressed first, followed by a discussion on mode shift and traffic diversion.

LAND USE TRAVEL DEMAND AND TRAFFIC PROJECTIONS

The Specific Plan's land use program includes both new development and redevelopment, which replaces existing land uses with, in some cases, different land uses or larger amounts of the same land use. The potential maximum amount of land use changes within the Specific Plan Area are presented in **Table 1** by subarea and summarized below:

- 680 multi-family dwelling units (apartments, condominiums, and townhouses)
- 91,800 square feet of retail space
- 240,820 square feet of commercial (office) space
- 380 hotel rooms

Trip Generation Rates

The amount of travel generated by the land use changes was estimated by applying trip generation rates and equations from the Institute of Transportation Engineers (ITE) *Trip Generation*, 8th edition. The resulting trip generation rates are presented in **Table 7**[4]. This table also identifies the ITE land use associated with the rates. The rates were selected to reflect that this is an analysis of a land use plan and does not include specific land use developments. For example, general office rates were used to estimate trips generated by the commercial space, even though other uses, such as medical office space which has a slightly higher trip generation rate, is allowed. Using more land use specific rates was deemed to be overly speculative, especially as the City has discretion to require more detailed analyses of specific land use projects when they are proposed.

[4] The equations for all uses (except retail, motel, and auto dealership uses) were applied to the total amount of each use in each subarea to obtain subarea specific rates. Therefore there are some slight variations in the rates. Apartment rates were selected for the residential uses as they are higher than condominium/townhouse rates and are therefore more conservative.

TABLE 7:
TRIP GENERATION RATES

Specific Plan Land Use	ITE Land Use	ITE Land Use Code	Unit	Rates						
				Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Residential	Apartment	220	du	6.07[1] / 6.09[2] / 6.08[3] / 6.10[4]	0.10[1] / 0.10[2] / 0.10[3] / 0.11[4]	0.41[1] / 0.42[2] / 0.41[3] / 0.42[4]	0.50[1] / 0.52[2] / 0.51[3] / 0.53[4]	0.40[1] / 0.44[2] / 0.42[3] / 0.47[4]	0.22[1] / 0.24[2] / 0.22[3] / 0.26[4]	0.62[1] / 0.68[2] / 0.64[3] / 0.73[4]
Retail	Shopping Center	820	sf	42.94	0.61	0.39	1.00	1.83	1.90	3.73
Auto Dealership	New Car Sales	841	sf	33.34	1.50	0.53	2.03	1.01	1.58	2.59
Commercial	Office	710	sf	11.01 / 11.17[3]	1.36 / 1.42[3]	0.19	1.55 / 1.61[3]	1.25	1.23	1.49 / 1.48[3]
Motel	Motel	320	rm	5.63	0.16	0.29	0.45	0.25	0.29	0.47
Hotel	Hotel	310	rm	8.17 / 7.71[3]	0.34	0.22	0.56	0.31	0.22	0.59

Notes:
1. Downtown Area
2. Station Area
3. El Camino Real South Area
4. El Camino Real North Area

Source: Institute of Transportation Engineers, *Trip Generation*, 8th Edition (2008).

The ITE rates are derived from surveys of stand alone uses in suburban locations with little to no transit access or opportunity for trips to be made between nearby uses via walking, bicycling, or very short vehicle trips. Therefore they are not reflective of the types of uses and development patterns of the Specific Plan. Trip reductions were applied to account for the infill and mixed-use nature of the land use plan and to account for transit trips due to the close proximity of the Menlo Park Caltrain station.

Infill/Mixed-Use Development and Transit Trip Reductions

There are few methodologies available to estimate the unique trip generation characteristics of mixed-use and infill developments. One of the most commonly used methods is to use trip generation rates or equations from the Institute of Transportation Engineers (ITE) *Trip Generation* and apply reductions from the mixed-use internalization spreadsheet from the ITE *Trip Generation Handbook*. This method has some shortcomings in that it is based on a limited sample size of six mixed-use sites in Florida, it is not recommended for town center projects such as the land uses changes proposed in Menlo Park's El Camino Real/Downtown Specific Plan, it is limited to three land use types (residential, retail, and office), and it does not take into account the influence of nearby land uses.

A more comprehensive analysis of mixed-use and infill trip generation was developed and is presented in the paper, *Traffic Generated by Mixed-Use Developments – A Six-Region Study Using Consistent Built Environmental Measures* (Reid Ewing et al., September 2008). The study gathered data from 239 sites/data sources, developed a trip internalization methodology (MXD model), and validated the methodology at 16 sites. Among the validation sites, use of the MXD model produced superior statistical performance of estimated versus observed external vehicle trips when compared to applications of the ITE rates alone or application of the ITE rates with the ITE trip internalization technique.

Internalization reductions were estimated using both methods. The ITE reductions ranged from 0 to 13 percent and the MXD reductions ranged from 10 to 16 percent. It was determined that a 10 percent reduction was

appropriate to account the infill and mixed-use nature of the land use plan where vehicle trips would be linked and or replaced with walk and bicycle trips to nearby land uses.

Reductions in vehicle trips due to transit usage are based on the proposed transit mode share. Transit mode shares for mixed-use developments near transit stations were obtained from a January 2004 report titled *Travel Characteristics of Transit-Oriented Development in California* by Lund et al. Transit use information for employment sites near rail stations was also obtained from Transportation Research Record 1835, Paper No. 03-4352, *Transit Use and Proximity to Rail – Results from Large Employment Sites in the San Francisco, California, Bay Area,* by Jennifer Dill. This information, plus 2000 Census data, was used to develop transit use reductions for this analysis due to the proximity of the Caltrain station and bus routes on El Camino Real. Anticipated transit trip reductions for potential land uses developments in the Specific Plan area are presented in **Table 8**.

TABLE 8:
TRANSIT TRIP REDUCTIONS

Location	Residential	Commercial (Office)	Retail	Hotel
Downtown Area[1]	5%	3%	2%	1%
Station Area [2]	10%	5%	3%	1%
El Camino Real South Area	2%	1%	0%	0%
El Camino Real North Area	2%	1%	0%	0%

Notes:
1. Also includes adjacent parcels in the El Camino Real North and South Areas on the west side on El Camino Real
2. Also includes adjacent parcels in the El Camino Real North and South Areas on the east side on El Camino Real
Fehr & Peers, 2010

Trip Generation Estimates

The trip generation estimates for each sub area and for the Specific Plan Area as a whole are presented in **Table 9**. Rates based on land use type were applied to the new uses to be added and the existing occupied space to be removed to estimate the amount of net added traffic. It should be noted that these estimates represent an analysis of a land use plan and do not pertain to particular land use developments. The City has discretion to require more detailed analyses of specific land use projects when they are proposed and if their trip estimates differ from those in **Table 9**.

TABLE 9:
SUMMARY OF TRIP GENERATION ESTIMATES BY SUB AREA

Area	Number of Trips						
		AM Peak Hour			PM Peak Hour		
	Daily	In	Out	Total	In	Out	Total
Downtown							
Vehicle Trips Generated by Added Uses	5,243	133	137	270	243	239	482
Vehicle Trips Subtracted from Existing Uses being Removed	-643	-34	-8	-42	-23	-44	-67
Net Added Vehicle Trips	4,600	99	129	228	220	195	415
Station Area							
Vehicle Trips Generated by Added Uses	1,837	28	55	83	97	79	176
Vehicle Trips Subtracted from Existing Uses being Removed	-374	-46	-7	-53	-8	-43	-51
Net Added Vehicle Trips	1,463	-18	48	30	89	36	125
El Camino Real South							
Vehicle Trips Generated by Added Uses	8,267	429	192	621	330	484	814
Vehicle Trips Subtracted from Existing Uses being Removed	-1,823	-61	-31	-92	-67	-86	-153
Net Added Vehicle Trips	5,492	355	151	506	221	356	577
El Camino Real North							
Vehicle Trips Generated by Added Uses	1,410	77	49	126	70	95	165
Vehicle Trips Subtracted from Existing Uses being Removed	-495	-7	-5	-12	-21	-22	-43
Net Added Vehicle Trips	915	70	44	114	49	73	122
Specific Plan Area							
Vehicle Trips Generated by Added Uses	16,903	668	442	1,110	747	899	1,646
Vehicle Trips Subtracted from Existing Uses being Removed	-3,335	-149	-50	-199	-119	-196	-315
Total Net Added Vehicle Trips	**13,560**	**519**	**392**	**911**	**628**	**703**	**1,331**

Notes:
Sources: ITE *Trip Generation*, 8th Edition (2008); Fehr & Peers, 2010.

TRIP DISTRIBUTION AND ASSIGNMENT

The traffic generated by the Specific Plan land uses will be distributed on the roadway system based on the locations of complementary land uses. For example, the outbound residential vehicle trips during the AM peak hour will primarily comprise residents driving to work and school. Therefore these trips will be headed to employment centers and schools. The City of Menlo Park has developed directions of approach and departure for residential, employment, and commercial (retail) uses to be used to assign traffic generated by proposed developments to the City's roadway system. These directions are presented in the Circulation System Assessment Document and were obtained from household interview surveys conducted in 1999, the City of Menlo Park 1999 employee Transportation Survey, and pedestrian interviews conducted in 1998. They vary based on the general locations within the city: Sharon Heights, West Menlo Park, West of US 101, and East of US 101; the Specific Plan area is in West Menlo Park. Directions of approach and departure for the hotels were developed based on the relative locations of the San Francisco and San Jose Mineta International airports, major employment areas, and other nearby destinations. The directions of approach and departure are presented in **Table 10**. These directions of approach and departure were used to assign the Specific Plan added traffic from **Table 9** to the study intersections, roadway segments, and freeway segments. The AM and PM peak hour trip assignments at the study intersections are presented on **Figures 11a through 11c**.

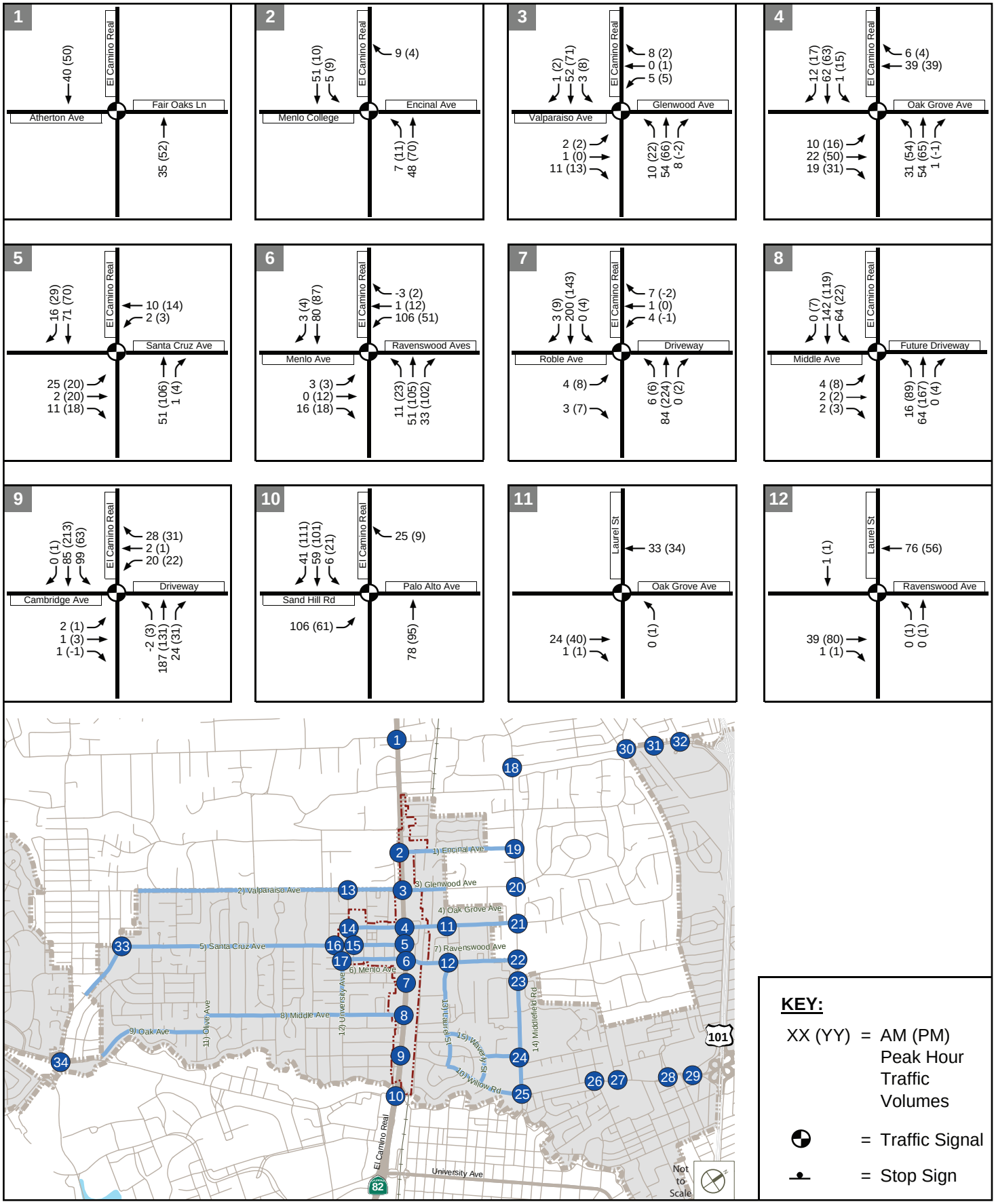
SPECIFIC PLAN TRANSPORTATION IMPROVEMENTS

The Specific Plan contains transportation improvements aimed to make walking and bicycling more attractive modes of transportation. These include widened sidewalks on El Camino Real and Santa Cruz Avenue, potential curb extensions on El Camino Real to shorten pedestrian crossing distances, a new pedestrian/bicycle underpass under the Caltrain tracks near Santa Cruz Avenue, and new bike lanes on Oak Grove Avenue. Many of these improvements will help pedestrian travel between destinations in the Specific Plan Area and between the downtown and the Caltrain Station. The added bicycle routes and lanes, plus support facilities such as new bicycle parking facilities in the downtown, will allow some people to ride their bikes to the downtown instead of driving. Therefore, there will be some decreases in vehicle travel, especially in the Downtown and Station areas. For the purposes of this analysis, no reductions were taken. Therefore, the analysis is conservative.

TABLE 10:
DIRECTIONS OF APPROACH AND DEPARTURE

Gateway	Residential	Commercial (Office)	Retail	Hotel
I-280 North	5%	12%	7%	5%
I-280 South	9%	16%	3%	5%
Sand Hill West	1%	1%	1%	0%
SR 84 East	2%	20%	1%	10%
US 101 South	9%	17%	3%	15%
US 101 North	2%	4%	2%	15%
Alameda North	6%	4%	4%	0%
El Camino Real North	10%	7%	6%	10%
Junipero South	5%	3%	4%	0%
Sand Hill East	3%	1%	3%	0%
El Camino South	14%	7%	15%	17%
Sharon Heights	5%	1%	8%	3%
Downtown	26%	6%	38%	20%
Willows	3%	1%	5%	0%
Total	100%	100%	100%	100%

Notes:
Source: Circulation System Assessment Document, City of Menlo Park and Fehr & Peers, 2010.



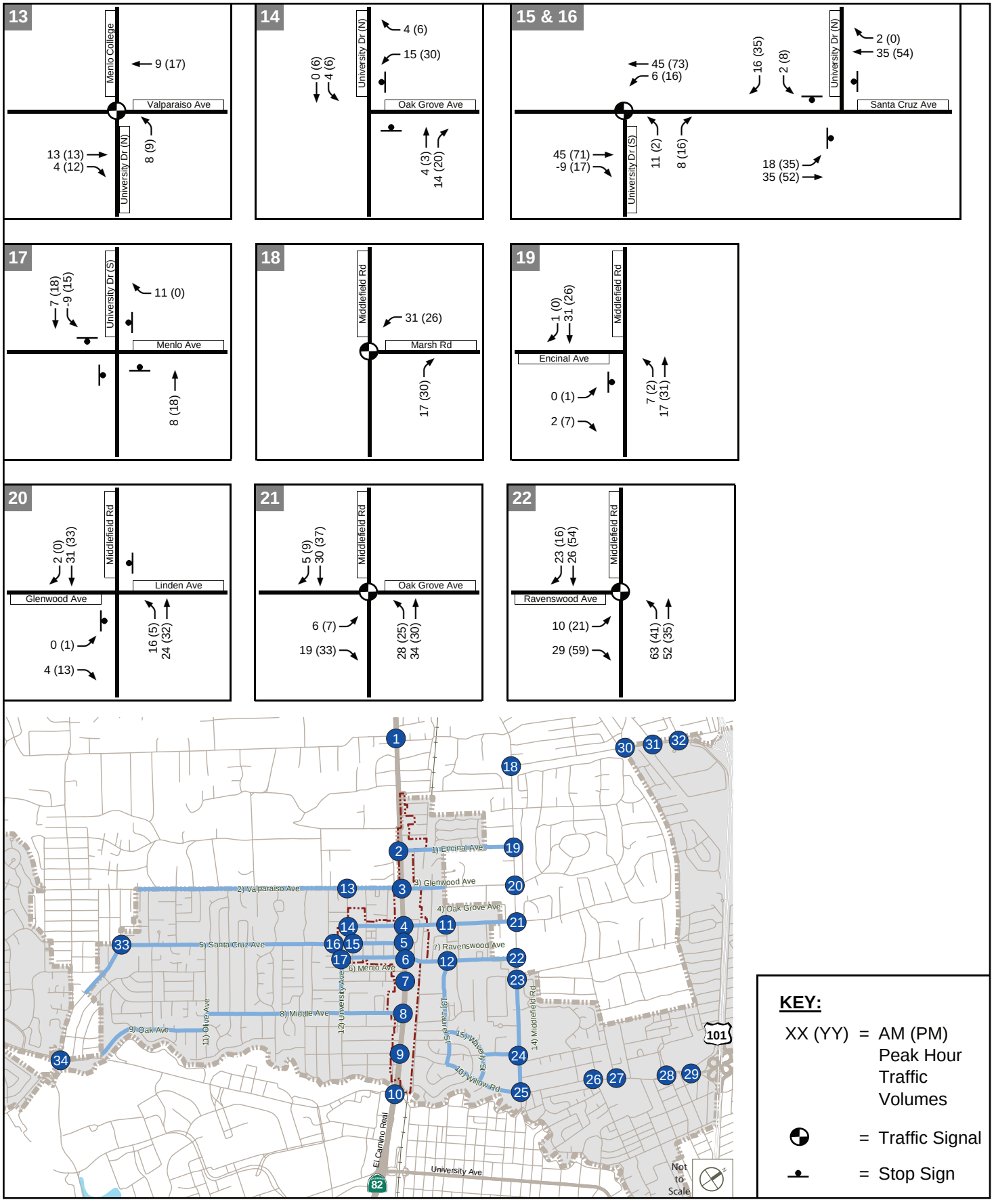
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April 2010
SJ09-1089

Project Trip Assignment

Figure 11a



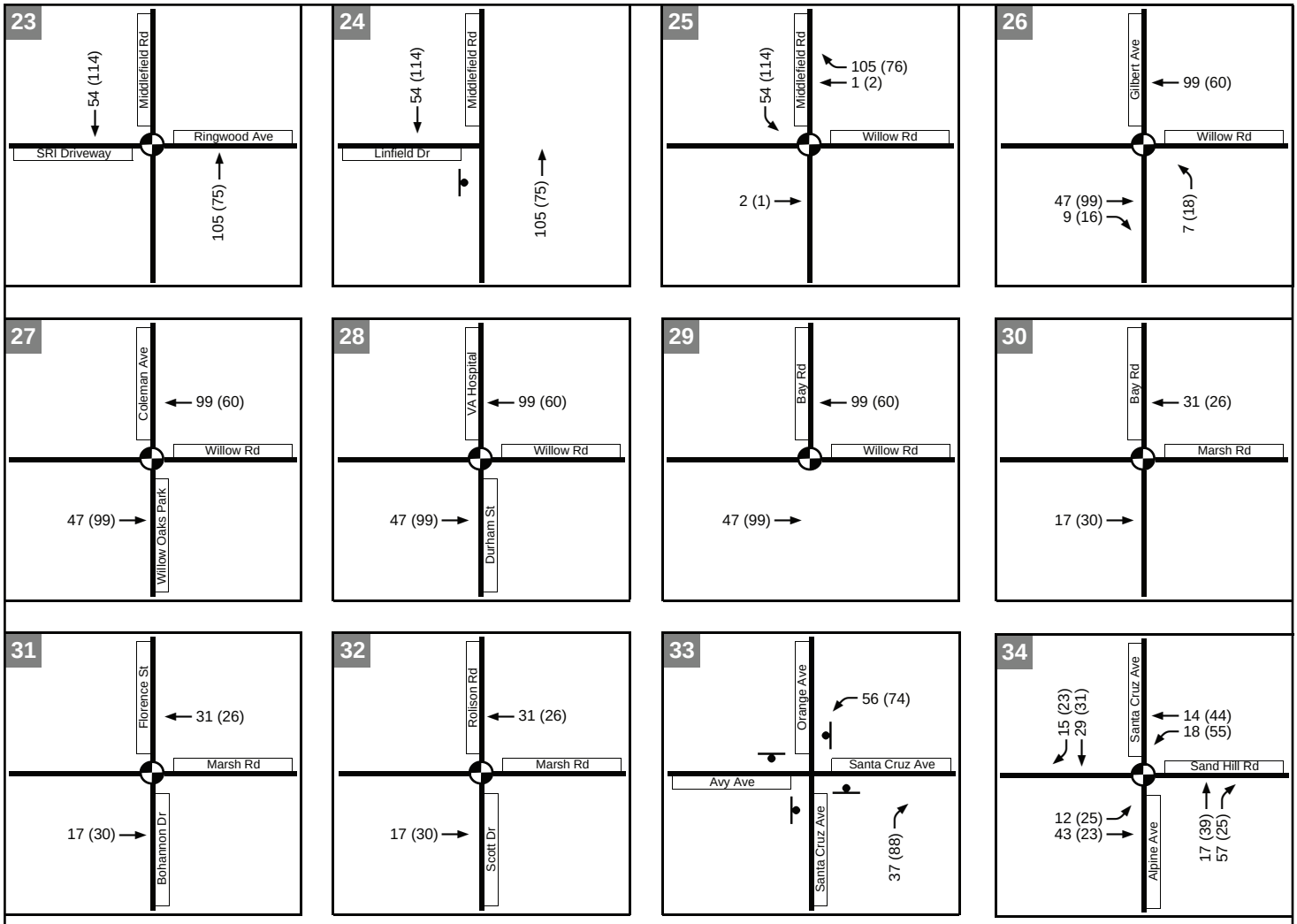
Menlo Park El Camino Real/ Downtown Specific Plan

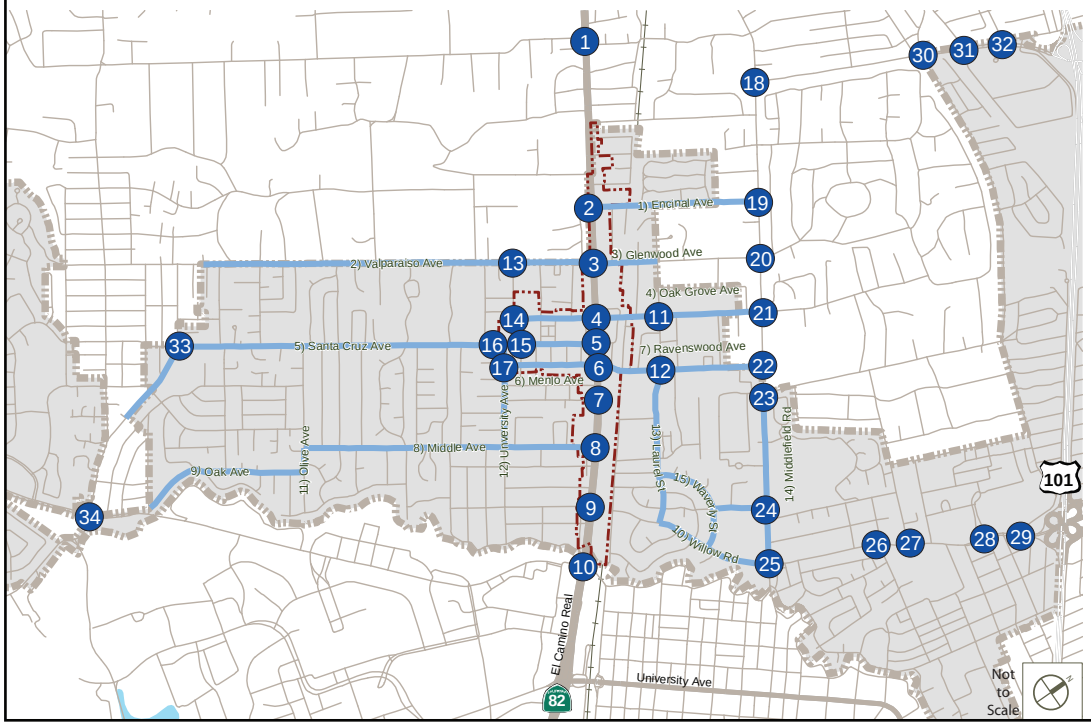
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Project Trip Assignment

Figure 11b





KEY:

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

= Traffic Signal

= Stop Sign

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April 2010
SJ09-1089

Project Trip Assignment

Figure 11c

5. EXISTING PLUS PROJECT CONDITIONS

This chapter discusses the proposed project and its potential impacts on the surrounding roadway system compared to Existing Conditions. The results of the level of service (LOS) calculations for Existing Plus Project Conditions are presented. Existing Plus Project Conditions are defined as Existing Conditions plus traffic generated by buildout of the proposed land use changes plus the transportation changes in the Specific Plan or "the project". Project impacts are identified by comparing the LOS results under Existing Plus Project Conditions to those under Existing Conditions.

While the land use changes in the Specific Plan would not occur at one time, the California Environmental Quality Act (CEQA) requires that the impacts of a proposed project be evaluated against existing "on the ground" conditions. This chapter, by analyzing conditions if all of the proposed project were in place immediately, meets this CEQA requirement. Chapter 6 evaluates the project conditions in 25 years when it is more likely that all of the development and transportation changes will have occurred.

EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection service levels were calculated for Existing Plus Project Conditions. The volumes uses in this analysis are the existing volumes on **Figures B-1a, B-1b, and B-1c** plus the trip assignment on **Figures 11a, 11b, and 11c.** The resulting volumes are shown on **Figures B-2a, B-2b, and B-2c** in **Appendix B**. The intersection LOS results are summarized in **Table 11**, and are shown graphically on **Figure 12**. Locally-controlled street approach delays and LOSs are also shown for the intersections on El Camino Real. For the three intersections with potential right-turn lane removal to accommodate sidewalk extensions, the LOS analysis was conducted both with and without the lane change. The calculated intersection levels of service do not vary with the removal of the right-turn lanes. The right-turn lanes carry few vehicles in comparison to the through movements so adding those vehicles to the through lane (i.e., in a restriped shared through/right-turn lane) did not substantially increase the delay. There are some approach delay changes. The corresponding LOS calculation sheets are included in **Appendix C**.

Some intersections show a reduction in average delay with the addition of project traffic, which is counter-intuitive. The average delay values in the table are weighted averages. Weighted average delays will be reduced when traffic is added to a movement with a low delay, such as the through movements in the non-peak direction on El Camino Real. Conversely, relatively small volume increases to movements with high delays can increase the weighted average delay substantially.

TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
1. El Camino Real & Atherton Avenue/Fair Oaks Lane (Ct/At)	Signal	AM PM	D	42.1 40.7	39.8 35.9	D D	41.7 40.1	39.1 35.0	D D	-0.7 -0.9
Eastbound Approach		AM PM		40.7 36.6	40.7 36.6	D D	41.5 37.7	41.5 37.7	D D	0.8 1.1
Westbound Approach		AM PM		**64.6** **64.1**	**64.3** **64.0**	**E** **E**	**64.6** **64.1**	**64.3** **64.0**	**E** **E**	**0.0** **0.0**
2. El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	D	14.7 17.4	18.2 16.3	B B	15.2 18.0	18.7 16.6	B B	0.5 0.3
Eastbound Approach		AM PM		- -	49.9 47.1	D D	- -	50.5 48.1	D D	0.6 1.0
Westbound Approach		AM PM		**61.6** 57.0	**58.5** 54.1	**E** D	**63.5** **59.3**	**60.2** **55.9**	**E** **E**	**1.9** **1.8**
3. El Camino Real & Glenwood Avenue/ Valparaiso Avenue (Ct/At/MP)	Signal	AM PM	D	37.0 40.6	33.0 38.8	C D	38.0 45.8	33.6 39.8	C D	0.6 1.0
Eastbound Approach		AM PM		**56.2** 49.8	**55.2** 48.9	**E** D	**57.8** 51.4	**56.7** 50.3	**E** D	**1.5** 1.4
Westbound Approach		AM PM		**65.4** **64.8**	**62.8** **62.4**	**E** **E**	**67.0** **66.6**	**64.0** **63.8**	**E** **E**	**1.2** **1.4**
4. El Camino Real & Oak Grove Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	29.5 27.2	31.8 29.4	C C	33.5 30.9	34.4 33.7	C C	2.6 4.3
Eastbound Approach		AM PM		**61.4** **64.4**	**63.0** **61.0**	**E** **E**	**78.2** **66.5**	**63.2** **59.4**	**E** **E**	**0.2** **-1.6**
Westbound Approach		AM PM		**70.4** **59.3**	**61.1** **58.9**	**E** **E**	**60.6** **59.2**	**61.8** **59.4**	**E** **E**	**0.7** **0.5**

TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
Without northbound and southbound right- turn lane	Signal	AM PM	D	N/A	N/A	N/A	33.3 30.4	34.8 34.0	C C	3.0 4.6
Eastbound Approach		AM PM					**81.5** **69.5**	**65.1** **61.6**	**E** **E**	**2.1** **0.6**
Westbound Approach		AM PM					**62.8** **61.8**	**63.8** **61.7**	**E** **E**	**2.7** **2.8**
5. El Camino Real & Santa Cruz Avenue (Ct/MP) w/ RT lanes	Signal	AM PM	D	9.4 23.6	9.7 22.5	A C	11.6 24.8	11.4 23.6	B C	1.7 1.1
Eastbound Approach		AM PM		**69.2** 54.7	**68.4** 53.5	**E** D	**67.1** 56.0	**65.6** 54.4	**E** D	-2.8 0.9
Westbound Approach		AM PM		**64.8** **58.9**	**63.8** **57.6**	**E** **E**	**65.4** **60.6**	**64.2** **58.8**	**E** **E**	**0.4** **1.2**
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	11.3 24.9	11.4 24.3	B C	1.7 1.8
Eastbound Approach		AM PM					**69.4** 56.3	**67.3** 54.6	**E** D	-1.1 1.1
Westbound Approach		AM PM					**67.6** **60.9**	**66.0** **59.1**	**E** **E**	**2.2** **1.5**
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/RT lanes	Signal	AM PM	D	41.0 54.8	40.5 44.1	D D	44.4 61.3	42.7 46.9	D D	2.2 2.8
Eastbound Approach		AM PM		**59.5** **61.9**	**59.5** **61.9**	**E** **E**	**63.2** **69.7**	**63.2** **69.7**	**E** **E**	**3.7** **7.8**
Westbound Approach		AM PM		**55.1** **61.4**	53.7 **60.4**	D **E**	**55.3** **68.3**	53.0 **65.7**	D **E**	-0.7 **5.3**

TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	44.5 61.3	42.8 47.0	D D	2.3 2.9
Eastbound Approach		AM PM					**63.6** **69.7**	**63.6** **69.7**	**E** **E**	**4.1** **7.8**
Westbound Approach		AM PM					55.8 **68.3**	53.5 **65.7**	D **E**	-0.3 **5.3**
7. El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	D	10.8 13.7	11.0 13.9	B B	11.3 15.8	11.3 15.1	B B	0.3 1.2
Eastbound Approach		AM PM		**57.9** **67.7**	**57.9** **67.7**	**E** **E**	**59.4** **75.2**	**59.4** **75.2**	**E** **E**	**1.5** **7.5**
Westbound Approach		AM PM		- -	52.9 **55.4**	D **E**	- -	53.7 **55.6**	D **E**	0.8 **0.2**
8. El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	D	35.5 41.0	29.0 27.8	C C	40.6 53.1	36.3 38.8	D D	7.3 11.0
Eastbound Approach		AM PM		49.7 64.7	46.3 **63.3**	D **E**	**58.1** **85.2**	**56.9** **82.4**	**E** **F**	**10.6** **19.1**
Westbound Approach		AM PM		N/A	N/A	N/A	***68.0*** ***73.2***	***62.6*** ***82.9***	***E*** ***F***	***62.6*** ***82.9***
9. El Camino Real & Cambridge Avenue (Ct/MP)	Signal	AM PM	D	13.5 6.6	11.3 12.3	B B	13.4 11.8	14.5 15.5	B B	3.2 3.2
Eastbound Approach		AM PM		**66.8** **-**	**66.8** **66.4**	**E** **E**	**67.5** **-**	**67.5** **67.5**	**E** **E**	**0.7** **1.1**
Westbound Approach		AM PM		**-** **62.9**	**62.1** **62.9**	**E** **E**	**-** **74.4**	**67.2** **74.4**	**E** **E**	**5.1** **11.5**

TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
10. El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	E	24.3 41.8	26.5 34.0	C C	26.9 43.3	28.7 34.7	C C	2.2 0.7
11. Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	C	14.3 12.1	13.3 11.5	B B	14.5 12.1	13.4 11.4	B B	0.1 -0.1
12. Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	D	14.7 11.6	13.6 11.9	B B	15 11.8	13.9 12.1	B B	0.3 0.2
13. University Drive (N) & Valparaiso Avenue (MP/At)	Signal	AM PM	D	13.8 15.5	13.1 15.5	B B	13.9 15.7	13.2 15.6	B B	0.1 0.1
14. University Drive (N) & Oak Grove Avenue (MP)	All-way Stop	AM PM	C	10.0 11.2	10.0 11.2	B B	10.4 12.1	10.4 12.1	B B	0.4 0.9
15. University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	31.5 19.0	31.5 19.0	D C	***41.9*** 26.9	***41.9*** 26.9	***E*** D	***10.4*** 7.9
16. University Drive (S) & Santa Cruz Avenue (MP)	Signal	AM PM	D	15.3 16.8	12.2 15.0	B B	15.3 17.5	12.6 14.8	B B	0.4 -0.2
17. University Drive (S) & Menlo Avenue (MP)	All-way Stop	AM PM	C	13.5 12.4	13.5 12.4	B B	13.5 12.9	13.5 12.9	B B	0.0 0.5
18. Middlefield Road & Marsh Road (At)	Signal	AM PM	D	34.4 41.0	24.7 26.9	C C	34.8 41.9	25.0 27.3	C C	0.3 0.4
19. Middlefield Road & Encinal Avenue (At)	Side Street Stop	AM PM	D	8.7 3.1	**72.0** **46.5**	**F** **E**	***10.9*** ***3.8***	***94.8*** ***56.3***	***F*** ***F***	***22.8*** ***9.8***
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	AM PM	D	7.5 22.7	**55.8** **>150**	**F** **F**	***9.9*** ***30.3***	***78.0*** ***>150***	***F*** ***F***	***22.2*** ***34.0***

TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
21. Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	D	12.1 8.8	11.6 9.3	B A	12.1 9.1	11.7 9.7	B A	0.1 0.4
22. Middlefield Road & Ravenswood Avenue (MP/At)	Signal	AM PM	D	30.1 38.4	22.7 28.1	C C	32.5 42.9	24.3 31.5	C C	1.6 3.4
23. Middlefield Road & Ringwood Avenue (MP/At)	Signal	AM PM	D	32.9 32.6	27.8 26.5	C C	32.5 32.3	27.2 25.7	C C	-0.6 -0.8
24. Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	D	0.9 1.2	21.4 15.9	C C	0.8 1.2	24.5 18.3	C C	3.1 2.4
25. Middlefield Road & Willow Road (MP)	Signal	AM PM	D	43.3 **62.2**	41.6 53.5	D D	45.4 ***75.1***	42.1 ***62.2***	D ***E***	0.5 ***12.9***[5]
26. Gilbert Avenue & Willow Road (MP)	Signal	AM PM	D	13.4 9.3	12.4 10.4	B B	13.8 13.1	12.7 11.6	B B	0.3 1.2
27. Coleman Avenue & Willow Road (MP)	Signal	AM PM	D	20.8 13.0	18.2 9.8	B A	22.3 14.6	18.8 10.8	B B	0.6 1.0
28. Durham Street & Willow Road (MP)	Signal	AM PM	D	11.5 22.0	12.9 21.2	B C	13.3 23	13.8 21.5	B C	0.9 0.3
29. Bay Road & Willow Road (Ct/MP)	Signal	AM PM	D	24.5 18.3	20.7 18.6	C B	24.7 18.5	20.5 18.4	C B	-0.2 -0.2
30. Bay Road & Marsh Road (MP)	Signal	AM PM	D	23.0 19.9	16.5 14.2	B B	23 19.7	16.4 14.1	B B	-0.1 -0.1
31. Florence Street/Bohannon Drive & Marsh Road (MP)	Signal	AM PM	D	17.9 23.6	16.4 20.7	B C	17.9 23.6	16.3 20.6	B C	-0.1 -0.1
32. Scott Drive & Marsh Road (MP)	Signal	AM PM	D	13.5 21.4	14.1 18.6	B B	13.6 21.4	14.1 18.6	B B	0.0 0.0

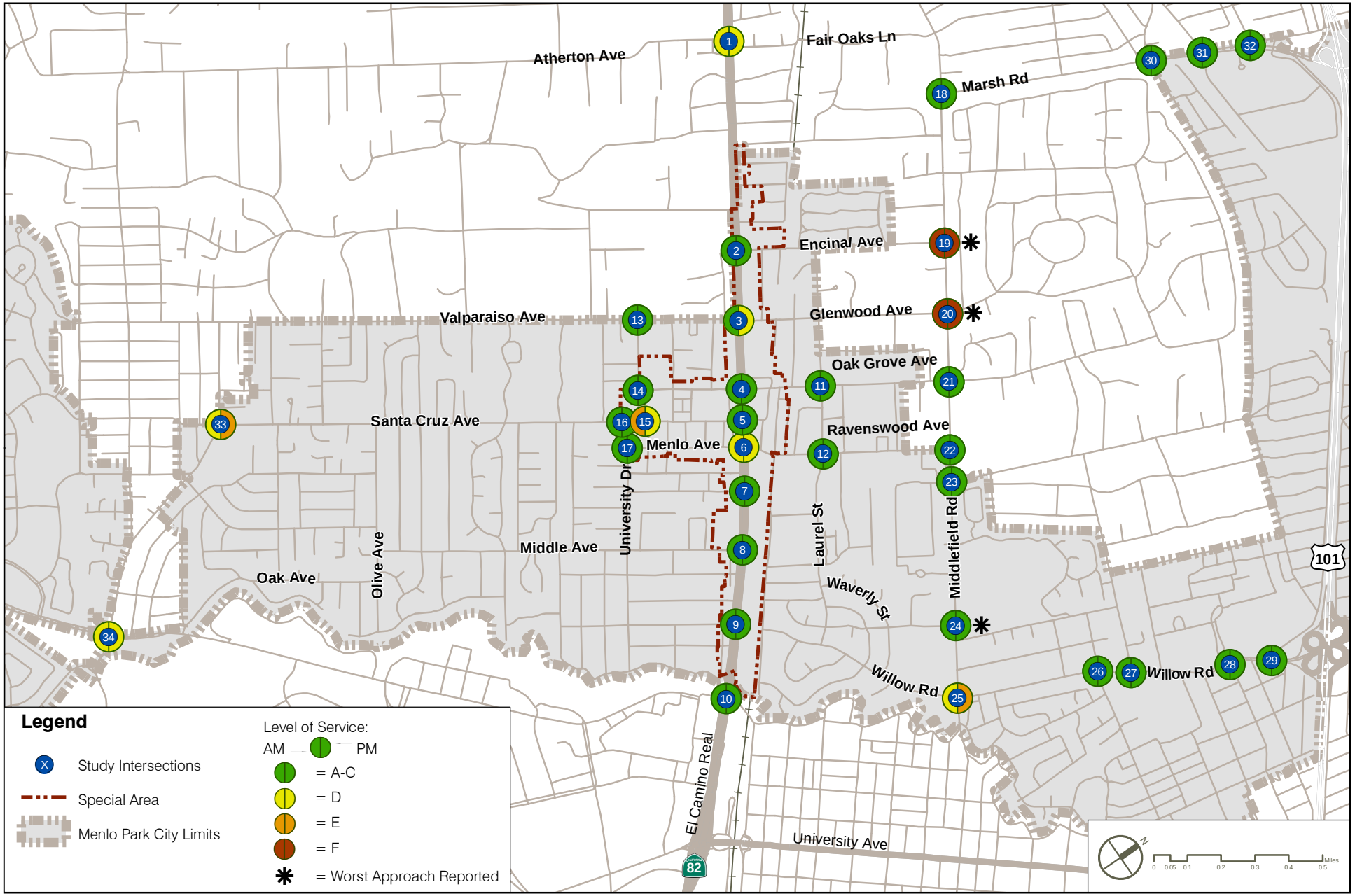
TABLE 11:
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay	Average Delay[2]	LOS[3]	Δ in Delay[4]
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM	D	21.6	21.6	C	28.7	28.7	D	7.1
		PM		24.1	24.1	C	***46.1***	***46.1***	***E***	***22.0***[5]
34. Santa Cruz Avenue/Alpine Avenue & Sand Hill Road (MP)	Signal	AM	D	41.2	42.8	D	44.9	43.8	D	1.0
		PM		46.6	45.1	D	47.6	46.1	D	1.0

1. Average control delay (expressed in seconds per vehicle) for the critical movements only.
2. Whole intersection weighted control total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
3. LOS calculations performed using the methodology outlines in the 2000 *Highway Capacity Manual – Special Report 209*.
4. Change in average delay between Existing and Existing Plus Project Conditions (unless otherwise noted).
5. Average Critical Delay Change

* Denotes Caltrans intersection. Unacceptable operations are indicated in **bold** type, and significant impacts are indicated in ***bold & Italic*** type

Source: Fehr & Peers, 2010.



El Camino Real / Downtown Specific Plan TIA

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Existing Plus Project AM and PM Peak-Hour Intersection Levels of Service

April 2010
SJ09-1089

Figure 12

EXISTING PLUS PROJECT ROADWAY SEGMENT ANALYSIS

Estimates of the amount of daily traffic generated by the Specific Plan land uses were added to the existing roadway segment daily volumes in **Table B-1 in Appendix B**. The results are presented in **Table 12**. The City of Menlo Park's roadway segment significance criteria presented in **Figure A-2 in Appendix A** was used to identify potentially significant impacts.

TABLE 12:
EXISTING PLUS PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Classification	Existing ADT	Added Daily Volume	Existing Plus Project ADT	Impact?
1. Encinal Avenue - Laurel to Middlefield	Collector	3,359	80	3,439	No
2. Encinal Avenue - El Camino to Laurel	Collector	4,540	86	4,626	No
3. Valparaiso Avenue - Delfino Way to El Camino	Minor Arterial	10,208	488	10,696	No
4. Glenwood Avenue - El Camino to Laurel	Collector	5,766	130	5,896	No
5. Oak Grove Avenue - Middlefield to Laurel	Collector	8,650	***847***	***9,497***	***Yes***
6. Oak Grove Avenue - Laurel to El Camino	Collector	9,590	***861***	***10,451***	***Yes***
7. Oak Grove Avenue - El Camino to Crane	Collector	8,367	***699***	***9,066***	***Yes***
8. Oak Grove Avenue - Crane to University	Collector	5,842	699	6,541	No
9. Santa Cruz Avenue - El Camino to Crane	Minor Arterial	7,351	1,134	8,485	No
10. Santa Cruz Avenue - Crane to University	Minor Arterial	8,603	1,134	9,737	No
11. Santa Cruz Avenue - University to Olive	Minor Arterial	15,445	1,694	17,139	No
12. Santa Cruz Avenue - Olive to Avy/Orange	Minor Arterial	15,135	1,694	16,829	No
13. Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas	Minor Arterial	10,522	***1,451***	***11,973***	***Yes***
14. Menlo Avenue - El Camino to Crane	Collector	8,675	***787***	***9,462***	***Yes***
15. Menlo Avenue - Crane to University	Collector	6,881	202	7,083	No
16. Ravenswood Avenue - Middlefield to Laurel	Minor Arterial	16,833	***1,348***	***18,181***	***Yes***
17. Ravenswood Avenue - Laurel to Alma	Minor Arterial	18,250	***1,822***	***20,072***	***Yes***
18. Ravenswood Avenue - Alma to El Camino	Minor Arterial	22,345	***1,822***	***24,167***	***Yes***
19. Middle Avenue - El Camino to University	Collector	8,608	222	8,830	No
20. Middle Avenue - University to Olive	Collector	6,622	52	6,674	No
21. Oak Avenue - Sand Hill Road to Olive Street	Local	2,549	17	2,566	No
22. Willow Road - Laurel to Middlefield	Collector	4,963	32	4,995	No
23. Olive Street - Oak to Middle	Local	2,641	16	2,657	No
24. University Drive - Oak Grove to Santa Cruz	Collector	6,658	774	7,432	No
25. University Drive - Santa Cruz to Menlo	Collector	8,117	613	8,730	No
26. University Drive - Menlo to Middle	Collector	5,038	438	5,476	No
27. Laurel Street - Ravenswood to Willow	Collector	5,313	32	5,345	No
28. Middlefield Road - Ringwood to Willow	Minor Arterial	20,027	***1,822***	***21,849***	***Yes***
29. Waverley Street - Laurel to Linfield	Local	1,478	4	1,482	No
30. Linfield Drive - Waverley to Middlefield	Local	1,583	4	1,587	No

Potentially significant impacts are indicated in ***bold & Italic*** type
Source: Fehr & Peers, 2010.

EXISTING PLUS PROJECT FREEWAY SEGMENT LEVELS OF SERVICE

For CMP facilities, the significance test is whether the addition of project traffic causes a segment to exceed its LOS threshold or if it adds an amount of traffic greater than 1 percent of the segment's capacity. The CMP LOS threshold on US 101 is LOS F. According to the 2009 CMP Monitoring Report, it is operating at LOS F based on average speeds. The capacities of the analysis segments and the amount of added project traffic are shown in **Table 13.** The amount of project traffic is much less than 1 percent of the capacity. Therefore, the project would have a less than significant impact on US 101 according to the significance criteria used in this analysis.

The CMP LOS threshold on I-280 is LOS D. According to the 2009 CMP Monitoring Report, it is operating at LOS D based on average speeds. Therefore, a volume-to-capacity ratio analysis was conducted to determine whether the addition of project traffic would cause a segment to exceed the threshold. The results are presented in **Table 13**. Portions of I-280 in the study area exceed the threshold and operate at LOS E based on volume-to-capacity calculations. The amount of project traffic added to the LOS E segments is less than 1 percent of the capacity. Therefore, the project would have a less than significant impact on I-280 according to the significance criteria used in this analysis.

Based on Caltrans criteria, the addition of any project traffic to a freeway segment operating at LOS D, E, or F would be a significant impact. The project would have significant freeway impacts according to this criterion. Measures to increase the freeway capacity could mitigate the impact. However, freeway widening would require right-of-way acquisition and may have secondary impacts rendering it infeasible. Plus the City of Menlo Park could not ensure its implementation because they do not have jurisdiction. Another type of mitigation measure would be to reduce the amount of traffic added to the freeway. The Specific Plan includes provisions for new developments to have Transportation Demand Management (TDM) programs to reduce their generated traffic. TDM programs are discussed in the mitigation measure chapter.

TABLE 13:
EXISTING PLUS PROJECT FREEWAY LEVELS OF SERVICE

Segment	Direction	Peak Hour	Ex. Volume[1]	Capacity[2]	Ex. V/C[3]	Ex. LOS[4]	Project Volume	% of Capacity	E+P Volume[1]	E+P V/C[3]	E+P LOS[4]	LOS Threshold
US 101, North of Marsh Road (mixed-flow lanes)	NB	AM	-	8,340	-	D	17	0.20%	-	-	D	F
		PM	-	7,780	-	**F**	30	0.39%	-	-	**F**	
	SB	AM	-	7,740	-	**F**	31	0.40%	-	-	**F**	
		PM	-	8,110	-	**F**	26	0.32%	-	-	**F**	
US 101, South of Willow Road (mixed-flow lanes)	NB	AM	-	6,470	-	D	38	0.59%	-	-	D	F
		PM	-	6,470	-	**F**	36	0.56%	-	-	**F**	
	SB	AM	-	6,470	-	**F**	29	0.45%	-	-	**F**	
		PM	-	6,470	-	**F**	43	0.66%	-	-	**F**	
I-280, North of Sand Hill Road	NB	AM	4,814	9,000	0.53	C	23	0.26%	4,837	0.54	C	D
		PM	7,699	9,000	0.86	D	56	0.62%	7,755	0.86	D	
	SB	AM	8,201	9,000	**0.91**	**E**	47	0.52%	**8,248**	**0.92**	**E**	
		PM	5,092	9,000	0.57	C	38	0.42%	5,130	0.57	C	
I-280, South of Alpine Road	NB	AM	4,862	9,000	0.54	C	60	0.67%	4,922	0.55	C	D
		PM	7,774	9,000	0.86	D	42	0.47%	7,816	0.87	D	
	SB	AM	8,281	9,000	**0.92**	**E**	32	0.36%	**8,313**	**0.92**	**E**	
		PM	5,142	9,000	0.57	C	64	0.71%	5,206	0.58	C	

Notes:

1. Peak hour volumes obtained from Caltrans data
2. Capacity based on number of lanes and per lane capacity of 2,300 vehicles per hour per lane (vphpl) for I-280 and 2,200 vphpl for US 101, per the 2000 *Highway Capacity Manual - Special Report 209,*and the lower of adjacent ramp volumes for auxiliary lanes – all adjusted for trucks.
3. Volume-to-Capacity ratio (V/C)
4. LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* methods for freeway segments

Unacceptable operations are indicated in **bold** type. Significant impacts are shown in ***bold italics*** type.

Source: Fehr & Peers, 2010.

EXISTING PLUS PROJECT IMPACTS

Impacts due to the proposed project based on the significance criteria used by the City of Menlo Park are described below. Mitigation measures for impacts are presented in Chapter 8.

Intersections

The results in **Table 11** indicate that the proposed project will result in significant traffic impacts at the following intersections and intersection approaches under Existing Plus Project Conditions:

- El Camino Real & Middle Avenue westbound approach in the AM and PM peak hours
- University Drive (N) & Santa Cruz Avenue in the AM peak hour
- Middlefield Road & Encinal Avenue in both the AM and PM peak hours
- Middlefield Road & Glenwood Avenue/Linden Avenue in both the AM and PM peak hours
- Middlefield Road & Willow Road in the PM peak hour
- Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue in the PM peak hour

Roadway Segments

The results in **Table 12** indicate that the proposed project will result in significant traffic impacts at the following roadway segments under Existing Plus Project Conditions:

- Oak Grove Avenue - Middlefield to Laurel
- Oak Grove Avenue - Laurel to El Camino
- Oak Grove Avenue - El Camino to Crane
- Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas
- Menlo Avenue - El Camino to Crane
- Ravenswood Avenue - Middlefield to Laurel
- Ravenswood Avenue - Laurel to Alma
- Ravenswood Avenue - Alma to El Camino
- Middlefield Road - Ringwood to Willow

Freeway Segments

The results in **Table 13** indicate that the proposed project will not result in significant traffic impacts on any of the study freeway segments under Existing Plus Project Conditions.

6. CUMULATIVE (2035) CONDITIONS

This chapter presents the results of the level of service calculations under Cumulative (2035) Conditions with and without the Specific Plan (the Project). Cumulative (2035) No Project Conditions were estimated by multiplying existing volumes by a 25 year growth factor and adding traffic from approved and pending developments in Menlo Park. The growth factor accounts for development projects outside of Menlo Park and general regional growth. Cumulative (2035) With Project Conditions include 2035 No Project Conditions plus traffic generated by the Specific Plan land uses. This chapter describes the procedure used to determine the Cumulative traffic volumes and the results of the LOS analysis for Cumulative (2035) No Project and Cumulative (2035) Plus Project Conditions.

CUMULATIVE TRAFFIC ESTIMATES

The City of Menlo Park monitors traffic volumes on city streets and has determined that traffic grows at an average rate of 1 percent per year. Therefore, the intersection volumes were multiplied by 1 percent per year compounded over 25 years, or 28.24 percent to represent growth between 2010 and 2035. The City has traffic assignments for approved and pending developments in their Traffix model. The growth rate plus these assignments were used to develop Cumulative No Project traffic volumes at the study intersections as shown on **Figures D-1a, D-1b,** and **D-1c in Appendix D**. The same process was used to develop Cumulative No Project roadway segment volumes. Annual growth rates on the freeways were developed by comparing 2030 and 2005 projections for the C/CAG model. Growth for 25 years was added to the existing volumes, traffic from Menlo Park approved and pending developments was added, and the results are presented in **Table 15.** Cumulative Plus Project intersection volumes were estimated by adding the project trip assignments presented on **Figures 11a, 11b, and 11c** to the volumes on **Figures D-1a, D-1b, and D-1c**. The results are shown on **Figures D-2a, D-2b, and D-2c** in **Appendix D**. The roadway segments volumes for Cumulative Plus Project conditions were estimated by adding the project trip assignments in **Table 12** to the Cumulative No Project volumes in **Table 15**. The results are also shown in **Table 15**. The Cumulative Plus Project volumes for the freeway segments were estimated in a similar way and the results are shown in **Table16**.

The resulting estimates represent the increased traffic demand. When the roadway system reaches capacity, it cannot accommodate new trips. Congestion occurs causing some people to alter their travel behavior by traveling at less congested times of the day (for discretionary trips) or by linking trips. It also causes a spreading or lengthening of the peak periods of traffic flow. The peak-hour intersection and freeway segments estimates are conservative because they do not include adjustments to account for these travel behavior changes.

CUMULATIVE (2035) TRANSPORTATION IMPROVEMENTS

The City of Menlo Park has no planned and funded improvements for their roadway system. Therefore, existing intersection lane configurations were used in the intersection and roadway segment analysis. Freeway improvements included under Cumulative Conditions include auxiliary lanes on US 101 from Marsh Road to the Santa Clara County border and modifications to the US 101/Willow Road interchange. These improvements are included in the analysis.

High Speed Rail

The California High Speed Rail (HSR) project is proposed to link San Francisco and Los Angeles via high speed trains. Major cities served would include San Francisco, San José, Fresno, Bakersfield, Los Angeles, and Anaheim. Future expansion of the rail project would further link additional areas of the state including Sacramento, Stockton, Modesto, San Diego, Riverside, and Ontario to the system. For the overall system, high speed rail service would be provided between about 5:00 am and midnight daily and is projected to serve approximately 13.5 million riders annually by 2020 and 41 million riders annually by 2035. This project is currently entering the conceptual design and environmental clearance stage. Although the high speed rail system would pass through Menlo Park, no station is planned within the city although possible stations may be located in either

Palo Alto or Redwood City. The City is currently a part of a lawsuit challenging the environmental document for the HSR project. The HSR project was not included in the cumulative analysis. It could potentially reduce traffic volumes on US 101 and I-280 and other parallel facilities. Therefore, not including it results in a conservative analysis of roadway impacts.

CUMULATIVE (2035) INTERSECTION LEVELS OF SERVICE

Table 14 presents the LOS calculation results for the study intersections under Cumulative (2035) Conditions both with and without the project. The LOS calculation sheets are contained in **Appendix C**. The intersection results are shown graphically on **Figures 13** and **14**. The calculated intersection levels of service do not vary with the removal of the right-turn lanes. The right-turn lanes carried few vehicles in comparison to the through movements so adding those movements to the through lane (a restriped shared through/right lane) did not substantially increase the delay. However, there are some changes in the approach delays for these intersections between conditions with and without the right-turn lanes.

TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
1. El Camino Real & Atherton Avenue/Fair Oaks Lane (Ct/At)	Signal	AM PM	D	43.7 41.8	40.0 35.3	D D	43.5 41.4	39.5 34.7	D C	-0.5 -0.6
Eastbound Approach		AM PM		42.8 39.1	44.3 39.1	D D	45.0 40.0	45.0 40.0	D D	0.7 0.9
Westbound Approach		AM PM		**65.2** **64.5**	**64.8** **64.4**	**E** **E**	**65.2** **64.5**	**64.8** **64.4**	**E** **E**	**0.0** **0.0**
2. El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	D	22.5 24.1	23.6 20.3	C C	24.0 25.7	24.6 21.3	C C	1.0 1.0
Eastbound Approach		AM PM		- -	50.2 47.6	D D	- -	50.6 48.4	D D	0.4 0.8
Westbound Approach		AM PM		**84.0** **73.6**	**72.2** **64.4**	**E** **E**	**88.4** **78.5**	**75.5** **67.5**	**E** **E**	**3.3** **3.1**
3. El Camino Real & Glenwood Avenue/ Valparaiso Avenue (Ct/At/MP)	Signal	AM PM	D	53.3 **56.7**	44.3 52.4	D D	**57.7** ***65.6***	46.9 ***56.8***	D ***E***	2.6 ***4.4***
Eastbound Approach		AM PM		**72.5** **65.9**	**68.7** **63.2**	**E** **E**	**77.9** ***70.2***	**73.1** ***66.8***	**E** ***E***	**4.5** ***4.3***[5]
Westbound Approach		AM PM		**93.0** **90.8**	**83.8** **82.9**	**F** **F**	**99.1** ***96.5***	**88.3** ***87.1***	**F** ***F***	**4.5** ***5.7***[5]
4. El Camino Real & Oak Grove Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	38.6 38.4	37.6 37.4	D D	44.0 45.9	42.3 44.7	D D	4.7 7.3
Eastbound Approach		AM PM		**79.0** **90.3**	**77.8** **79.6**	**E** **E**	**85.4** **94.8**	**86.5** **83.5**	**F** **F**	**8.7** **3.9**
Westbound Approach		AM PM		**91.6** **78.7**	**73.5** **70.4**	**E** **E**	**102.9** **90.5**	**83.6** **76.4**	**F** **E**	**10.1** **6.0**

TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
Without northbound and southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	46.5 53.7	45.2 51.1	D D	7.6 13.7
Eastbound Approach		AM PM					**92.6** **112.0**	**92.9** **95.2**	**F** **F**	**15.1** **15.6**
Westbound Approach		AM PM					**111.4** **107.5**	**90.1** **87.3**	**F** **F**	**16.7** **16.9**
5. El Camino Real & Santa Cruz Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	12.3 31.5	11.3 27.6	B C	14.7 34.9	13.0 30.0	B C	1.7 2.4
Eastbound Approach		AM PM		**77.7** **67.0**	**72.0** **61.0**	**E** **E**	**77.8** **72.6**	**71.3** **64.4**	**E** **E**	**-0.7** **3.4**
Westbound Approach		AM PM		**74.7** **79.0**	**71.1** **72.3**	**E** **E**	**77.6** **85.8**	**73.2** **77.0**	**E** **E**	**2.0** **4.8**
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	15.2 37.5	13.7 32.8	B C	2.4 5.2
Eastbound Approach		AM PM					**84.4** **80.5**	**75.3** **69.6**	**E** **E**	**3.4** **8.7**
Westbound Approach		AM PM					**84.1** **95.0**	**78.0** **83.5**	**E** **F**	**6.9** **11.2**
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/RT lanes	Signal	AM PM	D	***82.2*** ***>150***	***74.7*** ***141.7***	***E*** ***F***	***101.2*** ***>150***	***87.8*** ***>150***	***F*** ***F***	***13.1*** ***15.6***
Eastbound Approach		AM PM		**87.5** **>150**	**87.5** **>150**	**F** **F**	***106.9*** ***>150***	***107.0*** ***>150***	***F*** ***F***	***19.4***[5] ***35.8***[5]
Westbound Approach		AM PM		**110.0** **>150**	**90.8** **112.0**	**F** **F**	***114.4*** ***>150***	***104.0*** ***128.7***	***F*** ***F***	***4.4***[5] ***37.0***[5]

TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	***108.2*** ***>150***	***92.7*** ***>150***	***F*** ***F***	***18.0*** ***35.9***
Eastbound Approach		AM PM					***114.8*** ***>150***	***114.9*** ***>150***	***F*** ***F***	***27.3[5]*** ***35.8[5]***
Westbound Approach		AM PM					***122.1*** ***>150***	***110.4*** ***128.7***	***F*** ***F***	***12.1[5]*** ***37.0[5]***
7. El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	D	12.5 22.2	12.4 19.2	B B	13.4 32.2	13.1 24.9	B C	0.7 5.7
Eastbound Approach		AM PM		**62.0** **95.5**	**62.0** **95.5**	**E** **F**	**65.3** **116.4**	**65.3** **116.4**	**E** **F**	**3.3** **20.9**
Westbound Approach		AM PM		- -	53.0 **56.0**	D **E**	- -	53.7 **56.1**	D **E**	0.7 **0.1**
8. El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	D	47.9 56.0	37.4 37.5	D D	67.6 ***106.1***	53.7 ***69.0***	D ***E***	16.3 ***31.5***
Eastbound Approach		AM PM		**70.0** **97.0**	**60.2** **94.0**	**E** **F**	**96.6** ***147.2***	**82.3** ***129.1***	**F** ***F***	**22.1** ***50.2[5]***
Westbound Approach		AM PM		N/A	N/A	N/A	***68.0*** ***73.2***	***63.7*** ***99.6***	***E*** ***F***	***63.7*** ***99.6***
9. El Camino Real & Cambridge Avenue (Ct/MP)	Signal	AM PM	D	16.5 8.5	13.0 14.8	B B	16.7 14.2	16.0 18.7	B B	3.0 3.9
Eastbound Approach		AM PM		**71.7** **-**	**71.7** **70.0**	**E** **E**	***76.1*** -	**76.1** **76.8**	**E** **E**	**4.4** **6.8**
Westbound Approach		AM PM		- **63.1**	**62.1** **63.1**	**E** **E**	- **81.5**	**68** **81.5**	**E** **F**	**5.9** **18.4**

TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
10. El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	E	27.9 49.5	29.7 39.2	C D	31.0 53.8	32.2 41.8	C D	2.5 2.6
11. Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	C	19.9 14.1	18.5 13.3	B B	20.7 14.5	19.1 13.5	B B	0.6 0.2
12. Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	D	**72.1** **78.8**	47.1 52.4	D D	**81.2** ***93.0***	52.0 ***61.1***	D ***E***	4.9 ***8.7***
13. University Drive (N) & Valparaiso Avenue (MP/At)	Signal	AM PM	D	15.2 18.4	14.2 17.5	B B	12.2 19.0	14.4 18.1	B B	0.2 0.6
14. University Drive (N) & Oak Grove Avenue (MP)	All-way Stop	AM PM	C	12.3 15.1	12.3 15.1	B C	12.9 17.2	12.9 17.2	B C	0.6 2.1
15. University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	**109.7** 54.7	**109.7** **102.9**	**F** **F**	***128.5*** 35.2	***128.5*** **118.4**	***F*** **F**	***18.8***[5] -19.5[5]
16. University Drive (S) & Santa Cruz Avenue (MP)	Signal	AM PM	D	18.0 16.7	13.7 18.4	B B	18.4 22.7	14.2 19.4	B B	0.5 1.0
17. University Drive (S) & Menlo Avenue (MP)	All-way Stop	AM PM	C	29.9 21.3	29.9 21.3	D C	29.1 23.1	29.1 23.1	D C	-0.8[5] 1.8
18. Middlefield Road & Marsh Road (At)	Signal	AM PM	D	**82.4** **>150**	51.3 **101.7**	D **F**	**87.7** ***>150***	54.3 ***105***	D ***F***	3.0 ***6.3***[5]
19. Middlefield Road & Encinal Avenue (At)	Side Street Stop	AM PM	D	**>150** **>150**	**>150** **>150**	**F** **F**	***>150*** ***>150***	***>150*** ***>150***	***F*** ***F***	***146.1***[5] ***57.0***[5]
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	AM PM	D	**>150** **>150**	**>150** **>150**	**F** **F**	***>150*** ***>150***	***>150*** ***>150***	***F*** ***F***	***>150***[5] ***>150***[5]

TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
21. Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	D	38.7 **77.3**	16.8 18.8	B B	62.6 **115.1**	20.4 25.5	C C	3.6 6.7
22. Middlefield Road & Ravenswood Avenue (MP/At)	Signal	AM PM	D	71.7 **135.2**	**56.8** **101.4**	**E** **F**	***89.7*** ***>150***	***70.3*** ***124.2***	***E*** ***F***	***18.0[5]*** ***30.2[5]***
23. Middlefield Road & Ringwood Avenue (MP/At)	Signal	AM PM	D	35.9 37.6	29.4 29.3	C C	36.1 38.0	29.2 29.0	C C	-0.2 -0.3
24. Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	D	1.3 2.0	**37.8** 30.1	**E** D	***1.4*** ***2.4***	***46.6*** ***41.3***	***E*** ***E***	***8.8*** ***11.2***
25. Middlefield Road & Willow Road (MP)	Signal	AM PM	D	**83.4** **>150**	**72.4** **>150**	**E** **F**	***107.9*** ***>150***	***83.5*** ***>150***	***F*** ***F***	***24.5[5]*** ***32.0[5]***
26. Gilbert Avenue & Willow Road (MP)	Signal	AM PM	D	**58.7** **>150**	43.8 **100.8**	D **F**	**68.8** **100.6**	53.2 **68.9**	D **E**	9.4 - >150[5]
27. Coleman Avenue & Willow Road (MP)	Signal	AM PM	D	**125.3** **72.8**	**86.1** **55.3**	**F** **E**	***136*** ***94.9***	***97.8*** ***71.1***	***F*** ***E***	***10.7[5]*** ***22.1[5]***
28. Durham Street & Willow Road (MP)	Signal	AM PM	D	**55.1** **>150**	33.1 **93.2**	C **F**	69.4 ***>150***	42 ***101.4***	D ***F***	8.9 ***17.5[5]***
29. Bay Road & Willow Road (Ct/MP)	Signal	AM PM	D	**62.1** **55.8**	49.9 40.5	D D	***66.8*** **61.8**	***55.3*** 46.1	***E*** D	***5.4*** 5.6
30. Bay Road & Marsh Road (MP)	Signal	AM PM	D	36.1 48.6	25.1 32.8	C C	36.5 51.4	25.3 34.3	C C	0.2 1.5
31. Florence Street/Bohannon Drive & Marsh Road (MP)	Signal	AM PM	D	25.9 50	21.0 38.8	C D	26.5 52.0	21.4 40.0	C D	0.4 1.2
32. Scott Drive & Marsh Road (MP)	Signal	AM PM	D	27.4 **59.5**	21.9 41.7	C D	28.9 **62.1**	22.7 43.1	C D	0.8 1.4

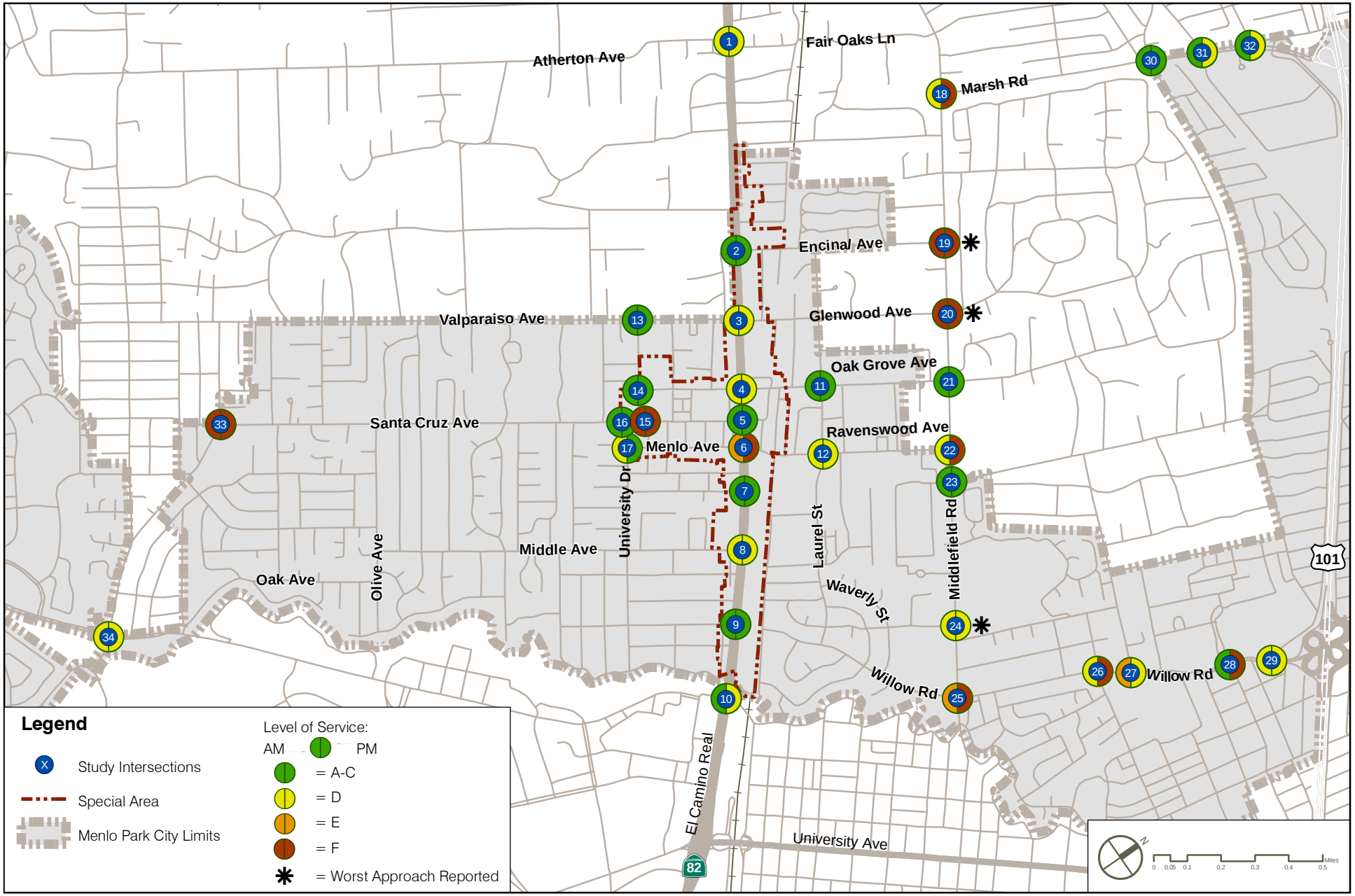
TABLE 14:
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Threshold	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[1]	Average Delay[2]	LOS[3]	Critical Delay[1]	Average Delay[2]	LOS[3]	Δ in Delay[4]
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	**82.9** **103.3**	**82.9** **103.3**	**F** **F**	***103.5*** ***147.9***	***103.5*** ***147.9***	***F*** ***F***	***20.6[5]*** ***44.6[5]***
34. Santa Cruz Avenue/Alpine Avenue & Sand Hill Road (MP)	Signal	AM PM	D	53.9 **56.2**	50.6 51.9	D D	**63.7** **59.0**	54.3 54.0	D D	3.7 2.1

1. Average control delay (expressed in seconds per vehicle) for the critical movements only.
2. Whole intersection weighted average control delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
3. LOS calculations performed using the methodology outlines in the 2000 *Highway Capacity Manual – Special Report 209*.
4. Change in average delay between Cumulative and Cumulative Plus Project Conditions (unless otherwise noted).
5. Average Critical Delay Change

* Denotes Caltrans intersection. Unacceptable operations are indicated in **bold** type, and significant impacts are indicated in ***bold & Italic*** type

Source: Fehr & Peers, 2010.



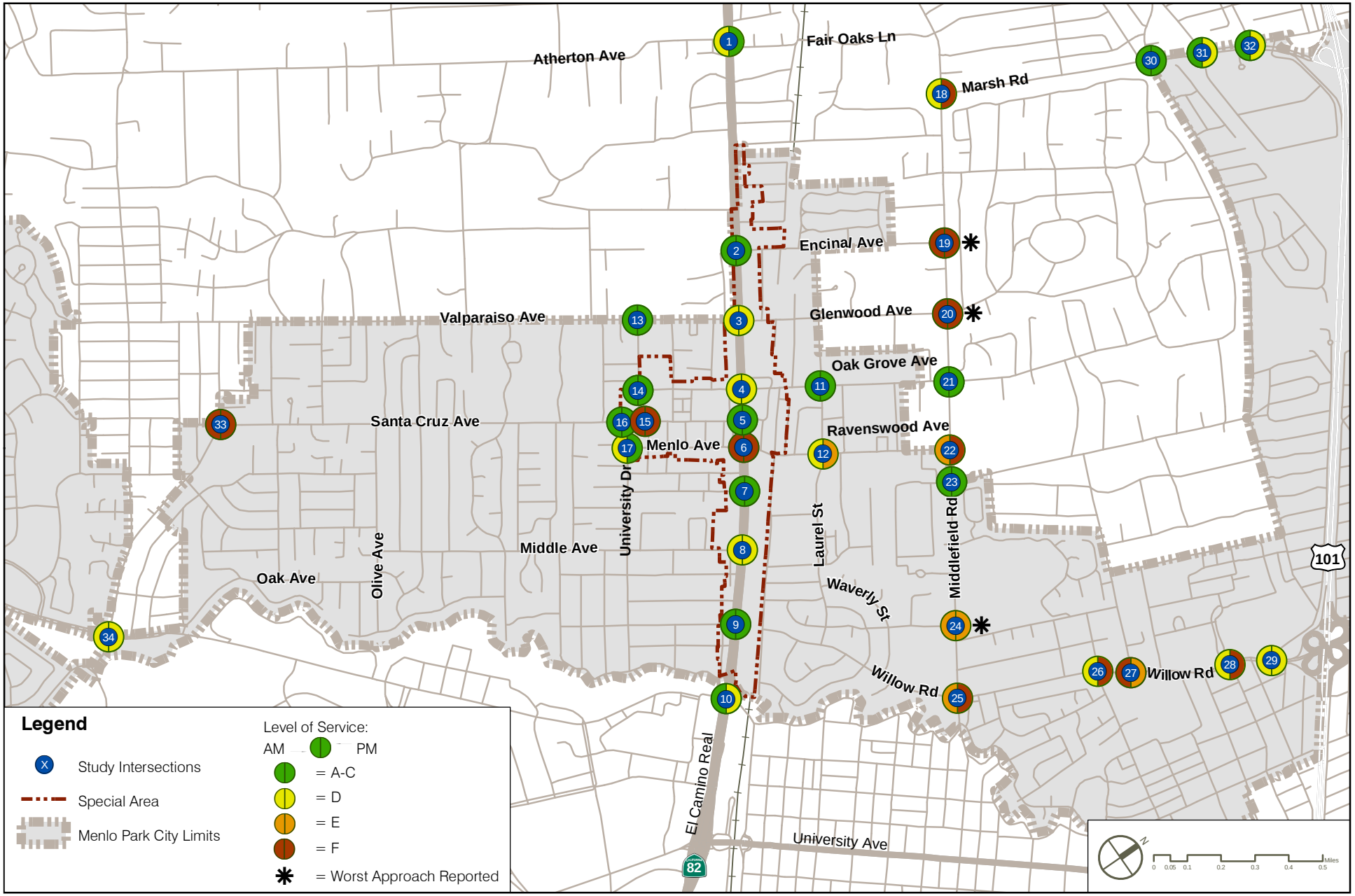
El Camino Real / Downtown Specific Plan TIA

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Cumulative AM and PM Peak-Hour Intersection Levels of Service

April 2010
SJ09-1089

Figure 13



El Camino Real / Downtown Specific Plan TIA

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TRANSPORTATION CONSULTANTS

Cumulative Plus Project AM and PM Peak-Hour Intersection Levels of Service

April 2010
SJ09-1089

Figure 14

CUMULATIVE (2035) ROADWAY SEGMENT ANALYSIS

Estimates of the amount of daily traffic generated by the Specific Plan land uses were added to the cumulative roadway segment daily volumes.. The results are presented in **Table 15**. The City of Menlo Park's roadway segment significance criteria presented in **Figure A-2 in Appendix A** were used to identify potentially significant impacts.

TABLE 15:
CUMULATIVE PLUS PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Classification	Cumulative ADT	Added Daily Volume	Cumulative Plus Project ADT	Impact?
1. Encinal Avenue - Laurel to Middlefield	Collector	5,768	80	5,848	No
2. Encinal Avenue - El Camino to Laurel	Collector	6,292	86	6,378	No
3. Valparaiso Avenue - Delfino Way to El Camino	Minor Arterial	13,711	488	14,199	No
4. Glenwood Avenue - El Camino to Laurel	Collector	8,004	130	8,134	No
5. Oak Grove Avenue - Middlefield to Laurel	Collector	***10,943***	***847***	***11,790***	***Yes***
6. Oak Grove Avenue - Laurel to El Camino	Collector	***13,138***	***861***	***13,999***	***Yes***
7. Oak Grove Avenue - El Camino to Crane	Collector	***10,730***	***699***	***11,429***	***Yes***
8. Oak Grove Avenue - Crane to University	Collector	7,492	699	8,191	No
9. Santa Cruz Avenue - El Camino to Crane	Minor Arterial	9,747	1,134	10,881	No
10. Santa Cruz Avenue - Crane to University	Minor Arterial	11,352	1,134	12,486	No
11. Santa Cruz Avenue - University to Olive	Minor Arterial	***21,117***	***1,694***	***22,811***	***Yes***
12. Santa Cruz Avenue - Olive to Avy/Orange	Minor Arterial	***20,719***	***1,694***	***22,413***	***Yes***
13. Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas	Minor Arterial	14,053	1,451	15,504	No
14. Menlo Avenue - El Camino to Crane	Collector	***16,745***	***787***	***17,532***	***Yes***
15. Menlo Avenue - Crane to University	Collector	***9,764***	***202***	***9,966***	***Yes***
16. Ravenswood Avenue - Middlefield to Laurel	Minor Arterial	***24,797***	***1,348***	***26,145***	***Yes***
17. Ravenswood Avenue - Laurel to Alma	Minor Arterial	***28,904***	***1,822***	***30,726***	***Yes***
18. Ravenswood Avenue - Alma to El Camino	Minor Arterial	***34,155***	***1,822***	***35,977***	***Yes***
19. Middle Avenue - El Camino to University	Collector	***11,119***	***222***	***11,341***	***Yes***
20. Middle Avenue - University to Olive	Collector	8,552	52	8,604	No
21. Oak Avenue - Sand Hill Road to Olive Street	Local	3,309	17	3,326	No
22. Willow Road - Laurel to Middlefield	Collector	8,615	32	8,647	No
23. Olive Street - Oak to Middle	Local	3,427	16	3,443	No
24. University Drive - Oak Grove to Santa Cruz	Collector	***8,548***	***774***	***9,322***	***Yes***
25. University Drive - Santa Cruz to Menlo	Collector	***11,409***	***613***	***12,022***	***Yes***
26. University Drive - Menlo to Middle	Collector	6,551	438	6,989	No
27. Laurel Street - Ravenswood to Willow	Collector	9,113	32	9,145	No
28. Middlefield Road - Ringwood to Willow	Minor Arterial	***26,053***	***1,822***	***27,875***	***Yes***
29. Waverley Street - Laurel to Linfield	Local	1,955	4	1,959	No
30. Linfield Drive - Waverley to Middlefield	Local	2,090	4	2,094	No

Potentially significant impacts are indicated in ***bold & Italic*** type
Source: Fehr & Peers, 2010.

CUMULATIVE (2035) FREEWAY SEGMENT LEVELS OF SERVICE

The freeway segment analysis for Cumulative Conditions is shown in **Table 16**. The freeway capacities on US 101 include the planned auxiliary lanes from Marsh Road to the Santa Clara County line.

For CMP facilities, the significance test is whether the addition of project traffic causes a segment to exceed its LOS threshold or if it adds an amount of traffic greater than 1 percent of the segment's capacity. The CMP LOS threshold on US 101 is LOS F The southbound direction is currently operating at LOS F during both the AM and PM peak hours based on average speeds according to the 2009 CMP Monitoring Report. It is projected to continue to operate at LOS F due to the projected increase in traffic volumes even with the increase in capacity. The northbound direction is currently operating at LOS D during the AM peak hour and LOS F during the PM peak hour. It is projected to operate at LOS F in both directions under Cumulative Conditions.

The capacities of the analysis segments under Cumulative Conditions and the amount of added project traffic are shown in **Table 16.** The amount of project traffic is much less than 1 percent of the capacity. Therefore, the project would have a less than significant impact on US 101 according to the significance criteria used in this analysis.

The CMP LOS threshold on I-280 is LOS D. According to the 2009 CMP Monitoring Report, it is operating at LOS D. Therefore, a volume-to-capacity ratio analysis was conducted to determine whether the addition of project traffic would cause a segment to exceed the threshold. The results for cumulative conditions are presented in **Table 16**. Portions of I-280 in the study area are projected to exceed the threshold and operate at LOS F. The amount of project traffic added to the LOS F segments is less than 1 percent of the capacity. Therefore, the project would have a less than significant impact on I-280 according to the significance criteria used in this analysis.

Based on Caltrans criteria, the addition of any project traffic to a freeway segment operating at LOS D, E, or F would be a significant impact. The Specific Plan includes provisions for new developments to have Transportation Demand Management (TDM) programs to reduce their generated traffic and thus reduce their impacts. TDM programs are discussed in the mitigation measure chapter.

TABLE 16:
CUMULATIVE PLUS PROJECT FREEWAY LEVELS OF SERVICE

Segment	Direction	Peak Hour	Cuml. Volume[1]	Cuml. Capacity[2]	Cuml. V/C[3]	Cuml. LOS[4]	Project Volume	% of Capacity	C+P Volume	C+P V/C[3]	C+P LOS[4]	LOS Threshold
US 101, North of Marsh Road	NB	AM	-	8,340[5]	-	**F**	17	0.20%	-	-	**F**	F
		PM	-	7,780[5]	-	**F**	30	0.39%	-	-	**F**	
	SB	AM	-	7,740[5]	-	**F**	31	0.40%	-	-	**F**	
		PM	-	8,110[5]	-	**F**	26	0.32%	-	-	**F**	
US 101, South of Willow Road	NB	AM	-	6,470[5]	-	**F**	38	0.59%	-	-	**F**	F
		PM	-	6,470[5]	-	**F**	36	0.56%	-	-	**F**	
	SB	AM	-	6,470[5]	-	**F**	29	0.45%	-	-	**F**	
		PM	-	6,470[5]	-	**F**	43	0.66%	-	-	**F**	
I-280, North of Sand Hill Road	NB	AM	6,187	9,000	0.69	C	23	0.26%	6,210	0.69	C	D
		PM	9,935	9,000	**1.10**	**F**	56	0.62%	**9,991**	**1.11**	**F**	
	SB	AM	10,563	9,000	**1.17**	**F**	47	0.52%	**10,610**	**1.18**	**F**	
		PM	6,560	9,000	0.73	D	38	0.42%	6,598	0.73	D	
I-280, South of Alpine Road	NB	AM	6,254	9,000	0.69	C	60	0.67%	6,314	0.70	C	D
		PM	9,982	9,000	**1.11**	**F**	42	0.47%	**10,024**	**1.11**	**F**	
	SB	AM	10,628	9,000	**1.18**	**F**	32	0.36%	**10,660**	**1.18**	**F**	
		PM	6,620	9,000	0.74	D	64	0.71%	6,684	0.74	D	

Notes:

1. Peak hour volumes obtained from Caltrans data and adjusted for corridor growth
2. Capacity based on number of lanes and per lane capacity of 2,300 vehicles per hour per lane (vphpl) for I-280 and 2,200 vphpl for US 101, per the 2000 *Highway Capacity Manual - Special Report 209,* and projected volumes for auxiliary lanes – all adjusted for trucks.
3. Volume-to-Capacity ratio (V/C)
4. LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* methods for freeway segments
5. Future ramp volumes were not available to account for auxiliary lane capacities. Therefore, existing capacities were used in this analysis. These existing capacities would be lower than the future capacities and would represent a more conservative analysis.

Unacceptable operations are indicated in **bold** type. Significant impacts are shown in ***bold italics*** type.

Source: Fehr & Peers, 2010.

CUMULATIVE (2035) IMPACTS

Impacts to intersections, roadway segments, and freeway facilities are described below. Mitigation measures for these impacts are discussed in Chapter 8.

Intersections

The results in **Table 14** indicate that the proposed project will result in significant traffic impacts at the following intersections under Cumulative Plus Project Conditions:

- El Camino Real & Glenwood Avenue/Valparaiso Avenue intersection as a whole in the PM peak hour and the eastbound and westbound approaches in the PM peak hour
- El Camino Real & Menlo Avenue/Ravenswood Avenue intersection as a whole and the eastbound and westbound approaches in both the AM and PM peak hours with and without the southbound right-turn lane
- El Camino Real & Middle Avenue intersection as a whole and the eastbound and westbound approaches in the PM peak hour and westbound approach in the AM peak hour
- Laurel Street & Ravenswood Avenue in the PM peak hour
- University Drive (N) & Santa Cruz Avenue in the AM peak hour
- Middlefield Road & Marsh Road in the PM peak hour
- Middlefield Road & Encinal Avenue in both the AM and PM peak hours
- Middlefield Road & Glenwood Avenue/Linden Avenue in both the AM and PM peak hours
- Middlefield Road & Ravenswood Avenue in both the AM and PM peak hours
- Middlefield Road & Linfield Drive in both the AM and PM peak hours
- Middlefield Road & Willow Road in both the AM and PM peak hours
- Coleman Avenue & Willow Road in both the AM and PM peak hours
- Durham Street & Willow Road in the PM peak hour
- Bay Road & Willow Road in the AM peak hour
- Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue in the AM and PM peak hours

Roadway Segments

The results in **Table 15** indicate that the proposed project will result in significant traffic impacts at the following roadway segments under Cumulative Plus Project Conditions:

- Oak Grove Avenue - Middlefield to Laurel
- Oak Grove Avenue - Laurel to El Camino
- Oak Grove Avenue - El Camino to Crane
- Santa Cruz Avenue - University to Olive
- Santa Cruz Avenue - Olive to Avy/Orange
- Menlo Avenue - El Camino to Crane
- Menlo Avenue - Crane to University
- Ravenswood Avenue - Middlefield to Laurel
- Ravenswood Avenue - Laurel to Alma
- Ravenswood Avenue - Alma to El Camino
- Middle Avenue - El Camino to University
- University Drive - Oak Grove to Santa Cruz
- University Drive - Santa Cruz to Menlo
- Middlefield Road - Ringwood to Willow

Freeway Segments

The results in **Table 16** indicate that the proposed project will not result in significant traffic impacts on any of the study freeway segments under Cumulative Plus Project Conditions.

7. TRANSIT, BICYCLE, PEDESTRIAN, AND PARKING ANALYSIS

This chapter addresses potential transit, bicycle, and pedestrian impacts and also addresses parking issues associated with the Specific Plan.

TRANSIT

The significance criteria for transit-related impacts are:

- The project would generate a substantial increase in transit riders that cannot be adequately served by existing transit services, or
- The project would generate demand for transit services in an area that is more than ¼ mile from existing transit routes.

The number of added transit riders was estimated based on the trip generation estimates and transit mode share estimates for the land use program. The daily ridership estimates are 330 riders on Caltrain and 80 bus riders. Both Caltrain and the buses have available capacity to accommodate these additional riders.

All of the potential developments in the land use program are within ¼ mile of a transit stop.

The Specific Plan will have a less-than-significant impact to transit.

BICYCLE SYSTEM

The Specific Pan would create a significant impact related to the bicycle system if either of the following criteria are met or exceeded:

- The project would not provide adequate bicycle facilities to connect to the area circulation system, or
- The project design would cause increased potential for bicycle/vehicle conflicts.

The Specific Plan provides new bicycle facilities (bike routes and bike lanes) and does not contain design aspects that would cause an increased potential for bicycle/vehicle conflicts. Therefore the Specific Plan has less-than-significant bicycle impacts.

PEDESTRIAN SYSTEM

The Specific Plan would create a significant impact related to the pedestrian facilities if either of the following criteria are met or exceeded:

- The project would not provide adequate pedestrian facilities to connect to the area circulation system, or
- Vehicles would cross pedestrian facilities on a regular basis without adequate design and/or warning systems, causing safety hazards.

The Specific Plan provides enhanced pedestrian facilities as described in Chapter 3. The proposed parking structures located in downtown Menlo Park would have driveways that cross sidewalks. The structures will be conditioned to be designed so that vehicle drivers can easily see pedestrians as they exit and that adequate pedestrian warning systems will be provided.

PARKING

A parking impact would be considered significant if:

- The project fails to provide a sufficient quantity of parking for vehicles.
- The project increases off-site parking demand above that which is provided in the immediate project area.
- The project fails to provide a sufficient quantity of parking for bicycles.

The proposed downtown parking supply with the Specific Plan includes added spaces due to the construction of two new parking garages on Parking Plazas 1 and 3 and the loss of parking spaces needed to accommodate public space improvements, such as widened sidewalks and pocket parks. Potential future development in the other subareas within the Specific Plan area will provide parking on-site according to the adopted code or rates in the Specific Plan or supported by a shared parking study approved by the City's Transportation Manager. Parking impacts in the other subareas will be less than significant and no additional parking analyses for those areas were conducted.

The existing and future downtown parking supply is summarized in **Table 17**. It indicates the number of existing parking spaces in each Parking Plaza and on each block face in the downtown core area (area bounded by Oak Grove Avenue, El Camino Real, Menlo Avenue, and University Drive). It also describes the types of changes that are proposed by the Specific Plan and the resulting change in number of spaces, and the resulting future supply. For Parking Plaza 1, the Specific Plan proposes a 5-level garage with 650 publicly accessible spaces. For Parking Plaza 3, the plan proposes two options: a 3.5 level garage, with housing on top, providing 370 publicly accessible spaces or a 5 level garage providing 650 publicly accessible spaces. The land use plan corresponds with Option 1 on Plaza 3[5]. Therefore, the supply associated with that option is assessed. The future parking supply is estimated to be approximately 1,850 spaces.

[5] Option 2 would provide parking to accommodate additional downtown development over what is included in the Specific Plan's land use program and included in this analysis. Therefore future environmental review would be required for Option 2.

TABLE 17:
EXISTING AND FUTURE DOWNTOWN PARKING SUPPLY

Parking Location	Existing Supply[1]	Specific Plan Change	Change in Spaces	Future Supply
Parking Plazas				
Parking Plaza 1	249	Added Parking Structure	+446	695[2]
Parking Plaza 2	95	Development Site	-95	0
Parking Plaza 3	212	Added Parking Structure and Pocket Park	+158	370
Parking Plaza 4	105	Pedestrian Link, Development Site	-31	74
Parking Plaza 5	150	Pedestrian Link, Development Site	-42	108
Parking Plaza 6	136	Pedestrian Link, Flex Space, Market Place	-32	104
Parking Plaza 7	94	Pedestrian Link, Market Place	-36	58
Parking Plaza 8	145	Pedestrian Link	-7	138
Total	1,186		+361	1,547
On-Street Spaces				
Santa Cruz Avenue	116	Sidewalk Widening	-48	68
Chestnut Street North	26	Sidewalk Widening	-11	15
Chestnut Street South	17	Chestnut Paseo	-11	6
Oak Grove Avenue	80	Added Bike Lanes	-35	45
Other Streets	170	No Change	0	170
Total	409		-105	304
Downtown Core Area Total	**1,595**		**+256**	**1,851**

Notes:
1, Draft *2009-2010 Downtown Menlo Park Parking Study*, Wilbur Smith Associates.
2. The future supply of 695 spaces on Plaza 1 includes both the parking structure with 650 publicly accessible spaces and a small surface parking lot on the same plaza.

The existing peak parking demand in the downtown core measured by Wilbur Smith Associates for the 2009/2010 Downtown Menlo Park Parking Study is 1,260 spaces. The land use program envisions that up to approximately 68,000 square feet of retail space could be added to the downtown area. The parking for this space would be provided in public parking areas. All other uses added to the downtown would provide parking on site and would not use up capacity in the public parking facilities.

The peak parking demand generated by potential new development in the downtown area is estimated to be 245 spaces. The combined parking demand of the existing (1,260 spaces) and potential new development (245 spaces) is estimated to be 1,505 spaces. The proposed parking supply of 1,850 spaces is more than sufficient to accommodate the added parking demand generated by the downtown Specific Plan uses plus an increase in demand reflecting stronger economic times, as the existing demand surveys were done in Fall of 2009.

The Specific Plan contains a parking management plan to determine if and when the downtown parking garages would be constructed.

Potential Neighborhood Parking Intrusion

The intensification of uses in the Specific Plan Area will generate new parking demand as described above. If adequate parking is not provided to accommodate the new uses, then parking spillover into the adjacent neighborhoods could occur. The Specific Plan contains a parking management plan to manage parking in the downtown and to plan when the parking garages would be built. The management plan would minimize the potential for neighborhood parking intrusion by responding to parking shortages with the construction of additional supply or through improved management practices.

Bicycle Parking

The Specific Plan provides bicycle parking facilities in the parking garages, in the pocket parks, and on Santa Cruz Avenue. Therefore, adequate bicycle parking will be provided.

Removal of Parking Spaces on Oak Grove Avenue

Parking spaces will be removed on Oak Grove Avenue to accommodate bike lanes. Replacement parking for the spaces on the west side of El Camino Real will be provided in the new parking structures. A survey was conducted to determine then number of vehicles parking in the spaces on the east side of El Camino Real. During the survey, 14 parked vehicles were observed. It was also observed that there were available parking spaces on other nearby roadways such as Laurel Street, Mills Street, Derry Lane, and El Camino Real.

Parking Impacts

The Specific Plan provides adequate parking for both vehicles and bicycles. Therefore, the Specific Plan's parking impact is less-than-significant.

8. MITIGATION MEASURES

Measures to mitigate significant intersection impacts are addressed in this chapter. Mitigations for roadway segment impacts would require adding travel lanes and widening roadways throughout Menlo Park. As the City is built out, there is little opportunity to widen roadways within the available right of way. Therefore any widening would require property acquisition. Due to the number of affected properties and financial implications, roadway segment impacts are considered significant and unavoidable. There are no freeway impacts due to the low amount of traffic from the Specific Plan anticipated to use the freeways. Therefore freeway mitigation measures are not addressed. The amount of traffic added to the roadway segments and freeway segments can be reduced, thus reducing their impacts, through transportation demand management (TDM). TDM measures are also addressed.

INTERSECTIONS

The results in **Tables 11** and **14** indicate that the Specific Plan will result in significant traffic impacts at the following intersections:

- El Camino Real & Glenwood Avenue/Valparaiso Avenue intersection as a whole in the PM peak hour and eastbound and westbound approaches in both the AM and PM peak hours (Cumulative Plus Project Conditions)
- El Camino Real & Menlo Avenue/Ravenswood Avenue intersection as a whole and eastbound and westbound approaches in both the AM and PM peak hours with and without right-turn lanes (Cumulative Plus Project Conditions)
- El Camino Real & Middle Avenue intersection as a whole and eastbound and westbound approaches in the PM peak hour and westbound approach in the AM peak hour (Cumulative Plus Project Conditions)
- Laurel Street & Ravenswood Avenue in the PM peak hour (Cumulative Plus Project Conditions)
- University Drive (N) & Santa Cruz Avenue in the AM peak hour (Existing Plus Project and Cumulative Plus Project Conditions)
- Middlefield Road & Marsh Road in the PM peak hour (Cumulative Plus Project Conditions)
- Middlefield Road & Encinal Avenue in both the AM and PM peak hours (Existing Plus Project and Cumulative Plus Project Conditions)
- Middlefield Road & Glenwood Avenue/Linden Avenue in both the AM and PM peak hours (Existing Plus Project and Cumulative Plus Project Conditions)
- Middlefield Road & Linfield Drive in both the AM and PM peak hours (Cumulative Plus Project Conditions)
- Middlefield Road & Willow Road in the AM peak hour (Existing Plus Project and Cumulative Plus Project Conditions) and in the PM peak hour (Cumulative Plus Project Conditions)
- Coleman Avenue & Willow Road in both the AM and PM peak hours (Cumulative Plus Project Conditions)
- Durham Street & Willow Road in the PM peak hour (Cumulative Plus Project Conditions)
- Bay Road & Willow Road in the AM peak hour (Cumulative Plus Project Conditions)
- Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (Existing Plus Project – PM peak hour and Cumulative Plus Project Conditions – AM and PM peak hours)

In addition, queue spillback out of left-turn pockets on El Camino Real are projected to occur at the following intersections based on Traffix output:

- El Camino Real & Atherton Avenue/Fair Oaks Lane
    - Northbound left in both the AM and PM peak hours (all Conditions – Existing, Existing Plus Project Plus Project, Cumulative, and Cumulative Plus Project Conditions)
- El Camino Real & Encinal Avenue
    - Northbound left in the AM peak hour (Cumulative and Cumulative Plus Project Conditions)
    - Southbound left in both the AM and PM peak hours (all Conditions)
- El Camino Real & Glenwood Avenue/ Valparaiso Avenue
    - Northbound left in both the AM and PM peak hours (all Conditions)
    - Southbound left in both the AM peak hour (Cumulative plus Project Conditions) and the PM peak hour (all Conditions)
- El Camino Real & Oak Grove Avenue
    - Northbound left in the AM peak hour (all Conditions) and the PM peak hour (Existing Plus Project Plus Project, Cumulative, and Cumulative Plus Project Conditions)
    - Southbound left in both the AM and PM peak hours (all Conditions)
- El Camino Real & Menlo Avenue/ Ravenswood Avenue
    - Northbound left in the AM peak hour (Cumulative Plus Project Conditions) and the PM peak hour (all Conditions)
    - Southbound left in both the AM and PM peak hours (all Conditions)
- El Camino Real & Roble Avenue
    - Northbound left in the PM peak hour (Cumulative and Cumulative Plus Project Conditions)
    - Southbound left in the AM peak hour (Cumulative and Cumulative Plus Project Conditions)
- El Camino Real & Middle Avenue
    - Northbound left in both the AM and PM peak hours (all Conditions)
    - Southbound left
        - If a 50-foot turn pocket is used, spillback will occur in both the AM and PM peak hours (Existing Plus Project and Cumulative Plus Project Conditions)
        - However, if a 300- foot side-by-side turn pocket is used, no spillback would occur
- El Camino Real & Cambridge Avenue
    - Northbound left in the AM peak hour (Cumulative and Cumulative Plus Project Conditions) and in the PM peak hour (all Conditions)

- Southbound left in the AM peak hour (Existing Plus Project and Cumulative Plus Project Conditions) and the PM peak hour (all Conditions)

- El Camino Real & Sand Hill Road
  - Northbound left in both the AM and PM peak hours (all Conditions)
  - Southbound left in the AM (Existing Plus Project, Cumulative, and Cumulative Plus Project Conditions) and PM peak hours (all Conditions)

More detailed operational analyses may be required during the approval process for individual development projects to ensure that left-turn queue spillback does not occur.

Mitigation measures were developed to improve intersection and local approach levels of service to acceptable operating conditions. Improvements contained in the *City of Menlo Park Transportation Impact Fee Study,* TJKM, September 9, 2009 were used when possible. Payment of the fee will constitute each indivdual project's fair share financial contribution to these selected mitigation measures. The mitigation measures are summarized in **Table 18**. The mitigations are discussed below in further detail. Note that all of the improvements listed at each intersection would need to be implemented

TABLE 18:
SUMMARY OF INTERSECTION MITIGATION MEASURES

Intersection	Existing Traffic Control	Mitigation	Included in TIF Program	Impact Reduction	
				E+P	C+P
3. El Camino Real & Glenwood/ Valparaiso Avenues (Ct/At/MP)	Signal	• Add WB right-turn lane	YES	-	✓*
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/RT lanes	Signal	• Add 2nd SB left-turn lane • Modify SB right-turn lane to a shared through/right-turn lane • Create third southbound receiving lane • Add 3rd NB through lane • Add EB left-turn lane, right-turn lane, and modify approach to L-T-T-R • Change EB/WB signal phasing from split to protected left-turn movements	YES[1]	-	X*
6. El Camino Real & Menlo Avenue/Ravenswood Avenues (Ct/MP) w/o SB RT lane	Signal	• Add 2nd SB left-turn lane • Add 3rd NB through lane • Add EB left-turn lane, right-turn lane, and modify approach to L-T-T-R • Change EB/WB signal phasing from split to protected left-turn movements	YES[1]	-	0*
8. El Camino Real & Middle Avenue (Ct/MP)	Signal	• Add 2nd NB left-turn lane	YES	-	✓*
12. Laurel Street & Ravenswood Avenue (MP)	Signal	• Add EB right-turn lane	YES	-	✓*
15. University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	• Signalize intersection and interconnect with University Drive (S) & Santa Cruz Avenue	NO	✓	✓
18. Middlefield Road & Marsh Road (At)	Signal	• Add 2nd WB left-turn lane and a 2nd receiving lane on the southern leg of the intersection	NO	-	✓*
19. Middlefield Road & Encinal Avenue (At)	Side Street Stop	• Signalize intersection • Add EB right-turn lane	NO	✓*	✓*
20. Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	• Signalize intersection	NO	✓	✓
22. Middlefield Road & Ravenswood Avenue (MP/At)	Signal	• Add SB right-turn lane & modify approach to T-R	YES	-	✓*
24. Middlefield Road & Linfield Drive (MP)	Side Street Stop	• Signalize intersection	NO	-	✓

TABLE 18:
SUMMARY OF INTERSECTION MITIGATION MEASURES

Intersection	Existing Traffic Control	Mitigation	Included in TIF Program	Impact Reduction	
				E+P	C+P
25. Middlefield Road & Willow Road (MP)	Signal	Existing plus Project Improvements • Add 2nd WB left-turn lane & modify WB approach to L-L-T-R • Change EB/WB signal phasing from split to protected left-turn movements Additional Cumulative plus Project Improvements • Add 2nd SB left-turn lane & modify SB approach to L-L-T-T/R • Change NB/SB signal phasing from split to protected left-turn movements	YES	✓*	X*
27. Coleman Avenue & Willow Road (MP)	Signal	• Restripe SB approach to L-T/R	NO	-	✓
28. Durham Street & Willow Road (MP)	Signal	• Add SB left-turn lane • Change NB/SB signal phasing from permitted to protected left-turn movements	NO	-	X*
29. Bay Road & Willow Road (MP)	Signal	• Add 2nd SB left-turn lane	NO	-	✓*
33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	• Signalize intersection	NO	✓	✓

Notes:

1. All modifications are identified in the City's Transportation Impact Fee program except adding the third northbound through lane. This lane has been identified as mitigation for other pending development projects in the city.

WB = Westbound EB = Eastbound NB = Northbound SB = Southbound SE = Southeast

- No modification necessary: intersection operates at its standard or better

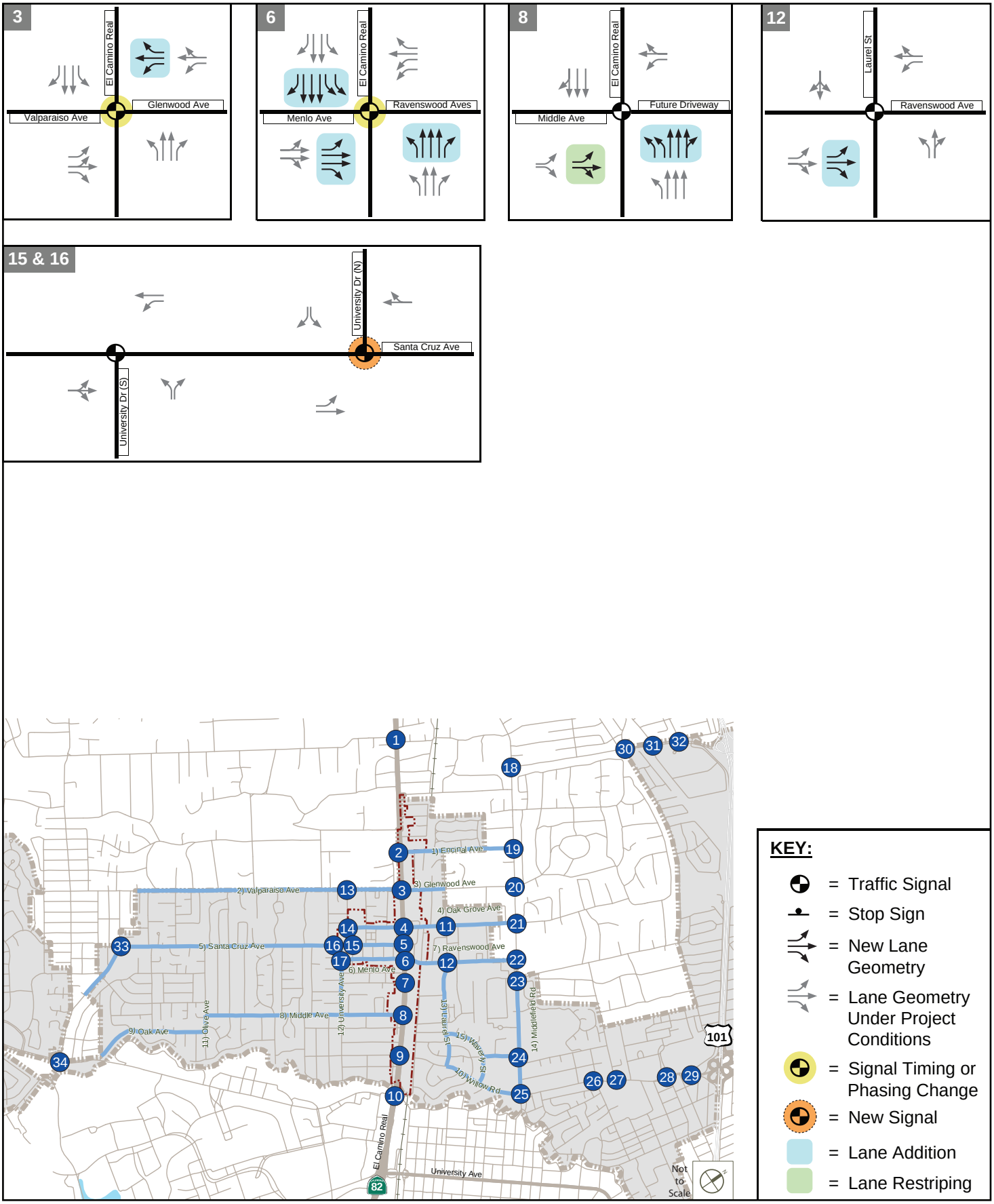
✓ Improves vehicular operations to the intersection's LOS standard or better

X Does not improve vehicular operations to the intersection's LOS standard or better but the impact is reduced

0 Not sufficient to fully mitigate impact

* Modification may not be feasible due to additional right-of-way acquisition or other factors

Source: Fehr & Peers, 2010.



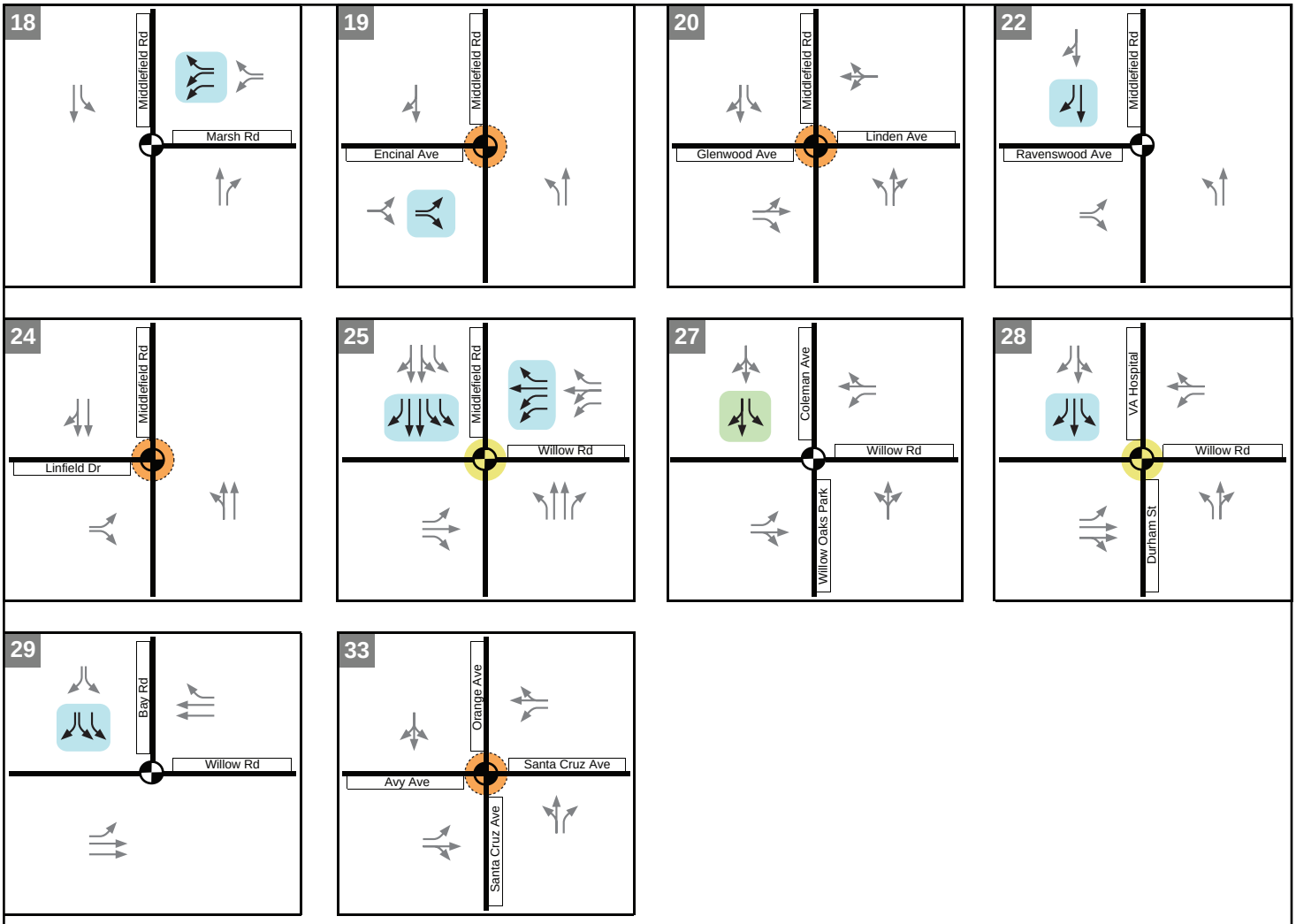
El Camino Real / Downtown Specific Plan

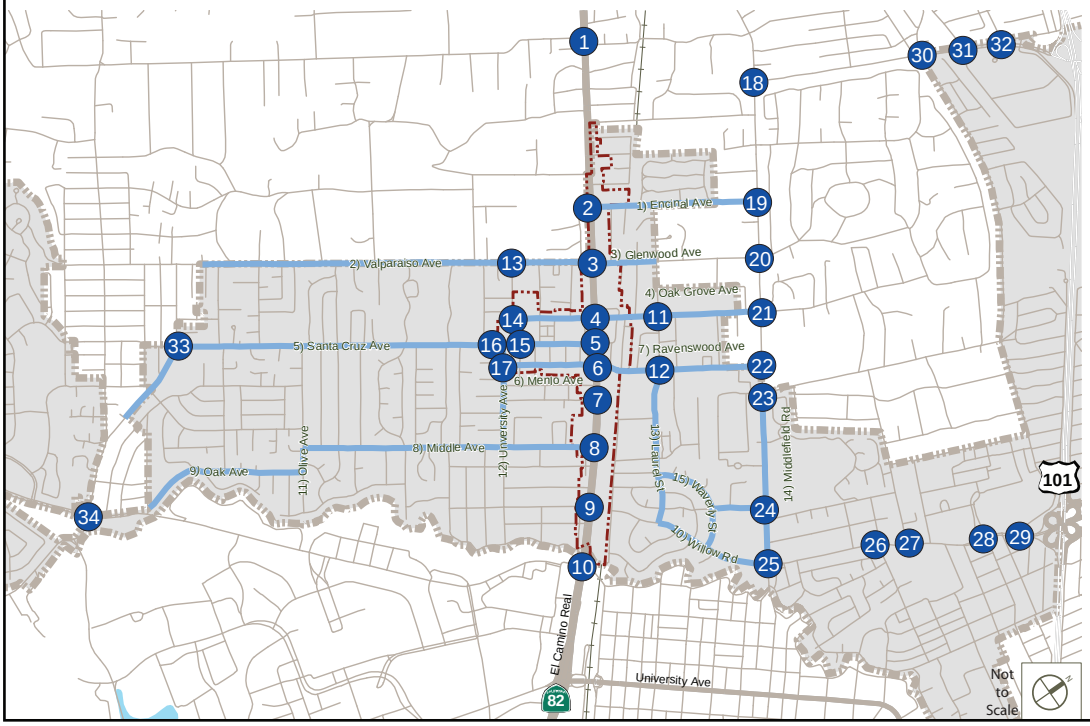
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SJ09-1089

Intersection Mitigation Measures

Figure 15a





KEY:

- = Traffic Signal
- = Stop Sign
- = New Lane Geometry
- = Lane Geometry Under Project Conditions
- = Signal Timing or Phasing Change
- = New Signal
- = Lane Addition
- = Lane Restriping

El Camino Real / Downtown Specific Plan

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Intersection Mitigation Measures

Figure 15b

3. El Camino Real & Glenwood Avenue/Valparaiso Avenue

Adding a westbound right-turn lane and modifying the westbound approach to a left-turn lane, a through lane, and a right-turn lane would improve overall vehicular operations of this state-controlled intersection to LOS D in the PM peak hour under Cumulative Plus Project Conditions. This geometric modification is included in the City's Transportation Impact Fee program and would reduce the cumulative impact to a less-than significant level. (No modifications are necessary under Existing Plus Project Condition since there is no impact under those conditions.)

The additional westbound right-turn lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. This lane would also require ROW acquisition on the north side of Glenwood Avenue. Therefore, this mitigation may be infeasible and the impact may remain significant and unavoidable.

6. El Camino Real & Menlo Avenue/Ravenswood Avenue

The following set of modifications would improve vehicular operations on the local approaches of the state-controlled intersection of El Camino Real and Menlo Avenue/Ravenswood Avenue under Cumulative Plus Project conditions:

- Adding a second southbound left-turn lane
- Modifying the southbound right-turn lane to a shared through/right-turn lane
- Creating a southbound receiving lane
- Adding a third northbound through lane
- Adding an eastbound left-turn lane, an eastbound right-turn lane, and modifying the eastbound approach to one left-turn lane, two through lanes, and one right-turn lane
- Changing the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing

This mitigation does not reduce the average intersection delay to an acceptable level. However, these improvements reduce the increase in average critical movement delay to less than 0.8 seconds thereby reducing this impact to a less-than-significant level. All modifications are identified in the City's Transportation Impact Fee program except adding the third northbound through lane. This lane has been identified as mitigation for other pending development projects in the city. No modifications are necessary under Existing Plus Project Condition since there is no impact under those conditions.

The additional southbound left-turn lane, northbound through lane, and eastbound lanes will increase the crosswalk distances and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound turn lanes could require ROW acquisition and parking space removal along Menlo Avenue. The second southbound left-turn and third northbound through lanes would require ROW acquisition on the east side of El Camino Real. Converting the southbound right-turn lane to a shared through/right-turn lane and adding the southbound receiving lane may require parking removal. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

For conditions where the southbound right-turn lane is removed to accommodate a sidewalk extension, the mitigation measure would include:

- Adding a second southbound left-turn lane
- Adding a third northbound through lane
- Adding an eastbound left-turn lane, an eastbound right-turn lane, and modifying the eastbound approach to one left-turn lane, two through lanes, and one right-turn lane
- Changing the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing

These improvements would not be sufficient to reduce the impact to a less-than-significant level and the impact would remain significant and unavoidable.

8. El Camino Real & Middle Avenue

Adding a second northbound right-turn lane and a second receiving lane on Middle Avenue west of El Camino would improve vehicular operations of this state-controlled intersection to LOS D under Cumulative Plus Project conditions. This modification is identified in the City's Transportation Impact Fee program.

However, the additional northbound left-turn lane and second receiving lane on Middle Avenue will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. These lanes would also require ROW acquisition along Middle Avenue. Therefore, this mitigation may be infeasible and the impact may remain significant and unavoidable.

The addition of the westbound approach to this intersection causes an increase in delay of over 23 seconds. Therefore, this approach addition may be considered to cause a significant and unavoidable impact to the intersection. No feasible lane additions or operational changes would reduce the amount of added delay to less than 23 seconds needed to reduce this impact to a less-than-significant level.

It is recommended that an access study be performed for new development projects on the east side of El Camino Real near Middle Avenue . These studies would evaluate the appropriate driveway locations, allowable driveways turning movements, and maximum queue lengths to size left-turn pockets on the driveways approaches and on El Camino Real at Middle Avenue.

12. Laurel Street & Ravenswood Avenue

Adding an eastbound right-turn lane improves the PM peak hour level of service to LOS D under Cumulative plus Project conditions. This modification is identified in the City's Transportation Impact Fee program. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

The additional eastbound lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound right-turn lane would require ROW acquisition and tree removal along Ravenswood Avenue. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

15. University Drive & Santa Cruz Avenue

Signalizing the intersection of University Drive (N) and Santa Cruz Avenue and interconnecting the new signal with the existing signal at the University Drive (S) and Santa Cruz Avenue intersection improves the level of service to LOS C during the AM peak hour under Existing plus Project and Cumulative Plus Project Conditions.

The new signal may increase queuing in all directions. Based on the westbound through and right-turn maximum queue estimates, the right-turn pocket at the University Drive (S) and Santa Cruz Avenue intersection should be at minimum 500 feet long. The distance between the University Drive (S) and Santa Cruz Avenue intersection and the upstream intersection at Johnson Street is approximately 300 feet; therefore, the eastbound right-turn pocket should extend beyond Johnson Street. This turn pocket extension would require the removal of several parking spaces on the south side of Santa Cruz Avenue.

Based on the southbound left-turn and right-turn maximum queue estimates, the right-turn pocket at the University Drive (N) and Santa Cruz Avenue intersection should be at minimum 150 feet long. This turn pocket extension would require the removal of two parking spaces on the west side of University Drive. Long queues would also extend into the downtown area of Menlo Park. However, due to the pedestrian oriented nature of this area, no modifications are proposed.

This intersection meets peak-hour warrants. (See **Appendix E**.) However, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

18. Middlefield Road & Marsh Road

The improvements at Middlefield Road and Marsh Road to mitigate Cumulative Plus Project impacts include adding a second westbound left-turn lane and providing a second receiving lane on the southern leg of the intersection. The level of service to improves to LOS D during the PM peak hour with these changes. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

The additional westbound lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the westbound left-turn lane and associated receiving lane may require ROW acquisition and tree removal along both Middlefield Road and Marsh Road. Further study should be undertaken to determine feasibility of this mitigation measure. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

19. Middlefield Road & Encinal Avenue

At Middlefield Road and Encinal Avenue, signalizing the intersection and adding an eastbound right-turn lane improves the level of service to LOS C and LOS D during the AM peak hour and LOS A and LOS C during the PM peak hour under Existing Plus Project and Cumulative Plus Project conditions, respectively. The additional westbound lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound right-turn lane may require ROW acquisition and tree removal along Encinal Avenue. Further study should be undertaken to determine feasibility of this mitigation measure. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

20. Middlefield Road & Glenwood Avenue/Linden Avenue

Signalizing the intersection of Middlefield Road and Glenwood Avenue improves the level of service to LOS B and LOS C during both the AM and PM peak hours under both Existing Plus Project and Cumulative Plus Project conditions. Therefore, the impact would be reduced to a less-than-significant level.

This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

22. Middlefield Road & Ravenswood Avenue

At Middlefield Road and Ravenswood Avenue under Cumulative Plus Project conditions, adding a southbound right-turn lane and modifying the approach to a through lane and a right-turn lane improves the level of service to LOS D during both the AM and PM peak hours. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

This modification is identified in the City's Transportation Impact Fee program. The addition of the southbound right-turn lane may require ROW acquisition and tree removal along Ravenswood Avenue. Further study should be undertaken to determine feasibility of this mitigation measure. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

24. Middlefield Road & Linfield Drive

Signalizing the intersection of Middlefield Road and Linfield Drive under Cumulative Plus Project conditions improves the level of service to LOS B during the AM peak hour and LOS C during the PM peak hour. Therefore, the impact would be reduced to a less-than-significant level. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

25. Middlefield Road & Willow Road

At Middlefield Road and Willow Road, the following modifications would improve vehicular operations of this intersection during the AM and PM peak hours under Existing plus Project conditions:

- Adding a second westbound left-turn lane
- Modifying the westbound approach to two left-turn lanes, one through lane, and one right-turn lane
- Changing the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing

These improvements are identified in the City's Transportation Impact Fee program. and would reduce the average intersection delay to an acceptable level thus reducing the impact to a less-than-significant level under Existing Plus Project conditions.

Additional improvements would be needed under Cumulative plus Project conditions:

- Adding a second southbound left-turn lane
- Modifying the southbound approach to two left-turn lanes, one through lane, and one through/right-turn lane
- Changing the signal phasing on the northbound and southbound approaches from split phasing to protected left-turn phasing

These improvements are also included in the City's Transportation Impact Fee. They are not sufficient to reduce the average intersection delay to an acceptable level under Cumulative Plus Project conditions, but they reduce the increase in average critical movement delay to less than 0.8 seconds.

The additional southbound and westbound left-turn lanes will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the left-turn lanes may require

ROW acquisition. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable.

27. Coleman Avenue & Willow Road

Restriping the southbound approach to one left-turn lane and one through/right-turn lane under Cumulative Plus Project conditions improves the level of service to LOS D during both the AM and PM peak hours at the intersection of Coleman Avenue and Willow Road. Therefore, the impact may be reduced to less than significant. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

28. Durham Street & Willow Road

At Durham Street and Willow Road, adding a southbound left-turn lane reduces the increase in average critical movement delay to less than 0.8 seconds although it does not reduce the average intersection delay to an acceptable level under Cumulative Plus Project conditions. . The addition of the southbound left-turn lane may require ROW acquisition and tree removal along the VA Hospital Driveway. Further study should be undertaken to determine feasibility of this mitigation measure. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

29. Bay Road & Willow Road

At Bay Road and Willow Road, adding a second southbound left-turn lane improves the level of service to LOS C during the AM peak hour under Cumulative Plus Project conditions. The addition of the second southbound left-turn lane may require ROW acquisition and tree removal. Further study should be undertaken to determine feasibility of this mitigation measure. Therefore, this mitigation may be considered infeasible and the impact may remain significant and unavoidable. (The project does not impact this intersection under Existing Plus Project conditions. Therefore, no modifications are necessary under those conditions.)

33. Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue

Signalizing the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue improves the level of service to LOS C during both the AM and PM peak hours under Existing Plus Project and Cumulative Plus Project conditions. Therefore, the impact may be reduced to a less than significant level.

This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

ROADWAY SEGMENTS

The results in **Tables 12** and **15** indicate that the Specific Plan will result in significant traffic impacts at the following roadway segments:

- Oak Grove Avenue - Middlefield to Laurel (Existing plus Project and Cumulative plus Project)
- Oak Grove Avenue - Laurel to El Camino (Existing plus Project and Cumulative plus Project)
- Oak Grove Avenue - El Camino to Crane (Existing plus Project and Cumulative plus Project)

- Santa Cruz Avenue - University to Olive (Cumulative plus Project)
- Santa Cruz Avenue - Olive to Avy/Orange (Cumulative plus Project)
- Santa Cruz Avenue – Avy/Orange to Alameda de las Pulgas (Existing plus Project)
- Menlo Avenue - El Camino to Crane (Existing plus Project and Cumulative plus Project)
- Menlo Avenue - Crane to University (Cumulative plus Project)
- Ravenswood Avenue - Middlefield to Laurel (Existing plus Project and Cumulative plus Project)
- Ravenswood Avenue - Laurel to Alma (Existing plus Project and Cumulative plus Project)
- Ravenswood Avenue - Alma to El Camino (Existing plus Project and Cumulative plus Project)
- Middle Avenue - El Camino to University (Cumulative plus Project)
- University Drive - Oak Grove to Santa Cruz (Cumulative plus Project)
- University Drive - Santa Cruz to Menlo (Cumulative plus Project)
- Laurel Street – Ravenswood to Willow (Cumulative plus Project)
- Middlefield Road - Ringwood to Willow (Existing plus Project and Cumulative plus Project)

Mitigations for roadway segment impacts would require adding travel lanes and widening roadways throughout Menlo Park. As the City is built out, there is little opportunity to widen roadways within the available right of way. Therefore any widening would require property acquisition. Due to the number of affected properties and financial implications, roadway segment impacts are considered significant and unavoidable. Measures to reduce traffic volumes and therefore minimize the impacts are discussed in the next section.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

A Transportation Demand Management (TDM) Plan is a set of strategies, measures and incentives to encourage people to walk, bicycle, use public transportation, carpool or use other alternatives to driving alone. TDM measures produce more mobility using existing transportation systems, boost economic efficiency of the current transportation infrastructure, improve air quality, save energy, and reduce traffic congestion.

C/CAG, the Congestion Management Agency of San Mateo County, adopted land use impact program as part of the 1999 Congestion Management Program (CMP). The guidelines of this policy were revised and adopted in 2005. The policy requirements are directed at new developments that are estimated to generate 100 or more net new trips during the AM or PM peak hours. The policy requires that all such developments mitigate the impacts of all new generated trips. The City of Menlo Park has elected require TDM plans or programs for all new development in the Specific Plan area, regardless of the amount of traffic they generate. Plus many of the Specific Plan transportation improvements are TDM measures.

C/CAG has identified acceptable TDM measures with equivalent numbers of peak-hour trips that will be reduced with implementation of each measure. Measures can be mixed and matched so that the total number of mitigated trips is equal to or greater than the new peak-hour trips generated by the project. These programs, once implemented, must be on-going for the occupied life of the development. Programs may be substituted, with prior approval of C/CAG, as long as the number of reduced trips is not reduced.

Examples of TDM measures are:

- Bicycle storage facilities
- Showers and changing rooms
- Operating dedicated shuttle service (or buying into a shuttle consortium)
- Subsidizing transit tickets for employees
- Providing preferential parking for carpoolers
- Van pool program
- Guaranteed ride home program for those who use alternative modes
- Locating uses near rail stations
- Making roads more pedestrian and bicycle friendly
- Encouraging infill development

9. GENERAL PLAN COMPLIANCE AND OTHER STUDY ISSUES

This chapter addresses the Specific Plan's compliance with the General Plan and other issues, such as the railroad crossings.

GENERAL PLAN COMPLIANCE

The Menlo Park *General Plan* (1994) provides a blueprint for growth within the city. The *Circulation Element* of the *General Plan* describes and illustrates the existing and future circulation network, including facilities for motorized vehicles, bicycles, pedestrians, and public transportation. The *Circulation Element* also presents the functional classification of roadways within the City. The *General Plan* provides broad guidelines and policy goals for the study area, but allows for flexibility in the ultimate implementation and design of transportation facilities in particular areas.

Transportation Policies

The *General Plan* includes specific objectives and policies for motor vehicle, public, and non-motorized transportation, as well as overall transportation systems management. Selected policies from the Transportation section are summarized below.

Thoroughfares

A-7. All streets should operate consistent with the Roadway Classification System Guidelines in Part II of the General Plan.

A-12. The City should provide safe, efficient, and equitable use of streets by pedestrians and bicyclists through good roadway design, maintenance, and effective traffic law enforcement.

A-13. The City should cooperate with other jurisdictions to secure funding for improvements and develop methods to reduce traffic impacts on a regional and subregional basis.

Impacts on Local Neighborhoods

A-9. Neighborhood streets should be protected from excessive speeds and excessive volumes of through traffic.

Transit Facilities

B-1. The City should consider transit modes in the design of transportation improvements and the review and approval of development projects.

B-2. As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible.

Transportation Systems Management/Transportation Demand Management (TDM)

C-1. The City should work with employers to encourage employees to use alternatives to the single occupant automobile in their commute to work.

C-7. Commuter shuttle service should be maintained and improved.

Bicycling

D-2. The City should work to complete a system of bikeways within Menlo Park.

D-3. The design of streets should consider the impact of street cross section, intersection geometrics, and traffic control devices on bicyclists.

D-4. Bicycle storage should be provided at new commercial and industrial developments. It should also be provided at transit stations.

Pedestrians

E-3. Appropriate traffic control should be provided for pedestrians at intersections.

E-4. The City should support full pedestrian access across all legs of an intersection at all signalized intersections which are City-controlled and at the signalized intersections along El Camino Real.

Parking

F-1. Adequate off-street parking should be required for all new development in the downtown area.

Specific Plan Compliance

The Specific Plan is compliant with the City of Menlo Park's General Plan policies. The Plan does not make changes to the City's thoroughfares and enables them to retain their operations per Policy A-7. Plus the Plan recommends improvements to make the roadways more equitable for pedestrians and bicyclists, such as widening the sidewalks and adding curb extension to reduce crossing distances (Policies A-12, D-3, and E-3).

The development sites in the Specific Plan are dispersed throughout the plan area and have access to El Camino Real and other roadways. Therefore, the amount of neighborhood intrusion will be minimized per Policy A-9.

A curb extension is not being proposed on the southeast corner of El Camino Real and Santa Cruz Avenue in order to accommodate buses per Policy B-1. The Specific Plan concentrates land uses near the Caltrain station and in the downtown, which is well-served by transit, to provide activities within easy walking distance of transit stops, per Policy B-2.

Policies C-1 and C-2 are explicitly supported in the Specific Plan regarding recommendations to improve shuttle service and to encourage TDM programs for development projects of all sizes, not just those that meet the C/CAG's 100 peak-hour trip threshold.

The Specific Plan incorporates Policy D-2 (City should work to complete a system of bikeways within Menlo Park) by incorporating planned bicycle facilities and adding new bicycle facilities. The Plan expands Policy D-4 regarding bicycle storage by including bike parking facilities in the new parking garages, the Chestnut Paseo, along Santa Cruz Avenue, and in the proposed pocket parks.

Pedestrian access is not restricted at any intersection and enhanced pedestrian treatments at intersection on El Camino Real are provided by the Specific Plan (Policy E-4).

Policy F-1 states, "Adequate off-street parking should be required for all new development in the downtown area." The Specific Plan addresses this policy by proposing new parking garages to accommodate the parking demand generated by new downtown development.

RAILROAD CROSSINGS

There are two at-grade railroad crossings that may be affected by the Specific Plan, one on Ravenswood Avenue and one on Oak Grove Avenue. These crossings would primarily be affected by traffic queuing back from intersections onto the tracks. The intersection level of service calculations provide queuing information. This information was reviewed to assess queuing and the crossings. **Table 19** shows the queue lengths on the two streets mentioned previously.

The westbound queue on Ravenswood Avenue currently extends to the railroad crossing area. The traffic added by the Specific Plan would increase this queue length by about five car lengths. The westbound queue on Oak Grove Avenue extends to just short of the railroad crossing. The addition of project traffic would increase this queue length by about one car length. No eastbound queues extend to the railroad crossings under Existing Conditions and the addition of project traffic would not extend those queues into the crossing areas.

Under Cumulative Conditions, queues in each direction on both roadways are projected to extend to the railroad crossings except the eastbound queue on Oak Grove Avenue. The addition of project traffic would extend all the queues and the eastbound queue on Oak Grove Avenue would not extend into the railroad crossing.

The City of Menlo Park should continue to monitor vehicle queuing in the vicinity of the at-grade railroad crossings and work with the California Public Utilities Commission (CPUC) to determine if additional warning devices need to be installed and whether additional turn restrictions, such as at the intersection of Ravenswood Avenue and Alma Street, are appropriate.

TABLE 19: RAILROAD CROSSING QUEUES

Location/Direction	Peak Hour	Distance to Tracks (feet)	Existing Queue[1] (feet)	Existing plus Project Queue[1] (feet)	Cumulative No Project Queue[1] (feet)	Cumulative Plus Project Queue[1] (feet)
On Ravenswood Avenue						
Westbound from El Camino Real	AM	350	**520**	**630**	**940**	**1,030**
	PM		**550**	**640**	**1,860[2]**	**2,010[2]**
Eastbound from Laurel Street	AM	770	460	490	**1,730[3]**	**1,870[3]**
	PM		470	520	**1,820[3]**	**2,060[3]**
On Oak Grove Avenue						
Westbound from El Camino Real	AM	450	410	420	**540**	**660**
	PM		340	420	**580**	**610**
Eastbound from Laurel Street	AM	640	250	260	510	530
	PM		270	290	410	440

1. 95th Percentile Queue
2. Queue extends beyond Laurel Street
3. Queue extends beyond El Camino Real

Bold text indicates the Queue backs up to the railroad crossing
Source: Fehr & Peers, 2010

PARKING STRUCTURE CONSTRUCTION

Additional analyses will be conducted prior to the approval and construction of any parking garages. Potential impacts associated with parking structure construction are provided to provide information to the City of Menlo Park.

Construction of the parking structures would temporarily affect vehicular, pedestrian, and bicycle circulation in the vicinity of their sites and displace parking spaces. Potential traffic impacts that may occur during the construction period are described below:

- Truck Traffic: Construction projects generate truck traffic for a variety of purposes throughout the construction schedule, including excavation, material deliveries, concrete pours, etc. The excavation portion of a construction project typically generates the highest daily and peak hour truck volumes. The specific number of excavation truck trips per day is directly related to the amount of material to be removed from or imported to the site, the project schedule, and other site factors that may limit the frequency of truck trips.

- Construction Worker Trips and Parking: The construction workforce will generate primarily auto and a few transit commute trips. Most construction worker commute trips are expected to occur during non-peak hours. Parking for construction workers would need to be accommodated.

- Construction Staging: The construction staging area would need to be accommodated..

- Temporary Traffic Detours and Lane Closures: Construction projects may periodically require traffic detours to allow heavy equipment movements or to facilitate construction activities directly adjacent to the street. The detours may temporarily affect traffic circulation, as well as re-direct pedestrian and bicycle traffic.

Temporary replacement parking would also be needed to provide parking for the downtown patrons and employees who park in the Parking Plaza slated for parking garages.

Prior to start of construction, the prime contractor shall prepare a Construction Traffic Management Plan which shall include the following items:

- Proposed truck routes to be used, consistent with the City's truck route map.

- Construction hours, including limits on the number of truck trips during the AM and PM peak traffic periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), if conditions demonstrate the need.

- Proposed employee parking plan (number of spaces and planned locations.

- Proposed construction equipment and materials staging areas, showing minimal conflicts with traffic, pedestrian and bicycle circulation patterns.

- Expected traffic detours needed, planned duration, and traffic control plans including potential sidewalk closures and plans to accommodate vehicular, pedestrian and bicycle detours.

- Replacement parking plan showing the location of parking spaces to be used by downtown patrons and employees during the construction period, including shuttle service, if needed.

The Construction Traffic Management Plan and Parking Replacement Plan should be approved by City of Menlo Park staff prior to start of construction.

10. VEHICLE MILES OF TRAVEL

Transportation is a major contributor to greenhouse gas emissions. According to the US Environmental Protection Agency (EPA), the transportation sector was responsible for nearly 28 percent of all greenhouse gas (GHG) emissions in the United States in 2006[6] and in California transportation is responsible for about 38 percent of GHG emissions in 2004[7]. Transportation is the direct result of population and employment growth, which generates vehicle trips to move goods, provide public services, and connect people with work, school, shopping, and other activities.

While a number of factors influence daily trip making, the following variables are some of the most influential when it comes to how individuals travel:

- Income
- Age
- Household size
- Workers per household
- Autos available
- Access to transit
- Comfort and convenience of travel modes

Growth in travel (especially vehicle travel) is due in large part to urban development patterns (i.e., the built environment). Over the last half century, homes have been built further from workplaces, schools have been located further from neighborhoods they serve, and other destinations, including shopping, have been isolated from where people live and work. A significant portion of new development since World War II has been planned and built in a pattern that is dependent on the use of cars as the primary mode of travel. As a larger share of the built environment has become automobile dependent, vehicle trips and distances have increased, and walking and public transit use have declined. Population growth has been responsible for only a quarter of the increase in vehicle travel over the last couple of decades. A larger share of the increase can be traced to the effects of a changing built environment, namely to longer trips and people driving alone[8].

A performance measure used to quantify the amount of travel is vehicle miles traveled (VMT). VMT is a useful performance measure, since the amount of travel and conditions under which the travel occurs directly relate to how much fuel vehicles burn.[9] One combusted gallon of gas from a vehicle is equal to approximately 24 pounds of carbon dioxide. Given today's average fuel mileage of vehicles (i.e., approximately 22 miles per gallon), one mile of travel equates to about one pound of carbon dioxide. As a result, increases in VMT directly cause increases in greenhouse gas emissions and air pollution.

VMT measurement has one primary limitation: it is not directly observed. Methods do not exist that can measure the trip distances of all vehicles on a given day. VMT is typically an output from travel demand models and is calculated based on the number of cars multiplied by the estimated distance traveled by each car. As such, the

[6] *Inventory of U.S. Greenhouse Gas Emissions And Sinks: 1990-2006*, Unites States Environmental Protection Agency, #430-R-08-005, April 2008.
[7] California Air Resources Board (CCARB). http://www.climatechange.ca.gov/inventory/index.html. September 2008.
[8] "Growing Cooler: The Evidence on Urban Development and Climate Change" published by the Urban Land Institute, 2008.
[9] Conditions influencing the amount of fuel consumed per VMT include the speed of travel, congestion stops and starts, length of trip, layover between trips, and the vehicle type and fuel economy.

VMT estimate is dependent on the level of detail in the network and other variables related to vehicle movement through the network. The volume and distance of traffic depends on land use types, density/intensity, and patterns as well as the supporting transportation system. **Figure 16** shows the basic relationship between land use, trips, and their length.

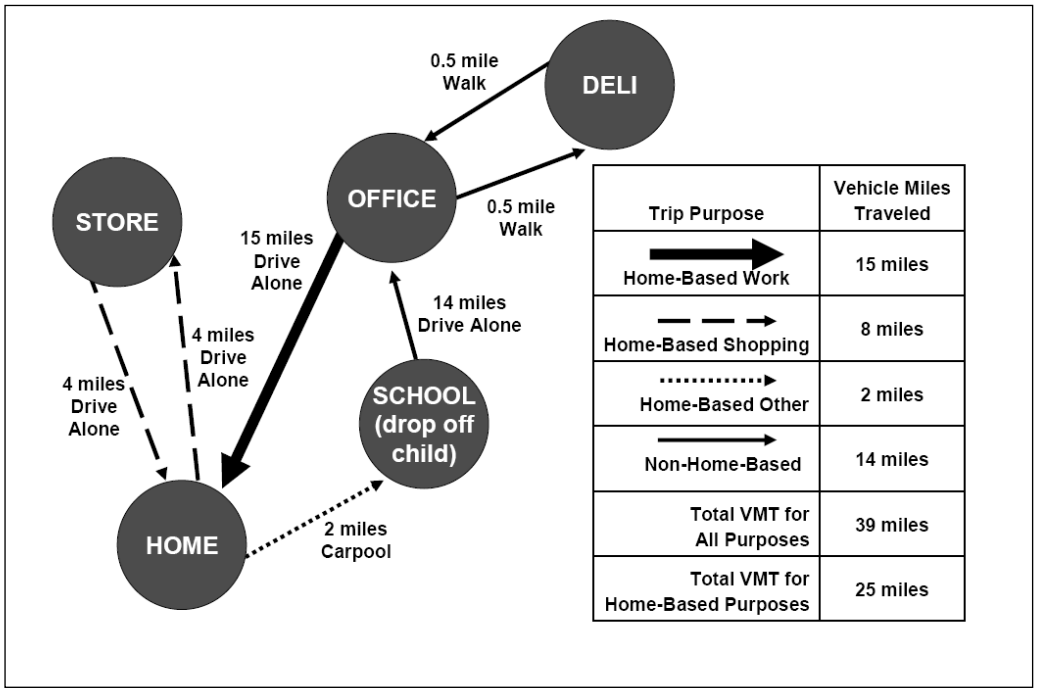


Figure 16
VMT Relationships

SPECIFIC PLAN VMT

The change in VMT due to the Specific Plan was estimated as the VMT generated by the net added trips due to the Specific Plan. The numbers of net added trips are presented in **Table 9**. These trips were stratified by trip purpose and the average trip lengths for each purpose were based on San Mateo County data from the 2000-2001 California Statewide Travel Survey (California Department of Transportation, June 2002) and average trip lengths for destinations within the Specific Plan area or other areas within the City of Menlo Park. It is estimated that the Menlo Park El Camino Real/Downtown Specific Plan will create approximately 98,000 VMT (approximately 8 miles per trip) per day.

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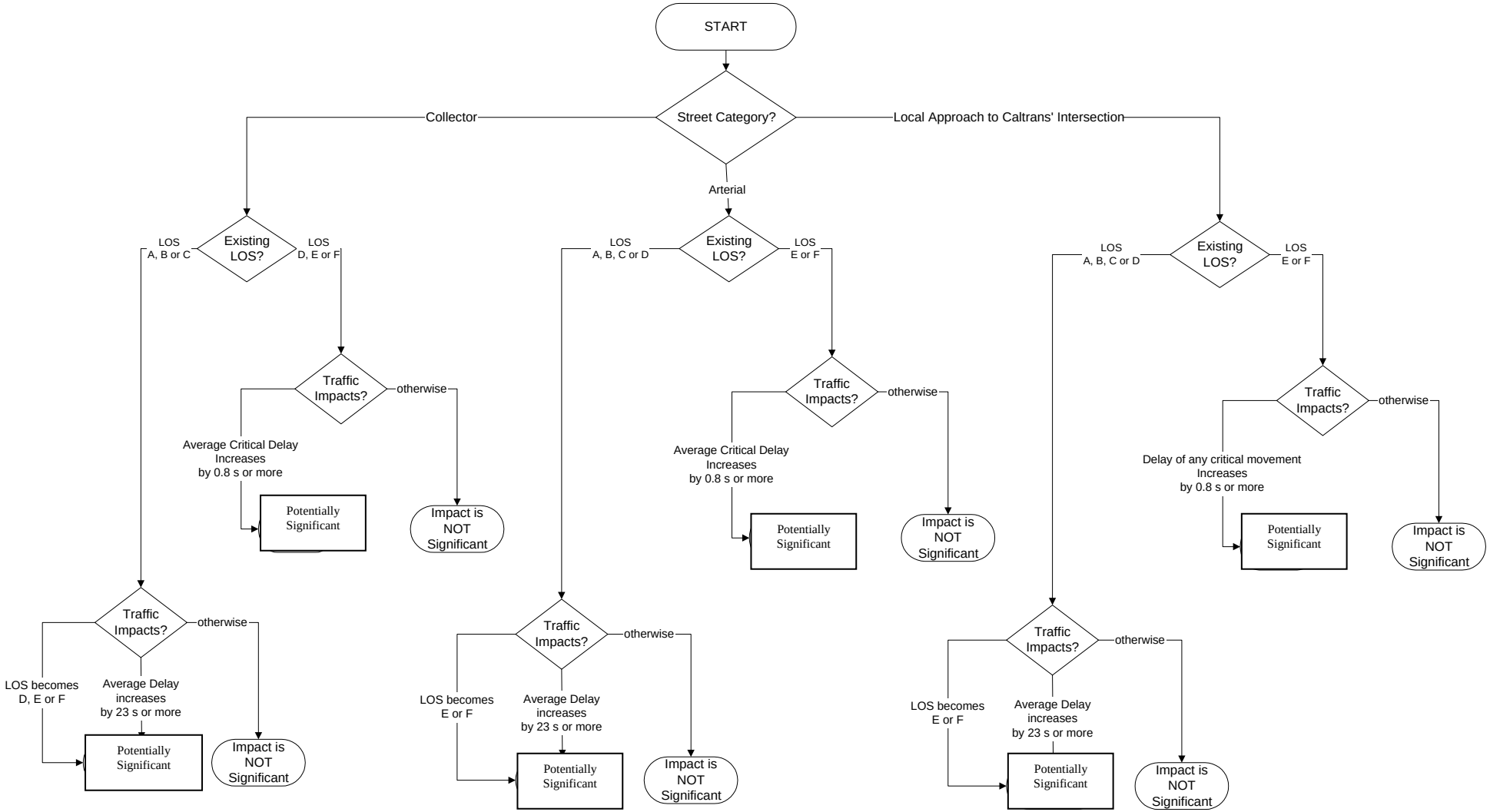
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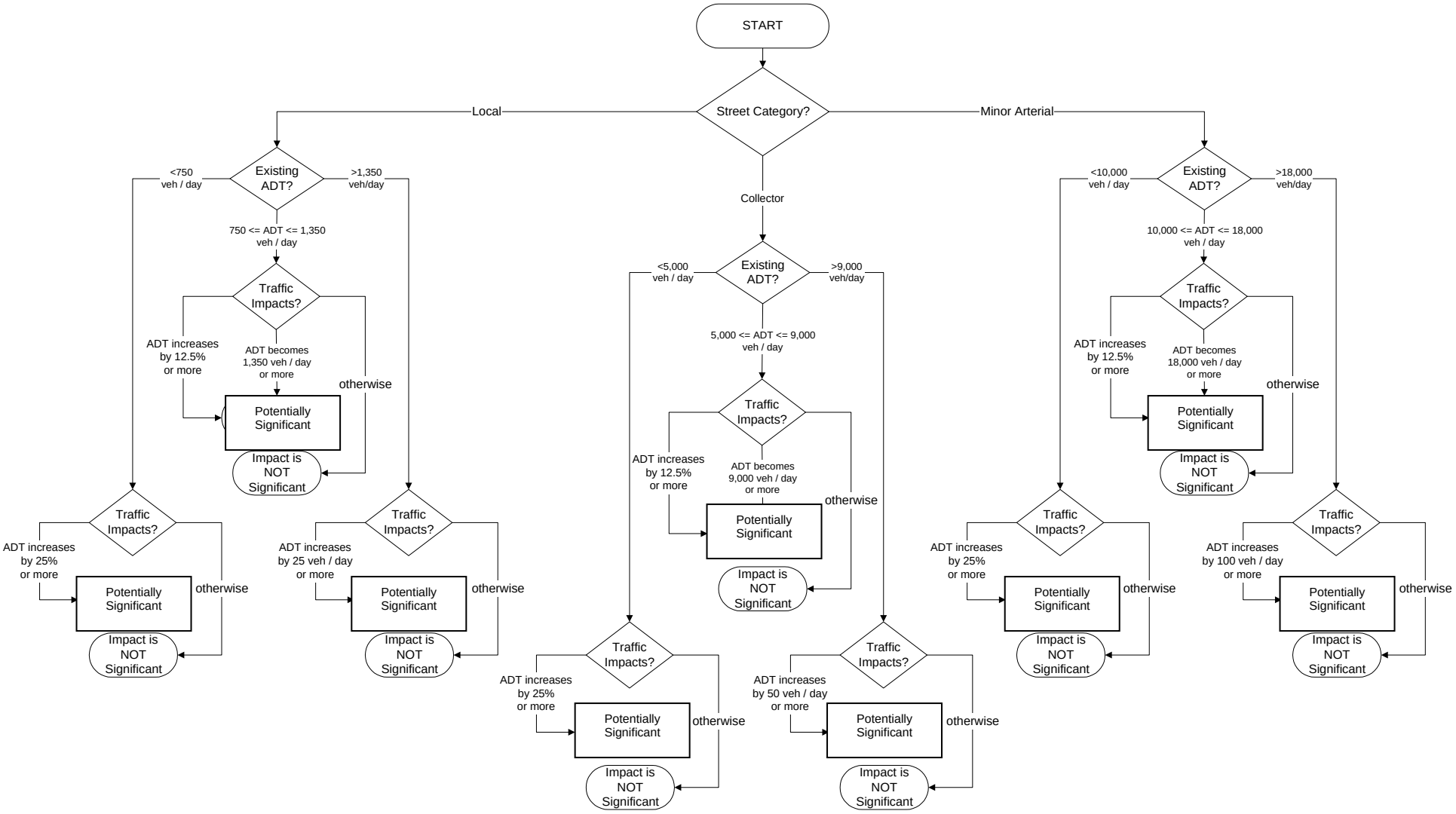
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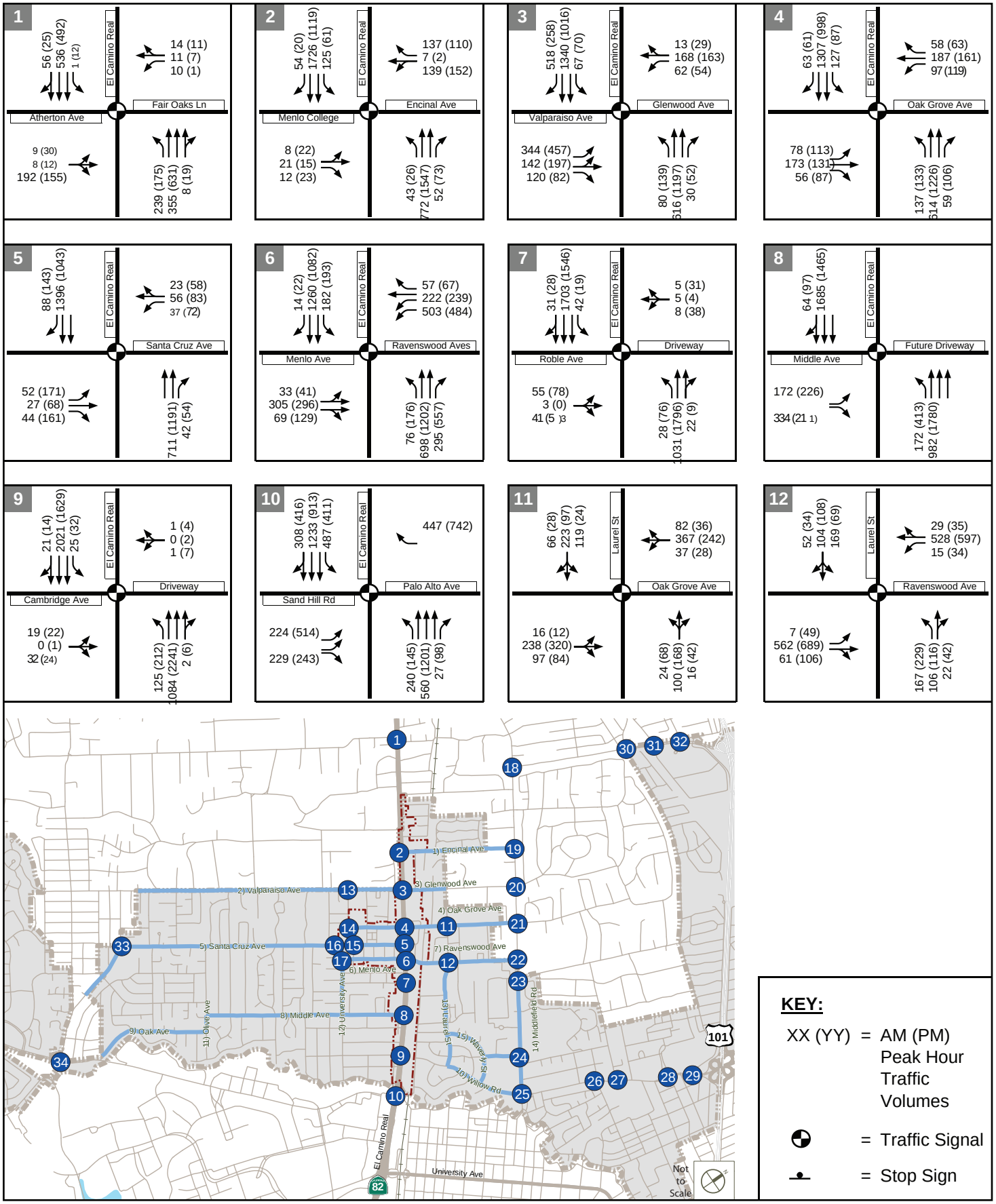
APPENDIX A: MENLO PARK INTERSECTION AND ROADWAY SEGMENT SIGNIFICANCE CRITERIA


START
Street Category?
Collector
Arterial
Local Approach to Caltrans' Intersection
Existing LOS?
LOS A, B or C
LOS D, E or F
LOS A, B, C or D
LOS E or F
Traffic Impacts?
otherwise
Average Critical Delay Increases by 0.8 s or more
Delay of any critical movement Increases by 0.8 s or more
Potentially Significant
Impact is NOT Significant
LOS becomes D, E or F
LOS becomes E or F
Average Delay increases by 23 s or more

Significance Criteria for Street segments



APPENDIX B: EXISTING TRAFFIC VOLUMES



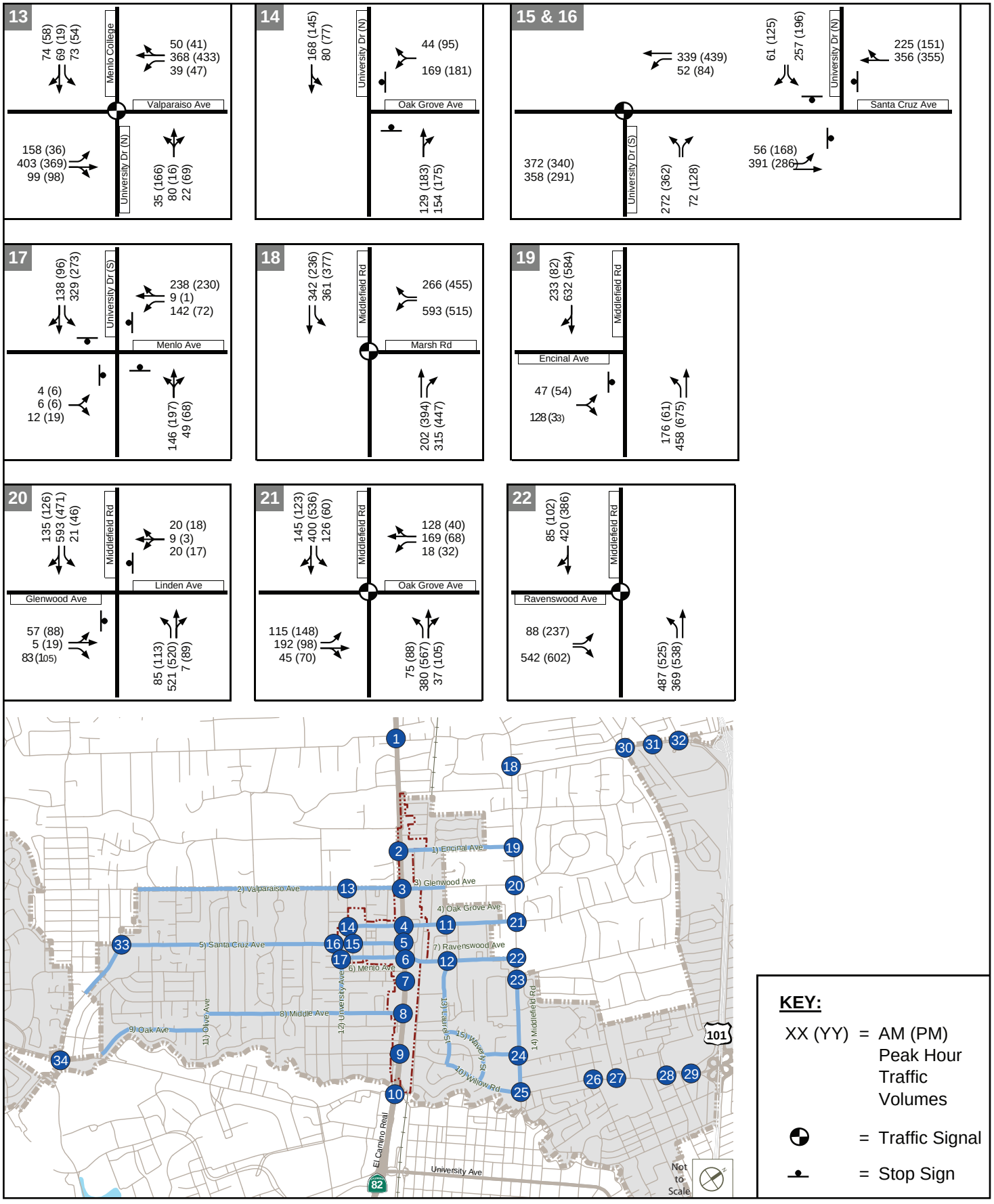
El Camino Real / Downtown Specific Plan

FEHR & PEERS
TRANSPORTATION CONSULTANTS

March 2010
SJ09-1089

Existing Lane Configurations, Traffic Control Devices and Intersection Volumes

Figure B-1a



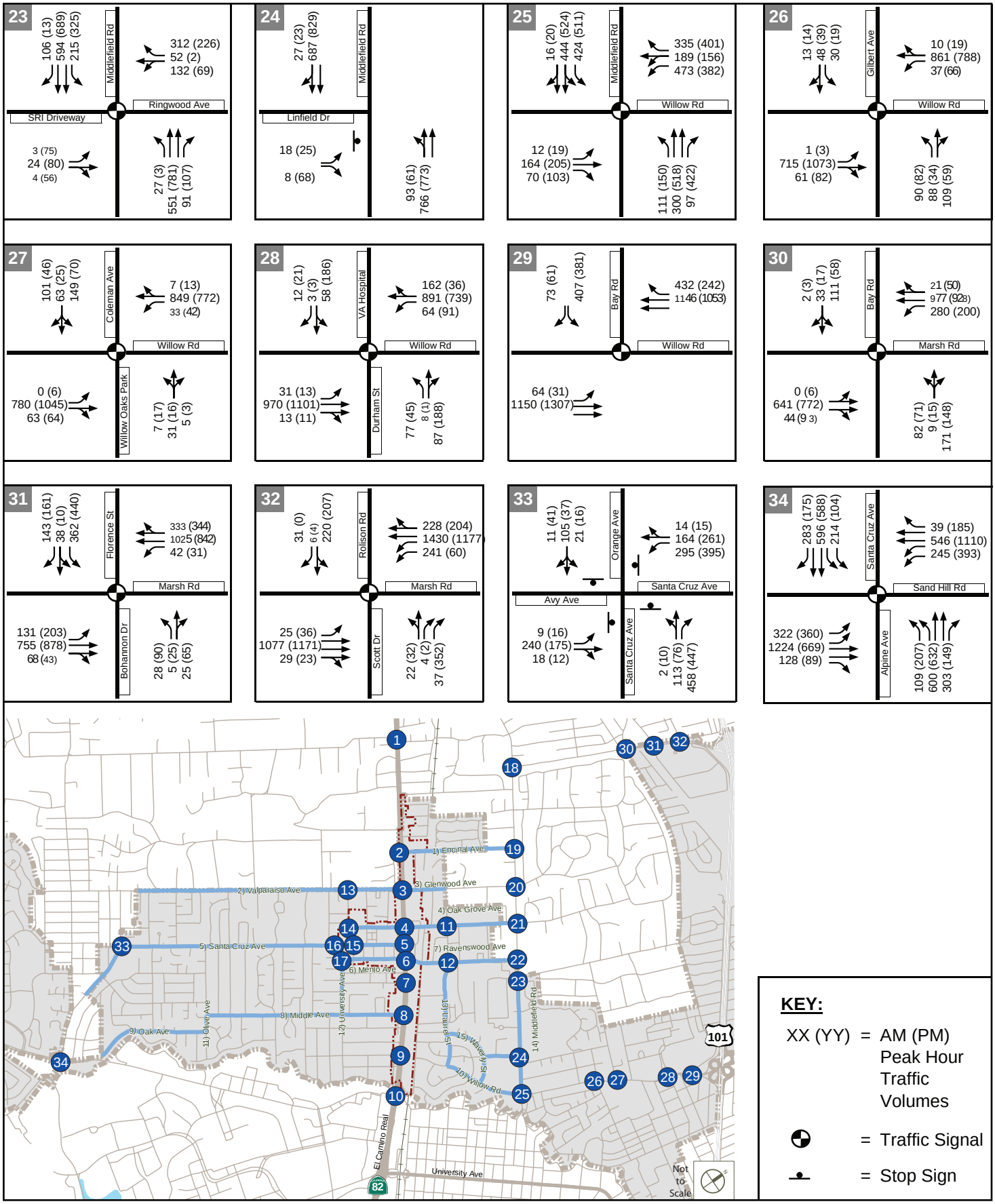
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March 2010
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Existing Lane Configurations, Traffic Control Devices and Intersection Volumes

Figure B-1b



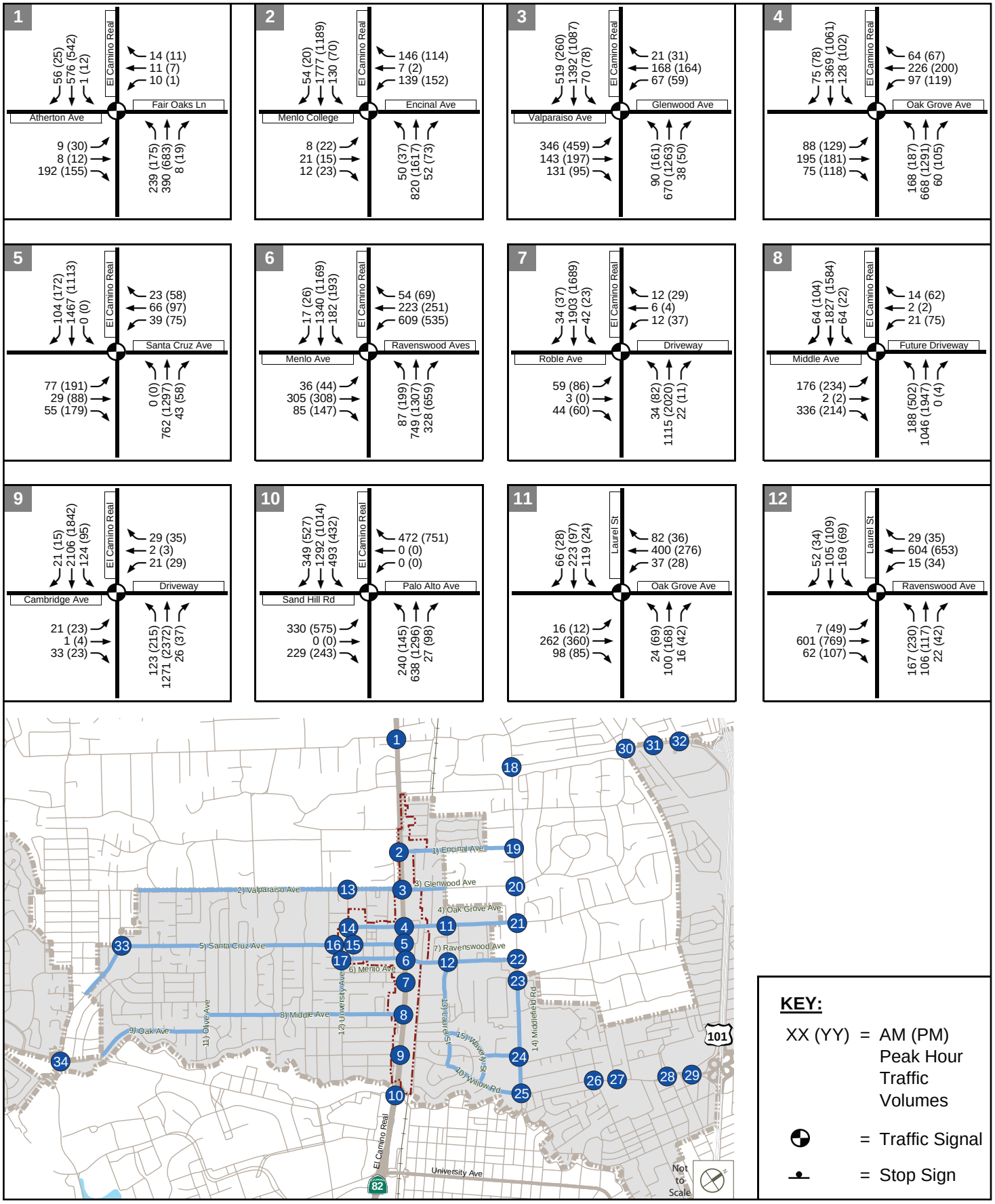
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March 2010
SJ09-1089

Existing Lane Configurations, Traffic Control Devices and Intersection Volumes

Figure B-1c



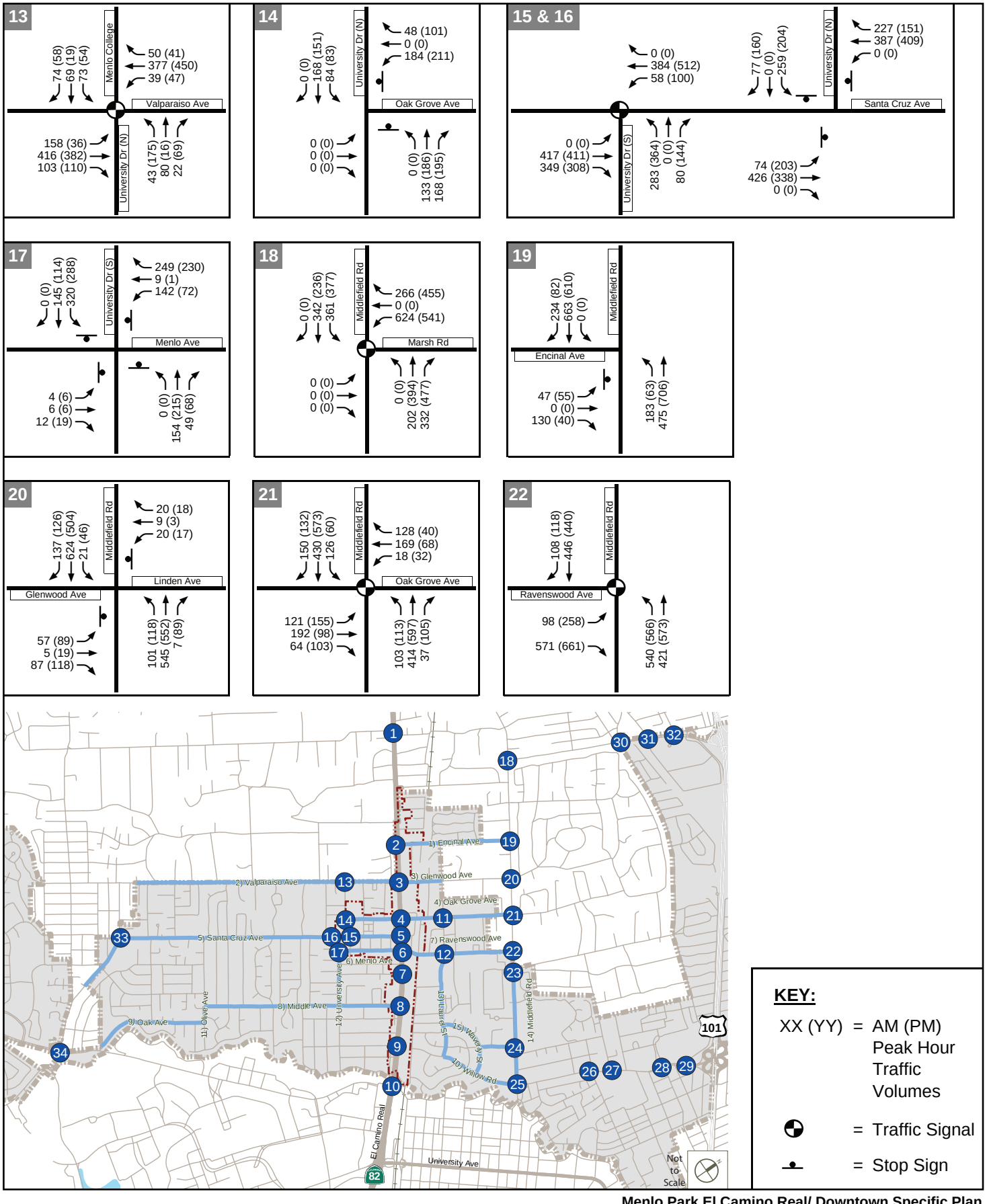
Menlo Park El Camino Real/ Downtown Specific Plan

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April 2010
SJ09-1089

Existing Plus Project
Traffic Control Devices and Intersection Volumes

Figure B-2a



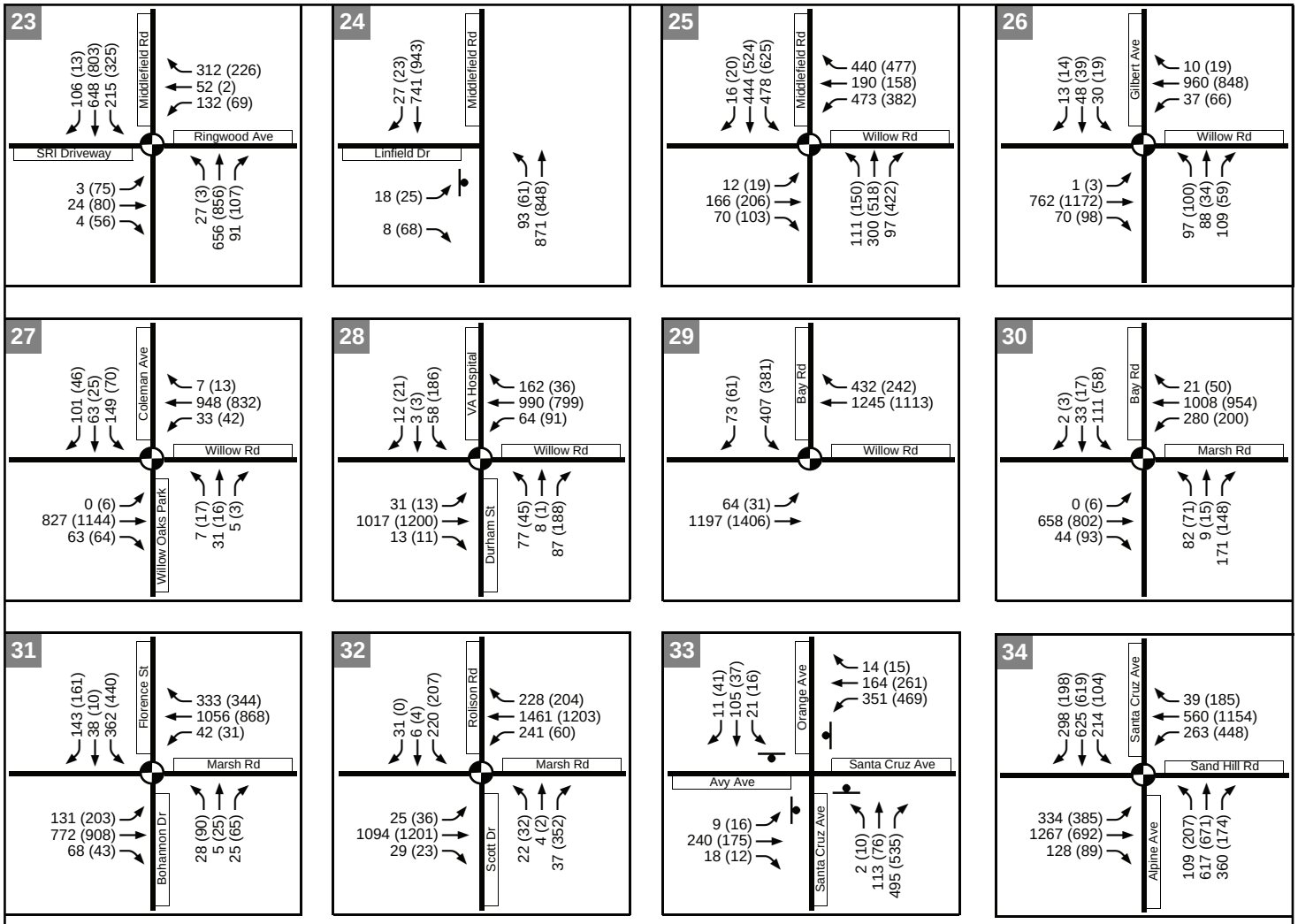
Menlo Park El Camino Real/ Downtown Specific Plan

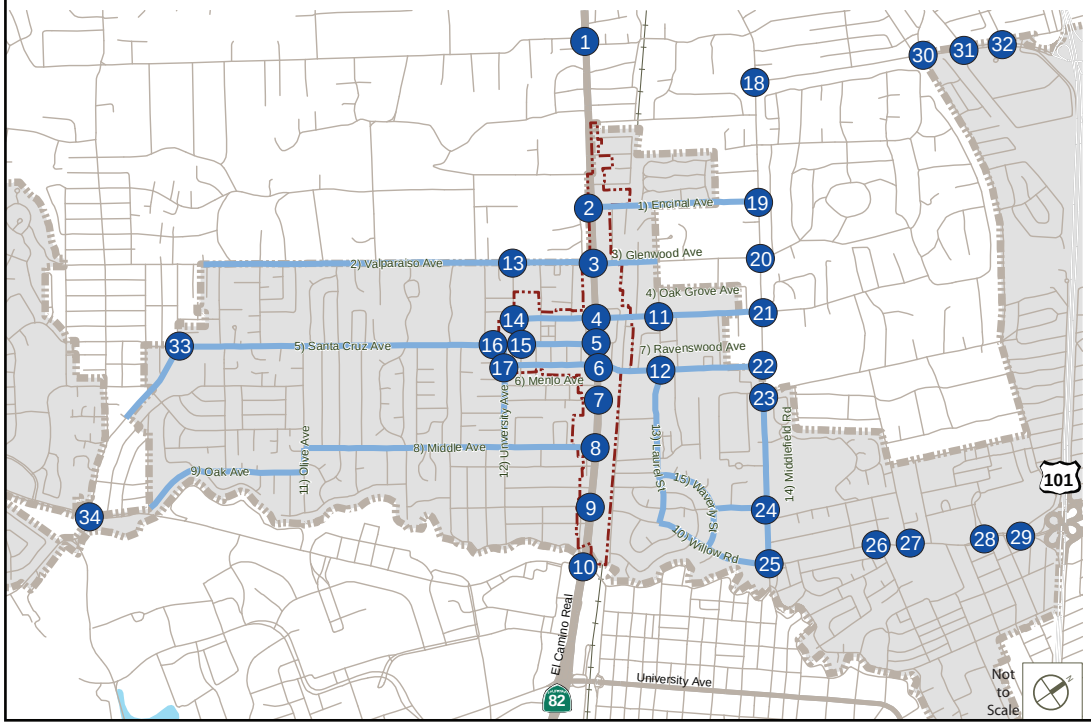
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April 2010
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Existing Plus Project
Traffic Control Devices and Intersection Volumes

Figure B-2b





KEY:

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

= Traffic Signal

= Stop Sign

Menlo Park El Camino Real/ Downtown Specific Plan

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April 2010
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Existing Plus Project
Traffic Control Devices and Intersection Volumes

Figure B-2c

AVERAGE DAILY TRAFFIC VOLUME - 24 HOUR TWO-WAY TRAFFIC			
LOCATION	**2009**	**LOCATION**	**2009**
ALAMEDA DE LAS PULGAS		***O'BRIEN DRIVE***	
Valparaiso-City Limits	15,215	Willow-Kavanaugh	6,079
Avy-Valparaiso	14,743	Kavanaugh-University	2,717
Santa Cruz-Avy	13,528	***OAK AVENUE***	
ALMA STREET		Sand Hill Road-Olive Street	2,549
Oak Grove-Ravenswood	1,545	***OAK GROVE AVENUE***	
Ravenswood-Willow	3,830	Middlefield-Laurel	8,650
ALPINE ROAD		Laurel-El Camino	9,590
I-280/Junipero Serra	23,406	El Camino-Crane	8,367
AVY AVENUE		Crane-University	5,842
Alameda de las Pulgas-Santa Cruz	5,260	***OLIVE STREET***	
City Limits-Alameda de las Pulgas	4,026	Oak Avenue-Middle Avenue	2,641
BAY ROAD		***RAVENSWOOD AVENUE***	
Marsh-Flood Park	5,440	Middlefield-Laurel	16,833
Flood Park-Ringwood	5,586	Laurel-Alma	18,250
Ringwood-Willow	7,674	Alma-El Camino	22,345
BOHANNON DRIVE		***RINGWOOD AVENUE***	
Marsh - Campbell	1,732	Bay-Middlefield	6,413
CHILCO STREET		***SAND HILL ROAD***	
Bayfront - Constitution	6,912	City Limits-Santa Cruz	31,840
CHRYSLER DRIVE		Santa Cruz-Sharon Park	30,796
Bayfront - Constitution	3,996	Sharon Park-I-280	29,347
CONSTITUTION DRIVE		***SANTA CRUZ AVENUE***	
Chrysler-Chilco	1,921	El Camino-Crane	7,351
CRANE STREET		Crane-University	8,603
Oak Grove-Santa Cruz	2,438	University-Olive	15,445
Santa Cruz-Menlo	1,608	Olive-Avy/Orange	15,135
ENCINAL AVENUE		Avy/Orange-Alameda de las Pulgas	10,522
Middlefield-Laurel	3,359	Alameda de las Pulgas-Sand Hill	22,363
Laurel-El Camino	4,540	Sand Hill-Junipero Serra	25,646
GLENWOOD AVENUE		***SCOTT DRIVE***	
El Camino-Laurel	5,766	Marsh - Campbell	3,160
HAMILTON AVENUE		***SHARON PARK DRIVE***	
Chilco-Willow	3,007	Sand Hill- Sharon Rd.	9,666
HAVEN AVENUE		***SHARON ROAD***	
City Limits-Bayfront/Marsh	6,366	Alameda de las Pulgas-Sharon Park	3,874

AVERAGE DAILY TRAFFIC VOLUME - 24 HOUR TWO-WAY TRAFFIC			
LOCATION	**2009**	**LOCATION**	**2009**
JUNIPERO SERRA BOULEVARD		***UNIVERSITY DRIVE***	
City Limits-Alpine	14,718	Valparaiso-Oak Grove	4,522
LAUREL STREET		Oak Grove-Santa Cruz	6,658
Glenwood-Oak Grove	3,395	Santa Cruz-Menlo	8,117
Oak Grove-Ravenswood	3,974	Menlo-Middle	5,038
Ravenswood-Willow	5,313	***VALPARAISO AVENUE***	
MARSH ROAD		El Camino-University	13,090
Bayfront-101		University-Cotton	13,281
Scott-Bohannon	33,433	Cotton-Alameda de las Pulgas	10,208
Bohannon-Bay	27,517	***WILLOW ROAD***	
Bay-City Limits	21,500	Bay-Middlefield	25,830
MENLO AVENUE		Middlefield-Laurel	4,963
El Camino-Crane	8,675	Laurel-Alma	2,265
Crane-University	6,881	***WAVERLY STREET***	
MIDDLE AVENUE		Laurel Street-Winfield Drive	1,478
El Camino-University	8,608	***WINFIELD DRIVE***	
University-Olive	6,622	Waverly Street-Middlefield Road	1,583
MIDDLEFIELD ROAD			
Oak Grove-Ravenswood	13,751		
Ravenswood-Willow	20,027		
Willow-City Limits	18,708		
NEWBRIDGE STREET			
Chilco-Willow	6,926		
Willow-City Limits	10,045		

APPENDIX C: INTERSECTION LEVEL OF SERVICE CALCULATIONS

FEHR & PEERS
TRANSPORTATION CONSULTANTS

EXISTING AM
LEVELS OF SERVICE

160 West Santa Clara Street, Suite 675, San Jose CA 95113 (408) 278-1700 Fax (408) 278-1717
www.fehrandpeers.com

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.399
Loss Time (sec):	4	Average Delay (sec/veh):	39.8
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 2	1 0	1	0 2	1 0	0	0 1!	0 0	1	0 0	1 0
Volume Module: >> Count Date: 19 Nov 2009 <<												
Base Vol:	239	355	8	1	536	56	9	8	192	10	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	355	8	1	536	56	9	8	192	10	11	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	355	8	1	536	56	9	8	192	10	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	355	8	1	536	56	9	8	192	10	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	355	8	1	536	56	9	8	192	10	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	355	8	1	536	56	9	8	192	10	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.90	0.90	0.87	0.87	0.87	0.95	0.92	0.92
Lanes:	1.00	2.93	0.07	1.00	2.72	0.28	0.04	0.04	0.92	1.00	0.44	0.56
Final Sat.:	1805	5057	114	1805	4631	484	72	64	1526	1805	766	975
Capacity Analysis Module:												
Vol/Sat:	0.13	0.07	0.07	0.00	0.12	0.12	0.13	0.13	0.13	0.01	0.01	0.01
Crit Moves:	****				****			****			****	
Green Time:	46.4	51.5	51.5	35.4	40.5	40.5	44.1	44.1	44.1	10.0	10.0	10.0
Volume/Cap:	0.41	0.20	0.20	0.00	0.41	0.41	0.41	0.41	0.41	0.08	0.21	0.21
Uniform Del:	38.7	32.4	32.4	41.4	42.5	42.5	40.2	40.2	40.2	63.2	63.8	63.8
IncremntDel:	0.5	0.1	0.1	0.0	0.2	0.2	0.6	0.6	0.6	0.3	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	39.1	32.5	32.5	41.4	42.7	42.7	40.7	40.7	40.7	63.5	64.6	64.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.1	32.5	32.5	41.4	42.7	42.7	40.7	40.7	40.7	63.5	64.6	64.6
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2k95thQ:	387	196	196	2	369	369	351	351	351	24	62	62

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Note: Queue reported is the distance per lane in feet.

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.644
Loss Time (sec):	4	Average Delay (sec/veh):	18.2
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0				
Lanes:	1	0	2	0 1	1	0	2	0 1	0	1	0	0 1	0	1	0	0 1
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 am - 8:45 am																
Base Vol:	43	772	52	125	1726	54	8	21	12	139	7	137				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	43	772	52	125	1726	54	8	21	12	139	7	137				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	43	772	52	125	1726	54	8	21	12	139	7	137				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	43	772	52	125	1726	54	8	21	12	139	7	137				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	43	772	52	125	1726	54	8	21	12	139	7	137				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	43	772	52	125	1726	54	8	21	12	139	7	137				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.92	0.92	0.83	0.67	0.67	0.83				
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.28	0.72	1.00	0.95	0.05	1.00				
Final Sat.:	1769	3538	1583	1769	3538	1583	482	1265	1583	1218	61	1583				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.22	0.03	0.07	0.49	0.03	0.02	0.02	0.01	0.11	0.11	0.09				
Crit Moves:	****				****						****					
Green Time:	5.5	87.1	87.1	28.2	110	109.8	25.7	25.7	25.7	25.7	25.7	25.7				
Volume/Cap:	0.64	0.36	0.05	0.36	0.64	0.05	0.09	0.09	0.04	0.64	0.64	0.49				
Uniform Del:	68.8	14.8	12.0	50.6	8.3	4.4	49.9	49.9	49.5	55.4	55.4	53.7				
IncremntDel:	19.6	0.1	0.0	0.7	0.5	0.0	0.1	0.1	0.1	6.2	6.2	1.3				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	88.4	14.9	12.0	51.3	8.9	4.4	50.0	50.0	49.5	61.6	61.6	55.1				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	88.4	14.9	12.0	51.3	8.9	4.4	50.0	50.0	49.5	61.6	61.6	55.1				
LOS by Move:	F	B	B	D	A	A	D	D	D	E	E	E				
HCM2k95thQ:	149	416	48	241	815	31	56	56	23	335	335	284				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.676
Loss Time (sec):	4	Average Delay (sec/veh):	33.0
Optimal Cycle:	34	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	80	616	30	67	1340	518	344	142	120	62	168	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	616	30	67	1340	518	344	142	120	62	168	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	616	30	67	1340	518	344	142	120	62	168	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	616	30	67	1340	518	344	142	120	62	168	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	616	30	67	1340	518	344	142	120	62	168	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	616	30	67	1340	518	344	142	120	62	168	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.42	0.58	1.00	1.00	0.93	0.07
Final Sat.:	1769	3538	1583	1769	3538	1583	2546	1051	1583	1769	1709	132
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.02	0.04	0.38	0.33	0.14	0.14	0.08	0.04	0.10	0.10
Crit Moves:	****				****		****					****
Green Time:	9.7	74.7	74.7	16.2	81.2	81.2	29.0	29.0	29.0	21.1	21.1	21.1
Volume/Cap:	0.68	0.34	0.04	0.34	0.68	0.58	0.68	0.68	0.38	0.24	0.68	0.68
Uniform Del:	66.1	20.6	17.4	59.4	22.6	20.8	53.7	53.7	50.2	54.9	58.7	58.7
IncremntDel:	14.5	0.1	0.0	1.0	0.9	1.0	2.6	2.6	0.8	0.5	6.7	6.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	80.6	20.7	17.4	60.4	23.5	21.8	56.2	56.2	51.0	55.4	65.4	65.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.6	20.7	17.4	60.4	23.5	21.8	56.2	56.2	51.0	55.4	65.4	65.4
LOS by Move:	F	C	B	E	C	C	E	E	D	E	E	E
HCM2k95thQ:	231	384	33	150	926	660	459	459	219	128	407	407

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Note: Queue reported is the distance per lane in feet.

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.612
Loss Time (sec):	4	Average Delay (sec/veh):	31.8
Optimal Cycle:	29	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.5				
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	137	614	59	127	1307	63	78	173	56	97	187	58				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	137	614	59	127	1307	63	78	173	56	97	187	58				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	137	614	59	127	1307	63	78	173	56	97	187	58				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	137	614	59	127	1307	63	78	173	56	97	187	58				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	137	614	59	127	1307	63	78	173	56	97	187	58				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	137	614	59	127	1307	63	78	173	56	97	187	58				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.83				
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1862	1583				
Capacity Analysis Module:																
Vol/Sat:	0.08	0.17	0.04	0.07	0.37	0.04	0.04	0.09	0.04	0.05	0.10	0.04				
Crit Moves:	****				****			****			****					
Green Time:	18.4	75.0	75.0	31.0	87.6	87.6	10.7	22.0	22.0	13.0	24.3	24.3				
Volume/Cap:	0.61	0.34	0.07	0.34	0.61	0.07	0.60	0.61	0.23	0.61	0.60	0.22				
Uniform Del:	59.9	20.5	17.6	48.3	18.0	11.8	65.1	57.5	54.1	63.6	55.8	52.1				
IncremntDel:	4.9	0.1	0.0	0.5	0.5	0.0	7.4	3.9	0.5	6.8	3.2	0.4				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	64.8	20.6	17.6	48.8	18.5	11.9	72.5	61.4	54.6	70.4	59.0	52.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	64.8	20.6	17.6	48.8	18.5	11.9	72.5	61.4	54.6	70.4	59.0	52.5				
LOS by Move:	E	C	B	D	B	B	E	E	D	E	E	D				
HCM2k95thQ:	317	382	65	237	809	58	212	374	116	249	391	116				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.482
Loss Time (sec):	4	Average Delay (sec/veh):	9.7
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	10		0	10	10		6	6	6		6	6	6	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0 2	0	1	0	0 2	0	1	1	0 1	0	1	1	0 0	1	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	0	711	42		0	1396	88		52	27	44		37	56	23	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	711	42		0	1396	88		52	27	44		37	56	23	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	711	42		0	1396	88		52	27	44		37	56	23	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	711	42		0	1396	88		52	27	44		37	56	23	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	711	42		0	1396	88		52	27	44		37	56	23	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	711	42		0	1396	88		52	27	44		37	56	23	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.93	0.83		1.00	0.93	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Lanes:	0.00	2.00	1.00		0.00	2.00	1.00		1.00	1.00	1.00		1.00	0.71	0.29	
Final Sat.:	0	3538	1583		0	3538	1583		1769	1862	1583		1769	1262	518	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.20	0.03		0.00	0.39	0.06		0.03	0.01	0.03		0.02	0.04	0.04	
Crit Moves:						****			****						****	
Green Time:	0.0	119	118.8		0.0	119	118.8		8.8	8.8	8.8		13.4	13.4	13.4	
Volume/Cap:	0.00	0.25	0.03		0.00	0.48	0.07		0.48	0.24	0.46		0.23	0.48	0.48	
Uniform Del:	0.0	3.0	2.4		0.0	3.9	2.5		65.9	64.9	65.7		61.0	62.5	62.5	
IncremntDel:	0.0	0.0	0.0		0.0	0.1	0.0		3.4	1.1	3.4		0.7	2.2	2.2	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	0.0	3.0	2.4		0.0	4.0	2.5		69.2	65.9	69.1		61.7	64.8	64.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	3.0	2.4		0.0	4.0	2.5		69.2	65.9	69.1		61.7	64.8	64.8	
LOS by Move:	A	A	A		A	A	A		E	E	E		E	E	E	
HCM2k95thQ:	0	186	18		0	451	39		144	69	125		85	193	193	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.683
Loss Time (sec):	4	Average Delay (sec/veh):	40.5
Optimal Cycle:	35	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 1	0	2 0	1 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	698	295	182	1260	14	33	305	69	503	222	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	698	295	182	1260	14	33	305	69	503	222	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	698	295	182	1260	14	33	305	69	503	222	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	698	295	182	1260	14	33	305	69	503	222	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.90	0.90	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.16	1.50	0.34	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	279	2575	582	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.19	0.10	0.36	0.01	0.12	0.12	0.12	0.15	0.12	0.04
Crit Moves:	****				****		****			****		
Green Time:	9.1	55.7	55.7	29.0	75.6	75.6	25.2	25.2	25.2	31.1	31.1	31.1
Volume/Cap:	0.68	0.51	0.49	0.51	0.68	0.02	0.68	0.68	0.68	0.68	0.56	0.17
Uniform Del:	66.5	34.3	33.8	51.7	25.8	16.8	56.2	56.2	56.2	52.4	50.8	46.4
IncremntDel:	16.1	0.3	0.6	1.3	1.1	0.0	3.3	3.3	3.3	2.7	1.7	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.6	34.6	34.4	53.0	26.9	16.8	59.5	59.5	59.5	55.1	52.5	46.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.6	34.6	34.4	53.0	26.9	16.8	59.5	59.5	59.5	55.1	52.5	46.6
LOS by Move:	F	C	C	D	C	B	E	E	E	E	D	D
HCM2k95thQ:	225	558	458	333	903	15	460	460	460	523	426	105

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Note: Queue reported is the distance per lane in feet.

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.458
Loss Time (sec):	10	Average Delay (sec/veh):	11.0
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	8	8	8	8	8	8
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	1 0	0 0	1! 0	0	0 1	0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	28	1031	22	42	1703	31	55	3	41	8	5	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	1031	22	42	1703	31	55	3	41	8	5	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	1031	22	42	1703	31	55	3	41	8	5	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	1031	22	42	1703	31	55	3	41	8	5	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	1031	22	42	1703	31	55	3	41	8	5	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	1031	22	42	1703	31	55	3	41	8	5	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.89	0.89	0.76	0.76	0.76	0.86	0.86	0.83
Lanes:	1.00	1.96	0.04	1.00	2.95	0.05	0.56	0.03	0.41	0.62	0.38	1.00
Final Sat.:	1769	3453	74	1769	4977	91	806	44	601	1000	625	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.30	0.30	0.02	0.34	0.34	0.07	0.07	0.07	0.01	0.01	0.00
Crit Moves:	****				****			****				
Green Time:	5.0	104	103.8	9.6	108	108.4	21.6	21.6	21.6	21.6	21.6	21.6
Volume/Cap:	0.46	0.42	0.42	0.36	0.46	0.46	0.46	0.46	0.46	0.05	0.05	0.02
Uniform Del:	68.7	8.3	8.3	64.8	7.0	7.0	56.3	56.3	56.3	52.9	52.9	52.7
IncremntDel:	5.4	0.1	0.1	1.9	0.1	0.1	1.5	1.5	1.5	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.0	8.5	8.5	66.6	7.1	7.1	57.9	57.9	57.9	53.0	53.0	52.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.0	8.5	8.5	66.6	7.1	7.1	57.9	57.9	57.9	53.0	53.0	52.7
LOS by Move:	E	A	A	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	93	451	451	109	488	488	219	219	219	26	26	10

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Note: Queue reported is the distance per lane in feet.

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	10	Average Delay (sec/veh):	29.0
Optimal Cycle:	58	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	0		0	10	10		11	0	11		0	0	0	
Y+R:	3.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0 3	0	0	0	0 2	1	0	1	0 0	0	1	0	0 0	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	172	982	0	0	1685	64	172	0	334	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	172	982	0	0	1685	64	172	0	334	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	172	982	0	0	1685	64	172	0	334	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	172	982	0	0	1685	64	172	0	334	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	172	982	0	0	1685	64	172	0	334	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	172	982	0	0	1685	64	172	0	334	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.89	1.00	1.00	0.89	0.89	0.93	1.00	0.83	1.00	1.00	1.00				
Lanes:	1.00	3.00	0.00	0.00	2.89	0.11	1.00	0.00	1.00	0.00	0.00	0.00				
Final Sat.:	1769	5083	0	0	4868	185	1769	0	1583	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.10	0.19	0.00	0.00	0.35	0.35	0.10	0.00	0.21	0.00	0.00	0.00				
Crit Moves:	****				****				****							
Green Time:	20.1	91.5	0.0	0.0	71.4	71.4	43.5	0.0	43.5	0.0	0.0	0.0				
Volume/Cap:	0.70	0.31	0.00	0.00	0.70	0.70	0.32	0.00	0.70	0.00	0.00	0.00				
Uniform Del:	59.6	12.2	0.0	0.0	28.6	28.6	39.3	0.0	45.0	0.0	0.0	0.0				
IncremntDel:	8.9	0.1	0.0	0.0	0.9	0.9	0.4	0.0	4.7	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00				
Delay/Veh:	68.5	12.3	0.0	0.0	29.5	29.5	39.7	0.0	49.7	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	68.5	12.3	0.0	0.0	29.5	29.5	39.7	0.0	49.7	0.0	0.0	0.0				
LOS by Move:	E	B	A	A	C	C	D	A	D	A	A	A				
HCM2k95thQ:	401	337	0	0	931	931	283	0	623	0	0	0				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.544
Loss Time (sec):	10	Average Delay (sec/veh):	11.3
Optimal Cycle:	41	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		11	11	11		11	11	11	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	125	1084	2		25	2021	21		19	0	32		1	0	1	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	125	1084	2		25	2021	21		19	0	32		1	0	1	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	125	1084	2		25	2021	21		19	0	32		1	0	1	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	125	1084	2		25	2021	21		19	0	32		1	0	1	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	125	1084	2		25	2021	21		19	0	32		1	0	1	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	125	1084	2		25	2021	21		19	0	32		1	0	1	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.89	0.89		0.93	0.89	0.89		0.80	1.00	0.80		0.83	1.00	0.83	
Lanes:	1.00	2.99	0.01		1.00	2.97	0.03		0.37	0.00	0.63		0.50	0.00	0.50	
Final Sat.:	1769	5074	9		1769	5026	52		564	0	950		791	0	791	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.21	0.21		0.01	0.40	0.40		0.03	0.00	0.03		0.00	0.00	0.00	
Crit Moves:	****					****			****							
Green Time:	18.5	110	109.8		14.2	105	105.5		11.0	0.0	11.0		11.0	0.0	11.0	
Volume/Cap:	0.55	0.28	0.28		0.14	0.55	0.55		0.44	0.00	0.44		0.02	0.00	0.02	
Uniform Del:	59.3	5.4	5.4		59.9	9.0	9.0		64.1	0.0	64.1		62.0	0.0	62.0	
IncremntDel:	3.0	0.0	0.0		0.4	0.2	0.2		2.7	0.0	2.7		0.1	0.0	0.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.00	1.00		1.00	0.00	1.00	
Delay/Veh:	62.3	5.5	5.5		60.2	9.2	9.2		66.8	0.0	66.8		62.1	0.0	62.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	62.3	5.5	5.5		60.2	9.2	9.2		66.8	0.0	66.8		62.1	0.0	62.1	
LOS by Move:	E	A	A		E	A	A		E	A	E		E	A	E	
HCM2k95thQ:	283	260	260		56	659	659		136	0	136		5	0	5	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	125	Critical Vol./Cap.(X):	0.542
Loss Time (sec):	9	Average Delay (sec/veh):	26.5
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	7	10	10	7	10	10	7	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 2	1 0	2	0 0	0 1	0	0 0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 8:00 am - 9:00 am												
Base Vol:	240	560	27	487	1233	308	224	0	229	0	0	447
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	240	560	27	487	1233	308	224	0	229	0	0	447
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	240	560	27	487	1233	308	224	0	229	0	0	447
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	240	560	27	487	1233	308	224	0	229	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	240	560	27	487	1233	308	224	0	229	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	240	560	27	487	1233	308	224	0	229	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.85	0.95	0.88	0.88	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.40	0.60	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1805	5187	1615	1805	4026	1006	3502	0	1615	0	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.13	0.11	0.02	0.27	0.31	0.31	0.06	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	30.7	28.9	28.9	72.3	70.6	70.6	14.7	0.0	45.4	0.0	0.0	0.0
Volume/Cap:	0.54	0.47	0.07	0.47	0.54	0.54	0.54	0.00	0.39	0.00	0.00	0.00
Uniform Del:	41.1	41.4	37.5	15.2	17.1	17.1	51.9	0.0	29.5	0.0	0.0	0.0
IncremntDel:	1.4	0.3	0.1	0.3	0.2	0.2	1.5	0.0	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	42.4	41.7	37.6	15.5	17.3	17.3	53.4	0.0	30.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	41.7	37.6	15.5	17.3	17.3	53.4	0.0	30.0	0.0	0.0	0.0
LOS by Move:	D	D	D	B	B	B	D	A	C	A	A	A
HCM2k95thQ:	394	333	42	487	600	600	205	0	301	0	0	0

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Note: Queue reported is the distance per lane in feet.

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.568
Loss Time (sec):	4	Average Delay (sec/veh):	13.3
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4	4	4	4	4	4	8	8	8	8	8	8	8	8
Y+R:	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	24	100	16	119	223	66	16	238	97	37	367	82				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	24	100	16	119	223	66	16	238	97	37	367	82				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	24	100	16	119	223	66	16	238	97	37	367	82				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	24	100	16	119	223	66	16	238	97	37	367	82				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	24	100	16	119	223	66	16	238	97	37	367	82				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	24	100	16	119	223	66	16	238	97	37	367	82				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.89	0.89	0.89	0.84	0.84	0.84	0.92	0.92	0.92	0.92	0.92	0.92				
Lanes:	0.17	0.72	0.11	0.29	0.55	0.16	0.04	0.68	0.28	0.08	0.75	0.17				
Final Sat.:	288	1201	192	463	868	257	80	1187	484	133	1316	294				
Capacity Analysis Module:																
Vol/Sat:	0.08	0.08	0.08	0.26	0.26	0.26	0.20	0.20	0.20	0.28	0.28	0.28				
Crit Moves:					****						****					
Green Time:	31.6	31.6	31.6	31.6	31.6	31.6	34.4	34.4	34.4	34.4	34.4	34.4				
Volume/Cap:	0.18	0.18	0.18	0.57	0.57	0.57	0.41	0.41	0.41	0.57	0.57	0.57				
Uniform Del:	11.5	11.5	11.5	14.1	14.1	14.1	11.4	11.4	11.4	12.6	12.6	12.6				
IncremntDel:	0.1	0.1	0.1	1.1	1.1	1.1	0.3	0.3	0.3	0.9	0.9	0.9				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	11.6	11.6	11.6	15.2	15.2	15.2	11.7	11.7	11.7	13.5	13.5	13.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	11.6	11.6	11.6	15.2	15.2	15.2	11.7	11.7	11.7	13.5	13.5	13.5				
LOS by Move:	B	B	B	B	B	B	B	B	B	B	B	B				
HCM2k95thQ:	95	95	95	339	339	339	246	246	246	375	375	375				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.600
Loss Time (sec):	4	Average Delay (sec/veh):	13.6
Optimal Cycle:	27	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module: >> Count Date: 22 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	167	106	22	169	104	52	7	562	61	15	528	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	167	106	22	169	104	52	7	562	61	15	528	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	106	22	169	104	52	7	562	61	15	528	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	167	106	22	169	104	52	7	562	61	15	528	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	106	22	169	104	52	7	562	61	15	528	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	106	22	169	104	52	7	562	61	15	528	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.95	0.95	0.75	0.75	0.75	0.31	0.97	0.97	0.27	0.97	0.97
Lanes:	1.00	0.83	0.17	0.52	0.32	0.16	1.00	0.90	0.10	1.00	0.95	0.05
Final Sat.:	1352	1502	312	740	455	228	592	1654	180	506	1751	96
Capacity Analysis Module:												
Vol/Sat:	0.12	0.07	0.07	0.23	0.23	0.23	0.01	0.34	0.34	0.03	0.30	0.30
Crit Moves:					****			****				
Green Time:	28.6	28.6	28.6	28.6	28.6	28.6	42.4	42.4	42.4	42.4	42.4	42.4
Volume/Cap:	0.32	0.19	0.19	0.60	0.60	0.60	0.02	0.60	0.60	0.05	0.53	0.53
Uniform Del:	16.4	15.5	15.5	18.6	18.6	18.6	7.1	10.7	10.7	7.3	10.1	10.1
IncremntDel:	0.4	0.1	0.1	1.9	1.9	1.9	0.0	1.0	1.0	0.1	0.5	0.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	16.8	15.6	15.6	20.5	20.5	20.5	7.2	11.7	11.7	7.4	10.6	10.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.8	15.6	15.6	20.5	20.5	20.5	7.2	11.7	11.7	7.4	10.6	10.6
LOS by Move:	B	B	B	C	C	C	A	B	B	A	B	B
HCM2k95thQ:	147	102	102	328	328	328	4	461	461	10	391	391

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Note: Queue reported is the distance per lane in feet.

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.413
Loss Time (sec):	4	Average Delay (sec/veh):	13.1
Optimal Cycle:	19	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0	0 1	0	1	0	1	0
Volume Module: >> Count Date: 2 Feb 2010 << 7:30 -8:30 A.M.												
Base Vol:	35	80	22	73	69	74	158	403	99	39	368	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	80	22	73	69	74	158	403	99	39	368	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	80	22	73	69	74	158	403	99	39	368	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	80	22	73	69	74	158	403	99	39	368	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	80	22	73	69	74	158	403	99	39	368	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	80	22	73	69	74	158	403	99	39	368	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.89	0.89	0.82	0.92	0.92	0.95	0.97	0.97	0.95	0.98	0.98
Lanes:	0.26	0.58	0.16	1.00	0.48	0.52	1.00	0.80	0.20	1.00	0.88	0.12
Final Sat.:	430	983	270	1556	845	907	1805	1480	363	1805	1643	223
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.05	0.08	0.08	0.09	0.27	0.27	0.02	0.22	0.22
Crit Moves:					****		****				****	
Green Time:	17.6	17.6	17.6	17.6	17.6	17.6	64.4	58.7	58.7	50.2	45.6	45.6
Volume/Cap:	0.39	0.39	0.39	0.23	0.39	0.39	0.20	0.39	0.39	0.07	0.42	0.42
Uniform Del:	29.1	29.1	29.1	28.0	29.1	29.1	3.6	5.6	5.6	7.3	11.8	11.8
IncremntDel:	0.7	0.7	0.7	0.4	0.7	0.7	0.1	0.2	0.2	0.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	29.8	29.8	29.8	28.4	29.8	29.8	3.8	5.8	5.8	7.3	12.1	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.8	29.8	29.8	28.4	29.8	29.8	3.8	5.8	5.8	7.3	12.1	12.1
LOS by Move:	C	C	C	C	C	C	A	A	A	A	B	B
HCM2k95thQ:	171	171	171	88	177	177	68	275	275	21	299	299

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Note: Queue reported is the distance per lane in feet.

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.361
Loss Time (sec):	0	Average Delay (sec/veh):	10.0
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0 0	0 0	1! 0	0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30 - 8:30 A.M.												
Base Vol:	0	129	154	80	168	0	0	0	0	169	0	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	129	154	80	168	0	0	0	0	169	0	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	129	154	80	168	0	0	0	0	169	0	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	129	154	80	168	0	0	0	0	169	0	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	129	154	80	168	0	0	0	0	169	0	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	129	154	80	168	0	0	0	0	169	0	44
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.46	0.54	0.32	0.68	0.00	0.00	0.00	0.00	0.79	0.00	0.21
Final Sat.:	0	358	427	232	487	0	0	0	0	529	0	138
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.36	0.36	0.34	0.34	xxxx	xxxx	xxxx	xxxx	0.32	xxxx	0.32
Crit Moves:			****	****						****		
Delay/Veh:	0.0	9.8	9.8	10.2	10.2	0.0	0.0	0.0	0.0	10.2	0.0	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.8	9.8	10.2	10.2	0.0	0.0	0.0	0.0	10.2	0.0	10.2
LOS by Move:	*	A	A	B	B	*	*	*	*	B	*	B
ApproachDel:		9.8			10.2			xxxxxx			10.2	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		9.8			10.2			xxxxxx			10.2	
LOS by Appr:		A			B			*			B	
AllWayAvgQ:	12.7	12.7	12.7	11.9	11.9	11.9	0.0	0.0	0.0	10.0	10.0	10.0

Note: Queue reported is the distance per lane in feet.

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	60	Critical Vol./Cap.(X):	0.948
Loss Time (sec):	0	Average Delay (sec/veh):	31.5
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	0 1	0
Volume Module: >> Count Date: 18 Nov 2009 <<												
Base Vol:	0	0	0	257	0	61	56	391	0	0	356	225
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	257	0	61	56	391	0	0	356	225
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	257	0	61	56	391	0	0	356	225
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	257	0	61	56	391	0	0	356	225
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	257	0	61	56	391	0	0	356	225
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	257	0	61	56	391	0	0	356	225
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.61	0.39
Final Sat.:	0	0	0	469	0	553	512	554	0	0	375	237
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.55	xxxx	0.11	0.11	0.71	xxxx	xxxx	0.95	0.95
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	18.5	0.0	9.8	10.4	22.3	0.0	0.0	47.8	47.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	18.5	0.0	9.8	10.4	22.3	0.0	0.0	47.8	47.8
LOS by Move:	*	*	*	C	*	A	B	C	*	*	E	E
ApproachDel:		xxxxxx			16.8			20.8			47.8	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			16.8			20.8			47.8	
LOS by Appr:		*			C			C			E	
AllWayAvgQ:	0.0	0.0	0.0	27.0	0.0	2.9	2.9	50.9	0.0	166	166	166.0

Note: Queue reported is the distance per lane in feet.

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.434
Loss Time (sec):	4	Average Delay (sec/veh):	12.2
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	272	0	72		0	0	0		0	372	358		52	339	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	272	0	72		0	0	0		0	372	358		52	339	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	272	0	72		0	0	0		0	372	358		52	339	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	272	0	72		0	0	0		0	372	358		52	339	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	272	0	72		0	0	0		0	372	358		52	339	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	272	0	72		0	0	0		0	372	358		52	339	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.15	0.00	0.05		0.00	0.00	0.00		0.00	0.20	0.23		0.03	0.18	0.00	
Crit Moves:	****										****		****			
Green Time:	24.8	0.0	24.8		0.0	0.0	0.0		0.0	36.5	36.5		4.7	41.2	0.0	
Volume/Cap:	0.43	0.00	0.13		0.00	0.00	0.00		0.00	0.38	0.43		0.43	0.31	0.00	
Uniform Del:	17.3	0.0	15.3		0.0	0.0	0.0		0.0	10.0	10.4		31.3	7.2	0.0	
IncremntDel:	0.5	0.0	0.1		0.0	0.0	0.0		0.0	0.3	0.4		2.5	0.2	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Delay/Veh:	17.7	0.0	15.4		0.0	0.0	0.0		0.0	10.3	10.7		33.9	7.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	17.7	0.0	15.4		0.0	0.0	0.0		0.0	10.3	10.7		33.9	7.4	0.0	
LOS by Move:	B	A	B		A	A	A		A	B	B		C	A	A	
HCM2k95thQ:	235	0	56		0	0	0		0	242	247		86	187	0	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.598
Loss Time (sec):	0	Average Delay (sec/veh):	13.5
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45-8:45 a.m.																
Base Vol:	0	146	49		329	138	0		4	6	12		142	9	238	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	146	49		329	138	0		4	6	12		142	9	238	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	146	49		329	138	0		4	6	12		142	9	238	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	146	49		329	138	0		4	6	12		142	9	238	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	146	49		329	138	0		4	6	12		142	9	238	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	146	49		329	138	0		4	6	12		142	9	238	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.75	0.25		1.00	1.00	0.00		0.18	0.27	0.55		1.00	0.04	0.96	
Final Sat.:	0	427	143		550	592	0		89	134	268		509	22	589	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.34	0.34		0.60	0.23	xxxx		0.04	0.04	0.04		0.28	0.40	0.40	
Crit Moves:		****			****					****					****	
Delay/Veh:	0.0	12.1	12.1		17.8	10.3	0.0		9.9	9.9	9.9		12.0	11.9	11.9	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.1	12.1		17.8	10.3	0.0		9.9	9.9	9.9		12.0	11.9	11.9	
LOS by Move:	*	B	B		C	B	*		A	A	A		B	B	B	
ApproachDel:		12.1			15.6				9.9				11.9			
Delay Adj:		1.00			1.00				1.00				1.00			
ApprAdjDel:		12.1			15.6				9.9				11.9			
LOS by Appr:		B			C				A				B			
AllWayAvgQ:	11.8	11.8	11.8		33.2	7.1	7.1		1.0	1.0	1.0		8.8	14.9	14.9	

Note: Queue reported is the distance per lane in feet.

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec):	110	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	10	Average Delay (sec/veh):	24.7
Optimal Cycle:	55	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0	6	6		5	6	0		0	0	0		6	0	6	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	1	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m.																
Base Vol:	0	202	315		361	342	0		0	0	0		593	0	266	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	202	315		361	342	0		0	0	0		593	0	266	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	202	315		361	342	0		0	0	0		593	0	266	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	202	315		361	342	0		0	0	0		593	0	266	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	202	315		361	342	0		0	0	0		593	0	266	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	202	315		361	342	0		0	0	0		593	0	266	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.85		0.95	1.00	1.00		1.00	1.00	1.00		0.95	1.00	0.85	
Lanes:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	0.00	0.00		1.00	0.00	1.00	
Final Sat.:	0	1900	1615		1805	1900	0		0	0	0		1805	0	1615	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.20		0.20	0.18	0.00		0.00	0.00	0.00		0.33	0.00	0.16	
Crit Moves:		****			****								****			
Green Time:	0.0	16.7	68.5		31.5	48.3	0.0		0.0	0.0	0.0		51.7	0.0	83.3	
Volume/Cap:	0.00	0.70	0.31		0.70	0.41	0.00		0.00	0.00	0.00		0.70	0.00	0.22	
Uniform Del:	0.0	44.2	9.7		35.0	21.1	0.0		0.0	0.0	0.0		23.0	0.0	3.9	
IncremntDel:	0.0	7.3	0.2		4.2	0.3	0.0		0.0	0.0	0.0		2.6	0.0	0.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	0.00	0.00		1.00	0.00	1.00	
Delay/Veh:	0.0	51.6	9.9		39.2	21.5	0.0		0.0	0.0	0.0		25.6	0.0	4.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	51.6	9.9		39.2	21.5	0.0		0.0	0.0	0.0		25.6	0.0	4.0	
LOS by Move:	A	D	A		D	C	A		A	A	A		C	A	A	
HCM2k95thQ:	0	316	237		540	370	0		0	0	0		687	0	130	

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 8.7 Worst Case Level Of Service: F[72.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 1	0	0	0	0 1	0	0	0	0 1!	0	0	0	0	0	0
Volume Module: >> Count Date: 19 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	176	458	0	0	632	233	47	0	128	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	176	458	0	0	632	233	47	0	128	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	176	458	0	0	632	233	47	0	128	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	176	458	0	0	632	233	47	0	128	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	176	458	0	0	632	233	47	0	128	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	865	xxxx	xxxxx	xxxx	xxxx	xxxxx	1567	1567	749	xxxx	xxxx	xxxxx				
Potent Cap.:	787	xxxx	xxxxx	xxxx	xxxx	xxxxx	109	99	415	xxxx	xxxx	xxxxx				
Move Cap.:	787	xxxx	xxxxx	xxxx	xxxx	xxxxx	90	77	415	xxxx	xxxx	xxxxx				
Volume/Cap:	0.22	xxxx	xxxx	xxxx	xxxx	xxxx	0.52	0.00	0.31	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	21.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	B	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	211	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.2	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	72.6	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				72.6			xxxxxx					
ApproachLOS:	*			*				F			*					

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: F[56.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 18 Nov 2009 << 7:45 - 8:45 A.M.												
Base Vol:	85	521	7	21	593	135	57	5	83	20	9	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	85	521	7	21	593	135	57	5	83	20	9	20
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	521	7	21	593	135	57	5	83	20	9	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	521	7	21	593	135	57	5	83	20	9	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	85	521	7	21	593	135	57	5	83	20	9	20
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	728	xxxx	xxxxx	394	xxxx	xxxxx	1399	1387	661	1433	1460	390
Potent Cap.:	885	xxxx	xxxxx	1033	xxxx	xxxxx	105	127	466	99	115	583
Move Cap.:	885	xxxx	xxxxx	1033	xxxx	xxxxx	86	112	466	72	101	583
Volume/Cap:	0.10	xxxx	xxxx	0.02	xxxx	xxxx	0.66	0.04	0.18	0.28	0.09	0.03
Level Of Service Module:												
2Way95thQ:	7.9	xxxx	xxxxx	1.6	xxxx	xxxxx	xxxx	xxxx	16.0	xxxx	xxxx	xxxxx
Control Del:	9.5	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	14.4	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	88	xxxx	xxxxx	xxxx	122	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	xxxxx	xxxxx	1.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	112.0	xxxx	xxxxx	xxxxx	52.9	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			56.1			52.9		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the distance per lane in feet.

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.513
Loss Time (sec): 6 Average Delay (sec/veh): 11.6
Optimal Cycle: 27 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	6	6	6	6	6	6
Y+R:	5.2	5.2	5.2	5.2	5.2	5.2	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45 - 8:45 a.m.												
Base Vol:	75	380	37	126	400	145	115	192	45	18	169	128
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	380	37	126	400	145	115	192	45	18	169	128
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	380	37	126	400	145	115	192	45	18	169	128
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	380	37	126	400	145	115	192	45	18	169	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	380	37	126	400	145	115	192	45	18	169	128
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	380	37	126	400	145	115	192	45	18	169	128
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.35	0.99	0.99	0.45	0.96	0.96	0.42	0.97	0.97	0.50	0.94	0.94
Lanes:	1.00	0.91	0.09	1.00	0.73	0.27	1.00	0.81	0.19	1.00	0.57	0.43
Final Sat.:	665	1709	166	847	1339	485	798	1496	351	950	1011	766
Capacity Analysis Module:												
Vol/Sat:	0.11	0.22	0.22	0.15	0.30	0.30	0.14	0.13	0.13	0.02	0.17	0.17
Crit Moves:					****						****	
Green Time:	37.8	37.8	37.8	37.8	37.8	37.8	21.2	21.2	21.2	21.2	21.2	21.2
Volume/Cap:	0.19	0.38	0.38	0.26	0.51	0.51	0.44	0.39	0.39	0.06	0.51	0.51
Uniform Del:	6.4	7.3	7.3	6.7	8.1	8.1	17.3	17.0	17.0	15.1	17.7	17.7
IncremntDel:	0.2	0.2	0.2	0.3	0.4	0.4	1.2	0.4	0.4	0.1	0.8	0.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	6.6	7.5	7.5	6.9	8.5	8.5	18.5	17.4	17.4	15.1	18.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	6.6	7.5	7.5	6.9	8.5	8.5	18.5	17.4	17.4	15.1	18.5	18.5
LOS by Move:	A	A	A	A	A	A	B	B	B	B	B	B
HCM2k95thQ:	37	217	217	64	309	309	121	196	196	15	261	261

Note: Queue reported is the distance per lane in feet.

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.623
Loss Time (sec):	4	Average Delay (sec/veh):	22.7
Optimal Cycle:	29	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.2	4.2	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 0	0	0 0	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM												
Base Vol:	487	369	0	0	420	85	88	0	542	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	369	0	0	420	85	88	0	542	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	487	369	0	0	420	85	88	0	542	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	487	369	0	0	420	85	88	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	487	369	0	0	420	85	88	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	487	369	0	0	420	85	88	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.96	0.96	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.83	0.17	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1513	306	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.28	0.20	0.00	0.00	0.28	0.28	0.05	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	53.0	106	0.0	0.0	53.4	53.4	9.6	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.62	0.22	0.00	0.00	0.62	0.62	0.62	0.00	0.00	0.00	0.00	0.00
Uniform Del:	25.8	1.0	0.0	0.0	25.6	25.6	53.5	0.0	0.0	0.0	0.0	0.0
IncremntDel:	1.6	0.1	0.0	0.0	1.5	1.5	8.4	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	27.4	1.0	0.0	0.0	27.1	27.1	61.9	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.4	1.0	0.0	0.0	27.1	27.1	61.9	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	C	C	E	A	A	A	A	A
HCM2k95thQ:	602	102	0	0	618	618	208	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.491
Loss Time (sec):	4	Average Delay (sec/veh):	27.8
Optimal Cycle:	22	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	0 1	0	0 1	0 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	27	551	91	215	594	106	3	24	4	132	52	312
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	551	91	215	594	106	3	24	4	132	52	312
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	551	91	215	594	106	3	24	4	132	52	312
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	551	91	215	594	106	3	24	4	132	52	312
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	551	91	215	594	106	3	24	4	132	52	312
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	551	91	215	594	106	3	24	4	132	52	312
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.53	0.96	0.96	0.75	0.75	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.86	0.14	0.72	0.28	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1013	1562	260	1029	405	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.16	0.06	0.12	0.17	0.07	0.00	0.02	0.02	0.13	0.13	0.20
Crit Moves:		****		****								****
Green Time:	11.2	38.1	38.1	29.7	56.6	56.6	48.2	48.2	48.2	48.2	48.2	48.2
Volume/Cap:	0.16	0.49	0.18	0.49	0.36	0.14	0.01	0.04	0.04	0.32	0.32	0.49
Uniform Del:	50.1	33.1	29.7	38.7	20.1	18.0	21.5	21.8	21.8	24.6	24.6	26.8
IncremntDel:	0.5	0.3	0.2	0.9	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	50.5	33.5	29.8	39.5	20.3	18.1	21.6	21.8	21.8	25.0	25.0	27.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	33.5	29.8	39.5	20.3	18.1	21.6	21.8	21.8	25.0	25.0	27.4
LOS by Move:	D	C	C	D	C	B	C	C	C	C	C	C
HCM2k95thQ:	53	409	122	311	331	106	4	32	32	229	229	406

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[21.4]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2010 << 7:30 - 8:30 A.M.												
Base Vol:	93	766	0	0	687	27	18	0	8	0	0	0
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse:	93	766	0	0	687	27	18	0	8	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	766	0	0	687	27	18	0	8	0	0	0
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	93	766	0	0	687	27	18	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	93	766	0	0	687	27	18	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	449	xxxx	xxxxx	xxxx	xxxx	xxxxx	1069	xxxx	51	xxxx	xxxx	xxxxx
Potent Cap.:	1005	xxxx	xxxxx	xxxx	xxxx	xxxxx	197	xxxx	908	xxxx	xxxx	xxxxx
Move Cap.:	1005	xxxx	xxxxx	xxxx	xxxx	xxxxx	182	xxxx	908	xxxx	xxxx	xxxxx
Volume/Cap:	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	7.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	8.1	xxxx	0.7	xxxx	xxxx	xxxxx
Control Del:	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	26.9	xxxx	9.0	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			21.4			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the distance per lane in feet.

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec):	130	Critical Vol./Cap.(X):	0.592
Loss Time (sec):	8	Average Delay (sec/veh):	41.6
Optimal Cycle:	40	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2 0	1	1	1 0	1 0	1 0	1 0	1	1	1 0	0 1
Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM												
Base Vol:	111	300	97	424	444	16	12	164	70	473	189	335
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	300	97	424	444	16	12	164	70	473	189	335
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	300	97	424	444	16	12	164	70	473	189	335
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	300	97	424	444	16	12	164	70	473	189	335
Reduct Vol:	0	0	3	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	300	94	424	444	16	12	164	70	473	189	335
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	300	94	424	444	16	12	164	70	473	189	335
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.44	1.51	0.05	1.00	1.00	1.00	1.43	0.57	1.00
Final Sat.:	1769	3538	1583	2479	2596	94	1769	1862	1583	2568	1026	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.06	0.17	0.17	0.17	0.01	0.09	0.04	0.18	0.18	0.21
Crit Moves:		****			****			****				****
Green Time:	18.6	18.6	18.6	37.6	37.6	37.6	19.3	19.3	19.3	46.5	46.5	46.5
Volume/Cap:	0.44	0.59	0.41	0.59	0.59	0.59	0.05	0.59	0.30	0.52	0.52	0.59
Uniform Del:	50.9	52.1	50.7	39.7	39.7	39.7	47.4	51.6	49.3	32.9	32.9	34.0
IncremntDel:	1.2	1.9	1.2	0.6	0.6	0.6	0.1	3.4	0.7	0.4	0.4	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.1	54.0	52.0	40.3	40.3	40.3	47.5	55.0	50.0	33.2	33.2	35.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	54.0	52.0	40.3	40.3	40.3	47.5	55.0	50.0	33.2	33.2	35.7
LOS by Move:	D	D	D	D	D	D	D	E	D	C	C	D
HCM2k95thQ:	217	319	187	502	502	502	22	327	134	480	480	512

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Note: Queue reported is the distance per lane in feet.

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.628
Loss Time (sec):	7	Average Delay (sec/veh):	12.4
Optimal Cycle:	38	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	12	12	12	12	12	12
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	90	88	109	30	48	13	1	715	61	37	861	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	88	109	30	48	13	1	715	61	37	861	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	88	109	30	48	13	1	715	61	37	861	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	88	109	30	48	13	1	715	61	37	861	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	88	109	30	48	13	1	715	61	37	861	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	88	109	30	48	13	1	715	61	37	861	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.90	0.90	0.40	0.95	0.95	0.24	0.97	0.97	0.28	0.98	0.98
Lanes:	1.00	0.45	0.55	1.00	0.79	0.21	1.00	0.92	0.08	1.00	0.99	0.01
Final Sat.:	1339	763	945	752	1418	384	456	1695	145	536	1837	21
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.12	0.04	0.03	0.03	0.00	0.42	0.42	0.07	0.47	0.47
Crit Moves:		****									****	
Green Time:	18.4	18.4	18.4	18.4	18.4	18.4	74.6	74.6	74.6	74.6	74.6	74.6
Volume/Cap:	0.37	0.63	0.63	0.22	0.18	0.18	0.00	0.57	0.57	0.09	0.63	0.63
Uniform Del:	35.7	37.7	37.7	34.7	34.5	34.5	3.2	5.6	5.6	3.5	6.1	6.1
IncremntDel:	0.9	4.0	4.0	0.8	0.3	0.3	0.0	0.6	0.6	0.1	0.9	0.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	36.6	41.7	41.7	35.5	34.8	34.8	3.2	6.1	6.1	3.6	7.0	7.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.6	41.7	41.7	35.5	34.8	34.8	3.2	6.1	6.1	3.6	7.0	7.0
LOS by Move:	D	D	D	D	C	C	A	A	A	A	A	A
HCM2k95thQ:	138	315	315	51	85	85	1	491	491	20	590	590

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Note: Queue reported is the distance per lane in feet.

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	7	Average Delay (sec/veh):	18.2
Optimal Cycle:	49	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0	0	1! 0	0	0	1! 0	1	0	0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM												
Base Vol:	7	31	5	149	63	101	0	780	63	33	849	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	31	5	149	63	101	0	780	63	33	849	7
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	31	5	149	63	101	0	780	63	33	849	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	31	5	149	63	101	0	780	63	33	849	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	31	5	149	63	101	0	780	63	33	849	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	31	5	149	63	101	0	780	63	33	849	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.91	0.91	0.77	0.77	0.77	1.00	0.97	0.97	0.19	0.98	0.98
Lanes:	0.16	0.72	0.12	0.48	0.20	0.32	1.00	0.93	0.07	1.00	0.99	0.01
Final Sat.:	283	1252	202	696	294	472	1900	1704	138	352	1845	15
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.21	0.21	0.21	0.00	0.46	0.46	0.09	0.46	0.46
Crit Moves:					****						****	
Green Time:	29.5	29.5	29.5	29.5	29.5	29.5	0.0	63.5	63.5	63.5	63.5	63.5
Volume/Cap:	0.08	0.08	0.08	0.73	0.73	0.73	0.00	0.72	0.72	0.15	0.73	0.73
Uniform Del:	25.5	25.5	25.5	31.6	31.6	31.6	0.0	12.3	12.3	7.4	12.4	12.4
IncremntDel:	0.1	0.1	0.1	6.0	6.0	6.0	0.0	2.2	2.2	0.3	2.3	2.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	25.5	25.5	25.5	37.6	37.6	37.6	0.0	14.5	14.5	7.7	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.5	25.5	25.5	37.6	37.6	37.6	0.0	14.5	14.5	7.7	14.6	14.6
LOS by Move:	C	C	C	D	D	D	A	B	B	A	B	B
HCM2k95thQ:	49	49	49	464	464	464	0	783	783	28	796	796

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Note: Queue reported is the distance per lane in feet.

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.716
Loss Time (sec):	7	Average Delay (sec/veh):	12.9
Optimal Cycle:	47	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	10	10	4	10	10
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lanes:	1 0	0 1	0	0 1	0 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	77	8	87	58	3	12	31	970	13	64	891	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	8	87	58	3	12	31	970	13	64	891	162
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	8	87	58	3	12	31	970	13	64	891	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	8	87	58	3	12	31	970	13	64	891	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	8	87	58	3	12	31	970	13	64	891	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	8	87	58	3	12	31	970	13	64	891	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	0.85	0.85	0.46	0.46	0.83	0.93	0.93	0.93	0.93	0.96	0.96
Lanes:	1.00	0.08	0.92	0.95	0.05	1.00	1.00	1.97	0.03	1.00	0.85	0.15
Final Sat.:	1220	135	1472	836	43	1583	1769	3484	47	1769	1539	280
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.07	0.07	0.01	0.02	0.28	0.28	0.04	0.58	0.58
Crit Moves:				****			****				****	
Green Time:	9.5	9.5	9.5	9.5	9.5	9.5	4.0	73.0	73.0	10.5	79.5	79.5
Volume/Cap:	0.66	0.62	0.62	0.73	0.73	0.08	0.44	0.38	0.38	0.35	0.73	0.73
Uniform Del:	43.7	43.5	43.5	44.0	44.0	41.2	46.9	5.1	5.1	41.6	5.0	5.0
IncremntDel:	13.4	7.6	7.6	27.3	27.3	0.2	4.3	0.1	0.1	1.1	1.9	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.1	51.1	51.1	71.3	71.3	41.5	51.2	5.2	5.2	42.7	6.9	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.1	51.1	51.1	71.3	71.3	41.5	51.2	5.2	5.2	42.7	6.9	6.9
LOS by Move:	E	D	D	E	E	D	D	A	A	D	A	A
HCM2k95thQ:	178	194	194	166	166	20	78	289	289	110	729	729

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Note: Queue reported is the distance per lane in feet.

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.663
Loss Time (sec): 11 Average Delay (sec/veh): 20.7
Optimal Cycle: 52 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	5	0	0	5	5	5	0	0	5	5			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	2	0	1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	0	0	0	407	0	73	64	1150	0	0	1146	432				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	407	0	73	64	1150	0	0	1146	432				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	407	0	73	64	1150	0	0	1146	432				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	407	0	73	64	1150	0	0	1146	432				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	407	0	73	64	1150	0	0	1146	432				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	0	0	407	0	73	64	1150	0	0	1146	432				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83				
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00				
Final Sat.:	0	0	0	1769	0	1583	1769	3538	0	0	3538	1583				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.05	0.04	0.33	0.00	0.00	0.32	0.27				
Crit Moves:				****			****				****					
Green Time:	0.0	0.0	0.0	34.7	0.0	34.7	5.5	54.3	0.0	0.0	48.8	48.8				
Volume/Cap:	0.00	0.00	0.00	0.66	0.00	0.13	0.66	0.60	0.00	0.00	0.66	0.56				
Uniform Del:	0.0	0.0	0.0	27.7	0.0	22.4	46.4	15.5	0.0	0.0	19.4	18.0				
IncremntDel:	0.0	0.0	0.0	2.7	0.0	0.1	16.0	0.5	0.0	0.0	1.0	0.9				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00				
Delay/Veh:	0.0	0.0	0.0	30.4	0.0	22.5	62.3	16.0	0.0	0.0	20.3	18.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	30.4	0.0	22.5	62.3	16.0	0.0	0.0	20.3	18.9				
LOS by Move:	A	A	A	C	A	C	E	B	A	A	C	B				
HCM2k95thQ:	0	0	0	519	0	79	160	576	0	0	643	448				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.557
Loss Time (sec):	4	Average Delay (sec/veh):	16.5
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	6	6	6		6	6	6		0	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.0	4.5	4.5		4.1	4.5	4.5	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	1	0	1 0	1	0	1	1 0
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	82	9	171		111	33	2		0	641	44		280	977	21	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	82	9	171		111	33	2		0	641	44		280	977	21	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	82	9	171		111	33	2		0	641	44		280	977	21	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	82	9	171		111	33	2		0	641	44		280	977	21	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	82	9	171		111	33	2		0	641	44		280	977	21	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	82	9	171		111	33	2		0	641	44		280	977	21	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.79	0.79	0.79		0.61	0.61	0.61		0.95	0.92	0.92		0.93	0.93	0.93	
Lanes:	0.31	0.03	0.66		0.76	0.23	0.01		0.00	1.87	0.13		1.00	1.96	0.04	
Final Sat.:	469	51	978		884	263	16		0	3277	225		1769	3453	74	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.17		0.13	0.13	0.13		0.00	0.20	0.20		0.16	0.28	0.28	
Crit Moves:		****								****			****			
Green Time:	25.1	25.1	25.1		25.1	25.1	25.1		0.0	28.1	28.1		22.8	50.9	50.9	
Volume/Cap:	0.56	0.56	0.56		0.40	0.40	0.40		0.00	0.56	0.56		0.56	0.44	0.44	
Uniform Del:	22.8	22.8	22.8		21.5	21.5	21.5		0.0	20.9	20.9		24.3	7.4	7.4	
IncremntDel:	1.5	1.5	1.5		0.7	0.7	0.7		0.0	0.6	0.6		1.4	0.1	0.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		0.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	24.3	24.3	24.3		22.3	22.3	22.3		0.0	21.5	21.5		25.7	7.5	7.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	24.3	24.3	24.3		22.3	22.3	22.3		0.0	21.5	21.5		25.7	7.5	7.5	
LOS by Move:	C	C	C		C	C	C		A	C	C		C	A	A	
HCM2k95thQ:	292	292	292		160	160	160		0	337	337		274	304	304	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.635
Loss Time (sec):	4	Average Delay (sec/veh):	16.4
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.5	4.5		4.1	4.5	4.5	
Lanes:	1	0 0	1	0	1	1 0	0	1	1	0 1	1	0	1	0 1	1	0
Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	28	5	25		362	38	143		131	755	68		42	1025	333	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	28	5	25		362	38	143		131	755	68		42	1025	333	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	28	5	25		362	38	143		131	755	68		42	1025	333	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	28	5	25		362	38	143		131	755	68		42	1025	333	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	28	5	25		362	38	143		131	755	68		42	1025	333	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	28	5	25		362	38	143		131	755	68		42	1025	333	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.86	0.86		0.94	0.94	0.83		0.93	0.92	0.92		0.93	0.90	0.90	
Lanes:	1.00	0.17	0.83		1.81	0.19	1.00		1.00	1.83	0.17		1.00	1.51	0.49	
Final Sat.:	1769	272	1358		3225	339	1583		1769	3207	289		1769	2571	835	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02		0.11	0.11	0.09		0.07	0.24	0.24		0.02	0.40	0.40	
Crit Moves:		****				****			****					****		
Green Time:	4.0	4.0	4.0		13.8	13.8	13.8		9.1	48.0	48.0		10.2	49.1	49.1	
Volume/Cap:	0.32	0.37	0.37		0.65	0.65	0.52		0.65	0.39	0.39		0.19	0.65	0.65	
Uniform Del:	36.7	36.8	36.8		30.8	30.8	30.1		33.9	8.4	8.4		31.2	9.9	9.9	
IncremntDel:	2.1	2.8	2.8		2.5	2.5	1.8		7.3	0.1	0.1		0.4	0.7	0.7	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	38.7	39.6	39.6		33.3	33.3	31.9		41.2	8.5	8.5		31.6	10.7	10.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	38.7	39.6	39.6		33.3	33.3	31.9		41.2	8.5	8.5		31.6	10.7	10.7	
LOS by Move:	D	D	D		C	C	C		D	A	A		C	B	B	
HCM2k95thQ:	54	61	61		280	280	194		157	262	262		45	502	502	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.668
Loss Time (sec):	4	Average Delay (sec/veh):	14.1
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	5.0	5.0	4.1	5.0	5.0
Lanes:	0	1	0	0	2	0	1	0	0	1	1	0
Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM												
Base Vol:	22	4	37	220	6	31	25	1077	29	241	1430	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	4	37	220	6	31	25	1077	29	241	1430	228
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	4	37	220	6	31	25	1077	29	241	1430	228
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	4	37	220	6	31	25	1077	29	241	1430	228
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	4	37	220	6	31	25	1077	29	241	1430	228
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	4	37	220	6	31	25	1077	29	241	1430	228
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.94	0.73	0.93	0.93	0.83	0.93	0.89	0.89	0.90	0.91	0.91
Lanes:	0.85	0.15	2.00	0.97	0.03	1.00	1.00	2.92	0.08	2.00	1.72	0.28
Final Sat.:	1511	275	2786	1729	47	1583	1769	4930	133	3432	2987	476
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.13	0.13	0.02	0.01	0.22	0.22	0.07	0.48	0.48
Crit Moves:	****				****		****				****	
Green Time:	4.0	4.0	4.0	14.3	14.3	14.3	4.0	43.7	43.7	14.0	53.7	53.7
Volume/Cap:	0.29	0.29	0.27	0.71	0.71	0.11	0.28	0.40	0.40	0.40	0.71	0.71
Uniform Del:	36.6	36.6	36.6	30.9	30.9	27.5	36.6	10.5	10.5	29.2	8.3	8.3
IncremntDel:	1.8	1.8	1.0	7.4	7.4	0.2	1.8	0.1	0.1	0.4	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	38.4	38.4	37.6	38.4	38.4	27.7	38.4	10.6	10.6	29.7	9.3	9.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.4	38.4	37.6	38.4	38.4	27.7	38.4	10.6	10.6	29.7	9.3	9.3
LOS by Move:	D	D	D	D	D	C	D	B	B	C	A	A
HCM2k95thQ:	49	49	41	326	326	36	31	273	273	130	590	590

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Note: Queue reported is the distance per lane in feet.

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	0.823
Loss Time (sec):	0	Average Delay (sec/veh):	21.6
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30-8:30 A.M.												
Base Vol:	2	113	458	21	105	11	9	240	18	295	164	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	113	458	21	105	11	9	240	18	295	164	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	113	458	21	105	11	9	240	18	295	164	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	113	458	21	105	11	9	240	18	295	164	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	113	458	21	105	11	9	240	18	295	164	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	113	458	21	105	11	9	240	18	295	164	14
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.02	0.98	1.00	0.15	0.77	0.08	1.00	0.93	0.07	1.00	0.92	0.08
Final Sat.:	9	488	557	64	322	34	428	431	32	458	451	39
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.82	0.33	0.33	0.33	0.02	0.56	0.56	0.64	0.36	0.36
Crit Moves:			****		****			****		****		
Delay/Veh:	11.8	11.8	30.8	14.3	14.3	14.3	10.9	18.4	18.4	22.5	13.6	13.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.8	11.8	30.8	14.3	14.3	14.3	10.9	18.4	18.4	22.5	13.6	13.6
LOS by Move:	B	B	D	B	B	B	B	C	C	C	B	B
ApproachDel:	27.0			14.3			18.1			19.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	27.0			14.3			18.1			19.2		
LOS by Appr:	D			B			C			C		
AllWayAvgQ:	7.1	7.1	84.1	9.8	9.8	9.8	0.5	26.4	26.4	38.5	13.0	13.0

Note: Queue reported is the distance per lane in feet.

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.694
Loss Time (sec):	10	Average Delay (sec/veh):	42.8
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	10	10	4	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	109	600	303	214	596	283	322	1224	128	245	546	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	600	303	214	596	283	322	1224	128	245	546	39
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	600	303	214	596	283	322	1224	128	245	546	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	600	303	214	596	283	322	1224	128	245	546	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	600	303	214	596	283	322	1224	128	245	546	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	600	303	214	596	283	322	1224	128	245	546	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.94	0.99	0.84	0.92	0.97	0.82
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	3724	1583	3538	3724	1583	3573	3761	1599	3502	3687	1567
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.19	0.06	0.16	0.18	0.09	0.33	0.08	0.07	0.15	0.02
Crit Moves:			****	****				****		****		
Green Time:	8.0	41.4	41.4	13.1	46.5	46.5	32.3	70.4	70.4	15.1	53.2	53.2
Volume/Cap:	0.58	0.58	0.69	0.69	0.52	0.58	0.42	0.69	0.17	0.69	0.42	0.07
Uniform Del:	69.3	46.9	48.6	66.5	42.5	43.5	50.7	31.3	23.0	65.2	36.7	32.1
IncremntDel:	4.4	0.9	4.8	6.7	0.4	1.7	0.4	1.2	0.1	5.9	0.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	1.00	1.00	1.00
Delay/Veh:	73.7	47.7	53.4	73.2	42.9	45.2	51.1	26.6	18.7	71.1	36.9	32.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.7	47.7	53.4	73.2	42.9	45.2	51.1	26.6	18.7	71.1	36.9	32.1
LOS by Move:	E	D	D	E	D	D	D	C	B	E	D	C
HCM2k95thQ:	124	494	533	293	512	511	274	774	118	322	433	59

Note: Queue reported is the distance per lane in feet.

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.334
Loss Time (sec):	4	Average Delay (sec/veh):	35.9
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	10	10		7	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	175	631	19		12	492	25		30	12	155		1	7	11	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	175	631	19		12	492	25		30	12	155		1	7	11	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	175	631	19		12	492	25		30	12	155		1	7	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	175	631	19		12	492	25		30	12	155		1	7	11	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	175	631	19		12	492	25		30	12	155		1	7	11	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	175	631	19		12	492	25		30	12	155		1	7	11	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.91		0.95	0.90	0.90		0.89	0.89	0.89		0.95	0.91	0.91	
Lanes:	1.00	2.91	0.09		1.00	2.85	0.15		0.15	0.06	0.79		1.00	0.39	0.61	
Final Sat.:	1805	5015	151		1805	4902	249		257	103	1326		1805	671	1054	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.13	0.13		0.01	0.10	0.10		0.12	0.12	0.12		0.00	0.01	0.01	
Crit Moves:	****					****					****			****		
Green Time:	40.4	59.5	59.5		22.8	41.8	41.8		48.7	48.7	48.7		10.0	10.0	10.0	
Volume/Cap:	0.35	0.31	0.31		0.04	0.35	0.35		0.35	0.35	0.35		0.01	0.15	0.15	
Uniform Del:	41.8	28.9	28.9		51.8	40.8	40.8		36.2	36.2	36.2		62.9	63.5	63.5	
IncremntDel:	0.4	0.1	0.1		0.1	0.1	0.1		0.4	0.4	0.4		0.0	0.6	0.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	42.2	29.0	29.0		51.9	40.9	40.9		36.6	36.6	36.6		62.9	64.1	64.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	42.2	29.0	29.0		51.9	40.9	40.9		36.6	36.6	36.6		62.9	64.1	64.1	
LOS by Move:	D	C	C		D	D	D		D	D	D		E	E	E	
HCM2k95thQ:	296	330	330		24	314	314		311	311	311		2	44	44	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.613
Loss Time (sec):	4	Average Delay (sec/veh):	16.3
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 2	0 1	1	0 2	0 1	0	1 0	0 1	0	1 0	0 1
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	26	1547	73	61	1119	20	22	15	23	152	2	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1547	73	61	1119	20	22	15	23	152	2	110
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	1547	73	61	1119	20	22	15	23	152	2	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	1547	73	61	1119	20	22	15	23	152	2	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	1547	73	61	1119	20	22	15	23	152	2	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	1547	73	61	1119	20	22	15	23	152	2	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.81	0.81	0.83	0.65	0.65	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.59	0.41	1.00	0.99	0.01	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	917	625	1583	1220	16	1583
Capacity Analysis Module:												
Vol/Sat:	0.01	0.44	0.05	0.03	0.32	0.01	0.02	0.02	0.01	0.12	0.12	0.07
Crit Moves:		****		****							****	
Green Time:	8.9	103	103.4	8.2	103	102.6	29.5	29.5	29.5	29.5	29.5	29.5
Volume/Cap:	0.24	0.61	0.06	0.61	0.45	0.02	0.12	0.12	0.07	0.61	0.61	0.34
Uniform Del:	64.8	10.6	6.3	66.9	9.1	6.3	47.2	47.2	46.7	52.6	52.6	49.5
IncremntDel:	1.1	0.5	0.0	10.8	0.1	0.0	0.2	0.2	0.1	4.4	4.4	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	65.9	11.1	6.3	77.7	9.2	6.3	47.3	47.3	46.8	57.0	57.0	50.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.9	11.1	6.3	77.7	9.2	6.3	47.3	47.3	46.8	57.0	57.0	50.1
LOS by Move:	E	B	A	E	A	A	D	D	D	E	E	D
HCM2k95thQ:	67	784	49	182	500	13	69	69	43	337	337	212

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Note: Queue reported is the distance per lane in feet.

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	4	Average Delay (sec/veh):	38.8
Optimal Cycle:	35	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	139	1197	52	70	1016	258	457	197	82	54	163	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	1197	52	70	1016	258	457	197	82	54	163	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	1197	52	70	1016	258	457	197	82	54	163	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	1197	52	70	1016	258	457	197	82	54	163	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1197	52	70	1016	258	457	197	82	54	163	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	1197	52	70	1016	258	457	197	82	54	163	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.96	0.96
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.40	0.60	1.00	1.00	0.85	0.15
Final Sat.:	1769	3538	1583	1769	3538	1583	2514	1084	1583	1769	1544	275
Capacity Analysis Module:												
Vol/Sat:	0.08	0.34	0.03	0.04	0.29	0.16	0.18	0.18	0.05	0.03	0.11	0.11
Crit Moves:		****		****			****					****
Green Time:	17.2	71.7	71.7	8.4	62.9	62.9	38.5	38.5	38.5	22.4	22.4	22.4
Volume/Cap:	0.66	0.68	0.07	0.68	0.66	0.38	0.68	0.68	0.19	0.20	0.68	0.68
Uniform Del:	61.1	28.0	19.2	67.0	32.6	27.8	47.8	47.8	41.2	53.5	58.0	58.0
IncremntDel:	7.7	1.1	0.0	17.5	1.1	0.3	2.1	2.1	0.2	0.4	6.8	6.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	68.8	29.1	19.2	84.5	33.7	28.1	49.8	49.8	41.5	53.8	64.8	64.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	29.1	19.2	84.5	33.7	28.1	49.8	49.8	41.5	53.8	64.8	64.8
LOS by Move:	E	C	B	F	C	C	D	D	D	D	E	E
HCM2k95thQ:	334	902	60	213	811	361	577	577	135	109	426	426

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Note: Queue reported is the distance per lane in feet.

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	4	Average Delay (sec/veh):	29.4
Optimal Cycle:	26	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM												
Base Vol:	133	1226	106	87	998	61	113	131	87	119	161	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	1226	106	87	998	61	113	131	87	119	161	63
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	1226	106	87	998	61	113	131	87	119	161	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	1226	106	87	998	61	113	131	87	119	161	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	1226	106	87	998	61	113	131	87	119	161	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	1226	106	87	998	61	113	131	87	119	161	63
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.35	0.07	0.05	0.28	0.04	0.06	0.07	0.05	0.07	0.09	0.04
Crit Moves:		****			****			****			****	
Green Time:	21.5	89.5	89.5	12.7	80.7	80.7	16.5	19.8	19.8	19.0	22.3	22.3
Volume/Cap:	0.51	0.56	0.11	0.56	0.51	0.07	0.56	0.51	0.40	0.51	0.56	0.26
Uniform Del:	56.9	16.3	11.4	63.5	19.9	14.8	60.8	58.1	57.2	58.7	56.8	54.0
IncremntDel:	1.6	0.3	0.0	4.6	0.2	0.0	3.6	1.8	1.2	2.0	2.5	0.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	58.5	16.6	11.4	68.1	20.1	14.9	64.4	59.9	58.4	60.7	59.3	54.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.5	16.6	11.4	68.1	20.1	14.9	64.4	59.9	58.4	60.7	59.3	54.6
LOS by Move:	E	B	B	E	C	B	E	E	E	E	E	D
HCM2k95thQ:	285	717	96	221	625	62	266	285	191	265	342	130

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Note: Queue reported is the distance per lane in feet.

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.534
Loss Time (sec):	4	Average Delay (sec/veh):	22.5
Optimal Cycle:	26	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	0 0	2 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm												
Base Vol:	0	1191	54	0	1043	143	171	68	161	72	83	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1191	54	0	1043	143	171	68	161	72	83	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1191	54	0	1043	143	171	68	161	72	83	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1191	54	0	1043	143	171	68	161	72	83	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1191	54	0	1043	143	171	68	161	72	83	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1191	54	0	1043	143	171	68	161	72	83	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.93	0.83	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00	0.59	0.41
Final Sat.:	0	3538	1583	0	3538	1583	1769	1862	1583	1769	1028	718
Capacity Analysis Module:												
Vol/Sat:	0.00	0.34	0.03	0.00	0.29	0.09	0.10	0.04	0.10	0.04	0.08	0.08
Crit Moves:		****							****		****	
Green Time:	0.0	91.4	91.4	0.0	91.4	91.4	27.6	27.6	27.6	21.9	21.9	21.9
Volume/Cap:	0.00	0.53	0.05	0.00	0.47	0.14	0.51	0.19	0.53	0.27	0.53	0.53
Uniform Del:	0.0	14.9	10.2	0.0	14.0	10.9	52.6	49.3	52.9	54.4	56.8	56.8
IncremntDel:	0.0	0.3	0.0	0.0	0.2	0.1	1.3	0.3	1.9	0.5	2.1	2.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	0.0	15.2	10.3	0.0	14.2	10.9	53.9	49.6	54.7	55.0	58.9	58.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	15.2	10.3	0.0	14.2	10.9	53.9	49.6	54.7	55.0	58.9	58.9
LOS by Move:	A	B	B	A	B	B	D	D	D	D	E	E
HCM2k95thQ:	0	651	45	0	560	127	340	128	330	147	303	303

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Note: Queue reported is the distance per lane in feet.

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.761
Loss Time (sec):	4	Average Delay (sec/veh):	44.1
Optimal Cycle:	45	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 1	0	2 0	1 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	176	1202	557	193	1082	22	41	296	129	484	239	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1202	557	193	1082	22	41	296	129	484	239	67
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	1202	557	193	1082	22	41	296	129	484	239	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	1202	557	193	1082	22	41	296	129	484	239	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	1202	557	193	1082	22	41	296	129	484	239	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	1202	557	193	1082	22	41	296	129	484	239	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.89	0.89	0.89	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.18	1.27	0.55	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	297	2144	934	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.10	0.34	0.35	0.11	0.31	0.01	0.14	0.14	0.14	0.14	0.13	0.04
Crit Moves:			****	****					****	****		
Green Time:	21.6	67.0	67.0	20.8	66.3	66.3	26.3	26.3	26.3	26.9	26.9	26.9
Volume/Cap:	0.67	0.73	0.76	0.76	0.67	0.03	0.76	0.76	0.76	0.76	0.69	0.23
Uniform Del:	58.3	31.7	32.3	59.7	30.8	21.7	56.4	56.4	56.4	56.0	55.2	50.2
IncremntDel:	6.5	1.8	4.7	12.7	1.1	0.0	5.6	5.6	5.6	5.4	6.0	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	64.9	33.5	37.0	72.4	31.9	21.7	61.9	61.9	61.9	61.4	61.2	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.9	33.5	37.0	72.4	31.9	21.7	61.9	61.9	61.9	61.4	61.2	50.6
LOS by Move:	E	C	D	E	C	C	E	E	E	E	E	D
HCM2k95thQ:	396	969	901	397	825	26	539	539	539	545	500	131

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Note: Queue reported is the distance per lane in feet.

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.662
Loss Time (sec):	10	Average Delay (sec/veh):	13.9
Optimal Cycle:	52	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	8	8	8	8	8	8
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	1 0	0 0	1! 0	0	0 1	0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	76	1796	9	19	1546	28	78	0	53	38	4	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	1796	9	19	1546	28	78	0	53	38	4	31
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	1796	9	19	1546	28	78	0	53	38	4	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	1796	9	19	1546	28	78	0	53	38	4	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	1796	9	19	1546	28	78	0	53	38	4	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	1796	9	19	1546	28	78	0	53	38	4	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.89	0.89	0.73	1.00	0.73	0.67	0.67	0.83
Lanes:	1.00	1.99	0.01	1.00	2.95	0.05	0.60	0.00	0.40	0.90	0.10	1.00
Final Sat.:	1769	3517	18	1769	4978	90	820	0	557	1154	121	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.51	0.51	0.01	0.31	0.31	0.10	0.00	0.10	0.03	0.03	0.02
Crit Moves:		****			****			****				
Green Time:	13.9	110	110.4	4.0	101	100.5	20.6	0.0	20.6	20.6	20.6	20.6
Volume/Cap:	0.45	0.67	0.67	0.39	0.45	0.45	0.67	0.00	0.67	0.23	0.23	0.14
Uniform Del:	61.9	8.4	8.4	69.3	9.9	9.9	59.0	0.0	59.0	55.2	55.2	54.5
IncremntDel:	1.9	0.7	0.7	5.1	0.1	0.1	8.7	0.0	8.7	0.7	0.7	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Delay/Veh:	63.8	9.1	9.1	74.4	10.0	10.0	67.7	0.0	67.7	55.9	55.9	54.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.8	9.1	9.1	74.4	10.0	10.0	67.7	0.0	67.7	55.9	55.9	54.7
LOS by Move:	E	A	A	E	A	A	E	A	E	E	E	D
HCM2k95thQ:	182	871	871	67	508	508	320	0	320	92	92	64

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Note: Queue reported is the distance per lane in feet.

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec): 145 Critical Vol./Cap.(X): 0.727
Loss Time (sec): 10 Average Delay (sec/veh): 27.8
Optimal Cycle: 62 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	0	0	10	10	11	0	11	0	0	0				
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0				
Lanes:	1	0	3	0 0	0	0	2	1 0	1	0	0	0 1	0	0	0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	413	1780	0	0	1465	97	226	0	211	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	413	1780	0	0	1465	97	226	0	211	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	413	1780	0	0	1465	97	226	0	211	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	413	1780	0	0	1465	97	226	0	211	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	413	1780	0	0	1465	97	226	0	211	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	413	1780	0	0	1465	97	226	0	211	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.89	1.00	1.00	0.88	0.88	0.93	1.00	0.83	1.00	1.00	1.00				
Lanes:	1.00	3.00	0.00	0.00	2.81	0.19	1.00	0.00	1.00	0.00	0.00	0.00				
Final Sat.:	1769	5083	0	0	4725	313	1769	0	1583	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.23	0.35	0.00	0.00	0.31	0.31	0.13	0.00	0.13	0.00	0.00	0.00				
Crit Moves:	****				****				****							
Green Time:	46.6	108	0.0	0.0	61.8	61.8	26.6	0.0	26.6	0.0	0.0	0.0				
Volume/Cap:	0.73	0.47	0.00	0.00	0.73	0.73	0.70	0.00	0.73	0.00	0.00	0.00				
Uniform Del:	43.6	7.1	0.0	0.0	34.6	34.6	55.4	0.0	55.8	0.0	0.0	0.0				
IncremntDel:	4.7	0.1	0.0	0.0	1.3	1.3	6.5	0.0	8.9	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00				
Delay/Veh:	48.3	7.2	0.0	0.0	35.8	35.8	61.9	0.0	64.7	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	48.3	7.2	0.0	0.0	35.8	35.8	61.9	0.0	64.7	0.0	0.0	0.0				
LOS by Move:	D	A	A	A	D	D	E	A	E	A	A	A				
HCM2k95thQ:	741	505	0	0	907	907	482	0	469	0	0	0				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	10	Average Delay (sec/veh):	12.3
Optimal Cycle:	39	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	212	2241	6	32	1629	14	22	1	24	7	2	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	2241	6	32	1629	14	22	1	24	7	2	4
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	2241	6	32	1629	14	22	1	24	7	2	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	2241	6	32	1629	14	22	1	24	7	2	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	2241	6	32	1629	14	22	1	24	7	2	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	2241	6	32	1629	14	22	1	24	7	2	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.78	0.78	0.78	0.82	0.82	0.82
Lanes:	1.00	2.99	0.01	1.00	2.97	0.03	0.47	0.02	0.51	0.54	0.15	0.31
Final Sat.:	1769	5070	14	1769	5035	43	695	32	758	839	240	479
Capacity Analysis Module:												
Vol/Sat:	0.12	0.44	0.44	0.02	0.32	0.32	0.03	0.03	0.03	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	33.5	119	119.1	4.9	90.5	90.5	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.52	0.54	0.54	0.54	0.52	0.52	0.42	0.42	0.42	0.11	0.11	0.11
Uniform Del:	48.7	4.1	4.1	69.0	15.2	15.2	63.9	63.9	63.9	62.4	62.4	62.4
IncremntDel:	1.2	0.1	0.1	9.5	0.2	0.2	2.5	2.5	2.5	0.4	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	49.9	4.3	4.3	78.4	15.3	15.3	66.4	66.4	66.4	62.9	62.9	62.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.9	4.3	4.3	78.4	15.3	15.3	66.4	66.4	66.4	62.9	62.9	62.9
LOS by Move:	D	A	A	E	B	B	E	E	E	E	E	E
HCM2k95thQ:	398	532	532	111	642	642	125	125	125	32	32	32

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Note: Queue reported is the distance per lane in feet.

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec): 140 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 9 Average Delay (sec/veh): 34.0
Optimal Cycle: 47 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Ignore			
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 3	0	1	1	0 2	1	0	2	0 0	0	1	0	0 0	0	1
Volume Module: >> Count Date: 29 Sep 2009 << 5:00 - 6:00 AM																
Base Vol:	145	1201	98		411	913	416		514	0	243		0	0	742	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	145	1201	98		411	913	416		514	0	243		0	0	742	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	145	1201	98		411	913	416		514	0	243		0	0	742	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Volume:	145	1201	98		411	913	416		514	0	243		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	145	1201	98		411	913	416		514	0	243		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	145	1201	98		411	913	416		514	0	243		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.85		0.95	0.87	0.87		0.92	1.00	0.85		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	2.06	0.94		2.00	0.00	1.00		0.00	0.00	1.00	
Final Sat.:	1805	5187	1615		1805	3396	1547		3502	0	1615		0	0	1900	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.23	0.06		0.23	0.27	0.27		0.15	0.00	0.15		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green Time:	22.8	50.1	50.1		49.2	76.4	76.4		31.7	0.0	54.6		0.0	0.0	0.0	
Volume/Cap:	0.49	0.65	0.17		0.65	0.49	0.49		0.65	0.00	0.39		0.00	0.00	0.00	
Uniform Del:	53.3	37.6	30.8		38.1	19.7	19.7		49.1	0.0	30.7		0.0	0.0	0.0	
IncremntDel:	1.3	0.8	0.1		2.3	0.1	0.1		1.9	0.0	0.4		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.00	1.00		0.00	0.00	0.00	
Delay/Veh:	54.6	38.4	30.9		40.5	19.9	19.9		50.9	0.0	31.1		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	54.6	38.4	30.9		40.5	19.9	19.9		50.9	0.0	31.1		0.0	0.0	0.0	
LOS by Move:	D	D	C		D	B	B		D	A	C		A	A	A	
HCM2k95thQ:	292	700	141		666	571	571		466	0	340		0	0	0	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.425
Loss Time (sec):	4	Average Delay (sec/veh):	11.5
Optimal Cycle:	19	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	8	8	8	8	8	8
Y+R:	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	68	168	42	24	97	28	12	320	84	28	242	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	168	42	24	97	28	12	320	84	28	242	36
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	168	42	24	97	28	12	320	84	28	242	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	168	42	24	97	28	12	320	84	28	242	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	168	42	24	97	28	12	320	84	28	242	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	168	42	24	97	28	12	320	84	28	242	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.92	0.92	0.92
Lanes:	0.24	0.61	0.15	0.16	0.65	0.19	0.03	0.77	0.20	0.09	0.79	0.12
Final Sat.:	403	995	249	274	1106	319	52	1380	362	159	1377	205
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	0.09	0.09	0.09	0.23	0.23	0.23	0.18	0.18	0.18
Crit Moves:		****						****				
Green Time:	27.8	27.8	27.8	27.8	27.8	27.8	38.2	38.2	38.2	38.2	38.2	38.2
Volume/Cap:	0.43	0.43	0.43	0.22	0.22	0.22	0.43	0.43	0.43	0.32	0.32	0.32
Uniform Del:	15.3	15.3	15.3	13.9	13.9	13.9	9.4	9.4	9.4	8.8	8.8	8.8
IncremntDel:	0.4	0.4	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	15.7	15.7	15.7	14.1	14.1	14.1	9.7	9.7	9.7	9.0	9.0	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.7	15.7	15.7	14.1	14.1	14.1	9.7	9.7	9.7	9.0	9.0	9.0
LOS by Move:	B	B	B	B	B	B	A	A	A	A	A	A
HCM2k95thQ:	228	228	228	112	112	112	268	268	268	186	186	186

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Note: Queue reported is the distance per lane in feet.

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.620
Loss Time (sec):	4	Average Delay (sec/veh):	11.9
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	229	116	42	69	108	34	49	689	106	34	597	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	116	42	69	108	34	49	689	106	34	597	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	229	116	42	69	108	34	49	689	106	34	597	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	229	116	42	69	108	34	49	689	106	34	597	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	229	116	42	69	108	34	49	689	106	34	597	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	229	116	42	69	108	34	49	689	106	34	597	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.94	0.94	0.82	0.82	0.82	0.33	0.96	0.96	0.25	0.97	0.97
Lanes:	1.00	0.73	0.27	0.33	0.51	0.16	1.00	0.87	0.13	1.00	0.94	0.06
Final Sat.:	1516	1312	475	512	801	252	633	1581	243	469	1745	102
Capacity Analysis Module:												
Vol/Sat:	0.15	0.09	0.09	0.13	0.13	0.13	0.08	0.44	0.44	0.07	0.34	0.34
Crit Moves:	****							****				
Green Time:	18.3	18.3	18.3	18.3	18.3	18.3	52.7	52.7	52.7	52.7	52.7	52.7
Volume/Cap:	0.62	0.36	0.36	0.55	0.55	0.55	0.11	0.62	0.62	0.10	0.49	0.49
Uniform Del:	25.3	23.5	23.5	24.8	24.8	24.8	3.6	5.9	5.9	3.6	5.0	5.0
IncremntDel:	3.2	0.5	0.5	1.8	1.8	1.8	0.1	0.9	0.9	0.1	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	28.5	24.0	24.0	26.6	26.6	26.6	3.7	6.8	6.8	3.7	5.3	5.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.5	24.0	24.0	26.6	26.6	26.6	3.7	6.8	6.8	3.7	5.3	5.3
LOS by Move:	C	C	C	C	C	C	A	A	A	A	A	A
HCM2k95thQ:	278	165	165	245	245	245	24	474	474	18	329	329

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Note: Queue reported is the distance per lane in feet.

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.503
Loss Time (sec):	4	Average Delay (sec/veh):	15.5
Optimal Cycle:	21	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Prot+Permit				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0			
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 2 Feb 2010 << 5:00 - 6:00 p.m.																
Base Vol:	166	16	69	54	19	58	36	369	98	47	433	41				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	166	16	69	54	19	58	36	369	98	47	433	41				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	166	16	69	54	19	58	36	369	98	47	433	41				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	166	16	69	54	19	58	36	369	98	47	433	41				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	166	16	69	54	19	58	36	369	98	47	433	41				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	166	16	69	54	19	58	36	369	98	47	433	41				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.74	0.74	0.74	0.73	0.89	0.89	0.95	0.97	0.97	0.95	0.99	0.99				
Lanes:	0.67	0.06	0.27	1.00	0.25	0.75	1.00	0.79	0.21	1.00	0.91	0.09				
Final Sat.:	927	89	385	1385	416	1269	1805	1455	386	1805	1713	162				
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.18	0.04	0.05	0.05	0.02	0.25	0.25	0.03	0.25	0.25				
Crit Moves:	****							****		****						
Green Time:	31.6	31.6	31.6	31.6	31.6	31.6	50.4	44.8	44.8	46.2	41.6	41.6				
Volume/Cap:	0.48	0.48	0.48	0.10	0.12	0.12	0.08	0.48	0.48	0.10	0.52	0.52				
Uniform Del:	20.4	20.4	20.4	17.4	17.6	17.6	8.5	12.7	12.7	9.7	14.8	14.8				
IncremntDel:	0.7	0.7	0.7	0.1	0.1	0.1	0.1	0.4	0.4	0.1	0.5	0.5				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	21.1	21.1	21.1	17.5	17.7	17.7	8.6	13.1	13.1	9.8	15.3	15.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	21.1	21.1	21.1	17.5	17.7	17.7	8.6	13.1	13.1	9.8	15.3	15.3				
LOS by Move:	C	C	C	B	B	B	A	B	B	A	B	B				
HCM2k95thQ:	264	264	264	49	69	69	23	373	373	28	381	381				

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Note: Queue reported is the distance per lane in feet.

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.476
Loss Time (sec):	0	Average Delay (sec/veh):	11.2
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	0	1 0	0 0	0 0	0 0	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:30-5:30 p.m.												
Base Vol:	0	183	175	77	145	0	0	0	0	181	0	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	183	175	77	145	0	0	0	0	181	0	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	183	175	77	145	0	0	0	0	181	0	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	183	175	77	145	0	0	0	0	181	0	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	183	175	77	145	0	0	0	0	181	0	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	183	175	77	145	0	0	0	0	181	0	95
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.51	0.49	0.35	0.65	0.00	0.00	0.00	0.00	0.66	0.00	0.34
Final Sat.:	0	384	367	233	439	0	0	0	0	435	0	229
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.48	0.48	0.33	0.33	xxxx	xxxx	xxxx	xxxx	0.42	xxxx	0.42
Crit Moves:		****			****							****
Delay/Veh:	0.0	11.5	11.5	10.4	10.4	0.0	0.0	0.0	0.0	11.4	0.0	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.5	11.5	10.4	10.4	0.0	0.0	0.0	0.0	11.4	0.0	11.4
LOS by Move:	*	B	B	B	B	*	*	*	*	B	*	B
ApproachDel:		11.5			10.4			xxxxxx			11.4	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		11.5			10.4			xxxxxx			11.4	
LOS by Appr:		B			B			*			B	
AllWayAvgQ:	20.2	20.2	20.2	10.9	10.9	10.9	0.0	0.0	0.0	15.0	15.0	15.0

Note: Queue reported is the distance per lane in feet.

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	60	Critical Vol./Cap.(X):	0.808
Loss Time (sec):	0	Average Delay (sec/veh):	19.0
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	1	0 0	0 1	1	0 1	0 0	0	0 0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<												
Base Vol:	0	0	0	196	0	125	168	286	0	0	355	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	196	0	125	168	286	0	0	355	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	196	0	125	168	286	0	0	355	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	196	0	125	168	286	0	0	355	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	196	0	125	168	286	0	0	355	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	196	0	125	168	286	0	0	355	151
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.70	0.30
Final Sat.:	0	0	0	477	0	564	531	575	0	0	439	187
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.41	xxxx	0.22	0.32	0.50	xxxx	xxxx	0.81	0.81
Crit Moves:				****				****			****	
Delay/Veh:	0.0	0.0	0.0	14.6	0.0	10.4	12.3	14.5	0.0	0.0	27.7	27.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	14.6	0.0	10.4	12.3	14.5	0.0	0.0	27.7	27.7
LOS by Move:	*	*	*	B	*	B	B	B	*	*	D	D
ApproachDel:		xxxxxx			13.0			13.7			27.7	
Delay Adj:		xxxxx			1.00			1.00			1.00	
ApprAdjDel:		xxxxxx			13.0			13.7			27.7	
LOS by Appr:		*			B			B			D	
AllWayAvgQ:	0.0	0.0	0.0	15.4	0.0	6.3	10.9	22.8	0.0	82.6	82.6	82.6

Note: Queue reported is the distance per lane in feet.

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.461
Loss Time (sec):	4	Average Delay (sec/veh):	15.0
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0 0	0	1	0	0 0	0	0	0	0 1	0	1	1	0 1	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	362	0	128		0	0	0		0	340	291		84	439	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	362	0	128		0	0	0		0	340	291		84	439	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	362	0	128		0	0	0		0	340	291		84	439	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	362	0	128		0	0	0		0	340	291		84	439	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	362	0	128		0	0	0		0	340	291		84	439	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	362	0	128		0	0	0		0	340	291		84	439	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.00	0.08		0.00	0.00	0.00		0.00	0.18	0.18		0.05	0.24	0.00	
Crit Moves:	****									****				****		
Green Time:	31.1	0.0	31.1		0.0	0.0	0.0		0.0	27.7	27.7		7.2	34.9	0.0	
Volume/Cap:	0.46	0.00	0.18		0.00	0.00	0.00		0.00	0.46	0.46		0.46	0.47	0.00	
Uniform Del:	13.6	0.0	11.8		0.0	0.0	0.0		0.0	15.6	15.6		29.6	11.5	0.0	
IncremntDel:	0.4	0.0	0.1		0.0	0.0	0.0		0.0	0.5	0.5		1.8	0.4	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Delay/Veh:	14.0	0.0	11.9		0.0	0.0	0.0		0.0	16.1	16.2		31.4	11.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.0	0.0	11.9		0.0	0.0	0.0		0.0	16.1	16.2		31.4	11.9	0.0	
LOS by Move:	B	A	B		A	A	A		A	B	B		C	B	A	
HCM2k95thQ:	279	0	88		0	0	0		0	277	246		119	311	0	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.487
Loss Time (sec):	0	Average Delay (sec/veh):	12.4
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module: >> Count Date: 17 Nov 2009 << 4:15 - 5:15 p.m.												
Base Vol:	0	197	68	273	96	0	6	6	19	72	1	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	197	68	273	96	0	6	6	19	72	1	230
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	197	68	273	96	0	6	6	19	72	1	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	197	68	273	96	0	6	6	19	72	1	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	197	68	273	96	0	6	6	19	72	1	230
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	197	68	273	96	0	6	6	19	72	1	230
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.74	0.26	1.00	1.00	0.00	0.19	0.19	0.62	1.00	0.01	0.99
Final Sat.:	0	448	155	561	605	0	98	98	310	510	3	613
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.44	0.44	0.49	0.16	xxxx	0.06	0.06	0.06	0.14	0.37	0.37
Crit Moves:			****	****			****				****	
Delay/Veh:	0.0	13.0	13.0	14.5	9.5	0.0	9.8	9.8	9.8	10.5	11.2	11.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.0	13.0	14.5	9.5	0.0	9.8	9.8	9.8	10.5	11.2	11.2
LOS by Move:	*	B	B	B	A	*	A	A	A	B	B	B
ApproachDel:		13.0			13.2			9.8			11.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.0			13.2			9.8			11.1	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	17.7	17.7	17.7	21.5	4.4	4.4	1.3	1.3	1.3	3.7	12.9	12.9

Note: Queue reported is the distance per lane in feet.

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec):	110	Critical Vol./Cap.(X):	0.772
Loss Time (sec):	10	Average Delay (sec/veh):	26.9
Optimal Cycle:	67	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	6	6	5	6	0	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	0 0	0 0	0	1 0	0 1	
Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m.												
Base Vol:	0	394	447	377	236	0	0	0	0	515	0	455
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	394	447	377	236	0	0	0	0	515	0	455
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	394	447	377	236	0	0	0	0	515	0	455
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	394	447	377	236	0	0	0	0	515	0	455
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	394	447	377	236	0	0	0	0	515	0	455
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	394	447	377	236	0	0	0	0	515	0	455
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.28	0.21	0.12	0.00	0.00	0.00	0.00	0.29	0.00	0.28
Crit Moves:		****		****						****		
Green Time:	0.0	29.6	70.2	29.8	59.3	0.0	0.0	0.0	0.0	40.7	0.0	70.4
Volume/Cap:	0.00	0.77	0.43	0.77	0.23	0.00	0.00	0.00	0.00	0.77	0.00	0.44
Uniform Del:	0.0	37.1	9.9	37.0	13.3	0.0	0.0	0.0	0.0	30.6	0.0	9.9
IncremntDel:	0.0	7.1	0.3	7.4	0.1	0.0	0.0	0.0	0.0	5.5	0.0	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Delay/Veh:	0.0	44.2	10.2	44.4	13.4	0.0	0.0	0.0	0.0	36.1	0.0	10.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	44.2	10.2	44.4	13.4	0.0	0.0	0.0	0.0	36.1	0.0	10.2
LOS by Move:	A	D	B	D	B	A	A	A	A	D	A	B
HCM2k95thQ:	0	561	348	599	202	0	0	0	0	684	0	357

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: F[50.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 1	0	0	0	0 1	0	0	0	0 1!	0	0	0	0	0	0
Volume Module: >> Count Date: 19 Nov 2009 << 4:45-5:45 p.m.																
Base Vol:	61	675	0	0	584	82	54	0	33	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	61	675	0	0	584	82	54	0	33	0	0	0				
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	61	675	0	0	584	82	54	0	33	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	61	675	0	0	584	82	54	0	33	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	61	675	0	0	584	82	54	0	33	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	666	xxxx	xxxxx	xxxx	xxxx	xxxxx	1399	1399	625	xxxx	xxxx	xxxxx				
Potent Cap.:	933	xxxx	xxxxx	xxxx	xxxx	xxxxx	121	110	488	xxxx	xxxx	xxxxx				
Move Cap.:	933	xxxx	xxxxx	xxxx	xxxx	xxxxx	115	103	488	xxxx	xxxx	xxxxx				
Volume/Cap:	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	0.47	0.00	0.07	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	5.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	162	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.7	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	50.3	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx				50.3			xxxxxx					
ApproachLOS:	*			*				F			*					

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 25.1 Worst Case Level Of Service: F[171.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module: >> Count Date: 18 Nov 2009 << 4:30 - 5:30 p.m.												
Base Vol:	113	520	89	46	471	126	88	19	105	17	3	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	113	520	89	46	471	126	88	19	105	17	3	18
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	113	520	89	46	471	126	88	19	105	17	3	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	113	520	89	46	471	126	88	19	105	17	3	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	113	520	89	46	471	126	88	19	105	17	3	18
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	597	xxxx	xxxxx	351	xxxx	xxxxx	1406	1450	534	1472	1474	294
Potent Cap.:	989	xxxx	xxxxx	945	xxxx	xxxxx	91	103	550	82	99	582
Move Cap.:	989	xxxx	xxxxx	945	xxxx	xxxxx	76	86	550	49	84	582
Volume/Cap:	0.11	xxxx	xxxx	0.05	xxxx	xxxx	1.16	0.22	0.19	0.35	0.04	0.03
Level Of Service Module:												
2Way95thQ:	9.6	xxxx	xxxxx	3.8	xxxx	xxxxx	xxxx	xxxx	17.5	xxxx	xxxx	xxxxx
Control Del:	9.1	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	13.1	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	78	xxxx	xxxxx	xxxx	92	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	1.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	327.1	xxxx	xxxxx	xxxxx	69.7	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			171.6			69.7		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the distance per lane in feet.

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.526
Loss Time (sec): 6 Average Delay (sec/veh): 9.3
Optimal Cycle: 28 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	6	6	6	6	6	6
Y+R:	5.2	5.2	5.2	5.2	5.2	5.2	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module: >> Count Date: 17 Nov 2009 << 5:00-6:00 P.M.												
Base Vol:	88	567	105	60	536	123	148	98	70	32	68	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	567	105	60	536	123	148	98	70	32	68	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	567	105	60	536	123	148	98	70	32	68	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	567	105	60	536	123	148	98	70	32	68	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	567	105	60	536	123	148	98	70	32	68	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	567	105	60	536	123	148	98	70	32	68	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.33	0.98	0.98	0.32	0.97	0.97	0.67	0.94	0.94	0.54	0.95	0.95
Lanes:	1.00	0.84	0.16	1.00	0.81	0.19	1.00	0.58	0.42	1.00	0.63	0.37
Final Sat.:	625	1566	290	610	1502	345	1279	1039	742	1034	1131	665
Capacity Analysis Module:												
Vol/Sat:	0.14	0.36	0.36	0.10	0.36	0.36	0.12	0.09	0.09	0.03	0.06	0.06
Crit Moves:		****					****					
Green Time:	44.7	44.7	44.7	44.7	44.7	44.7	14.3	14.3	14.3	14.3	14.3	14.3
Volume/Cap:	0.20	0.53	0.53	0.14	0.52	0.52	0.53	0.43	0.43	0.14	0.27	0.27
Uniform Del:	3.7	5.0	5.0	3.5	4.9	4.9	22.4	21.8	21.8	20.4	21.0	21.0
IncremntDel:	0.2	0.4	0.4	0.2	0.4	0.4	1.8	0.8	0.8	0.3	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	3.9	5.4	5.4	3.7	5.3	5.3	24.2	22.6	22.6	20.7	21.4	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	3.9	5.4	5.4	3.7	5.3	5.3	24.2	22.6	22.6	20.7	21.4	21.4
LOS by Move:	A	A	A	A	A	A	C	C	C	C	C	C
HCM2k95thQ:	34	317	317	22	310	310	170	167	167	33	101	101

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Note: Queue reported is the distance per lane in feet.

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	4	Average Delay (sec/veh):	28.1
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.0	4.2	4.0	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 0	0	0 0 1	0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	525	538	0	0	386	102	237	0	602	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	525	538	0	0	386	102	237	0	602	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	525	538	0	0	386	102	237	0	602	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	525	538	0	0	386	102	237	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	525	538	0	0	386	102	237	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	525	538	0	0	386	102	237	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.95	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.79	0.21	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1432	378	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.30	0.29	0.00	0.00	0.27	0.27	0.13	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	49.2	93.8	0.0	0.0	44.7	44.7	22.2	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.72	0.37	0.00	0.00	0.72	0.72	0.72	0.00	0.00	0.00	0.00	0.00
Uniform Del:	29.7	4.0	0.0	0.0	32.4	32.4	46.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	3.6	0.2	0.0	0.0	3.9	3.9	7.8	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	33.4	4.2	0.0	0.0	36.3	36.3	53.9	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.4	4.2	0.0	0.0	36.3	36.3	53.9	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	D	D	D	A	A	A	A	A
HCM2k95thQ:	700	289	0	0	673	673	446	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.566
Loss Time (sec):	4	Average Delay (sec/veh):	26.5
Optimal Cycle:	26	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	0 1	0	0 1	0 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	3	781	107	325	689	13	75	80	56	69	2	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	781	107	325	689	13	75	80	56	69	2	226
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	781	107	325	689	13	75	80	56	69	2	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	781	107	325	689	13	75	80	56	69	2	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	781	107	325	689	13	75	80	56	69	2	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	781	107	325	689	13	75	80	56	69	2	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.64	0.92	0.92	0.63	0.63	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.59	0.41	0.97	0.03	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1221	1027	719	1167	34	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.07	0.18	0.19	0.01	0.06	0.08	0.08	0.06	0.06	0.14
Crit Moves:		****		****								****
Green Time:	12.5	46.8	46.8	38.9	73.2	73.2	30.3	30.3	30.3	30.3	30.3	30.3
Volume/Cap:	0.02	0.57	0.17	0.57	0.32	0.01	0.24	0.31	0.31	0.23	0.23	0.57
Uniform Del:	48.2	28.7	24.0	33.5	11.3	9.2	35.7	36.4	36.4	35.7	35.7	39.1
IncremntDel:	0.0	0.6	0.1	1.3	0.1	0.0	0.4	0.4	0.4	0.4	0.4	1.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	48.2	29.2	24.1	34.9	11.4	9.2	36.2	36.8	36.8	36.1	36.1	41.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.2	29.2	24.1	34.9	11.4	9.2	36.2	36.8	36.8	36.1	36.1	41.0
LOS by Move:	D	C	C	C	B	A	D	D	D	D	D	D
HCM2k95thQ:	6	520	128	437	281	9	117	204	204	111	111	369

Note: Queue reported is the distance per lane in feet.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[15.9]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2000 << 5:00 - 6:00 p.m.												
Base Vol:	61	773	0	0	829	23	25	0	68	0	0	0
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
Initial Bse:	61	773	0	0	829	23	25	0	68	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	773	0	0	829	23	25	0	68	0	0	0
User Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00
PHF Volume:	61	773	0	0	829	23	25	0	68	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	61	773	0	0	829	23	25	0	68	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	636	xxxx	xxxxx	xxxx	xxxx	xxxxx	1183	xxxx	167	xxxx	xxxx	xxxxx
Potent Cap.:	870	xxxx	xxxxx	xxxx	xxxx	xxxxx	168	xxxx	776	xxxx	xxxx	xxxxx
Move Cap.:	870	xxxx	xxxxx	xxxx	xxxx	xxxxx	159	xxxx	776	xxxx	xxxx	xxxxx
Volume/Cap:	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	0.16	xxxx	0.09	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	5.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	13.6	xxxx	7.2	xxxx	xxxx	xxxxx
Control Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	31.8	xxxx	10.1	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			15.9			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the distance per lane in feet.

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec):	130	Critical Vol./Cap.(X):	0.889
Loss Time (sec):	8	Average Delay (sec/veh):	53.5
Optimal Cycle:	104	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2 0	1	1	1 0	1 0	1 0	1 0	1	1	1 0	0 1
Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM												
Base Vol:	150	518	422	511	524	20	19	205	103	382	156	401
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	518	422	511	524	20	19	205	103	382	156	401
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	518	422	511	524	20	19	205	103	382	156	401
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	518	422	511	524	20	19	205	103	382	156	401
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	518	422	511	524	20	19	205	103	382	156	401
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	518	422	511	524	20	19	205	103	382	156	401
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.45	1.49	0.06	1.00	1.00	1.00	1.42	0.58	1.00
Final Sat.:	1769	3538	1583	2501	2565	98	1769	1862	1583	2554	1043	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.15	0.27	0.20	0.20	0.20	0.01	0.11	0.07	0.15	0.15	0.25
Crit Moves:			****	****				****				****
Green Time:	39.0	39.0	39.0	29.9	29.9	29.9	16.1	16.1	16.1	37.0	37.0	37.0
Volume/Cap:	0.28	0.49	0.89	0.89	0.89	0.89	0.09	0.89	0.53	0.52	0.52	0.89
Uniform Del:	34.8	37.3	43.4	48.5	48.5	48.5	50.4	56.1	53.4	39.1	39.1	44.5
IncremntDel:	0.3	0.4	18.3	8.5	8.5	8.5	0.2	31.5	2.6	0.5	0.5	19.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.1	37.7	61.7	57.0	57.0	57.0	50.6	87.6	56.0	39.6	39.6	63.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	37.7	61.7	57.0	57.0	57.0	50.6	87.6	56.0	39.6	39.6	63.6
LOS by Move:	D	D	E	E	E	E	D	F	E	D	D	E
HCM2k95thQ:	223	420	820	753	753	753	36	502	222	429	429	792

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Note: Queue reported is the distance per lane in feet.

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	7	Average Delay (sec/veh):	10.4
Optimal Cycle:	50	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	5	5	5		5	5	5		12	12	12		12	12	12	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1	
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	82	34	59		19	39	14		3	1073	82		66	788	19	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	82	34	59		19	39	14		3	1073	82		66	788	19	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	82	34	59		19	39	14		3	1073	82		66	788	19	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	82	34	59		19	39	14		3	1073	82		66	788	19	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	82	34	59		19	39	14		3	1073	82		66	788	19	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	82	34	59		19	39	14		3	1073	82		66	788	19	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.71	0.89	0.89		0.53	0.94	0.94		0.31	0.97	0.97		0.19	0.98	0.98	
Lanes:	1.00	0.37	0.63		1.00	0.74	0.26		1.00	0.93	0.07		1.00	0.98	0.02	
Final Sat.:	1350	616	1069		1002	1315	472		598	1711	131		359	1811	44	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.06	0.06		0.02	0.03	0.03		0.01	0.63	0.63		0.18	0.44	0.44	
Crit Moves:		****								****						
Green Time:	7.9	7.9	7.9		7.9	7.9	7.9		90.1	90.1	90.1		90.1	90.1	90.1	
Volume/Cap:	0.80	0.73	0.73		0.25	0.39	0.39		0.01	0.73	0.73		0.21	0.51	0.51	
Uniform Del:	47.8	47.5	47.5		45.7	46.2	46.2		1.1	2.8	2.8		1.3	1.9	1.9	
IncremntDel:	35.6	19.4	19.4		1.7	1.9	1.9		0.0	1.8	1.8		0.3	0.3	0.3	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	83.4	66.9	66.9		47.5	48.1	48.1		1.1	4.6	4.6		1.6	2.1	2.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	83.4	66.9	66.9		47.5	48.1	48.1		1.1	4.6	4.6		1.6	2.1	2.1	
LOS by Move:	F	E	E		D	D	D		A	A	A		A	A	A	
HCM2k95thQ:	223	223	223		44	106	106		1	677	677		31	331	331	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.746
Loss Time (sec):	7	Average Delay (sec/veh):	9.8
Optimal Cycle:	52	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0	0	1! 0	0	0	1! 0	1	0	0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM												
Base Vol:	17	16	3	70	25	46	6	1045	64	42	772	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	16	3	70	25	46	6	1045	64	42	772	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	16	3	70	25	46	6	1045	64	42	772	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	16	3	70	25	46	6	1045	64	42	772	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	16	3	70	25	46	6	1045	64	42	772	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	16	3	70	25	46	6	1045	64	42	772	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.78	0.78	0.78	0.30	0.97	0.97	0.17	0.98	0.98
Lanes:	0.48	0.44	0.08	0.50	0.18	0.32	1.00	0.94	0.06	1.00	0.98	0.02
Final Sat.:	727	684	128	733	262	481	575	1739	106	330	1826	31
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.10	0.10	0.10	0.01	0.60	0.60	0.13	0.42	0.42
Crit Moves:					****			****				
Green Time:	13.4	13.4	13.4	13.4	13.4	13.4	84.6	84.6	84.6	84.6	84.6	84.6
Volume/Cap:	0.18	0.18	0.18	0.75	0.75	0.75	0.01	0.75	0.75	0.16	0.53	0.53
Uniform Del:	40.9	40.9	40.9	44.1	44.1	44.1	2.0	5.0	5.0	2.3	3.4	3.4
IncremntDel:	0.4	0.4	0.4	15.0	15.0	15.0	0.0	2.1	2.1	0.3	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.3	41.3	41.3	59.1	59.1	59.1	2.0	7.1	7.1	2.6	3.8	3.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.3	41.3	41.3	59.1	59.1	59.1	2.0	7.1	7.1	2.6	3.8	3.8
LOS by Move:	D	D	D	E	E	E	A	A	A	A	A	A
HCM2k95thQ:	60	60	60	295	295	295	2	795	795	24	412	412

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Note: Queue reported is the distance per lane in feet.

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	7	Average Delay (sec/veh):	21.2
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	10	10		4	10	10	
Y+R:	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Lanes:	1	0	0	1 0	0	1	0	0 1	1	0	1	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM																
Base Vol:	45	1	188		186	3	21		13	1101	11		91	739	36	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	45	1	188		186	3	21		13	1101	11		91	739	36	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	45	1	188		186	3	21		13	1101	11		91	739	36	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	45	1	188		186	3	21		13	1101	11		91	739	36	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	45	1	188		186	3	21		13	1101	11		91	739	36	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	45	1	188		186	3	21		13	1101	11		91	739	36	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.50	0.83	0.83		0.47	0.47	0.83		0.93	0.93	0.93		0.93	0.97	0.97	
Lanes:	1.00	0.01	0.99		0.98	0.02	1.00		1.00	1.98	0.02		1.00	0.95	0.05	
Final Sat.:	942	8	1576		880	14	1583		1769	3499	35		1769	1763	86	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.12	0.12		0.21	0.21	0.01		0.01	0.31	0.31		0.05	0.42	0.42	
Crit Moves:					****				****					****		
Green Time:	31.5	31.5	31.5		31.5	31.5	31.5		4.0	57.1	57.1		9.3	62.5	62.5	
Volume/Cap:	0.16	0.40	0.40		0.70	0.70	0.04		0.19	0.58	0.58		0.58	0.70	0.70	
Uniform Del:	27.0	29.2	29.2		32.6	32.6	26.1		48.9	15.9	15.9		45.9	14.8	14.8	
IncremntDel:	0.3	0.5	0.5		8.2	8.2	0.0		1.4	0.4	0.4		5.3	2.1	2.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	27.3	29.7	29.7		40.8	40.8	26.1		50.3	16.4	16.4		51.2	16.9	16.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	27.3	29.7	29.7		40.8	40.8	26.1		50.3	16.4	16.4		51.2	16.9	16.9	
LOS by Move:	C	C	C		D	D	C		D	B	B		D	B	B	
HCM2k95thQ:	59	246	246		328	328	25		31	570	570		186	775	775	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	90	Critical Vol./Cap.(X):	0.666
Loss Time (sec):	11	Average Delay (sec/veh):	18.6
Optimal Cycle:	52	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	5	0	5	5	5	0	0	5	5
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	2	0	2	1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	0	0	0	381	0	61	31	1307	0	0	1053	242
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	381	0	61	31	1307	0	0	1053	242
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	381	0	61	31	1307	0	0	1053	242
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	381	0	61	31	1307	0	0	1053	242
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	381	0	61	31	1307	0	0	1053	242
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	381	0	61	31	1307	0	0	1053	242
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	3538	0	0	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.04	0.02	0.37	0.00	0.00	0.30	0.15
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	29.1	0.0	29.1	7.8	49.9	0.0	0.0	42.1	42.1
Volume/Cap:	0.00	0.00	0.00	0.67	0.00	0.12	0.20	0.67	0.00	0.00	0.64	0.33
Uniform Del:	0.0	0.0	0.0	26.3	0.0	21.4	38.2	14.2	0.0	0.0	18.2	15.1
IncremntDel:	0.0	0.0	0.0	3.0	0.0	0.1	0.6	0.9	0.0	0.0	0.8	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	29.3	0.0	21.5	38.8	15.0	0.0	0.0	19.0	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	29.3	0.0	21.5	38.8	15.0	0.0	0.0	19.0	15.3
LOS by Move:	A	A	A	C	A	C	D	B	A	A	B	B
HCM2k95thQ:	0	0	0	464	0	62	50	624	0	0	550	211

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Note: Queue reported is the distance per lane in feet.

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.558
Loss Time (sec):	4	Average Delay (sec/veh):	14.2
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	71	15	148	58	17	3	6	772	93	200	928	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	15	148	58	17	3	6	772	93	200	928	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	15	148	58	17	3	6	772	93	200	928	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	15	148	58	17	3	6	772	93	200	928	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	15	148	58	17	3	6	772	93	200	928	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	15	148	58	17	3	6	772	93	200	928	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.70	0.70	0.70	0.87	0.87	0.87	0.93	0.92	0.92
Lanes:	0.30	0.06	0.64	0.74	0.22	0.04	0.01	1.78	0.21	1.00	1.90	0.10
Final Sat.:	462	98	963	982	288	51	23	2934	353	1769	3330	179
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.06	0.06	0.06	0.26	0.26	0.26	0.11	0.28	0.28
Crit Moves:	****						****			****		
Green Time:	22.0	22.0	22.0	22.0	22.0	22.0	37.7	37.7	37.7	16.2	54.0	54.0
Volume/Cap:	0.56	0.56	0.56	0.21	0.21	0.21	0.56	0.56	0.56	0.56	0.41	0.41
Uniform Del:	24.8	24.8	24.8	22.3	22.3	22.3	15.1	15.1	15.1	28.7	5.9	5.9
IncremntDel:	1.7	1.7	1.7	0.3	0.3	0.3	0.5	0.5	0.5	2.0	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	26.5	26.5	26.5	22.6	22.6	22.6	15.6	15.6	15.6	30.6	6.0	6.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	26.5	26.5	22.6	22.6	22.6	15.6	15.6	15.6	30.6	6.0	6.0
LOS by Move:	C	C	C	C	C	C	B	B	B	C	A	A
HCM2k95thQ:	274	274	274	82	82	82	377	377	377	211	267	267

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Note: Queue reported is the distance per lane in feet.

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	4	Average Delay (sec/veh):	20.7
Optimal Cycle:	33	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.1	4.5	4.5
Lanes:	1 0	0	1 0	1	1 0	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm												
Base Vol:	90	25	65	440	10	161	203	878	43	31	842	344
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	25	65	440	10	161	203	878	43	31	842	344
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	25	65	440	10	161	203	878	43	31	842	344
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	25	65	440	10	161	203	878	43	31	842	344
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	25	65	440	10	161	203	878	43	31	842	344
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	25	65	440	10	161	203	878	43	31	842	344
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.92	0.92	0.93	0.89	0.89
Lanes:	1.00	0.28	0.72	1.96	0.04	1.00	1.00	1.91	0.09	1.00	1.42	0.58
Final Sat.:	1769	461	1200	3470	79	1583	1769	3349	164	1769	2404	982
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.13	0.13	0.10	0.11	0.26	0.26	0.02	0.35	0.35
Crit Moves:		****			****		****				****	
Green Time:	6.4	6.4	6.4	14.9	14.9	14.9	13.5	45.9	45.9	8.8	41.2	41.2
Volume/Cap:	0.64	0.68	0.68	0.68	0.68	0.55	0.68	0.46	0.46	0.16	0.68	0.68
Uniform Del:	35.7	35.8	35.8	30.3	30.3	29.5	31.2	9.8	9.8	32.3	14.5	14.5
IncremntDel:	9.4	13.4	13.4	2.9	2.9	2.1	6.2	0.2	0.2	0.4	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	45.1	49.3	49.3	33.2	33.2	31.6	37.5	10.0	10.0	32.7	15.6	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	49.3	49.3	33.2	33.2	31.6	37.5	10.0	10.0	32.7	15.6	15.6
LOS by Move:	D	D	D	C	C	C	D	A	A	C	B	B
HCM2k95thQ:	169	178	178	313	313	215	233	319	319	34	508	508

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Note: Queue reported is the distance per lane in feet.

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	4	Average Delay (sec/veh):	18.6
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM																
Base Vol:	32	2	352		207	4	0		36	1171	23		60	1177	204	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	32	2	352		207	4	0		36	1171	23		60	1177	204	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	32	2	352		207	4	0		36	1171	23		60	1177	204	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	32	2	352		207	4	0		36	1171	23		60	1177	204	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	32	2	352		207	4	0		36	1171	23		60	1177	204	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	32	2	352		207	4	0		36	1171	23		60	1177	204	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.94	0.94	0.73		0.93	0.93	1.00		0.93	0.89	0.89		0.90	0.91	0.91	
Lanes:	0.94	0.06	2.00		0.98	0.02	1.00		1.00	2.94	0.06		2.00	1.70	0.30	
Final Sat.:	1674	105	2786		1741	34	1900		1769	4970	98		3432	2949	511	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.13		0.12	0.12	0.00		0.02	0.24	0.24		0.02	0.40	0.40	
Crit Moves:			****		****				****					****		
Green Time:	14.1	14.1	14.1		13.3	13.3	0.0		4.0	40.1	40.1		8.5	44.6	44.6	
Volume/Cap:	0.11	0.11	0.72		0.72	0.72	0.00		0.41	0.47	0.47		0.16	0.72	0.72	
Uniform Del:	27.7	27.7	31.1		31.6	31.6	0.0		36.8	13.0	13.0		32.5	13.0	13.0	
IncremntDel:	0.2	0.2	5.0		8.1	8.1	0.0		3.0	0.1	0.1		0.2	1.3	1.3	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	27.8	27.8	36.0		39.7	39.7	0.0		39.9	13.2	13.2		32.7	14.3	14.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	27.8	27.8	36.0		39.7	39.7	0.0		39.9	13.2	13.2		32.7	14.3	14.3	
LOS by Move:	C	C	D		D	D	A		D	B	B		C	B	B	
HCM2k95thQ:	39	39	302		313	313	0		45	326	326		34	581	581	

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Note: Queue reported is the distance per lane in feet.

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	0.810
Loss Time (sec):	0	Average Delay (sec/veh):	24.1
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1	0	1	0	0 1 0
Volume Module: >> Count Date: 17 Nov 2000 << 5:00-6:00 p.m.												
Base Vol:	10	76	447	16	37	41	16	175	12	395	261	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	76	447	16	37	41	16	175	12	395	261	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	76	447	16	37	41	16	175	12	395	261	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	76	447	16	37	41	16	175	12	395	261	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	76	447	16	37	41	16	175	12	395	261	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	76	447	16	37	41	16	175	12	395	261	15
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.88	1.00	0.17	0.39	0.44	1.00	0.94	0.06	1.00	0.95	0.05
Final Sat.:	57	433	553	74	171	190	426	431	30	488	494	28
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.81	0.22	0.22	0.22	0.04	0.41	0.41	0.81	0.53	0.53
Crit Moves:			****		****			****		****		
Delay/Veh:	11.3	11.3	29.6	12.6	12.6	12.6	11.0	14.8	14.8	33.5	16.6	16.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.3	11.3	29.6	12.6	12.6	12.6	11.0	14.8	14.8	33.5	16.6	16.6
LOS by Move:	B	B	D	B	B	B	B	B	B	D	C	C
ApproachDel:	26.6			12.6			14.5			26.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	26.6			12.6			14.5			26.6		
LOS by Appr:	D			B			B			D		
AllWayAvgQ:	5.0	5.0	78.7	5.8	5.8	5.8	0.9	14.9	14.9	79.6	25.7	25.7

Note: Queue reported is the distance per lane in feet.

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.660
Loss Time (sec):	10	Average Delay (sec/veh):	45.1
Optimal Cycle:	52	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	10	10	4	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 2	0 1	2	0 2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	207	632	149	104	588	175	360	669	89	393	1110	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	207	632	149	104	588	175	360	669	89	393	1110	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	207	632	149	104	588	175	360	669	89	393	1110	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	207	632	149	104	588	175	360	669	89	393	1110	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	207	632	149	104	588	175	360	669	89	393	1110	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	207	632	149	104	588	175	360	669	89	393	1110	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	3724	1583	3538	3724	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.17	0.09	0.03	0.16	0.11	0.10	0.18	0.06	0.11	0.30	0.12
Crit Moves:	****				****		****				****	
Green Time:	13.3	41.9	41.9	7.3	35.9	35.9	23.1	56.1	56.1	34.7	67.7	67.7
Volume/Cap:	0.66	0.61	0.34	0.61	0.66	0.46	0.66	0.48	0.15	0.48	0.66	0.26
Uniform Del:	66.2	46.9	43.0	70.0	51.6	48.8	59.7	35.8	31.1	49.8	32.2	25.6
IncremntDel:	5.1	1.0	0.5	6.2	1.8	0.9	3.0	0.3	0.1	0.4	1.0	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	71.3	48.0	43.5	76.1	53.4	49.7	62.7	36.1	31.2	50.3	33.1	25.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.3	48.0	43.5	76.1	53.4	49.7	62.7	36.1	31.2	50.3	33.1	25.7
LOS by Move:	E	D	D	E	D	D	E	D	C	D	C	C
HCM2k95thQ:	220	513	227	166	576	337	366	511	130	376	846	251

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.407
Loss Time (sec):	4	Average Delay (sec/veh):	39.1
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 1	0	1 0	2 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module: >> Count Date: 19 Nov 2009 <<												
Base Vol:	239	355	8	1	536	56	9	8	192	10	11	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	355	8	1	536	56	9	8	192	10	11	14
Added Vol:	0	35	0	0	40	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	390	8	1	576	56	9	8	192	10	11	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	390	8	1	576	56	9	8	192	10	11	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	390	8	1	576	56	9	8	192	10	11	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	390	8	1	576	56	9	8	192	10	11	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.90	0.90	0.87	0.87	0.87	0.95	0.92	0.92
Lanes:	1.00	2.94	0.06	1.00	2.73	0.27	0.04	0.04	0.92	1.00	0.44	0.56
Final Sat.:	1805	5067	104	1805	4666	454	72	64	1526	1805	766	975
Capacity Analysis Module:												
Vol/Sat:	0.13	0.08	0.08	0.00	0.12	0.12	0.13	0.13	0.13	0.01	0.01	0.01
Crit Moves:	****				****			****			****	
Green Time:	45.4	54.0	54.0	33.9	42.4	42.4	43.2	43.2	43.2	10.0	10.0	10.0
Volume/Cap:	0.42	0.21	0.21	0.00	0.42	0.42	0.42	0.42	0.42	0.08	0.21	0.21
Delay/Veh:	39.9	31.0	31.0	42.6	41.6	41.6	41.5	41.5	41.5	63.5	64.6	64.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	31.0	31.0	42.6	41.6	41.6	41.5	41.5	41.5	63.5	64.6	64.6
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2k95thQ:	391	210	210	2	388	388	354	354	354	24	62	62

Note: Queue reported is the distance per lane in feet.

Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.663
Loss Time (sec):	4	Average Delay (sec/veh):	18.7
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 2	0 1	1	0 2	0 1	0 1	0	0 1	0 1	0	0 1
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 am - 8:45 am												
Base Vol:	43	772	52	125	1726	54	8	21	12	139	7	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	772	52	125	1726	54	8	21	12	139	7	137
Added Vol:	7	48	0	5	51	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	820	52	130	1777	54	8	21	12	139	7	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	820	52	130	1777	54	8	21	12	139	7	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	820	52	130	1777	54	8	21	12	139	7	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	820	52	130	1777	54	8	21	12	139	7	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.92	0.92	0.83	0.67	0.67	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.28	0.72	1.00	0.95	0.05	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	482	1265	1583	1216	61	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.23	0.03	0.07	0.50	0.03	0.02	0.02	0.01	0.11	0.11	0.09
Crit Moves:	****			****							****	
Green Time:	6.2	88.1	88.1	27.9	110	109.8	25.0	25.0	25.0	25.0	25.0	25.0
Volume/Cap:	0.66	0.38	0.05	0.38	0.66	0.05	0.10	0.10	0.04	0.66	0.66	0.54
Delay/Veh:	88.4	14.7	11.6	51.7	9.2	4.4	50.6	50.6	50.1	63.5	63.5	56.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.4	14.7	11.6	51.7	9.2	4.4	50.6	50.6	50.1	63.5	63.5	56.8
LOS by Move:	F	B	B	D	A	A	D	D	D	E	E	E
HCM2k95thQ:	168	440	47	252	859	31	56	56	23	341	341	309

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	4	Average Delay (sec/veh):	33.6
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1	0 2	0 1	1	0 2	0 1	1	1	0 0 1	1	0	0 1 0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	80	616	30	67	1340	518	344	142	120	62	168	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	616	30	67	1340	518	344	142	120	62	168	13
Added Vol:	10	54	8	3	52	1	2	1	11	5	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	670	38	70	1392	519	346	143	131	67	168	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	670	38	70	1392	519	346	143	131	67	168	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	670	38	70	1392	519	346	143	131	67	168	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	670	38	70	1392	519	346	143	131	67	168	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.96	0.96
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.42	0.58	1.00	1.00	0.89	0.11
Final Sat.:	1769	3538	1583	1769	3538	1583	2545	1052	1583	1769	1627	203
Capacity Analysis Module:												
Vol/Sat:	0.05	0.19	0.02	0.04	0.39	0.33	0.14	0.14	0.08	0.04	0.10	0.10
Crit Moves:	****			****			****				****	
Green Time:	10.5	75.8	75.8	15.8	81.2	81.2	28.0	28.0	28.0	21.3	21.3	21.3
Volume/Cap:	0.70	0.36	0.05	0.36	0.70	0.59	0.70	0.70	0.43	0.26	0.70	0.70
Delay/Veh:	81.9	20.5	16.9	61.1	24.3	21.9	57.8	57.8	52.4	55.4	67.0	67.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.9	20.5	16.9	61.1	24.3	21.9	57.8	57.8	52.4	55.4	67.0	67.0
LOS by Move:	F	C	B	E	C	C	E	E	D	E	E	E
HCM2k95thQ:	257	416	41	158	982	663	468	468	242	138	429	429

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.672
Loss Time (sec):	4	Average Delay (sec/veh):	34.4
Optimal Cycle:	33	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	137	614	59	127	1307	63	78	173	56	97	187	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	137	614	59	127	1307	63	78	173	56	97	187	58
Added Vol:	31	54	1	1	62	12	10	22	19	0	39	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	668	60	128	1369	75	88	195	75	97	226	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	668	60	128	1369	75	88	195	75	97	226	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	668	60	128	1369	75	88	195	75	97	226	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	668	60	128	1369	75	88	195	75	97	226	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.19	0.04	0.07	0.39	0.05	0.05	0.10	0.05	0.05	0.12	0.04
Crit Moves:	****				****		****				****	
Green Time:	20.5	75.2	75.2	28.8	83.5	83.5	10.7	24.2	24.2	12.7	26.2	26.2
Volume/Cap:	0.67	0.36	0.07	0.36	0.67	0.08	0.67	0.63	0.28	0.63	0.67	0.22
Delay/Veh:	66.0	20.8	17.5	50.8	22.1	13.7	78.2	60.2	53.4	71.7	60.6	51.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.0	20.8	17.5	50.8	22.1	13.7	78.2	60.2	53.4	71.7	60.6	51.1
LOS by Move:	E	C	B	D	C	B	E	E	D	E	E	D
HCM2k95thQ:	384	418	66	245	923	74	246	412	152	252	473	126

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.522
Loss Time (sec):	4	Average Delay (sec/veh):	11.4
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	0 0	2 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	0	711	42	0	1396	88	52	27	44	37	56	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	711	42	0	1396	88	52	27	44	37	56	23
Added Vol:	0	51	1	0	71	16	25	2	11	2	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	762	43	0	1467	104	77	29	55	39	66	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	762	43	0	1467	104	77	29	55	39	66	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	762	43	0	1467	104	77	29	55	39	66	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	762	43	0	1467	104	77	29	55	39	66	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.93	0.83	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	0	3538	1583	0	3538	1583	1769	1862	1583	1769	1327	462
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.03	0.00	0.41	0.07	0.04	0.02	0.03	0.02	0.05	0.05
Crit Moves:					****		****					****
Green Time:	0.0	115	115.1	0.0	115	115.1	12.1	12.1	12.1	13.8	13.8	13.8
Volume/Cap:	0.00	0.27	0.03	0.00	0.52	0.08	0.52	0.19	0.42	0.23	0.52	0.52
Delay/Veh:	0.0	4.0	3.2	0.0	5.4	3.3	67.1	62.5	65.2	61.4	65.4	65.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.0	3.2	0.0	5.4	3.3	67.1	62.5	65.2	61.4	65.4	65.4
LOS by Move:	A	A	A	A	A	A	E	E	E	E	E	E
HCM2k95thQ:	0	226	21	0	544	52	196	68	140	89	217	217

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.751
Loss Time (sec):	4	Average Delay (sec/veh):	42.7
Optimal Cycle:	43	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	0 1	0 1	0	2	0 1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	698	295	182	1260	14	33	305	69	503	222	57
Added Vol:	11	51	33	0	80	3	3	0	16	106	1	-3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	749	328	182	1340	17	36	305	85	609	223	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	749	328	182	1340	17	36	305	85	609	223	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	749	328	182	1340	17	36	305	85	609	223	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	749	328	182	1340	17	36	305	85	609	223	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.90	0.90	0.90	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.17	1.43	0.40	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	289	2447	682	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.21	0.10	0.38	0.01	0.12	0.12	0.12	0.18	0.12	0.03
Crit Moves:	****				****		****			****		
Green Time:	9.5	55.6	55.6	27.0	73.2	73.2	24.1	24.1	24.1	34.3	34.3	34.3
Volume/Cap:	0.75	0.55	0.54	0.55	0.75	0.02	0.75	0.75	0.75	0.75	0.51	0.14
Delay/Veh:	90.2	35.4	35.7	55.5	30.5	18.0	63.2	63.2	63.2	55.3	49.0	43.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.2	35.4	35.7	55.5	30.5	18.0	63.2	63.2	63.2	55.3	49.0	43.9
LOS by Move:	F	D	D	E	C	B	E	E	E	E	D	D
HCM2k95thQ:	262	606	519	339	1022	19	502	502	502	632	410	96

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.510
Loss Time (sec):	10	Average Delay (sec/veh):	11.3
Optimal Cycle:	38	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	8	8	8	8	8	8
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	1 0	1	0 2	1 0	0	0 1!	0 0	0	1 0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	28	1031	22	42	1703	31	55	3	41	8	5	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	1031	22	42	1703	31	55	3	41	8	5	5
Added Vol:	6	84	0	0	200	3	4	0	3	4	1	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	1115	22	42	1903	34	59	3	44	12	6	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	1115	22	42	1903	34	59	3	44	12	6	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	1115	22	42	1903	34	59	3	44	12	6	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	1115	22	42	1903	34	59	3	44	12	6	12
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.89	0.89	0.76	0.76	0.76	0.83	0.83	0.83
Lanes:	1.00	1.96	0.04	1.00	2.95	0.05	0.56	0.03	0.41	0.67	0.33	1.00
Final Sat.:	1769	3459	68	1769	4979	89	801	41	598	1054	527	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.32	0.32	0.02	0.38	0.38	0.07	0.07	0.07	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	5.5	105	105.1	9.0	109	108.6	20.9	20.9	20.9	20.9	20.9	20.9
Volume/Cap:	0.51	0.44	0.44	0.38	0.51	0.51	0.51	0.51	0.51	0.08	0.08	0.05
Delay/Veh:	74.9	8.2	8.2	67.6	7.5	7.5	59.4	59.4	59.4	53.8	53.8	53.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.9	8.2	8.2	67.6	7.5	7.5	59.4	59.4	59.4	53.8	53.8	53.6
LOS by Move:	E	A	A	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	112	485	485	112	568	568	240	240	240	37	37	25

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	10	Average Delay (sec/veh):	36.3
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	10	10	7	10	10
Y+R:	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	0	1	0	1	0	1	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	172	982	0	0	1685	64	172	0	334	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	172	982	0	0	1685	64	172	0	334	0	0	0
Added Vol:	16	64	0	64	142	0	4	2	2	21	2	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	188	1046	0	64	1827	64	176	2	336	21	2	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	1046	0	64	1827	64	176	2	336	21	2	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	1046	0	64	1827	64	176	2	336	21	2	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	1046	0	64	1827	64	176	2	336	21	2	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.91	0.93	0.89	0.89	0.93	0.83	0.83	0.93	0.85	0.85
Lanes:	1.00	3.00	0.00	1.00	2.90	0.10	1.00	0.01	0.99	1.00	0.13	0.87
Final Sat.:	1769	5083	0	1769	4887	171	1769	9	1575	1769	202	1416
Capacity Analysis Module:												
Vol/Sat:	0.11	0.21	0.00	0.04	0.37	0.37	0.10	0.21	0.21	0.01	0.01	0.01
Crit Moves:	****				****			****		****		
Green Time:	19.6	75.4	0.0	13.3	69.0	69.0	27.4	39.4	39.4	7.0	19.0	19.0
Volume/Cap:	0.79	0.40	0.00	0.40	0.79	0.79	0.53	0.79	0.79	0.25	0.08	0.08
Delay/Veh:	76.3	21.1	0.0	63.7	33.6	33.6	54.5	58.1	58.1	68.0	55.5	55.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.3	21.1	0.0	63.7	33.6	33.6	54.5	58.1	58.1	68.0	55.5	55.5
LOS by Move:	E	C	A	E	C	C	D	E	E	E	E	E
HCM2k95thQ:	458	460	0	153	1088	1088	353	681	681	58	34	34

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.564
Loss Time (sec):	10	Average Delay (sec/veh):	14.5
Optimal Cycle:	42	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	0	0	1!	0	0	0	1!	0	0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	125	1084	2	25	2021	21	19	0	32	1	0	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1084	2	25	2021	21	19	0	32	1	0	1
Added Vol:	-2	187	24	99	85	0	2	1	1	20	2	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	1271	26	124	2106	21	21	1	33	21	2	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	1271	26	124	2106	21	21	1	33	21	2	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	1271	26	124	2106	21	21	1	33	21	2	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	1271	26	124	2106	21	21	1	33	21	2	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.79	0.79	0.79	0.78	0.78	0.78
Lanes:	1.00	2.94	0.06	1.00	2.97	0.03	0.38	0.02	0.60	0.40	0.04	0.56
Final Sat.:	1769	4966	102	1769	5028	50	570	27	895	595	57	822
Capacity Analysis Module:												
Vol/Sat:	0.07	0.26	0.26	0.07	0.42	0.42	0.04	0.04	0.04	0.04	0.04	0.04
Crit Moves:	****				****			****				
Green Time:	17.7	97.3	97.3	26.7	106	106.3	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.57	0.38	0.38	0.38	0.57	0.57	0.49	0.49	0.49	0.46	0.46	0.46
Delay/Veh:	63.7	10.6	10.6	52.7	9.1	9.1	67.5	67.5	67.5	67.2	67.2	67.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.7	10.6	10.6	52.7	9.1	9.1	67.5	67.5	67.5	67.2	67.2	67.2
LOS by Move:	E	B	B	D	A	A	E	E	E	E	E	E
HCM2k95thQ:	284	422	422	244	687	687	149	149	149	141	141	141

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec): 125 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 9 Average Delay (sec/veh): 28.7
Optimal Cycle: 42 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Ignore			
Min. Green:	7	10	10		7	10	10		7	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0 1	1	0	2	1 0	2	0	0	0 1	0	0	0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 8:00 am - 9:00 am																
Base Vol:	240	560	27		487	1233	308		224	0	229		0	0	447	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	240	560	27		487	1233	308		224	0	229		0	0	447	
Added Vol:	0	78	0		6	59	41		106	0	0		0	0	25	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	240	638	27		493	1292	349		330	0	229		0	0	472	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Volume:	240	638	27		493	1292	349		330	0	229		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	240	638	27		493	1292	349		330	0	229		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	240	638	27		493	1292	349		330	0	229		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.85		0.95	0.88	0.88		0.92	1.00	0.85		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	2.36	0.64		2.00	0.00	1.00		0.00	0.00	1.00	
Final Sat.:	1805	5187	1615		1805	3953	1068		3502	0	1615		0	0	1900	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.12	0.02		0.27	0.33	0.33		0.09	0.00	0.14		0.00	0.00	0.00	
Crit Moves:	****					****			****							
Green Time:	27.8	29.9	29.9		66.4	68.4	68.4		19.7	0.0	47.6		0.0	0.0	0.0	
Volume/Cap:	0.60	0.51	0.07		0.51	0.60	0.60		0.60	0.00	0.37		0.00	0.00	0.00	
Delay/Veh:	46.0	41.6	36.9		19.4	19.4	19.4		50.7	0.0	28.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	46.0	41.6	36.9		19.4	19.4	19.4		50.7	0.0	28.3		0.0	0.0	0.0	
LOS by Move:	D	D	D		B	B	B		D	A	C		A	A	A	
HCM2k95thQ:	413	380	42		546	678	678		290	0	293		0	0	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec): 70 Critical Vol./Cap.(X): 0.587
Loss Time (sec): 4 Average Delay (sec/veh): 13.4
Optimal Cycle: 26 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		8	8	8		8	8	8	
Y+R:	4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	24	100	16		119	223	66		16	238	97		37	367	82	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	24	100	16		119	223	66		16	238	97		37	367	82	
Added Vol:	0	0	0		0	0	0		0	24	1		0	33	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	24	100	16		119	223	66		16	262	98		37	400	82	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	24	100	16		119	223	66		16	262	98		37	400	82	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	24	100	16		119	223	66		16	262	98		37	400	82	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	24	100	16		119	223	66		16	262	98		37	400	82	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	0.89	0.89		0.84	0.84	0.84		0.92	0.92	0.92		0.92	0.92	0.92	
Lanes:	0.17	0.72	0.11		0.29	0.55	0.16		0.04	0.70	0.26		0.07	0.77	0.16	
Final Sat.:	288	1201	192		463	868	257		75	1222	457		125	1347	276	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.08	0.08		0.26	0.26	0.26		0.21	0.21	0.21		0.30	0.30	0.30	
Crit Moves:						****								****		
Green Time:	30.6	30.6	30.6		30.6	30.6	30.6		35.4	35.4	35.4		35.4	35.4	35.4	
Volume/Cap:	0.19	0.19	0.19		0.59	0.59	0.59		0.42	0.42	0.42		0.59	0.59	0.59	
Delay/Veh:	12.2	12.2	12.2		16.2	16.2	16.2		11.2	11.2	11.2		13.2	13.2	13.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.2	12.2	12.2		16.2	16.2	16.2		11.2	11.2	11.2		13.2	13.2	13.2	
LOS by Move:	B	B	B		B	B	B		B	B	B		B	B	B	
HCM2k95thQ:	97	97	97		350	350	350		259	259	259		397	397	397	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.624
Loss Time (sec):	4	Average Delay (sec/veh):	13.9
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 22 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	167	106	22	169	104	52	7	562	61	15	528	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	167	106	22	169	104	52	7	562	61	15	528	29
Added Vol:	0	0	0	0	1	0	0	39	1	0	76	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	167	106	22	169	105	52	7	601	62	15	604	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	167	106	22	169	105	52	7	601	62	15	604	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	106	22	169	105	52	7	601	62	15	604	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	106	22	169	105	52	7	601	62	15	604	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	0.95	0.95	0.75	0.75	0.75	0.27	0.97	0.97	0.25	0.97	0.97
Lanes:	1.00	0.83	0.17	0.52	0.32	0.16	1.00	0.91	0.09	1.00	0.95	0.05
Final Sat.:	1370	1502	312	736	457	227	508	1664	172	471	1764	85
Capacity Analysis Module:												
Vol/Sat:	0.12	0.07	0.07	0.23	0.23	0.23	0.01	0.36	0.36	0.03	0.34	0.34
Crit Moves:					****			****				
Green Time:	27.6	27.6	27.6	27.6	27.6	27.6	43.4	43.4	43.4	43.4	43.4	43.4
Volume/Cap:	0.33	0.19	0.19	0.62	0.62	0.62	0.02	0.62	0.62	0.06	0.59	0.59
Delay/Veh:	17.5	16.3	16.3	21.8	21.8	21.8	6.8	11.6	11.6	7.0	11.0	11.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.5	16.3	16.3	21.8	21.8	21.8	6.8	11.6	11.6	7.0	11.0	11.0
LOS by Move:	B	B	B	C	C	C	A	B	B	A	B	B
HCM2k95thQ:	150	104	104	339	339	339	5	490	490	10	455	455

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.424
Loss Time (sec):	4	Average Delay (sec/veh):	13.2
Optimal Cycle:	19	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 2 Feb 2010 << 7:30 -8:30 A.M.												
Base Vol:	35	80	22	73	69	74	158	403	99	39	368	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	80	22	73	69	74	158	403	99	39	368	50
Added Vol:	8	0	0	0	0	0	0	13	4	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	80	22	73	69	74	158	416	103	39	377	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	80	22	73	69	74	158	416	103	39	377	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	80	22	73	69	74	158	416	103	39	377	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	80	22	73	69	74	158	416	103	39	377	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.87	0.87	0.87	0.82	0.92	0.92	0.95	0.97	0.97	0.95	0.98	0.98
Lanes:	0.30	0.55	0.15	1.00	0.48	0.52	1.00	0.80	0.20	1.00	0.88	0.12
Final Sat.:	490	912	251	1554	845	907	1805	1477	366	1805	1647	218
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.05	0.08	0.08	0.09	0.28	0.28	0.02	0.23	0.23
Crit Moves:		****						****			****	
Green Time:	18.2	18.2	18.2	18.2	18.2	18.2	63.8	58.4	58.4	49.9	45.4	45.4
Volume/Cap:	0.41	0.41	0.41	0.22	0.38	0.38	0.21	0.41	0.41	0.07	0.43	0.43
Delay/Veh:	29.6	29.6	29.6	27.9	29.3	29.3	4.0	6.0	6.0	7.5	12.2	12.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.6	29.6	29.6	27.9	29.3	29.3	4.0	6.0	6.0	7.5	12.2	12.2
LOS by Move:	C	C	C	C	C	C	A	A	A	A	B	B
HCM2k95thQ:	181	181	181	87	174	174	70	291	291	21	307	307

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.389
Loss Time (sec):	0	Average Delay (sec/veh):	10.4
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30 - 8:30 A.M.																
Base Vol:	0	129	154	80	168	0	0	0	0	169	0	44				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	129	154	80	168	0	0	0	0	169	0	44				
Added Vol:	0	4	14	4	0	0	0	0	0	15	0	4				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	133	168	84	168	0	0	0	0	184	0	48				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	133	168	84	168	0	0	0	0	184	0	48				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	133	168	84	168	0	0	0	0	184	0	48				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	133	168	84	168	0	0	0	0	184	0	48				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.00	0.44	0.56	0.33	0.67	0.00	0.00	0.00	0.00	0.79	0.00	0.21				
Final Sat.:	0	342	432	235	470	0	0	0	0	523	0	136				
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.39	0.39	0.36	0.36	xxxx	xxxx	xxxx	xxxx	0.35	xxxx	0.35				
Crit Moves:			****	****						****						
Delay/Veh:	0.0	10.1	10.1	10.5	10.5	0.0	0.0	0.0	0.0	10.7	0.0	10.7				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	10.1	10.1	10.5	10.5	0.0	0.0	0.0	0.0	10.7	0.0	10.7				
LOS by Move:	*	B	B	B	B	*	*	*	*	B	*	B				
ApproachDel:	10.1			10.5		xxxxxx			10.7							
Delay Adj:	1.00			1.00		xxxxx			1.00							
ApprAdjDel:	10.1			10.5		xxxxxx			10.7							
LOS by Appr:	B			B		*			B							
AllWayAvgQ:	14.3	14.3	14.3	12.5	12.5	12.5	0.0	0.0	0.0	11.5	11.5	11.5				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	60	Critical Vol./Cap.(X):	1.030
Loss Time (sec):	0	Average Delay (sec/veh):	41.9
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0	257	0	61	56	391	0	0	356	225				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	257	0	61	56	391	0	0	356	225				
Added Vol:	0	0	0	2	0	16	18	35	0	0	35	2				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	259	0	77	74	426	0	0	391	227				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	259	0	77	74	426	0	0	391	227				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	259	0	77	74	426	0	0	391	227				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	0	0	259	0	77	74	426	0	0	391	227				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.63	0.37				
Final Sat.:	0	0	0	464	0	546	509	550	0	0	380	220				
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx	0.56	xxxx	0.14	0.15	0.77	xxxx	xxxx	1.03	1.03				
Crit Moves:				****				****			****					
Delay/Veh:	0.0	0.0	0.0	19.3	0.0	10.2	10.9	27.7	0.0	0.0	68.9	68.9				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	19.3	0.0	10.2	10.9	27.7	0.0	0.0	68.9	68.9				
LOS by Move:	*	*	*	C	*	B	B	D	*	*	F	F				
ApproachDel:	xxxxxx			17.2				25.2			68.9					
Delay Adj:	xxxxx			1.00				1.00			1.00					
ApprAdjDel:	xxxxxx			17.2				25.2			68.9					
LOS by Appr:	*			C				D			F					
AllWayAvgQ:	0.0	0.0	0.0	28.9	0.0	3.9	4.2	70.7	0.0	250	250	249.6				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.442
Loss Time (sec):	4	Average Delay (sec/veh):	12.6
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	272	0	72		0	0	0		0	372	358		52	339	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	272	0	72		0	0	0		0	372	358		52	339	0	
Added Vol:	11	0	8		0	0	0		0	45	-9		6	45	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	283	0	80		0	0	0		0	417	349		58	384	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	283	0	80		0	0	0		0	417	349		58	384	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	283	0	80		0	0	0		0	417	349		58	384	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	283	0	80		0	0	0		0	417	349		58	384	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.16	0.00	0.05		0.00	0.00	0.00		0.00	0.22	0.22		0.03	0.21	0.00	
Crit Moves:	****									****			****			
Green Time:	25.3	0.0	25.3		0.0	0.0	0.0		0.0	35.5	35.5		5.2	40.7	0.0	
Volume/Cap:	0.44	0.00	0.14		0.00	0.00	0.00		0.00	0.44	0.44		0.44	0.36	0.00	
Delay/Veh:	17.5	0.0	15.1		0.0	0.0	0.0		0.0	11.3	11.3		33.4	7.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	17.5	0.0	15.1		0.0	0.0	0.0		0.0	11.3	11.3		33.4	7.9	0.0	
LOS by Move:	B		A		B		A		A		B		C		A	
HCM2k95thQ:	242		0		62		0		0	287	247		93	221	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.586
Loss Time (sec):	0	Average Delay (sec/veh):	13.5
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	4	4		4	4	4	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45-8:45 a.m.																
Base Vol:	0	146	49		329	138	0		4	6	12		142	9	238	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	146	49		329	138	0		4	6	12		142	9	238	
Added Vol:	0	8	0		-9	7	0		0	0	0		0	0	11	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	154	49		320	145	0		4	6	12		142	9	249	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	154	49		320	145	0		4	6	12		142	9	249	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	154	49		320	145	0		4	6	12		142	9	249	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	154	49		320	145	0		4	6	12		142	9	249	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		1.00	1.00	0.00		0.18	0.27	0.55		1.00	0.03	0.97	
Final Sat.:	0	430	137		546	588	0		89	133	266		509	21	590	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.36	0.36		0.59	0.25	xxxx		0.05	0.05	0.05		0.28	0.42	0.42	
Crit Moves:		****			****					****				****		
Delay/Veh:	0.0	12.3	12.3		17.5	10.5	0.0		9.9	9.9	9.9		12.0	12.2	12.2	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.3	12.3		17.5	10.5	0.0		9.9	9.9	9.9		12.0	12.2	12.2	
LOS by Move:	*	B	B		C	B	*		A	A	A		B	B	B	
ApproachDel:		12.3				15.3				9.9				12.1		
Delay Adj:		1.00				1.00				1.00				1.00		
ApprAdjDel:		12.3				15.3				9.9				12.1		
LOS by Appr:		B				C				A				B		
AllWayAvgQ:	12.6	12.6	12.6		31.7	7.6	7.6		1.0	1.0	1.0		8.8	16.2	16.2	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.717
Loss Time (sec): 10 Average Delay (sec/veh): 25.0
Optimal Cycle: 57 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0		6	6	5		6	0	0		0	0	6		0	6
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lanes:	0	0	1	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m.																
Base Vol:	0	202	315	361	342	0	0	0	0	593	0	266				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	202	315	361	342	0	0	0	0	593	0	266				
Added Vol:	0	0	17	0	0	0	0	0	0	31	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	202	332	361	342	0	0	0	0	624	0	266				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	202	332	361	342	0	0	0	0	624	0	266				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	202	332	361	342	0	0	0	0	624	0	266				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	202	332	361	342	0	0	0	0	624	0	266				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85				
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00				
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.21	0.20	0.18	0.00	0.00	0.00	0.00	0.35	0.00	0.16				
Crit Moves:		****		****						****						
Green Time:	0.0	16.3	69.3	30.7	47.0	0.0	0.0	0.0	0.0	53.0	0.0	83.7				
Volume/Cap:	0.00	0.72	0.33	0.72	0.42	0.00	0.00	0.00	0.00	0.72	0.00	0.22				
Delay/Veh:	0.0	53.2	9.7	40.7	22.4	0.0	0.0	0.0	0.0	25.4	0.0	3.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	53.2	9.7	40.7	22.4	0.0	0.0	0.0	0.0	25.4	0.0	3.9				
LOS by Move:	A	D	A	D	C	A	A	A	A	C	A	A				
HCM2k95thQ:	0	319	248	550	378	0	0	0	0	723	0	128				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 10.9 Worst Case Level Of Service: F[94.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module: >> Count Date: 19 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	176	458	0	0	632	233	47	0	128	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	176	458	0	0	632	233	47	0	128	0	0	0				
Added Vol:	7	17	0	0	31	1	0	0	2	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	183	475	0	0	663	234	47	0	130	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	183	475	0	0	663	234	47	0	130	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	183	475	0	0	663	234	47	0	130	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	897	xxxx	xxxxx	xxxx	xxxx	xxxxx	1639	1639	780	xxxx	xxxx	xxxxx				
Potent Cap.:	765	xxxx	xxxxx	xxxx	xxxx	xxxxx	97	89	399	xxxx	xxxx	xxxxx				
Move Cap.:	765	xxxx	xxxxx	xxxx	xxxx	xxxxx	80	67	399	xxxx	xxxx	xxxxx				
Volume/Cap:	0.24	xxxx	xxxx	xxxx	xxxx	xxxx	0.59	0.00	0.33	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	23.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	11.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	B	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	193	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	7.2	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	94.8	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			94.8			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 9.9 Worst Case Level Of Service: F[78.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	1	0	0 1	0	0	1!	0 0
Volume Module: >> Count Date: 18 Nov 2009 << 7:45 - 8:45 A.M.																
Base Vol:	85	521		7	21	593		135	57		5	83	20		9	20
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	85	521		7	21	593		135	57		5	83	20		9	20
Added Vol:	16	24		0	0	31		2	0		0	4	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	101	545		7	21	624		137	57		5	87	20		9	20
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	101	545		7	21	624		137	57		5	87	20		9	20
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
FinalVolume:	101	545		7	21	624		137	57		5	87	20		9	20
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5		6.2	7.1	6.5		6.2
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0		3.3	3.5	4.0		3.3
Capacity Module:																
Cnflict Vol:	761	xxxx	xxxxx		414	xxxx	xxxxx		1499	1487		693	1536	1561		410
Potent Cap.:	860	xxxx	xxxxx		1009	xxxx	xxxxx		89	110		447	84	99		564
Move Cap.:	860	xxxx	xxxxx		1009	xxxx	xxxxx		71	95		447	58	85		564
Volume/Cap:	0.12	xxxx	xxxx		0.02	xxxx	xxxx		0.81	0.05		0.19	0.34	0.11		0.04
Level Of Service Module:																
2Way95thQ:	9.9	xxxx	xxxxx		1.6	xxxx	xxxxx		xxxx	xxxx		17.8	xxxx	xxxx		xxxxx
Control Del:	9.7	xxxx	xxxxx		8.6	xxxx	xxxxx		xxxxx	xxxx		15.0	xxxxx	xxxx		xxxxx
LOS by Move:	A	*		*	A	*		*	*		*	B	*		*	*
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		72	xxxx	xxxxx		xxxx	101	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.2	xxxx	xxxxx		xxxxx	2.1	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		166.3	xxxx	xxxxx		xxxxx	70.6	xxxxx	
Shared LOS:	*	*		*	*	*		*	F	*		*	*	F		*
ApproachDel:	xxxxxx				xxxxxx				78.0				70.6			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 6 Average Delay (sec/veh): 11.7
Optimal Cycle: 28 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	10		10	10	10		10	10	6		6	6	6		6	6
Y+R:	5.2		5.2	5.2	5.2		5.2	5.2	5.0		5.0	5.0	5.0		5.0	5.0
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45 - 8:45 a.m.																
Base Vol:	75	380		37	126	400		145	115	192		45	18	169		128
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	75	380		37	126	400		145	115	192		45	18	169		128
Added Vol:	28	34		0	0	30		5	6	0		19	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	103	414		37	126	430		150	121	192		64	18	169		128
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	103	414		37	126	430		150	121	192		64	18	169		128
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	103	414		37	126	430		150	121	192		64	18	169		128
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	103	414		37	126	430		150	121	192		64	18	169		128
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.33	0.99		0.99	0.42	0.96		0.96	0.41	0.96		0.96	0.47	0.94		0.94
Lanes:	1.00	0.92		0.08	1.00	0.74		0.26	1.00	0.75		0.25	1.00	0.57		0.43
Final Sat.:	635	1723		154	806	1354		472	777	1372		457	884	1011		766
Capacity Analysis Module:																
Vol/Sat:	0.16	0.24		0.24	0.16	0.32		0.32	0.16	0.14		0.14	0.02	0.17		0.17
Crit Moves:						****								****		
Green Time:	38.7	38.7		38.7	38.7	38.7		38.7	20.3	20.3		20.3	20.3	20.3		20.3
Volume/Cap:	0.27	0.40		0.40	0.26	0.53		0.53	0.50	0.45		0.45	0.07	0.53		0.53
Delay/Veh:	6.8	7.3		7.3	6.6	8.3		8.3	19.8	18.4		18.4	15.8	19.4		19.4
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	6.8	7.3		7.3	6.6	8.3		8.3	19.8	18.4		18.4	15.8	19.4		19.4
LOS by Move:	A	A		A	A	A		A	B	B		B	B	B		B
HCM2k95thQ:	52	233		233	62	327		327	137	221		221	16	268		268

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	4	Average Delay (sec/veh):	24.3
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.2	4.2	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM												
Base Vol:	487	369	0	0	420	85	88	0	542	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	369	0	0	420	85	88	0	542	0	0	0
Added Vol:	53	52	0	0	26	23	10	0	29	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	540	421	0	0	446	108	98	0	571	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	540	421	0	0	446	108	98	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	540	421	0	0	446	108	98	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	540	421	0	0	446	108	98	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.95	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.81	0.19	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1460	354	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.31	0.23	0.00	0.00	0.31	0.31	0.06	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	53.2	106	0.0	0.0	53.2	53.2	9.6	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.69	0.26	0.00	0.00	0.69	0.69	0.69	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	29.4	1.1	0.0	0.0	29.3	29.3	67.1	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	1.1	0.0	0.0	29.3	29.3	67.1	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	C	C	E	A	A	A	A	A
HCM2k95thQ:	687	121	0	0	702	702	239	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.521
Loss Time (sec):	4	Average Delay (sec/veh):	27.2
Optimal Cycle:	23	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	0	1	0	0	1	0	1
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	27	551	91	215	594	106	3	24	4	132	52	312
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	551	91	215	594	106	3	24	4	132	52	312
Added Vol:	0	105	0	0	54	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	656	91	215	648	106	3	24	4	132	52	312
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	656	91	215	648	106	3	24	4	132	52	312
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	656	91	215	648	106	3	24	4	132	52	312
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	656	91	215	648	106	3	24	4	132	52	312
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.52	0.96	0.96	0.75	0.75	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.86	0.14	0.72	0.28	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	994	1562	260	1027	405	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.19	0.06	0.12	0.18	0.07	0.00	0.02	0.02	0.13	0.13	0.20
Crit Moves:		****		****								****
Green Time:	10.9	42.7	42.7	28.0	59.8	59.8	45.4	45.4	45.4	45.4	45.4	45.4
Volume/Cap:	0.17	0.52	0.16	0.52	0.37	0.13	0.01	0.04	0.04	0.34	0.34	0.52
Delay/Veh:	50.9	31.0	26.6	41.4	18.6	16.3	23.3	23.6	23.6	27.0	27.0	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	31.0	26.6	41.4	18.6	16.3	23.3	23.6	23.6	27.0	27.0	29.7
LOS by Move:	D	C	C	D	B	B	C	C	C	C	C	C
HCM2k95thQ:	53	468	115	316	346	101	4	33	33	239	239	424

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[24.5]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2010 << 7:30 - 8:30 A.M.												
Base Vol:	93	766	0	0	687	27	18	0	8	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	766	0	0	687	27	18	0	8	0	0	0
Added Vol:	0	105	0	0	54	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	871	0	0	741	27	18	0	8	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	871	0	0	741	27	18	0	8	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	93	871	0	0	741	27	18	0	8	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	488	xxxx	xxxxx	xxxx	xxxx	xxxxx	1172	xxxx	56	xxxx	xxxx	xxxxx
Potent Cap.:	965	xxxx	xxxxx	xxxx	xxxx	xxxxx	167	xxxx	893	xxxx	xxxx	xxxxx
Move Cap.:	965	xxxx	xxxxx	xxxx	xxxx	xxxxx	154	xxxx	893	xxxx	xxxx	xxxxx
Volume/Cap:	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	8.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	9.7	xxxx	0.7	xxxx	xxxx	xxxxx
Control Del:	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	31.4	xxxx	9.1	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			24.5			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 8 Average Delay (sec/veh): 42.1
Optimal Cycle: 47 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2	0 1	1	1	0 1	0	1	0	1	1	0 0 1
Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM												
Base Vol:	111	300	97	424	444	16	12	164	70	473	189	335
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	300	97	424	444	16	12	164	70	473	189	335
Added Vol:	0	0	0	54	0	0	0	2	0	0	1	105
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	111	300	97	478	444	16	12	166	70	473	190	440
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	300	97	478	444	16	12	166	70	473	190	440
Reduct Vol:	0	0	3	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	300	94	478	444	16	12	166	70	473	190	440
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	300	94	478	444	16	12	166	70	473	190	440
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.53	1.42	0.05	1.00	1.00	1.00	1.43	0.57	1.00
Final Sat.:	1769	3538	1583	2629	2442	88	1769	1862	1583	2566	1031	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.06	0.18	0.18	0.18	0.01	0.09	0.04	0.18	0.18	0.28
Crit Moves:		****		****				****				****
Green Time:	16.3	16.3	16.3	35.0	35.0	35.0	17.2	17.2	17.2	53.5	53.5	53.5
Volume/Cap:	0.50	0.68	0.47	0.68	0.68	0.68	0.05	0.68	0.34	0.45	0.45	0.68
Delay/Veh:	54.8	58.4	54.6	43.8	43.8	43.8	49.4	61.0	52.2	27.8	27.8	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.8	58.4	54.6	43.8	43.8	43.8	49.4	61.0	52.2	27.8	27.8	34.0
LOS by Move:	D	E	D	D	D	D	D	E	D	C	C	C
HCM2k95thQ:	229	343	198	563	563	563	23	355	140	438	438	656

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	7	Average Delay (sec/veh):	12.7
Optimal Cycle:	44	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	5	5	5		5	5	5		12	12	12		12	12	12	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1	
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	90	88	109		30	48	13		1	715	61		37	861	10	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	90	88	109		30	48	13		1	715	61		37	861	10	
Added Vol:	7	0	0		0	0	0		0	47	9		0	99	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	97	88	109		30	48	13		1	762	70		37	960	10	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	97	88	109		30	48	13		1	762	70		37	960	10	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	97	88	109		30	48	13		1	762	70		37	960	10	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	97	88	109		30	48	13		1	762	70		37	960	10	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.70	0.90	0.90		0.37	0.95	0.95		0.21	0.97	0.97		0.26	0.98	0.98	
Lanes:	1.00	0.45	0.55		1.00	0.79	0.21		1.00	0.92	0.08		1.00	0.99	0.01	
Final Sat.:	1339	763	945		702	1418	384		393	1683	155		503	1841	19	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.12	0.12		0.04	0.03	0.03		0.00	0.45	0.45		0.07	0.52	0.52	
Crit Moves:		****												****		
Green Time:	16.8	16.8	16.8		16.8	16.8	16.8		76.2	76.2	76.2		76.2	76.2	76.2	
Volume/Cap:	0.43	0.68	0.68		0.25	0.20	0.20		0.00	0.59	0.59		0.10	0.68	0.68	
Delay/Veh:	38.6	45.8	45.8		37.2	36.1	36.1		2.9	5.9	5.9		3.2	7.4	7.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	38.6	45.8	45.8		37.2	36.1	36.1		2.9	5.9	5.9		3.2	7.4	7.4	
LOS by Move:	D	D	D		D	D	D		A	A	A		A	A	A	
HCM2k95thQ:	157	334	334		54	87	87		1	523	523		19	680	680	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.782
Loss Time (sec):	7	Average Delay (sec/veh):	18.8
Optimal Cycle:	58	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.1	4.1	4.1		4.1	4.1	4.1	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM																
Base Vol:	7	31	5		149	63	101		0	780	63		33	849	7	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	31	5		149	63	101		0	780	63		33	849	7	
Added Vol:	0	0	0		0	0	0		0	47	0		0	99	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	7	31	5		149	63	101		0	827	63		33	948	7	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	7	31	5		149	63	101		0	827	63		33	948	7	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	7	31	5		149	63	101		0	827	63		33	948	7	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	7	31	5		149	63	101		0	827	63		33	948	7	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	0.91		0.77	0.77	0.77		1.00	0.97	0.97		0.18	0.98	0.98	
Lanes:	0.16	0.72	0.12		0.48	0.20	0.32		1.00	0.93	0.07		1.00	0.99	0.01	
Final Sat.:	282	1251	202		697	295	472		1900	1711	130		333	1847	14	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02		0.21	0.21	0.21		0.00	0.48	0.48		0.10	0.51	0.51	
Crit Moves:						****								****		
Green Time:	27.4	27.4	27.4		27.4	27.4	27.4		0.0	65.6	65.6		65.6	65.6	65.6	
Volume/Cap:	0.09	0.09	0.09		0.78	0.78	0.78		0.00	0.74	0.74		0.15	0.78	0.78	
Delay/Veh:	27.1	27.1	27.1		43.2	43.2	43.2		0.0	13.8	13.8		6.9	15.5	15.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	27.1	27.1	27.1		43.2	43.2	43.2		0.0	13.8	13.8		6.9	15.5	15.5	
LOS by Move:	C	C	C		D	D	D		A	B	B		A	B	B	
HCM2k95thQ:	51	51	51		497	497	497		0	814	814		27	922	922	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.775
Loss Time (sec):	7	Average Delay (sec/veh):	13.8
Optimal Cycle:	57	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	10	10		4	10	10	
Y+R:	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Lanes:	1	0	0	1 0	0	1	0	0 1	1	0	1	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	77	8	87		58	3	12		31	970	13		64	891	162	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	77	8	87		58	3	12		31	970	13		64	891	162	
Added Vol:	0	0	0		0	0	0		0	47	0		0	99	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	77	8	87		58	3	12		31	1017	13		64	990	162	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	77	8	87		58	3	12		31	1017	13		64	990	162	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	77	8	87		58	3	12		31	1017	13		64	990	162	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	77	8	87		58	3	12		31	1017	13		64	990	162	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.64	0.85	0.85		0.45	0.45	0.83		0.93	0.93	0.93		0.93	0.96	0.96	
Lanes:	1.00	0.08	0.92		0.95	0.05	1.00		1.00	1.97	0.03		1.00	0.86	0.14	
Final Sat.:	1210	135	1472		813	42	1583		1769	3486	45		1769	1567	256	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.06	0.06		0.07	0.07	0.01		0.02	0.29	0.29		0.04	0.63	0.63	
Crit Moves:						****			****					****		
Green Time:	9.0	9.0	9.0		9.0	9.0	9.0		4.0	73.8	73.8		10.1	80.0	80.0	
Volume/Cap:	0.70	0.65	0.65		0.79	0.79	0.08		0.44	0.40	0.40		0.36	0.79	0.79	
Delay/Veh:	63.0	54.3	54.3		85.4	85.4	41.9		51.2	4.9	4.9		43.1	8.5	8.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	63.0	54.3	54.3		85.4	85.4	41.9		51.2	4.9	4.9		43.1	8.5	8.5	
LOS by Move:	E	D	D		F	F	D		D	A	A		D	A	A	
HCM2k95thQ:	187	202	202		179	179	21		78	299	299		111	881	881	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.695
Loss Time (sec):	11	Average Delay (sec/veh):	20.5
Optimal Cycle:	56	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		5	0	5		5	5	0		0	5	5	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0	0	0	2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	0	0	0		407	0	73		64	1150	0		0	1146	432	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		407	0	73		64	1150	0		0	1146	432	
Added Vol:	0	0	0		0	0	0		0	47	0		0	99	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		407	0	73		64	1197	0		0	1245	432	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		407	0	73		64	1197	0		0	1245	432	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		407	0	73		64	1197	0		0	1245	432	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		407	0	73		64	1197	0		0	1245	432	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.93	1.00	0.83		0.93	0.93	1.00		1.00	0.93	0.83	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	2.00	0.00		0.00	2.00	1.00	
Final Sat.:	0	0	0		1769	0	1583		1769	3538	0		0	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.23	0.00	0.05		0.04	0.34	0.00		0.00	0.35	0.27	
Crit Moves:					****				****					****		
Green Time:	0.0	0.0	0.0		33.1	0.0	33.1		5.2	55.9	0.0		0.0	50.7	50.7	
Volume/Cap:	0.00	0.00	0.00		0.69	0.00	0.14		0.69	0.61	0.00		0.00	0.69	0.54	
Delay/Veh:	0.0	0.0	0.0		32.7	0.0	23.6		67.2	15.3	0.0		0.0	20.0	17.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		32.7	0.0	23.6		67.2	15.3	0.0		0.0	20.0	17.5	
LOS by Move:	A	A	A		C	A	C		E	B	A		A	B	B	
HCM2k95thQ:	0	0	0		538	0	81		166	589	0		0	699	431	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.562
Loss Time (sec):	4	Average Delay (sec/veh):	16.4
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	0	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	82	9	171	111	33	2	0	641	44	280	977	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	9	171	111	33	2	0	641	44	280	977	21
Added Vol:	0	0	0	0	0	0	0	17	0	0	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	9	171	111	33	2	0	658	44	280	1008	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	9	171	111	33	2	0	658	44	280	1008	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	9	171	111	33	2	0	658	44	280	1008	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	82	9	171	111	33	2	0	658	44	280	1008	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.61	0.61	0.61	0.95	0.92	0.92	0.93	0.93	0.93
Lanes:	0.31	0.03	0.66	0.76	0.23	0.01	0.00	1.87	0.13	1.00	1.96	0.04
Final Sat.:	469	51	978	802	262	16	0	3286	220	1769	3455	72
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	0.13	0.13	0.13	0.00	0.20	0.20	0.16	0.29	0.29
Crit Moves:		****						****		****		
Green Time:	24.9	24.9	24.9	24.9	24.9	24.9	0.0	28.5	28.5	22.6	51.1	51.1
Volume/Cap:	0.56	0.56	0.56	0.40	0.40	0.40	0.00	0.56	0.56	0.56	0.46	0.46
Delay/Veh:	24.6	24.6	24.6	22.5	22.5	22.5	0.0	21.3	21.3	25.9	7.5	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.6	24.6	24.6	22.5	22.5	22.5	0.0	21.3	21.3	25.9	7.5	7.5
LOS by Move:	C	C	C	C	C	C	A	C	C	C	A	A
HCM2k95thQ:	293	293	293	161	161	161	0	344	344	275	314	314

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.644
Loss Time (sec):	4	Average Delay (sec/veh):	16.3
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.5	4.5
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0
Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	28	5	25	362	38	143	131	755	68	42	1025	333
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	5	25	362	38	143	131	755	68	42	1025	333
Added Vol:	0	0	0	0	0	0	0	17	0	0	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	5	25	362	38	143	131	772	68	42	1056	333
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	5	25	362	38	143	131	772	68	42	1056	333
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	5	25	362	38	143	131	772	68	42	1056	333
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	5	25	362	38	143	131	772	68	42	1056	333
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.86	0.86	0.94	0.94	0.83	0.93	0.92	0.92	0.93	0.90	0.90
Lanes:	1.00	0.17	0.83	1.81	0.19	1.00	1.00	1.84	0.16	1.00	1.52	0.48
Final Sat.:	1769	272	1358	3225	339	1583	1769	3212	283	1769	2593	818
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.11	0.11	0.09	0.07	0.24	0.24	0.02	0.41	0.41
Crit Moves:		****			****		****				****	
Green Time:	4.0	4.0	4.0	13.6	13.6	13.6	9.0	48.3	48.3	10.1	49.4	49.4
Volume/Cap:	0.32	0.37	0.37	0.66	0.66	0.53	0.66	0.40	0.40	0.19	0.66	0.66
Delay/Veh:	38.7	39.6	39.6	33.7	33.7	32.3	42.0	8.4	8.4	31.7	10.7	10.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	39.6	39.6	33.7	33.7	32.3	42.0	8.4	8.4	31.7	10.7	10.7
LOS by Move:	D	D	D	C	C	C	D	A	A	C	B	B
HCM2k95thQ:	54	61	61	283	283	196	158	266	266	45	514	514

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	4	Average Delay (sec/veh):	14.1
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM																
Base Vol:	22	4	37		220	6	31		25	1077	29		241	1430	228	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	22	4	37		220	6	31		25	1077	29		241	1430	228	
Added Vol:	0	0	0		0	0	0		0	17	0		0	31	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	22	4	37		220	6	31		25	1094	29		241	1461	228	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	22	4	37		220	6	31		25	1094	29		241	1461	228	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	22	4	37		220	6	31		25	1094	29		241	1461	228	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	22	4	37		220	6	31		25	1094	29		241	1461	228	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.94	0.94	0.73		0.93	0.93	0.83		0.93	0.89	0.89		0.90	0.91	0.91	
Lanes:	0.85	0.15	2.00		0.97	0.03	1.00		1.00	2.92	0.08		2.00	1.73	0.27	
Final Sat.:	1511	275	2786		1729	47	1583		1769	4932	131		3432	2999	468	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.01	0.01	0.13	0.13	0.02	0.01	0.22	0.22	0.07	0.49	0.49				
Crit Moves:	****				****		****				****					
Green Time:	4.0	4.0	4.0	14.1	14.1	14.1	4.0	44.0	44.0	13.9	53.9	53.9				
Volume/Cap:	0.29	0.29	0.27	0.72	0.72	0.11	0.28	0.40	0.40	0.40	0.72	0.72				
Delay/Veh:	38.4	38.4	37.6	39.2	39.2	27.9	38.4	10.5	10.5	29.8	9.4	9.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	38.4	38.4	37.6	39.2	39.2	27.9	38.4	10.5	10.5	29.8	9.4	9.4				
LOS by Move:	D	D	D	D	D	C	D	B	B	C	A	A				
HCM2k95thQ:	49	49	41	330	330	37	31	276	276	129	603	603				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	0.914
Loss Time (sec):	0	Average Delay (sec/veh):	28.7
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	4	4		4	4	4	
Lanes:	0	1	0	0 1	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	2	113	458		21	105	11		9	240	18		295	164	14	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	2	113	458		21	105	11		9	240	18		295	164	14	
Added Vol:	0	0	37		0	0	0		0	0	0		56	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	2	113	495		21	105	11		9	240	18		351	164	14	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	2	113	495		21	105	11		9	240	18		351	164	14	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	2	113	495		21	105	11		9	240	18		351	164	14	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	2	113	495		21	105	11		9	240	18		351	164	14	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.02	0.98	1.00		0.15	0.77	0.08		1.00	0.93	0.07		1.00	0.92	0.08	
Final Sat.:	8	477	541		63	313	33		416	414	31		450	442	38	
Capacity Analysis Module:																
Vol/Sat:	0.24	0.24	0.91	0.34	0.34	0.34	0.02	0.58	0.58	0.78	0.37	0.37				
Crit Moves:			****			****		****		****						
Delay/Veh:	12.2	12.2	44.2	15.0	15.0	15.0	11.2	19.7	19.7	32.1	14.1	14.1				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	12.2	12.2	44.2	15.0	15.0	15.0	11.2	19.7	19.7	32.1	14.1	14.1				
LOS by Move:	B	B	E	C	C	C	B	C	C	D	B	B				
ApproachDel:	38.1			15.0			19.5			26.1						
Delay Adj:	1.00			1.00			1.00			1.00						
ApprAdjDel:	38.1			15.0			19.5			26.1						
LOS by Appr:	E			C			C			D						
AllWayAvgQ:	7.4	7.4	131.1	10.6	10.6	10.6	0.5	28.7	28.7	67.4	13.6	13.6				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.750
Loss Time (sec):	10	Average Delay (sec/veh):	43.8
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	10	10		4	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	5.0	5.0		4.0	5.0	5.0	
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	109	600	303		214	596	283		322	1224	128		245	546	39	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	109	600	303		214	596	283		322	1224	128		245	546	39	
Added Vol:	0	17	57		0	29	15		12	43	0		18	14	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	109	617	360		214	625	298		334	1267	128		263	560	39	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	109	617	360		214	625	298		334	1267	128		263	560	39	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	109	617	360		214	625	298		334	1267	128		263	560	39	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	109	617	360		214	625	298		334	1267	128		263	560	39	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.98	0.83		0.93	0.98	0.83		0.94	0.99	0.84		0.92	0.97	0.82	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3538	3724	1583		3538	3724	1583		3573	3761	1599		3502	3687	1567	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.17	0.23		0.06	0.17	0.19		0.09	0.34	0.08		0.08	0.15	0.02	
Crit Moves:			****		****					****			****			
Green Time:	8.1	45.5	45.5		12.1	49.5	49.5		31.4	67.4	67.4		15.0	51.0	51.0	
Volume/Cap:	0.57	0.55	0.75		0.75	0.51	0.57		0.45	0.75	0.18		0.75	0.45	0.07	
Delay/Veh:	73.3	44.2	53.6		78.0	40.8	43.0		52.2	30.6	20.8		74.4	38.8	33.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	73.3	44.2	53.6		78.0	40.8	43.0		52.2	30.6	20.8		74.4	38.8	33.6	
LOS by Move:	E	D	D		E	D	D		D	C	C		E	D	C	
HCM2k95thQ:	123	480	628		308	522	523		288	869	126		355	456	61	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	4	Average Delay (sec/veh):	34.8
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.5
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	137	614	59	127	1307	63	78	173	56	97	187	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	137	614	59	127	1307	63	78	173	56	97	187	58
Added Vol:	31	54	1	1	62	12	10	22	19	0	39	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	668	60	128	1369	75	88	195	75	97	226	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	668	60	128	1369	75	88	195	75	97	226	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	668	60	128	1369	75	88	195	75	97	226	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	168	668	60	128	1369	75	88	195	75	97	226	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.84	0.16	1.00	1.90	0.10	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3207	288	1769	3327	182	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.21	0.07	0.41	0.41	0.05	0.10	0.05	0.05	0.12	0.04
Crit Moves:	****				****		****				****	
Green Time:	19.8	78.2	78.2	27.2	85.6	85.6	10.4	23.4	23.4	12.2	25.3	25.3
Volume/Cap:	0.70	0.39	0.39	0.39	0.70	0.70	0.70	0.65	0.29	0.65	0.70	0.23
Delay/Veh:	68.4	19.6	19.6	52.4	21.7	21.7	81.5	61.9	54.2	74.0	62.8	52.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.4	19.6	19.6	52.4	21.7	21.7	81.5	61.9	54.2	74.0	62.8	52.0
LOS by Move:	E	B	B	D	C	C	F	E	D	E	E	D
HCM2k95thQ:	392	445	445	250	976	976	252	420	154	258	483	127

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.557
Loss Time (sec):	4	Average Delay (sec/veh):	11.4
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	0	0 1	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	0	711	42	0	1396	88	52	27	44	37	56	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	711	42	0	1396	88	52	27	44	37	56	23
Added Vol:	0	51	1	0	71	16	25	2	11	2	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	762	43	0	1467	104	77	29	55	39	66	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	762	43	0	1467	104	77	29	55	39	66	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	762	43	0	1467	104	77	29	55	39	66	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	762	43	0	1467	104	77	29	55	39	66	23
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.92	0.92	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	0.00	2.00	1.00	0.00	1.87	0.13	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	0	3538	1583	0	3271	232	1769	1862	1583	1769	1327	462
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.03	0.00	0.45	0.45	0.04	0.02	0.03	0.02	0.05	0.05
Crit Moves:					****		****					****
Green Time:	0.0	117	116.7	0.0	117	116.7	11.3	11.3	11.3	12.9	12.9	12.9
Volume/Cap:	0.00	0.27	0.03	0.00	0.56	0.56	0.56	0.20	0.44	0.25	0.56	0.56
Delay/Veh:	0.0	3.6	2.8	0.0	5.2	5.2	69.4	63.3	66.4	62.3	67.6	67.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	3.6	2.8	0.0	5.2	5.2	69.4	63.3	66.4	62.3	67.6	67.6
LOS by Move:	A	A	A	A	A	A	E	E	E	E	E	E
HCM2k95thQ:	0	215	20	0	583	583	202	69	144	91	224	224

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.756
Loss Time (sec):	4	Average Delay (sec/veh):	42.8
Optimal Cycle:	44	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 1	1 0	0	1 0	1 0	2	0 1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	698	295	182	1260	14	33	305	69	503	222	57
Added Vol:	11	51	33	0	80	3	3	0	16	106	1	-3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	749	328	182	1340	17	36	305	85	609	223	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	749	328	182	1340	17	36	305	85	609	223	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	749	328	182	1340	17	36	305	85	609	223	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	749	328	182	1340	17	36	305	85	609	223	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.93	0.90	0.90	0.90	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	1.97	0.03	0.17	1.43	0.40	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3486	44	289	2447	682	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.21	0.21	0.10	0.38	0.38	0.12	0.12	0.12	0.18	0.12	0.03
Crit Moves:	****				****		****			****		
Green Time:	9.4	55.9	55.9	27.2	73.7	73.7	23.9	23.9	23.9	34.0	34.0	34.0
Volume/Cap:	0.76	0.55	0.54	0.55	0.76	0.76	0.76	0.76	0.76	0.76	0.51	0.15
Delay/Veh:	91.2	35.2	35.5	55.3	30.4	30.4	63.6	63.6	63.6	55.8	49.3	44.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.2	35.2	35.5	55.3	30.4	30.4	63.6	63.6	63.6	55.8	49.3	44.2
LOS by Move:	F	D	D	E	C	C	E	E	E	E	D	D
HCM2k95thQ:	264	604	517	338	1033	1033	505	505	505	635	412	97

Note: Queue reported is the distance per lane in feet.

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FEHR & PEERS
TRANSPORTATION CONSULTANTS

EXISTING PLUS PROJECT PM
LEVELS OF SERVICE

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.344
Loss Time (sec):	4	Average Delay (sec/veh):	35.0
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	10	10		7	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	175	631	19		12	492	25		30	12	155		1	7	11	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	175	631	19		12	492	25		30	12	155		1	7	11	
Added Vol:	0	52	0		0	50	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	175	683	19		12	542	25		30	12	155		1	7	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	175	683	19		12	542	25		30	12	155		1	7	11	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	175	683	19		12	542	25		30	12	155		1	7	11	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	175	683	19		12	542	25		30	12	155		1	7	11	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.91		0.95	0.90	0.90		0.89	0.89	0.89		0.95	0.91	0.91	
Lanes:	1.00	2.92	0.08		1.00	2.87	0.13		0.15	0.06	0.79		1.00	0.39	0.61	
Final Sat.:	1805	5026	140		1805	4924	227		257	103	1326		1805	671	1054	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.14	0.14		0.01	0.11	0.11		0.12	0.12	0.12		0.00	0.01	0.01	
Crit Moves:	****					****					****			****		
Green Time:	39.2	61.8	61.8		21.9	44.5	44.5		47.3	47.3	47.3		10.0	10.0	10.0	
Volume/Cap:	0.36	0.32	0.32		0.04	0.36	0.36		0.36	0.36	0.36		0.01	0.15	0.15	
Delay/Veh:	43.2	27.7	27.7		52.6	39.3	39.3		37.7	37.7	37.7		62.9	64.1	64.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	43.2	27.7	27.7		52.6	39.3	39.3		37.7	37.7	37.7		62.9	64.1	64.1	
LOS by Move:	D	C	C		D	D	D		D	D	D		E	E	E	
HCM2k95thQ:	300	349	349		24	337	337		316	316	316		2	44	44	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.639
Loss Time (sec):	4	Average Delay (sec/veh):	16.6
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	26	1547	73	61	1119	20	22	15	23	152	2	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1547	73	61	1119	20	22	15	23	152	2	110
Added Vol:	11	70	0	9	70	0	0	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	1617	73	70	1189	20	22	15	23	152	2	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	37	1617	73	70	1189	20	22	15	23	152	2	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	1617	73	70	1189	20	22	15	23	152	2	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	1617	73	70	1189	20	22	15	23	152	2	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.81	0.81	0.83	0.65	0.65	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.59	0.41	1.00	0.99	0.01	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	917	625	1583	1217	16	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.46	0.05	0.04	0.34	0.01	0.02	0.02	0.01	0.12	0.12	0.07
Crit Moves:		****		****							****	
Green Time:	8.5	104	103.7	9.0	104	104.1	28.3	28.3	28.3	28.3	28.3	28.3
Volume/Cap:	0.35	0.64	0.06	0.64	0.47	0.02	0.12	0.12	0.07	0.64	0.64	0.37
Delay/Veh:	67.7	11.4	6.2	78.4	8.8	5.8	48.3	48.3	47.7	59.3	59.3	51.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.7	11.4	6.2	78.4	8.8	5.8	48.3	48.3	47.7	59.3	59.3	51.3
LOS by Move:	E	B	A	E	A	A	D	D	D	E	E	D
HCM2k95thQ:	99	838	49	204	525	13	70	70	43	345	345	224

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.707
Loss Time (sec):	4	Average Delay (sec/veh):	39.8
Optimal Cycle:	37	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	139	1197	52	70	1016	258	457	197	82	54	163	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	1197	52	70	1016	258	457	197	82	54	163	29
Added Vol:	22	66	-2	8	71	2	2	0	13	5	1	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	1263	50	78	1087	260	459	197	95	59	164	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	1263	50	78	1087	260	459	197	95	59	164	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	1263	50	78	1087	260	459	197	95	59	164	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	161	1263	50	78	1087	260	459	197	95	59	164	31
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.96	0.96
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.40	0.60	1.00	1.00	0.84	0.16
Final Sat.:	1769	3538	1583	1769	3538	1583	2517	1080	1583	1769	1528	289
Capacity Analysis Module:												
Vol/Sat:	0.09	0.36	0.03	0.04	0.31	0.16	0.18	0.18	0.06	0.03	0.11	0.11
Crit Moves:	****				****			****				****
Green Time:	18.7	72.7	72.7	9.0	63.0	63.0	37.4	37.4	37.4	22.0	22.0	22.0
Volume/Cap:	0.71	0.71	0.06	0.71	0.71	0.38	0.71	0.71	0.23	0.22	0.71	0.71
Delay/Veh:	70.4	29.5	18.7	86.5	35.0	28.1	51.4	51.4	42.8	54.4	66.6	66.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.4	29.5	18.7	86.5	35.0	28.1	51.4	51.4	42.8	54.4	66.6	66.6
LOS by Move:	E	C	B	F	D	C	D	D	D	D	E	E
HCM2k95thQ:	384	962	57	235	888	364	587	587	158	120	439	439

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.620
Loss Time (sec):	4	Average Delay (sec/veh):	33.7
Optimal Cycle:	29	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10		10	4	10		10	4	4		4	4	4		4
Y+R:	3.0	4.2		4.2	3.0	4.2		4.2	3.0	3.5		3.5	3.0	3.5		3.0
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM																
Base Vol:	133	1226		106	87	998		61	113	131		87	119	161		63
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	133	1226		106	87	998		61	113	131		87	119	161		63
Added Vol:	54	65		-1	15	63		17	16	50		31	0	39		4
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	187	1291		105	102	1061		78	129	181		118	119	200		67
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	187	1291		105	102	1061		78	129	181		118	119	200		67
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	187	1291		105	102	1061		78	129	181		118	119	200		67
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	187	1291		105	102	1061		78	129	181		118	119	200		67
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.93	0.93		0.83	0.93	0.93		0.83	0.93	0.98		0.83	0.93	0.98		0.83
Lanes:	1.00	2.00		1.00	1.00	2.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Sat.:	1769	3538		1583	1769	3538		1583	1769	1862		1583	1769	1862		1583
Capacity Analysis Module:																
Vol/Sat:	0.11	0.36		0.07	0.06	0.30		0.05	0.07	0.10		0.07	0.07	0.11		0.04
Crit Moves:		****			****				****					****		
Green Time:	25.8	85.3		85.3	13.5	73.1		73.1	17.1	24.9		24.9	17.2	25.1		25.1
Volume/Cap:	0.60	0.62		0.11	0.62	0.60		0.10	0.62	0.57		0.43	0.57	0.62		0.24
Delay/Veh:	57.9	19.9		13.2	70.4	26.0		18.8	66.5	57.4		54.8	63.9	59.2		52.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	57.9	19.9		13.2	70.4	26.0		18.8	66.5	57.4		54.8	63.9	59.2		52.2
LOS by Move:	E	B		B	E	C		B	E	E		D	E	E		D
HCM2k95thQ:	389	823		101	260	750		89	306	373		244	276	417		134

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.584
Loss Time (sec):	4	Average Delay (sec/veh):	23.6
Optimal Cycle:	27	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10		10	0	10		10	6	6		6	6	6		6
Y+R:	4.0	4.7		4.7	4.0	4.7		4.7	4.0	4.0		4.0	4.0	4.0		4.0
Lanes:	0	0	2	0 1	0	0	2	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm																
Base Vol:	0	1191		54	0	1043		143	171	68		161	72	83		58
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	1191		54	0	1043		143	171	68		161	72	83		58
Added Vol:	0	106		4	0	70		29	20	20		18	3	14		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	0	1297		58	0	1113		172	191	88		179	75	97		58
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	0	1297		58	0	1113		172	191	88		179	75	97		58
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	0	1297		58	0	1113		172	191	88		179	75	97		58
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	0	1297		58	0	1113		172	191	88		179	75	97		58
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	1.00	0.93		0.83	1.00	0.93		0.83	0.93	0.98		0.83	0.93	0.93		0.93
Lanes:	0.00	2.00		1.00	0.00	2.00		1.00	1.00	1.00		1.00	1.00	0.63		0.37
Final Sat.:	0	3538		1583	0	3538		1583	1769	1862		1583	1769	1100		658
Capacity Analysis Module:																
Vol/Sat:	0.00	0.37		0.04	0.00	0.31		0.11	0.11	0.05		0.11	0.04	0.09		0.09
Crit Moves:		****										****		****		
Green Time:	0.0	91.0		91.0	0.0	91.0		91.0	28.1	28.1		28.1	21.9	21.9		21.9
Volume/Cap:	0.00	0.58		0.06	0.00	0.50		0.17	0.56	0.24		0.58	0.28	0.58		0.58
Delay/Veh:	0.0	16.3		10.5	0.0	14.8		11.4	54.9	49.8		56.0	55.2	60.6		60.6
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	16.3		10.5	0.0	14.8		11.4	54.9	49.8		56.0	55.2	60.6		60.6
LOS by Move:	A	B		B	A	B		B	D	D		E	E	E		E
HCM2k95thQ:	0	735		48	0	614		155	383	166		371	154	338		338

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	4	Average Delay (sec/veh):	46.9
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		7	7	7		4	4	4	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	0	1	0	1 0	2	0	1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM																
Base Vol:	176	1202	557		193	1082	22		41	296	129		484	239	67	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	1202	557		193	1082	22		41	296	129		484	239	67	
Added Vol:	23	105	102		0	87	4		3	12	18		51	12	2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	199	1307	659		193	1169	26		44	308	147		535	251	69	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	199	1307	659		193	1169	26		44	308	147		535	251	69	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	199	1307	659		193	1169	26		44	308	147		535	251	69	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	199	1307	659		193	1169	26		44	308	147		535	251	69	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.89	0.89	0.89		0.90	0.98	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		0.18	1.23	0.59		2.00	1.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		297	2079	992		3432	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.37	0.42		0.11	0.33	0.02		0.15	0.15	0.15		0.16	0.13	0.04	
Crit Moves:			****		****					****			****			
Green Time:	22.7	70.8	70.8		18.5	66.6	66.6		25.2	25.2	25.2		26.5	26.5	26.5	
Volume/Cap:	0.72	0.76	0.85		0.85	0.72	0.04		0.85	0.85	0.85		0.85	0.74	0.24	
Delay/Veh:	66.9	32.1	41.6		87.4	33.2	21.6		69.7	69.7	69.7		68.3	64.2	51.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	66.9	32.1	41.6		87.4	33.2	21.6		69.7	69.7	69.7		68.3	64.2	51.1	
LOS by Move:	E		C	D	F		C		E		E		E		D	
HCM2k95thQ:	450	1042	1128		420	913	31		615	615	615		636	537	135	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.745
Loss Time (sec):	10	Average Delay (sec/veh):	15.1
Optimal Cycle:	65	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		8	8	8		8	8	8	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	1 0	1	0	2	1 0	0	0	1!	0 0	0	1	0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	76	1796	9		19	1546	28		78	0	53		38	4	31	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	76	1796	9		19	1546	28		78	0	53		38	4	31	
Added Vol:	6	224	2		4	143	9		8	0	7		-1	0	-2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	82	2020	11		23	1689	37		86	0	60		37	4	29	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	82	2020	11		23	1689	37		86	0	60		37	4	29	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	82	2020	11		23	1689	37		86	0	60		37	4	29	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	82	2020	11		23	1689	37		86	0	60		37	4	29	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.93		0.93	0.89	0.89		0.73	1.00	0.73		0.67	0.67	0.83	
Lanes:	1.00	1.99	0.01		1.00	2.94	0.06		0.59	0.00	0.41		0.90	0.10	1.00	
Final Sat.:	1769	3515	19		1769	4959	109		815	0	568		1143	124	1583	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.57	0.57		0.01	0.34	0.34		0.11	0.00	0.11		0.03	0.03	0.02	
Crit Moves:		****			****				****							
Green Time:	13.7	111	110.7		4.0	101	100.9		20.3	0.0	20.3		20.3	20.3	20.3	
Volume/Cap:	0.49	0.75	0.75		0.47	0.49	0.49		0.75	0.00	0.75		0.23	0.23	0.13	
Delay/Veh:	64.5	10.8	10.8		76.5	10.3	10.3		75.2	0.0	75.2		56.1	56.1	54.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	64.5	10.8	10.8		76.5	10.3	10.3		75.2	0.0	75.2		56.1	56.1	54.9	
LOS by Move:	E		B	B	E		B		E		A		E		E	D
HCM2k95thQ:	199	1097	1097		84	570	570		372	0	372		90	90	60	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.850
Loss Time (sec):	10	Average Delay (sec/veh):	38.8
Optimal Cycle:	96	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	10	10	7	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 2	1 0	1	0 2	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	413	1780	0	0	1465	97	226	0	211	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	413	1780	0	0	1465	97	226	0	211	0	0	0
Added Vol:	89	167	4	22	119	7	8	2	3	75	2	62
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	502	1947	4	22	1584	104	234	2	214	75	2	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	502	1947	4	22	1584	104	234	2	214	75	2	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	502	1947	4	22	1584	104	234	2	214	75	2	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	502	1947	4	22	1584	104	234	2	214	75	2	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.83	0.83	0.93	0.84	0.84
Lanes:	1.00	2.99	0.01	1.00	2.82	0.18	1.00	0.01	0.99	1.00	0.03	0.97
Final Sat.:	1769	5073	10	1769	4727	310	1769	15	1570	1769	50	1542
Capacity Analysis Module:												
Vol/Sat:	0.28	0.38	0.38	0.01	0.34	0.34	0.13	0.14	0.14	0.04	0.04	0.04
Crit Moves:	****				****		****				****	
Green Time:	47.2	96.1	96.1	6.9	55.8	55.8	22.0	23.6	23.6	8.4	10.0	10.0
Volume/Cap:	0.87	0.58	0.58	0.26	0.87	0.87	0.87	0.84	0.84	0.73	0.58	0.58
Delay/Veh:	59.6	13.6	13.6	68.2	45.9	45.9	85.2	79.3	79.3	91.1	73.2	73.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.6	13.6	13.6	68.2	45.9	45.9	85.2	79.3	79.3	91.1	73.2	73.2
LOS by Move:	E	B	B	E	D	D	F	E	E	F	E	E
HCM2k95thQ:	980	741	741	61	1132	1132	577	527	527	234	182	182

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.617
Loss Time (sec):	10	Average Delay (sec/veh):	15.5
Optimal Cycle:	47	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	1 0	1	0 2	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	212	2241	6	32	1629	14	22	1	24	7	2	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	2241	6	32	1629	14	22	1	24	7	2	4
Added Vol:	3	131	31	63	213	1	1	3	-1	22	1	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	215	2372	37	95	1842	15	23	4	23	29	3	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	2372	37	95	1842	15	23	4	23	29	3	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	2372	37	95	1842	15	23	4	23	29	3	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	2372	37	95	1842	15	23	4	23	29	3	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.73	0.73	0.73	0.76	0.76	0.76
Lanes:	1.00	2.95	0.05	1.00	2.98	0.02	0.46	0.08	0.46	0.43	0.04	0.53
Final Sat.:	1769	4995	78	1769	5037	41	642	112	642	628	65	758
Capacity Analysis Module:												
Vol/Sat:	0.12	0.47	0.47	0.05	0.37	0.37	0.04	0.04	0.04	0.05	0.05	0.05
Crit Moves:		****		****							****	
Green Time:	30.9	111	111.4	12.6	93.1	93.1	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.57	0.62	0.62	0.62	0.57	0.57	0.47	0.47	0.47	0.61	0.61	0.61
Delay/Veh:	53.1	7.7	7.7	71.3	14.9	14.9	67.5	67.5	67.5	74.4	74.4	74.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.1	7.7	7.7	71.3	14.9	14.9	67.5	67.5	67.5	74.4	74.4	74.4
LOS by Move:	D	A	A	E	B	B	E	E	E	E	E	E
HCM2k95thQ:	419	747	747	247	728	728	138	138	138	192	192	192

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	140	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	9	Average Delay (sec/veh):	34.7
Optimal Cycle:	54	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 2	1 0	2	0 0	0 1	0	0 0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 5:00 - 6:00 AM												
Base Vol:	145	1201	98	411	913	416	514	0	243	0	0	742
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	1201	98	411	913	416	514	0	243	0	0	742
Added Vol:	0	95	0	21	101	111	61	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	1296	98	432	1014	527	575	0	243	0	0	751
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	145	1296	98	432	1014	527	575	0	243	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1296	98	432	1014	527	575	0	243	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	145	1296	98	432	1014	527	575	0	243	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.85	0.95	0.86	0.86	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1805	5187	1615	1805	3282	1641	3502	0	1615	0	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.06	0.24	0.31	0.32	0.16	0.00	0.15	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green Time:	19.6	50.1	50.1	48.0	78.5	78.5	32.9	0.0	52.5	0.0	0.0	0.0
Volume/Cap:	0.57	0.70	0.17	0.70	0.55	0.57	0.70	0.00	0.40	0.00	0.00	0.00
Delay/Veh:	59.4	39.7	30.9	43.3	19.8	20.2	51.7	0.0	32.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.4	39.7	30.9	43.3	19.8	20.2	51.7	0.0	32.6	0.0	0.0	0.0
LOS by Move:	E	D	C	D	B	C	D	A	C	A	A	A
HCM2k95thQ:	312	772	141	723	660	695	523	0	347	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.450
Loss Time (sec):	4	Average Delay (sec/veh):	11.4
Optimal Cycle:	20	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	8	8	8	8	8	8
Y+R:	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	68	168	42	24	97	28	12	320	84	28	242	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	168	42	24	97	28	12	320	84	28	242	36
Added Vol:	1	0	0	0	0	0	0	40	1	0	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	168	42	24	97	28	12	360	85	28	276	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	168	42	24	97	28	12	360	85	28	276	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	168	42	24	97	28	12	360	85	28	276	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	168	42	24	97	28	12	360	85	28	276	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	0.89	0.89	0.89	0.95	0.95	0.95	0.92	0.92	0.92
Lanes:	0.25	0.60	0.15	0.16	0.65	0.19	0.03	0.79	0.18	0.08	0.81	0.11
Final Sat.:	406	989	247	273	1105	319	47	1417	335	144	1419	185
Capacity Analysis Module:												
Vol/Sat:	0.17	0.17	0.17	0.09	0.09	0.09	0.25	0.25	0.25	0.19	0.19	0.19
Crit Moves:		****						****				
Green Time:	26.5	26.5	26.5	26.5	26.5	26.5	39.5	39.5	39.5	39.5	39.5	39.5
Volume/Cap:	0.45	0.45	0.45	0.23	0.23	0.23	0.45	0.45	0.45	0.34	0.34	0.34
Delay/Veh:	16.8	16.8	16.8	15.0	15.0	15.0	9.2	9.2	9.2	8.4	8.4	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.8	16.8	16.8	15.0	15.0	15.0	9.2	9.2	9.2	8.4	8.4	8.4
LOS by Move:	B	B	B	B	B	B	A	A	A	A	A	A
HCM2k95thQ:	238	238	238	115	115	115	289	289	289	202	202	202

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	0.661
Loss Time (sec):	4	Average Delay (sec/veh):	12.1
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	1	0	0 1	0	1	0
Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	229	116	42	69	108	34	49	689	106	34	597	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	116	42	69	108	34	49	689	106	34	597	35
Added Vol:	1	1	0	0	1	0	0	80	1	0	56	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	117	42	69	109	34	49	769	107	34	653	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	117	42	69	109	34	49	769	107	34	653	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	117	42	69	109	34	49	769	107	34	653	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	117	42	69	109	34	49	769	107	34	653	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.94	0.94	0.79	0.79	0.79	0.31	0.96	0.96	0.22	0.97	0.97
Lanes:	1.00	0.74	0.26	0.33	0.51	0.16	1.00	0.88	0.12	1.00	0.95	0.05
Final Sat.:	1567	1315	472	487	769	240	592	1605	223	421	1753	94
Capacity Analysis Module:												
Vol/Sat:	0.15	0.09	0.09	0.14	0.14	0.14	0.08	0.48	0.48	0.08	0.37	0.37
Crit Moves:	****							****				
Green Time:	16.7	16.7	16.7	16.7	16.7	16.7	54.3	54.3	54.3	54.3	54.3	54.3
Volume/Cap:	0.66	0.40	0.40	0.64	0.64	0.64	0.11	0.66	0.66	0.11	0.51	0.51
Delay/Veh:	31.3	25.6	25.6	30.6	30.6	30.6	3.2	6.7	6.7	3.3	4.9	4.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.3	25.6	25.6	30.6	30.6	30.6	3.2	6.7	6.7	3.3	4.9	4.9
LOS by Move:	C	C	C	C	C	C	A	A	A	A	A	A
HCM2k95thQ:	295	174	174	271	271	271	23	524	524	18	348	348

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.526
Loss Time (sec):	4	Average Delay (sec/veh):	15.6
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0	1	0	0 1	0	1	0
Volume Module: >> Count Date: 2 Feb 2010 << 5:00 - 6:00 p.m.												
Base Vol:	166	16	69	54	19	58	36	369	98	47	433	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	16	69	54	19	58	36	369	98	47	433	41
Added Vol:	9	0	0	0	0	0	0	13	12	0	17	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	175	16	69	54	19	58	36	382	110	47	450	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	175	16	69	54	19	58	36	382	110	47	450	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	16	69	54	19	58	36	382	110	47	450	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	16	69	54	19	58	36	382	110	47	450	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.73	0.89	0.89	0.95	0.97	0.97	0.95	0.99	0.99
Lanes:	0.67	0.06	0.27	1.00	0.25	0.75	1.00	0.78	0.22	1.00	0.92	0.08
Final Sat.:	938	86	370	1389	416	1269	1805	1425	410	1805	1719	157
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.04	0.05	0.05	0.02	0.27	0.27	0.03	0.26	0.26
Crit Moves:		****							****		****	
Green Time:	31.4	31.4	31.4	31.4	31.4	31.4	50.6	45.2	45.2	46.4	42.0	42.0
Volume/Cap:	0.50	0.50	0.50	0.11	0.12	0.12	0.08	0.50	0.50	0.11	0.53	0.53
Delay/Veh:	21.6	21.6	21.6	17.7	17.8	17.8	8.6	13.2	13.2	9.8	15.3	15.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.6	21.6	21.6	17.7	17.8	17.8	8.6	13.2	13.2	9.8	15.3	15.3
LOS by Move:	C	C	C	B	B	B	A	B	B	A	B	B
HCM2k95thQ:	278	278	278	49	69	69	23	396	396	28	394	394

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 0 Average Delay (sec/veh): 12.1
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:30-5:30 p.m.																
Base Vol:	0	183	175	77	145	0	0	0	0	181	0	95				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	183	175	77	145	0	0	0	0	181	0	95				
Added Vol:	0	3	20	6	6	0	0	0	0	30	0	6				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	186	195	83	151	0	0	0	0	211	0	101				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	186	195	83	151	0	0	0	0	211	0	101				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	186	195	83	151	0	0	0	0	211	0	101				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	186	195	83	151	0	0	0	0	211	0	101				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.00	0.49	0.51	0.35	0.65	0.00	0.00	0.00	0.00	0.68	0.00	0.32				
Final Sat.:	0	357	374	231	420	0	0	0	0	440	0	211				
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.52	0.52	0.36	0.36	xxxx	xxxx	xxxx	xxxx	0.48	xxxx	0.48				
Crit Moves:		****			****							****				
Delay/Veh:	0.0	12.5	12.5	11.0	11.0	0.0	0.0	0.0	0.0	12.5	0.0	12.5				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	12.5	12.5	11.0	11.0	0.0	0.0	0.0	0.0	12.5	0.0	12.5				
LOS by Move:	*	B	B	B	B	*	*	*	*	B	*	B				
ApproachDel:		12.5			11.0		xxxxxx			12.5						
Delay Adj:		1.00			1.00		xxxxx			1.00						
ApprAdjDel:		12.5			11.0		xxxxxx			12.5						
LOS by Appr:		B			B		*			B						
AllWayAvgQ:	23.9	23.9	23.9	12.3	12.3	12.3	0.0	0.0	0.0	19.3	19.3	19.3				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec): 60 Critical Vol./Cap.(X): 0.930
Loss Time (sec): 0 Average Delay (sec/veh): 26.9
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0	196	0	125	168	286	0	0	355	151				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	196	0	125	168	286	0	0	355	151				
Added Vol:	0	0	0	8	0	35	35	52	0	0	54	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	204	0	160	203	338	0	0	409	151				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	204	0	160	203	338	0	0	409	151				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	204	0	160	203	338	0	0	409	151				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	0	0	204	0	160	203	338	0	0	409	151				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.73	0.27				
Final Sat.:	0	0	0	466	0	550	514	554	0	0	440	162				
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx	0.44	xxxx	0.29	0.39	0.61	xxxx	xxxx	0.93	0.93				
Crit Moves:				****				****				****				
Delay/Veh:	0.0	0.0	0.0	15.8	0.0	11.6	13.9	18.3	0.0	0.0	45.2	45.2				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	15.8	0.0	11.6	13.9	18.3	0.0	0.0	45.2	45.2				
LOS by Move:	*	*	*	C	*	B	B	C	*	*	E	E				
ApproachDel:	xxxxxx			13.9				16.7			45.2					
Delay Adj:	xxxxx			1.00				1.00			1.00					
ApprAdjDel:	xxxxxx			13.9				16.7			45.2					
LOS by Appr:	*			B				C			E					
AllWayAvgQ:	0.0	0.0	0.0	17.8	0.0	9.5	15.5	35.4	0.0	152	152	151.5				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.512
Loss Time (sec):	4	Average Delay (sec/veh):	14.8
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	362	0	128		0	0	0		0	340	291		84	439	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	362	0	128		0	0	0		0	340	291		84	439	0	
Added Vol:	2	0	16		0	0	0		0	71	17		16	73	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	364	0	144		0	0	0		0	411	308		100	512	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	364	0	144		0	0	0		0	411	308		100	512	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	364	0	144		0	0	0		0	411	308		100	512	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	364	0	144		0	0	0		0	411	308		100	512	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.21	0.00	0.09		0.00	0.00	0.00		0.00	0.22	0.19		0.06	0.27	0.00	
Crit Moves:	****									****			****			
Green Time:	28.1	0.0	28.1		0.0	0.0	0.0		0.0	30.2	30.2		7.7	37.9	0.0	
Volume/Cap:	0.51	0.00	0.23		0.00	0.00	0.00		0.00	0.51	0.45		0.51	0.51	0.00	
Delay/Veh:	16.4	0.0	14.0		0.0	0.0	0.0		0.0	15.1	14.6		31.7	10.6	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.4	0.0	14.0		0.0	0.0	0.0		0.0	15.1	14.6		31.7	10.6	0.0	
LOS by Move:	B		A	B		A		A	A		B	B		C	B	A
HCM2k95thQ:	305		0	108		0		0	0	328		246	141		347	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.517
Loss Time (sec):	0	Average Delay (sec/veh):	12.9
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:15 - 5:15 p.m.																
Base Vol:	0	197	68		273	96	0		6	6	19		72	1	230	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	197	68		273	96	0		6	6	19		72	1	230	
Added Vol:	0	18	0		15	18	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	215	68		288	114	0		6	6	19		72	1	230	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	215	68		288	114	0		6	6	19		72	1	230	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	215	68		288	114	0		6	6	19		72	1	230	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	215	68		288	114	0		6	6	19		72	1	230	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		1.00	1.00	0.00		0.19	0.19	0.62		1.00	0.01	0.99	
Final Sat.:	0	454	143		557	601	0		95	95	301		501	3	601	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.47	0.47		0.52	0.19	xxxx		0.06	0.06	0.06		0.14	0.38	0.38	
Crit Moves:			****		****				****					****		
Delay/Veh:	0.0	13.7	13.7		15.3	9.8	0.0		9.9	9.9	9.9		10.6	11.5	11.5	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	13.7		15.3	9.8	0.0		9.9	9.9	9.9		10.6	11.5	11.5	
LOS by Move:	*	B	B		C	A	*		A	A	A		B	B	B	
ApproachDel:	13.7				13.7				9.9				11.3			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	13.7				13.7				9.9				11.3			
LOS by Appr:	B				B				A				B			
AllWayAvgQ:	20.3	20.3	20.3		24.2	5.4	5.4		1.3	1.3	1.3		3.8	13.3	13.3	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 0.788
Loss Time (sec): 10 Average Delay (sec/veh): 27.3
Optimal Cycle: 70 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0	6		6	5	6		0	0	0		0	6	0		6
Y+R:	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lanes:	0	0	1	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m.																
Base Vol:	0	394		447	377	236		0	0	0		0	515	0		455
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	394		447	377	236		0	0	0		0	515	0		455
Added Vol:	0	0		30	0	0		0	0	0		0	26	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	0	394		477	377	236		0	0	0		0	541	0		455
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	0	394		477	377	236		0	0	0		0	541	0		455
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	0	394		477	377	236		0	0	0		0	541	0		455
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	0	394		477	377	236		0	0	0		0	541	0		455
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	1.00	1.00		0.85	0.95	1.00		1.00	1.00	1.00		0.95	1.00	1.00		0.85
Lanes:	0.00	1.00		1.00	1.00	1.00		0.00	0.00	0.00		0.00	1.00	0.00		1.00
Final Sat.:	0	1900		1615	1805	1900		0	0	0		0	1805	0		1615
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21		0.30	0.21	0.12		0.00	0.00	0.00		0.00	0.30	0.00		0.28
Crit Moves:		****			****								****			
Green Time:	0.0	29.0		70.8	29.2	58.1		0.0	0.0	0.0		0.0	41.9	0.0		71.0
Volume/Cap:	0.00	0.79		0.46	0.79	0.24		0.00	0.00	0.00		0.00	0.79	0.00		0.44
Delay/Veh:	0.0	45.8		10.2	46.0	14.1		0.0	0.0	0.0		0.0	36.2	0.0		9.9
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	45.8		10.2	46.0	14.1		0.0	0.0	0.0		0.0	36.2	0.0		9.9
LOS by Move:	A	D		B	D	B		A	A	A		A	D	A		A
HCM2k95thQ:	0	566		373	610	207		0	0	0		0	719	0		352

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: F[56.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module: >> Count Date: 19 Nov 2009 << 4:45-5:45 p.m.																
Base Vol:	61	675		0	0	584		82	54	0		33	0	0		0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	61	675		0	0	584		82	54	0		33	0	0		0
Added Vol:	2	31		0	0	26		0	1	0		7	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	63	706		0	0	610		82	55	0		40	0	0		0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	63	706		0	0	610		82	55	0		40	0	0		0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
FinalVolume:	63	706		0	0	610		82	55	0		40	0	0		0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	6.5			6.2	xxxxx	xxxx	xxxxx	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	4.0			3.3	xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	692	xxxx	xxxxx	xxxx	xxxx	xxxxx		1479	1479			651	xxxx	xxxx	xxxxx	
Potent Cap.:	912	xxxx	xxxxx	xxxx	xxxx	xxxxx		114	103			472	xxxx	xxxx	xxxxx	
Move Cap.:	912	xxxx	xxxxx	xxxx	xxxx	xxxxx		108	96			472	xxxx	xxxx	xxxxx	
Volume/Cap:	0.07	xxxx	xxxx	xxxx	xxxx	xxxx		0.51	0.00			0.08	xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	5.6	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxx	xxxxx	
Control Del:	9.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxx	xxxxx	
LOS by Move:	A	*		*	*	*		*	*	*		*	*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	159	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	3.2	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	56.3	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*		*	*	*		*	*	F		*	*	*		*
ApproachDel:	xxxxxx				xxxxxx				56.3				xxxxxx			
ApproachLOS:	*				*				F				*			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 30.3 Worst Case Level Of Service: F[205.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	1	0	0 1	0	0	1!	0 0
Volume Module: >> Count Date: 18 Nov 2009 << 4:30 - 5:30 p.m.																
Base Vol:	113	520		89	46	471		126	88		19	105	17		3	18
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	113	520		89	46	471		126	88		19	105	17		3	18
Added Vol:	5	32		0	0	33		0	1		0	13	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	118	552		89	46	504		126	89		19	118	17		3	18
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	118	552		89	46	504		126	89		19	118	17		3	18
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
FinalVolume:	118	552		89	46	504		126	89		19	118	17		3	18
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5		6.2	7.1	6.5		6.2
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0		3.3	3.5	4.0		3.3
Capacity Module:																
Cnflict Vol:	630	xxxx	xxxxx		443	xxxx	xxxxx		1502	1544		567	1574	1567		388
Potent Cap.:	962	xxxx	xxxxx		917	xxxx	xxxxx		82	94		527	73	91		540
Move Cap.:	962	xxxx	xxxxx		917	xxxx	xxxxx		67	78		527	41	76		540
Volume/Cap:	0.12	xxxx	xxxx		0.05	xxxx	xxxx		1.32	0.24		0.22	0.42	0.04		0.03
Level Of Service Module:																
2Way95thQ:	10.4	xxxx	xxxxx		4.0	xxxx	xxxxx		xxxx	xxxx		21.3	xxxx	xxxx		xxxxx
Control Del:	9.3	xxxx	xxxxx		9.1	xxxx	xxxxx		xxxxx	xxxx		13.8	xxxxx	xxxx		xxxxx
LOS by Move:	A	*		*	A	*		*	*		*	B	*		*	*
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		69	xxxx	xxxxx		xxxx		77	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		9.3	xxxx	xxxxx		xxxxx		2.0	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		415.2	xxxx	xxxxx		xxxxx		90.3	xxxxx
Shared LOS:	*	*		*	*	*		*	F	*		*	*		F	*
ApproachDel:	xxxxxx				xxxxxx				205.6				90.3			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.554
Loss Time (sec): 6 Average Delay (sec/veh): 9.7
Optimal Cycle: 29 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	10		10	10	10		10	10	6		6	6	6		6	6
Y+R:	5.2		5.2	5.2	5.2		5.2	5.2	5.0		5.0	5.0	5.0		5.0	5.0
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 5:00-6:00 P.M.																
Base Vol:	88	567		105	60	536		123	148		98	70	32		68	40
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	88	567		105	60	536		123	148		98	70	32		68	40
Added Vol:	25	30		0	0	37		9	7		0	33	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	113	597		105	60	573		132	155		98	103	32		68	40
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	113	597		105	60	573		132	155		98	103	32		68	40
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	113	597		105	60	573		132	155		98	103	32		68	40
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	113	597		105	60	573		132	155		98	103	32		68	40
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.30	0.98		0.98	0.31	0.97		0.97	0.67	0.92		0.92	0.48	0.95		0.95
Lanes:	1.00	0.85		0.15	1.00	0.81		0.19	1.00	0.49		0.51	1.00	0.63		0.37
Final Sat.:	576	1580		278	580	1501		346	1277	855		899	904	1131		665
Capacity Analysis Module:																
Vol/Sat:	0.20	0.38		0.38	0.10	0.38		0.38	0.12	0.11		0.11	0.04	0.06		0.06
Crit Moves:						****			****							
Green Time:	44.8	44.8		44.8	44.8	44.8		44.8	14.2	14.2		14.2	14.2	14.2		14.2
Volume/Cap:	0.29	0.55		0.55	0.15	0.55		0.55	0.55	0.52		0.52	0.16	0.27		0.27
Delay/Veh:	4.3	5.6		5.6	3.7	5.6		5.6	25.0	23.7		23.7	20.9	21.5		21.5
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	4.3	5.6		5.6	3.7	5.6		5.6	25.0	23.7		23.7	20.9	21.5		21.5
LOS by Move:	A	A		A	A	A		A	C	C		C	C	C		C
HCM2k95thQ:	47	337		337	23	342		342	181	210		210	34	102		102

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.801
Loss Time (sec):	4	Average Delay (sec/veh):	31.5
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.0	4.2	4.0	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 0	0	0 0	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	525	538	0	0	386	102	237	0	602	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	525	538	0	0	386	102	237	0	602	0	0	0
Added Vol:	41	35	0	0	54	16	21	0	59	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	566	573	0	0	440	118	258	0	661	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	566	573	0	0	440	118	258	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	566	573	0	0	440	118	258	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	566	573	0	0	440	118	258	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.95	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.79	0.21	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1427	383	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.32	0.31	0.00	0.00	0.31	0.31	0.15	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	47.9	94.1	0.0	0.0	46.2	46.2	21.9	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.80	0.39	0.00	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	38.3	4.2	0.0	0.0	39.4	39.4	60.3	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.3	4.2	0.0	0.0	39.4	39.4	60.3	0.0	0.0	0.0	0.0	0.0
LOS by Move:	D	A	A	A	D	D	E	A	A	A	A	A
HCM2k95thQ:	795	310	0	0	792	792	509	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	4	Average Delay (sec/veh):	25.7
Optimal Cycle:	27	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 0	1 0	0	1 0	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	3	781	107	325	689	13	75	80	56	69	2	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	781	107	325	689	13	75	80	56	69	2	226
Added Vol:	0	75	0	0	114	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	856	107	325	803	13	75	80	56	69	2	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	856	107	325	803	13	75	80	56	69	2	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	856	107	325	803	13	75	80	56	69	2	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	856	107	325	803	13	75	80	56	69	2	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.64	0.92	0.92	0.62	0.62	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.59	0.41	0.97	0.03	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1214	1027	719	1151	33	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.07	0.18	0.23	0.01	0.06	0.08	0.08	0.06	0.06	0.14
Crit Moves:		****		****								****
Green Time:	11.1	49.4	49.4	37.5	75.7	75.7	29.1	29.1	29.1	29.1	29.1	29.1
Volume/Cap:	0.02	0.59	0.16	0.59	0.36	0.01	0.25	0.32	0.32	0.25	0.25	0.59
Delay/Veh:	49.5	28.1	22.4	36.4	10.7	8.2	37.1	37.7	37.7	37.0	37.0	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	28.1	22.4	36.4	10.7	8.2	37.1	37.7	37.7	37.0	37.0	42.5
LOS by Move:	D	C	C	D	B	A	D	D	D	D	D	D
HCM2k95thQ:	6	561	124	441	317	9	119	207	207	113	113	377

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[18.3]

Street Name:	Middlefield Road								Linfield Drive							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	1	1	0 0	0	0	1	1 0	1	0	0	0 1	0	0	0	0 0
Volume Module: >> Count Date: 11 Feb 2000 << 5:00 - 6:00 p.m.																
Base Vol:	61	773		0 0	829		23	25 0	68			0 0	0		0	0
Growth Adj:	1.00	1.00		1.00 1.00	1.00		1.00	1.00 1.00	1.00			1.00 1.00	1.00			1.00
Initial Bse:	61	773		0 0	829		23	25 0	68			0 0	0		0	0
Added Vol:	0	75		0 0	114		0	0 0	0			0 0	0		0	0
PasserByVol:	0	0		0 0	0		0	0 0	0			0 0	0		0	0
Initial Fut:	61	848		0 0	943		23	25 0	68			0 0	0		0	0
User Adj:	1.00	1.00		1.00 1.00	1.00		1.00	1.00 1.00	1.00			1.00 1.00	1.00			1.00
PHF Adj:	1.00	1.00		1.00 1.00	1.00		1.00	1.00 1.00	1.00			1.00 1.00	1.00			1.00
PHF Volume:	61	848		0 0	943		23	25 0	68			0 0	0		0	0
Reduct Vol:	0	0		0 0	0		0	0 0	0			0 0	0		0	0
FinalVolume:	61	848		0 0	943		23	25 0	68			0 0	0		0	0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx xxxx	xxxxx		6.8	xxxx	6.9	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx xxxx	xxxxx		3.5	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	719	xxxx	xxxxx	xxxx xxxx	xxxxx		1319	xxxx	178	xxxx	xxxx	xxxxx				
Potent Cap.:	795	xxxx	xxxxx	xxxx xxxx	xxxxx		135	xxxx	750	xxxx	xxxx	xxxxx				
Move Cap.:	795	xxxx	xxxxx	xxxx xxxx	xxxxx		127	xxxx	750	xxxx	xxxx	xxxxx				
Volume/Cap:	0.08	xxxx	xxxx	xxxx xxxx	xxxx		0.20	xxxx	0.09	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	6.2	xxxx	xxxxx	xxxx xxxx	xxxxx		17.5	xxxx	7.5	xxxx	xxxx	xxxxx				
Control Del:	9.9	xxxx	xxxxx	xxxxx xxxx	xxxxx		40.3	xxxx	10.3	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*		* *	*		E	*	B		*	* *				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	0.2	xxxx	xxxxx	xxxxx xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	9.9	xxxx	xxxxx	xxxxx xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	A	*		* *	*		*	*	*		*	* *				
ApproachDel:	xxxxxx			xxxxxx			18.3		xxxxxx							
ApproachLOS:	*			*			C		*							

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 8 Average Delay (sec/veh): 62.2
Optimal Cycle: 182 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	8	8		8	8	8		8	8	8		8	8	8		8
Y+R:	4.7	4.7		4.7	4.7	4.7		4.7	4.3	4.3		4.3	4.7	4.7		4.7
Lanes:	1	0	2	0 1	1	1	0	1 0	1	0	1	0 1	1	1	0	0 1
Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM																
Base Vol:	150	518		422	511	524		20	19	205		103	382	156		401
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	150	518		422	511	524		20	19	205		103	382	156		401
Added Vol:	0	0		0	114	0		0	0	1		0	0	2		76
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	150	518		422	625	524		20	19	206		103	382	158		477
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	150	518		422	625	524		20	19	206		103	382	158		477
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	150	518		422	625	524		20	19	206		103	382	158		477
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	150	518		422	625	524		20	19	206		103	382	158		477
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.93	0.93		0.83	0.90	0.90		0.90	0.93	0.98		0.83	0.95	0.95		0.83
Lanes:	1.00	2.00		1.00	1.61	1.34		0.05	1.00	1.00		1.00	1.41	0.59		1.00
Final Sat.:	1769	3538		1583	2755	2310		88	1769	1862		1583	2545	1053		1583
Capacity Analysis Module:																
Vol/Sat:	0.08	0.15		0.27	0.23	0.23		0.23	0.01	0.11		0.07	0.15	0.15		0.30
Crit Moves:				****	****					****						****
Green Time:	35.9	35.9		35.9	30.6	30.6		30.6	14.9	14.9		14.9	40.6	40.6		40.6
Volume/Cap:	0.31	0.53		0.96	0.96	0.96		0.96	0.09	0.96		0.57	0.48	0.48		0.96
Delay/Veh:	37.6	40.4		80.3	67.2	67.2		67.2	51.7	109		58.7	36.5	36.5		75.5
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	37.6	40.4		80.3	67.2	67.2		67.2	51.7	109		58.7	36.5	36.5		75.5
LOS by Move:	D	D		F	E	E		E	D	F		E	D	D		E
HCM2k95thQ:	232	438		900	883	883		883	37	544		230	411	411		983

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.819
Loss Time (sec):	7	Average Delay (sec/veh):	11.6
Optimal Cycle:	67	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	12	12	12	12	12	12
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	82	34	59	19	39	14	3	1073	82	66	788	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	34	59	19	39	14	3	1073	82	66	788	19
Added Vol:	18	0	0	0	0	0	0	99	16	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	34	59	19	39	14	3	1172	98	66	848	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	34	59	19	39	14	3	1172	98	66	848	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	34	59	19	39	14	3	1172	98	66	848	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	34	59	19	39	14	3	1172	98	66	848	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.89	0.89	0.56	0.94	0.94	0.29	0.97	0.97	0.14	0.98	0.98
Lanes:	1.00	0.37	0.63	1.00	0.74	0.26	1.00	0.92	0.08	1.00	0.98	0.02
Final Sat.:	1350	616	1069	1061	1315	472	544	1698	142	257	1816	41
Capacity Analysis Module:												
Vol/Sat:	0.07	0.06	0.06	0.02	0.03	0.03	0.01	0.69	0.69	0.26	0.47	0.47
Crit Moves:	****							****				
Green Time:	9.5	9.5	9.5	9.5	9.5	9.5	88.5	88.5	88.5	88.5	88.5	88.5
Volume/Cap:	0.82	0.61	0.61	0.20	0.33	0.33	0.01	0.82	0.82	0.30	0.55	0.55
Delay/Veh:	80.5	53.0	53.0	45.2	45.9	45.9	1.3	7.8	7.8	2.5	2.9	2.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.5	53.0	53.0	45.2	45.9	45.9	1.3	7.8	7.8	2.5	2.9	2.9
LOS by Move:	F	D	D	D	D	D	A	A	A	A	A	A
HCM2k95thQ:	257	195	195	39	98	98	1	953	953	43	406	406

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	7	Average Delay (sec/veh):	10.8
Optimal Cycle:	63	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0	1 0	1 0	0	1 0
Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM												
Base Vol:	17	16	3	70	25	46	6	1045	64	42	772	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	16	3	70	25	46	6	1045	64	42	772	13
Added Vol:	0	0	0	0	0	0	0	99	0	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	16	3	70	25	46	6	1144	64	42	832	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	16	3	70	25	46	6	1144	64	42	832	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	16	3	70	25	46	6	1144	64	42	832	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	16	3	70	25	46	6	1144	64	42	832	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.78	0.78	0.78	0.28	0.97	0.97	0.14	0.98	0.98
Lanes:	0.48	0.44	0.08	0.50	0.18	0.32	1.00	0.95	0.05	1.00	0.98	0.02
Final Sat.:	713	671	126	734	262	483	536	1749	98	266	1830	29
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.10	0.10	0.10	0.01	0.65	0.65	0.16	0.45	0.45
Crit Moves:					****			****				
Green Time:	12.5	12.5	12.5	12.5	12.5	12.5	85.5	85.5	85.5	85.5	85.5	85.5
Volume/Cap:	0.20	0.20	0.20	0.80	0.80	0.80	0.01	0.80	0.80	0.19	0.56	0.56
Delay/Veh:	42.3	42.3	42.3	67.8	67.8	67.8	1.8	8.4	8.4	2.6	3.8	3.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	42.3	42.3	67.8	67.8	67.8	1.8	8.4	8.4	2.6	3.8	3.8
LOS by Move:	D	D	D	E	E	E	A	A	A	A	A	A
HCM2k95thQ:	62	62	62	315	315	315	2	943	943	26	445	445

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	7	Average Delay (sec/veh):	21.5
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	10	10	4	10	10
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lanes:	1	0	0 1	0	0 1	0 1	1	0 1	1 0	1	0 0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM												
Base Vol:	45	1	188	186	3	21	13	1101	11	91	739	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	1	188	186	3	21	13	1101	11	91	739	36
Added Vol:	0	0	0	0	0	0	0	99	0	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	1	188	186	3	21	13	1200	11	91	799	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	1	188	186	3	21	13	1200	11	91	799	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	1	188	186	3	21	13	1200	11	91	799	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	1	188	186	3	21	13	1200	11	91	799	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.49	0.83	0.83	0.46	0.46	0.83	0.93	0.93	0.93	0.93	0.97	0.97
Lanes:	1.00	0.01	0.99	0.98	0.02	1.00	1.00	1.98	0.02	1.00	0.96	0.04
Final Sat.:	927	8	1576	865	14	1583	1769	3502	32	1769	1771	80
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.12	0.22	0.22	0.01	0.01	0.34	0.34	0.05	0.45	0.45
Crit Moves:					****		****				****	
Green Time:	30.3	30.3	30.3	30.3	30.3	30.3	4.0	58.8	58.8	8.8	63.7	63.7
Volume/Cap:	0.17	0.41	0.41	0.74	0.74	0.05	0.19	0.61	0.61	0.61	0.74	0.74
Delay/Veh:	28.2	30.7	30.7	45.1	45.1	26.9	50.3	16.0	16.0	53.7	17.6	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.2	30.7	30.7	45.1	45.1	26.9	50.3	16.0	16.0	53.7	17.6	17.6
LOS by Move:	C	C	C	D	D	C	D	B	B	D	B	B
HCM2k95thQ:	61	251	251	345	345	25	31	620	620	193	855	855

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	90	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	11	Average Delay (sec/veh):	18.4
Optimal Cycle:	55	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	5	0	5	5	5	0	0	5	5
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	0	0	0	381	0	61	31	1307	0	0	1053	242
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	381	0	61	31	1307	0	0	1053	242
Added Vol:	0	0	0	0	0	0	0	99	0	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	381	0	61	31	1406	0	0	1113	242
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	381	0	61	31	1406	0	0	1113	242
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	381	0	61	31	1406	0	0	1113	242
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	381	0	61	31	1406	0	0	1113	242
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	3538	0	0	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.04	0.02	0.40	0.00	0.00	0.31	0.15
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	27.8	0.0	27.8	7.7	51.2	0.0	0.0	43.5	43.5
Volume/Cap:	0.00	0.00	0.00	0.70	0.00	0.12	0.21	0.70	0.00	0.00	0.65	0.32
Delay/Veh:	0.0	0.0	0.0	31.4	0.0	22.5	39.0	15.0	0.0	0.0	18.4	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.4	0.0	22.5	39.0	15.0	0.0	0.0	18.4	14.4
LOS by Move:	A	A	A	C	A	C	D	B	A	A	B	B
HCM2k95thQ:	0	0	0	481	0	64	50	676	0	0	575	205

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.567
Loss Time (sec):	4	Average Delay (sec/veh):	14.1
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	71	15	148	58	17	3	6	772	93	200	928	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	15	148	58	17	3	6	772	93	200	928	50
Added Vol:	0	0	0	0	0	0	0	30	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	15	148	58	17	3	6	802	93	200	954	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	15	148	58	17	3	6	802	93	200	954	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	15	148	58	17	3	6	802	93	200	954	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	15	148	58	17	3	6	802	93	200	954	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.69	0.69	0.69	0.87	0.87	0.87	0.93	0.92	0.92
Lanes:	0.30	0.06	0.64	0.74	0.22	0.04	0.01	1.78	0.21	1.00	1.90	0.10
Final Sat.:	462	98	963	977	286	51	22	2950	342	1769	3338	175
Capacity Analysis Module:												
Vol/Sat:	0.15	0.15	0.15	0.06	0.06	0.06	0.27	0.27	0.27	0.11	0.29	0.29
Crit Moves:		****						****		****		
Green Time:	21.7	21.7	21.7	21.7	21.7	21.7	38.4	38.4	38.4	16.0	54.3	54.3
Volume/Cap:	0.57	0.57	0.57	0.22	0.22	0.22	0.57	0.57	0.57	0.57	0.42	0.42
Delay/Veh:	27.0	27.0	27.0	22.9	22.9	22.9	15.4	15.4	15.4	31.1	5.9	5.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.0	27.0	27.0	22.9	22.9	22.9	15.4	15.4	15.4	31.1	5.9	5.9
LOS by Move:	C	C	C	C	C	C	B	B	B	C	A	A
HCM2k95thQ:	277	277	277	83	83	83	389	389	389	212	273	273

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.688
Loss Time (sec):	4	Average Delay (sec/veh):	20.6
Optimal Cycle:	33	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.1	4.5	4.5
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0
Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm												
Base Vol:	90	25	65	440	10	161	203	878	43	31	842	344
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	25	65	440	10	161	203	878	43	31	842	344
Added Vol:	0	0	0	0	0	0	0	30	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	25	65	440	10	161	203	908	43	31	868	344
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	25	65	440	10	161	203	908	43	31	868	344
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	25	65	440	10	161	203	908	43	31	868	344
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	25	65	440	10	161	203	908	43	31	868	344
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.92	0.92	0.93	0.89	0.89
Lanes:	1.00	0.28	0.72	1.96	0.04	1.00	1.00	1.91	0.09	1.00	1.43	0.57
Final Sat.:	1769	461	1200	3470	79	1583	1769	3354	159	1769	2425	961
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.13	0.13	0.10	0.11	0.27	0.27	0.02	0.36	0.36
Crit Moves:		****			****		****				****	
Green Time:	6.3	6.3	6.3	14.7	14.7	14.7	13.3	46.4	46.4	8.6	41.6	41.6
Volume/Cap:	0.65	0.69	0.69	0.69	0.69	0.55	0.69	0.47	0.47	0.16	0.69	0.69
Delay/Veh:	45.8	50.2	50.2	33.6	33.6	31.9	38.1	9.9	9.9	32.9	15.5	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.8	50.2	50.2	33.6	33.6	31.9	38.1	9.9	9.9	32.9	15.5	15.5
LOS by Move:	D	D	D	C	C	C	D	A	A	C	B	B
HCM2k95thQ:	170	180	180	316	316	217	234	328	328	34	519	519

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	4	Average Delay (sec/veh):	18.6
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM																
Base Vol:	32	2	352	207	4	0	36	1171	23		60	1177	204			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
Initial Bse:	32	2	352	207	4	0	36	1171	23		60	1177	204			
Added Vol:	0	0	0	0	0	0	0	30	0		0	26	0			
PasserByVol:	0	0	0	0	0	0	0	0	0		0	0	0			
Initial Fut:	32	2	352	207	4	0	36	1201	23		60	1203	204			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
PHF Volume:	32	2	352	207	4	0	36	1201	23		60	1203	204			
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0			
Reduced Vol:	32	2	352	207	4	0	36	1201	23		60	1203	204			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
FinalVolume:	32	2	352	207	4	0	36	1201	23		60	1203	204			
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900	1900	1900			
Adjustment:	0.94	0.94	0.73	0.93	0.93	1.00	0.93	0.89	0.89		0.90	0.91	0.91			
Lanes:	0.94	0.06	2.00	0.98	0.02	1.00	1.00	2.94	0.06		2.00	1.71	0.29			
Final Sat.:	1674	105	2786	1741	34	1900	1769	4973	95		3432	2958	502			
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.13	0.12	0.12	0.00	0.02	0.24	0.24		0.02	0.41	0.41			
Crit Moves:			****	****			****					****				
Green Time:	14.0	14.0	14.0	13.1	13.1	0.0	4.0	40.5	40.5		8.4	44.9	44.9			
Volume/Cap:	0.11	0.11	0.72	0.72	0.72	0.00	0.41	0.48	0.48		0.17	0.72	0.72			
Delay/Veh:	27.9	27.9	36.6	40.4	40.4	0.0	39.9	13.0	13.0		32.8	14.4	14.4			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			
AdjDel/Veh:	27.9	27.9	36.6	40.4	40.4	0.0	39.9	13.0	13.0		32.8	14.4	14.4			
LOS by Move:	C		C	D		D	A		D		B	C	B			
HCM2k95thQ:	39		39	305		317	0		45		333	333	34		594	594

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	1.003
Loss Time (sec):	0	Average Delay (sec/veh):	46.1
Optimal Cycle:	0	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	1	0	0 1	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2000 << 5:00-6:00 p.m.																
Base Vol:	10	76	447		16	37	41		16	175	12		395	261	15	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	10	76	447		16	37	41		16	175	12		395	261	15	
Added Vol:	0	0	88		0	0	0		0	0	0		74	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	10	76	535		16	37	41		16	175	12		469	261	15	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	10	76	535		16	37	41		16	175	12		469	261	15	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	10	76	535		16	37	41		16	175	12		469	261	15	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	10	76	535		16	37	41		16	175	12		469	261	15	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.12	0.88	1.00		0.17	0.39	0.44		1.00	0.94	0.06		1.00	0.95	0.05	
Final Sat.:	56	425	539		73	169	188		418	418	29		468	474	27	
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.99		0.22	0.22	0.22		0.04	0.42	0.42		1.00	0.55	0.55	
Crit Moves:			****			****				****			****			
Delay/Veh:	11.7	11.7	62.2		13.4	13.4	13.4		11.6	16.2	16.2		70.0	18.2	18.2	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	11.7	11.7	62.2		13.4	13.4	13.4		11.6	16.2	16.2		70.0	18.2	18.2	
LOS by Move:	B	B	F		B	B	B		B	C	C		F	C	C	
ApproachDel:	55.2				13.4					15.8				50.8		
Delay Adj:	1.00				1.00					1.00				1.00		
ApprAdjDel:	55.2				13.4					15.8				50.8		
LOS by Appr:	F				B					C				F		
AllWayAvgQ:	5.3	5.3	197.9		6.6	6.6	6.6		1.0	17.1	17.1		194	29.1	29.1	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	10	Average Delay (sec/veh):	46.1
Optimal Cycle:	56	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	10	10		4	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	5.0	5.0		4.0	5.0	5.0	
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	207	632	149		104	588	175		360	669	89		393	1110	185	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	207	632	149		104	588	175		360	669	89		393	1110	185	
Added Vol:	0	39	25		0	31	23		25	23	0		55	44	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	207	671	174		104	619	198		385	692	89		448	1154	185	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	207	671	174		104	619	198		385	692	89		448	1154	185	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	207	671	174		104	619	198		385	692	89		448	1154	185	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	207	671	174		104	619	198		385	692	89		448	1154	185	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3538	3724	1583		3538	3724	1583		3538	3724	1583		3538	3724	1583	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.18	0.11		0.03	0.17	0.13		0.11	0.19	0.06		0.13	0.31	0.12	
Crit Moves:	****					****			****					****		
Green Time:	12.7	42.0	42.0		6.9	36.2	36.2		23.7	54.2	54.2		36.9	67.4	67.4	
Volume/Cap:	0.69	0.64	0.39		0.64	0.69	0.52		0.69	0.51	0.16		0.51	0.69	0.26	
Delay/Veh:	73.4	48.8	44.2		78.9	54.1	50.6		63.3	37.9	32.6		49.3	34.2	25.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	73.4	48.8	44.2		78.9	54.1	50.6		63.3	37.9	32.6		49.3	34.2	25.9	
LOS by Move:	E	D	D		E	D	D		E	D	C		D	C	C	
HCM2k95thQ:	221	548	268		172	611	385		392	541	132		423	895	251	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.655
Loss Time (sec):	4	Average Delay (sec/veh):	34.0
Optimal Cycle:	32	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM												
Base Vol:	133	1226	106	87	998	61	113	131	87	119	161	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	1226	106	87	998	61	113	131	87	119	161	63
Added Vol:	54	65	-1	15	63	17	16	50	31	0	39	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	187	1291	105	102	1061	78	129	181	118	119	200	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	187	1291	105	102	1061	78	129	181	118	119	200	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	187	1291	105	102	1061	78	129	181	118	119	200	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	187	1291	105	102	1061	78	129	181	118	119	200	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.85	0.15	1.00	1.86	0.14	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3236	263	1769	3263	240	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.40	0.40	0.06	0.33	0.33	0.07	0.10	0.07	0.07	0.11	0.04
Crit Moves:		****		****			****				****	
Green Time:	24.8	88.3	88.3	12.8	76.3	76.3	16.1	23.6	23.6	16.3	23.8	23.8
Volume/Cap:	0.62	0.66	0.66	0.66	0.62	0.62	0.66	0.60	0.46	0.60	0.66	0.26
Delay/Veh:	59.6	19.2	19.2	73.7	24.8	24.8	69.5	59.6	56.2	66.1	61.8	53.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.6	19.2	19.2	73.7	24.8	24.8	69.5	59.6	56.2	66.1	61.8	53.4
LOS by Move:	E	B	B	E	C	C	E	E	E	E	E	D
HCM2k95thQ:	396	888	888	268	794	794	315	382	249	284	429	136

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	4	Average Delay (sec/veh):	24.3
Optimal Cycle:	27	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	0	0 1	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm												
Base Vol:	0	1191	54	0	1043	143	171	68	161	72	83	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1191	54	0	1043	143	171	68	161	72	83	58
Added Vol:	0	106	4	0	70	29	20	20	18	3	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1297	58	0	1113	172	191	88	179	75	97	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1297	58	0	1113	172	191	88	179	75	97	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1297	58	0	1113	172	191	88	179	75	97	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1297	58	0	1113	172	191	88	179	75	97	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.91	0.91	0.93	0.98	0.83	0.93	0.93	0.93
Lanes:	0.00	2.00	1.00	0.00	1.73	0.27	1.00	1.00	1.00	1.00	0.63	0.37
Final Sat.:	0	3538	1583	0	3003	464	1769	1862	1583	1769	1100	658
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.04	0.00	0.37	0.37	0.11	0.05	0.11	0.04	0.09	0.09
Crit Moves:					****				****		****	
Green Time:	0.0	91.4	91.4	0.0	91.4	91.4	27.9	27.9	27.9	21.7	21.7	21.7
Volume/Cap:	0.00	0.58	0.06	0.00	0.59	0.59	0.56	0.25	0.59	0.28	0.59	0.59
Delay/Veh:	0.0	16.0	10.3	0.0	16.2	16.2	55.2	50.0	56.3	55.3	60.9	60.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	16.0	10.3	0.0	16.2	16.2	55.2	50.0	56.3	55.3	60.9	60.9
LOS by Move:	A	B	B	A	B	B	E	D	E	E	E	E
HCM2k95thQ:	0	731	48	0	752	752	384	166	372	154	339	339

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	4	Average Delay (sec/veh):	47.0
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 1	1 0	0	1 0	1 0	2	0 1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	176	1202	557	193	1082	22	41	296	129	484	239	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	1202	557	193	1082	22	41	296	129	484	239	67
Added Vol:	23	105	102	0	87	4	3	12	18	51	12	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	1307	659	193	1169	26	44	308	147	535	251	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	1307	659	193	1169	26	44	308	147	535	251	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	1307	659	193	1169	26	44	308	147	535	251	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	199	1307	659	193	1169	26	44	308	147	535	251	69
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.93	0.89	0.89	0.89	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	1.96	0.04	0.18	1.23	0.59	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3450	77	297	2079	992	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.37	0.42	0.11	0.34	0.34	0.15	0.15	0.15	0.16	0.13	0.04
Crit Moves:			****	****				****		****		
Green Time:	22.3	70.8	70.8	18.5	67.1	67.1	25.2	25.2	25.2	26.5	26.5	26.5
Volume/Cap:	0.73	0.76	0.85	0.85	0.73	0.73	0.85	0.85	0.85	0.85	0.74	0.24
Delay/Veh:	68.4	32.1	41.6	87.4	33.4	33.4	69.7	69.7	69.7	68.3	64.2	51.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.4	32.1	41.6	87.4	33.4	33.4	69.7	69.7	69.7	68.3	64.2	51.1
LOS by Move:	E	C	D	F	C	C	E	E	E	E	E	D
HCM2k95thQ:	455	1042	1128	416	933	933	615	615	615	636	537	135

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	4	Average Delay (sec/veh):	40.0
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 1	0	1 0	2 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module: >> Count Date: 19 Nov 2009 <<												
Base Vol:	239	355	8	1	536	56	9	8	192	10	11	14
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	306	455	10	1	687	72	12	10	246	13	14	18
Added Vol:	0	26	0	0	75	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	306	481	10	1	762	72	12	10	246	13	14	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	306	481	10	1	762	72	12	10	246	13	14	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	481	10	1	762	72	12	10	246	13	14	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	481	10	1	762	72	12	10	246	13	14	18
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.90	0.90	0.87	0.87	0.87	0.95	0.92	0.92
Lanes:	1.00	2.94	0.06	1.00	2.74	0.26	0.04	0.04	0.92	1.00	0.44	0.56
Final Sat.:	1805	5063	108	1805	4679	441	72	64	1526	1805	766	975
Capacity Analysis Module:												
Vol/Sat:	0.17	0.10	0.10	0.00	0.16	0.16	0.16	0.16	0.16	0.01	0.02	0.02
Crit Moves:	****				****			****			****	
Green Time:	45.0	58.5	58.5	29.7	43.2	43.2	42.8	42.8	42.8	10.0	10.0	10.0
Volume/Cap:	0.55	0.24	0.24	0.00	0.55	0.55	0.55	0.55	0.55	0.10	0.27	0.27
Delay/Veh:	42.7	28.6	28.6	45.9	43.1	43.1	44.3	44.3	44.3	63.7	65.2	65.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.7	28.6	28.6	45.9	43.1	43.1	44.3	44.3	44.3	63.7	65.2	65.2
LOS by Move:	D	C	C	D	D	D	D	D	D	E	E	E
HCM2k95thQ:	519	248	248	2	522	522	471	471	471	31	81	81

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	4	Average Delay (sec/veh):	23.6
Optimal Cycle:	68	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 am - 8:45 am												
Base Vol:	43	772	52	125	1726	54	8	21	12	139	7	137
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	55	990	67	160	2213	69	10	27	15	178	9	176
Added Vol:	0	41	-3	0	78	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	1031	64	160	2291	69	10	27	15	178	9	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	1031	64	160	2291	69	10	27	15	178	9	176
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	1031	64	160	2291	69	10	27	15	178	9	176
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	1031	64	160	2291	69	10	27	15	178	9	176
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.91	0.91	0.83	0.65	0.65	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.28	0.72	1.00	0.95	0.05	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	475	1247	1583	1181	59	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.04	0.09	0.65	0.04	0.02	0.02	0.01	0.15	0.15	0.11
Crit Moves:	****				****						****	
Green Time:	5.3	88.0	88.0	27.4	110	110.1	25.7	25.7	25.7	25.7	25.7	25.7
Volume/Cap:	0.85	0.48	0.07	0.48	0.85	0.06	0.12	0.12	0.05	0.85	0.85	0.63
Delay/Veh:	132.8	16.0	11.7	53.6	14.8	4.4	50.4	50.4	49.7	84.0	84.0	59.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	132.8	16.0	11.7	53.6	14.8	4.4	50.4	50.4	49.7	84.0	84.0	59.7
LOS by Move:	F	B	B	D	B	A	D	D	D	F	F	E
HCM2k95thQ:	212	584	58	318	1499	40	72	72	30	483	483	380

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.914
Loss Time (sec):	4	Average Delay (sec/veh):	44.3
Optimal Cycle:	104	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	80	616	30	67	1340	518	344	142	120	62	168	13
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	103	790	38	86	1718	664	441	182	154	80	215	17
Added Vol:	2	37	0	0	71	1	7	38	3	2	9	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	827	38	86	1789	665	448	220	157	82	224	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	105	827	38	86	1789	665	448	220	157	82	224	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	827	38	86	1789	665	448	220	157	82	224	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	827	38	86	1789	665	448	220	157	82	224	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.96	0.96
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.34	0.66	1.00	1.00	0.89	0.11
Final Sat.:	1769	3538	1583	1769	3538	1583	2418	1187	1583	1769	1623	207
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.02	0.05	0.51	0.42	0.19	0.19	0.10	0.05	0.14	0.14
Crit Moves:	****				****			****				****
Green Time:	9.4	74.2	74.2	15.4	80.3	80.3	29.4	29.4	29.4	21.9	21.9	21.9
Volume/Cap:	0.91	0.46	0.05	0.46	0.91	0.76	0.91	0.91	0.49	0.30	0.91	0.91
Delay/Veh:	125.2	22.7	17.7	62.6	36.3	28.8	72.5	72.5	52.3	55.4	93.0	93.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	125.2	22.7	17.7	62.6	36.3	28.8	72.5	72.5	52.3	55.4	93.0	93.0
LOS by Move:	F	C	B	E	D	C	E	E	D	E	F	F
HCM2k95thQ:	344	542	43	200	1597	976	691	691	287	167	636	636

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	4	Average Delay (sec/veh):	37.6
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	4	4		4	4	4	
Y+R:	3.0	4.2	4.2		3.0	4.2	4.2		3.0	3.5	3.5		3.0	3.5	3.5	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	137	614	59		127	1307	63		78	173	56		97	187	58	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	176	787	76		163	1676	81		100	222	72		124	240	74	
Added Vol:	0	109	72		-1	116	0		0	0	0		16	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	176	896	148		162	1792	81		100	222	72		140	240	74	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	896	148		162	1792	81		100	222	72		140	240	74	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	896	148		162	1792	81		100	222	72		140	240	74	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	176	896	148		162	1792	81		100	222	72		140	240	74	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	1862	1583		1769	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.25	0.09		0.09	0.51	0.05		0.06	0.12	0.05		0.08	0.13	0.05	
Crit Moves:	****					****				****			****			
Green Time:	17.4	78.0	78.0		28.2	88.8	88.8		10.6	20.9	20.9		13.9	24.2	24.2	
Volume/Cap:	0.83	0.47	0.17		0.47	0.83	0.08		0.77	0.83	0.32		0.83	0.77	0.28	
Delay/Veh:	85.0	20.9	17.2		52.8	24.9	11.5		90.4	79.0	56.4		91.6	69.1	53.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	85.0	20.9	17.2		52.8	24.9	11.5		90.4	79.0	56.4		91.6	69.1	53.4	
LOS by Move:	F		C	B	D		C	B	F		E	E	F		E	D
HCM2k95thQ:	454	568	162		318	1350	73		294	534	153		389	537	151	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.663
Loss Time (sec):	4	Average Delay (sec/veh):	11.3
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	10		0	10	10		6	6	6		6	6	6	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	2	0 1	0	0	2	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	0	711	42		0	1396	88		52	27	44		37	56	23	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	912	54		0	1790	113		67	35	56		47	72	29	
Added Vol:	0	162	0		0	119	13		19	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1074	54		0	1909	126		86	35	56		47	72	29	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1074	54		0	1909	126		86	35	56		47	72	29	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1074	54		0	1909	126		86	35	56		47	72	29	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1074	54		0	1909	126		86	35	56		47	72	29	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.93	0.83		1.00	0.93	0.83		0.93	0.98	0.83		0.93	0.94	0.94	
Lanes:	0.00	2.00	1.00		0.00	2.00	1.00		1.00	1.00	1.00		1.00	0.71	0.29	
Final Sat.:	0	3538	1583		0	3538	1583		1769	1862	1583		1769	1262	518	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.30	0.03		0.00	0.54	0.08		0.05	0.02	0.04		0.03	0.06	0.06	
Crit Moves:						****			****						****	
Green Time:	0.0	118	118.0		0.0	118	118.0		10.6	10.6	10.6		12.4	12.4	12.4	
Volume/Cap:	0.00	0.37	0.04		0.00	0.66	0.10		0.66	0.25	0.49		0.31	0.66	0.66	
Delay/Veh:	0.0	3.7	2.6		0.0	6.1	2.8		77.7	64.5	67.8		63.4	74.7	74.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	3.7	2.6		0.0	6.1	2.8		77.7	64.5	67.8		63.4	74.7	74.7	
LOS by Move:	A		A	A	A		A	A	E		E	E	E		E	E
HCM2k95thQ:	0	307	23		0	786	59		240	84	152		113	269	269	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.020
Loss Time (sec):	4	Average Delay (sec/veh):	74.7
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 1	0	2 0	1 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	97	895	378	233	1616	18	42	391	88	645	285	73
Added Vol:	1	21	42	69	12	39	117	314	0	12	89	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	916	420	302	1628	57	159	705	88	657	374	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	916	420	302	1628	57	159	705	88	657	374	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	916	420	302	1628	57	159	705	88	657	374	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	916	420	302	1628	57	159	705	88	657	374	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.91	0.91	0.91	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.33	1.48	0.19	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	579	2561	321	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.27	0.17	0.46	0.04	0.28	0.28	0.28	0.19	0.20	0.06
Crit Moves:	****				****				****		****	
Green Time:	7.9	44.6	44.6	28.7	65.4	65.4	39.1	39.1	39.1	28.5	28.5	28.5
Volume/Cap:	1.02	0.84	0.86	0.86	1.02	0.08	1.02	1.02	1.02	0.97	1.02	0.31
Delay/Veh:	165.7	53.0	62.0	75.5	67.5	22.7	87.5	87.5	87.5	85.8	110	50.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	165.7	53.0	62.0	75.5	67.5	22.7	87.5	87.5	87.5	85.8	110	50.4
LOS by Move:	F	D	E	E	E	C	F	F	F	F	F	D
HCM2k95thQ:	360	925	855	600	1689	69	1166	1166	1166	830	935	188

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.593
Loss Time (sec):	10	Average Delay (sec/veh):	12.4
Optimal Cycle:	45	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	8	8	8	8	8	8
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	28	1031	22	42	1703	31	55	3	41	8	5	5
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	36	1322	28	54	2184	40	71	4	53	10	6	6
Added Vol:	0	64	0	0	24	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	1386	28	54	2208	40	71	4	53	10	6	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	1386	28	54	2208	40	71	4	53	10	6	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1386	28	54	2208	40	71	4	53	10	6	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	1386	28	54	2208	40	71	4	53	10	6	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.89	0.89	0.75	0.75	0.75	0.85	0.85	0.83
Lanes:	1.00	1.96	0.04	1.00	2.95	0.05	0.56	0.03	0.41	0.62	0.38	1.00
Final Sat.:	1769	3457	70	1769	4978	90	795	43	593	996	622	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.40	0.40	0.03	0.44	0.44	0.09	0.09	0.09	0.01	0.01	0.00
Crit Moves:	****				****			****				
Green Time:	5.0	105	105.3	8.0	108	108.4	21.7	21.7	21.7	21.7	21.7	21.7
Volume/Cap:	0.59	0.55	0.55	0.55	0.59	0.59	0.59	0.59	0.59	0.07	0.07	0.03
Delay/Veh:	83.9	9.3	9.3	73.4	8.6	8.6	62.0	62.0	62.0	53.1	53.1	52.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.9	9.3	9.3	73.4	8.6	8.6	62.0	62.0	62.0	53.1	53.1	52.7
LOS by Move:	F	A	A	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	127	657	657	158	717	717	293	293	293	34	34	13

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.908
Loss Time (sec):	10	Average Delay (sec/veh):	37.4
Optimal Cycle:	129	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	0	0	10	10	11	0	11	0	0	0
Y+R:	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 3	0 0	0	0 2	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	172	982	0	0	1685	64	172	0	334	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	221	1259	0	0	2161	82	221	0	428	0	0	0
Added Vol:	2	59	0	0	23	0	4	0	1	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	223	1318	0	0	2184	82	225	0	429	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	223	1318	0	0	2184	82	225	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	1318	0	0	2184	82	225	0	429	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	223	1318	0	0	2184	82	225	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	1.00	1.00	0.89	0.89	0.93	1.00	0.83	1.00	1.00	1.00
Lanes:	1.00	3.00	0.00	0.00	2.89	0.11	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	5083	0	0	4875	183	1769	0	1583	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.26	0.00	0.00	0.45	0.45	0.13	0.00	0.27	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	20.1	91.7	0.0	0.0	71.6	71.6	43.3	0.0	43.3	0.0	0.0	0.0
Volume/Cap:	0.91	0.41	0.00	0.00	0.91	0.91	0.42	0.00	0.91	0.00	0.00	0.00
Delay/Veh:	95.4	13.3	0.0	0.0	39.0	39.0	41.4	0.0	70.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	95.4	13.3	0.0	0.0	39.0	39.0	41.4	0.0	70.0	0.0	0.0	0.0
LOS by Move:	F	B	A	A	D	D	D	A	E	A	A	A
HCM2k95thQ:	577	475	0	0	1454	1454	376	0	912	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	10	Average Delay (sec/veh):	13.0
Optimal Cycle:	58	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	1 0	1	0 2	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	125	1084	2	25	2021	21	19	0	32	1	0	1
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	160	1390	3	32	2592	27	24	0	41	1	0	1
Added Vol:	0	61	0	0	25	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	1451	3	32	2617	27	24	0	41	1	0	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	1451	3	32	2617	27	24	0	41	1	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	1451	3	32	2617	27	24	0	41	1	0	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	1451	3	32	2617	27	24	0	41	1	0	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.79	1.00	0.79	0.83	1.00	0.83
Lanes:	1.00	2.99	0.01	1.00	2.97	0.03	0.37	0.00	0.63	0.50	0.00	0.50
Final Sat.:	1769	5074	9	1769	5026	52	560	0	943	792	0	792
Capacity Analysis Module:												
Vol/Sat:	0.09	0.29	0.29	0.02	0.52	0.52	0.04	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	18.4	113	113.1	10.9	106	105.6	11.0	0.0	11.0	11.0	0.0	11.0
Volume/Cap:	0.71	0.37	0.37	0.24	0.71	0.71	0.57	0.00	0.57	0.02	0.00	0.02
Delay/Veh:	71.2	5.0	5.0	64.1	11.8	11.8	71.7	0.0	71.7	62.1	0.0	62.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.2	5.0	5.0	64.1	11.8	11.8	71.7	0.0	71.7	62.1	0.0	62.1
LOS by Move:	E	A	A	E	B	B	E	A	E	E	A	E
HCM2k95thQ:	386	342	342	78	1012	1012	183	0	183	6	0	6

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	125	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	9	Average Delay (sec/veh):	29.7
Optimal Cycle:	53	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Ignore			
Min. Green:	7	10	10		7	10	10		7	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0 1	1	0	2	1 0	2	0	0	0 1	0	0	0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 8:00 am - 9:00 am																
Base Vol:	240	560	27		487	1233	308		224	0	229		0	0	447	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	308	718	35		625	1581	395		287	0	294		0	0	573	
Added Vol:	0	57	0		0	22	3		5	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	308	775	35		625	1603	398		292	0	294		0	0	573	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Volume:	308	775	35		625	1603	398		292	0	294		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	308	775	35		625	1603	398		292	0	294		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	308	775	35		625	1603	398		292	0	294		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.85		0.95	0.88	0.88		0.92	1.00	0.85		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	2.40	0.60		2.00	0.00	1.00		0.00	0.00	1.00	
Final Sat.:	1805	5187	1615		1805	4031	1001		3502	0	1615		0	0	1900	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.15	0.02		0.35	0.40	0.40		0.08	0.00	0.18		0.00	0.00	0.00	
Crit Moves:	****					****			****							
Green Time:	30.4	30.5	30.5		70.6	70.8	70.8		14.9	0.0	45.2		0.0	0.0	0.0	
Volume/Cap:	0.70	0.61	0.09		0.61	0.70	0.70		0.70	0.00	0.50		0.00	0.00	0.00	
Delay/Veh:	48.3	42.9	36.6		19.2	20.3	20.3		58.3	0.0	31.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	48.3	42.9	36.6		19.2	20.3	20.3		58.3	0.0	31.8		0.0	0.0	0.0	
LOS by Move:	D	D	D		B	C	C		E	A	C		A	A	A	
HCM2k95thQ:	536	471	53		697	869	869		275	0	398		0	0	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	4	Average Delay (sec/veh):	18.5
Optimal Cycle:	40	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		8	8	8		8	8	8	
Y+R:	4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	24	100	16		119	223	66		16	238	97		37	367	82	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	31	128	21		153	286	85		21	305	124		47	471	105	
Added Vol:	0	0	0		0	0	19		81	-4	0		0	-11	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	31	128	21		153	286	104		102	301	124		47	460	105	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	31	128	21		153	286	104		102	301	124		47	460	105	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	31	128	21		153	286	104		102	301	124		47	460	105	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	31	128	21		153	286	104		102	301	124		47	460	105	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.86	0.86	0.86		0.83	0.83	0.83		0.75	0.75	0.75		0.90	0.90	0.90	
Lanes:	0.17	0.72	0.11		0.28	0.53	0.19		0.19	0.57	0.24		0.08	0.75	0.17	
Final Sat.:	280	1169	187		442	827	300		276	819	338		133	1284	294	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.11	0.11		0.35	0.35	0.35		0.37	0.37	0.37		0.36	0.36	0.36	
Crit Moves:						****				****						
Green Time:	32.0	32.0	32.0		32.0	32.0	32.0		34.0	34.0	34.0		34.0	34.0	34.0	
Volume/Cap:	0.24	0.24	0.24		0.76	0.76	0.76		0.76	0.76	0.76		0.74	0.74	0.74	
Delay/Veh:	11.8	11.8	11.8		20.4	20.4	20.4		19.4	19.4	19.4		17.9	17.9	17.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	11.8	11.8	11.8		20.4	20.4	20.4		19.4	19.4	19.4		17.9	17.9	17.9	
LOS by Move:	B	B	B		C	C	C		B	B	B		B	B	B	
HCM2k95thQ:	124	124	124		523	523	523		506	506	506		546	546	546	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	1.079
Loss Time (sec):	4	Average Delay (sec/veh):	47.1
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 22 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	167	106	22	169	104	52	7	562	61	15	528	29
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	214	136	28	217	133	67	9	721	78	19	677	37
Added Vol:	60	0	0	0	0	0	0	255	170	0	66	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	274	136	28	217	133	67	9	976	248	19	743	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	274	136	28	217	133	67	9	976	248	19	743	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	274	136	28	217	133	67	9	976	248	19	743	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	274	136	28	217	133	67	9	976	248	19	743	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.95	0.95	0.64	0.64	0.64	0.21	0.95	0.95	0.08	0.97	0.97
Lanes:	1.00	0.83	0.17	0.52	0.32	0.16	1.00	0.80	0.20	1.00	0.95	0.05
Final Sat.:	1531	1502	312	631	388	194	400	1440	366	158	1761	88
Capacity Analysis Module:												
Vol/Sat:	0.18	0.09	0.09	0.34	0.34	0.34	0.02	0.68	0.68	0.12	0.42	0.42
Crit Moves:					****			****				
Green Time:	23.9	23.9	23.9	23.9	23.9	23.9	47.1	47.1	47.1	47.1	47.1	47.1
Volume/Cap:	0.56	0.28	0.28	1.08	1.08	1.08	0.04	1.08	1.08	0.19	0.67	0.67
Delay/Veh:	22.7	19.4	19.4	94.1	94.1	94.1	5.4	64.6	64.6	6.9	10.5	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.7	19.4	19.4	94.1	94.1	94.1	5.4	64.6	64.6	6.9	10.5	10.5
LOS by Move:	C	B	B	F	F	F	A	E	E	A	B	B
HCM2k95thQ:	288	148	148	776	776	776	6	1731	1731	21	559	559

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.547
Loss Time (sec):	4	Average Delay (sec/veh):	14.2
Optimal Cycle:	24	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 2 Feb 2010 << 7:30 -8:30 A.M.												
Base Vol:	35	80	22	73	69	74	158	403	99	39	368	50
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	45	103	28	94	88	95	203	517	127	50	472	64
Added Vol:	0	0	1	0	0	0	0	49	0	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	45	103	29	94	88	95	203	566	127	50	485	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	103	29	94	88	95	203	566	127	50	485	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	103	29	94	88	95	203	566	127	50	485	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	103	29	94	88	95	203	566	127	50	485	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.81	0.81	0.84	0.92	0.92	0.95	0.97	0.97	0.95	0.98	0.98
Lanes:	0.25	0.58	0.17	1.00	0.48	0.52	1.00	0.82	0.18	1.00	0.88	0.12
Final Sat.:	392	897	255	1600	845	907	1805	1510	339	1805	1648	218
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.06	0.10	0.10	0.11	0.37	0.37	0.03	0.29	0.29
Crit Moves:		****						****			****	
Green Time:	17.9	17.9	17.9	17.9	17.9	17.9	64.1	58.7	58.7	50.0	45.7	45.7
Volume/Cap:	0.54	0.54	0.54	0.28	0.50	0.50	0.30	0.54	0.54	0.10	0.55	0.55
Delay/Veh:	31.7	31.7	31.7	28.6	30.6	30.6	5.4	7.0	7.0	7.5	13.5	13.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.7	31.7	31.7	28.6	30.6	30.6	5.4	7.0	7.0	7.5	13.5	13.5
LOS by Move:	C	C	C	C	C	C	A	A	A	A	B	B
HCM2k95thQ:	237	237	237	113	233	233	100	430	430	27	408	408

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 0 Average Delay (sec/veh): 12.3
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30 - 8:30 A.M.																
Base Vol:	0	129	154		80	168	0		0	0	0		169	0	44	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	165	197		103	215	0		0	0	0		217	0	56	
Added Vol:	0	1	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	166	197		103	215	0		0	0	0		217	0	56	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	166	197		103	215	0		0	0	0		217	0	56	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	166	197		103	215	0		0	0	0		217	0	56	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	166	197		103	215	0		0	0	0		217	0	56	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.46	0.54		0.32	0.68	0.00		0.00	0.00	0.00		0.79	0.01	0.20	
Final Sat.:	0	334	396		216	455	0		0	0	0		492	0	128	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.50	0.50		0.47	0.47	xxxx		xxxx	xxxx	xxxx		0.44	0.00	0.44	
Crit Moves:		****				****									****	
Delay/Veh:	0.0	12.1	12.1		12.4	12.4	0.0		0.0	0.0	0.0		12.3	12.3	12.3	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.1	12.1		12.4	12.4	0.0		0.0	0.0	0.0		12.3	12.3	12.3	
LOS by Move:	*	B	B		B	B	*		*	*	*		B	B	B	
ApproachDel:		12.1				12.4			xxxxxx					12.3		
Delay Adj:		1.00				1.00			xxxxx					1.00		
ApprAdjDel:		12.1				12.4			xxxxxx					12.3		
LOS by Appr:		B				B			*					B		
AllWayAvgQ:	22.0	22.0	22.0		19.9	19.9	19.9		0.0	0.0	0.0		16.4	16.4	16.4	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec): 60 Critical Vol./Cap.(X): 1.368
Loss Time (sec): 0 Average Delay (sec/veh): 109.7
Optimal Cycle: 0 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0		257	0	61		56	391	0		0	356	225	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		330	0	78		72	501	0		0	457	289	
Added Vol:	0	0	0		0	0	0		1	19	0		0	13	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		330	0	78		73	520	0		0	470	289	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		330	0	78		73	520	0		0	470	289	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		330	0	78		73	520	0		0	470	289	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		330	0	78		73	520	0		0	470	289	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	1.00		0.00	0.00	0.62	0.38
Final Sat.:	0	0	0		458	0	538		486	524	0		0	343	211	
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx		0.72	xxxx	0.15		0.15	0.99	xxxx		xxxx	1.37	1.37	
Crit Moves:					****					****				****		
Delay/Veh:	0.0	0.0	0.0		28.2	0.0	10.5		11.4	63.6	0.0		0.0	196	196.4	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		28.2	0.0	10.5		11.4	63.6	0.0		0.0	196	196.4	
LOS by Move:	*	*	*		D	*	B		B	F	*		*	F	F	
ApproachDel:		xxxxxx				24.8				57.2				196.4		
Delay Adj:		xxxxx				1.00				1.00				1.00		
ApprAdjDel:		xxxxxx				24.8				57.2				196.4		
LOS by Appr:		*				C				F				F		
AllWayAvgQ:	0.0	0.0	0.0		56.1	0.0	4.2		4.3	197	0.0		719	719	719.4	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec): 70 Critical Vol./Cap.(X): 0.622
Loss Time (sec): 4 Average Delay (sec/veh): 13.7
Optimal Cycle: 28 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	272	0	72		0	0	0		0	372	358		52	339	0	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	349	0	92		0	0	0		0	477	459		67	435	0	
Added Vol:	27	0	0		0	0	0		0	19	73		0	12	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	376	0	92		0	0	0		0	496	532		67	447	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	376	0	92		0	0	0		0	496	532		67	447	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	376	0	92		0	0	0		0	496	532		67	447	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	376	0	92		0	0	0		0	496	532		67	447	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.21	0.00	0.06		0.00	0.00	0.00		0.00	0.27	0.34		0.04	0.24	0.00	
Crit Moves:	****										****		****			
Green Time:	23.9	0.0	23.9		0.0	0.0	0.0		0.0	37.8	37.8		4.2	42.1	0.0	
Volume/Cap:	0.62	0.00	0.17		0.00	0.00	0.00		0.00	0.49	0.62		0.62	0.40	0.00	
Delay/Veh:	21.3	0.0	16.3		0.0	0.0	0.0		0.0	10.5	12.6		42.9	7.6	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	21.3	0.0	16.3		0.0	0.0	0.0		0.0	10.5	12.6		42.9	7.6	0.0	
LOS by Move:	C		A	B	A		A		A	B	B		D	A	A	
HCM2k95thQ:	363		0	75	0		0		0	334	409		130	254	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.968
Loss Time (sec): 0 Average Delay (sec/veh): 29.9
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45-8:45 a.m.																
Base Vol:	0	146	49		329	138	0		4	6	12		142	9	238	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	187	63		422	177	0		5	8	15		182	12	305	
Added Vol:	0	3	0		70	3	0		0	0	0		0	0	24	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	190	63		492	180	0		5	8	15		182	12	329	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	190	63		492	180	0		5	8	15		182	12	329	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	190	63		492	180	0		5	8	15		182	12	329	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	190	63		492	180	0		5	8	15		182	12	329	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.75	0.25		1.00	1.00	0.00		0.18	0.27	0.55		1.00	0.03	0.97	
Final Sat.:	0	385	127		508	542	0		78	117	234		469	19	535	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.49	0.49		0.97	0.33	xxxx		0.07	0.07	0.07		0.39	0.62	0.62	
Crit Moves:		****			****				****						****	
Delay/Veh:	0.0	16.2	16.2		58.0	12.4	0.0		11.3	11.3	11.3		14.9	18.5	18.5	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	16.2	16.2		58.0	12.4	0.0		11.3	11.3	11.3		14.9	18.5	18.5	
LOS by Move:	*	C	C		F	B	*		B	B	B		B	C	C	
ApproachDel:	16.2				45.8				11.3				17.2			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	16.2				45.8				11.3				17.2			
LOS by Appr:	C				E				B				C			
AllWayAvgQ:	22.4	22.4	22.4		170	11.9	11.9		1.5	1.5	1.5		15.1	36.0	36.0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec):	110	Critical Vol./Cap.(X):	1.037	
Loss Time (sec):	10	Average Delay (sec/veh):	51.3	
Optimal Cycle:	200	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	6	6	5	6	0	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1 0 1	1	0	1 0 0	0	0	0 0 0	1	0	0 0 1
Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m.												
Base Vol:	0	202	315	361	342	0	0	0	0	593	0	266
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	259	404	463	439	0	0	0	0	760	0	341
Added Vol:	0	0	361	133	2	0	0	0	0	99	0	48
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	259	765	596	441	0	0	0	0	859	0	389
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	259	765	596	441	0	0	0	0	859	0	389
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	259	765	596	441	0	0	0	0	859	0	389
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	259	765	596	441	0	0	0	0	859	0	389
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.47	0.33	0.23	0.00	0.00	0.00	0.00	0.48	0.00	0.24
Crit Moves:		****		****						****		
Green Time:	0.0	14.5	65.0	35.0	49.5	0.0	0.0	0.0	0.0	50.5	0.0	85.5
Volume/Cap:	0.00	1.04	0.80	1.04	0.52	0.00	0.00	0.00	0.00	1.04	0.00	0.31
Delay/Veh:	0.0	115	22.4	84.9	22.2	0.0	0.0	0.0	0.0	71.0	0.0	3.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	115	22.4	84.9	22.2	0.0	0.0	0.0	0.0	71.0	0.0	3.7
LOS by Move:	A	F	C	F	C	A	A	A	A	E	A	A
HCM2k95thQ:	0	514	853	1148	489	0	0	0	0	1425	0	188

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 817.3 Worst Case Level Of Service: F[6220.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module: >> Count Date: 19 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	176	458		0	0	632		233	47		0	128	0		0	0
Growth Adj:	1.28	1.28		1.28	1.28	1.28		1.28	1.28		1.28	1.28	1.28		1.28	1.28
Initial Bse:	226	587		0	0	810		299	60		0	164	0		0	0
Added Vol:	0	247		0	0	63		29	119		0	-2	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	226	834		0	0	873		328	179		0	162	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	226	834		0	0	873		328	179		0	162	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
FinalVolume:	226	834		0	0	873		328	179		0	162	0		0	0
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	6.5		6.2	xxxxx	xxxx	xxxxx	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	4.0		3.3	xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1201	xxxx	xxxxx	xxxx	xxxx	xxxxx			2641	2641		1037	xxxx	xxxx	xxxxx	
Potent Cap.:	588	xxxx	xxxxx	xxxx	xxxx	xxxxx			19	17		283	xxxx	xxxx	xxxxx	
Move Cap.:	588	xxxx	xxxxx	xxxx	xxxx	xxxxx			13	11		283	xxxx	xxxx	xxxxx	
Volume/Cap:	0.38	xxxx	xxxx	xxxx	xxxx	xxxx			13.56	0.00		0.57	xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	44.9	xxxx	xxxxx	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	14.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	B	*		*	*	*			*	*	*		*	*	*	
Movement:	LT -	LTR -	RT	LT -	LTR -	RT			LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			xxxx	24	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	42.7	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	6221	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*		*	*	*			*	F			*	*	*	
ApproachDel:	xxxxxx			xxxxxx					6220.7				xxxxxx			
ApproachLOS:	*			*					F				*			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 248.6 Worst Case Level Of Service: F[2415.0]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		1	0	0	1	0		0	1	0	0	1		0	0	1!	0	0	
Volume Module: >> Count Date: 18 Nov 2009 << 7:45 - 8:45 A.M.																								
Base Vol:	85	521		7			21	593		135			57		5		83		20		9		20	
Growth Adj:	1.28	1.28		1.28			1.28	1.28		1.28			1.28	1.28		1.28	1.28		1.28	1.28		1.28	1.28	
Initial Bse:	109	668		9			27	760		173			73		6		106		26		12		26	
Added Vol:	9	248		0			0	58		3			-2		0		0		0		0		0	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	118	916		9			27	818		176			71		6		106		26		12		26	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
PHF Volume:	118	916		9			27	818		176			71		6		106		26		12		26	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
FinalVolume:	118	916		9			27	818		176			71		6		106		26		12		26	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				4.1	xxxx	xxxxx				7.1	6.5		6.2			7.1	6.5		6.2		
FollowUpTim:	2.2	xxxx	xxxxx				2.2	xxxx	xxxxx				3.5	4.0		3.3			3.5	4.0		3.3		
Capacity Module:																								
Cnflict Vol:	995	xxxx	xxxxx				703	xxxx	xxxxx				2381	2362		907			2434	2477		697		
Potent Cap.:	703	xxxx	xxxxx				652	xxxx	xxxxx				17	26		337			16	22		321		
Move Cap.:	703	xxxx	xxxxx				652	xxxx	xxxxx				6	21		337			7	17		321		
Volume/Cap:	0.17	xxxx	xxxx				0.04	xxxx	xxxx				11.03	0.31		0.32			3.63	0.66		0.08		
Level Of Service Module:																								
2Way95thQ:	15.0	xxxx	xxxxx				3.2	xxxx	xxxxx				xxxx	xxxx		33.1			xxxx	xxxx		xxxxx		
Control Del:	11.1	xxxx	xxxxx				10.8	xxxx	xxxxx				xxxxx	xxxx		20.5			xxxxx	xxxx		xxxxx		
LOS by Move:	B	*		*			B	*		*			*			C			*			*		
Movement:	LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT				LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				7	xxxx	xxxxx				xxxx		14	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				11.4	xxxx	xxxxx				xxxxx		8.8	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				5703	xxxx	xxxxx				xxxxx		2050	xxxxx		
Shared LOS:	*	*		*			*	*		*			F	*		*			*		F		*	
ApproachDel:	xxxxxx			xxxxxx									2415.0						2049.5					
ApproachLOS:	*			*									F						F					

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 6 Average Delay (sec/veh): 16.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Permitted						Permitted						Permitted						Permitted					
Rights:	Include						Include						Include						Include					
Min. Green:	10	10		10			10	10		10			6	6		6			6	6		6		
Y+R:	5.2	5.2		5.2			5.2	5.2		5.2			5.0	5.0		5.0			5.0	5.0		5.0		
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	0	1	0		1	0	0	1	0	
Volume Module: >> Count Date: 17 Nov 2009 << 7:45 - 8:45 a.m.																								
Base Vol:	75	380		37			126	400		145			115	192		45			18	169		128		
Growth Adj:	1.28	1.28		1.28			1.28	1.28		1.28			1.28	1.28		1.28			1.28	1.28		1.28		
Initial Bse:	96	487		47			162	513		186			147	246		58			23	217		164		
Added Vol:	-9	258		0			0	61		-3			-1	0		-3			0	0		0		
PasserByVol:	0	0		0			0	0		0			0	0		0			0	0		0		
Initial Fut:	87	745		47			162	574		183			146	246		55			23	217		164		
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Volume:	87	745		47			162	574		183			146	246		55			23	217		164		
Reduct Vol:	0	0		0			0	0		0			0	0		0			0	0		0		
Reduced Vol:	87	745		47			162	574		183			146	246		55			23	217		164		
PCE Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
FinalVolume:	87	745		47			162	574		183			146	246		55			23	217		164		
Saturation Flow Module:																								
Sat/Lane:	1900	1900		1900			1900	1900		1900			1900	1900		1900			1900	1900		1900		
Adjustment:	0.19	0.99		0.99			0.17	0.96		0.96			0.34	0.97		0.97			0.43	0.94		0.94		
Lanes:	1.00	0.94		0.06			1.00	0.76		0.24			1.00	0.82		0.18			1.00	0.57		0.43		
Final Sat.:	360	1770		113			315	1389		443			640	1513		336			821	1011		766		
Capacity Analysis Module:																								
Vol/Sat:	0.24	0.42		0.42			0.51	0.41		0.41			0.23	0.16		0.16			0.03	0.21		0.21		
Crit Moves:							****						****											
Green Time:	40.8	40.8		40.8			40.8	40.8		40.8			18.2	18.2		18.2			18.2	18.2		18.2		
Volume/Cap:	0.39	0.67		0.67			0.82	0.66		0.66			0.82	0.58		0.58			0.10	0.77		0.77		
Delay/Veh:	7.0	9.3		9.3			31.8	9.1		9.1			46.3	21.8		21.8			17.5	28.4		28.4		
User DelAdj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
AdjDel/Veh:	7.0	9.3		9.3			31.8	9.1		9.1			46.3	21.8		21.8			17.5	28.4		28.4		
LOS by Move:	A	A		A			C	A		A			D	C		C			B	C		C		
HCM2k95thQ:	47	477		477			147	447		447			252	289		289			22	421		421		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.983
Loss Time (sec):	4	Average Delay (sec/veh):	56.8
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.2	4.2	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	0	1	0	1	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM												
Base Vol:	487	369	0	0	420	85	88	0	542	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	625	473	0	0	539	109	113	0	695	0	0	0
Added Vol:	10	9	0	0	2	56	241	0	14	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	635	482	0	0	541	165	354	0	709	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	635	482	0	0	541	165	354	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	635	482	0	0	541	165	354	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	635	482	0	0	541	165	354	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.95	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.77	0.23	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1381	421	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.36	0.26	0.00	0.00	0.39	0.39	0.20	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	43.8	91.6	0.0	0.0	47.8	47.8	24.4	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	0.98	0.34	0.00	0.00	0.98	0.98	0.98	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	68.8	4.7	0.0	0.0	64.9	64.9	90.3	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	4.7	0.0	0.0	64.9	64.9	90.3	0.0	0.0	0.0	0.0	0.0
LOS by Move:	E	A	A	A	E	E	F	A	A	A	A	A
HCM2k95thQ:	1080	268	0	0	1174	1174	775	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	4	Average Delay (sec/veh):	29.4
Optimal Cycle:	30	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	0	2	0	1	0	1
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	27	551	91	215	594	106	3	24	4	132	52	312
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	35	707	117	276	762	136	4	31	5	169	67	400
Added Vol:	0	18	0	-4	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	725	117	272	781	136	4	31	5	169	67	400
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	725	117	272	781	136	4	31	5	169	67	400
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	725	117	272	781	136	4	31	5	169	67	400
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	725	117	272	781	136	4	31	5	169	67	400
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.48	0.96	0.96	0.74	0.74	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.86	0.14	0.72	0.28	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	903	1562	260	1013	399	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.20	0.07	0.15	0.22	0.09	0.00	0.02	0.02	0.17	0.17	0.25
Crit Moves:		****		****								****
Green Time:	8.9	38.9	38.9	29.2	59.1	59.1	48.0	48.0	48.0	48.0	48.0	48.0
Volume/Cap:	0.26	0.63	0.23	0.63	0.45	0.17	0.01	0.05	0.05	0.42	0.42	0.63
Delay/Veh:	53.5	35.6	29.8	43.7	20.0	17.0	21.7	22.1	22.1	26.5	26.5	31.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.5	35.6	29.8	43.7	20.0	17.0	21.7	22.1	22.1	26.5	26.5	31.0
LOS by Move:	D	D	C	D	C	B	C	C	C	C	C	C
HCM2k95thQ:	74	560	157	386	420	128	5	41	41	306	306	556

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: E[37.8]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2010 << 7:30 - 8:30 A.M.												
Base Vol:	93	766	0	0	687	27	18	0	8	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	119	982	0	0	881	35	23	0	10	0	0	0
Added Vol:	4	21	0	0	2	2	2	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	1003	0	0	883	37	25	0	14	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	1003	0	0	883	37	25	0	14	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	123	1003	0	0	883	37	25	0	14	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	571	xxxx	xxxxx	xxxx	xxxx	xxxxx	1423	xxxx	34	xxxx	xxxx	xxxxx
Potent Cap.:	866	xxxx	xxxxx	xxxx	xxxx	xxxxx	111	xxxx	889	xxxx	xxxx	xxxxx
Move Cap.:	866	xxxx	xxxxx	xxxx	xxxx	xxxxx	98	xxxx	889	xxxx	xxxx	xxxxx
Volume/Cap:	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	0.26	xxxx	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	12.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	23.5	xxxx	1.2	xxxx	xxxx	xxxxx
Control Del:	9.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	54.2	xxxx	9.1	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	F	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			37.8			xxxxxx		
ApproachLOS:	*			*			E			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec):	130	Critical Vol./Cap.(X):	0.991
Loss Time (sec):	8	Average Delay (sec/veh):	72.4
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2	0 1	1	1	0 1	0	1	0	1	1	0 0 1
Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM												
Base Vol:	111	300	97	424	444	16	12	164	70	473	189	335
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	142	385	124	544	569	21	15	210	90	607	242	430
Added Vol:	3	11	240	4	2	0	0	165	3	72	54	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	396	364	548	571	21	15	375	93	679	296	443
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	396	364	548	571	21	15	375	93	679	296	443
Reduct Vol:	0	0	3	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	396	361	548	571	21	15	375	93	679	296	443
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	396	361	548	571	21	15	375	93	679	296	443
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.44	1.51	0.05	1.00	1.00	1.00	1.39	0.61	1.00
Final Sat.:	1769	3538	1583	2484	2592	93	1769	1862	1583	2504	1094	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.23	0.22	0.22	0.22	0.01	0.20	0.06	0.27	0.27	0.28
Crit Moves:			****	****				****				****
Green Time:	30.0	30.0	30.0	28.9	28.9	28.9	26.4	26.4	26.4	36.7	36.7	36.7
Volume/Cap:	0.36	0.49	0.99	0.99	0.99	0.99	0.04	0.99	0.29	0.96	0.96	0.99
Delay/Veh:	42.5	43.8	94.5	74.7	74.7	74.7	41.7	95.4	44.3	65.3	65.3	86.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.5	43.8	94.5	74.7	74.7	74.7	41.7	95.4	44.3	65.3	65.3	86.6
LOS by Move:	D	D	F	E	E	E	D	F	D	E	E	F
HCM2k95thQ:	242	352	832	895	895	895	26	855	162	994	994	963

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.039
Loss Time (sec):	7	Average Delay (sec/veh):	43.8
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	12	12	12	12	12	12
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 1	0	1	0 1
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	90	88	109	30	48	13	1	715	61	37	861	10
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	115	113	140	38	62	17	1	917	78	47	1104	13
Added Vol:	7	0	91	0	0	0	0	405	4	25	132	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	122	113	231	38	62	17	1	1322	82	72	1236	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	113	231	38	62	17	1	1322	82	72	1236	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	113	231	38	62	17	1	1322	82	72	1236	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	122	113	231	38	62	17	1	1322	82	72	1236	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.88	0.88	0.20	0.95	0.95	0.05	0.97	0.97	0.05	0.98	0.98
Lanes:	1.00	0.33	0.67	1.00	0.79	0.21	1.00	0.94	0.06	1.00	0.99	0.01
Final Sat.:	1305	550	1124	376	1418	384	102	1737	108	102	1841	19
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.21	0.10	0.04	0.04	0.01	0.76	0.76	0.71	0.67	0.67
Crit Moves:		****						****				
Green Time:	19.8	19.8	19.8	19.8	19.8	19.8	73.2	73.2	73.2	73.2	73.2	73.2
Volume/Cap:	0.47	1.04	1.04	0.52	0.22	0.22	0.02	1.04	1.04	0.97	0.92	0.92
Delay/Veh:	36.9	100	100.1	42.1	34.0	34.0	3.7	48.6	48.6	104.2	20.9	20.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	100	100.1	42.1	34.0	34.0	3.7	48.6	48.6	104.2	20.9	20.9
LOS by Move:	D	F	F	D	C	C	A	D	D	F	C	C
HCM2k95thQ:	192	735	735	94	107	107	1	2135	2135	230	1406	1406

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.211
Loss Time (sec):	7	Average Delay (sec/veh):	86.1
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1
Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM												
Base Vol:	7	31	5	149	63	101	0	780	63	33	849	7
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	9	40	6	191	81	130	0	1000	81	42	1089	9
Added Vol:	0	0	0	0	0	0	0	495	0	0	157	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	40	6	191	81	130	0	1495	81	42	1246	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	40	6	191	81	130	0	1495	81	42	1246	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	40	6	191	81	130	0	1495	81	42	1246	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	40	6	191	81	130	0	1495	81	42	1246	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.77	0.77	0.77	1.00	0.97	0.97	0.06	0.98	0.98
Lanes:	0.16	0.72	0.12	0.48	0.20	0.32	1.00	0.95	0.05	1.00	0.99	0.01
Final Sat.:	279	1234	199	701	296	475	1900	1752	95	106	1847	13
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.27	0.27	0.27	0.00	0.85	0.85	0.40	0.67	0.67
Crit Moves:					****			****				
Green Time:	22.5	22.5	22.5	22.5	22.5	22.5	0.0	70.5	70.5	70.5	70.5	70.5
Volume/Cap:	0.14	0.14	0.14	1.21	1.21	1.21	0.00	1.21	1.21	0.57	0.96	0.96
Delay/Veh:	31.2	31.2	31.2	158.3	158	158.3	0.0	117	116.9	17.0	29.1	29.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.2	31.2	31.2	158.3	158	158.3	0.0	117	116.9	17.0	29.1	29.1
LOS by Move:	C	C	C	F	F	F	A	F	F	B	C	C
HCM2k95thQ:	72	72	72	989	989	989	0	3128	3128	83	1604	1604

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.031
Loss Time (sec):	7	Average Delay (sec/veh):	33.1
Optimal Cycle:	200	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	10	10	4	10	10
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lanes:	1	0	0 1	0	0 1	0 1	1	0 1	1 0	1	0 0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	77	8	87	58	3	12	31	970	13	64	891	162
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	99	10	112	74	4	15	40	1244	17	82	1143	208
Added Vol:	0	0	0	0	0	0	0	495	0	0	157	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	10	112	74	4	15	40	1739	17	82	1300	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	10	112	74	4	15	40	1739	17	82	1300	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	10	112	74	4	15	40	1739	17	82	1300	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	10	112	74	4	15	40	1739	17	82	1300	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.58	0.85	0.85	0.38	0.38	0.83	0.93	0.93	0.93	0.93	0.96	0.96
Lanes:	1.00	0.08	0.92	0.95	0.05	1.00	1.00	1.98	0.02	1.00	0.86	0.14
Final Sat.:	1095	135	1472	682	35	1583	1769	3501	34	1769	1572	251
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.08	0.11	0.11	0.01	0.02	0.50	0.50	0.05	0.83	0.83
Crit Moves:					****		****				****	
Green Time:	10.4	10.4	10.4	10.4	10.4	10.4	4.0	75.6	75.6	7.1	78.6	78.6
Volume/Cap:	0.87	0.73	0.73	1.05	1.05	0.09	0.56	0.66	0.66	0.66	1.05	1.05
Delay/Veh:	90.7	58.6	58.6	164.1	164	40.8	57.0	6.5	6.5	57.4	49.3	49.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.7	58.6	58.6	164.1	164	40.8	57.0	6.5	6.5	57.4	49.3	49.3
LOS by Move:	F	E	E	F	F	D	E	A	A	E	D	D
HCM2k95thQ:	263	257	257	269	269	26	107	634	634	185	2318	2318

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.043
Loss Time (sec):	11	Average Delay (sec/veh):	49.9
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	5	0	5	5	5	0	0	5	5
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	0	0	0	407	0	73	64	1150	0	0	1146	432
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	0	0	522	0	94	82	1475	0	0	1470	554
Added Vol:	0	0	0	135	0	0	0	495	0	0	157	34
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	657	0	94	82	1970	0	0	1627	588
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	657	0	94	82	1970	0	0	1627	588
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	657	0	94	82	1970	0	0	1627	588
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	657	0	94	82	1970	0	0	1627	588
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	3538	0	0	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.37	0.00	0.06	0.05	0.56	0.00	0.00	0.46	0.37
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	35.6	0.0	35.6	5.2	53.4	0.0	0.0	48.2	48.2
Volume/Cap:	0.00	0.00	0.00	1.04	0.00	0.17	0.89	1.04	0.00	0.00	0.95	0.77
Delay/Veh:	0.0	0.0	0.0	79.7	0.0	22.2	105.1	56.2	0.0	0.0	37.6	26.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	79.7	0.0	22.2	105.1	56.2	0.0	0.0	37.6	26.3
LOS by Move:	A	A	A	E	A	C	F	E	A	A	D	C
HCM2k95thQ:	0	0	0	1180	0	101	239	1677	0	0	1244	716

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80			Critical Vol./Cap.(X):			0.899									
Loss Time (sec):	4			Average Delay (sec/veh):			25.1									
Optimal Cycle:	80			Level Of Service:			C									
Approach:	North Bound			South Bound			East Bound			West Bound						
Movement:	L	-	T - R	L	-	T - R	L	-	T - R	L	-	T - R				
Control:	Permitted			Permitted			Permitted			Protected						
Rights:	Include			Include			Include			Include						
Min. Green:	6	6	6	6	6	6	0	6	6	4	6	6				
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.5	4.5	4.1	4.5	4.5				
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1				
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	82	9	171	111	33	2	0	641	44	280	977	21				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	105	12	219	142	42	3	0	822	56	359	1253	27				
Added Vol:	34	0	0	0	0	0	0	355	139	0	113	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	139	12	219	142	42	3	0	1177	195	359	1366	27				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	139	12	219	142	42	3	0	1177	195	359	1366	27				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	139	12	219	142	42	3	0	1177	195	359	1366	27				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	139	12	219	142	42	3	0	1177	195	359	1366	27				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.76	0.76	0.76	0.52	0.52	0.52	0.95	0.91	0.91	0.93	0.93	0.93				
Lanes:	0.38	0.03	0.59	0.76	0.23	0.01	0.00	1.72	0.28	1.00	1.96	0.04				
Final Sat.:	546	45	860	752	223	14	0	2970	493	1769	3459	68				
Capacity Analysis Module:																
Vol/Sat:	0.25	0.25	0.25	0.19	0.19	0.19	0.00	0.40	0.40	0.20	0.39	0.39				
Crit Moves:	****							****		****						
Green Time:	22.1	22.1	22.1	22.1	22.1	22.1	0.0	35.7	35.7	18.3	53.9	53.9				
Volume/Cap:	0.92	0.92	0.92	0.69	0.69	0.69	0.00	0.89	0.89	0.89	0.59	0.59				
Delay/Veh:	55.0	55.0	55.0	33.0	33.0	33.0	0.0	27.1	27.1	50.7	7.4	7.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	55.0	55.0	55.0	33.0	33.0	33.0	0.0	27.1	27.1	50.7	7.4	7.4				
LOS by Move:	E	E	E	C	C	C	A	C	C	D	A	A				
HCM2k95thQ:	588	588	588	271	271	271	0	782	782	406	426	426				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80			Critical Vol./Cap.(X):			0.848									
Loss Time (sec):	4			Average Delay (sec/veh):			21.0									
Optimal Cycle:	60			Level Of Service:			C									
Approach:	North Bound			South Bound			East Bound			West Bound						
Movement:	L	-	T - R	L	-	T - R	L	-	T - R	L	-	T - R				
Control:	Split Phase			Split Phase			Protected			Protected						
Rights:	Include			Include			Include			Include						
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6				
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.5	4.5				
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0				
Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	28	5	25	362	38	143	131	755	68	42	1025	333				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	36	6	32	464	49	183	168	968	87	54	1314	427				
Added Vol:	0	0	0	0	0	0	0	355	0	0	113	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	36	6	32	464	49	183	168	1323	87	54	1427	427				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	36	6	32	464	49	183	168	1323	87	54	1427	427				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	36	6	32	464	49	183	168	1323	87	54	1427	427				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	36	6	32	464	49	183	168	1323	87	54	1427	427				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.86	0.86	0.94	0.94	0.83	0.93	0.92	0.92	0.93	0.90	0.90				
Lanes:	1.00	0.17	0.83	1.81	0.19	1.00	1.00	1.88	0.12	1.00	1.54	0.46				
Final Sat.:	1769	272	1358	3225	339	1583	1769	3289	217	1769	2631	787				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02	0.14	0.14	0.12	0.09	0.40	0.40	0.03	0.54	0.54				
Crit Moves:	****			****			****				****					
Green Time:	4.0	4.0	4.0	13.3	13.3	13.3	8.7	52.2	52.2	6.5	50.0	50.0				
Volume/Cap:	0.41	0.47	0.47	0.87	0.87	0.70	0.87	0.62	0.62	0.38	0.87	0.87				
Delay/Veh:	39.9	41.2	41.2	45.5	45.5	39.6	66.7	8.6	8.6	36.5	16.4	16.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	39.9	41.2	41.2	45.5	45.5	39.6	66.7	8.6	8.6	36.5	16.4	16.4				
LOS by Move:	D	D	D	D	D	D	E	A	A	D	B	B				
HCM2k95thQ:	72	83	83	431	431	280	204	459	459	60	799	799				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	4	Average Delay (sec/veh):	21.9
Optimal Cycle:	75	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM																
Base Vol:	22	4	37		220	6	31		25	1077	29		241	1430	228	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	28	5	47		282	8	40		32	1381	37		309	1834	292	
Added Vol:	0	0	0		0	0	0		0	355	0		0	113	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	28	5	47		282	8	40		32	1736	37		309	1947	292	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	28	5	47		282	8	40		32	1736	37		309	1947	292	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	28	5	47		282	8	40		32	1736	37		309	1947	292	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	28	5	47		282	8	40		32	1736	37		309	1947	292	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.94	0.94	0.73		0.93	0.93	0.83		0.93	0.89	0.89		0.90	0.91	0.91	
Lanes:	0.85	0.15	2.00		0.97	0.03	1.00		1.00	2.94	0.06		2.00	1.74	0.26	
Final Sat.:	1511	275	2786		1729	47	1583		1769	4962	106		3432	3014	453	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02		0.16	0.16	0.03		0.02	0.35	0.35		0.09	0.65	0.65	
Crit Moves:	****					****			****					****		
Green Time:	4.0	4.0	4.0		13.7	13.7	13.7		4.0	46.4	46.4		11.9	54.3	54.3	
Volume/Cap:	0.37	0.37	0.34		0.95	0.95	0.15		0.36	0.60	0.60		0.60	0.95	0.95	
Delay/Veh:	39.4	39.4	38.2		71.5	71.5	28.4		39.3	11.2	11.2		33.9	21.3	21.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.4	39.4	38.2		71.5	71.5	28.4		39.3	11.2	11.2		33.9	21.3	21.3	
LOS by Move:	D	D	D		E	E	C		D	B	B		C	C	C	
HCM2k95thQ:	65	65	55		524	524	48		39	465	465		167	1027	1027	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	1.309
Loss Time (sec):	0	Average Delay (sec/veh):	82.9
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	1	0	0 1	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	2	113	458		21	105	11		9	240	18		295	164	14	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	3	145	587		27	135	14		12	308	23		378	210	18	
Added Vol:	0	0	41		0	0	0		0	51	0		15	25	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	145	628		27	135	14		12	359	23		393	235	18	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	145	628		27	135	14		12	359	23		393	235	18	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	145	628		27	135	14		12	359	23		393	235	18	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	3	145	628		27	135	14		12	359	23		393	235	18	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.02	0.98	1.00		0.15	0.77	0.08		1.00	0.94	0.06		1.00	0.93	0.07	
Final Sat.:	8	428	480		57	285	30		397	399	26		413	409	31	
Capacity Analysis Module:																
Vol/Sat:	0.34	0.34	1.31		0.47	0.47	0.47		0.03	0.90	0.90		0.95	0.58	0.58	
Crit Moves:			****			****				****				****		
Delay/Veh:	15.0	15.0	175.3		20.2	20.2	20.2		11.9	50.3	50.3		62.2	21.2	21.2	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.0	15.0	175.3		20.2	20.2	20.2		11.9	50.3	50.3		62.2	21.2	21.2	
LOS by Move:	B	B	F		C	C	C		B	F	F		F	C	C	
ApproachDel:	144.8				20.2				49.2				46.1			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	144.8				20.2				49.2				46.1			
LOS by Appr:	F				C				E				E			
AllWayAvgQ:	12.4	12.4	550.4		20.1	20.1	20.1		0.7	116	115.6		146	31.7	31.7	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	10	Average Delay (sec/veh):	50.6
Optimal Cycle:	118	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	10	10		4	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	5.0	5.0		4.0	5.0	5.0	
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	109	600	303		214	596	283		322	1224	128		245	546	39	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	140	769	389		274	764	363		413	1570	164		314	700	50	
Added Vol:	1	5	0		0	4	8		6	2	0		0	5	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	141	774	389		274	768	371		419	1572	164		314	705	50	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	141	774	389		274	768	371		419	1572	164		314	705	50	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	141	774	389		274	768	371		419	1572	164		314	705	50	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	141	774	389		274	768	371		419	1572	164		314	705	50	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.98	0.83		0.93	0.98	0.83		0.94	0.99	0.84		0.92	0.97	0.82	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3538	3724	1583		3538	3724	1583		3573	3761	1599		3502	3687	1567	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.21	0.25		0.08	0.21	0.23		0.12	0.42	0.10		0.09	0.19	0.03	
Crit Moves:			****		****					****			****			
Green Time:	7.9	41.4	41.4		13.1	46.5	46.5		32.5	70.4	70.4		15.1	53.0	53.0	
Volume/Cap:	0.76	0.75	0.89		0.89	0.66	0.76		0.54	0.89	0.22		0.89	0.54	0.09	
Delay/Veh:	86.1	52.9	71.8		93.4	46.4	53.2		52.9	35.4	19.2		89.8	39.2	32.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	86.1	52.9	71.8		93.4	46.4	53.2		52.9	35.4	19.2		89.8	39.2	32.4	
LOS by Move:	F	D	E		F	D	D		D	D	B		F	D	C	
HCM2k95thQ:	166	675	759		414	689	720		354	1169	151		455	578	76	

Note: Queue reported is the distance per lane in feet.

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LEVELS OF SERVICE

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.438
Loss Time (sec):	4	Average Delay (sec/veh):	35.3
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	10	10		7	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	175	631	19		12	492	25		30	12	155		1	7	11	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	224	809	24		15	631	32		38	15	199		1	9	14	
Added Vol:	0	94	0		0	49	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	224	903	24		15	680	32		38	15	199		1	9	14	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	224	903	24		15	680	32		38	15	199		1	9	14	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	224	903	24		15	680	32		38	15	199		1	9	14	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	224	903	24		15	680	32		38	15	199		1	9	14	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.91		0.95	0.90	0.90		0.89	0.89	0.89		0.95	0.91	0.91	
Lanes:	1.00	2.92	0.08		1.00	2.86	0.14		0.15	0.06	0.79		1.00	0.39	0.61	
Final Sat.:	1805	5031	136		1805	4919	232		257	103	1326		1805	671	1054	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.18	0.18		0.01	0.14	0.14		0.15	0.15	0.15		0.00	0.01	0.01	
Crit Moves:	****					****					****			****		
Green Time:	39.5	65.7	65.7		17.7	43.9	43.9		47.6	47.6	47.6		10.0	10.0	10.0	
Volume/Cap:	0.46	0.40	0.40		0.07	0.46	0.46		0.46	0.46	0.46		0.01	0.19	0.19	
Delay/Veh:	44.5	26.5	26.5		56.5	41.1	41.1		39.1	39.1	39.1		62.9	64.5	64.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	44.5	26.5	26.5		56.5	41.1	41.1		39.1	39.1	39.1		62.9	64.5	64.5	
LOS by Move:	D	C	C		E	D	D		D	D	D		E	E	E	
HCM2k95thQ:	391	452	452		32	433	433		414	414	414		3	57	57	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.813
Loss Time (sec):	4	Average Delay (sec/veh):	20.3
Optimal Cycle:	55	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2	0 1	1 0	2	0 1	0 1	0	0 1	0 1	0	0 1
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	26	1547	73	61	1119	20	22	15	23	152	2	110
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	33	1984	94	78	1435	26	28	19	29	195	3	141
Added Vol:	0	71	0	0	64	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	2055	94	78	1499	26	28	19	29	195	3	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	33	2055	94	78	1499	26	28	19	29	195	3	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	2055	94	78	1499	26	28	19	29	195	3	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	2055	94	78	1499	26	28	19	29	195	3	141
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.70	0.70	0.83	0.63	0.63	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.59	0.41	1.00	0.99	0.01	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	788	537	1583	1180	16	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.58	0.06	0.04	0.42	0.02	0.04	0.04	0.02	0.17	0.17	0.09
Crit Moves:		****		****							****	
Green Time:	6.8	104	103.6	7.9	105	104.7	29.5	29.5	29.5	29.5	29.5	29.5
Volume/Cap:	0.40	0.81	0.08	0.81	0.59	0.02	0.18	0.18	0.09	0.81	0.81	0.44
Delay/Veh:	70.3	16.2	6.3	106.7	10.1	5.7	48.0	48.0	47.0	73.6	73.6	51.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.3	16.2	6.3	106.7	10.1	5.7	48.0	48.0	47.0	73.6	73.6	51.5
LOS by Move:	E	B	A	F	B	A	D	D	D	E	E	D
HCM2k95thQ:	98	1335	64	259	726	16	91	91	55	480	480	277

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	4	Average Delay (sec/veh):	52.4
Optimal Cycle:	106	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2	0 1	1 0	2	0 1	1 1	0	0 1	1 0	0	0 1 0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	139	1197	52	70	1016	258	457	197	82	54	163	29
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	178	1535	67	90	1303	331	586	253	105	69	209	37
Added Vol:	12	74	9	0	59	6	-7	17	11	5	42	-13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	1609	76	90	1362	337	579	270	116	74	251	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	1609	76	90	1362	337	579	270	116	74	251	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	1609	76	90	1362	337	579	270	116	74	251	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	1609	76	90	1362	337	579	270	116	74	251	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.36	0.64	1.00	1.00	0.91	0.09
Final Sat.:	1769	3538	1583	1769	3538	1583	2457	1144	1583	1769	1676	162
Capacity Analysis Module:												
Vol/Sat:	0.11	0.45	0.05	0.05	0.38	0.21	0.24	0.24	0.07	0.04	0.15	0.15
Crit Moves:		****		****			****				****	
Green Time:	17.5	72.0	72.0	8.0	62.5	62.5	37.3	37.3	37.3	23.7	23.7	23.7
Volume/Cap:	0.89	0.92	0.10	0.92	0.89	0.49	0.92	0.92	0.29	0.26	0.92	0.92
Delay/Veh:	96.9	41.7	19.4	132.5	45.2	30.4	65.9	65.9	43.6	53.4	90.8	90.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.9	41.7	19.4	132.5	45.2	30.4	65.9	65.9	43.6	53.4	90.8	90.8
LOS by Move:	F	D	B	F	D	C	E	E	D	D	F	F
HCM2k95thQ:	510	1495	88	311	1288	492	829	829	193	148	676	676

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.844
Loss Time (sec):	4	Average Delay (sec/veh):	37.4
Optimal Cycle:	65	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	4	4		4	4	4	
Y+R:	3.0	4.2	4.2		3.0	4.2	4.2		3.0	3.5	3.5		3.0	3.5	3.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	1	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM																
Base Vol:	133	1226	106		87	998	61		113	131	87		119	161	63	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	171	1572	136		112	1280	78		145	168	112		153	206	81	
Added Vol:	0	299	48		2	302	0		0	0	0		91	1	1	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	171	1871	184		114	1582	78		145	168	112		244	207	82	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	171	1871	184		114	1582	78		145	168	112		244	207	82	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	171	1871	184		114	1582	78		145	168	112		244	207	82	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	171	1871	184		114	1582	78		145	168	112		244	207	82	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		1769	1862	1583		1769	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.53	0.12		0.06	0.45	0.05		0.08	0.09	0.07		0.14	0.11	0.05	
Crit Moves:		****				****				****				****		
Green Time:	18.1	90.8	90.8		11.0	83.8	83.8		16.6	15.5	15.5		23.6	22.6	22.6	
Volume/Cap:	0.77	0.84	0.19		0.84	0.77	0.09		0.72	0.84	0.66		0.84	0.72	0.33	
Delay/Veh:	77.1	24.6	11.5		102.1	25.3	13.6		73.5	90.3	71.5		78.7	66.5	55.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	77.1	24.6	11.5		102.1	25.3	13.6		73.5	90.3	71.5		78.7	66.5	55.3	
LOS by Move:	E	C	B		F	C	B		E	F	E		E	E	E	
HCM2k95thQ:	424	1422	168		342	1164	77		360	448	285		579	463	171	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.798
Loss Time (sec):	4	Average Delay (sec/veh):	27.6
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	10		0	10	10		6	6	6		6	6	6	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	2	0 1	0	0	2	0 1	1	0	1	0 1	1	0	0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm																
Base Vol:	0	1191	54		0	1043	143		171	68	161		72	83	58	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	1527	69		0	1338	183		219	87	206		92	106	74	
Added Vol:	0	282	0		0	326	68		65	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1809	69		0	1664	251		284	87	206		92	106	74	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1809	69		0	1664	251		284	87	206		92	106	74	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1809	69		0	1664	251		284	87	206		92	106	74	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1809	69		0	1664	251		284	87	206		92	106	74	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.93	0.83		1.00	0.93	0.83		0.93	0.98	0.83		0.93	0.92	0.92	
Lanes:	0.00	2.00	1.00		0.00	2.00	1.00		1.00	1.00	1.00		1.00	0.59	0.41	
Final Sat.:	0	3538	1583		0	3538	1583		1769	1862	1583		1769	1028	718	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.51	0.04		0.00	0.47	0.16		0.16	0.05	0.13		0.05	0.10	0.10	
Crit Moves:		****							****					****		
Green Time:	0.0	93.0	93.0		0.0	93.0	93.0		29.2	29.2	29.2		18.8	18.8	18.8	
Volume/Cap:	0.00	0.80	0.07		0.00	0.73	0.25		0.80	0.23	0.65		0.40	0.80	0.80	
Delay/Veh:	0.0	21.2	9.8		0.0	18.9	11.2		67.0	48.8	57.8		59.1	79.0	79.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	21.2	9.8		0.0	18.9	11.2		67.0	48.8	57.8		59.1	79.0	79.0	
LOS by Move:	A	C	A		A	B	B		E	D	E		E	E	E	
HCM2k95thQ:	0	1158	54		0	1084	228		616	162	431		201	451	451	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.282
Loss Time (sec):	4	Average Delay (sec/veh):	141.7
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		7	7	7		4	4	4	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	0	1	0	1 0	2	0	1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM																
Base Vol:	176	1202	557		193	1082	22		41	296	129		484	239	67	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	226	1541	714		248	1388	28		53	380	165		621	306	86	
Added Vol:	-7	45	16		56	56	214		142	151	0		40	349	96	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	219	1586	730		304	1444	242		195	531	165		661	655	182	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	219	1586	730		304	1444	242		195	531	165		661	655	182	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	219	1586	730		304	1444	242		195	531	165		661	655	182	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	219	1586	730		304	1444	242		195	531	165		661	655	182	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.89	0.89	0.89		0.90	0.98	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		0.44	1.19	0.37		2.00	1.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		743	2026	632		3432	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.45	0.46		0.17	0.41	0.15		0.26	0.26	0.26		0.19	0.35	0.11	
Crit Moves:			****		****					****				****		
Green Time:	16.6	52.2	52.2		19.4	54.9	54.9		29.6	29.6	29.6		39.8	39.8	39.8	
Volume/Cap:	1.08	1.25	1.28		1.28	1.08	0.40		1.28	1.28	1.28		0.70	1.28	0.42	
Delay/Veh:	149.3	164	186.5		218.1	93.2	33.5		195.6	196	195.6		49.6	194	43.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	149.3	164	186.5		218.1	93.2	33.5		195.6	196	195.6		49.6	194	43.8	
LOS by Move:	F		F		F		C		F		F		D	F	D	
HCM2k95thQ:	664	2226	2041		905	1613	352		1400	1400	1400		638	1857	321	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.870
Loss Time (sec):	10	Average Delay (sec/veh):	19.2
Optimal Cycle:	105	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		8	8	8		8	8	8	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	1 0	1	0	2	1 0	0	0	1!	0 0	0	1	0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	76	1796	9		19	1546	28		78	0	53		38	4	31	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	97	2303	12		24	1983	36		100	0	68		49	5	40	
Added Vol:	0	54	0		0	96	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	97	2357	12		24	2079	36		100	0	68		49	5	40	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	97	2357	12		24	2079	36		100	0	68		49	5	40	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	97	2357	12		24	2079	36		100	0	68		49	5	40	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	97	2357	12		24	2079	36		100	0	68		49	5	40	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.93		0.93	0.89	0.89		0.70	1.00	0.70		0.64	0.64	0.83	
Lanes:	1.00	1.99	0.01		1.00	2.95	0.05		0.60	0.00	0.40		0.90	0.10	1.00	
Final Sat.:	1769	3517	17		1769	4982	86		793	0	539		1093	115	1583	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.67	0.67		0.01	0.42	0.42		0.13	0.00	0.13		0.04	0.04	0.03	
Crit Moves:		****			****				****							
Green Time:	13.3	110	110.3		4.0	101	100.9		20.7	0.0	20.7		20.7	20.7	20.7	
Volume/Cap:	0.60	0.88	0.88		0.50	0.60	0.60		0.88	0.00	0.88		0.31	0.31	0.18	
Delay/Veh:	69.3	16.4	16.4		77.3	11.8	11.8		95.5	0.0	95.5		56.8	56.8	55.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	69.3	16.4	16.4		77.3	11.8	11.8		95.5	0.0	95.5		56.8	56.8	55.0	
LOS by Move:	E		B		B		B		F	A	F		E	E	D	
HCM2k95thQ:	247	1647	1647		90	764	764		462	0	462		121	121	83	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.939
Loss Time (sec):	10	Average Delay (sec/veh):	37.5
Optimal Cycle:	159	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	0	0	10	10	11	0	11	0	0	0
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 3	0 0	0	0 2	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	413	1780	0	0	1465	97	226	0	211	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	530	2283	0	0	1879	124	290	0	271	0	0	0
Added Vol:	-14	65	0	0	106	0	-4	0	-11	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	516	2348	0	0	1985	124	286	0	260	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	516	2348	0	0	1985	124	286	0	260	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	516	2348	0	0	1985	124	286	0	260	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	516	2348	0	0	1985	124	286	0	260	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	1.00	1.00	0.88	0.88	0.93	1.00	0.83	1.00	1.00	1.00
Lanes:	1.00	3.00	0.00	0.00	2.82	0.18	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	5083	0	0	4740	297	1769	0	1583	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.29	0.46	0.00	0.00	0.42	0.42	0.16	0.00	0.16	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green Time:	45.0	110	0.0	0.0	64.7	64.7	25.3	0.0	25.3	0.0	0.0	0.0
Volume/Cap:	0.94	0.61	0.00	0.00	0.94	0.94	0.93	0.00	0.94	0.00	0.00	0.00
Delay/Veh:	72.8	8.3	0.0	0.0	46.8	46.8	91.2	0.0	97.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.8	8.3	0.0	0.0	46.8	46.8	91.2	0.0	97.0	0.0	0.0	0.0
LOS by Move:	E	A	A	A	D	D	F	A	F	A	A	A
HCM2k95thQ:	1082	745	0	0	1453	1453	700	0	663	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	10	Average Delay (sec/veh):	14.8
Optimal Cycle:	56	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	1 0	1	0 2	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	212	2241	6	32	1629	14	22	1	24	7	2	4
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	272	2874	8	41	2089	18	28	1	31	9	3	5
Added Vol:	0	50	0	0	92	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	272	2924	8	41	2181	18	28	1	31	9	3	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	272	2924	8	41	2181	18	28	1	31	9	3	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	2924	8	41	2181	18	28	1	31	9	3	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	2924	8	41	2181	18	28	1	31	9	3	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.77	0.77	0.77	0.83	0.83	0.83
Lanes:	1.00	2.99	0.01	1.00	2.98	0.02	0.47	0.02	0.51	0.54	0.15	0.31
Final Sat.:	1769	5070	13	1769	5037	41	686	31	748	850	243	486
Capacity Analysis Module:												
Vol/Sat:	0.15	0.58	0.58	0.02	0.43	0.43	0.04	0.04	0.04	0.01	0.01	0.01
Crit Moves:		****		****				****				
Green Time:	32.5	119	119.2	4.8	91.5	91.5	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.69	0.70	0.70	0.70	0.69	0.69	0.54	0.54	0.54	0.14	0.14	0.14
Delay/Veh:	56.5	6.0	6.0	101.1	18.0	18.0	70.0	70.0	70.0	63.1	63.1	63.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.5	6.0	6.0	101.1	18.0	18.0	70.0	70.0	70.0	63.1	63.1	63.1
LOS by Move:	E	A	A	F	B	B	E	E	E	E	E	E
HCM2k95thQ:	542	865	865	153	966	966	168	168	168	41	41	41

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	140	Critical Vol./Cap.(X):	0.841	
Loss Time (sec):	9	Average Delay (sec/veh):	39.2	
Optimal Cycle:	87	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 2	1 0	2	0 0	0 1	0	0 0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 5:00 - 6:00 AM												
Base Vol:	145	1201	98	411	913	416	514	0	243	0	0	742
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	186	1540	126	527	1171	533	659	0	312	0	0	952
Added Vol:	0	51	0	0	87	5	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	186	1591	126	527	1258	538	659	0	312	0	0	952
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	186	1591	126	527	1258	538	659	0	312	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	1591	126	527	1258	538	659	0	312	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	186	1591	126	527	1258	538	659	0	312	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.85	0.95	0.87	0.87	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.10	0.90	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1805	5187	1615	1805	3469	1485	3502	0	1615	0	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.31	0.08	0.29	0.36	0.36	0.19	0.00	0.19	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green Time:	22.1	51.1	51.1	48.6	77.6	77.6	31.3	0.0	53.4	0.0	0.0	0.0
Volume/Cap:	0.65	0.84	0.21	0.84	0.65	0.65	0.84	0.00	0.51	0.00	0.00	0.00
Delay/Veh:	60.8	44.3	30.8	52.1	22.4	22.4	60.1	0.0	33.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.8	44.3	30.8	52.1	22.4	22.4	60.1	0.0	33.9	0.0	0.0	0.0
LOS by Move:	E	D	C	D	C	C	E	A	C	A	A	A
HCM2k95thQ:	396	1026	181	955	838	838	632	0	452	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.595	
Loss Time (sec):	4	Average Delay (sec/veh):	13.3	
Optimal Cycle:	26	Level Of Service:	B	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	8	8	8	8	8	8
Y+R:	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	68	168	42	24	97	28	12	320	84	28	242	36
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	87	215	54	31	124	36	15	410	108	36	310	46
Added Vol:	0	0	0	0	0	88	35	5	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	215	54	31	124	124	50	415	108	36	328	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	215	54	31	124	124	50	415	108	36	328	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	215	54	31	124	124	50	415	108	36	328	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	215	54	31	124	124	50	415	108	36	328	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.83	0.83	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Lanes:	0.24	0.61	0.15	0.11	0.45	0.44	0.09	0.72	0.19	0.09	0.80	0.11
Final Sat.:	387	955	239	182	734	731	150	1239	321	150	1373	193
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.23	0.17	0.17	0.17	0.34	0.34	0.34	0.24	0.24	0.24
Crit Moves:		****						****				
Green Time:	26.5	26.5	26.5	26.5	26.5	26.5	39.5	39.5	39.5	39.5	39.5	39.5
Volume/Cap:	0.59	0.59	0.59	0.45	0.45	0.45	0.59	0.59	0.59	0.42	0.42	0.42
Delay/Veh:	19.0	19.0	19.0	16.8	16.8	16.8	11.0	11.0	11.0	9.1	9.1	9.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.0	19.0	19.0	16.8	16.8	16.8	11.0	11.0	11.0	9.1	9.1	9.1
LOS by Move:	B	B	B	B	B	B	B	B	B	A	A	A
HCM2k95thQ:	332	332	332	237	237	237	409	409	409	258	258	258

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	1.098
Loss Time (sec):	4	Average Delay (sec/veh):	52.4
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	229	116	42	69	108	34	49	689	106	34	597	35
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	294	149	54	88	138	44	63	884	136	44	766	45
Added Vol:	206	0	0	0	0	0	0	109	113	0	278	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	500	149	54	88	138	44	63	993	249	44	1044	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	500	149	54	88	138	44	63	993	249	44	1044	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	500	149	54	88	138	44	63	993	249	44	1044	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	500	149	54	88	138	44	63	993	249	44	1044	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.75	0.94	0.94	0.80	0.80	0.80	0.08	0.95	0.95	0.08	0.97	0.97
Lanes:	1.00	0.73	0.27	0.33	0.51	0.16	1.00	0.80	0.20	1.00	0.96	0.04
Final Sat.:	1421	1312	475	497	778	245	158	1444	362	158	1775	76
Capacity Analysis Module:												
Vol/Sat:	0.35	0.11	0.11	0.18	0.18	0.18	0.40	0.69	0.69	0.28	0.59	0.59
Crit Moves:	****							****				
Green Time:	24.0	24.0	24.0	24.0	24.0	24.0	47.0	47.0	47.0	47.0	47.0	47.0
Volume/Cap:	1.10	0.35	0.35	0.56	0.56	0.56	0.63	1.10	1.10	0.44	0.94	0.94
Delay/Veh:	96.8	19.9	19.9	22.5	22.5	22.5	21.4	71.6	71.6	10.3	26.9	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.8	19.9	19.9	22.5	22.5	22.5	21.4	71.6	71.6	10.3	26.9	26.9
LOS by Move:	F	B	B	C	C	C	C	E	E	B	C	C
HCM2k95thQ:	906	188	188	283	283	283	109	1815	1815	61	1161	1161

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.673
Loss Time (sec):	4	Average Delay (sec/veh):	17.5
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 2 Feb 2010 << 5:00 - 6:00 p.m.												
Base Vol:	166	16	69	54	19	58	36	369	98	47	433	41
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	213	21	88	69	24	74	46	473	126	60	555	53
Added Vol:	-1	0	-1	0	0	0	0	23	-2	0	60	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	21	87	69	24	74	46	496	124	60	615	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	21	87	69	24	74	46	496	124	60	615	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	21	87	69	24	74	46	496	124	60	615	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	21	87	69	24	74	46	496	124	60	615	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.71	0.71	0.71	0.75	0.89	0.89	0.95	0.97	0.97	0.95	0.99	0.99
Lanes:	0.67	0.06	0.27	1.00	0.25	0.75	1.00	0.80	0.20	1.00	0.92	0.08
Final Sat.:	888	86	367	1417	416	1269	1805	1475	368	1805	1729	148
Capacity Analysis Module:												
Vol/Sat:	0.24	0.24	0.24	0.05	0.06	0.06	0.03	0.34	0.34	0.03	0.36	0.36
Crit Moves:		****						****			****	
Green Time:	30.9	30.9	30.9	30.9	30.9	30.9	47.9	43.9	43.9	51.1	46.1	46.1
Volume/Cap:	0.66	0.66	0.66	0.13	0.16	0.16	0.15	0.65	0.65	0.17	0.66	0.66
Delay/Veh:	25.8	25.8	25.8	18.2	18.4	18.4	10.9	16.5	16.5	10.0	15.4	15.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.8	25.8	25.8	18.2	18.4	18.4	10.9	16.5	16.5	10.0	15.4	15.4
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
HCM2k95thQ:	380	380	380	64	90	90	36	560	560	33	525	525

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.659
Loss Time (sec):	0	Average Delay (sec/veh):	15.1
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:30-5:30 p.m.																
Base Vol:	0	183	175		77	145	0		0	0	0		181	0	95	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	235	224		99	186	0		0	0	0		232	0	122	
Added Vol:	0	-2	0		0	-2	0		0	0	0		1	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	233	224		99	184	0		0	0	0		233	0	122	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	233	224		99	184	0		0	0	0		233	0	122	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	233	224		99	184	0		0	0	0		233	0	122	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	233	224		99	184	0		0	0	0		233	0	122	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.51	0.49		0.35	0.65	0.00		0.00	0.00	0.00		0.66	0.00	0.34	
Final Sat.:	0	353	341		215	400	0		0	0	0		404	0	211	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.66	0.66		0.46	0.46	xxxx		xxxx	xxxx	xxxx		0.58	xxxx	0.58	
Crit Moves:		****				****							****			
Delay/Veh:	0.0	16.6	16.6		12.9	12.9	0.0		0.0	0.0	0.0		15.1	0.0	15.1	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	16.6	16.6		12.9	12.9	0.0		0.0	0.0	0.0		15.1	0.0	15.1	
LOS by Move:	*	C	C		B	B	*		*	*	*		C	*	C	
ApproachDel:		16.6				12.9				xxxxxx				15.1		
Delay Adj:		1.00				1.00				xxxxx				1.00		
ApprAdjDel:		16.6				12.9				xxxxxx				15.1		
LOS by Appr:		C				B				*				C		
AllWayAvgQ:	41.1	41.1	41.1		18.4	18.4	18.4		0.0	0.0	0.0		27.9	27.9	27.9	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
1994 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	1	Critical Vol./Cap.(X):	1.437
Loss Time (sec):	0	Average Delay (sec/veh):	102.9
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0		196	0	125		168	286	0		0	355	151	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		251	0	160		215	367	0		0	455	194	
Added Vol:	0	0	0		0	0	-1		-2	65	0		0	68	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		251	0	159		213	432	0		0	523	194	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		251	0	159		213	432	0		0	523	194	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		251	0	159		213	432	0		0	523	194	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		251	0	159		213	432	0		0	523	194	
Saturation Flow Module:																
Sat/Lane:	0	0	0		311	311	311		468	468	468		499	499	499	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	0.00		0.00	0.73	0.27	
Final Sat.:	0	0	0		311	0	311		468	468	0		0	364	135	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.81	0.00	0.51		0.46	0.92	0.00		0.00	1.44	1.44	
Crit Moves:			****		****					****				****		
ApproachV/S:		xxxxx					0.66			0.69				1.44		
Delay/Veh:	0.0	0.0	0.0		21.6	0.0	7.0		5.7	33.3	0.0		0.0	235	234.9	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		21.6	0.0	7.0		5.7	33.3	0.0		0.0	235	234.9	
LOS by Move:	*	*	*		D	*	B		B	E	*		*	F	F	
ApproachDel:		xxxxxx				12.3				13.7				234.9		
Delay Adj:		xxxxx				1.00				1.00				1.00		
ApprAdjDel:		xxxxxx				12.3				13.7				234.9		
LOS by Appr:		F				C				C				F		

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	4	Average Delay (sec/veh):	18.4
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	362	0	128		0	0	0		0	340	291		84	439	0	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	464	0	164		0	0	0		0	436	373		108	563	0	
Added Vol:	80	0	-1		0	0	0		0	64	41		-2	69	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	544	0	163		0	0	0		0	500	414		106	632	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	544	0	163		0	0	0		0	500	414		106	632	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	544	0	163		0	0	0		0	500	414		106	632	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	544	0	163		0	0	0		0	500	414		106	632	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.31	0.00	0.10		0.00	0.00	0.00		0.00	0.27	0.26		0.06	0.34	0.00	
Crit Moves:	****								****					****		
Green Time:	31.4	0.0	31.4		0.0	0.0	0.0		0.0	28.3	28.3		6.3	34.6	0.0	
Volume/Cap:	0.69	0.00	0.23		0.00	0.00	0.00		0.00	0.66	0.65		0.66	0.69	0.00	
Delay/Veh:	17.9	0.0	12.0		0.0	0.0	0.0		0.0	19.2	19.1		40.9	15.7	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	17.9	0.0	12.0		0.0	0.0	0.0		0.0	19.2	19.1		40.9	15.7	0.0	
LOS by Move:	B		A	B		A		A	A		B	B		D	B	A
HCM2k95thQ:	481		0	114		0		0	0	452	386		178	521	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	0	Average Delay (sec/veh):	21.3
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:15 - 5:15 p.m.																
Base Vol:	0	197	68		273	96	0		6	6	19		72	1	230	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	253	87		350	123	0		8	8	24		92	1	295	
Added Vol:	0	-2	0		38	0	0		0	0	0		0	0	81	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	251	87		388	123	0		8	8	24		92	1	376	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	251	87		388	123	0		8	8	24		92	1	376	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	251	87		388	123	0		8	8	24		92	1	376	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	251	87		388	123	0		8	8	24		92	1	376	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.74	0.26		1.00	1.00	0.00		0.19	0.19	0.62		1.00	0.01	0.99	
Final Sat.:	0	389	135		499	533	0		78	78	248		468	2	555	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.64	0.64		0.78	0.23	xxxx		0.10	0.10	0.10		0.20	0.68	0.68	
Crit Moves:			****		****						****				****	
Delay/Veh:	0.0	20.3	20.3		29.5	11.2	0.0		11.4	11.4	11.4		11.9	20.2	20.2	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	20.3	20.3		29.5	11.2	0.0		11.4	11.4	11.4		11.9	20.2	20.2	
LOS by Move:	*	C	C		D	B	*		B	B	B		B	C	C	
ApproachDel:	20.3				25.1				11.4				18.6			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	20.3				25.1				11.4				18.6			
LOS by Appr:	C				D				B				C			
AllWayAvgQ:	38.7	38.7	38.7		68.2	7.1	7.1		2.0	2.0	2.0		5.7	43.4	43.4	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 1.281
Loss Time (sec): 10 Average Delay (sec/veh): 101.7
Optimal Cycle: 200 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0		6	6	5		6	0	0		0	0	6		0	6
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lanes:	0	0	1	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m.																
Base Vol:	0	394	447	377	236	0	0	0	0	515	0	455				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	0	505	573	483	303	0	0	0	0	660	0	583				
Added Vol:	0	3	179	73	3	0	0	0	0	403	0	149				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	508	752	556	306	0	0	0	0	1063	0	732				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	508	752	556	306	0	0	0	0	1063	0	732				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	508	752	556	306	0	0	0	0	1063	0	732				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	508	752	556	306	0	0	0	0	1063	0	732				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85				
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00				
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.27	0.47	0.31	0.16	0.00	0.00	0.00	0.00	0.59	0.00	0.45				
Crit Moves:		****		****						****						
Green Time:	0.0	23.0	73.5	26.5	49.4	0.0	0.0	0.0	0.0	50.6	0.0	77.0				
Volume/Cap:	0.00	1.28	0.70	1.28	0.36	0.00	0.00	0.00	0.00	1.28	0.00	0.65				
Delay/Veh:	0.0	188	13.3	185.1	20.1	0.0	0.0	0.0	0.0	165.6	0.0	10.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	188	13.3	185.1	20.1	0.0	0.0	0.0	0.0	165.6	0.0	10.4				
LOS by Move:	A	F	B	F	C	A	A	A	A	F	A	B				
HCM2k95thQ:	0	1234	677	1421	320	0	0	0	0	2402	0	585				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 219.8 Worst Case Level Of Service: F[3244.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module: >> Count Date: 19 Nov 2009 << 4:45-5:45 p.m.																
Base Vol:	61	675	0	0	584	82	54	0	33	0	0	0				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	78	866	0	0	749	105	69	0	42	0	0	0				
Added Vol:	0	116	0	0	275	135	57	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	78	982	0	0	1024	240	126	0	42	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	78	982	0	0	1024	240	126	0	42	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	78	982	0	0	1024	240	126	0	42	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	1264	xxxx	xxxxx	xxxx	xxxx	xxxxx	2607	2607	1144	xxxx	xxxx	xxxxx				
Potent Cap.:	557	xxxx	xxxxx	xxxx	xxxx	xxxxx	19	18	246	xxxx	xxxx	xxxxx				
Move Cap.:	557	xxxx	xxxxx	xxxx	xxxx	xxxxx	17	15	246	xxxx	xxxx	xxxxx				
Volume/Cap:	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	7.29	0.00	0.17	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	12.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	12.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	B	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	23	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	21.2	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	3245	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			3244.6			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	1	0	0 1	0	0	1!	0 0
Volume Module: >> Count Date: 18 Nov 2009 << 4:30 - 5:30 p.m.																
Base Vol:	113	520	89		46	471	126		88	19	105		17	3	18	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	145	667	114		59	604	162		113	24	135		22	4	23	
Added Vol:	-10	113	0		0	279	-3		3	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	135	780	114		59	883	159		116	24	135		22	4	23	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	135	780	114		59	883	159		116	24	135		22	4	23	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	135	780	114		59	883	159		116	24	135		22	4	23	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5	6.2		7.1	6.5	6.2	
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3	
Capacity Module:																
Cnflict Vol:	1042	xxxx	xxxxx		642	xxxx	xxxxx		2492	2553	962		2585	2585	561	
Potent Cap.:	675	xxxx	xxxxx		673	xxxx	xxxxx		14	19	313		12	18	375	
Move Cap.:	675	xxxx	xxxxx		673	xxxx	xxxxx		8	14	313		0	13	375	
Volume/Cap:	0.20	xxxx	xxxx		0.09	xxxx	xxxx		14.00	1.75	0.43		xxxx	0.29	0.06	
Level Of Service Module:																
2Way95thQ:	18.5	xxxx	xxxxx		7.2	xxxx	xxxxx		xxxx	xxxx	51.8		xxxx	xxxx	xxxxx	
Control Del:	11.7	xxxx	xxxxx		10.9	xxxx	xxxxx		xxxxx	xxxx	24.9		xxxxx	xxxx	xxxxx	
LOS by Move:	B	*	*		B	*	*		*	*	C		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		9	xxxx	xxxxx		xxxx	0	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		19.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		7453	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		F	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				3814.2				xxxxxx			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec):	65	Critical Vol./Cap.(X):	0.962
Loss Time (sec):	6	Average Delay (sec/veh):	18.8
Optimal Cycle:	113	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	10	10	10		10	10	10		6	6	6		6	6	6	
Y+R:	5.2	5.2	5.2		5.2	5.2	5.2		5.0	5.0	5.0		5.0	5.0	5.0	
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 5:00-6:00 P.M.																
Base Vol:	88	567	105		60	536	123		148	98	70		32	68	40	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	113	727	135		77	687	158		190	126	90		41	87	51	
Added Vol:	14	102	0		0	275	4		1	0	4		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	127	829	135		77	962	162		191	126	94		41	87	51	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	127	829	135		77	962	162		191	126	94		41	87	51	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	127	829	135		77	962	162		191	126	94		41	87	51	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	127	829	135		77	962	162		191	126	94		41	87	51	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.09	0.98	0.98		0.18	0.98	0.98		0.60	0.94	0.94		0.43	0.95	0.95	
Lanes:	1.00	0.86	0.14		1.00	0.86	0.14		1.00	0.57	0.43		1.00	0.63	0.37	
Final Sat.:	180	1600	260		338	1591	267		1141	1018	760		810	1131	665	
Capacity Analysis Module:																
Vol/Sat:	0.71	0.52	0.52		0.23	0.60	0.60		0.17	0.12	0.12		0.05	0.08	0.08	
Crit Moves:	****								****							
Green Time:	47.7	47.7	47.7		47.7	47.7	47.7		11.3	11.3	11.3		11.3	11.3	11.3	
Volume/Cap:	0.96	0.71	0.71		0.31	0.82	0.82		0.96	0.71	0.71		0.29	0.44	0.44	
Delay/Veh:	74.2	6.5	6.5		3.7	10.1	10.1		79.4	32.8	32.8		24.5	25.0	25.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	74.2	6.5	6.5		3.7	10.1	10.1		79.4	32.8	32.8		24.5	25.0	25.0	
LOS by Move:	E	A	A		A	B	B		E	C	C		C	C	C	
HCM2k95thQ:	165	502	502		30	715	715		371	281	281		54	151	151	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	1.176
Loss Time (sec):	4	Average Delay (sec/veh):	101.4
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.0	4.2	4.0	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	1	0	0	0	1	0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	525	538	0	0	386	102	237	0	602	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	673	690	0	0	495	131	304	0	772	0	0	0
Added Vol:	17	13	0	0	17	262	103	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	690	703	0	0	512	393	407	0	778	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	690	703	0	0	512	393	407	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	690	703	0	0	512	393	407	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	690	703	0	0	512	393	407	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.92	0.92	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.57	0.43	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	991	761	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.39	0.38	0.00	0.00	0.52	0.52	0.23	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	39.8	92.5	0.0	0.0	52.7	52.7	23.5	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	1.18	0.49	0.00	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	136.1	5.3	0.0	0.0	126	126.2	153.5	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	136.1	5.3	0.0	0.0	126	126.2	153.5	0.0	0.0	0.0	0.0	0.0
LOS by Move:	F	A	A	A	F	F	F	A	A	A	A	A
HCM2k95thQ:	1493	428	0	0	1886	1886	1047	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.736
Loss Time (sec):	4	Average Delay (sec/veh):	29.3
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	0	2	0	1	0	1
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	3	781	107	325	689	13	75	80	56	69	2	226
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	4	1002	137	417	884	17	96	103	72	88	3	290
Added Vol:	0	26	0	0	23	0	0	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	1028	137	417	907	17	96	103	72	88	3	294
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	1028	137	417	907	17	96	103	72	88	3	294
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	1028	137	417	907	17	96	103	72	88	3	294
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	1028	137	417	907	17	96	103	72	88	3	294
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.60	0.92	0.92	0.52	0.52	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.59	0.41	0.97	0.03	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1149	1027	719	964	28	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.09	0.24	0.26	0.01	0.08	0.10	0.10	0.09	0.09	0.19
Crit Moves:		****		****								****
Green Time:	9.9	47.3	47.3	38.4	75.9	75.9	30.3	30.3	30.3	30.3	30.3	30.3
Volume/Cap:	0.03	0.74	0.22	0.74	0.41	0.02	0.33	0.40	0.40	0.36	0.36	0.74
Delay/Veh:	50.7	33.1	24.3	41.3	11.0	8.2	37.3	37.9	37.9	37.8	37.8	48.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	33.1	24.3	41.3	11.0	8.2	37.3	37.9	37.9	37.8	37.8	48.2
LOS by Move:	D	C	C	D	B	A	D	D	D	D	D	D
HCM2k95thQ:	8	771	166	563	373	11	156	266	266	153	153	517

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: D[30.1]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2000 << 5:00 - 6:00 p.m.												
Base Vol:	61	773	0	0	829	23	25	0	68	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	78	991	0	0	1063	29	32	0	87	0	0	0
Added Vol:	7	2	0	0	23	3	2	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	993	0	0	1086	32	34	0	91	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	993	0	0	1086	32	34	0	91	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	85	993	0	0	1086	32	34	0	91	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	844	xxxx	xxxxx	xxxx	xxxx	xxxxx	1590	xxxx	203	xxxx	xxxx	xxxxx
Potent Cap.:	699	xxxx	xxxxx	xxxx	xxxx	xxxxx	88	xxxx	707	xxxx	xxxx	xxxxx
Move Cap.:	699	xxxx	xxxxx	xxxx	xxxx	xxxxx	79	xxxx	707	xxxx	xxxx	xxxxx
Volume/Cap:	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	0.43	xxxx	0.13	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	10.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	43.5	xxxx	11.0	xxxx	xxxx	xxxxx
Control Del:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	81.5	xxxx	10.8	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			30.1			xxxxxx		
ApproachLOS:	*			*			D			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec):	130	Critical Vol./Cap.(X):	1.282
Loss Time (sec):	8	Average Delay (sec/veh):	156.2
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2	0 1	1	1	0 1	1	0	1 0	1	1	0 0 1
Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM												
Base Vol:	150	518	422	511	524	20	19	205	103	382	156	401
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	192	664	541	655	672	26	24	263	132	490	200	514
Added Vol:	10	13	122	7	20	0	0	99	10	268	194	-3
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	677	663	662	692	26	24	362	142	758	394	511
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	677	663	662	692	26	24	362	142	758	394	511
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	677	663	662	692	26	24	362	142	758	394	511
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	677	663	662	692	26	24	362	142	758	394	511
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.44	1.50	0.06	1.00	1.00	1.00	1.32	0.68	1.00
Final Sat.:	1769	3538	1583	2481	2592	96	1769	1862	1583	2372	1233	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.42	0.27	0.27	0.27	0.01	0.19	0.09	0.32	0.32	0.32
Crit Moves:			****			****		****				****
Green Time:	42.5	42.5	42.5	27.1	27.1	27.1	19.7	19.7	19.7	32.7	32.7	32.7
Volume/Cap:	0.35	0.59	1.28	1.28	1.28	1.28	0.09	1.28	0.59	1.27	1.27	1.28
Delay/Veh:	33.6	37.2	185.0	185.7	186	185.7	47.6	206	55.3	178.2	178	193.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.6	37.2	185.0	185.7	186	185.7	47.6	206	55.3	178.2	178	193.6
LOS by Move:	C	D	F	F	F	F	D	F	E	F	F	F
HCM2k95thQ:	293	545	1777	1366	1366	1366	44	1082	294	1559	1559	1428

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	2.576
Loss Time (sec):	7	Average Delay (sec/veh):	100.8
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	12	12	12	12	12	12
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	82	34	59	19	39	14	3	1073	82	66	788	19
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	105	44	76	24	50	18	4	1376	105	85	1011	24
Added Vol:	14	0	44	0	0	0	0	210	18	100	444	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	44	120	24	50	18	4	1586	123	185	1455	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	44	120	24	50	18	4	1586	123	185	1455	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	44	120	24	50	18	4	1586	123	185	1455	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	44	120	24	50	18	4	1586	123	185	1455	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	0.87	0.87	0.78	0.94	0.94	0.08	0.97	0.97	0.04	0.98	0.98
Lanes:	1.00	0.27	0.73	1.00	0.74	0.26	1.00	0.93	0.07	1.00	0.98	0.02
Final Sat.:	1490	443	1215	1490	1315	472	158	1709	133	80	1828	31
Capacity Analysis Module:												
Vol/Sat:	0.08	0.10	0.10	0.02	0.04	0.04	0.02	0.93	0.93	2.31	0.80	0.80
Crit Moves:		****								****		
Green Time:	5.0	5.0	5.0	5.0	5.0	5.0	93.0	93.0	93.0	93.0	93.0	93.0
Volume/Cap:	1.68	2.07	2.07	0.34	0.80	0.80	0.03	1.05	1.05	2.60	0.90	0.90
Delay/Veh:	409.3	572	571.7	51.3	89.1	89.1	0.8	42.0	42.0	766.7	10.4	10.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	409.3	572	571.7	51.3	89.1	89.1	0.8	42.0	42.0	766.7	10.4	10.4
LOS by Move:	F	F	F	D	F	F	A	D	D	F	B	B
HCM2k95thQ:	518	736	736	60	198	198	2	2652	2652	888	1240	1240

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	1.100
Loss Time (sec):	7	Average Delay (sec/veh):	55.3
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM												
Base Vol:	17	16	3	70	25	46	6	1045	64	42	772	13
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	22	21	4	90	32	59	8	1340	82	54	990	17
Added Vol:	0	0	0	0	0	0	0	254	0	0	544	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	21	4	90	32	59	8	1594	82	54	1534	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	21	4	90	32	59	8	1594	82	54	1534	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	21	4	90	32	59	8	1594	82	54	1534	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	21	4	90	32	59	8	1594	82	54	1534	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.79	0.79	0.79	0.05	0.97	0.97	0.05	0.98	0.98
Lanes:	0.48	0.44	0.08	0.50	0.18	0.32	1.00	0.95	0.05	1.00	0.99	0.01
Final Sat.:	656	618	116	746	266	490	86	1758	91	86	1838	20
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.12	0.12	0.12	0.09	0.91	0.91	0.63	0.83	0.83
Crit Moves:					****			****				
Green Time:	11.5	11.5	11.5	11.5	11.5	11.5	86.5	86.5	86.5	86.5	86.5	86.5
Volume/Cap:	0.30	0.30	0.30	1.10	1.10	1.10	0.11	1.10	1.10	0.76	1.01	1.01
Delay/Veh:	44.2	44.2	44.2	146.3	146	146.3	2.5	64.9	64.9	41.5	35.5	35.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.2	44.2	44.2	146.3	146	146.3	2.5	64.9	64.9	41.5	35.5	35.5
LOS by Move:	D	D	D	F	F	F	A	E	E	D	D	D
HCM2k95thQ:	85	85	85	509	509	509	9	2859	2859	125	2298	2298

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	1.274
Loss Time (sec):	7	Average Delay (sec/veh):	93.2
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	10	10		4	10	10	
Y+R:	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Lanes:	1	0	0	1 0	0	1	0	0 1	1	0	1	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM																
Base Vol:	45	1	188		186	3	21		13	1101	11		91	739	36	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	58	1	241		239	4	27		17	1412	14		117	948	46	
Added Vol:	0	0	0		0	0	0		0	254	0		0	544	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	58	1	241		239	4	27		17	1666	14		117	1492	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	58	1	241		239	4	27		17	1666	14		117	1492	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	58	1	241		239	4	27		17	1666	14		117	1492	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	58	1	241		239	4	27		17	1666	14		117	1492	46	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.39	0.83	0.83		0.36	0.36	0.83		0.93	0.93	0.93		0.93	0.98	0.98	
Lanes:	1.00	0.01	0.99		0.98	0.02	1.00		1.00	1.98	0.02		1.00	0.97	0.03	
Final Sat.:	734	8	1576		680	11	1583		1769	3505	30		1769	1799	56	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.15	0.15		0.35	0.35	0.02		0.01	0.48	0.48		0.07	0.83	0.83	
Crit Moves:						****			****					****		
Green Time:	27.9	27.9	27.9		27.9	27.9	27.9		4.0	61.5	61.5		8.5	66.1	66.1	
Volume/Cap:	0.30	0.57	0.57		1.32	1.32	0.06		0.25	0.81	0.81		0.81	1.32	1.32	
Delay/Veh:	31.5	35.3	35.3		214.7	215	28.8		51.0	19.7	19.7		75.7	169	168.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	31.5	35.3	35.3		214.7	215	28.8		51.0	19.7	19.7		75.7	169	168.8	
LOS by Move:	C	D	D		F	F	C		D	B	B		E	F	F	
HCM2k95thQ:	89	351	351		749	749	34		41	999	999		282	3573	3573	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	90	Critical Vol./Cap.(X):	0.988
Loss Time (sec):	11	Average Delay (sec/veh):	40.5
Optimal Cycle:	161	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		5	0	5		5	5	0		0	5	5	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0	0	0	2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	0	0	0		381	0	61		31	1307	0		0	1053	242	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		489	0	78		40	1676	0		0	1350	310	
Added Vol:	0	0	0		58	0	0		0	254	0		0	544	155	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		547	0	78		40	1930	0		0	1894	465	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		547	0	78		40	1930	0		0	1894	465	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		547	0	78		40	1930	0		0	1894	465	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		547	0	78		40	1930	0		0	1894	465	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.93	1.00	0.83		0.93	0.93	1.00		1.00	0.93	0.83	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	2.00	0.00		0.00	2.00	1.00	
Final Sat.:	0	0	0		1769	0	1583		1769	3538	0		0	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.31	0.00	0.05		0.02	0.55	0.00		0.00	0.54	0.29	
Crit Moves:					****				****					****		
Green Time:	0.0	0.0	0.0		27.1	0.0	27.1		5.0	51.9	0.0		0.0	46.9	46.9	
Volume/Cap:	0.00	0.00	0.00		1.03	0.00	0.16		0.40	0.95	0.00		0.00	1.03	0.56	
Delay/Veh:	0.0	0.0	0.0		77.6	0.0	23.3		43.8	27.7	0.0		0.0	49.7	15.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		77.6	0.0	23.3		43.8	27.7	0.0		0.0	49.7	15.5	
LOS by Move:	A	A	A		E	A	C		D	C	A		A	D	B	
HCM2k95thQ:	0	0	0		954	0	84		81	1275	0		0	1489	425	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.960
Loss Time (sec):	4	Average Delay (sec/veh):	32.8
Optimal Cycle:	132	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	71	15	148	58	17	3	6	772	93	200	928	50
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	91	19	190	74	22	4	8	990	119	256	1190	64
Added Vol:	151	0	0	0	0	0	0	195	57	0	401	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	242	19	190	74	22	4	8	1185	176	256	1591	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	19	190	74	22	4	8	1185	176	256	1591	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	19	190	74	22	4	8	1185	176	256	1591	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	19	190	74	22	4	8	1185	176	256	1591	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.65	0.65	0.65	0.81	0.81	0.81	0.93	0.93	0.93
Lanes:	0.54	0.04	0.42	0.74	0.22	0.04	0.01	1.73	0.26	1.00	1.92	0.08
Final Sat.:	748	59	587	923	271	48	17	2671	397	1769	3380	136
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.08	0.08	0.08	0.44	0.44	0.44	0.14	0.47	0.47
Crit Moves:		****						****		****		
Green Time:	27.7	27.7	27.7	27.7	27.7	27.7	35.8	35.8	35.8	12.5	48.3	48.3
Volume/Cap:	0.93	0.93	0.93	0.23	0.23	0.23	0.99	0.99	0.99	0.93	0.78	0.78
Delay/Veh:	50.6	50.6	50.6	18.9	18.9	18.9	43.9	43.9	43.9	69.6	13.8	13.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.6	50.6	50.6	18.9	18.9	18.9	43.9	43.9	43.9	69.6	13.8	13.8
LOS by Move:	D	D	D	B	B	B	D	D	D	E	B	B
HCM2k95thQ:	677	677	677	96	96	96	937	937	937	290	652	652

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.991
Loss Time (sec):	4	Average Delay (sec/veh):	38.8
Optimal Cycle:	199	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.1	4.5	4.5
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0
Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm												
Base Vol:	90	25	65	440	10	161	203	878	43	31	842	344
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	115	32	83	564	13	206	260	1126	55	40	1080	441
Added Vol:	0	0	0	0	0	0	0	195	0	0	401	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	32	83	564	13	206	260	1321	55	40	1481	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	32	83	564	13	206	260	1321	55	40	1481	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	32	83	564	13	206	260	1321	55	40	1481	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	32	83	564	13	206	260	1321	55	40	1481	441
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.90	0.90
Lanes:	1.00	0.28	0.72	1.96	0.04	1.00	1.00	1.92	0.08	1.00	1.54	0.46
Final Sat.:	1769	461	1200	3470	79	1583	1769	3376	141	1769	2633	784
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.16	0.16	0.13	0.15	0.39	0.39	0.02	0.56	0.56
Crit Moves:		****			****		****				****	
Green Time:	5.6	5.6	5.6	13.1	13.1	13.1	11.9	50.8	50.8	6.5	45.4	45.4
Volume/Cap:	0.93	0.99	0.99	0.99	0.99	0.80	0.99	0.62	0.62	0.28	0.99	0.99
Delay/Veh:	96.6	118	117.7	68.3	68.3	47.7	87.0	9.3	9.3	35.6	35.4	35.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.6	118	117.7	68.3	68.3	47.7	87.0	9.3	9.3	35.6	35.4	35.4
LOS by Move:	F	F	F	E	E	D	F	A	A	D	D	D
HCM2k95thQ:	283	303	303	552	552	341	319	452	452	43	1011	1011

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	1.017
Loss Time (sec):	4	Average Delay (sec/veh):	41.7
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM																
Base Vol:	32	2	352	207	4	0	36	1171	23	60	1177	204				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	41	3	451	265	5	0	46	1502	29	77	1509	262				
Added Vol:	0	0	0	0	0	0	0	195	0	0	401	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	41	3	451	265	5	0	46	1697	29	77	1910	262				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	41	3	451	265	5	0	46	1697	29	77	1910	262				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	41	3	451	265	5	0	46	1697	29	77	1910	262				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	41	3	451	265	5	0	46	1697	29	77	1910	262				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.94	0.94	0.73	0.93	0.93	1.00	0.93	0.89	0.89	0.90	0.91	0.91				
Lanes:	0.94	0.06	2.00	0.98	0.02	1.00	1.00	2.95	0.05	2.00	1.76	0.24				
Final Sat.:	1674	105	2786	1741	34	1900	1769	4981	87	3432	3056	418				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.16	0.15	0.15	0.00	0.03	0.34	0.34	0.02	0.63	0.63				
Crit Moves:			****	****			****				****					
Green Time:	12.4	12.4	12.4	11.7	11.7	0.0	4.0	45.3	45.3	6.6	47.9	47.9				
Volume/Cap:	0.16	0.16	1.04	1.04	1.04	0.00	0.52	0.60	0.60	0.27	1.04	1.04				
Delay/Veh:	29.5	29.5	89.1	102.1	102	0.0	42.6	11.8	11.8	34.9	48.5	48.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	29.5	29.5	89.1	102.1	102	0.0	42.6	11.8	11.8	34.9	48.5	48.5				
LOS by Move:	C	C	F	F	F	A	D	B	B	C	D	D				
HCM2k95thQ:	53	53	546	566	566	0	58	461	461	43	1304	1304				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	1.300
Loss Time (sec):	0	Average Delay (sec/veh):	103.3
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	1	0	0 1	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2000 << 5:00-6:00 p.m.																
Base Vol:	10	76	447		16	37	41		16	175	12		395	261	15	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	13	97	573		21	47	53		21	224	15		507	335	19	
Added Vol:	0	0	46		0	1	0		0	59	0		65	85	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	13	97	619		21	48	53		21	283	15		572	420	19	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	13	97	619		21	48	53		21	283	15		572	420	19	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	13	97	619		21	48	53		21	283	15		572	420	19	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	13	97	619		21	48	53		21	283	15		572	420	19	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.12	0.88	1.00		0.17	0.40	0.43		1.00	0.95	0.05		1.00	0.96	0.04	
Final Sat.:	52	397	501		67	159	173		404	409	22		440	450	21	
Capacity Analysis Module:																
Vol/Sat:	0.25	0.25	1.24		0.30	0.30	0.30		0.05	0.69	0.69		1.30	0.93	0.93	
Crit Moves:			****			****					****		****	****		
Delay/Veh:	13.2	13.2	145.5		15.5	15.5	15.5		12.0	27.4	27.4		174.5	53.8	53.8	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	13.2	13.2	145.5		15.5	15.5	15.5		12.0	27.4	27.4		174.5	53.8	53.8	
LOS by Move:	B	B	F		C	C	C		B	D	D		F	F	F	
ApproachDel:	125.5				15.5				26.4				122.1			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	125.5				15.5				26.4				122.1			
LOS by Appr:	F				C				D				F			
AllWayAvgQ:	7.9	7.9	472.0		10.3	10.3	10.3		1.3	49.1	49.1		500	142	142.2	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.852
Loss Time (sec):	10	Average Delay (sec/veh):	51.9
Optimal Cycle:	98	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	10	10	4	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 2	0 1	2	0 2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	207	632	149	104	588	175	360	669	89	393	1110	185
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	265	810	191	133	754	224	462	858	114	504	1423	237
Added Vol:	0	12	-2	0	14	4	7	-9	1	-1	-2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	265	822	189	133	768	228	469	849	115	503	1421	237
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	265	822	189	133	768	228	469	849	115	503	1421	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	822	189	133	768	228	469	849	115	503	1421	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	265	822	189	133	768	228	469	849	115	503	1421	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	3724	1583	3538	3724	1583	3538	3724	1583	3538	3724	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.12	0.04	0.21	0.14	0.13	0.23	0.07	0.14	0.38	0.15
Crit Moves:	****				****		****				****	
Green Time:	13.2	42.3	42.3	7.2	36.3	36.3	23.3	55.7	55.7	34.8	67.2	67.2
Volume/Cap:	0.85	0.78	0.42	0.78	0.85	0.60	0.85	0.61	0.20	0.61	0.85	0.33
Delay/Veh:	87.1	53.6	44.6	91.3	62.2	52.9	73.9	39.2	32.1	53.0	41.4	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.1	53.6	44.6	91.3	62.2	52.9	73.9	39.2	32.1	53.0	41.4	27.2
LOS by Move:	F	D	D	F	E	D	E	D	C	D	D	C
HCM2k95thQ:	280	686	287	231	819	453	502	672	169	496	1243	330

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.535
Loss Time (sec):	4	Average Delay (sec/veh):	39.5
Optimal Cycle:	41	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	10	10		7	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 19 Nov 2009 <<																
Base Vol:	239	355	8		1	536	56		9	8	192		10	11	14	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	306	455	10		1	687	72		12	10	246		13	14	18	
Added Vol:	0	61	0		0	116	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	306	516	10		1	803	72		12	10	246		13	14	18	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	306	516	10		1	803	72		12	10	246		13	14	18	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	306	516	10		1	803	72		12	10	246		13	14	18	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	306	516	10		1	803	72		12	10	246		13	14	18	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.91		0.95	0.90	0.90		0.87	0.87	0.87		0.95	0.92	0.92	
Lanes:	1.00	2.94	0.06		1.00	2.75	0.25		0.04	0.04	0.92		1.00	0.44	0.56	
Final Sat.:	1805	5071	101		1805	4704	421		72	64	1526		1805	766	975	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.10	0.10		0.00	0.17	0.17		0.16	0.16	0.16		0.01	0.02	0.02	
Crit Moves:	****					****				****				****		
Green Time:	44.3	60.3	60.3		28.6	44.6	44.6		42.1	42.1	42.1		10.0	10.0	10.0	
Volume/Cap:	0.56	0.24	0.24		0.00	0.56	0.56		0.56	0.56	0.56		0.10	0.27	0.27	
Delay/Veh:	43.4	27.6	27.6		46.8	42.4	42.4		45.0	45.0	45.0		63.7	65.2	65.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	43.4	27.6	27.6		46.8	42.4	42.4		45.0	45.0	45.0		63.7	65.2	65.2	
LOS by Move:	D	C	C		D	D	D		D	D	D		E	E	E	
HCM2k95thQ:	523	261	261		2	542	542		475	475	475		31	81	81	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	4	Average Delay (sec/veh):	24.6
Optimal Cycle:	77	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 am - 8:45 am												
Base Vol:	43	772	52	125	1726	54	8	21	12	139	7	137
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	55	990	67	160	2213	69	10	27	15	178	9	176
Added Vol:	7	89	-3	5	129	0	0	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	1079	64	165	2342	69	10	27	15	178	9	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	1079	64	165	2342	69	10	27	15	178	9	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	1079	64	165	2342	69	10	27	15	178	9	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	1079	64	165	2342	69	10	27	15	178	9	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.91	0.91	0.83	0.65	0.65	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.28	0.72	1.00	0.95	0.05	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	475	1247	1583	1179	59	1583
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.04	0.09	0.66	0.04	0.02	0.02	0.01	0.15	0.15	0.12
Crit Moves:	****				****						****	
Green Time:	5.8	88.7	88.7	27.2	110	110.0	25.1	25.1	25.1	25.1	25.1	25.1
Volume/Cap:	0.87	0.50	0.07	0.50	0.87	0.06	0.12	0.12	0.06	0.87	0.87	0.67
Delay/Veh:	133.9	15.9	11.4	54.0	15.9	4.4	50.8	50.8	50.1	88.4	88.4	62.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	133.9	15.9	11.4	54.0	15.9	4.4	50.8	50.8	50.1	88.4	88.4	62.5
LOS by Move:	F	B	B	D	B	A	D	D	D	F	F	E
HCM2k95thQ:	234	612	57	330	1598	40	72	72	30	493	493	408

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.941
Loss Time (sec):	4	Average Delay (sec/veh):	46.9
Optimal Cycle:	137	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	80	616	30	67	1340	518	344	142	120	62	168	13
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	103	790	38	86	1718	664	441	182	154	80	215	17
Added Vol:	12	91	8	3	123	3	9	39	15	6	10	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	881	46	89	1841	667	450	221	169	86	225	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	881	46	89	1841	667	450	221	169	86	225	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	881	46	89	1841	667	450	221	169	86	225	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	881	46	89	1841	667	450	221	169	86	225	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.96	0.96
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.34	0.66	1.00	1.00	0.86	0.14
Final Sat.:	1769	3538	1583	1769	3538	1583	2417	1187	1583	1769	1568	255
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.03	0.05	0.52	0.42	0.19	0.19	0.11	0.05	0.14	0.14
Crit Moves:	****				****			****				****
Green Time:	10.0	75.0	75.0	15.1	80.2	80.2	28.7	28.7	28.7	22.2	22.2	22.2
Volume/Cap:	0.94	0.48	0.06	0.48	0.94	0.76	0.94	0.94	0.54	0.32	0.94	0.94
Delay/Veh:	130.5	22.7	17.4	63.2	40.0	29.0	77.9	77.9	54.1	55.4	99.1	99.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	130.5	22.7	17.4	63.2	40.0	29.0	77.9	77.9	54.1	55.4	99.1	99.1
LOS by Move:	F	C	B	E	D	C	E	E	D	E	F	F
HCM2k95thQ:	375	579	51	209	1716	983	710	710	313	175	669	669

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.875
Loss Time (sec):	4	Average Delay (sec/veh):	42.3
Optimal Cycle:	78	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.5
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 1	0 1	1	0 1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	137	614	59	127	1307	63	78	173	56	97	187	58
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	176	787	76	163	1676	81	100	222	72	124	240	74
Added Vol:	31	163	74	0	178	12	10	22	19	16	39	6
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	207	950	150	163	1854	93	110	244	91	140	279	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	207	950	150	163	1854	93	110	244	91	140	279	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	207	950	150	163	1854	93	110	244	91	140	279	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	207	950	150	163	1854	93	110	244	91	140	279	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.12	0.27	0.09	0.09	0.52	0.06	0.06	0.13	0.06	0.08	0.15	0.05
Crit Moves:	****				****			****		****		
Green Time:	19.4	79.1	79.1	27.1	86.8	86.8	10.2	21.7	21.7	13.1	24.6	24.6
Volume/Cap:	0.88	0.49	0.17	0.49	0.88	0.10	0.88	0.88	0.38	0.88	0.88	0.30
Delay/Veh:	90.1	20.7	16.7	54.0	29.0	12.4	113.4	85.4	56.7	102.9	82.6	53.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.1	20.7	16.7	54.0	29.0	12.4	113.4	85.4	56.7	102.9	82.6	53.3
LOS by Move:	F	C	B	D	C	B	F	F	E	F	F	D
HCM2k95thQ:	532	601	162	325	1512	87	346	597	193	407	660	163

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	4	Average Delay (sec/veh):	13.0
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	0	0 2	0 1	1	0 1	0 1	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	0	711	42	0	1396	88	52	27	44	37	56	23
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	912	54	0	1790	113	67	35	56	47	72	29
Added Vol:	0	213	1	0	190	29	43	2	11	2	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1125	55	0	1980	142	110	37	67	49	82	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1125	55	0	1980	142	110	37	67	49	82	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1125	55	0	1980	142	110	37	67	49	82	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1125	55	0	1980	142	110	37	67	49	82	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.93	0.83	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	0	3538	1583	0	3538	1583	1769	1862	1583	1769	1314	474
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.03	0.00	0.56	0.09	0.06	0.02	0.04	0.03	0.06	0.06
Crit Moves:							****		****			****
Green Time:	0.0	115	115.4	0.0	115	115.4	12.8	12.8	12.8	12.8	12.8	12.8
Volume/Cap:	0.00	0.40	0.04	0.00	0.70	0.11	0.70	0.22	0.48	0.32	0.70	0.70
Delay/Veh:	0.0	4.5	3.1	0.0	7.7	3.4	77.8	62.2	65.6	63.1	77.6	77.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.5	3.1	0.0	7.7	3.4	77.8	62.2	65.6	63.1	77.6	77.6
LOS by Move:	A	A	A	A	A	A	E	E	E	E	E	E
HCM2k95thQ:	0	353	25	0	913	72	294	85	172	117	297	297

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.078
Loss Time (sec):	4	Average Delay (sec/veh):	87.8
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 1	0	2 0	1 0	1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	97	895	378	233	1616	18	42	391	88	645	285	73
Added Vol:	12	72	75	69	92	43	120	314	16	118	90	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	967	453	302	1708	61	162	705	104	763	375	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	967	453	302	1708	61	162	705	104	763	375	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	967	453	302	1708	61	162	705	104	763	375	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	967	453	302	1708	61	162	705	104	763	375	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.91	0.91	0.91	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.33	1.45	0.22	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	577	2505	371	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.29	0.17	0.48	0.04	0.28	0.28	0.28	0.22	0.20	0.06
Crit Moves:	****				****				****	****		
Green Time:	8.3	45.9	45.9	27.4	64.9	64.9	37.9	37.9	37.9	29.9	29.9	29.9
Volume/Cap:	1.08	0.86	0.91	0.91	1.08	0.09	1.08	1.08	1.08	1.08	0.98	0.29
Delay/Veh:	180.3	53.8	67.4	84.4	87.0	23.1	106.9	107	106.9	114.4	96.5	49.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	180.3	53.8	67.4	84.4	87.0	23.1	106.9	107	106.9	114.4	96.5	49.1
LOS by Move:	F	D	E	F	F	C	F	F	F	F	F	D
HCM2k95thQ:	404	984	945	617	1886	75	1254	1254	1254	1026	896	179

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.646
Loss Time (sec):	10	Average Delay (sec/veh):	13.1
Optimal Cycle:	50	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	8	8	8	8	8	8
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	2 1	0	0 0	1! 0	0	0 1	0 0	1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	28	1031	22	42	1703	31	55	3	41	8	5	5
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	36	1322	28	54	2184	40	71	4	53	10	6	6
Added Vol:	6	148	0	0	223	3	4	0	3	4	1	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	1470	28	54	2407	43	75	4	56	14	7	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	1470	28	54	2407	43	75	4	56	14	7	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	1470	28	54	2407	43	75	4	56	14	7	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	1470	28	54	2407	43	75	4	56	14	7	13
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.89	0.89	0.75	0.75	0.75	0.82	0.82	0.83
Lanes:	1.00	1.96	0.04	1.00	2.95	0.05	0.56	0.03	0.41	0.66	0.34	1.00
Final Sat.:	1769	3461	66	1769	4980	88	790	41	589	1024	532	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.42	0.42	0.03	0.48	0.48	0.09	0.09	0.09	0.01	0.01	0.01
Crit Moves:	****				****			****				
Green Time:	5.3	106	106.2	7.6	109	108.5	21.2	21.2	21.2	21.2	21.2	21.2
Volume/Cap:	0.65	0.58	0.58	0.58	0.65	0.65	0.65	0.65	0.65	0.10	0.10	0.06
Delay/Veh:	89.3	9.4	9.4	76.0	9.3	9.3	65.3	65.3	65.3	53.8	53.8	53.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.3	9.4	9.4	76.0	9.3	9.3	65.3	65.3	65.3	53.8	53.8	53.4
LOS by Move:	F	A	A	E	A	A	E	E	E	D	D	D
HCM2k95thQ:	147	703	703	162	826	826	318	318	318	45	45	27

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.963
Loss Time (sec):	10	Average Delay (sec/veh):	53.7
Optimal Cycle:	194	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	10	10	7	10	10
Y+R:	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	0	1	0	1	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	172	982	0	0	1685	64	172	0	334	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	221	1259	0	0	2161	82	221	0	428	0	0	0
Added Vol:	18	123	0	64	165	0	8	2	4	21	2	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	239	1382	0	64	2326	82	229	2	432	21	2	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1382	0	64	2326	82	229	2	432	21	2	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1382	0	64	2326	82	229	2	432	21	2	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1382	0	64	2326	82	229	2	432	21	2	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.91	0.93	0.89	0.89	0.93	0.83	0.83	0.93	0.85	0.85
Lanes:	1.00	3.00	0.00	1.00	2.90	0.10	1.00	0.01	0.99	1.00	0.13	0.87
Final Sat.:	1769	5083	0	1769	4885	172	1769	7	1577	1769	202	1416
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.00	0.04	0.48	0.48	0.13	0.27	0.27	0.01	0.01	0.01
Crit Moves:	****				****			****		****		
Green Time:	19.5	78.0	0.0	10.4	68.9	68.9	30.4	39.6	39.6	7.0	16.2	16.2
Volume/Cap:	1.00	0.51	0.00	0.51	1.00	1.00	0.62	1.00	1.00	0.25	0.09	0.09
Delay/Veh:	121.8	21.4	0.0	68.1	57.1	57.1	55.1	96.6	96.6	68.0	58.0	58.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	121.8	21.4	0.0	68.1	57.1	57.1	55.1	96.6	96.6	68.0	58.0	58.0
LOS by Move:	F	C	A	E	E	E	E	F	F	E	E	E
HCM2k95thQ:	664	620	0	170	1785	1785	454	1029	1029	58	35	35

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	10	Average Delay (sec/veh):	16.0
Optimal Cycle:	61	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	0	0	1!	0	0	0	1!	0	0
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	125	1084	2	25	2021	21	19	0	32	1	0	1
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	160	1390	3	32	2592	27	24	0	41	1	0	1
Added Vol:	-2	248	24	99	111	0	2	1	1	20	2	28
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	1638	27	131	2703	27	26	1	42	21	2	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	1638	27	131	2703	27	26	1	42	21	2	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	1638	27	131	2703	27	26	1	42	21	2	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	1638	27	131	2703	27	26	1	42	21	2	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.77	0.77	0.77	0.73	0.73	0.73
Lanes:	1.00	2.95	0.05	1.00	2.97	0.03	0.38	0.01	0.61	0.40	0.04	0.56
Final Sat.:	1769	4992	81	1769	5028	50	553	21	881	565	53	777
Capacity Analysis Module:												
Vol/Sat:	0.09	0.33	0.33	0.07	0.54	0.54	0.05	0.05	0.05	0.04	0.04	0.04
Crit Moves:	****				****			****				
Green Time:	17.7	101	101.2	22.8	106	106.3	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.73	0.47	0.47	0.47	0.73	0.73	0.63	0.63	0.63	0.50	0.50	0.50
Delay/Veh:	73.6	10.0	10.0	56.8	11.9	11.9	76.1	76.1	76.1	68.0	68.0	68.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.6	10.0	10.0	56.8	11.9	11.9	76.1	76.1	76.1	68.0	68.0	68.0
LOS by Move:	E	A	A	E	B	B	E	E	E	E	E	E
HCM2k95thQ:	388	540	540	274	1061	1061	201	201	201	146	146	146

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	125	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	9	Average Delay (sec/veh):	32.2
Optimal Cycle:	63	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Ignore			
Min. Green:	7	10	10		7	10	10		7	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	3	0 1	1	0	2	1 0	2	0	0	0 1	0	0	0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 8:00 am - 9:00 am																
Base Vol:	240	560	27		487	1233	308		224	0	229		0	0	447	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	308	718	35		625	1581	395		287	0	294		0	0	573	
Added Vol:	0	135	0		6	81	45		111	0	0		0	0	25	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	308	853	35		631	1662	440		398	0	294		0	0	598	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
PHF Volume:	308	853	35		631	1662	440		398	0	294		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	308	853	35		631	1662	440		398	0	294		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00	
FinalVolume:	308	853	35		631	1662	440		398	0	294		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.85		0.95	0.88	0.88		0.92	1.00	0.85		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	2.37	0.63		2.00	0.00	1.00		0.00	0.00	1.00	
Final Sat.:	1805	5187	1615		1805	3974	1052		3502	0	1615		0	0	1900	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.16	0.02		0.35	0.42	0.42		0.11	0.00	0.18		0.00	0.00	0.00	
Crit Moves:	****					****			****							
Green Time:	28.2	31.1	31.1		66.1	69.1	69.1		18.8	0.0	46.9		0.0	0.0	0.0	
Volume/Cap:	0.76	0.66	0.09		0.66	0.76	0.76		0.76	0.00	0.48		0.00	0.00	0.00	
Delay/Veh:	53.2	43.5	36.1		23.1	22.8	22.8		57.2	0.0	30.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	53.2	43.5	36.1		23.1	22.8	22.8		57.2	0.0	30.4		0.0	0.0	0.0	
LOS by Move:	D	D	D		C	C	C		E	A	C		A	A	A	
HCM2k95thQ:	565	524	53		764	974	974		367	0	389		0	0	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.774
Loss Time (sec):	4	Average Delay (sec/veh):	19.1
Optimal Cycle:	43	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		8	8	8		8	8	8	
Y+R:	4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2		4.2	4.2	4.2	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	24	100	16		119	223	66		16	238	97		37	367	82	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	31	128	21		153	286	85		21	305	124		47	471	105	
Added Vol:	0	0	0		0	0	19		81	20	1		0	22	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	31	128	21		153	286	104		102	325	125		47	493	105	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	31	128	21		153	286	104		102	325	125		47	493	105	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	31	128	21		153	286	104		102	325	125		47	493	105	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	31	128	21		153	286	104		102	325	125		47	493	105	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.86	0.86	0.86		0.83	0.83	0.83		0.76	0.76	0.76		0.90	0.90	0.90	
Lanes:	0.17	0.72	0.11		0.28	0.53	0.19		0.18	0.59	0.23		0.07	0.77	0.16	
Final Sat.:	281	1171	187		442	828	300		264	846	326		126	1307	279	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.11	0.11		0.35	0.35	0.35		0.38	0.38	0.38		0.38	0.38	0.38	
Crit Moves:						****				****						
Green Time:	31.2	31.2	31.2		31.2	31.2	31.2		34.8	34.8	34.8		34.8	34.8	34.8	
Volume/Cap:	0.25	0.25	0.25		0.77	0.77	0.77		0.77	0.77	0.77		0.76	0.76	0.76	
Delay/Veh:	12.2	12.2	12.2		21.8	21.8	21.8		19.7	19.7	19.7		18.2	18.2	18.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.2	12.2	12.2		21.8	21.8	21.8		19.7	19.7	19.7		18.2	18.2	18.2	
LOS by Move:	B	B	B		C	C	C		B	B	B		B	B	B	
HCM2k95thQ:	126	126	126		538	538	538		533	533	533		581	581	581	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	1.105
Loss Time (sec):	4	Average Delay (sec/veh):	52.0
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 22 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	167	106	22	169	104	52	7	562	61	15	528	29
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	214	136	28	217	133	67	9	721	78	19	677	37
Added Vol:	60	0	0	0	1	0	0	293	171	0	142	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	274	136	28	217	134	67	9	1014	249	19	819	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	274	136	28	217	134	67	9	1014	249	19	819	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	274	136	28	217	134	67	9	1014	249	19	819	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	274	136	28	217	134	67	9	1014	249	19	819	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.81	0.95	0.95	0.63	0.63	0.63	0.17	0.95	0.95	0.08	0.97	0.97
Lanes:	1.00	0.83	0.17	0.52	0.32	0.16	1.00	0.80	0.20	1.00	0.96	0.04
Final Sat.:	1545	1502	312	625	388	192	328	1450	356	156	1770	80
Capacity Analysis Module:												
Vol/Sat:	0.18	0.09	0.09	0.35	0.35	0.35	0.03	0.70	0.70	0.12	0.46	0.46
Crit Moves:					****			****				
Green Time:	23.5	23.5	23.5	23.5	23.5	23.5	47.5	47.5	47.5	47.5	47.5	47.5
Volume/Cap:	0.57	0.29	0.29	1.10	1.10	1.10	0.04	1.10	1.10	0.19	0.73	0.73
Delay/Veh:	23.0	19.7	19.7	103.3	103	103.3	5.3	73.9	73.9	6.7	11.8	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.0	19.7	19.7	103.3	103	103.3	5.3	73.9	73.9	6.7	11.8	11.8
LOS by Move:	C	B	B	F	F	F	A	E	E	A	B	B
HCM2k95thQ:	290	150	150	805	805	805	6	1865	1865	21	650	650

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.582
Loss Time (sec):	4	Average Delay (sec/veh):	14.4
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1 0
Volume Module: >> Count Date: 2 Feb 2010 << 7:30 -8:30 A.M.												
Base Vol:	35	80	22	73	69	74	158	403	99	39	368	50
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	45	103	28	94	88	95	203	517	127	50	472	64
Added Vol:	8	0	1	0	0	0	0	62	4	0	22	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	103	29	94	88	95	203	579	131	50	494	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	103	29	94	88	95	203	579	131	50	494	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	103	29	94	88	95	203	579	131	50	494	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	103	29	94	88	95	203	579	131	50	494	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.84	0.92	0.92	0.95	0.97	0.97	0.95	0.98	0.98
Lanes:	0.29	0.55	0.16	1.00	0.48	0.52	1.00	0.82	0.18	1.00	0.89	0.11
Final Sat.:	429	833	237	1590	845	907	1805	1506	341	1805	1653	215
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.06	0.10	0.10	0.11	0.38	0.38	0.03	0.30	0.30
Crit Moves:		****						****			****	
Green Time:	18.6	18.6	18.6	18.6	18.6	18.6	63.4	58.2	58.2	49.5	45.3	45.3
Volume/Cap:	0.56	0.56	0.56	0.27	0.48	0.48	0.31	0.56	0.56	0.11	0.56	0.56
Delay/Veh:	31.8	31.8	31.8	27.9	29.9	29.9	5.7	7.5	7.5	7.8	13.9	13.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.8	31.8	31.8	27.9	29.9	29.9	5.7	7.5	7.5	7.8	13.9	13.9
LOS by Move:	C	C	C	C	C	C	A	A	A	A	B	B
HCM2k95thQ:	248	248	248	112	229	229	104	455	455	28	418	418

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.531
Loss Time (sec):	0	Average Delay (sec/veh):	12.9
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30 - 8:30 A.M.																
Base Vol:	0	129	154		80	168	0		0	0	0		169	0	44	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	165	197		103	215	0		0	0	0		217	0	56	
Added Vol:	0	5	14		3	1	0		0	0	0		15	0	4	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	170	211		106	216	0		0	0	0		232	0	60	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	170	211		106	216	0		0	0	0		232	0	60	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	170	211		106	216	0		0	0	0		232	0	60	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	170	211		106	216	0		0	0	0		232	0	60	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.45	0.55		0.33	0.67	0.00		0.00	0.00	0.00		0.79	0.00	0.21	
Final Sat.:	0	321	398		216	443	0		0	0	0		487	0	127	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.53	0.53		0.49	0.49	xxxx		xxxx	xxxx	xxxx		0.48	xxxx	0.48	
Crit Moves:		****				****									****	
Delay/Veh:	0.0	12.8	12.8		12.9	12.9	0.0		0.0	0.0	0.0		12.9	0.0	12.9	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.8	12.8		12.9	12.9	0.0		0.0	0.0	0.0		12.9	0.0	12.9	
LOS by Move:	*	B	B		B	B	*		*	*	*		B	*	B	
ApproachDel:		12.8				12.9			xxxxxx					12.9		
Delay Adj:		1.00				1.00			xxxxx					1.00		
ApprAdjDel:		12.8				12.9			xxxxxx					12.9		
LOS by Appr:		B				B			*					B		
AllWayAvgQ:	24.9	24.9	24.9		21.1	21.1	21.1		0.0	0.0	0.0		18.8	18.8	18.8	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	60	Critical Vol./Cap.(X):	1.444
Loss Time (sec):	0	Average Delay (sec/veh):	128.5
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0		257	0	61		56	391	0		0	356	225	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		330	0	78		72	501	0		0	457	289	
Added Vol:	0	0	0		2	0	16		19	53	0		0	48	2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		332	0	94		91	554	0		0	505	291	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		332	0	94		91	554	0		0	505	291	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		332	0	94		91	554	0		0	505	291	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		332	0	94		91	554	0		0	505	291	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	0.00		0.00	0.63	0.37	
Final Sat.:	0	0	0		458	0	538		483	521	0		0	349	201	
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx		0.72	xxxx	0.18		0.19	1.06	xxxx		xxxx	1.44	1.44	
Crit Moves:					****					****				****		
Delay/Veh:	0.0	0.0	0.0		28.6	0.0	10.8		11.8	83.4	0.0		0.0	229	228.9	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		28.6	0.0	10.8		11.8	83.4	0.0		0.0	229	228.9	
LOS by Move:	*	*	*		D	*	B		B	F	*		*	F	F	
ApproachDel:		xxxxxx				24.7				73.4				228.9		
Delay Adj:		xxxxx				1.00				1.00				1.00		
ApprAdjDel:		xxxxxx				24.7				73.4				228.9		
LOS by Appr:		*				C				F				F		
AllWayAvgQ:	0.0	0.0	0.0		57.4	0.0	5.3		5.7	267	0.0		838	838	838.5	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.627
Loss Time (sec):	4	Average Delay (sec/veh):	14.2
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	272	0	72		0	0	0		0	372	358		52	339	0	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	349	0	92		0	0	0		0	477	459		67	435	0	
Added Vol:	38	0	8		0	0	0		0	65	64		7	57	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	387	0	100		0	0	0		0	542	523		74	492	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	387	0	100		0	0	0		0	542	523		74	492	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	387	0	100		0	0	0		0	542	523		74	492	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	387	0	100		0	0	0		0	542	523		74	492	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.22	0.00	0.06		0.00	0.00	0.00		0.00	0.29	0.33		0.04	0.26	0.00	
Crit Moves:	****										****		****			
Green Time:	24.4	0.0	24.4		0.0	0.0	0.0		0.0	36.9	36.9		4.7	41.6	0.0	
Volume/Cap:	0.63	0.00	0.18		0.00	0.00	0.00		0.00	0.55	0.63		0.63	0.44	0.00	
Delay/Veh:	21.0	0.0	16.0		0.0	0.0	0.0		0.0	11.7	13.2		42.1	8.1	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	21.0	0.0	16.0		0.0	0.0	0.0		0.0	11.7	13.2		42.1	8.1	0.0	
LOS by Move:	C		A	B		A		A	A		B		D		A	A
HCM2k95thQ:	371	0	81		0	0	0		0	387	411		138	293	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.957
Loss Time (sec):	0	Average Delay (sec/veh):	29.1
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45-8:45 a.m.																
Base Vol:	0	146	49		329	138	0		4	6	12		142	9	238	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	187	63		422	177	0		5	8	15		182	12	305	
Added Vol:	0	12	0		61	10	0		0	0	0		0	0	35	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	199	63		483	187	0		5	8	15		182	12	340	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	199	63		483	187	0		5	8	15		182	12	340	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	199	63		483	187	0		5	8	15		182	12	340	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	199	63		483	187	0		5	8	15		182	12	340	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		1.00	1.00	0.00		0.18	0.27	0.55		1.00	0.03	0.97	
Final Sat.:	0	387	122		505	538	0		77	116	232		467	18	533	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.51	0.51		0.96	0.35	xxxx		0.07	0.07	0.07		0.39	0.64	0.64	
Crit Moves:		****			****				****						****	
Delay/Veh:	0.0	16.7	16.7		55.8	12.7	0.0		11.4	11.4	11.4		15.0	19.3	19.3	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	16.7	16.7		55.8	12.7	0.0		11.4	11.4	11.4		15.0	19.3	19.3	
LOS by Move:	*	C	C		F	B	*		B	B	B		B	C	C	
ApproachDel:	16.7				43.8				11.4				17.8			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	16.7				43.8				11.4				17.8			
LOS by Appr:	C				E				B				C			
AllWayAvgQ:	24.1	24.1	24.1		161	12.8	12.8		1.5	1.5	1.5		15.1	38.9	38.9	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec):	110	Critical Vol./Cap.(X):	1.055
Loss Time (sec):	10	Average Delay (sec/veh):	54.3
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	6	6	5	6	0	0	0	0	6	0	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1 0 1	1	0	1 0 0	0	0	0 0 0	1	0	0 0 1
Volume Module: >> Count Date: 18 Nov 2009 << 7:15-8:15 a.m.												
Base Vol:	0	202	315	361	342	0	0	0	0	593	0	266
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	259	404	463	439	0	0	0	0	760	0	341
Added Vol:	0	0	378	133	2	0	0	0	0	129	0	48
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	259	782	596	441	0	0	0	0	889	0	389
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	259	782	596	441	0	0	0	0	889	0	389
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	259	782	596	441	0	0	0	0	889	0	389
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	259	782	596	441	0	0	0	0	889	0	389
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.14	0.48	0.33	0.23	0.00	0.00	0.00	0.00	0.49	0.00	0.24
Crit Moves:		****		****						****		
Green Time:	0.0	14.2	65.6	34.4	48.6	0.0	0.0	0.0	0.0	51.4	0.0	85.8
Volume/Cap:	0.00	1.06	0.81	1.06	0.52	0.00	0.00	0.00	0.00	1.06	0.00	0.31
Delay/Veh:	0.0	121	22.7	91.1	22.9	0.0	0.0	0.0	0.0	75.9	0.0	3.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	121	22.7	91.1	22.9	0.0	0.0	0.0	0.0	75.9	0.0	3.7
LOS by Move:	A	F	C	F	C	A	A	A	A	E	A	A
HCM2k95thQ:	0	527	877	1175	496	0	0	0	0	1507	0	187

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh):	963.4	Worst Case Level Of Service:	F[7453.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1	0 1	0 0	0	0 0	0 1	0	0	0 1! 0	0	0	0 0 0
Volume Module: >> Count Date: 19 Nov 2009 << 7:30-8:30 A.M.												
Base Vol:	176	458	0	0	632	233	47	0	128	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	226	587	0	0	810	299	60	0	164	0	0	0
Added Vol:	7	264	0	0	94	30	119	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	233	851	0	0	904	329	179	0	164	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	233	851	0	0	904	329	179	0	164	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	233	851	0	0	904	329	179	0	164	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1233	xxxx	xxxxx	xxxx	xxxx	xxxxx	2736	2736	1069	xxxx	xxxx	xxxxx
Potent Cap.:	572	xxxx	xxxxx	xxxx	xxxx	xxxxx	16	15	272	xxxx	xxxx	xxxxx
Move Cap.:	572	xxxx	xxxxx	xxxx	xxxx	xxxxx	11	9	272	xxxx	xxxx	xxxxx
Volume/Cap:	0.41	xxxx	xxxx	xxxx	xxxx	xxxx	16.15	0.00	0.60	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	49.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	15.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	20	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	43.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	7454	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			7453.7			xxxxxx		
ApproachLOS:	*			*			F			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): 475.7 Worst Case Level Of Service: F[4982.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	1	0	0 1	0	0	1!	0 0
Volume Module: >> Count Date: 18 Nov 2009 << 7:45 - 8:45 A.M.																
Base Vol:	85	521		7	21	593		135	57		5	83	20		9	20
Growth Adj:	1.28	1.28		1.28	1.28	1.28		1.28	1.28		1.28	1.28	1.28		1.28	1.28
Initial Bse:	109	668		9	27	760		173	73		6	106	26		12	26
Added Vol:	25	272		0	0	89		5	-1		0	4	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	134	940		9	27	849		178	72		6	110	26		12	26
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Volume:	134	940		9	27	849		178	72		6	110	26		12	26
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
FinalVolume:	134	940		9	27	849		178	72		6	110	26		12	26
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5		6.2	7.1	6.5		6.2
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0		3.3	3.5	4.0		3.3
Capacity Module:																
Cnflict Vol:	1028	xxxx	xxxxx		731	xxxx	xxxxx		2510	2490		939	2566	2608		725
Potent Cap.:	684	xxxx	xxxxx		632	xxxx	xxxxx		14	21		323	13	18		307
Move Cap.:	684	xxxx	xxxxx		632	xxxx	xxxxx		3	16		323	5	14		307
Volume/Cap:	0.20	xxxx	xxxx		0.04	xxxx	xxxx		22.61	0.39		0.34	5.29	0.84		0.08
Level Of Service Module:																
2Way95thQ:	18.1	xxxx	xxxxx		3.3	xxxx	xxxxx		xxxx	xxxx		36.9	xxxx	xxxx		xxxxx
Control Del:	11.5	xxxx	xxxxx		10.9	xxxx	xxxxx		xxxxx	xxxx		21.8	xxxxx	xxxx		xxxxx
LOS by Move:	B	*		*	B	*		*	*		*	C	*		*	*
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		3	xxxx	xxxxx		xxxx	10	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		11.9	xxxx	xxxxx		xxxxx	9.2	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		11961	xxxx	xxxxx		xxxxx	3076	xxxxx	
Shared LOS:	*	*		*	*	*		*	F	*		*	*	F		*
ApproachDel:	xxxxxx				xxxxxx				4982.8				3076.1			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 0.919
Loss Time (sec): 6 Average Delay (sec/veh): 20.4
Optimal Cycle: 87 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	10		10	10	10		10	10	6		6	6	6		6	6
Y+R:	5.2		5.2	5.2	5.2		5.2	5.2	5.0		5.0	5.0	5.0		5.0	5.0
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:45 - 8:45 a.m.																
Base Vol:	75	380		37	126	400		145	115	192		45	18	169		128
Growth Adj:	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28
Initial Bse:	96	487		47	162	513		186	147	246		58	23	217		164
Added Vol:	20	292		0	0	91		2	5	0		16	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	116	779		47	162	604		188	152	246		74	23	217		164
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	116	779		47	162	604		188	152	246		74	23	217		164
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	116	779		47	162	604		188	152	246		74	23	217		164
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	116	779		47	162	604		188	152	246		74	23	217		164
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.17	0.99		0.99	0.14	0.96		0.96	0.34	0.97		0.97	0.41	0.94		0.94
Lanes:	1.00	0.94		0.06	1.00	0.76		0.24	1.00	0.77		0.23	1.00	0.57		0.43
Final Sat.:	314	1775		108	270	1397		435	643	1413		423	780	1011		766
Capacity Analysis Module:																
Vol/Sat:	0.37	0.44		0.44	0.60	0.43		0.43	0.24	0.17		0.17	0.03	0.21		0.21
Crit Moves:					****				****							
Green Time:	42.2	42.2		42.2	42.2	42.2		42.2	16.8	16.8		16.8	16.8	16.8		16.8
Volume/Cap:	0.57	0.68		0.68	0.92	0.67		0.67	0.92	0.68		0.68	0.11	0.83		0.83
Delay/Veh:	10.1	8.6		8.6	55.2	8.5		8.5	70.5	25.6		25.6	18.7	35.0		35.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	10.1	8.6		8.6	55.2	8.5		8.5	70.5	25.6		25.6	18.7	35.0		35.0
LOS by Move:	B	A		A	E	A		A	E	C		C	B	C		C
HCM2k95thQ:	73	483		483	184	455		455	302	338		338	23	465		465

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	1.049
Loss Time (sec):	4	Average Delay (sec/veh):	70.3
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.2	4.2	4.0	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 0	0	0 0	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 7:45 - 8:45 AM												
Base Vol:	487	369	0	0	420	85	88	0	542	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	625	473	0	0	539	109	113	0	695	0	0	0
Added Vol:	62	61	0	0	28	80	251	0	42	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	687	534	0	0	567	189	364	0	737	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	687	534	0	0	567	189	364	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	687	534	0	0	567	189	364	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	687	534	0	0	567	189	364	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.95	0.95	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.75	0.25	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1349	450	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.39	0.29	0.00	0.00	0.42	0.42	0.21	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	44.4	92.5	0.0	0.0	48.1	48.1	23.5	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	1.05	0.37	0.00	0.00	1.05	1.05	1.05	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	86.5	4.6	0.0	0.0	83.0	83.0	109.9	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.5	4.6	0.0	0.0	83.0	83.0	109.9	0.0	0.0	0.0	0.0	0.0
LOS by Move:	F	A	A	A	F	F	F	A	A	A	A	A
HCM2k95thQ:	1259	296	0	0	1366	1366	849	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.663
Loss Time (sec):	4	Average Delay (sec/veh):	29.2
Optimal Cycle:	32	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 0	1 0	0	1 0	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	27	551	91	215	594	106	3	24	4	132	52	312
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	35	707	117	276	762	136	4	31	5	169	67	400
Added Vol:	0	123	0	-4	74	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	830	117	272	836	136	4	31	5	169	67	400
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	830	117	272	836	136	4	31	5	169	67	400
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	830	117	272	836	136	4	31	5	169	67	400
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	830	117	272	836	136	4	31	5	169	67	400
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.46	0.96	0.96	0.74	0.74	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.86	0.14	0.72	0.28	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	883	1562	260	1011	398	1583
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.07	0.15	0.24	0.09	0.00	0.02	0.02	0.17	0.17	0.25
Crit Moves:		****		****								****
Green Time:	8.7	42.4	42.4	27.8	61.6	61.6	45.8	45.8	45.8	45.8	45.8	45.8
Volume/Cap:	0.27	0.66	0.21	0.66	0.46	0.17	0.01	0.05	0.05	0.44	0.44	0.66
Delay/Veh:	53.8	34.1	27.2	45.9	18.8	15.7	23.1	23.5	23.5	28.2	28.2	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.8	34.1	27.2	45.9	18.8	15.7	23.1	23.5	23.5	28.2	28.2	33.5
LOS by Move:	D	C	C	D	B	B	C	C	C	C	C	C
HCM2k95thQ:	75	627	149	390	437	123	5	42	42	317	317	577

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: E[46.6]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2010 << 7:30 - 8:30 A.M.												
Base Vol:	93	766	0	0	687	27	18	0	8	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	119	982	0	0	881	35	23	0	10	0	0	0
Added Vol:	4	125	0	0	56	2	2	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	123	1107	0	0	937	37	25	0	14	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	1107	0	0	937	37	25	0	14	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	123	1107	0	0	937	37	25	0	14	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	614	xxxx	xxxxx	xxxx	xxxx	xxxxx	1535	xxxx	41	xxxx	xxxx	xxxxx
Potent Cap.:	828	xxxx	xxxxx	xxxx	xxxx	xxxxx	93	xxxx	873	xxxx	xxxx	xxxxx
Move Cap.:	828	xxxx	xxxxx	xxxx	xxxx	xxxxx	81	xxxx	873	xxxx	xxxx	xxxxx
Volume/Cap:	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	0.31	xxxx	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	13.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	28.8	xxxx	1.2	xxxx	xxxx	xxxxx
Control Del:	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	67.9	xxxx	9.2	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	A	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			46.6			xxxxxx		
ApproachLOS:	*			*			E			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec): 130 Critical Vol./Cap.(X): 1.074
Loss Time (sec): 8 Average Delay (sec/veh): 83.5
Optimal Cycle: 200 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2	0 1	1	1 0	1 0	1	0 1	0 1	1	1 0	0 1
Volume Module: >> Count Date: 30 Sep 2009 << 8:00 - 9:00 AM												
Base Vol:	111	300	97	424	444	16	12	164	70	473	189	335
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	142	385	124	544	569	21	15	210	90	607	242	430
Added Vol:	3	11	240	58	2	0	0	167	3	72	54	118
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	396	364	602	571	21	15	377	93	679	296	548
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	396	364	602	571	21	15	377	93	679	296	548
Reduct Vol:	0	0	3	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	396	361	602	571	21	15	377	93	679	296	548
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	396	361	602	571	21	15	377	93	679	296	548
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.51	1.44	0.05	1.00	1.00	1.00	1.39	0.61	1.00
Final Sat.:	1769	3538	1583	2601	2469	89	1769	1862	1583	2504	1094	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.23	0.23	0.23	0.23	0.01	0.20	0.06	0.27	0.27	0.35
Crit Moves:			****			****		****				****
Green Time:	27.6	27.6	27.6	28.0	28.0	28.0	24.5	24.5	24.5	41.9	41.9	41.9
Volume/Cap:	0.39	0.53	1.07	1.07	1.07	1.07	0.05	1.07	0.31	0.84	0.84	1.07
Delay/Veh:	44.6	46.1	121.5	100.4	100	100.4	43.2	122	46.1	46.7	46.7	105.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.6	46.1	121.5	100.4	100	100.4	43.2	122	46.1	46.7	46.7	105.4
LOS by Move:	D	D	F	F	F	F	D	F	D	D	D	F
HCM2k95thQ:	250	365	905	1009	1009	1009	26	934	166	861	861	1237

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.071
Loss Time (sec):	7	Average Delay (sec/veh):	53.2
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	5	5	5		5	5	5		12	12	12		12	12	12	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1		4.1	4.1	4.1	
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM																
Base Vol:	90	88	109		30	48	13		1	715	61		37	861	10	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	115	113	140		38	62	17		1	917	78		47	1104	13	
Added Vol:	13	0	91		0	0	0		0	451	13		25	231	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	128	113	231		38	62	17		1	1368	91		72	1335	13	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	128	113	231		38	62	17		1	1368	91		72	1335	13	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	128	113	231		38	62	17		1	1368	91		72	1335	13	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	128	113	231		38	62	17		1	1368	91		72	1335	13	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.69	0.88	0.88		0.20	0.95	0.95		0.05	0.97	0.97		0.05	0.98	0.98	
Lanes:	1.00	0.33	0.67		1.00	0.79	0.21		1.00	0.94	0.06		1.00	0.99	0.01	
Final Sat.:	1303	550	1124		389	1418	384		101	1730	115		101	1842	18	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.21	0.21		0.10	0.04	0.04		0.01	0.79	0.79		0.72	0.72	0.72	
Crit Moves:		****								****						
Green Time:	19.2	19.2	19.2		19.2	19.2	19.2		73.8	73.8	73.8		73.8	73.8	73.8	
Volume/Cap:	0.51	1.07	1.07		0.52	0.23	0.23		0.02	1.07	1.07		0.98	0.98	0.98	
Delay/Veh:	38.1	111	110.8		42.4	34.5	34.5		3.6	58.9	58.9		108.2	32.3	32.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	38.1	111	110.8		42.4	34.5	34.5		3.6	58.9	58.9		108.2	32.3	32.3	
LOS by Move:	D	F	F		D	C	C		A	E	E		F	C	C	
HCM2k95thQ:	207	762	762		94	108	108		1	2332	2332		234	1817	1817	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.237
Loss Time (sec):	7	Average Delay (sec/veh):	97.8
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.1	4.1	4.1		4.1	4.1	4.1	
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 30 Sep 2009 << 7:30 - 8:30 AM																
Base Vol:	7	31	5		149	63	101		0	780	63		33	849	7	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	9	40	6		191	81	130		0	1000	81		42	1089	9	
Added Vol:	0	0	0		0	0	0		0	542	0		0	256	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	9	40	6		191	81	130		0	1542	81		42	1345	9	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	9	40	6		191	81	130		0	1542	81		42	1345	9	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	9	40	6		191	81	130		0	1542	81		42	1345	9	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	9	40	6		191	81	130		0	1542	81		42	1345	9	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	0.90		0.78	0.78	0.78		1.00	0.97	0.97		0.05	0.98	0.98	
Lanes:	0.16	0.72	0.12		0.48	0.20	0.32		1.00	0.95	0.05		1.00	0.99	0.01	
Final Sat.:	278	1232	199		702	297	476		1900	1757	92		104	1848	12	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.03	0.03		0.27	0.27	0.27		0.00	0.88	0.88		0.41	0.73	0.73	
Crit Moves:						****				****						
Green Time:	22.0	22.0	22.0		22.0	22.0	22.0		0.0	71.0	71.0		71.0	71.0	71.0	
Volume/Cap:	0.15	0.15	0.15		1.24	1.24	1.24		0.00	1.24	1.24		0.57	1.03	1.03	
Delay/Veh:	31.6	31.6	31.6		169.2	169	169.2		0.0	128	127.8		17.4	45.9	45.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	31.6	31.6	31.6		169.2	169	169.2		0.0	128	127.8		17.4	45.9	45.9	
LOS by Move:	C	C	C		F	F	F		A	F	F		B	D	D	
HCM2k95thQ:	72	72	72		1013	1013	1013		0	3332	3332		83	2025	2025	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.072
Loss Time (sec):	7	Average Delay (sec/veh):	42.0
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	10	10	4	10	10
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lanes:	1	0	0 1	0	0	1 0	1	0 1	1 0	1	0	0 1 0
Volume Module: >> Count Date: 1 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	77	8	87	58	3	12	31	970	13	64	891	162
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	99	10	112	74	4	15	40	1244	17	82	1143	208
Added Vol:	0	0	0	0	0	0	0	542	0	0	256	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	10	112	74	4	15	40	1786	17	82	1399	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	10	112	74	4	15	40	1786	17	82	1399	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	10	112	74	4	15	40	1786	17	82	1399	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	10	112	74	4	15	40	1786	17	82	1399	208
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.55	0.85	0.85	0.44	0.44	0.83	0.93	0.93	0.93	0.93	0.96	0.96
Lanes:	1.00	0.08	0.92	0.95	0.05	1.00	1.00	1.98	0.02	1.00	0.87	0.13
Final Sat.:	1041	135	1472	797	41	1583	1769	3502	33	1769	1590	236
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.08	0.09	0.09	0.01	0.02	0.51	0.51	0.05	0.88	0.88
Crit Moves:	****						****				****	
Green Time:	8.7	8.7	8.7	8.7	8.7	8.7	4.0	77.3	77.3	7.0	80.3	80.3
Volume/Cap:	1.09	0.87	0.87	1.08	1.08	0.11	0.56	0.66	0.66	0.66	1.09	1.09
Delay/Veh:	168.4	86.7	86.7	174.1	174	42.5	57.0	5.9	5.9	57.7	63.7	63.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	168.4	86.7	86.7	174.1	174	42.5	57.0	5.9	5.9	57.7	63.7	63.7
LOS by Move:	F	F	F	F	F	D	E	A	A	E	E	E
HCM2k95thQ:	326	303	303	275	275	27	107	625	625	185	2644	2644

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.058
Loss Time (sec):	11	Average Delay (sec/veh):	55.3
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	5	0	5	5	5	0	0	5	5
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0 0	1	0	0 1	1	0	2 0	0	0	2 0 1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	0	0	0	407	0	73	64	1150	0	0	1146	432
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	0	0	522	0	94	82	1475	0	0	1470	554
Added Vol:	0	0	0	135	0	0	0	542	0	0	256	34
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	657	0	94	82	2017	0	0	1726	588
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	657	0	94	82	2017	0	0	1726	588
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	657	0	94	82	2017	0	0	1726	588
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	657	0	94	82	2017	0	0	1726	588
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.93	1.00	0.83	0.93	0.93	1.00	1.00	0.93	0.83
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	1769	0	1583	1769	3538	0	0	3538	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.37	0.00	0.06	0.05	0.57	0.00	0.00	0.49	0.37
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	35.1	0.0	35.1	5.0	53.9	0.0	0.0	48.9	48.9
Volume/Cap:	0.00	0.00	0.00	1.06	0.00	0.17	0.93	1.06	0.00	0.00	1.00	0.76
Delay/Veh:	0.0	0.0	0.0	84.8	0.0	22.5	118.6	60.9	0.0	0.0	46.6	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	84.8	0.0	22.5	118.6	60.9	0.0	0.0	46.6	25.2
LOS by Move:	A	A	A	F	A	C	F	E	A	A	D	C
HCM2k95thQ:	0	0	0	1204	0	102	248	1750	0	0	1413	703

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	4	Average Delay (sec/veh):	25.3
Optimal Cycle:	82	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	0	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	82	9	171	111	33	2	0	641	44	280	977	21
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	105	12	219	142	42	3	0	822	56	359	1253	27
Added Vol:	34	0	0	0	0	0	0	372	139	0	144	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	12	219	142	42	3	0	1194	195	359	1397	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	12	219	142	42	3	0	1194	195	359	1397	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	12	219	142	42	3	0	1194	195	359	1397	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	12	219	142	42	3	0	1194	195	359	1397	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	0.76	0.76	0.52	0.52	0.52	0.95	0.91	0.91	0.93	0.93	0.93
Lanes:	0.38	0.03	0.59	0.76	0.23	0.01	0.00	1.72	0.28	1.00	1.96	0.04
Final Sat.:	546	45	860	750	223	14	0	2976	487	1769	3460	67
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.25	0.19	0.19	0.19	0.00	0.40	0.40	0.20	0.40	0.40
Crit Moves:		****						****		****		
Green Time:	21.9	21.9	21.9	21.9	21.9	21.9	0.0	35.9	35.9	18.2	54.1	54.1
Volume/Cap:	0.93	0.93	0.93	0.69	0.69	0.69	0.00	0.89	0.89	0.89	0.60	0.60
Delay/Veh:	56.5	56.5	56.5	33.5	33.5	33.5	0.0	27.4	27.4	51.6	7.5	7.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.5	56.5	56.5	33.5	33.5	33.5	0.0	27.4	27.4	51.6	7.5	7.5
LOS by Move:	E	E	E	C	C	C	A	C	C	D	A	A
HCM2k95thQ:	594	594	594	273	273	273	0	796	796	406	438	438

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.857
Loss Time (sec):	4	Average Delay (sec/veh):	21.4
Optimal Cycle:	62	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.5	4.5
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0
Volume Module: >> Count Date: 7 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	28	5	25	362	38	143	131	755	68	42	1025	333
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	36	6	32	464	49	183	168	968	87	54	1314	427
Added Vol:	0	0	0	0	0	0	0	372	0	0	144	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	6	32	464	49	183	168	1340	87	54	1458	427
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	6	32	464	49	183	168	1340	87	54	1458	427
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	6	32	464	49	183	168	1340	87	54	1458	427
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	6	32	464	49	183	168	1340	87	54	1458	427
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.86	0.86	0.94	0.94	0.83	0.93	0.92	0.92	0.93	0.90	0.90
Lanes:	1.00	0.17	0.83	1.81	0.19	1.00	1.00	1.88	0.12	1.00	1.55	0.45
Final Sat.:	1769	272	1358	3225	339	1583	1769	3292	214	1769	2643	774
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.14	0.14	0.12	0.09	0.41	0.41	0.03	0.55	0.55
Crit Moves:		****			****		****				****	
Green Time:	4.0	4.0	4.0	13.1	13.1	13.1	8.6	52.5	52.5	6.4	50.2	50.2
Volume/Cap:	0.41	0.47	0.47	0.88	0.88	0.71	0.88	0.62	0.62	0.38	0.88	0.88
Delay/Veh:	39.9	41.2	41.2	46.9	46.9	40.3	69.0	8.5	8.5	36.6	16.9	16.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	41.2	41.2	46.9	46.9	40.3	69.0	8.5	8.5	36.6	16.9	16.9
LOS by Move:	D	D	D	D	D	D	E	A	A	D	B	B
HCM2k95thQ:	72	83	83	437	437	283	206	464	464	60	818	818

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.899
Loss Time (sec):	4	Average Delay (sec/veh):	22.7
Optimal Cycle:	79	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	6	6		4	6	6	
Y+R:	4.1	4.1	4.1		4.1	4.1	4.1		4.1	5.0	5.0		4.1	5.0	5.0	
Lanes:	0	1	0	0 2	0	1	0	0 1	1	0	2	1 0	2	0	1	1 0
Volume Module: >> Count Date: 8 Oct 2009 << 7:15 - 8:15 AM																
Base Vol:	22	4	37		220	6	31		25	1077	29		241	1430	228	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	28	5	47		282	8	40		32	1381	37		309	1834	292	
Added Vol:	0	0	0		0	0	0		0	372	0		0	144	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	28	5	47		282	8	40		32	1753	37		309	1978	292	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	28	5	47		282	8	40		32	1753	37		309	1978	292	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	28	5	47		282	8	40		32	1753	37		309	1978	292	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	28	5	47		282	8	40		32	1753	37		309	1978	292	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.94	0.94	0.73		0.93	0.93	0.83		0.93	0.89	0.89		0.90	0.91	0.91	
Lanes:	0.85	0.15	2.00		0.97	0.03	1.00		1.00	2.94	0.06		2.00	1.74	0.26	
Final Sat.:	1511	275	2786		1729	47	1583		1769	4963	105		3432	3024	447	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02		0.16	0.16	0.03		0.02	0.35	0.35		0.09	0.65	0.65	
Crit Moves:	****					****			****					****		
Green Time:	4.0	4.0	4.0		13.6	13.6	13.6		4.0	46.6	46.6		11.9	54.4	54.4	
Volume/Cap:	0.37	0.37	0.34		0.96	0.96	0.15		0.36	0.61	0.61		0.61	0.96	0.96	
Delay/Veh:	39.4	39.4	38.2		74.3	74.3	28.5		39.3	11.2	11.2		34.0	22.8	22.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.4	39.4	38.2		74.3	74.3	28.5		39.3	11.2	11.2		34.0	22.8	22.8	
LOS by Move:	D	D	D		E	E	C		D	B	B		C	C	C	
HCM2k95thQ:	65	65	55		531	531	48		39	469	469		167	1063	1063	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	1.394
Loss Time (sec):	0	Average Delay (sec/veh):	103.5
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	1	0	0 1	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 7:30-8:30 A.M.																
Base Vol:	2	113	458		21	105	11		9	240	18		295	164	14	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	3	145	587		27	135	14		12	308	23		378	210	18	
Added Vol:	0	0	78		0	0	0		0	51	0		71	25	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	145	665		27	135	14		12	359	23		449	235	18	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	3	145	665		27	135	14		12	359	23		449	235	18	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	3	145	665		27	135	14		12	359	23		449	235	18	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	3	145	665		27	135	14		12	359	23		449	235	18	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.02	0.98	1.00		0.15	0.77	0.08		1.00	0.94	0.06		1.00	0.93	0.07	
Final Sat.:	8	427	477		57	285	30		398	398	26		413	409	31	
Capacity Analysis Module:																
Vol/Sat:	0.34	0.34	1.39		0.47	0.47	0.47		0.03	0.90	0.90		1.09	0.58	0.58	
Crit Moves:			****		****					****			****			
Delay/Veh:	15.1	15.1	210.9		20.4	20.4	20.4		12.0	51.3	51.3		99.1	21.3	21.3	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.1	15.1	210.9		20.4	20.4	20.4		12.0	51.3	51.3		99.1	21.3	21.3	
LOS by Move:	C	C	F		C	C	C		B	F	F		F	C	C	
ApproachDel:	175.4				20.4				50.2				71.1			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	175.4				20.4				50.2				71.1			
LOS by Appr:	F				C				F				F			
AllWayAvgQ:	12.5	12.5	665.3		20.4	20.4	20.4		0.7	118	118.0		252	31.9	31.9	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.946
Loss Time (sec):	10	Average Delay (sec/veh):	54.3
Optimal Cycle:	171	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	10	10	4	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	2 0	2	0 1	2 0	2	0 1	2 0	2	0 1	2 0	2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 7:30 - 8:30 AM												
Base Vol:	109	600	303	214	596	283	322	1224	128	245	546	39
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	140	769	389	274	764	363	413	1570	164	314	700	50
Added Vol:	1	22	57	0	33	23	18	45	0	18	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	791	446	274	797	386	431	1615	164	332	720	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	791	446	274	797	386	431	1615	164	332	720	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	791	446	274	797	386	431	1615	164	332	720	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	791	446	274	797	386	431	1615	164	332	720	50
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.93	0.98	0.83	0.94	0.99	0.84	0.92	0.97	0.82
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3538	3724	1583	3538	3724	1583	3573	3761	1599	3502	3687	1567
Capacity Analysis Module:												
Vol/Sat:	0.04	0.21	0.28	0.08	0.21	0.24	0.12	0.43	0.10	0.09	0.20	0.03
Crit Moves:			****	****				****		****		
Green Time:	8.0	44.6	44.6	12.3	48.9	48.9	31.7	68.0	68.0	15.0	51.4	51.4
Volume/Cap:	0.75	0.71	0.95	0.95	0.66	0.75	0.57	0.95	0.23	0.95	0.57	0.09
Delay/Veh:	85.1	49.2	79.9	107.1	44.6	51.0	54.1	44.1	20.9	101.3	40.9	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.1	49.2	79.9	107.1	44.6	51.0	54.1	44.1	20.9	101.3	40.9	33.6
LOS by Move:	F	D	E	F	D	D	D	D	C	F	D	C
HCM2k95thQ:	163	657	896	435	700	732	367	1305	158	497	604	78

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	4	Average Delay (sec/veh):	45.2
Optimal Cycle:	98	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	4	4		4	4	4	
Y+R:	3.0	4.2	4.2		3.0	4.2	4.2		3.0	3.5	3.5		3.0	3.5	3.5	
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 8:00 am - 9:00 am																
Base Vol:	137	614	59		127	1307	63		78	173	56		97	187	58	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	176	787	76		163	1676	81		100	222	72		124	240	74	
Added Vol:	31	163	74		0	178	12		10	22	19		16	39	6	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	207	950	150		163	1854	93		110	244	91		140	279	80	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	207	950	150		163	1854	93		110	244	91		140	279	80	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	207	950	150		163	1854	93		110	244	91		140	279	80	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	207	950	150		163	1854	93		110	244	91		140	279	80	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.91	0.91		0.93	0.92	0.92		0.93	0.98	0.83		0.93	0.98	0.83	
Lanes:	1.00	1.73	0.27		1.00	1.90	0.10		1.00	1.00	1.00		1.00	1.00	1.00	
Final Sat.:	1769	2995	472		1769	3346	167		1769	1862	1583		1769	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.32	0.32		0.09	0.55	0.55		0.06	0.13	0.06		0.08	0.15	0.05	
Crit Moves:	****					****				****				****		
Green Time:	18.7	83.2	83.2		24.1	88.7	88.7		9.9	21.0	21.0		12.7	23.8	23.8	
Volume/Cap:	0.91	0.55	0.55		0.55	0.91	0.91		0.91	0.91	0.40		0.91	0.91	0.31	
Delay/Veh:	97.6	19.6	19.6		57.7	30.6	30.6		122.9	92.6	57.4		111.4	89.8	54.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	97.6	19.6	19.6		57.7	30.6	30.6		122.9	92.6	57.4		111.4	89.8	54.1	
LOS by Move:	F	B	B		E	C	C		F	F	E		F	F	D	
HCM2k95thQ:	548	690	690		341	1653	1653		356	615	196		419	680	165	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.751
Loss Time (sec):	4	Average Delay (sec/veh):	13.7
Optimal Cycle:	43	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	0 0	1	1 0	1 0	1	0 1	1 0	0 1	0
Volume Module: >> Count Date: 20 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	0	711	42	0	1396	88	52	27	44	37	56	23
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	912	54	0	1790	113	67	35	56	47	72	29
Added Vol:	0	213	1	0	190	29	43	2	11	2	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1125	55	0	1980	142	110	37	67	49	82	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1125	55	0	1980	142	110	37	67	49	82	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1125	55	0	1980	142	110	37	67	49	82	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1125	55	0	1980	142	110	37	67	49	82	29
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.92	0.92	0.93	0.98	0.83	0.93	0.94	0.94
Lanes:	0.00	2.00	1.00	0.00	1.87	0.13	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	0	3538	1583	0	3268	234	1769	1862	1583	1769	1314	474
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.03	0.00	0.61	0.61	0.06	0.02	0.04	0.03	0.06	0.06
Crit Moves:					****		****				****	
Green Time:	0.0	117	117.0	0.0	117	117.0	12.0	12.0	12.0	12.0	12.0	12.0
Volume/Cap:	0.00	0.39	0.04	0.00	0.75	0.75	0.75	0.24	0.52	0.34	0.75	0.75
Delay/Veh:	0.0	4.1	2.8	0.0	8.0	8.0	84.4	63.0	67.3	64.1	84.1	84.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	4.1	2.8	0.0	8.0	8.0	84.4	63.0	67.3	64.1	84.1	84.1
LOS by Move:	A	A	A	A	A	A	F	E	E	E	F	F
HCM2k95thQ:	0	336	24	0	1027	1027	307	86	177	120	310	310

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.098
Loss Time (sec):	4	Average Delay (sec/veh):	92.7
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	8.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	0 1	1 0	1	1 0	0 1	0	1 0	2 0	1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 8:00 am - 9:00 am												
Base Vol:	76	698	295	182	1260	14	33	305	69	503	222	57
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	97	895	378	233	1616	18	42	391	88	645	285	73
Added Vol:	12	72	75	69	92	43	120	314	16	118	90	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	967	453	302	1708	61	162	705	104	763	375	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	967	453	302	1708	61	162	705	104	763	375	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	967	453	302	1708	61	162	705	104	763	375	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	967	453	302	1708	61	162	705	104	763	375	94
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.93	0.91	0.91	0.91	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	1.93	0.07	0.33	1.45	0.22	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3399	121	577	2505	371	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.29	0.17	0.50	0.50	0.28	0.28	0.28	0.22	0.20	0.06
Crit Moves:	****				****				****	****		
Green Time:	8.2	46.7	46.7	27.8	66.3	66.3	37.2	37.2	37.2	29.4	29.4	29.4
Volume/Cap:	1.10	0.85	0.89	0.89	1.10	1.10	1.10	1.10	1.10	1.10	0.99	0.29
Delay/Veh:	187.6	52.1	64.2	81.0	93.8	93.8	114.8	115	114.8	122.1	102	49.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	187.6	52.1	64.2	81.0	93.8	93.8	114.8	115	114.8	122.1	102	49.5
LOS by Move:	F	D	E	F	F	F	F	F	F	F	F	D
HCM2k95thQ:	410	968	928	603	1987	1987	1280	1280	1280	1045	914	180

Note: Queue reported is the distance per lane in feet.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

CUMULATIVE PLUS PROJECT PM LEVELS OF SERVICE

160 West Santa Clara Street, Suite 675, San Jose CA 95113 (408) 278-1700 Fax (408) 278-1717
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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #1 El Camino Real & Atherton/ Fair Oaks

Cycle (sec):	145	Critical Vol./Cap.(X):	0.448
Loss Time (sec):	4	Average Delay (sec/veh):	34.7
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	10	10		7	10	10		10	10	10		10	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		3.0	3.0	3.0		3.0	3.0	3.0	
Lanes:	1	0	2	1 0	1	0	2	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	175	631	19		12	492	25		30	12	155		1	7	11	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	224	809	24		15	631	32		38	15	199		1	9	14	
Added Vol:	0	146	0		0	99	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	224	955	24		15	730	32		38	15	199		1	9	14	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	224	955	24		15	730	32		38	15	199		1	9	14	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	224	955	24		15	730	32		38	15	199		1	9	14	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	224	955	24		15	730	32		38	15	199		1	9	14	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.91	0.91		0.95	0.90	0.90		0.89	0.89	0.89		0.95	0.91	0.91	
Lanes:	1.00	2.93	0.07		1.00	2.87	0.13		0.15	0.06	0.79		1.00	0.39	0.61	
Final Sat.:	1805	5038	129		1805	4939	217		257	103	1326		1805	671	1054	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.19	0.19		0.01	0.15	0.15		0.15	0.15	0.15		0.00	0.01	0.01	
Crit Moves:	****					****					****			****		
Green Time:	38.6	67.3	67.3		17.1	45.9	45.9		46.5	46.5	46.5		10.0	10.0	10.0	
Volume/Cap:	0.47	0.41	0.41		0.07	0.47	0.47		0.47	0.47	0.47		0.01	0.19	0.19	
Delay/Veh:	45.3	25.8	25.8		57.0	40.0	40.0		40.0	40.0	40.0		62.9	64.5	64.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	45.3	25.8	25.8		57.0	40.0	40.0		40.0	40.0	40.0		62.9	64.5	64.5	
LOS by Move:	D	C	C		E	D	D		D	D	D		E	E	E	
HCM2k95thQ:	395	471	471		33	456	456		419	419	419		3	57	57	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #2 El Camino Real & Encinal Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.839
Loss Time (sec):	4	Average Delay (sec/veh):	21.3
Optimal Cycle:	63	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	10	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	0 1	0 0	1
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	26	1547	73	61	1119	20	22	15	23	152	2	110
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	33	1984	94	78	1435	26	28	19	29	195	3	141
Added Vol:	11	142	0	9	134	0	0	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	2126	94	87	1569	26	28	19	29	195	3	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	2126	94	87	1569	26	28	19	29	195	3	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	2126	94	87	1569	26	28	19	29	195	3	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	2126	94	87	1569	26	28	19	29	195	3	145
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.68	0.68	0.83	0.63	0.63	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.59	0.41	1.00	0.99	0.01	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	773	527	1583	1176	15	1583
Capacity Analysis Module:												
Vol/Sat:	0.03	0.60	0.06	0.05	0.44	0.02	0.04	0.04	0.02	0.17	0.17	0.09
Crit Moves:		****		****							****	
Green Time:	6.6	104	103.8	8.5	106	105.8	28.6	28.6	28.6	28.6	28.6	28.6
Volume/Cap:	0.55	0.84	0.08	0.84	0.61	0.02	0.18	0.18	0.09	0.84	0.84	0.46
Delay/Veh:	75.9	17.3	6.2	109.9	10.0	5.4	48.8	48.8	47.7	78.5	78.5	52.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.9	17.3	6.2	109.9	10.0	5.4	48.8	48.8	47.7	78.5	78.5	52.5
LOS by Move:	E	B	A	F	A	A	D	D	D	E	E	D
HCM2k95thQ:	139	1442	63	285	762	16	93	93	56	493	493	289

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #3 El Camino Real & Valparaiso/Glenwood

Cycle (sec):	145	Critical Vol./Cap.(X):	0.939
Loss Time (sec):	4	Average Delay (sec/veh):	56.8
Optimal Cycle:	134	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	6	6	6	6	6	6
Y+R:	3.5	4.2	4.2	3.5	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	1 0	0 1	0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	139	1197	52	70	1016	258	457	197	82	54	163	29
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	178	1535	67	90	1303	331	586	253	105	69	209	37
Added Vol:	34	140	7	8	131	8	-5	18	24	10	43	-11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	1675	74	98	1434	339	581	271	129	79	252	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	1675	74	98	1434	339	581	271	129	79	252	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	1675	74	98	1434	339	581	271	129	79	252	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	1675	74	98	1434	339	581	271	129	79	252	26
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.95	0.95	0.83	0.93	0.97	0.97
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.36	0.64	1.00	1.00	0.91	0.09
Final Sat.:	1769	3538	1583	1769	3538	1583	2457	1144	1583	1769	1663	173
Capacity Analysis Module:												
Vol/Sat:	0.12	0.47	0.05	0.06	0.41	0.21	0.24	0.24	0.08	0.04	0.15	0.15
Crit Moves:	****				****		****					****
Green Time:	18.5	72.6	72.6	8.5	62.6	62.6	36.5	36.5	36.5	23.4	23.4	23.4
Volume/Cap:	0.94	0.95	0.09	0.95	0.94	0.50	0.94	0.94	0.32	0.28	0.94	0.94
Delay/Veh:	105.8	45.4	19.0	138.9	51.0	30.4	70.2	70.2	44.7	53.9	96.5	96.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.8	45.4	19.0	138.9	51.0	30.4	70.2	70.2	44.7	53.9	96.5	96.5
LOS by Move:	F	D	B	F	D	C	E	E	D	D	F	F
HCM2k95thQ:	576	1617	85	337	1430	495	847	847	217	159	697	697

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.901
Loss Time (sec):	4	Average Delay (sec/veh):	44.7
Optimal Cycle:	93	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.0
Lanes:	1	0 2	0 1	1	0 2	0 1	1	0 1	0 1	1	0 1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM												
Base Vol:	133	1226	106	87	998	61	113	131	87	119	161	63
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	171	1572	136	112	1280	78	145	168	112	153	206	81
Added Vol:	54	364	47	17	366	17	16	51	31	92	40	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	1936	183	129	1646	95	161	219	143	245	246	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	1936	183	129	1646	95	161	219	143	245	246	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	1936	183	129	1646	95	161	219	143	245	246	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	1936	183	129	1646	95	161	219	143	245	246	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.55	0.12	0.07	0.47	0.06	0.09	0.12	0.09	0.14	0.13	0.05
Crit Moves:		****			****			****		****		
Green Time:	21.4	88.1	88.1	11.7	78.4	78.4	16.8	18.9	18.9	22.3	24.4	24.4
Volume/Cap:	0.86	0.90	0.19	0.90	0.86	0.11	0.79	0.90	0.69	0.90	0.79	0.32
Delay/Veh:	84.2	30.3	12.7	113.0	32.8	16.3	80.4	94.8	69.7	90.5	70.1	53.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.2	30.3	12.7	113.0	32.8	16.3	80.4	94.8	69.7	90.5	70.1	53.7
LOS by Move:	F	C	B	F	C	B	F	F	E	F	E	D
HCM2k95thQ:	555	1631	175	392	1380	102	412	567	347	613	554	172

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	4	Average Delay (sec/veh):	30.0
Optimal Cycle:	66	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	0	0 2	0 1	1	0 1	0 1	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm												
Base Vol:	0	1191	54	0	1043	143	171	68	161	72	83	58
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	1527	69	0	1338	183	219	87	206	92	106	74
Added Vol:	0	388	4	0	396	97	84	20	18	3	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1915	73	0	1734	280	303	107	224	95	120	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1915	73	0	1734	280	303	107	224	95	120	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1915	73	0	1734	280	303	107	224	95	120	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1915	73	0	1734	280	303	107	224	95	120	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.93	0.83	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	0.00	2.00	1.00	0.00	2.00	1.00	1.00	1.00	1.00	1.00	0.62	0.38
Final Sat.:	0	3538	1583	0	3538	1583	1769	1862	1583	1769	1085	670
Capacity Analysis Module:												
Vol/Sat:	0.00	0.54	0.05	0.00	0.49	0.18	0.17	0.06	0.14	0.05	0.11	0.11
Crit Moves:		****					****					****
Green Time:	0.0	92.7	92.7	0.0	92.7	92.7	29.3	29.3	29.3	19.0	19.0	19.0
Volume/Cap:	0.00	0.85	0.07	0.00	0.77	0.28	0.85	0.28	0.70	0.41	0.85	0.85
Delay/Veh:	0.0	23.8	9.9	0.0	20.2	11.6	72.6	49.4	60.5	59.1	85.8	85.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.8	9.9	0.0	20.2	11.6	72.6	49.4	60.5	59.1	85.8	85.8
LOS by Move:	A	C	A	A	C	B	E	D	E	E	F	F
HCM2k95thQ:	0	1297	58	0	1176	260	675	200	478	207	497	497

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.365
Loss Time (sec):	4	Average Delay (sec/veh):	157.3
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		7	7	7		4	4	4	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	0 1	1	0	2	0 1	0	1	0	1 0	2	0	1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM																
Base Vol:	176	1202	557		193	1082	22		41	296	129		484	239	67	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	226	1541	714		248	1388	28		53	380	165		621	306	86	
Added Vol:	16	150	118		56	143	218		145	163	18		91	360	98	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	242	1691	832		304	1531	246		198	543	183		712	666	184	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	242	1691	832		304	1531	246		198	543	183		712	666	184	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	242	1691	832		304	1531	246		198	543	183		712	666	184	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	242	1691	832		304	1531	246		198	543	183		712	666	184	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.83		0.93	0.93	0.83		0.89	0.89	0.89		0.90	0.98	0.83	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		0.43	1.17	0.40		2.00	1.00	1.00	
Final Sat.:	1769	3538	1583		1769	3538	1583		726	1994	674		3432	1862	1583	
Capacity Analysis Module:																
Vol/Sat:	0.14	0.48	0.53		0.17	0.43	0.16		0.27	0.27	0.27		0.21	0.36	0.12	
Crit Moves:			****		****				****					****		
Green Time:	17.8	55.9	55.9		18.2	56.3	56.3		28.9	28.9	28.9		38.0	38.0	38.0	
Volume/Cap:	1.11	1.24	1.37		1.37	1.11	0.40		1.37	1.37	1.37		0.79	1.37	0.44	
Delay/Veh:	158.8	160	219.3		253.8	106	32.6		231.8	232	231.8		54.6	231	45.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	158.8	160	219.3		253.8	106	32.6		231.8	232	231.8		54.6	231	45.4	
LOS by Move:	F		F		F		C		F		F		D	F		D
HCM2k95thQ:	736	2346	2453		962	1775	353		1528	1528	1528		728	2007	332	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #7 El Camino Real & Roble Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.952
Loss Time (sec):	10	Average Delay (sec/veh):	24.9
Optimal Cycle:	176	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		8	8	8		8	8	8	
Y+R:	4.0	4.7	4.7		4.0	4.7	4.7		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	1 0	1	0	2	1 0	0	0	1!	0 0	0	1	0	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	76	1796	9		19	1546	28		78	0	53		38	4	31	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	97	2303	12		24	1983	36		100	0	68		49	5	40	
Added Vol:	6	278	2		4	239	9		8	0	7		-1	0	-2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	103	2581	14		28	2222	45		108	0	75		48	5	38	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	103	2581	14		28	2222	45		108	0	75		48	5	38	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	103	2581	14		28	2222	45		108	0	75		48	5	38	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	103	2581	14		28	2222	45		108	0	75		48	5	38	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.93	0.93		0.93	0.89	0.89		0.71	1.00	0.71		0.63	0.63	0.83	
Lanes:	1.00	1.99	0.01		1.00	2.94	0.06		0.59	0.00	0.41		0.90	0.10	1.00	
Final Sat.:	1769	3516	18		1769	4968	100		793	0	550		1086	117	1583	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.73	0.73		0.02	0.45	0.45		0.14	0.00	0.14		0.04	0.04	0.02	
Crit Moves:		****			****				****							
Green Time:	13.2	110	110.5		4.0	101	101.2		20.5	0.0	20.5		20.5	20.5	20.5	
Volume/Cap:	0.64	0.96	0.96		0.58	0.64	0.64		0.96	0.00	0.96		0.31	0.31	0.17	
Delay/Veh:	72.0	25.7	25.7		86.2	12.3	12.3		116.4	0.0	116.4		56.9	56.9	55.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	72.0	25.7	25.7		86.2	12.3	12.3		116.4	0.0	116.4		56.9	56.9	55.1	
LOS by Move:	E		C		C		F		B		B		F	A		F	E	E	E
HCM2k95thQ:	267	2263	2263		108	848	848		530	0	530		119	119	79	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #8 El Camino Real & Middle Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.065
Loss Time (sec):	10	Average Delay (sec/veh):	69.0
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	10	10	7	10	10
Y+R:	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
Lanes:	1	0 2	1 0	1	0 2	1 0	1	0 0	1 0	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	413	1780	0	0	1465	97	226	0	211	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	530	2283	0	0	1879	124	290	0	271	0	0	0
Added Vol:	74	232	4	22	225	7	4	2	-8	75	2	62
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	604	2515	4	22	2104	131	294	2	263	75	2	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	604	2515	4	22	2104	131	294	2	263	75	2	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	604	2515	4	22	2104	131	294	2	263	75	2	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	604	2515	4	22	2104	131	294	2	263	75	2	62
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.88	0.88	0.93	0.83	0.83	0.93	0.84	0.84
Lanes:	1.00	2.99	0.01	1.00	2.82	0.18	1.00	0.01	0.99	1.00	0.03	0.97
Final Sat.:	1769	5075	8	1769	4741	296	1769	12	1573	1769	50	1542
Capacity Analysis Module:												
Vol/Sat:	0.34	0.50	0.50	0.01	0.44	0.44	0.17	0.17	0.17	0.04	0.04	0.04
Crit Moves:	****				****		****				****	
Green Time:	44.9	97.7	97.7	5.4	58.3	58.3	21.8	24.7	24.7	7.1	10.0	10.0
Volume/Cap:	1.10	0.74	0.74	0.33	1.10	1.10	1.10	0.98	0.98	0.86	0.58	0.58
Delay/Veh:	119.9	16.1	16.1	70.9	97.9	97.9	147.2	109	109.1	122.1	73.2	73.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	119.9	16.1	16.1	70.9	97.9	97.9	147.2	109	109.1	122.1	73.2	73.2
LOS by Move:	F	B	B	E	F	F	F	F	F	F	E	E
HCM2k95thQ:	1466	1089	1089	68	1884	1884	843	700	700	262	182	182

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #9 El Camino Real & Cambridge Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.773
Loss Time (sec):	10	Average Delay (sec/veh):	18.7
Optimal Cycle:	71	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	11	11	11	11	11	11
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	1 0	1	0 2	1 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	212	2241	6	32	1629	14	22	1	24	7	2	4
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	272	2874	8	41	2089	18	28	1	31	9	3	5
Added Vol:	3	181	31	63	305	1	1	3	-1	22	1	31
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	275	3055	39	104	2394	19	29	4	30	31	4	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	3055	39	104	2394	19	29	4	30	31	4	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	3055	39	104	2394	19	29	4	30	31	4	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	3055	39	104	2394	19	29	4	30	31	4	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.89	0.89	0.93	0.89	0.89	0.70	0.70	0.70	0.73	0.73	0.73
Lanes:	1.00	2.96	0.04	1.00	2.98	0.02	0.46	0.07	0.47	0.44	0.05	0.51
Final Sat.:	1769	5010	63	1769	5038	40	615	90	627	604	70	705
Capacity Analysis Module:												
Vol/Sat:	0.16	0.61	0.61	0.06	0.48	0.48	0.05	0.05	0.05	0.05	0.05	0.05
Crit Moves:		****		****							****	
Green Time:	30.6	113	113.1	10.9	93.4	93.4	11.0	11.0	11.0	11.0	11.0	11.0
Volume/Cap:	0.74	0.78	0.78	0.78	0.74	0.74	0.63	0.63	0.63	0.68	0.68	0.68
Delay/Veh:	61.0	10.1	10.1	91.1	18.4	18.4	76.8	76.8	76.8	81.5	81.5	81.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.0	10.1	10.1	91.1	18.4	18.4	76.8	76.8	76.8	81.5	81.5	81.5
LOS by Move:	E	B	B	F	B	B	E	E	E	F	F	F
HCM2k95thQ:	570	1176	1176	305	1094	1094	188	188	188	212	212	212

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #10 Sand Hill Rd & El Camino Real (Palo Alto)

Cycle (sec):	140	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	9	Average Delay (sec/veh):	41.8
Optimal Cycle:	112	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 1	1	0 2	1 0	2	0 0	0 1	0	0 0	0 1
Volume Module: >> Count Date: 29 Sep 2009 << 5:00 - 6:00 AM												
Base Vol:	145	1201	98	411	913	416	514	0	243	0	0	742
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	186	1540	126	527	1171	533	659	0	312	0	0	952
Added Vol:	0	146	0	21	189	116	61	0	0	0	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	186	1686	126	548	1360	649	720	0	312	0	0	961
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	186	1686	126	548	1360	649	720	0	312	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	1686	126	548	1360	649	720	0	312	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	186	1686	126	548	1360	649	720	0	312	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.85	0.95	0.87	0.87	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	2.03	0.97	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1805	5187	1615	1805	3342	1596	3502	0	1615	0	0	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.33	0.08	0.30	0.41	0.41	0.21	0.00	0.19	0.00	0.00	0.00
Crit Moves:		****		****			****					
Green Time:	19.9	51.0	51.0	47.7	78.8	78.8	32.3	0.0	52.2	0.0	0.0	0.0
Volume/Cap:	0.72	0.89	0.21	0.89	0.72	0.72	0.89	0.00	0.52	0.00	0.00	0.00
Delay/Veh:	67.1	47.7	30.8	58.9	23.5	23.5	64.3	0.0	34.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.1	47.7	30.8	58.9	23.5	23.5	64.3	0.0	34.9	0.0	0.0	0.0
LOS by Move:	E	D	C	E	C	C	E	A	C	A	A	A
HCM2k95thQ:	420	1135	181	1041	979	979	704	0	456	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #11 Laurel St. & Oak Grove Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.622
Loss Time (sec):	4	Average Delay (sec/veh):	13.5
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	8	8	8	8	8	8
Y+R:	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	68	168	42	24	97	28	12	320	84	28	242	36
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	87	215	54	31	124	36	15	410	108	36	310	46
Added Vol:	1	0	0	0	0	88	35	45	1	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	215	54	31	124	124	50	455	109	36	363	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	215	54	31	124	124	50	455	109	36	363	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	215	54	31	124	124	50	455	109	36	363	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	215	54	31	124	124	50	455	109	36	363	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.82	0.82	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Lanes:	0.25	0.60	0.15	0.11	0.45	0.44	0.08	0.74	0.18	0.08	0.82	0.10
Final Sat.:	386	943	236	182	736	734	141	1270	303	139	1402	178
Capacity Analysis Module:												
Vol/Sat:	0.23	0.23	0.23	0.17	0.17	0.17	0.36	0.36	0.36	0.26	0.26	0.26
Crit Moves:		****						****				
Green Time:	25.7	25.7	25.7	25.7	25.7	25.7	40.3	40.3	40.3	40.3	40.3	40.3
Volume/Cap:	0.62	0.62	0.62	0.46	0.46	0.46	0.62	0.62	0.62	0.45	0.45	0.45
Delay/Veh:	20.3	20.3	20.3	17.4	17.4	17.4	11.0	11.0	11.0	8.8	8.8	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.3	20.3	20.3	17.4	17.4	17.4	11.0	11.0	11.0	8.8	8.8	8.8
LOS by Move:	C	C	C	B	B	B	B	B	B	A	A	A
HCM2k95thQ:	345	345	345	243	243	243	440	440	440	279	279	279

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #12 Laurel St. & Ravenswood Ave.

Cycle (sec):	75	Critical Vol./Cap.(X):	1.137
Loss Time (sec):	4	Average Delay (sec/veh):	61.1
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	0	1! 0	1	0	0 1	0	1	0
Volume Module: >> Count Date: 22 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	229	116	42	69	108	34	49	689	106	34	597	35
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	294	149	54	88	138	44	63	884	136	44	766	45
Added Vol:	207	1	0	0	1	0	0	189	114	0	335	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	501	150	54	88	139	44	63	1073	250	44	1101	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	501	150	54	88	139	44	63	1073	250	44	1101	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	501	150	54	88	139	44	63	1073	250	44	1101	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	501	150	54	88	139	44	63	1073	250	44	1101	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	0.94	0.94	0.78	0.78	0.78	0.08	0.95	0.95	0.08	0.97	0.97
Lanes:	1.00	0.74	0.26	0.33	0.51	0.16	1.00	0.81	0.19	1.00	0.96	0.04
Final Sat.:	1450	1315	473	482	760	238	154	1468	342	154	1778	73
Capacity Analysis Module:												
Vol/Sat:	0.35	0.11	0.11	0.18	0.18	0.18	0.41	0.73	0.73	0.28	0.62	0.62
Crit Moves:	****							****				
Green Time:	22.8	22.8	22.8	22.8	22.8	22.8	48.2	48.2	48.2	48.2	48.2	48.2
Volume/Cap:	1.14	0.37	0.37	0.60	0.60	0.60	0.63	1.14	1.14	0.44	0.96	0.96
Delay/Veh:	111.9	21.0	21.0	24.6	24.6	24.6	20.6	85.8	85.8	9.7	30.4	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	111.9	21.0	21.0	24.6	24.6	24.6	20.6	85.8	85.8	9.7	30.4	30.4
LOS by Move:	F	C	C	C	C	C	C	F	F	A	C	C
HCM2k95thQ:	957	195	195	301	301	301	108	2056	2056	60	1277	1277

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #13 Valparaiso & University (N)

Cycle (sec):	85	Critical Vol./Cap.(X):	0.691
Loss Time (sec):	4	Average Delay (sec/veh):	18.1
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lanes:	0	0	1! 0	0	1	0	1	0	0 1	0	1	0
Volume Module: >> Count Date: 2 Feb 2010 << 5:00 - 6:00 p.m.												
Base Vol:	166	16	69	54	19	58	36	369	98	47	433	41
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	213	21	88	69	24	74	46	473	126	60	555	53
Added Vol:	8	0	-1	0	0	0	0	36	10	0	77	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	221	21	87	69	24	74	46	509	136	60	632	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	221	21	87	69	24	74	46	509	136	60	632	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	21	87	69	24	74	46	509	136	60	632	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	21	87	69	24	74	46	509	136	60	632	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.70	0.70	0.70	0.75	0.89	0.89	0.95	0.97	0.97	0.95	0.99	0.99
Lanes:	0.67	0.06	0.27	1.00	0.25	0.75	1.00	0.79	0.21	1.00	0.92	0.08
Final Sat.:	894	83	354	1416	416	1269	1805	1454	387	1805	1733	144
Capacity Analysis Module:												
Vol/Sat:	0.25	0.25	0.25	0.05	0.06	0.06	0.03	0.35	0.35	0.03	0.36	0.36
Crit Moves:		****						****			****	
Green Time:	31.1	31.1	31.1	31.1	31.1	31.1	48.0	44.0	44.0	50.9	45.9	45.9
Volume/Cap:	0.68	0.68	0.68	0.13	0.16	0.16	0.16	0.68	0.68	0.18	0.68	0.68
Delay/Veh:	26.5	26.5	26.5	18.1	18.3	18.3	11.2	17.2	17.2	10.5	16.0	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.5	26.5	26.5	18.1	18.3	18.3	11.2	17.2	17.2	10.5	16.0	16.0
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
HCM2k95thQ:	396	396	396	64	90	90	37	594	594	34	543	543

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #14 Oak Grove & University (N)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.711
Loss Time (sec):	0	Average Delay (sec/veh):	17.2
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	1 0	0	1	0	0 0	0	0	0	0 0	0	0	1!	0 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:30-5:30 p.m.																
Base Vol:	0	183	175		77	145	0		0	0	0		181	0	95	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	235	224		99	186	0		0	0	0		232	0	122	
Added Vol:	0	0	20		6	4	0		0	0	0		30	0	6	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	235	244		105	190	0		0	0	0		262	0	128	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	235	244		105	190	0		0	0	0		262	0	128	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	235	244		105	190	0		0	0	0		262	0	128	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	235	244		105	190	0		0	0	0		262	0	128	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.49	0.51		0.36	0.64	0.00		0.00	0.00	0.00		0.67	0.01	0.32	
Final Sat.:	0	330	344		211	384	0		0	0	0		407	0	199	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.71	0.71		0.50	0.50	xxxx		xxxx	xxxx	xxxx		0.64	0.00	0.64	
Crit Moves:			****		****								****			
Delay/Veh:	0.0	19.0	19.0		13.9	13.9	0.0		0.0	0.0	0.0		17.4	17.4	17.4	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	19.0	19.0		13.9	13.9	0.0		0.0	0.0	0.0		17.4	17.4	17.4	
LOS by Move:	*	C	C		B	B	*		*	*	*		C	C	C	
ApproachDel:		19.0				13.9				xxxxxx				17.4		
Delay Adj:		1.00				1.00				xxxxx				1.00		
ApprAdjDel:		19.0				13.9				xxxxxx				17.4		
LOS by Appr:		C				B				*				C		
AllWayAvgQ:	50.7	50.7	50.7		21.1	21.1	21.1		0.0	0.0	0.0		36.7	36.7	36.7	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
1994 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #15 University Dr. (N) & Santa Cruz Ave.

Cycle (sec):	1	Critical Vol./Cap.(X):	1.477
Loss Time (sec):	0	Average Delay (sec/veh):	118.4
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	0	1 0
Volume Module: >> Count Date: 18 Nov 2009 <<																
Base Vol:	0	0	0		196	0	125		168	286	0		0	355	151	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		251	0	160		215	367	0		0	455	194	
Added Vol:	0	0	0		8	0	34		32	117	0		0	122	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		259	0	194		247	484	0		0	577	194	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		259	0	194		247	484	0		0	577	194	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		259	0	194		247	484	0		0	577	194	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		259	0	194		247	484	0		0	577	194	
Saturation Flow Module:																
Sat/Lane:	0	0	0		308	308	308		482	482	482		522	522	522	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	1.00	0.00		0.00	0.75	0.25	
Final Sat.:	0	0	0		308	0	308		482	482	0		0	391	131	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.84	0.00	0.63		0.51	1.00	0.00		0.00	1.48	1.48	
Crit Moves:			****		****					****					****	
ApproachV/S:		xxxxx					0.74			0.76				1.48		
Delay/Veh:	0.0	0.0	0.0		24.5	0.0	11.0		7.0	45.3	0.0		0.0	274	273.7	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		24.5	0.0	11.0		7.0	45.3	0.0		0.0	274	273.7	
LOS by Move:	*	*	*		D	*	C		B	F	*		*	F	F	
ApproachDel:		xxxxxx					16.4			17.9				273.7		
Delay Adj:		xxxxx					1.00			1.00				1.00		
ApprAdjDel:		xxxxxx					16.4			17.9				273.7		
LOS by Appr:		F					C			C				F		

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #16 University Dr. (S) & Santa Cruz Ave.

Cycle (sec):	70	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	4	Average Delay (sec/veh):	19.4
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	0	4		0	0	0		0	10	10		4	10	0	
Y+R:	4.1	4.0	4.1		4.0	4.0	4.0		4.0	4.1	4.1		4.1	4.1	4.0	
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	1	0 1	1	0	1	0 0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	362	0	128		0	0	0		0	340	291		84	439	0	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	464	0	164		0	0	0		0	436	373		108	563	0	
Added Vol:	82	0	15		0	0	0		0	134	58		14	142	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	546	0	179		0	0	0		0	570	431		122	705	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	546	0	179		0	0	0		0	570	431		122	705	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	546	0	179		0	0	0		0	570	431		122	705	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	546	0	179		0	0	0		0	570	431		122	705	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.83		1.00	1.00	1.00		1.00	0.98	0.83		0.93	0.98	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00		1.00	1.00	0.00	
Final Sat.:	1769	0	1583		0	0	0		0	1862	1583		1769	1862	0	
Capacity Analysis Module:																
Vol/Sat:	0.31	0.00	0.11		0.00	0.00	0.00		0.00	0.31	0.27		0.07	0.38	0.00	
Crit Moves:	****									****			****			
Green Time:	29.8	0.0	29.8		0.0	0.0	0.0		0.0	29.6	29.6		6.6	36.2	0.0	
Volume/Cap:	0.73	0.00	0.27		0.00	0.00	0.00		0.00	0.73	0.65		0.73	0.73	0.00	
Delay/Veh:	20.2	0.0	13.2		0.0	0.0	0.0		0.0	20.2	18.3		45.4	16.1	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	20.2	0.0	13.2		0.0	0.0	0.0		0.0	20.2	18.3		45.4	16.1	0.0	
LOS by Move:	C		A	B	A		A		A	C		B	D		B	A
HCM2k95thQ:	512		0	132	0		0		0	528	393		211	590	0	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #17 Menlo Avenue & University (S)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	0	Average Delay (sec/veh):	23.1
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	1 0	1	0	0	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 4:15 - 5:15 p.m.																
Base Vol:	0	197	68		273	96	0		6	6	19		72	1	230	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	253	87		350	123	0		8	8	24		92	1	295	
Added Vol:	0	16	0		54	18	0		0	0	0		0	0	81	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	269	87		404	141	0		8	8	24		92	1	376	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	269	87		404	141	0		8	8	24		92	1	376	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	269	87		404	141	0		8	8	24		92	1	376	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	269	87		404	141	0		8	8	24		92	1	376	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	0.75	0.25		1.00	1.00	0.00		0.19	0.19	0.62		1.00	0.01	0.99	
Final Sat.:	0	393	128		496	529	0		77	77	244		462	2	545	
Capacity Analysis Module:																
Vol/Sat:	xxxx	0.68	0.68		0.81	0.27	xxxx		0.10	0.10	0.10		0.20	0.69	0.69	
Crit Moves:		****			****				****						****	
Delay/Veh:	0.0	22.4	22.4		33.4	11.7	0.0		11.6	11.6	11.6		12.1	21.1	21.1	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	22.4	22.4		33.4	11.7	0.0		11.6	11.6	11.6		12.1	21.1	21.1	
LOS by Move:	*	C	C		D	B	*		B	B	B		B	C	C	
ApproachDel:	22.4				27.8				11.6				19.3			
Delay Adj:	1.00				1.00				1.00				1.00			
ApprAdjDel:	22.4				27.8				11.6				19.3			
LOS by Appr:	C				D				B				C			
AllWayAvgQ:	45.6	45.6	45.6		81.0	8.6	8.6		2.1	2.1	2.1		5.9	45.6	45.6	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #18 Middlefield at Marsh (Town of Atherton)

Cycle (sec): 110 Critical Vol./Cap.(X): 1.297
Loss Time (sec): 10 Average Delay (sec/veh): 105.0
Optimal Cycle: 200 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0		6	6	5		6	0	0		0	0	6		0	6
Y+R:	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lanes:	0	0	1	0 1	1	0	1	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 18 Nov 2009 << 5:00 - 6:00 p.m.																
Base Vol:	0	394	447	377	236	0	0	0	0	515	0	455				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	0	505	573	483	303	0	0	0	0	660	0	583				
Added Vol:	0	3	209	73	3	0	0	0	0	428	0	149				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	508	782	556	306	0	0	0	0	1088	0	732				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	508	782	556	306	0	0	0	0	1088	0	732				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	508	782	556	306	0	0	0	0	1088	0	732				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	508	782	556	306	0	0	0	0	1088	0	732				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85				
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00				
Final Sat.:	0	1900	1615	1805	1900	0	0	0	0	1805	0	1615				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.27	0.48	0.31	0.16	0.00	0.00	0.00	0.00	0.60	0.00	0.45				
Crit Moves:		****		****						****						
Green Time:	0.0	22.7	73.8	26.2	48.8	0.0	0.0	0.0	0.0	51.2	0.0	77.3				
Volume/Cap:	0.00	1.30	0.72	1.30	0.36	0.00	0.00	0.00	0.00	1.30	0.00	0.65				
Delay/Veh:	0.0	195	13.9	191.8	20.5	0.0	0.0	0.0	0.0	171.7	0.0	10.2				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	195	13.9	191.8	20.5	0.0	0.0	0.0	0.0	171.7	0.0	10.2				
LOS by Move:	A	F	B	F	C	A	A	A	A	F	A	B				
HCM2k95thQ:	0	1252	718	1440	323	0	0	0	0	2497	0	580				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Encinal Avenue at Middlefield Road

Average Delay (sec/veh): 276.8 Worst Case Level Of Service: F[4010.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	1	0 0	0	0	0	1 0	0	0	1!	0 0	0	0	0	0 0
Volume Module: >> Count Date: 19 Nov 2009 << 4:45-5:45 p.m.																
Base Vol:	61	675	0	0	584	82	54	0	33	0	0	0				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	78	866	0	0	749	105	69	0	42	0	0	0				
Added Vol:	2	147	0	0	302	136	58	0	7	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	80	1013	0	0	1051	241	127	0	49	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	80	1013	0	0	1051	241	127	0	49	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	80	1013	0	0	1051	241	127	0	49	0	0	0				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	1292	xxxx	xxxxx	xxxx	xxxx	xxxxx	2717	2717	1172	xxxx	xxxx	xxxxx				
Potent Cap.:	543	xxxx	xxxxx	xxxx	xxxx	xxxxx	16	15	237	xxxx	xxxx	xxxxx				
Move Cap.:	543	xxxx	xxxxx	xxxx	xxxx	xxxxx	14	13	237	xxxx	xxxx	xxxxx				
Volume/Cap:	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	8.84	0.00	0.21	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	12.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	12.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	B	*	*	*	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	20	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	22.6	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4010	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			4010.3			xxxxxx						
ApproachLOS:	*			*			F			*						

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #20 Unsig:Middlefield at Glenwood

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	1 0	1	0	0	1 0	0	1	0	0 1	0	0	1!	0 0
Volume Module: >> Count Date: 18 Nov 2009 << 4:30 - 5:30 p.m.																
Base Vol:	113	520		89	46	471		126	88	19		105	17	3		18
Growth Adj:	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28
Initial Bse:	145	667		114	59	604		162	113	24		135	22	4		23
Added Vol:	-5	145		0	0	312		-3	5	0		14	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	140	812		114	59	916		159	118	24		149	22	4		23
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	140	812		114	59	916		159	118	24		149	22	4		23
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
FinalVolume:	140	812		114	59	916		159	118	24		149	22	4		23
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.1	6.5		6.2	7.1	6.5		6.2
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0		3.3	3.5	4.0		3.3
Capacity Module:																
Cnflict Vol:	1075	xxxx	xxxxx		673	xxxx	xxxxx		2617	2680		995	2722	2712		591
Potent Cap.:	656	xxxx	xxxxx		644	xxxx	xxxxx		11	16		300	9	15		355
Move Cap.:	656	xxxx	xxxxx		644	xxxx	xxxxx		6	11		300	0	11		355
Volume/Cap:	0.21	xxxx	xxxx		0.09	xxxx	xxxx		19.61	2.20		0.50	xxxx	0.36		0.07
Level Of Service Module:																
2Way95thQ:	20.1	xxxx	xxxxx		7.5	xxxx	xxxxx		xxxx	xxxx		64.9	xxxx	xxxx		xxxxx
Control Del:	12.0	xxxx	xxxxx		11.2	xxxx	xxxxx		xxxxx	xxxx		28.3	xxxxx	xxxx		xxxxx
LOS by Move:	B	*	*		B	*	*		*	*		D	*	*		*
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		7	xxxx	xxxxx		xxxx	0	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		19.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		10469	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		F	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				5133.0				xxxxxx			
ApproachLOS:	*				*				F				F			

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #21 Middlefield at Oak Grove (Town of Atherton)

Cycle (sec): 65 Critical Vol./Cap.(X): 1.088
Loss Time (sec): 6 Average Delay (sec/veh): 25.5
Optimal Cycle: 200 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	10	10		10	10	10		10	6	6		6	6	6		6
Y+R:	5.2	5.2		5.2	5.2	5.2		5.2	5.0	5.0		5.0	5.0	5.0		5.0
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0	1	0	0	1 0
Volume Module: >> Count Date: 17 Nov 2009 << 5:00-6:00 P.M.																
Base Vol:	88	567		105	60	536		123	148	98		70	32	68		40
Growth Adj:	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28
Initial Bse:	113	727		135	77	687		158	190	126		90	41	87		51
Added Vol:	39	132		0	0	312		13	9	0		37	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	152	859		135	77	999		171	199	126		127	41	87		51
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	152	859		135	77	999		171	199	126		127	41	87		51
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	152	859		135	77	999		171	199	126		127	41	87		51
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	152	859		135	77	999		171	199	126		127	41	87		51
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.10	0.98		0.98	0.19	0.98		0.98	0.58	0.93		0.93	0.35	0.95		0.95
Lanes:	1.00	0.86		0.14	1.00	0.85		0.15	1.00	0.50		0.50	1.00	0.63		0.37
Final Sat.:	188	1610		252	355	1587		271	1100	875		883	669	1131		665
Capacity Analysis Module:																
Vol/Sat:	0.81	0.53		0.53	0.22	0.63		0.63	0.18	0.14		0.14	0.06	0.08		0.08
Crit Moves:	****								****							
Green Time:	48.2	48.2		48.2	48.2	48.2		48.2	10.8	10.8		10.8	10.8	10.8		10.8
Volume/Cap:	1.09	0.72		0.72	0.29	0.85		0.85	1.09	0.86		0.86	0.37	0.46		0.46
Delay/Veh:	109.9	6.5		6.5	3.4	11.1		11.1	119.0	48.8		48.8	26.1	25.6		25.6
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	109.9	6.5		6.5	3.4	11.1		11.1	119.0	48.8		48.8	26.1	25.6		25.6
LOS by Move:	F	A		A	A	B		B	F	D		D	C	C		C
HCM2k95thQ:	260	518		518	29	774		774	448	381		381	62	155		155

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #22 Middlefield Rd. & Ravenswood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	1.250
Loss Time (sec):	4	Average Delay (sec/veh):	124.2
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ignore			Include		
Min. Green:	4	10	0	0	10	10	4	0	4	0	0	0
Y+R:	4.0	4.2	4.0	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	0	0	1	0	0	0	0
Volume Module: >> Count Date: 20 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	525	538	0	0	386	102	237	0	602	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	673	690	0	0	495	131	304	0	772	0	0	0
Added Vol:	57	48	0	0	71	277	123	0	65	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	730	738	0	0	566	408	427	0	837	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	730	738	0	0	566	408	427	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	730	738	0	0	566	408	427	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	730	738	0	0	566	408	427	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	1.00	0.92	0.92	0.93	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	0.58	0.42	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	0	1021	735	1769	0	1900	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.41	0.40	0.00	0.00	0.55	0.55	0.24	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green Time:	39.6	92.8	0.0	0.0	53.2	53.2	23.2	0.0	0.0	0.0	0.0	0.0
Volume/Cap:	1.25	0.51	0.00	0.00	1.25	1.25	1.25	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	166.6	5.4	0.0	0.0	157	156.7	183.2	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	166.6	5.4	0.0	0.0	157	156.7	183.2	0.0	0.0	0.0	0.0	0.0
LOS by Move:	F	A	A	A	F	F	F	A	A	A	A	A
HCM2k95thQ:	1713	454	0	0	2218	2218	1161	0	0	0	0	0

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #23 Middlefield Rd. & Ringwood Ave.

Cycle (sec):	120	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	4	Average Delay (sec/veh):	29.0
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	4.0	4.2	4.2	4.0	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	0	2	0	1	0	1
Volume Module: >> Count Date: 21 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	3	781	107	325	689	13	75	80	56	69	2	226
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	4	1002	137	417	884	17	96	103	72	88	3	290
Added Vol:	0	101	0	0	137	0	0	0	0	0	0	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	1103	137	417	1021	17	96	103	72	88	3	294
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	1103	137	417	1021	17	96	103	72	88	3	294
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	1103	137	417	1021	17	96	103	72	88	3	294
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	1103	137	417	1021	17	96	103	72	88	3	294
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.93	0.83	0.60	0.92	0.92	0.51	0.51	0.83
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	0.59	0.41	0.97	0.03	1.00
Final Sat.:	1769	3538	1583	1769	3538	1583	1141	1027	719	948	27	1583
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.09	0.24	0.29	0.01	0.08	0.10	0.10	0.09	0.09	0.19
Crit Moves:		****		****								****
Green Time:	9.0	49.3	49.3	37.3	77.6	77.6	29.4	29.4	29.4	29.4	29.4	29.4
Volume/Cap:	0.03	0.76	0.21	0.76	0.45	0.02	0.34	0.41	0.41	0.38	0.38	0.76
Delay/Veh:	51.6	32.6	23.0	43.3	10.6	7.6	38.1	38.6	38.6	38.8	38.8	50.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	32.6	23.0	43.3	10.6	7.6	38.1	38.6	38.6	38.8	38.8	50.4
LOS by Move:	D	C	C	D	B	A	D	D	D	D	D	D
HCM2k95thQ:	8	825	161	570	417	10	158	269	269	157	157	528

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #24 Middlefield Road and Linfield Drive

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: E[41.3]

Street Name:	Middlefield Road						Linfield Drive					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	1	0 0	0	0 1	1 0	1	0 0	0 1	0	0 0	0 0
Volume Module: >> Count Date: 11 Feb 2000 << 5:00 - 6:00 p.m.												
Base Vol:	61	773	0	0	829	23	25	0	68	0	0	0
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	78	991	0	0	1063	29	32	0	87	0	0	0
Added Vol:	7	78	0	0	137	3	2	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	85	1069	0	0	1200	32	34	0	91	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	1069	0	0	1200	32	34	0	91	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	85	1069	0	0	1200	32	34	0	91	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	933	xxxx	xxxxx	xxxx	xxxx	xxxxx	1739	xxxx	213	xxxx	xxxx	xxxxx
Potent Cap.:	634	xxxx	xxxxx	xxxx	xxxx	xxxxx	68	xxxx	683	xxxx	xxxx	xxxxx
Move Cap.:	634	xxxx	xxxxx	xxxx	xxxx	xxxxx	61	xxxx	683	xxxx	xxxx	xxxxx
Volume/Cap:	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	0.56	xxxx	0.13	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	11.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	56.8	xxxx	11.5	xxxx	xxxx	xxxxx
Control Del:	11.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	122.1	xxxx	11.1	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	B	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	11.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			41.3			xxxxxx		
ApproachLOS:	*			*			E			*		

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #25 Middlefield Rd. & Willow Rd.

Cycle (sec):	130	Critical Vol./Cap.(X):	1.357
Loss Time (sec):	8	Average Delay (sec/veh):	167.4
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	8	8	8	8	8	8	8	8	8
Y+R:	4.7	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.7	4.7	4.7
Lanes:	1 0	2	0 1	1	1	0 1	1	0	1 0	1	1	0 0 1
Volume Module: >> Count Date: 30 Sep 2009 << 4:45 - 5:45 PM												
Base Vol:	150	518	422	511	524	20	19	205	103	382	156	401
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	192	664	541	655	672	26	24	263	132	490	200	514
Added Vol:	10	13	122	121	20	0	0	100	10	268	196	72
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	677	663	776	692	26	24	363	142	758	396	586
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	677	663	776	692	26	24	363	142	758	396	586
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	677	663	776	692	26	24	363	142	758	396	586
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	677	663	776	692	26	24	363	142	758	396	586
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.91	0.91	0.91	0.93	0.98	0.83	0.95	0.95	0.83
Lanes:	1.00	2.00	1.00	1.56	1.39	0.05	1.00	1.00	1.00	1.31	0.69	1.00
Final Sat.:	1769	3538	1583	2681	2389	89	1769	1862	1583	2368	1237	1583
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.42	0.29	0.29	0.29	0.01	0.19	0.09	0.32	0.32	0.37
Crit Moves:			****			****		****				****
Green Time:	40.1	40.1	40.1	27.7	27.7	27.7	18.7	18.7	18.7	35.5	35.5	35.5
Volume/Cap:	0.37	0.62	1.36	1.36	1.36	1.36	0.10	1.36	0.63	1.17	1.17	1.36
Delay/Veh:	35.5	39.5	218.7	218.0	218	218.0	48.5	239	57.8	136.0	136	222.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.5	39.5	218.7	218.0	218	218.0	48.5	239	57.8	136.0	136	222.6
LOS by Move:	D	D	F	F	F	F	D	F	E	F	F	F
HCM2k95thQ:	302	564	1889	1543	1543	1543	45	1141	303	1429	1429	1697

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #26 Gilbert Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	1.175
Loss Time (sec):	7	Average Delay (sec/veh):	68.9
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	5	5	5	5	5	12	12	12	12	12	12
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	1	0	0 1	0	1	0 0 1	0	1	0 0 1	0	1	0 0 1
Volume Module: >> Count Date: 1 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	82	34	59	19	39	14	3	1073	82	66	788	19
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	105	44	76	24	50	18	4	1376	105	85	1011	24
Added Vol:	32	0	44	0	0	0	0	309	34	100	504	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	137	44	120	24	50	18	4	1685	139	185	1515	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	137	44	120	24	50	18	4	1685	139	185	1515	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	44	120	24	50	18	4	1685	139	185	1515	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	137	44	120	24	50	18	4	1685	139	185	1515	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.68	0.87	0.87	0.41	0.94	0.94	0.04	0.97	0.97	0.13	0.98	0.98
Lanes:	1.00	0.27	0.73	1.00	0.74	0.26	1.00	0.92	0.08	1.00	0.98	0.02
Final Sat.:	1292	443	1215	786	1315	472	84	1701	140	255	1829	29
Capacity Analysis Module:												
Vol/Sat:	0.11	0.10	0.10	0.03	0.04	0.04	0.05	0.99	0.99	0.72	0.83	0.83
Crit Moves:	****							****				
Green Time:	9.5	9.5	9.5	9.5	9.5	9.5	88.5	88.5	88.5	88.5	88.5	88.5
Volume/Cap:	1.18	1.09	1.09	0.34	0.42	0.42	0.05	1.18	1.18	0.86	0.98	0.98
Delay/Veh:	185.7	148	147.6	47.7	46.9	46.9	1.7	94.2	94.2	32.2	26.1	26.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	185.7	148	147.6	47.7	46.9	46.9	1.7	94.2	94.2	32.2	26.1	26.1
LOS by Move:	F	F	F	D	D	D	A	F	F	C	C	C
HCM2k95thQ:	445	470	470	59	129	129	4	3492	3492	304	2038	2038

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #27 Coleman Ave. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	1.157
Loss Time (sec):	7	Average Delay (sec/veh):	71.1
Optimal Cycle:	200	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 0 1	0	1	0 0 1
Volume Module: >> Count Date: 30 Sep 2009 << 5:00 - 6:00 PM												
Base Vol:	17	16	3	70	25	46	6	1045	64	42	772	13
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	22	21	4	90	32	59	8	1340	82	54	990	17
Added Vol:	0	0	0	0	0	0	0	353	0	0	604	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	21	4	90	32	59	8	1693	82	54	1594	17
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	21	4	90	32	59	8	1693	82	54	1594	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	21	4	90	32	59	8	1693	82	54	1594	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	21	4	90	32	59	8	1693	82	54	1594	17
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.79	0.79	0.79	0.05	0.97	0.97	0.05	0.98	0.98
Lanes:	0.48	0.44	0.08	0.50	0.18	0.32	1.00	0.95	0.05	1.00	0.99	0.01
Final Sat.:	653	615	115	748	267	491	86	1763	85	86	1841	19
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.12	0.12	0.12	0.09	0.96	0.96	0.63	0.87	0.87
Crit Moves:					****			****				
Green Time:	10.9	10.9	10.9	10.9	10.9	10.9	87.1	87.1	87.1	87.1	87.1	87.1
Volume/Cap:	0.32	0.32	0.32	1.16	1.16	1.16	0.11	1.16	1.16	0.76	1.04	1.04
Delay/Veh:	44.9	44.9	44.9	167.6	168	167.6	2.4	87.5	87.5	40.9	44.2	44.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.9	44.9	44.9	167.6	168	167.6	2.4	87.5	87.5	40.9	44.2	44.2
LOS by Move:	D	D	D	F	F	F	A	F	F	D	D	D
HCM2k95thQ:	87	87	87	535	535	535	8	3312	3312	124	2500	2500

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #28 Durham St. & Willow Rd.

Cycle (sec):	105	Critical Vol./Cap.(X):	1.314
Loss Time (sec):	7	Average Delay (sec/veh):	101.4
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	4	4		4	4	4		4	10	10		4	10	10	
Y+R:	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Lanes:	1	0	0	1 0	0	1	0	0 1	1	0	1	1 0	1	0	0	1 0
Volume Module: >> Count Date: 1 Oct 2009 << 4:00 - 5:00 PM																
Base Vol:	45	1	188		186	3	21		13	1101	11		91	739	36	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	58	1	241		239	4	27		17	1412	14		117	948	46	
Added Vol:	0	0	0		0	0	0		0	353	0		0	604	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	58	1	241		239	4	27		17	1765	14		117	1552	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	58	1	241		239	4	27		17	1765	14		117	1552	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	58	1	241		239	4	27		17	1765	14		117	1552	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	58	1	241		239	4	27		17	1765	14		117	1552	46	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.38	0.83	0.83		0.36	0.36	0.83		0.93	0.93	0.93		0.93	0.98	0.98	
Lanes:	1.00	0.01	0.99		0.98	0.02	1.00		1.00	1.98	0.02		1.00	0.97	0.03	
Final Sat.:	724	8	1576		671	11	1583		1769	3506	28		1769	1801	54	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.15	0.15		0.36	0.36	0.02		0.01	0.50	0.50		0.07	0.86	0.86	
Crit Moves:						****			****					****		
Green Time:	27.5	27.5	27.5		27.5	27.5	27.5		4.0	62.4	62.4		8.2	66.5	66.5	
Volume/Cap:	0.30	0.58	0.58		1.36	1.36	0.07		0.25	0.85	0.85		0.85	1.36	1.36	
Delay/Veh:	32.0	35.9	35.9		232.5	233	29.2		51.0	20.9	20.9		83.8	187	186.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	32.0	35.9	35.9		232.5	233	29.2		51.0	20.9	20.9		83.8	187	186.7	
LOS by Move:	C	D	D		F	F	C		D	C	C		F	F	F	
HCM2k95thQ:	91	355	355		770	770	34		41	1099	1099		293	3867	3867	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #29 Bay Rd. & Willow Rd.

Cycle (sec):	90	Critical Vol./Cap.(X):	1.007
Loss Time (sec):	11	Average Delay (sec/veh):	46.1
Optimal Cycle:	184	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		5	0	5		5	5	0		0	5	5	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	2	0 0	0	0	2	0 1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	0	0	0		381	0	61		31	1307	0		0	1053	242	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	0	0	0		489	0	78		40	1676	0		0	1350	310	
Added Vol:	0	0	0		58	0	0		0	353	0		0	604	155	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		547	0	78		40	2029	0		0	1954	465	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		547	0	78		40	2029	0		0	1954	465	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		547	0	78		40	2029	0		0	1954	465	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	0	0		547	0	78		40	2029	0		0	1954	465	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.93	1.00	0.83		0.93	0.93	1.00		1.00	0.93	0.83	
Lanes:	0.00	0.00	0.00		1.00	0.00	1.00		1.00	2.00	0.00		0.00	2.00	1.00	
Final Sat.:	0	0	0		1769	0	1583		1769	3538	0		0	3538	1583	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.31	0.00	0.05		0.02	0.57	0.00		0.00	0.55	0.29	
Crit Moves:					****				****					****		
Green Time:	0.0	0.0	0.0		26.5	0.0	26.5		5.0	52.5	0.0		0.0	47.5	47.5	
Volume/Cap:	0.00	0.00	0.00		1.05	0.00	0.17		0.40	0.98	0.00		0.00	1.05	0.56	
Delay/Veh:	0.0	0.0	0.0		84.2	0.0	23.7		43.8	34.5	0.0		0.0	55.9	15.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		84.2	0.0	23.7		43.8	34.5	0.0		0.0	55.9	15.1	
LOS by Move:	A	A	A		F	A	C		D	C	A		A	E	B	
HCM2k95thQ:	0	0	0		982	0	85		81	1446	0		0	1578	420	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #30 Bay Rd. & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.972
Loss Time (sec):	4	Average Delay (sec/veh):	34.3
Optimal Cycle:	152	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.5	4.1	4.5	4.5
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM												
Base Vol:	71	15	148	58	17	3	6	772	93	200	928	50
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	91	19	190	74	22	4	8	990	119	256	1190	64
Added Vol:	151	0	0	0	0	0	0	225	57	0	427	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	242	19	190	74	22	4	8	1215	176	256	1617	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	19	190	74	22	4	8	1215	176	256	1617	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	19	190	74	22	4	8	1215	176	256	1617	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	19	190	74	22	4	8	1215	176	256	1617	64
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.73	0.73	0.73	0.65	0.65	0.65	0.81	0.81	0.81	0.93	0.93	0.93
Lanes:	0.54	0.04	0.42	0.74	0.22	0.04	0.01	1.74	0.25	1.00	1.92	0.08
Final Sat.:	748	59	587	923	271	48	17	2671	387	1769	3382	134
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.08	0.08	0.08	0.45	0.45	0.45	0.14	0.48	0.48
Crit Moves:		****						****		****		
Green Time:	27.4	27.4	27.4	27.4	27.4	27.4	36.2	36.2	36.2	12.3	48.6	48.6
Volume/Cap:	0.94	0.94	0.94	0.24	0.24	0.24	1.00	1.00	1.00	0.94	0.79	0.79
Delay/Veh:	53.2	53.2	53.2	19.1	19.1	19.1	47.0	47.0	47.0	72.1	13.8	13.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.2	53.2	53.2	19.1	19.1	19.1	47.0	47.0	47.0	72.1	13.8	13.8
LOS by Move:	D	D	D	B	B	B	D	D	D	E	B	B
HCM2k95thQ:	690	690	690	97	97	97	979	979	979	290	661	661

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #31 Bohannon/ Florence & Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	0.999
Loss Time (sec):	4	Average Delay (sec/veh):	40.0
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.5	4.5	4.1	4.1	4.5	4.5
Lanes:	1	0	0 1 0	1	1	0 0 1	1	0	1 1 0	1	0	1 1 0
Volume Module: >> Count Date: 7 Oct 2009 << 4:30 - 5:30 pm												
Base Vol:	90	25	65	440	10	161	203	878	43	31	842	344
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	115	32	83	564	13	206	260	1126	55	40	1080	441
Added Vol:	0	0	0	0	0	0	0	225	0	0	427	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	115	32	83	564	13	206	260	1351	55	40	1507	441
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	32	83	564	13	206	260	1351	55	40	1507	441
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	32	83	564	13	206	260	1351	55	40	1507	441
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	32	83	564	13	206	260	1351	55	40	1507	441
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.87	0.87	0.93	0.93	0.83	0.93	0.93	0.93	0.93	0.90	0.90
Lanes:	1.00	0.28	0.72	1.96	0.04	1.00	1.00	1.92	0.08	1.00	1.55	0.45
Final Sat.:	1769	461	1200	3470	79	1583	1769	3379	138	1769	2644	774
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.16	0.16	0.13	0.15	0.40	0.40	0.02	0.57	0.57
Crit Moves:		****			****		****				****	
Green Time:	5.6	5.6	5.6	13.0	13.0	13.0	11.8	51.0	51.0	6.4	45.6	45.6
Volume/Cap:	0.94	1.00	1.00	1.00	1.00	0.80	1.00	0.63	0.63	0.28	1.00	1.00
Delay/Veh:	99.0	121	120.7	70.7	70.7	48.5	89.6	9.3	9.3	35.7	37.3	37.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	99.0	121	120.7	70.7	70.7	48.5	89.6	9.3	9.3	35.7	37.3	37.3
LOS by Move:	F	F	F	E	E	D	F	A	A	D	D	D
HCM2k95thQ:	285	305	305	558	558	343	320	462	462	43	1047	1047

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #32 Scott Dr/Rolison at Marsh Rd.

Cycle (sec):	80	Critical Vol./Cap.(X):	1.025
Loss Time (sec):	4	Average Delay (sec/veh):	43.1
Optimal Cycle:	200	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	6	6	4	6	6
Y+R:	4.1	4.1	4.1	4.1	4.1	4.1	4.1	5.0	5.0	4.1	5.0	5.0
Lanes:	0	1	0	0	2	0	1	0	0	1	1	0
Volume Module: >> Count Date: 4 Nov 2009 << 4:45 - 5:45 PM												
Base Vol:	32	2	352	207	4	0	36	1171	23	60	1177	204
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	41	3	451	265	5	0	46	1502	29	77	1509	262
Added Vol:	0	0	0	0	0	0	0	225	0	0	427	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	3	451	265	5	0	46	1727	29	77	1936	262
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	3	451	265	5	0	46	1727	29	77	1936	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	3	451	265	5	0	46	1727	29	77	1936	262
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	3	451	265	5	0	46	1727	29	77	1936	262
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.94	0.73	0.93	0.93	1.00	0.93	0.89	0.89	0.90	0.91	0.91
Lanes:	0.94	0.06	2.00	0.98	0.02	1.00	1.00	2.95	0.05	2.00	1.76	0.24
Final Sat.:	1674	105	2786	1741	34	1900	1769	4983	85	3432	3061	413
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.16	0.15	0.15	0.00	0.03	0.35	0.35	0.02	0.63	0.63
Crit Moves:			****	****			****				****	
Green Time:	12.3	12.3	12.3	11.6	11.6	0.0	4.0	45.5	45.5	6.6	48.1	48.1
Volume/Cap:	0.16	0.16	1.05	1.05	1.05	0.00	0.52	0.61	0.61	0.27	1.05	1.05
Delay/Veh:	29.6	29.6	91.8	104.8	105	0.0	42.6	11.8	11.8	35.0	51.2	51.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.6	29.6	91.8	104.8	105	0.0	42.6	11.8	11.8	35.0	51.2	51.2
LOS by Move:	C	C	F	F	F	A	D	B	B	D	D	D
HCM2k95thQ:	53	53	551	572	572	0	58	469	469	43	1352	1352

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #33 4-Way Stop.: St Cruz & Orange

Cycle (sec):	100	Critical Vol./Cap.(X):	1.468
Loss Time (sec):	0	Average Delay (sec/veh):	147.9
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	R	L	-	T	R	L	-	T	R	L	-	T	R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0	0	1	0	0	1!	0	0	1	0	0	1	0	0
Volume Module: >> Count Date: 17 Nov 2000 << 5:00-6:00 p.m.																
Base Vol:	10	76	447	16	37	41	16	175	12	395	261	15				
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28				
Initial Bse:	13	97	573	21	47	53	21	224	15	507	335	19				
Added Vol:	0	0	134	0	1	0	0	59	0	139	85	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	13	97	707	21	48	53	21	283	15	646	420	19				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	13	97	707	21	48	53	21	283	15	646	420	19				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	13	97	707	21	48	53	21	283	15	646	420	19				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	13	97	707	21	48	53	21	283	15	646	420	19				
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.12	0.88	1.00	0.17	0.40	0.43	1.00	0.95	0.05	1.00	0.96	0.04				
Final Sat.:	52	397	501	67	159	173	404	409	22	440	450	21				
Capacity Analysis Module:																
Vol/Sat:	0.25	0.25	1.41	0.30	0.30	0.30	0.05	0.69	0.69	1.47	0.93	0.93				
Crit Moves:			****		****			****		****						
Delay/Veh:	13.2	13.2	217.2	15.5	15.5	15.5	12.0	27.4	27.4	244.1	53.8	53.8				
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	13.2	13.2	217.2	15.5	15.5	15.5	12.0	27.4	27.4	244.1	53.8	53.8				
LOS by Move:	B	B	F	C	C	C	B	D	D	F	F	F				
ApproachDel:	189.6			15.5			26.4			167.1						
Delay Adj:	1.00			1.00			1.00			1.00						
ApprAdjDel:	189.6			15.5			26.4			167.1						
LOS by Appr:	F			C			D			F						
AllWayAvgQ:	7.9	7.9	721.1	10.3	10.3	10.3	1.3	49.1	49.1	712	142	142.2				

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
With Downtown-Area El Camino Real Turn Lanes

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

Intersection #34 Santa Cruz Ave. & Sand Hill Rd.

Cycle (sec):	150	Critical Vol./Cap.(X):	0.881
Loss Time (sec):	10	Average Delay (sec/veh):	54.0
Optimal Cycle:	113	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	4	10	10		4	10	10		4	10	10		4	10	10	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	5.0	5.0		4.0	5.0	5.0	
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1	2	0 2	0	1
Volume Module: >> Count Date: 6 Oct 2009 << 5:00 - 6:00 PM																
Base Vol:	207	632	149		104	588	175		360	669	89		393	1110	185	
Growth Adj:	1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28		1.28	1.28	1.28	
Initial Bse:	265	810	191		133	754	224		462	858	114		504	1423	237	
Added Vol:	0	50	23		0	45	27		32	14	1		54	42	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	265	860	214		133	799	251		494	872	115		558	1465	237	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	265	860	214		133	799	251		494	872	115		558	1465	237	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	265	860	214		133	799	251		494	872	115		558	1465	237	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	265	860	214		133	799	251		494	872	115		558	1465	237	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83		0.93	0.98	0.83	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3538	3724	1583		3538	3724	1583		3538	3724	1583		3538	3724	1583	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.23	0.14		0.04	0.21	0.16		0.14	0.23	0.07		0.16	0.39	0.15	
Crit Moves:	****					****			****					****		
Green Time:	12.8	42.4	42.4		6.9	36.5	36.5		23.7	54.2	54.2		36.5	67.0	67.0	
Volume/Cap:	0.88	0.82	0.48		0.82	0.88	0.65		0.88	0.65	0.20		0.65	0.88	0.34	
Delay/Veh:	92.5	55.3	45.5		97.5	64.7	55.0		76.8	41.1	33.2		52.7	43.8	27.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	92.5	55.3	45.5		97.5	64.7	55.0		76.8	41.1	33.2		52.7	43.8	27.3	
LOS by Move:	F	E	D		F	E	E		E	D	C		D	D	C	
HCM2k95thQ:	278	721	328		238	867	507		534	704	171		548	1320	331	

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #4 El Camino Real & Oak Grove Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.962
Loss Time (sec):	4	Average Delay (sec/veh):	51.1
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	4	4	4	4	4
Y+R:	3.0	4.2	4.2	3.0	4.2	4.2	3.0	3.5	3.5	3.0	3.5	3.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module: >> Count Date: 22 Oct 2009 << 4:15 - 5:15 PM												
Base Vol:	133	1226	106	87	998	61	113	131	87	119	161	63
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	171	1572	136	112	1280	78	145	168	112	153	206	81
Added Vol:	54	364	47	17	366	17	16	51	31	92	40	4
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	225	1936	183	129	1646	95	161	219	143	245	246	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	1936	183	129	1646	95	161	219	143	245	246	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	1936	183	129	1646	95	161	219	143	245	246	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	1936	183	129	1646	95	161	219	143	245	246	85
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.92	0.92	0.93	0.92	0.92	0.93	0.98	0.83	0.93	0.98	0.83
Lanes:	1.00	1.83	0.17	1.00	1.89	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1769	3190	301	1769	3318	192	1769	1862	1583	1769	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.61	0.61	0.07	0.50	0.50	0.09	0.12	0.09	0.14	0.13	0.05
Crit Moves:		****		****				****		****		
Green Time:	20.9	91.5	91.5	11.0	81.6	81.6	15.7	17.7	17.7	20.8	22.9	22.9
Volume/Cap:	0.88	0.96	0.96	0.96	0.88	0.88	0.84	0.96	0.74	0.96	0.84	0.34
Delay/Veh:	88.9	36.7	36.7	132.8	32.6	32.6	90.1	112	75.2	107.5	78.2	55.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.9	36.7	36.7	132.8	32.6	32.6	90.1	112	75.2	107.5	78.2	55.2
LOS by Move:	F	D	D	F	C	C	F	F	E	F	E	E
HCM2k95thQ:	567	1977	1977	414	1478	1478	433	602	362	651	581	176

Note: Queue reported is the distance per lane in feet.

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Menlo Park El Camino Real/ Downtown Specific Plan
SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

Intersection #5 El Camino Real & Santa Cruz Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	0.888
Loss Time (sec):	4	Average Delay (sec/veh):	32.8
Optimal Cycle:	85	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	10	0	10	10	6	6	6	6	6	6
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	0	0 1	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module: >> Count Date: 20 Oct 2009 << 4 - 5 pm												
Base Vol:	0	1191	54	0	1043	143	171	68	161	72	83	58
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	0	1527	69	0	1338	183	219	87	206	92	106	74
Added Vol:	0	388	4	0	396	97	84	20	18	3	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1915	73	0	1734	280	303	107	224	95	120	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1915	73	0	1734	280	303	107	224	95	120	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1915	73	0	1734	280	303	107	224	95	120	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1915	73	0	1734	280	303	107	224	95	120	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.83	1.00	0.91	0.91	0.93	0.98	0.83	0.93	0.92	0.92
Lanes:	0.00	2.00	1.00	0.00	1.72	0.28	1.00	1.00	1.00	1.00	0.62	0.38
Final Sat.:	0	3538	1583	0	2981	482	1769	1862	1583	1769	1085	670
Capacity Analysis Module:												
Vol/Sat:	0.00	0.54	0.05	0.00	0.58	0.58	0.17	0.06	0.14	0.05	0.11	0.11
Crit Moves:					****		****					****
Green Time:	0.0	94.9	94.9	0.0	94.9	94.9	28.0	28.0	28.0	18.1	18.1	18.1
Volume/Cap:	0.00	0.83	0.07	0.00	0.89	0.89	0.89	0.30	0.73	0.43	0.89	0.89
Delay/Veh:	0.0	21.5	9.1	0.0	25.4	25.4	80.5	50.6	64.0	60.0	95.0	95.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.5	9.1	0.0	25.4	25.4	80.5	50.6	64.0	60.0	95.0	95.0
LOS by Move:	A	C	A	A	C	C	F	D	E	E	F	F
HCM2k95thQ:	0	1246	56	0	1605	1605	703	204	493	211	517	517

Note: Queue reported is the distance per lane in feet.

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SJ09-1089
Without Downtown-Area El Camino Real Turn Lanes

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

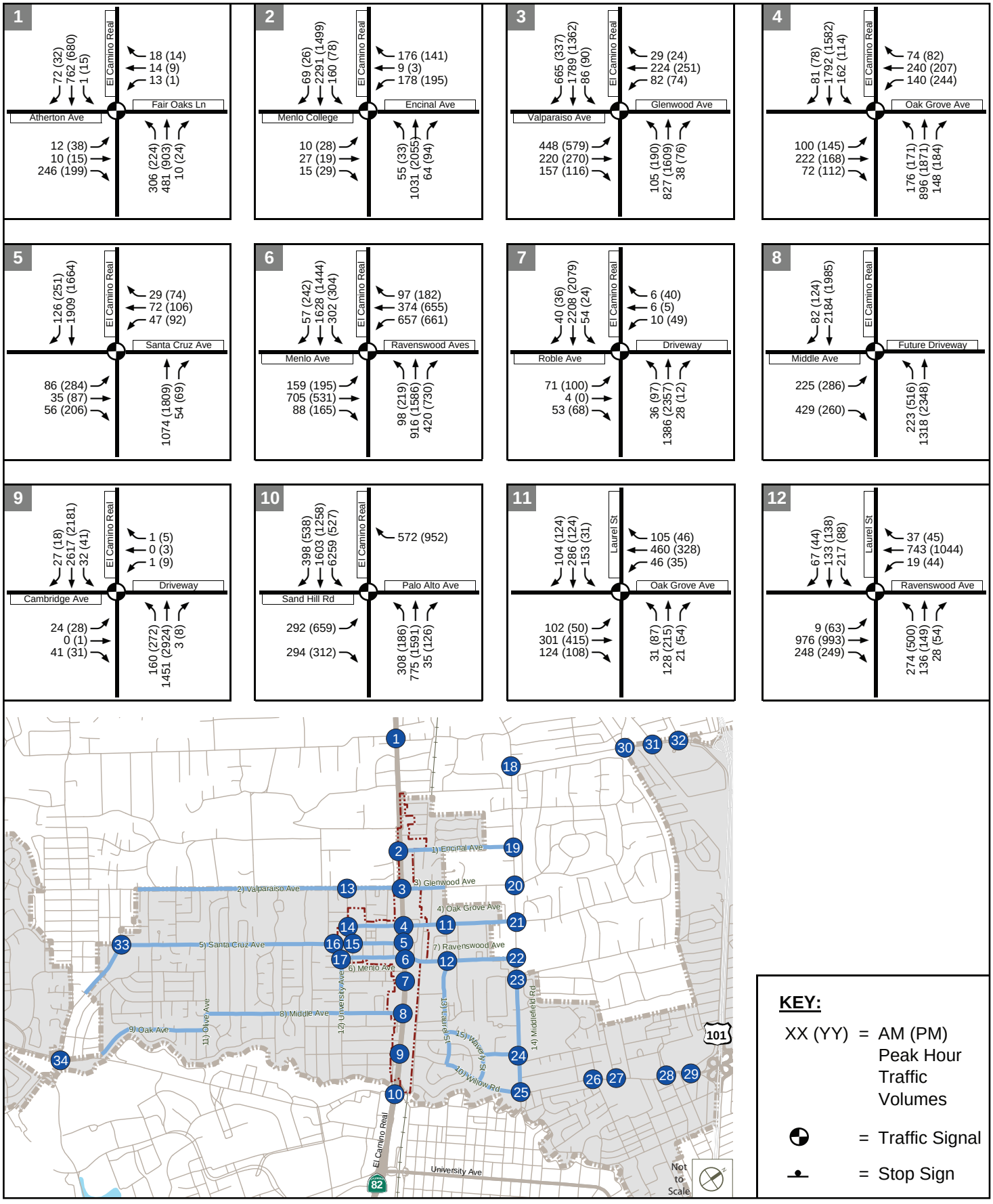
Intersection #6 El Camino Real & Ravenswood Ave.

Cycle (sec):	145	Critical Vol./Cap.(X):	1.365
Loss Time (sec):	4	Average Delay (sec/veh):	177.6
Optimal Cycle:	200	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	7	7	7	4	4	4
Y+R:	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 2	0 1	1	0 1	1 0	0	1 0	1 0	2	0 1	0 1
Volume Module: >> Count Date: 21 Oct 2009 << 4:45 - 5:45 PM												
Base Vol:	176	1202	557	193	1082	22	41	296	129	484	239	67
Growth Adj:	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Initial Bse:	226	1541	714	248	1388	28	53	380	165	621	306	86
Added Vol:	16	150	118	56	143	218	145	163	18	91	360	98
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	242	1691	832	304	1531	246	198	543	183	712	666	184
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	1691	832	304	1531	246	198	543	183	712	666	184
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	1691	832	304	1531	246	198	543	183	712	666	184
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	1691	832	304	1531	246	198	543	183	712	666	184
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.83	0.93	0.91	0.91	0.89	0.89	0.89	0.90	0.98	0.83
Lanes:	1.00	2.00	1.00	1.00	1.72	0.28	0.43	1.17	0.40	2.00	1.00	1.00
Final Sat.:	1769	3538	1583	1769	2984	480	726	1994	674	3432	1862	1583
Capacity Analysis Module:												
Vol/Sat:	0.14	0.48	0.53	0.17	0.51	0.51	0.27	0.27	0.27	0.21	0.36	0.12
Crit Moves:			****	****			****				****	
Green Time:	15.6	55.9	55.9	18.2	58.5	58.5	28.9	28.9	28.9	38.0	38.0	38.0
Volume/Cap:	1.27	1.24	1.37	1.37	1.27	1.27	1.37	1.37	1.37	0.79	1.37	0.44
Delay/Veh:	221.5	160	219.3	253.8	171	171.2	231.8	232	231.8	54.6	231	45.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	221.5	160	219.3	253.8	171	171.2	231.8	232	231.8	54.6	231	45.4
LOS by Move:	F	F	F	F	F	F	F	F	F	D	F	D
HCM2k95thQ:	824	2346	2453	952	2420	2420	1528	1528	1528	728	2007	332

Note: Queue reported is the distance per lane in feet.

APPENDIX D: CUMULATIVE TRAFFIC VOLUMES



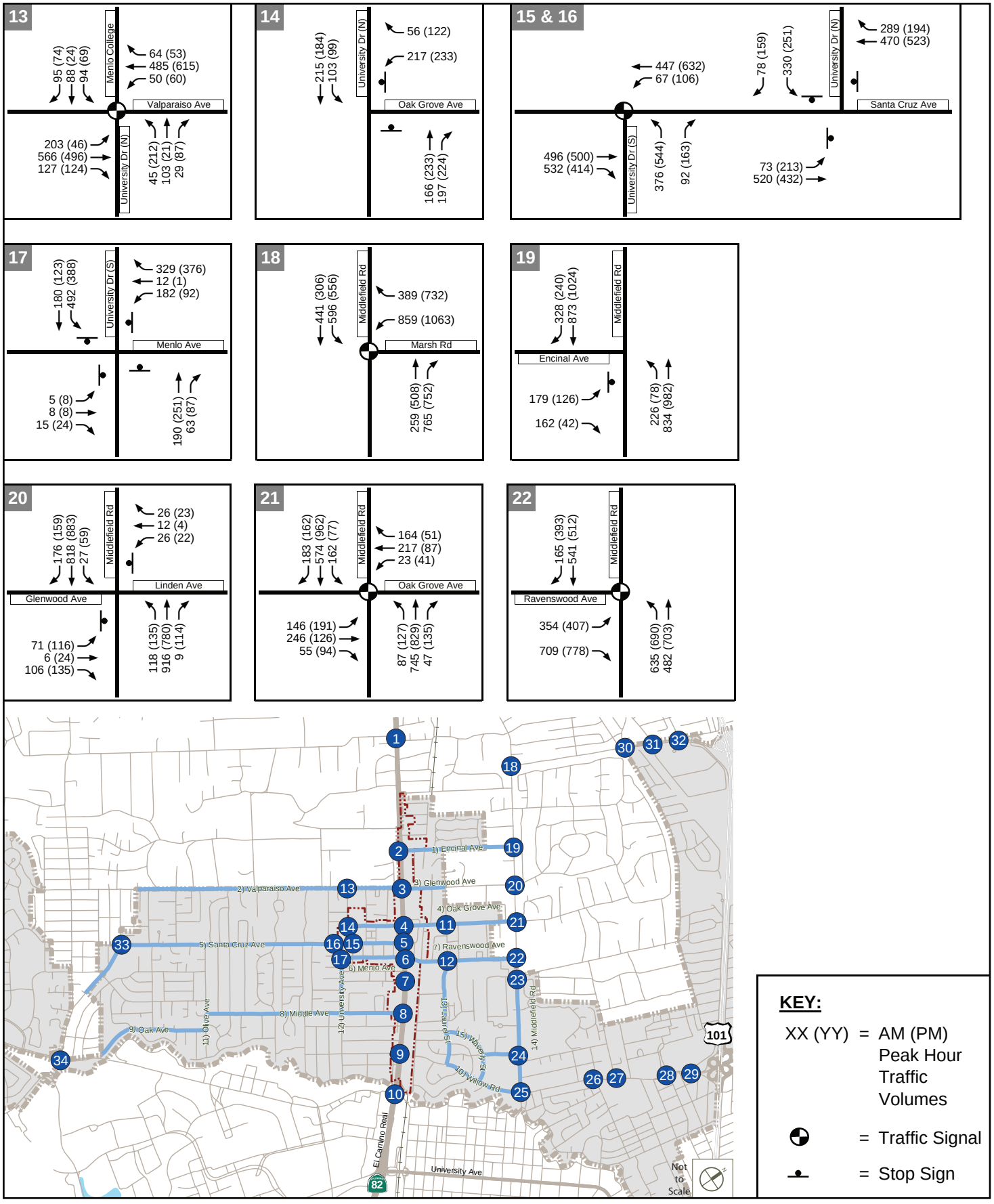
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April 2010
SJ09-1089

Cumulative (No Project)
Traffic Control Devices and Intersection Volumes

Figure D-1a



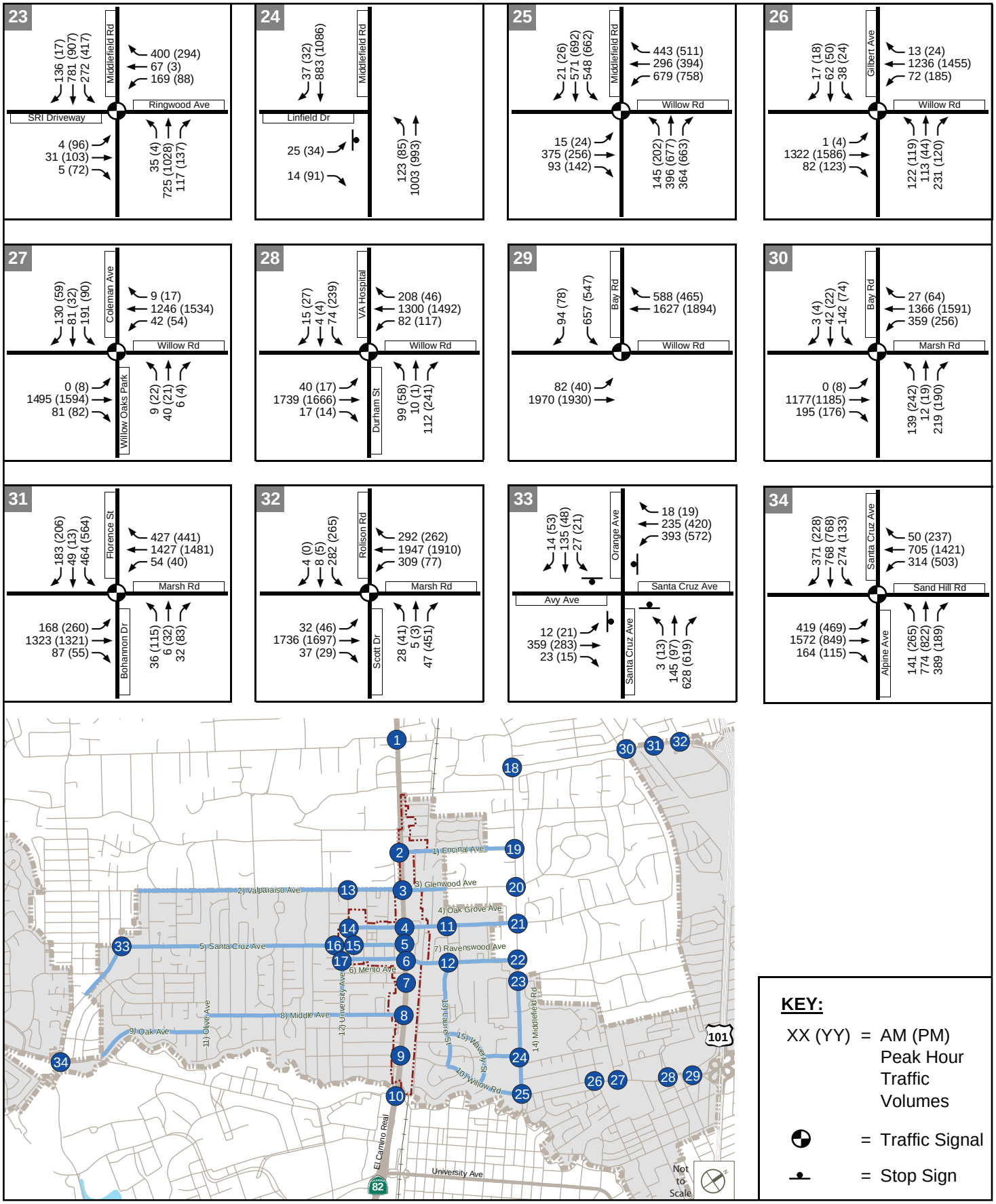
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Cumulative (No Project)
Traffic Control Devices and Intersection Volumes

Figure D-1b



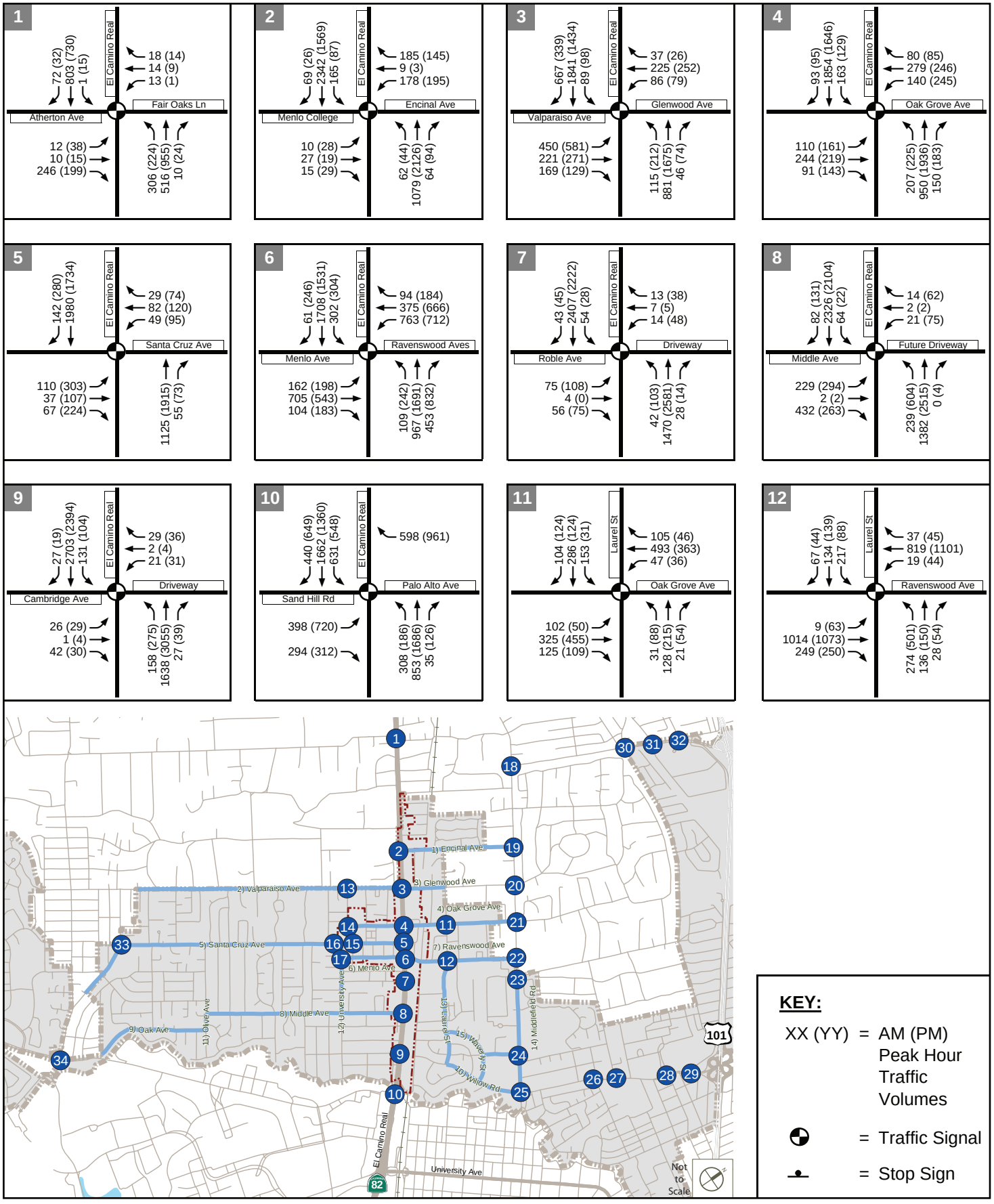
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SJ09-1089

Cumulative (No Project)
Traffic Control Devices and Intersection Volumes

Figure D-1c



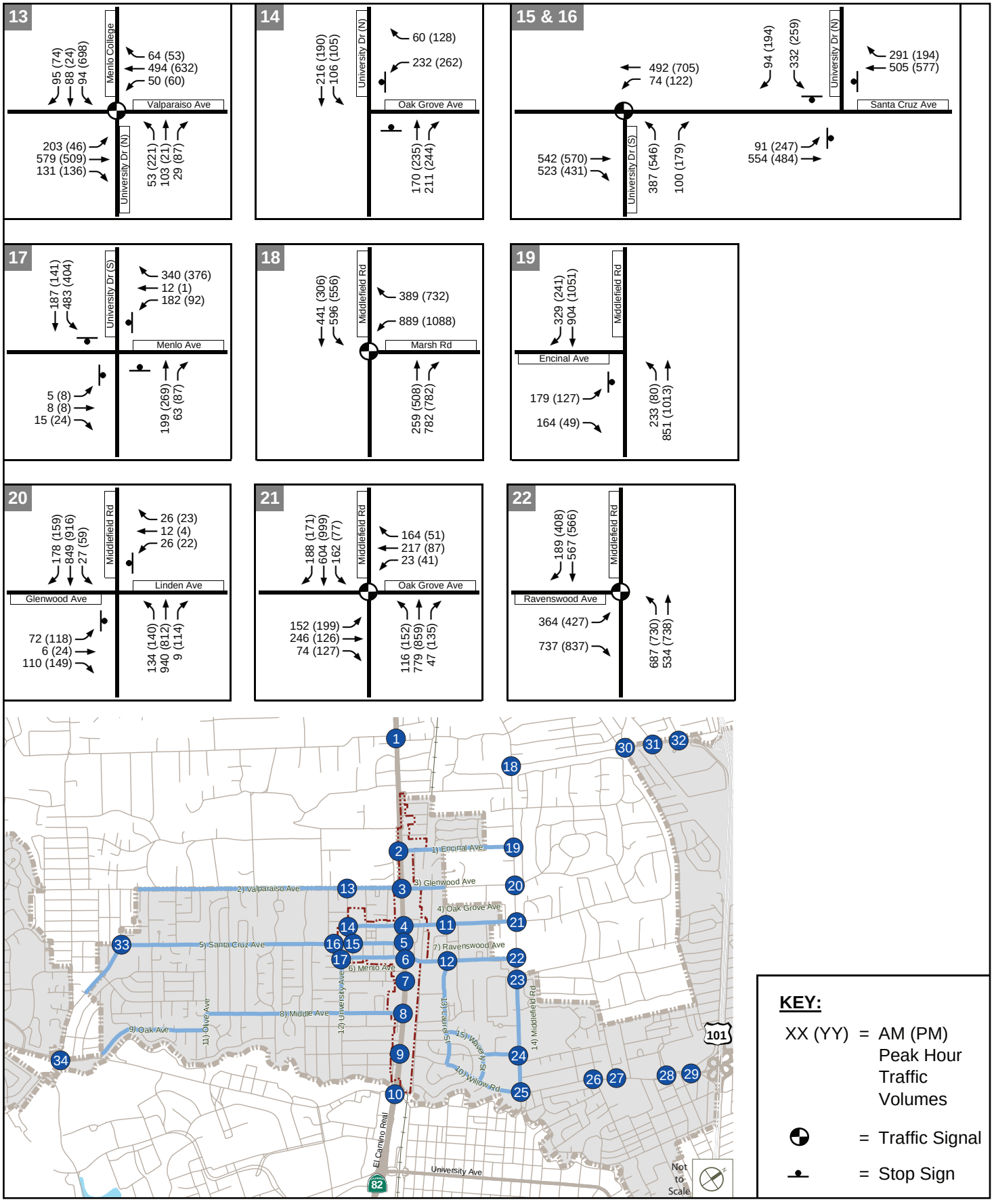
Menlo Park El Camino Real/ Downtown Specific Plan

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SJ09-1089

Cumulative Plus Project
Traffic Control Devices and Intersection Volumes

Figure D-2a



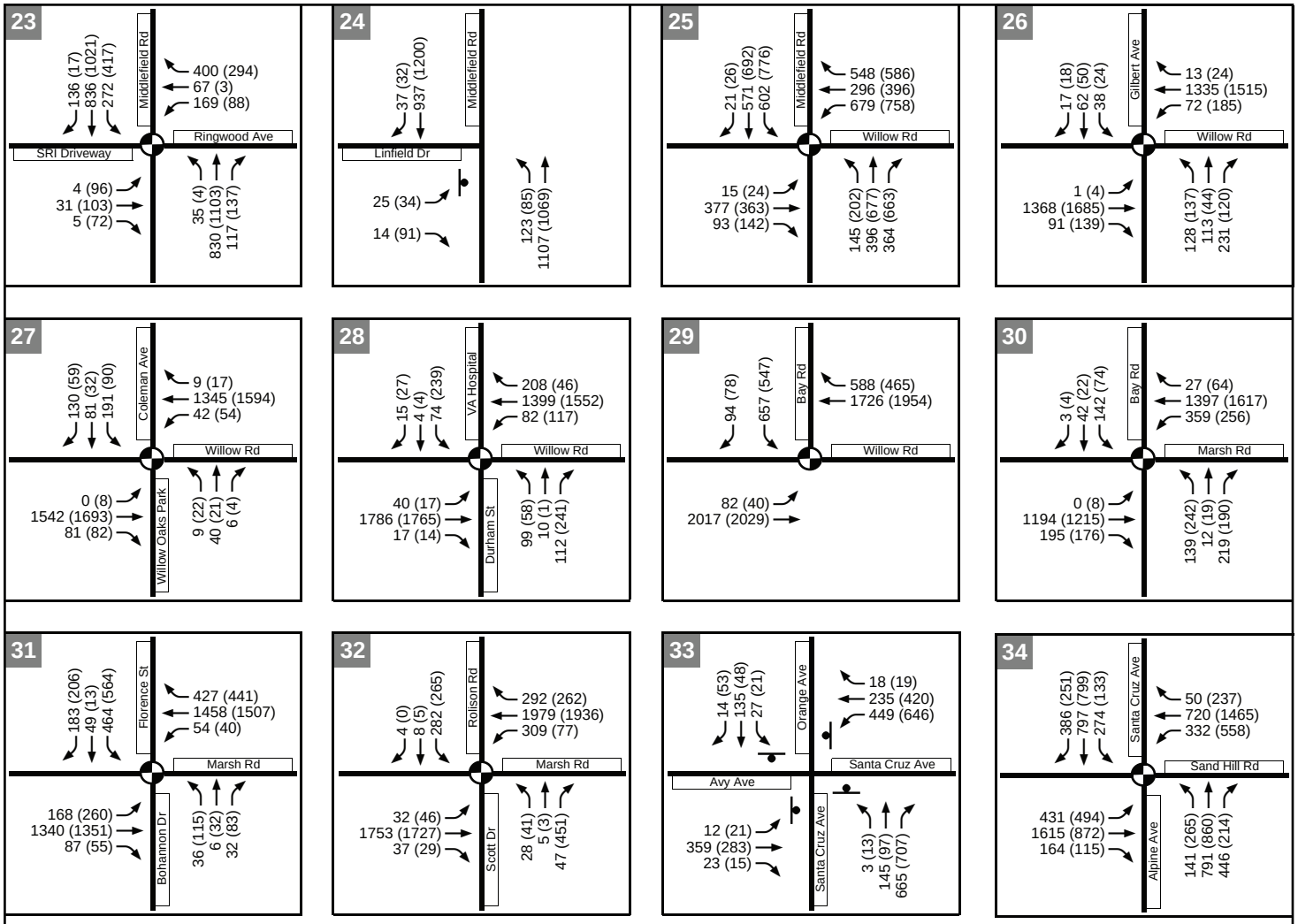
Menlo Park El Camino Real/ Downtown Specific Plan

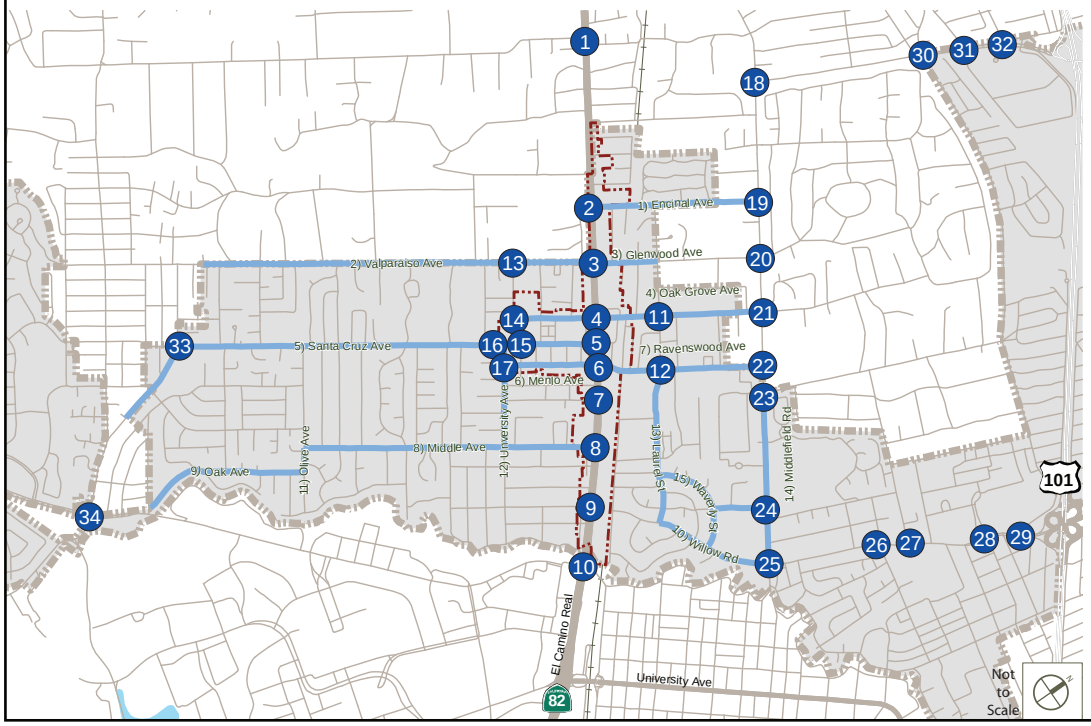
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April 2010
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Cumulative Plus Project
Traffic Control Devices and Intersection Volumes

Figure D-2b





KEY:

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

= Traffic Signal

= Stop Sign

Menlo Park El Camino Real/ Downtown Specific Plan

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SJ09-1089

Cumulative Plus Project
Traffic Control Devices and Intersection Volumes

Figure D-2c

APPENDIX E: TRAFFIC SIGNAL WARRANT ANALYSIS

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Sheet No 1 of 1

Major Street	Santa Cruz Avenue
Minor Street	University Drive
Project	Menlo Park ECRDSP TIA
Scenario	Existing Conditions
Peak Hour	AM

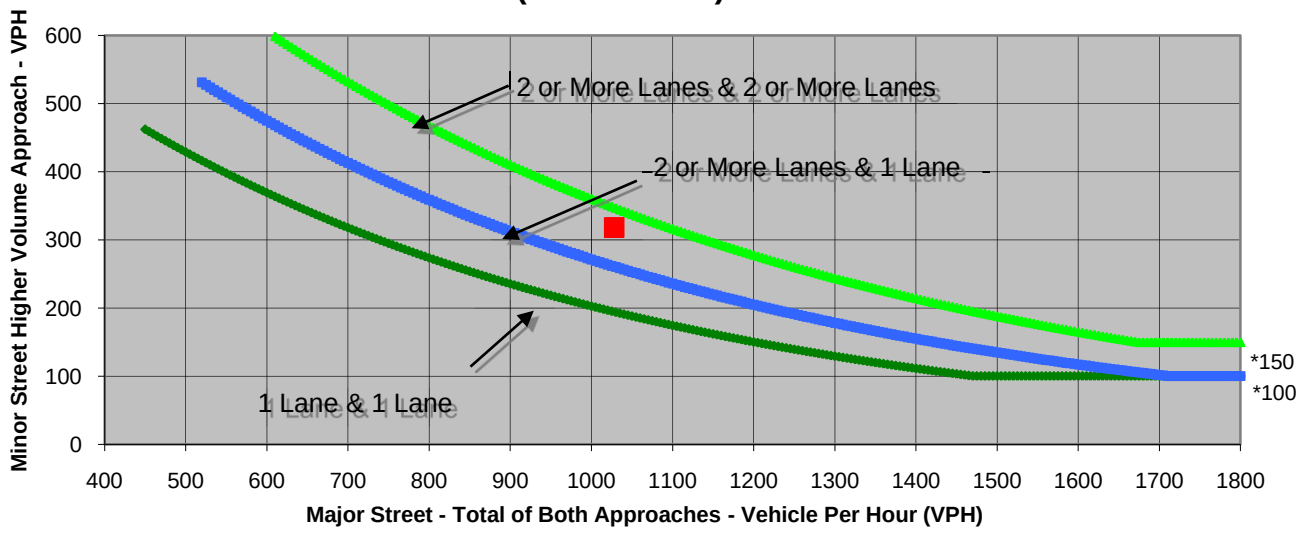
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	257	56	0
Through	0	0	391	356
Right	0	61	0	225
Total	0	318	447	581

Major Street Direction

	North/South
x	East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Santa Cruz Avenue	University Drive	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,028	318	

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

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Sheet No 1 of 1

Major Street	Santa Cruz Avenue
Minor Street	University Drive
Project	Menlo Park ECRDSP TIA
Scenario	Existing Conditions
Peak Hour	PM

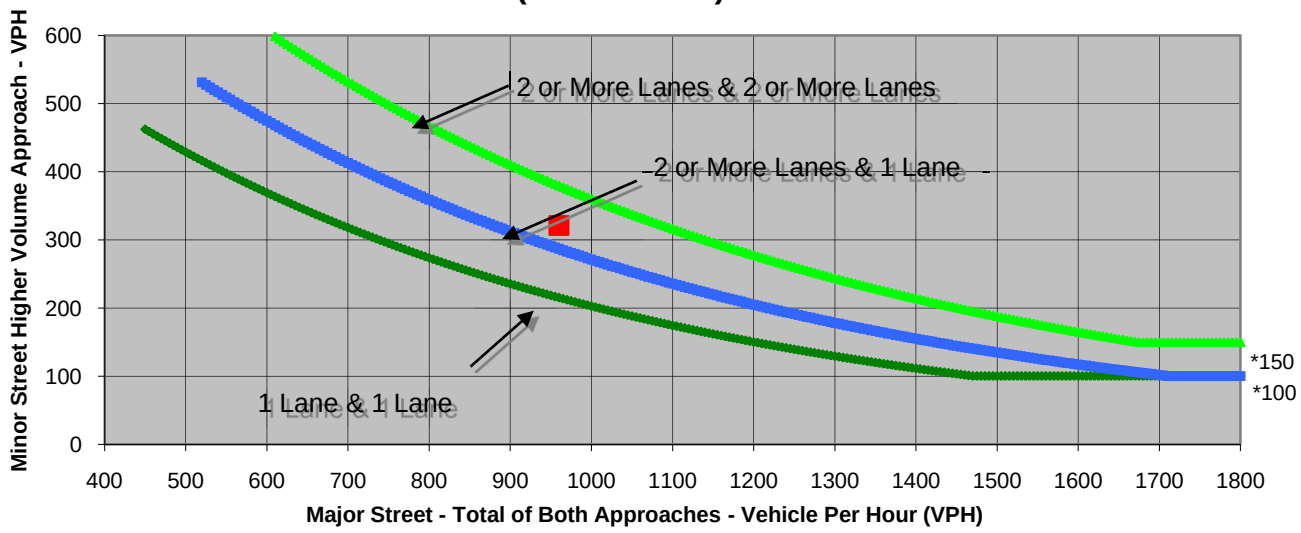
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	196	168	0
Through	0	0	286	355
Right	0	125	0	151
Total	0	321	454	506

Major Street Direction

	North/South
x	East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Santa Cruz Avenue	University Drive	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	960	321	

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

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Sheet No 1 of 1

Major Street	Middlefield Road
Minor Street	Encinal Avenue
Project	Menlo Park ECRDSP TIA
Scenario	Existing Conditions
Peak Hour	AM

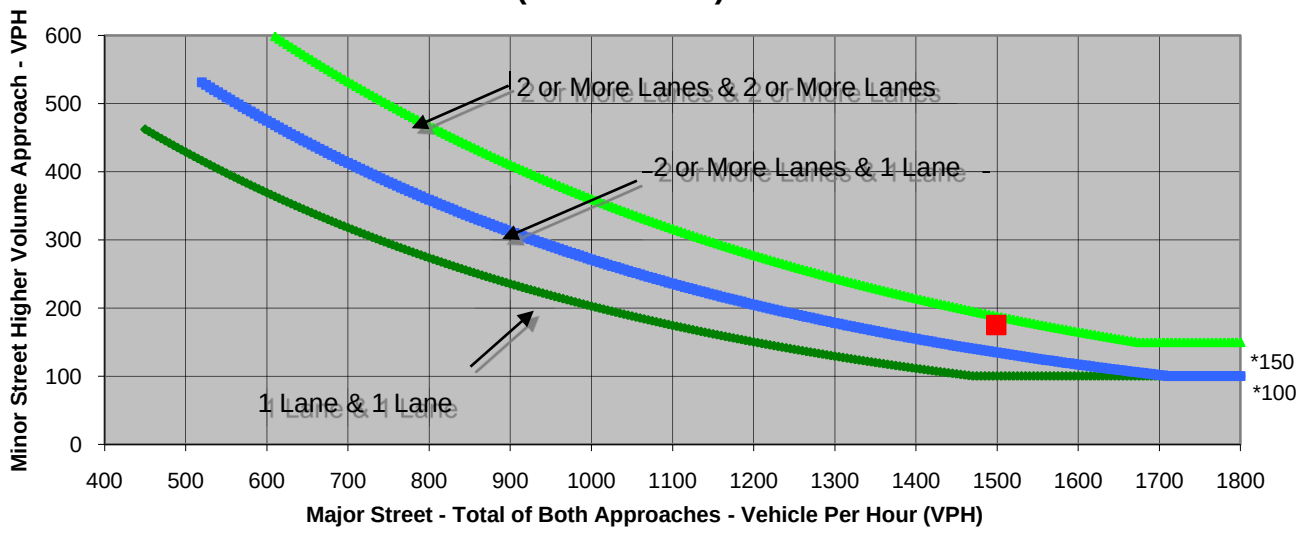
Turn Movement Volumes

	NB	SB	EB	WB
Left	176	0	47	0
Through	458	632	0	0
Right	0	223	128	0
Total	634	865	175	

Major Street Direction

x	North/South
	East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Encinal Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,499	175	

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

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Project Menlo Park ECRDSP TIA
Scenario Existing Conditions
Peak Hour PM

Major Street Middlefield Road
Minor Street Encinal Avenue

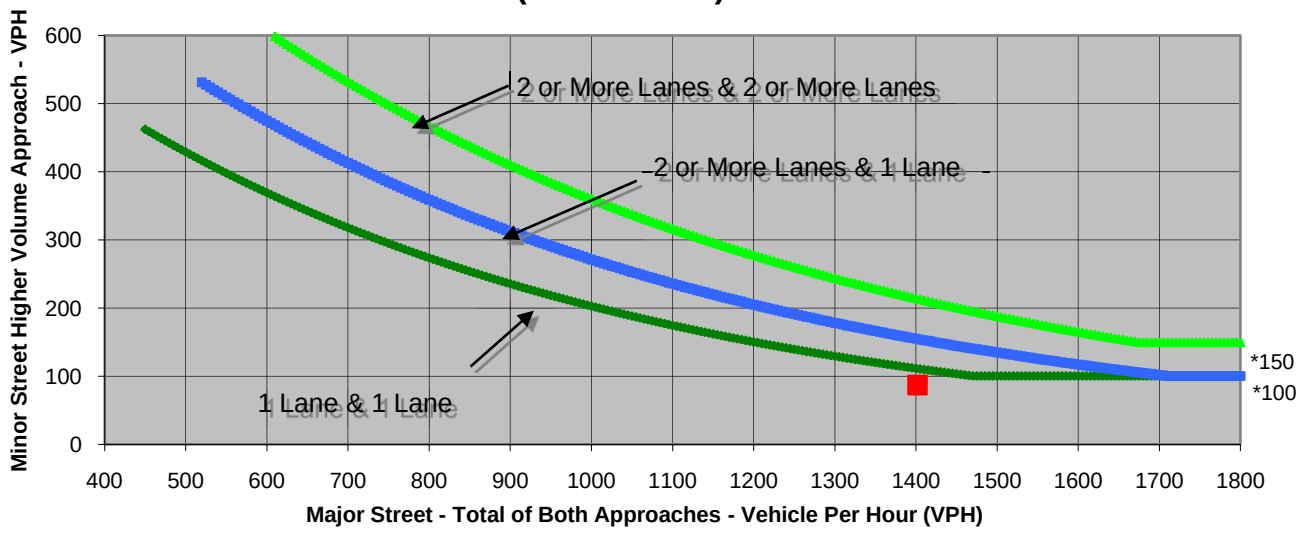
Turn Movement Volumes

	NB	SB	EB	WB
Left	61	0	54	0
Through	675	584	0	0
Right	0	82	33	0
Total	736	666	87	0

Major Street Direction

x North/South
East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Encinal Avenue	
Number of Approach Lanes	1	1	NO
Traffic Volume (VPH) *	1,402	87	

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

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Sheet No 1 of 1

Major Street	Middlefield Road
Minor Street	Encinal Avenue
Project	Menlo Park ECRDSP TIA
Scenario	Cumulative Plus No Project Conditions
Peak Hour	PM

Turn Movement Volumes

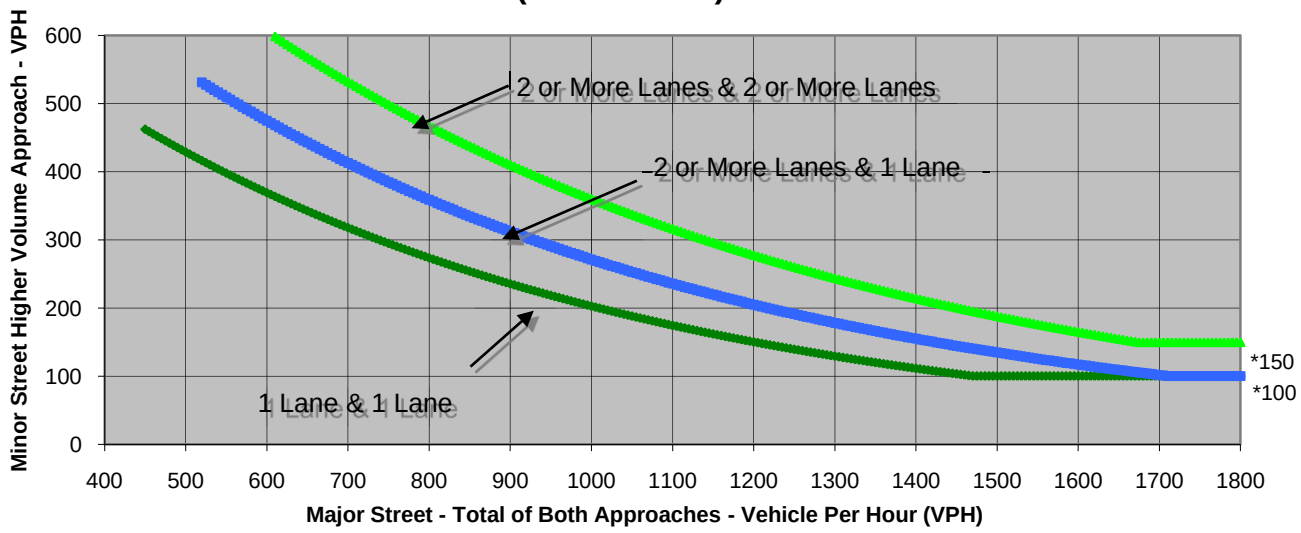
	NB	SB	EB	WB
Left	78		126	
Through	982	1,024		
Right		240	42	
Total	1,060	1,264	168	0

Major Street Direction

x North/South

East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Encinal Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	2,324	168	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Project Menlo Park ECRDSP TIA
Scenario Existing Conditions
Peak Hour AM

Major Street Middlefield Road
Minor Street Glenwood Avenue/ Linden Avenue

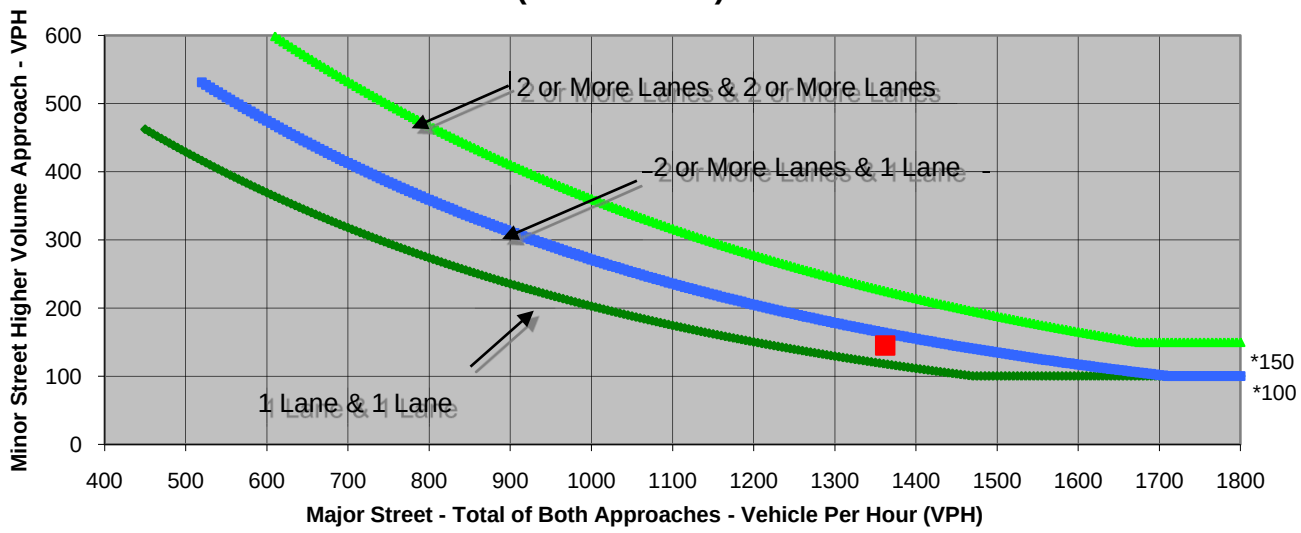
Turn Movement Volumes

	NB	SB	EB	WB
Left	85	21	57	20
Through	521	593	5	9
Right	7	135	83	20
Total	613	749	145	49

Major Street Direction

x North/South
East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Glenwood Avenue/ Linden Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,362	145	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Project Menlo Park ECRDSP TIA
Scenario Existing Conditions
Peak Hour PM

Major Street Middlefield Road
Minor Street Glenwood Avenue/ Linden Avenue

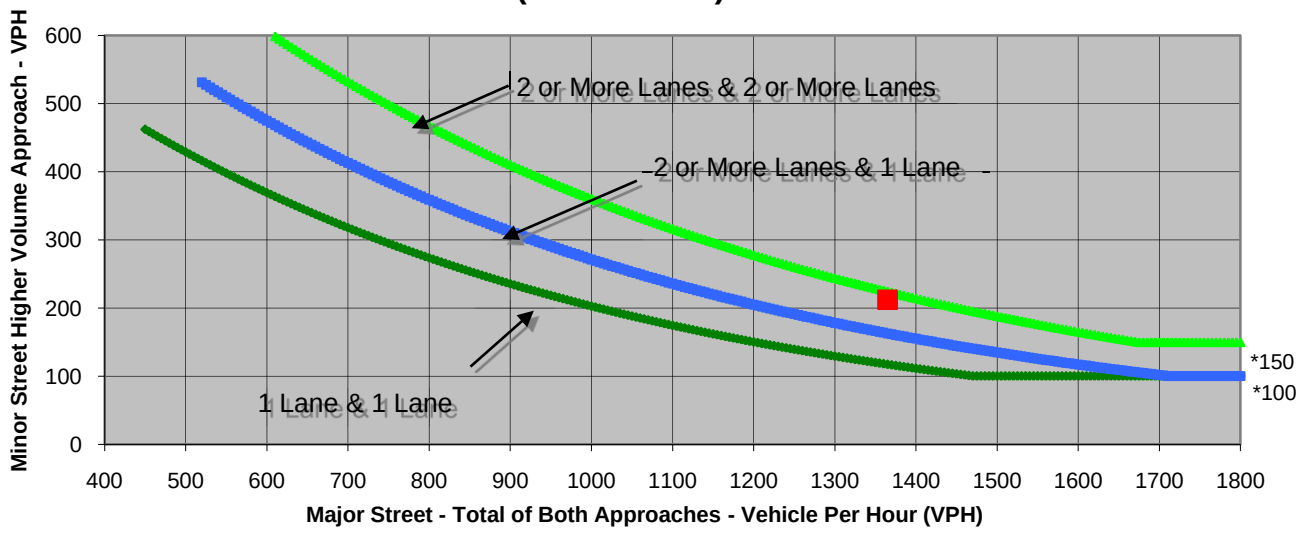
Turn Movement Volumes

	NB	SB	EB	WB
Left	113	46	89	17
Through	520	471	19	3
Right	89	126	105	18
Total	722	643	212	38

Major Street Direction

x North/South
East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Glenwood Avenue/ Linden Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	1,365	212	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Project Menlo Park ECRDSP TIA
Scenario Cumulative Plus No Project Conditions
Peak Hour AM

Major Street Middlefield Road
Minor Street Linfield Drive

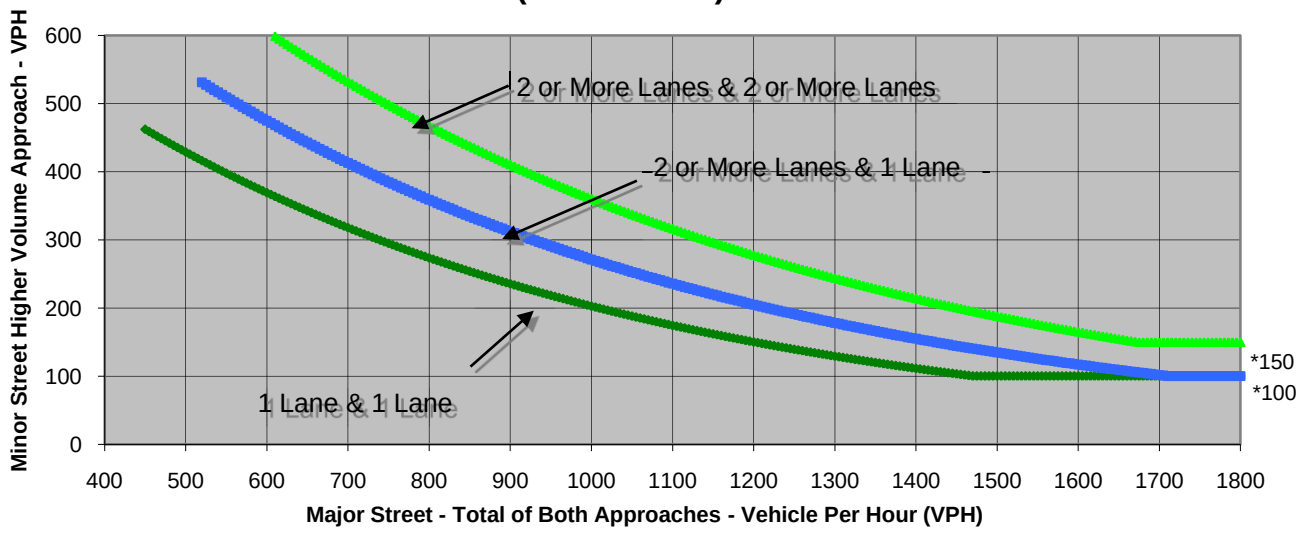
Turn Movement Volumes

	NB	SB	EB	WB
Left	123	0	25	0
Through	1,003	883	0	0
Right	0	37	14	0
Total	1,126	920	39	0

Major Street Direction

x North/South
East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Middlefield Road	Minor Street Linfield Drive	Warrant Met
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	2,046	39	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Project Menlo Park ECRDSP TIA
Scenario Cumulative Plus No Project Conditions
Peak Hour PM

Major Street Middlefield Road
Minor Street Linfield Drive

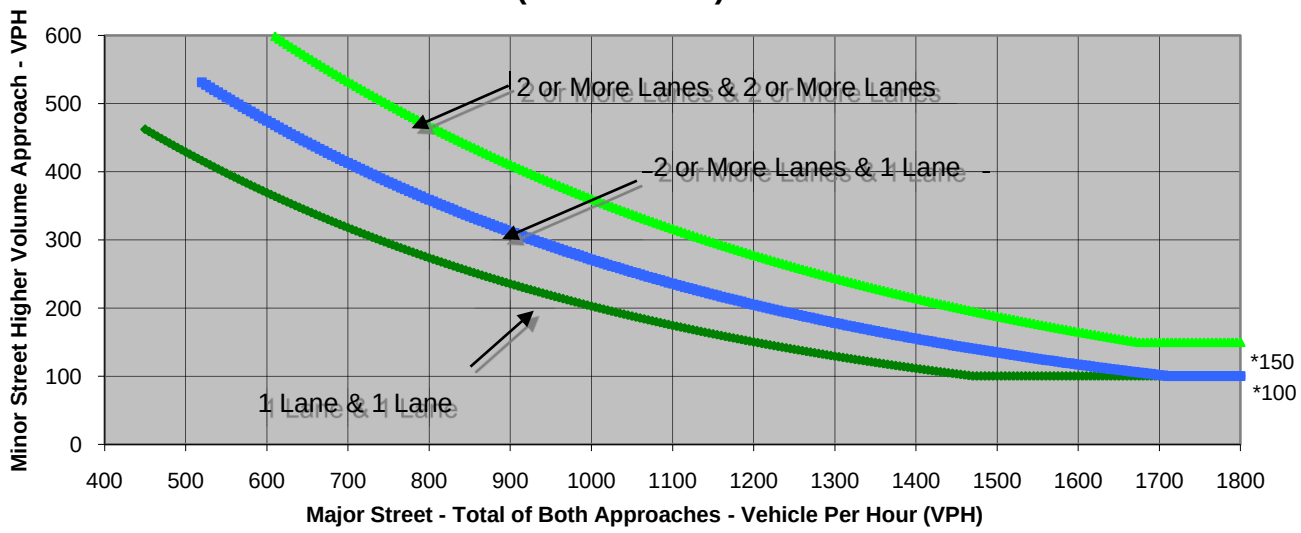
Turn Movement Volumes

	NB	SB	EB	WB
Left	85	0	34	0
Through	993	1,086	0	0
Right	0	32	91	0
Total	1,078	1,118	125	0

Major Street Direction

x North/South
East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street	Minor Street	Warrant Met
	Middlefield Road	Linfield Drive	
Number of Approach Lanes	2	1	YES
Traffic Volume (VPH) *	2,196	125	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Major Street	Santa Cruz Avenue
Minor Street	Orange Avenue/ Avy Avenue

Project	Menlo Park ECRDSP TIA
Scenario	Existing Conditions
Peak Hour	AM

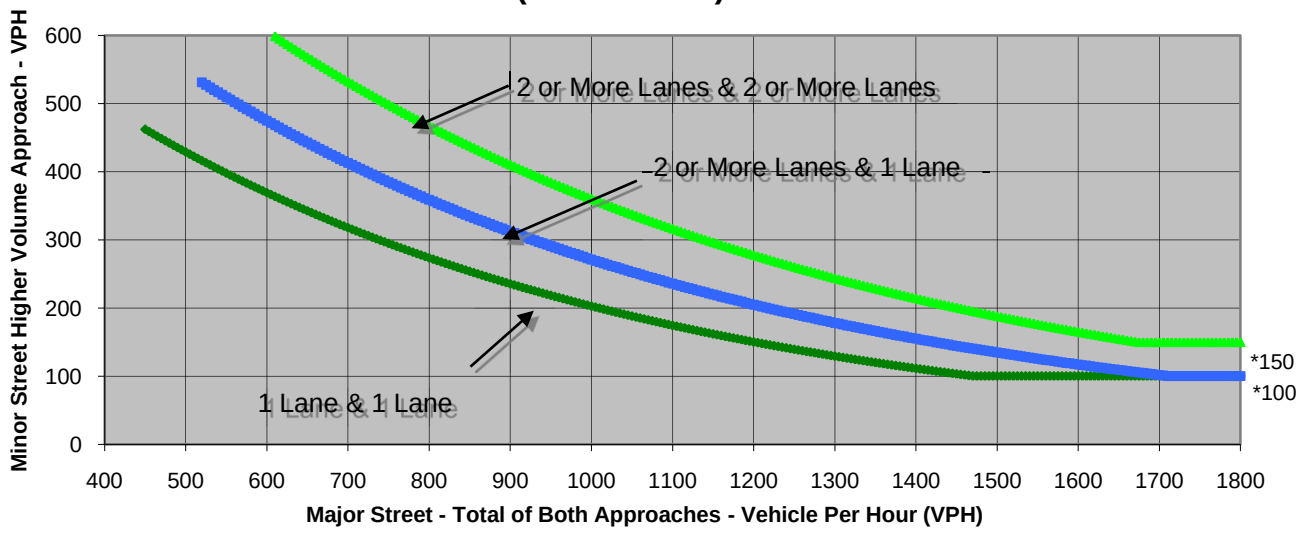
Turn Movement Volumes

	NB	SB	EB	WB
Left	N/A - Meets guidance on page 4C-2 of the California MUTCD			
Through				
Right				
Total	868	137	267	178

Major Street Direction

	North/South
x	East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Santa Cruz Avenue	Orange Avenue/ Avy Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	445	868	

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

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TRANSPORTATION CONSULTANTS

Sheet No 1 of 1

Major Street	Santa Cruz Avenue
Minor Street	Orange Avenue/ Avy Avenue
Project	Menlo Park ECRDSP TIA
Scenario	Existing Conditions
Peak Hour	PM

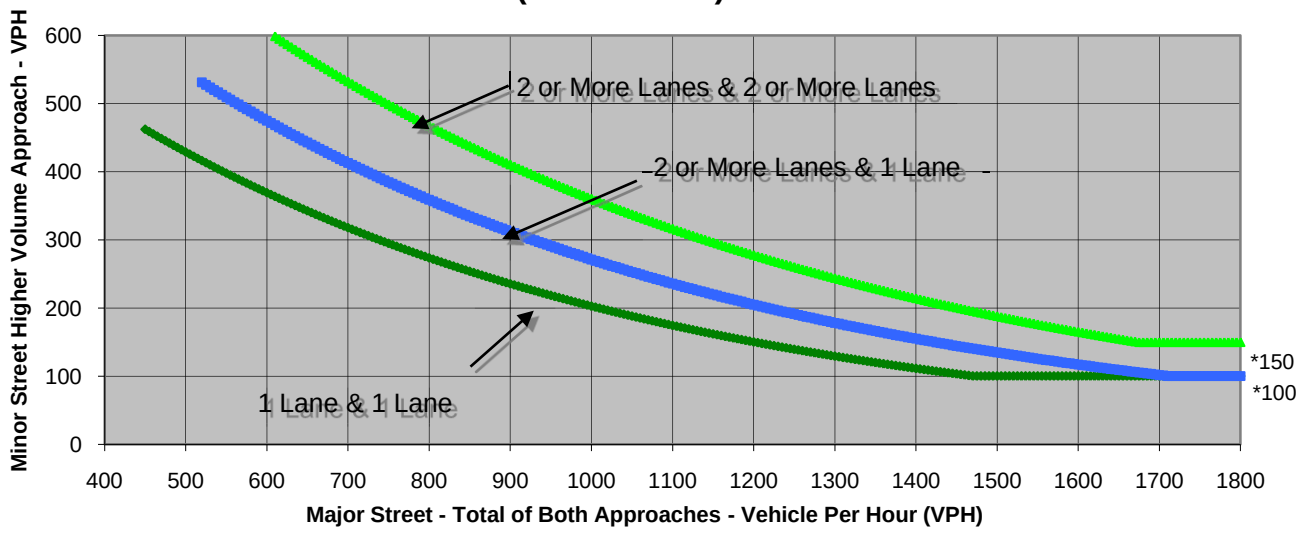
Turn Movement Volumes

	NB	SB	EB	WB
Left	N/A - Meets guidance on page 4C-2 of the California MUTCD			
Through				
Right				
Total	928	94	203	276

Major Street Direction

	North/South
x	East/West

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



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

	Major Street	Minor Street	Warrant Met
	Santa Cruz Avenue	Orange Avenue/ Avy Avenue	
Number of Approach Lanes	1	1	YES
Traffic Volume (VPH) *	479	928	

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

APPENDIX F
Technical Memoranda

FEHR PEERS

MEMORANDUM

Date: March 8, 2012

To: Linda Heineck, City of Menlo Park
Thomas Rogers, City of Menlo Park

Copy: Mark Hoffheimer, Perkins + Will

From: Jane Bierstedt

Subject: ***Task A – El Camino Real Street Sections Revisions***

SJ09-1089

PURPOSE

This memorandum discusses the rationale for recommending bulbouts (or curb extensions) on El Camino Real to improve east-west pedestrian connectivity. It also presents alternative roadway cross-sections for the portion of El Camino Real in downtown Menlo Park (between Valparaiso/Glenwood Avenues on the north and Menlo/Ravenswood Avenues on the south) with removal of the bulbouts, including adding bicycle lanes and providing six travel lanes, per City Council direction. The transportation implications of each of these options are addressed, and the pedestrian and retail environment ramifications, provided by Perkins + Will, have been incorporated.

As with other Specific Plan analyses, in particular Tasks O, P, and Q (Bicycle-Related Comments), this discussion and analysis has occurred at a relatively high level. While specific findings and recommendations are presented, future detailed design would need to occur to establish with certainty the feasibility of various improvements.

KEY FINDINGS

- Bulbouts (or curb extensions) were included in the *Draft Menlo Park El Camino Real/Downtown Specific Plan* for the downtown intersections on El Camino Real because they improve pedestrian safety by slowing down vehicles turning across the crosswalk, create a larger sidewalk area for pedestrians at the intersection corner, and shorten the pedestrian crossing distance and exposure time to moving traffic. In addition, they are consistent with intersection crossing improvements identified in the *Grand Boulevard Multimodal Transportation Corridor Plan*.

- The existing curb-to-curb width on the downtown portion of El Camino Real can accommodate alternative cross-sections, including six travel lanes and four travel lanes with on-street parking and bicycle lanes, with some minor curb and median adjustments.

- Adding bicycle lanes would enhance bicycle travel, especially if the bicycle lanes extend beyond the downtown area, and would not alter the traffic operations of the intersections. Please see the bicycle network memorandum regarding the feasibility of bicycle lanes on other portions of El Camino Real.

- With the six-lane cross-section, approximately 40 parking spaces would be removed. Intersection operations will improve slightly, with overall peak-hour delay decreasing approximately 8 percent compared to a four-lane cross-section (with or without bicycle lanes but no bulbouts).

- The six-lane alternative creates a worse pedestrian environment than the four-lane alternative as it moves traffic closer to the pedestrians, and increases the overall volume of traffic and associated impacts, such as noise.

- The sidewalk width of the four-lane alternative is closer to its preferred width than the six-lane alternative, especially if the sub alternative with no on-street parking but with wider sidewalks is considered.

- The four-lane alternative has reduced retail environment ramifications compared to the six-lane alternative.

- The four-lane alternative with on-street parking, and bicycle lanes is the preferred alternative, subject to consideration in relation to the overall El Camino Real bicycle route/lane analysis and future detailed design, in order to establish its physical feasibility.

RECOMMENDATIONS FOR SPECIFIC PLAN REVISIONS

It is recommended that the four-lane alternative with on-street parking and bicycle lanes be the preferred alternative. The six-lane alternative will be addressed in the revised Specific Plan text. It is recommended that the curb extensions and the corresponding Specific Plan language be retained. However, the Specific Plan language will be modified per City Council direction to delete references to the curb extensions/bulbouts within this central El Camino Real section (bulbouts in other sections of El Camino Real could be implemented if they do not conflict with 6-lane travel sections or bicycle lanes). Figure D17 should be modified so the existing curb-to-curb width and dimensions match the attached figure. Figure D18 should be modified to reflect the cross-section with four lanes, on-street parking, and bicycle lanes. Figure D20 should be modified to be consistent with the revised Figure D18.

METHODOLOGY

The existing curb-to-curb width was determined via Google Maps and verified during a field visit. The alternative cross-sections were developed using engineering standards for travel lane widths and bicycle facilities. Intersection level of service calculations were conducted to evaluate the intersection operational improvements with the six-lane alternative.

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DISCUSSION OF FINDINGS

Rationale for Bulbouts

There are numerous treatments that can be implemented to enhance pedestrian crossings. A table summarizing several of them plus a recent publication from America Walks, "Signalized Intersection Enhancements that Benefit Pedestrians" are attached to the memorandum with the subject *Task N – East-West Connectivity* and dated February 10, 2012. One option to enhance pedestrian access at signalized crossings is curb extensions. This option works well at locations with a high volume of traffic and on-street parking because they can be installed without reducing the number of travel lanes. Curb extensions calm or slow down vehicles turning across the crosswalk, thus improving pedestrian safety. They also create a larger sidewalk area for pedestrians at the intersection corner. Of primary importance for El Camino Real is that curb extensions shorten the pedestrian crossing distance and exposure time to moving traffic. Curb extensions were included in the Draft Specific Plan because of their numerous benefits; plus they are consistent with intersection crossing improvements identified in the *Grand Boulevard Multimodal Transportation Corridor Plan*. It should be noted that full implementation of the identified curb extensions would require removal of selected right-turn lanes on El Camino Real at the intersections (partial implementation of curb extensions on only the "receiving" end of an intersection would not necessary require any lane removal).

Existing Cross-Section for El Camino Real in Downtown Menlo Park

El Camino Real in downtown Menlo Park has two travel lanes in each direction and a median with left-turn lanes. The areas near the curb are used for on-street parking, bus stops, and right-turn lanes at the intersections. The existing cross-section with a (generalized) curb-to-curb width of 84 feet is shown on an attached figure. (The curb-to-curb width, median width, and lane widths vary by a few feet throughout the downtown area.)

Existing Pedestrian Environment

The existing pedestrian environment in the downtown area comprises 7- to 8-foot wide sidewalks with adjacent on-street parking. The preferred sidewalk widths are 15 feet with adjacent on-street parking or bicycle lanes and 18 feet with an adjacent traffic lane.

Existing Parcel Configuration

There are numerous small parcels per block in the downtown area with the exception of Menlo Center (1010-1090 El Camino Real). The parcel widths vary from 25 to 160 feet. The parcel depths vary from 75 to 140 feet, with typical depths of 75 or 100 feet. With the exception of the ECR NW zoning district, service is provided both from El Camino Real and from the rear streets or alley ways.

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ALTERNATIVE CROSS-SECTIONS FOR EL CAMINO REAL IN DOWNTOWN MENLO PARK

Three alternative cross-sections are addressed:

1. Six travel lanes (Option 1)
    a. Six travel lanes at all times (no on-street parking and no bicycle lanes)
    b. Six travel lanes with two lanes converted to on-street parking during off-peak hours
2. Four travel lanes with on-street parking and bicycle lanes (Option 2)
3. Four travel lanes with bicycle lanes (no parking) (Option 3)

There has been some discussion of another option with six travel lanes with the two outside travel lanes converted to bicycle lanes during off-peak hours. This option was not considered further because of safety concerns with temporary and discontinuous bicycle lanes and due to traffic operational considerations. To create off-peak bicycle lanes, special non-standard striping and signage would need to be added to communicate to vehicle drivers when to stay out of the outside lanes. El Camino Real has six travel lanes north and south of the downtown area. It is a regional route and carries traffic from areas outside of Menlo Park. Therefore some of the drivers may not be familiar with the unique circumstances in Menlo Park and could continue to drive in the outside lane thus negating the bicycle/vehicle separation provided by bicycle lanes. With the driver confusion/distraction caused by the unusual treatment of this section of El Camino this option was deleted from further consideration.

Six Lanes (Option 1)

A cross-section with six travel lanes is shown on an attached figure. This option would add a vehicular travel lane in each direction by converting the outside lanes used for parking and right-turn lanes to travel lanes. Approximately 40 parking spaces would be removed. Minor modifications to the median and outside curbs would also be required as the cross-section on El Camino Real is not consistent through the downtown area. The existing right-turn lanes at the intersections would become shared through/right-turn lanes. The per-lane through volumes are generally heavier than the right-turn volumes so the result would be an increase in the north-south vehicle carrying capacity of the four downtown intersections.

Intersection Operations

Changes in intersection operations were evaluated with intersection level of service calculations using the Traffix software program. The results for both a four-lane cross-section (with or without bicycle lanes but without bulbouts) are presented in Table 1. The volumes used in the calculations represent Cumulative plus Project conditions from the Specific Plan Draft Environmental Impact Report. They do not include induced demand or volume increases caused by traffic diverting from parallel roadways or other time periods in response to the roadway capacity increase. Intersection delays with the six-lane option are lower than with the four-lane alternative. Peak-hour delay is

reduced by 0 to 20 percent at each intersection for an average overall reduction of 8 percent. The improvement is not greater because the added through lanes are caused by converting existing right-turn lanes and not by adding new lanes. Plus the intersection operations are based on the average delay for all approaching vehicles, including those on the side streets where no lanes are being added. With induced demand, the delay reduction would be less and operations would likely mimic the four-lane alternative.

TABLE 1:
PROJECTED DOWNTOWN INTERSECTION OPERATIONS
WITH 4 AND 6 TRAVEL LANES ON EL CAMINO REAL

Intersection	Peak Hour	4 Lanes		6 Lanes	
		Delay	LOS	Delay	LOS
El Camino Real and Valparaiso Ave./Glenwood Ave.	AM	46.9	D	46.7	D
	PM	56.8	E	49.1	D
El Camino Real and Oak Grove Avenue	AM	42.3	D	37.8	D
	PM	44.7	D	39.6	D
El Camino Real and Santa Cruz Avenue	AM	13.0	B	12.9	B
	PM	30.0	C	28.9	C
El Camino Real and Menlo Ave./Ravenswood Ave.	AM	87.8	F	70.4	E
	PM	157.3	F	157.2	F

Delay – Weighted average control delay per vehicle in seconds
LOS – Level of service
Source: Fehr & Peers

Pedestrian Environment

This option worsens the pedestrian environment as it places fast moving traffic near pedestrians. A remedy is to increase the sidewalk width to 18 feet by increasing the building setbacks when parcels redevelop. With numerous small parcels, increased setbacks with an enhanced pedestrian environment would be achieved incrementally over time, assuming that an entire block is not redeveloped at the same time. Therefore implementation would be a long-term prospect. With incremental improvements, the pedestrian environment would be uneven and potentially uninviting as the main pedestrian through zone would remain closest to the street.

Retail Environment

This option also worsens the retail environment as it removes on-street parking, which is a customer convenience particularly during time periods when El Camino Real traffic volumes are lower and parking maneuvers are easier to make. Plus the worsened pedestrian environment may reduce the amount of foot traffic. With the incremental improvements and uneven building setbacks, the retail environment could suffer as there would be a lack of a consistent street/retail

wall. The resulting inconsistent sidewalk conditions could create an unappealing shopping experience for those walking along the street and hurt retail sales. However, while resulting in an inconsistent frontage, piecemeal development could allow for more immediate improvements to the sidewalk, while block-wide improvements may take more time to plan, fund, and construct. With increased setbacks, redevelopment is still possible on the existing parcels. With a setback of 10 feet, the most constrained parcel at 25 feet wide and 75 feet deep would have a buildable area of 25 feet by 65 feet or 1,625 square feet.

Six Lanes with Off-Peak Parking (Option 1 – layout similar)

Another option is to allow off-peak on-street parking with the six-lane option. (El Camino would function as a six-lane arterial during peak periods and as a four-lane arterial with parking during off-peak periods.) This option would have the same peak hour traffic benefits/intersection operations as the six-lane alternative as it would have the added travel lanes when traffic volumes are high enough to warrant them. When the lanes are not needed for traffic–carrying purposes they would be used for on-street parking. One significant drawback of this option is that it would require the City of Menlo Park to enforce the peak period parking restrictions by towing vehicles (either by operating tow vehicles or by managing the process).

Pedestrian Environment

The existing environment would be retained during the off-peak hours. However, the pedestrian environment would be worsened during the peak hours as moving traffic is placed near the pedestrians without the buffer of the parked vehicles. Peak hours for vehicles can coincide when pedestrians themselves are active, so this negative effect could be magnified. The pedestrian environment could be improved by widening the sidewalk through building setback increases as discussed for the six-lane alternative.

Retail Environment

This option also worsens the retail environment as it removes on-street parking during peak periods, which is often a time that parking itself is in demand (i.e., quick shopping trips are often conducted on the way to/from work, during peak travel hours). Plus the worsened pedestrian environment may reduce the amount of foot traffic. The incremental improvements and uneven building setbacks would have the same ramifications on the retail environment as the six-lane alternative.

Four Lanes with Parking and Bicycle Lanes (Option 2)

The existing curb-to-curb width can accommodate striped bicycle lanes adjacent to the on-street parking with a few modifications, as illustrated on the attached figure. The existing outside 13-foot lane dimension would accommodate a 5-foot bicycle lane adjacent to an 8-foot parking lane. This arrangement is consistent with Grand Boulevard design guidance. Although an 11-foot travel dimension would require an exemption from Caltrans design standards, Caltrans staff has been amenable to 11-foot lanes in similar situations. This alternative does not change the number of vehicular travel lanes. Therefore it will not affect traffic operations compared to the existing cross-

section. Curb extensions could be retained in this layout, as Caltrans and other requirements already limit conflicts with bicycle lanes.

Although the layout of 5-foot bicycle lanes to the left of parallel parking would be in compliance with relevant standards and guidelines, it is worth noting that such an arrangement can create the risk of "dooring," which is when someone in a parked car opens a door into the bicycle lane, potentially injuring a bicyclist. It is also worth noting that Option 2 does not necessarily clearly work in the northbound block between Ravenswood Avenue and Santa Cruz Avenue, where parking is not already present and where bus access/loading movements currently occur. In addition, this block and the following northbound block are identified in the Draft EIR as a possible location for an additional northbound through lane to mitigate intersection impacts, which would likely preclude bicycle lanes. The city would need to consider how to balance the needs of all modes in this section and determine whether a bicycle lane or vehicle travel lane take precedence.

Intersection Operations

Projected intersection operations for this four-lane alternative (without bulbouts) are expressed with level of service calculation results and are presented in Table 1. The results are similar to the six-lane alternative, with the exception of Valparaiso Avenue during the PM peak hour, which could go from LOS D to E, and Ravenswood Avenue during the AM peak hour, which could go from LOS E to F.

Pedestrian Environment

This option retains the existing pedestrian environment as it retains the existing sidewalk width and on-street parking. The existing sidewalk width of 7 to 8 feet is narrower than the preferred sidewalk width of 15 feet. The preferred sidewalk can be achieved by increasing the building setbacks when parcels redevelop. With numerous small parcels, increased setbacks with an enhanced pedestrian environment would be achieved incrementally over time, assuming that an entire block is not redeveloped at the same time. Therefore implementation would be a long-term prospect. With incremental improvements, the pedestrian environment would be uneven and potentially uninviting as the main pedestrian through zone would remain closest to the street. However, as noted earlier, incremental parcel-specific improvements may allow some benefits to be realized sooner than larger-scale public improvement projects.

Retail Environment

This option maintains the existing retail environment. However, there would be a desire to widen the sidewalks through increased building setbacks which would create similar challenges (but to a lesser degree) than the six-lane alternative; there would be a lack of a consistent street/retail wall with the incremental improvements and uneven building setbacks until the preferred sidewalk width is achieved.

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Four Lanes with Bicycle Lanes (No Parking) - (Option 3)

Another alternative was developed with four travel lanes and bicycle lanes (no on-street parking) as illustrated on the attached figure. Buffered bicycle lanes (bicycle lanes separated from the adjacent vehicle travel lanes with a striped area of 2 to 3 feet in width) could be provided realizing greater separation between the bicyclists and traffic. Bulbouts could be retained with this option if the existing curb line is retained. Alternatively, the sidewalks could be widened approximately 5 feet with a sub alternative of this option. The potential risk of "dooring" would be eliminated in this option, improving the bicycle environment.

Intersection Operations

Intersection operations (without bulbouts) would be the same as Option 2.

Pedestrian Environment

This option retains the existing pedestrian environment as with Option 2, or allows for improvement with the sub alternative by extending the entire curb lane approximately 5' toward the street creating a sidewalk width of 12 to 13 feet. The preferred sidewalk can be achieved by increasing the building setbacks when parcels redevelop with similar ramifications as Option 2.

Retail Environment

This option also worsens the retail environment as it removes on-street parking, which is a customer convenience particularly during time periods when El Camino Real traffic volumes are lower and parking maneuvers are easier to make. However, the sub-alternative improvement of widening the entire sidewalk would improve the pedestrian environment such that the retail implications of the parking removal may be offset. If the sidewalk widening sub-alternative is not pursued, there would be a desire to widen the sidewalks through increased building setbacks which would create similar challenges (but to a lesser degree) than the six-lane alternative; there would be a lack of a consistent street/retail wall with the incremental improvements and uneven building setbacks until the preferred sidewalk width is achieved.

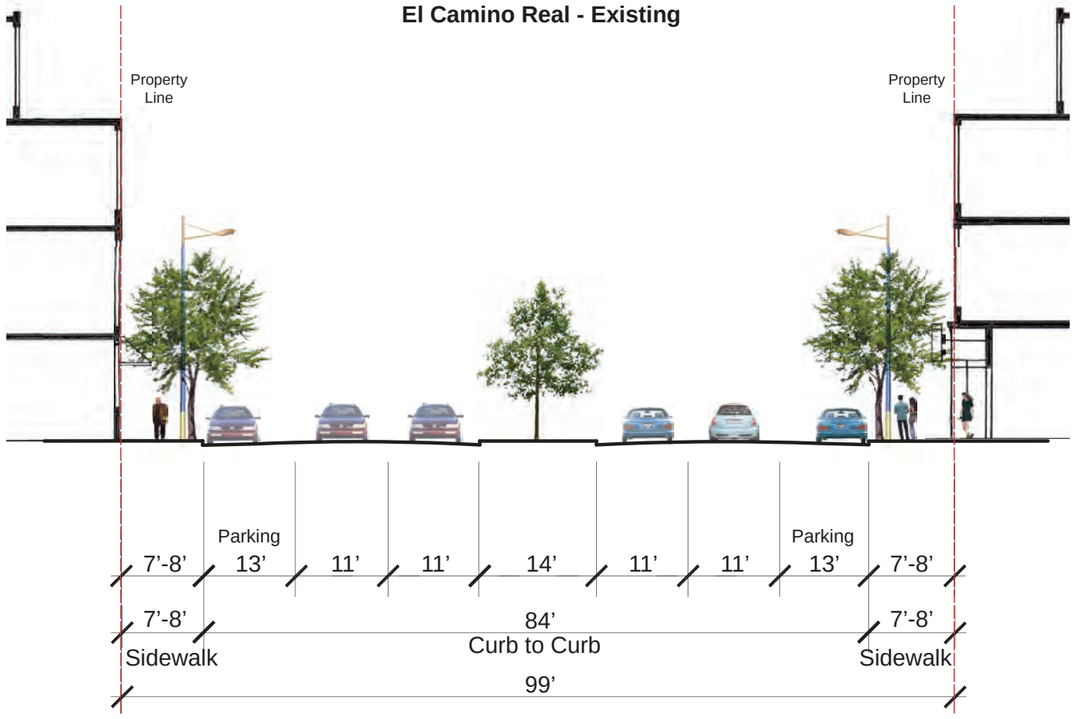
Conclusions

Option 2, the four-lane alternative with on-street parking and bicycle lanes, is the preferred alternative, subject to detailed analysis and design, and consideration of implications for the overall El Camino Real corridor. Its improved pedestrian environment, retail environment, and bicycle mobility outweigh the modest traffic operations improvement of the six-lane alternative. Curb extensions can be accommodated with the four-lane alternative. There would be modest increases in intersection delay as reported in the Draft EIR.

REFERENCES

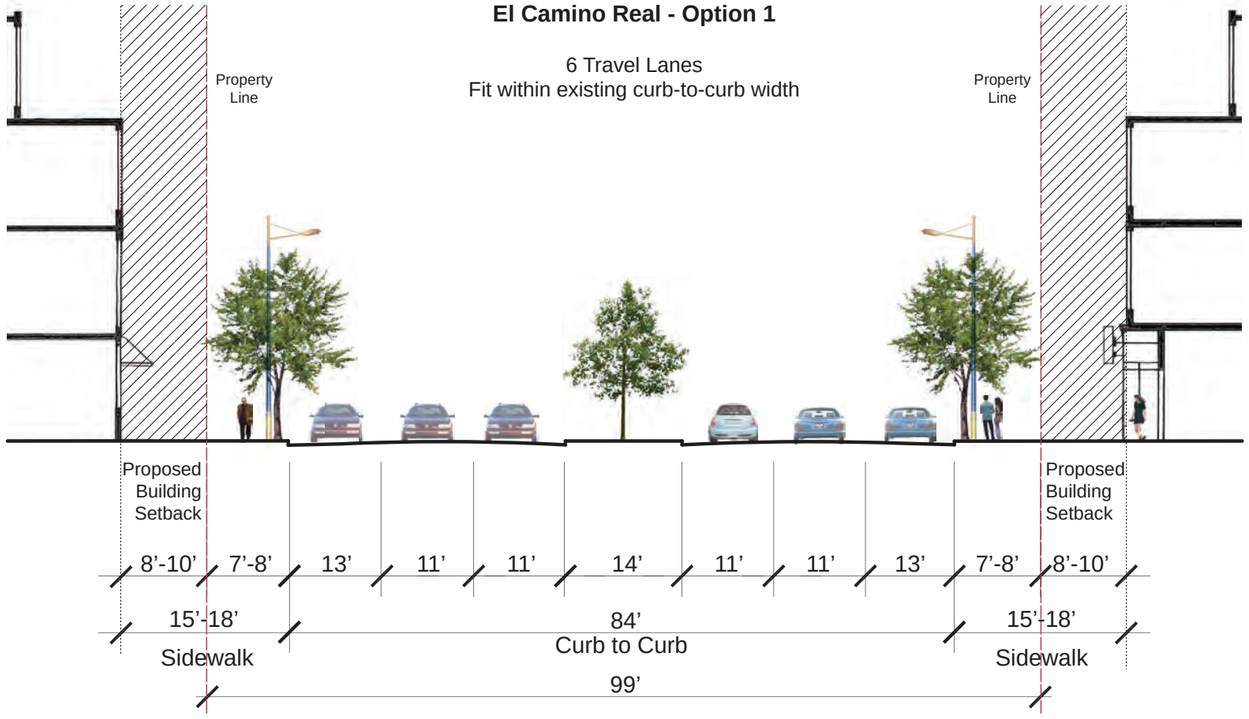
Final Grand Boulevard Multimodal Transportation Corridor Study (October 2010).
Google Maps

El Camino Real - Existing



El Camino Real - Option 1

6 Travel Lanes
Fit within existing curb-to-curb width



Street Section Study

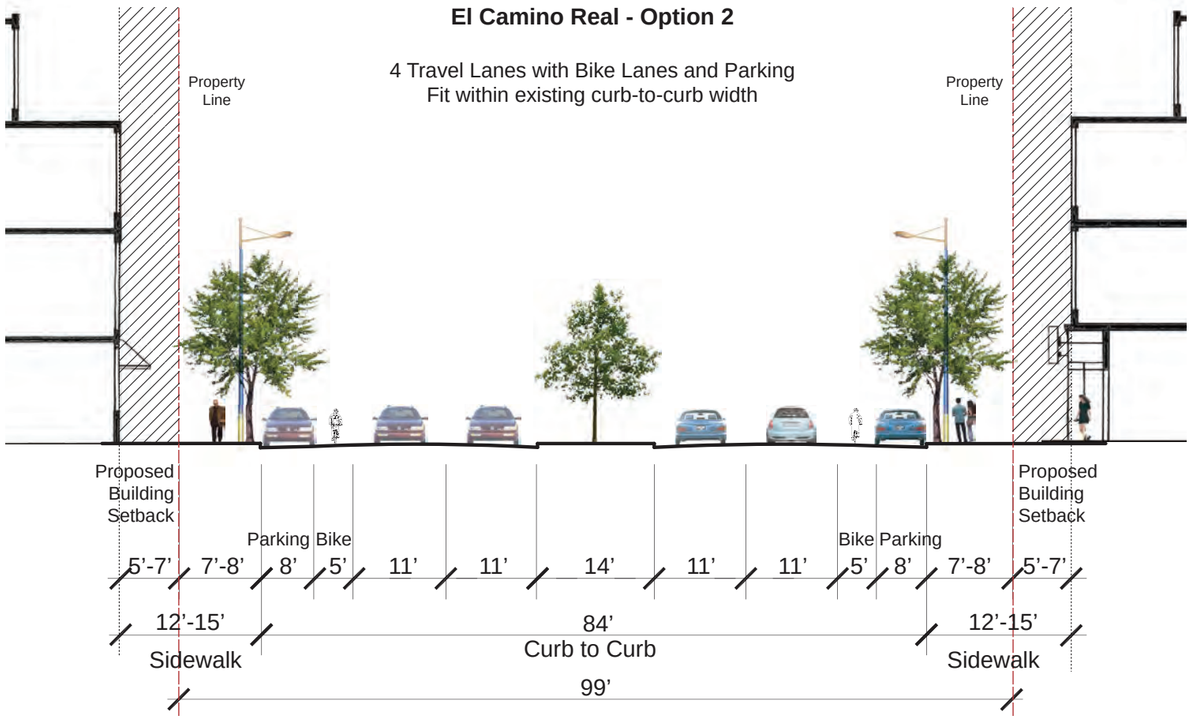
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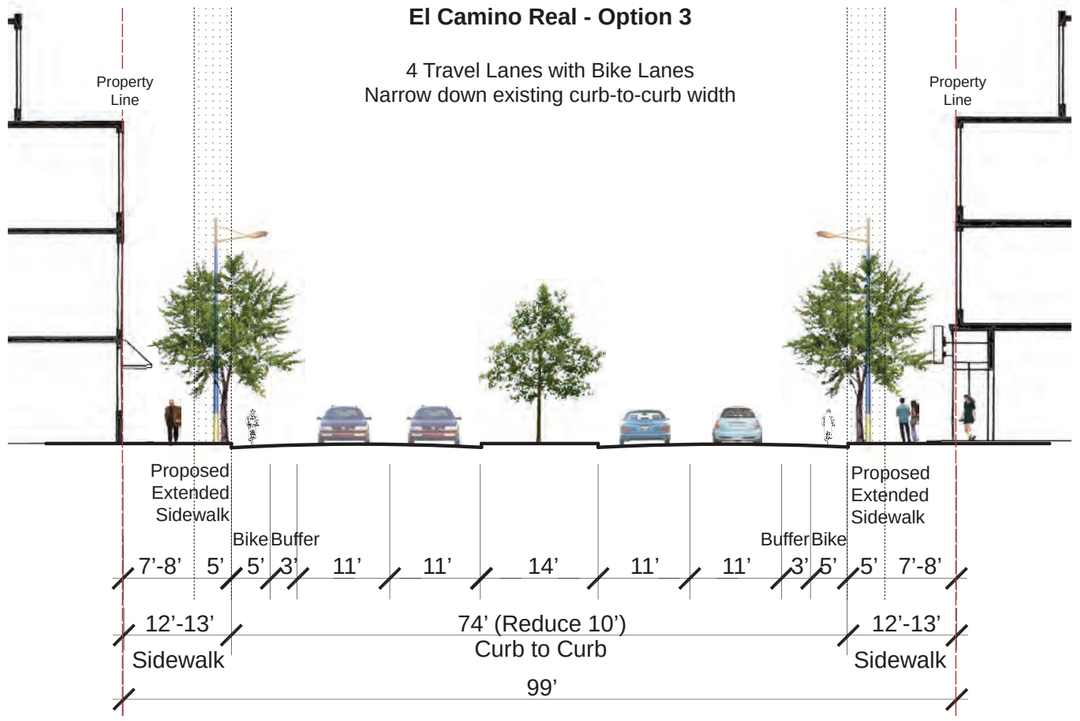
El Camino Real - Option 2

4 Travel Lanes with Bike Lanes and Parking
Fit within existing curb-to-curb width



El Camino Real - Option 3

4 Travel Lanes with Bike Lanes
Narrow down existing curb-to-curb width



Street Section Study

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City of Menlo Park

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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Geeti Silwal
Date:	15 March 2012
Subject:	Task B & C. Station Area and ECR SE Façade Height, Building Height and Bulk Control Revisions and Task E. Building Height Revisions (ECR NE and ECR NE-R)

Purpose

To evaluate façade height, building height, and building bulk and massing controls in the Station Area (SA E and SA W) and the El Camino Real –Southeast (ECR SE) Zoning Districts in order to break down the scale of buildings and increase architectural interest while considering building viability and feasibility. To establish an appropriate maximum building height for the ECR NE and ECR NE-R zoning districts, associated with provision of Public Benefit. Although these tasks primarily relate to specific zoning districts, some associated concepts affect development standards and design guidelines more broadly, and apply to other Specific Plan areas.

Key Findings/Recommendations for Specific Plan Revisions

1. Set the location of building envelope requirements at the minimum setback line versus at the façade plane.
2. Reduce the façade height requirement from 45’ maximum to 38’ maximum in the SA E, SA W, and ECR SE zoning districts
3. Reduce the building height in SA W from 60’ to 48’
4. Increase the maximum height in the ECR NE and ECR NE-R zoning districts from 38’ to 48’, if Public Benefit is provided
5. Bulk Controls: Above the maximum façade height of 38’, the maximum allowable façade length is limited to 175’. The bulk requirement of a 200’ diagonal over a 45’ height limit has been removed

6. Enhance design guidelines to recommend a hierarchy of façade modulation and roof line breaks to reduce apparent building massing and increase architectural interest

    - Minor Building Façade Modulation: Building Facades facing public rights-of-way or public open spaces may not exceed 50 feet in length without a minor facade modulation. At every 50' façade length, a minor facade modulation is either a 2' deep x 5' wide recess or a 2' setback of building plane from the primary building façade.
    - Major Building Façade and Height Modulation: Building Facades facing public rights-of-way or public open spaces may not exceed 100 feet in length without a major facade and height modulation. At every 100' façade length, a major facade modulation is either a 6' deep x 20' wide recess or a 6' setback of building plane from the primary building façade for the entire height of the building; accompanied with a height modulation of a minimum height of 4'. In addition to the major façade and height modulation a major change in fenestration pattern, materials or color is required.

7. Establish the following to enhance building interest, which would be more broadly applicable throughout the Plan Area:

    - Permit habitable projections within the setback and, where feasible, right-of-way, subject to length limits. Such projections would continue to be considered Gross Floor Area (GFA) and as such would continue to be counted toward a site's FAR.
    - Permit ground-level elements, such as walls, stairs, and elevated private space within the setback area provided the minimum sidewalk dimension required is achieved.
    - Set detailed standards for ground-floor treatments, addressing topics such as rhythm of bays, floor-to-floor heights, recessed windows and doors, and related items.

Methodology

Starting with the setback and bulk controls in the Draft Specific Plan, Perkins+Will systematically reviewed and refined the controls for prototypical parcels in the SA and ECR SE zoning districts, to achieve finer grain, by investigating the following:

- Maximum height
- Façade height
- Setbacks
- Façade Modulation
- Projections
- Ground Floor Articulation

Particular attention was paid to portions of buildings above the façade height of 38 feet to ensure that stepbacks and bulk controls allowed for viable floor plates. Building modulation was based on the study of

typical lot sizes in the Study Area and buildings that community workshop attendees responded positively to. For this effort, a variety of mixed-use projects were considered.

Perkins+Will conducted a design analysis to test fit the maximum office Public Benefit Bonus FAR of 0.75 (½ of 1.50) and Density of 50 du/ac and to confirm/revise the FAR, Density and maximum building height specified for zoning district ECR NE and ECR NE-R in the Specific Plan. This effort was done in conjunction with Task G – Development Intensity Accommodation Study.

Discussion of Findings

Attachments on the following pages outline findings and proposed revisions. Limited discussion of the key findings follows.

45 Degree Building Profile

The study for placement of building envelope determined that the 45 degree building profile requirements set at the minimum setback line versus at the façade plane allow for greater flexibility and variation in height/façade. **(See Attachment B/C.i).** For example, buildings at the minimum setback would have their upper stories stepped back. Alternatively, buildings setback far enough from the street could have minimal or no upper story stepbacks, as long as the building fit within the building envelope. Such an approach allows for variation of buildings along the street, and would also address a comment from Stanford University regarding façade height flexibility.

Building Height Reduction and Increases

Perkins+Will studied a variety of mixed-use building sections to determine ideal façade and overall heights. The following assumptions were made for floor to ceiling heights:

- Ground floor retail = 15’
- Residential = 10’
- High ceiling residential = 18’
- Office = 15’
- Ground floor garage = 10’
- Upper floor garages = 9’

An appropriate façade height that allows optimum flexibility to accommodate different mixed-use buildings was determined, with the overall intent of balancing the preferences expressed in community workshops while still achieving feasible and standard building forms. **(See Attachment B/C.ii).**

Based on the analysis of typical use arrangements, Perkins+Will identified four different building profiles for the Study Area:

- Building Profile 1: Façade Height – 30’; Building Height – 38’
- Building Profile 2: Façade Height – 38’; Building Height – 38’

- Building Profile 3: Façade Height – 38'; Building Height – 48'
- Building Profile 4: Façade Height – 38'; Building Height – 60'

The City Council provided direction regarding maximum building heights in three zoning districts. In particular, the Council directed that staff and the consultant reduce the SA W district building height (formerly proposed at 60') by one full story and increase the ECR NE and ECR NE-R building height (formerly proposed at 38') district by one full story. The latter increase would be structured as a Public Benefit Bonus. As a result of the building profile analysis above, all three districts are proposed to have maximums in line with Building Profile 3, which has a façade height of 38' and a building height of 48'. The revised height limits for all districts are as marked up in **Attachment B/C.iii.**

As part of the ECR NE and ECR NE-R height analysis, these districts' density/intensity standards were reviewed. The Draft Specific Plan's Density for ECR NE-R, with the 38' height limit, can accommodate residential projects using the Base density but it cannot accommodate residential projects using the Public Benefit Bonus density. To achieve the Public Benefit Bonus density, a typical residential project would increase height to avail the Bonus Height limit of 48'. In this case, public benefit can be inferred by increasing the height limit.

The Draft Specific Plan's FAR for ECR-NE and ECR NE-R, with the 38' height limit, can accommodate office use projects using either the Base or Public Benefit Bonus FAR, particularly when only ½ of the FAR is allowable for office development. In this case, no public benefit can be inferred by increasing the height limit.

Hence the proposed Public Benefit Bonus height increase would most likely be proposed as part of a residential project also requesting the Public Benefit Bonus density standard, and would be less likely for commercial projects or Base residential projects. However, individual proposals may differ.

Bulk Guidelines

Perkins+Will studied in-depth the massing, form and bulk guidelines for two building profiles:

- Building Profile 2, a low scale building with no stepback requirements
- Building Profile 4, a taller building with stepback requirements mandated by the 45 degree profile for façades facing streets;

The studies helped confirm and/or refine the design guidelines to increase architectural interest **(See Attachment B/C.iv)**. Three-dimensional studies of Building Profile 2 and Building Profile 4 analyzed the building height, setbacks, façade modulation, façade projections and ground floor articulation of commercial and residential buildings. The studies focused on the pedestrian experience of what the Plan Area is planned to be. Street views at eye level from the sidewalk along the building and from the sidewalk across the street, were used to effectively simulate the pedestrian experience and study the recommended guidelines.

A change in the bulk controls has been recommended to allow for flexibility and viability of floors above the 38-foot height. The maximum continuous floor length of 175 feet for all portions of the building proposed in the Draft Specific Plan remains; however the maximum diagonal length of 200 feet has been removed. The 200-foot diagonal was analyzed to be restrictive for the viability of the floors above 38 feet

when the development parcels are deep hence it was removed. **(See Attachment B/C.v)**. In addition the façade modulations discussed in **Attachment B/C.iv and vi.** help break the apparent bulk and mass of the buildings.

Façade Modulation Guidelines

Perkins+Will studied and analyzed the existing Plan Area Menlo Park buildings and precedent building images that community workshop attendees reacted positively to and worked with architects to revise the architectural façade modulation and roof line breaks that will promote architecturally interesting buildings **(See Attachment B/C.vi)**.

The design guidelines derive their basic modulation from a typical Downtown lot width of about 50'. Modulation in height and façade, and variation in roof line emulate the finer grain fabric that would result from distinct 50' wide buildings.

The minor variation in roof line of 4' could be achieved by a modulation of the parapet height and form. (Note: Parapets and screened mechanical equipment can extend beyond the maximum height limit allowed.)

References

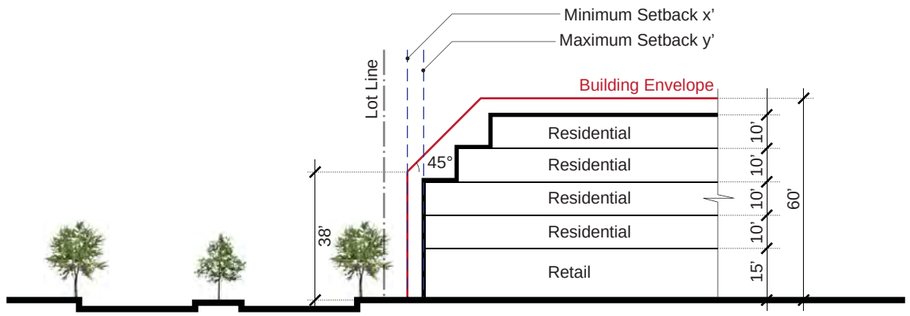
- Existing building precedents from Menlo Park and surrounding cities
- California Building Code, Part 2 – Volume 1

Attachments

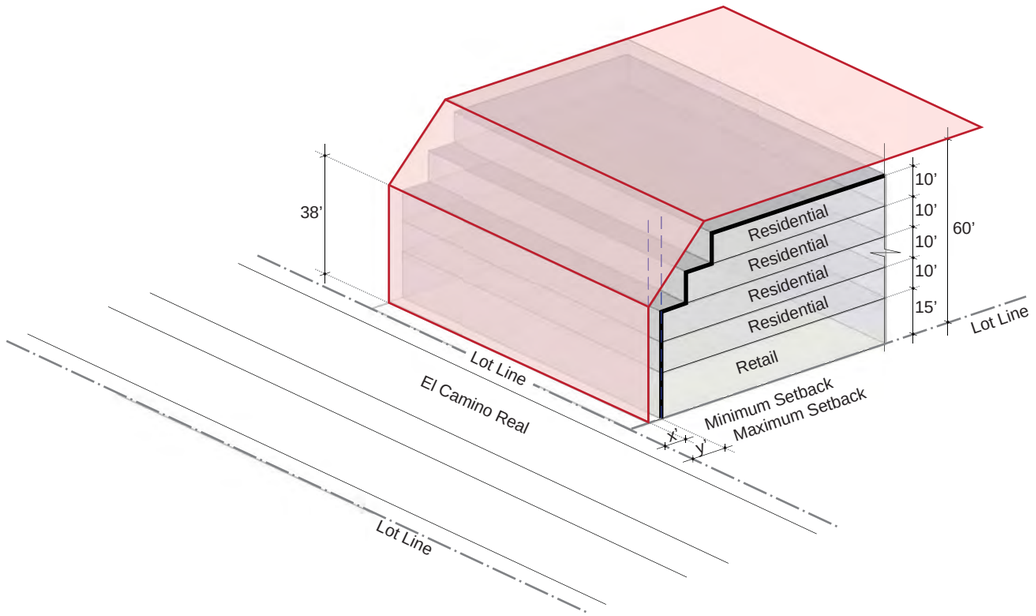
- Attachment B/C.i – Placement of Building Envelope
- Attachment B/C.ii – Potential Building Sections in Plan Area
- Attachment B/C.iii – Table E2. Development Standards Revised
- Attachment B/C.iv – Height, Massing, Bulk, Façade Articulation Guidelines Study
- Attachment B/C.v – Bulk Control Study
- Attachment B/C.vi – Building Façade Articulation Analysis

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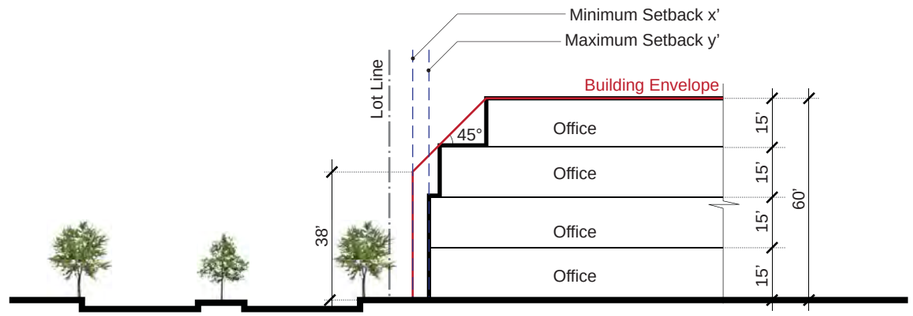
Residential Building



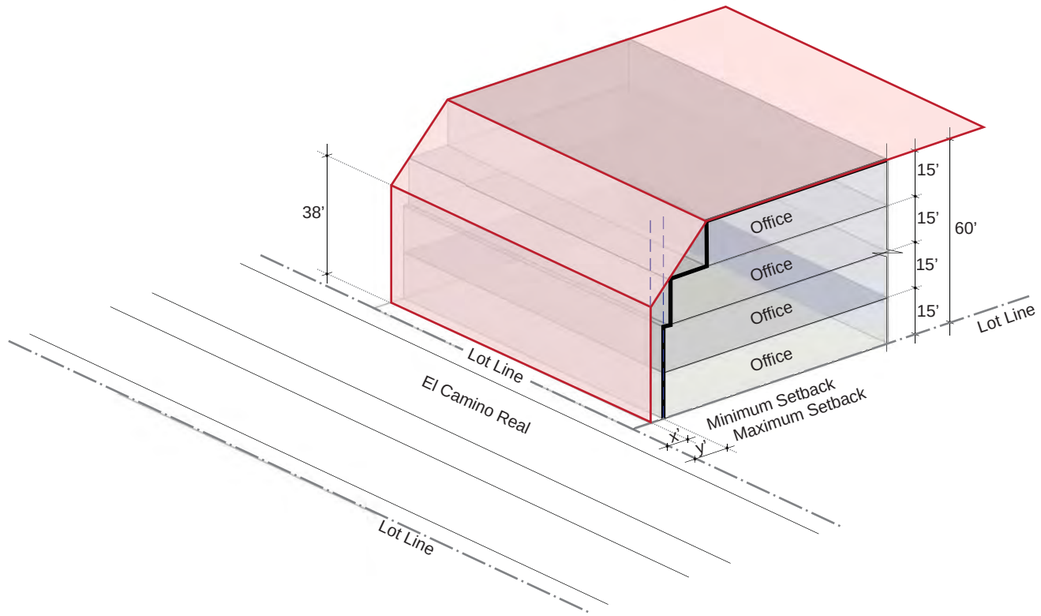
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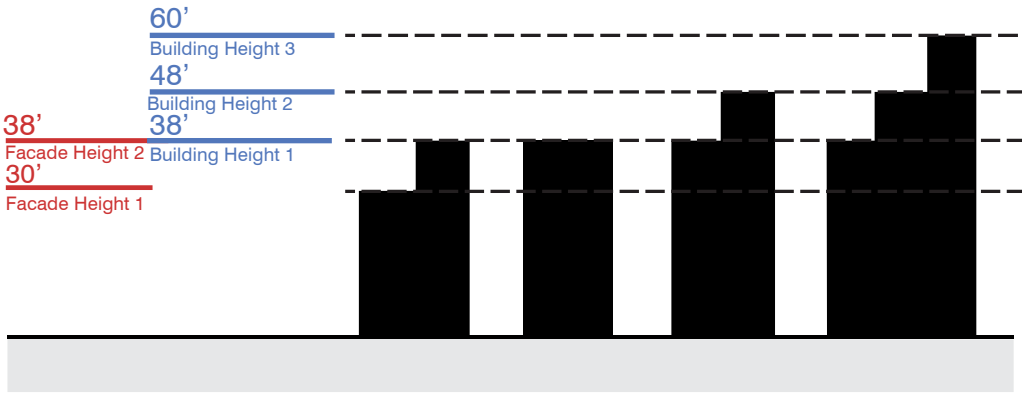
Office Building



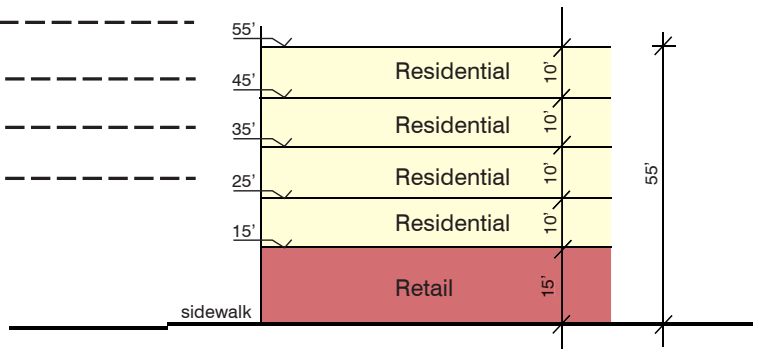
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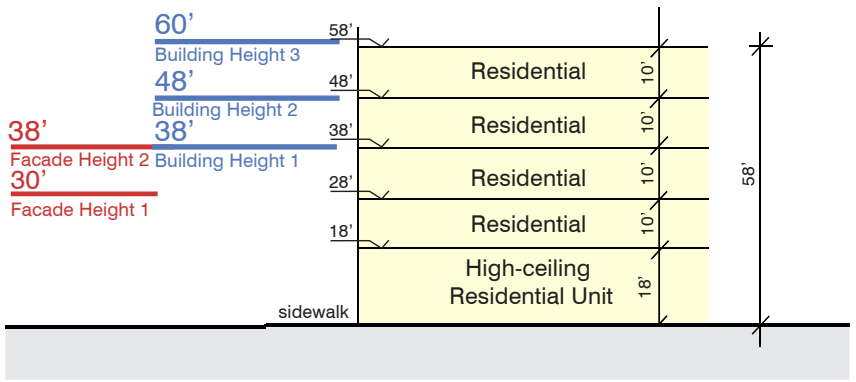
Placement of Building Envelope



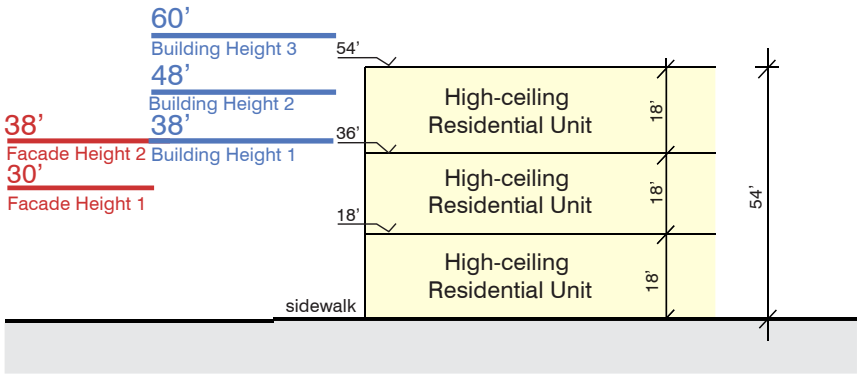
4 Building Profiles



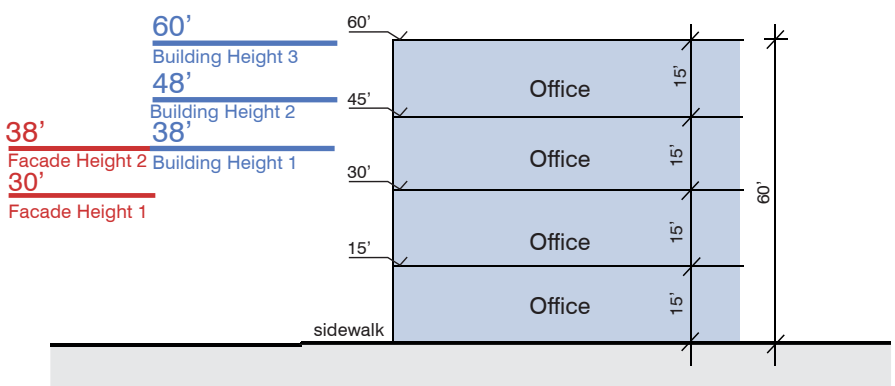
4-story Residential over Retail



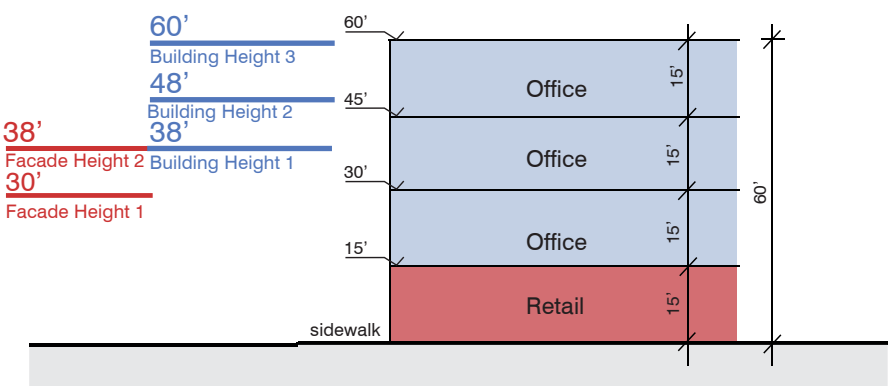
4-story Residential over Ground Floor
High-ceiling Residential Unit



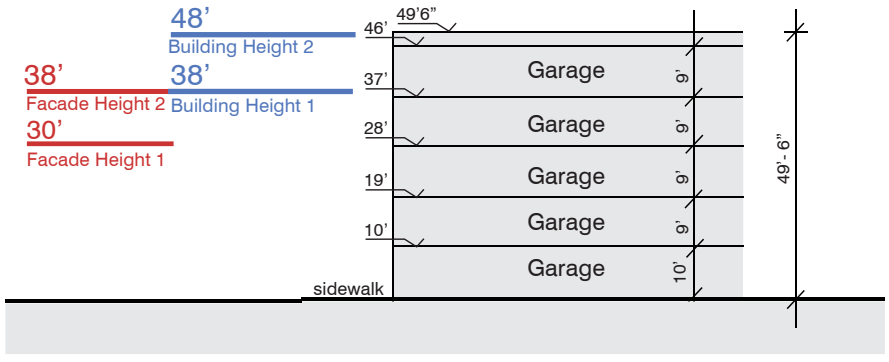
3-story High-ceiling Residential Unit



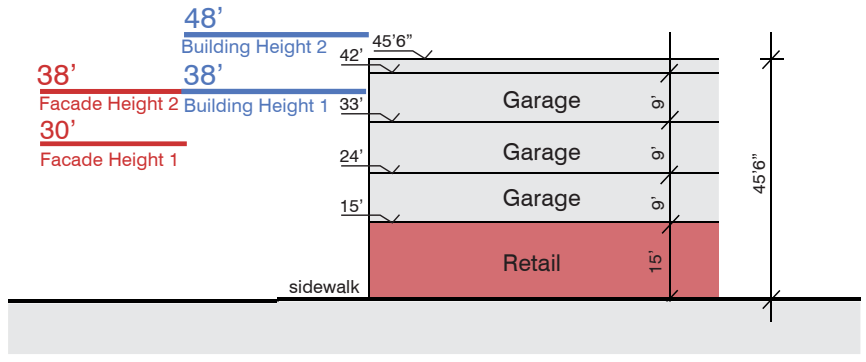
4-story Office



3-story Office over Retail



5 levels of Garage (including roof parking)



3 levels of Garage over Retail

Potential Building Types in Plan Area

9 February 2012

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ATTACHMENT B/C.ii

Development Standards								
				DEVELOPMENT INTENSITY			BUILDING HEIGHTS	
AREA				LAND USE	FAR*	DU/ACRE	HEIGHT MAX.	FAÇADE HEIGHT MAX.
El Camino Real	El Camino Real North	ECR NW	El Camino Real North-West	Mixed Use/ Residential	1.10 (1.50)	25.0 (40.0)	38'	~~N.A.~~ 38'
		ECR NE-L	El Camino Real North-East - Low Density	Mixed Use	0.75 (1.10)	20.0 (30.0)	38'	30'
		ECR NE	El Camino Real North-East	Mixed Use	1.10 (1.50)	25.0 (40.0)	38' (48' Bonus Height)	~~N.A.~~ 38'
		ECR NE-R	El Camino Real North-East - Residential Emphasis	Mixed Use/ Residential	1.10 (1.50)	32.0 (50.0)	38'	~~N.A.~~ 38'
	El Camino Real South	ECR SW	El Camino Real South-West	Mixed Use/ Residential	1.10 (1.50)	25.0 (40.0)	38'	38' (Front Side) 30' (Rear Side)
		ECR SE	El Camino Real South-East	Mixed Use/ Residential	1.25 (1.75)	40.0 (60.0)	60	45' 38'
Station		SA W	Station Area West	Retail/ Mixed Use	2.00 (2.25)	50.0 (60.0)	~~60'~~ 48'	~~45'~~ 38'
		SA E	Station Area East	Retail/ Mixed Use	1.35 (1.75)	50.0 (60.0)	60'	~~45'~~ 38'
Downtown		DA	Downtown Adjacent	Office/ Residential	0.85 (1.00)	18.5 (25.0)	38'	30'
		D	Downtown Santa Cruz Avenue	Retail/ Mixed Use	2.00 (2.25)	25.0 (40.0)	38', ~~48' for Parking Plazas 1 & 3~~	30', ~~38' for Parking Plazas 1 & 3~~

*Specific Plan limits the amount of general office allowed and the amount of medical office, based on community concerns, to the following:

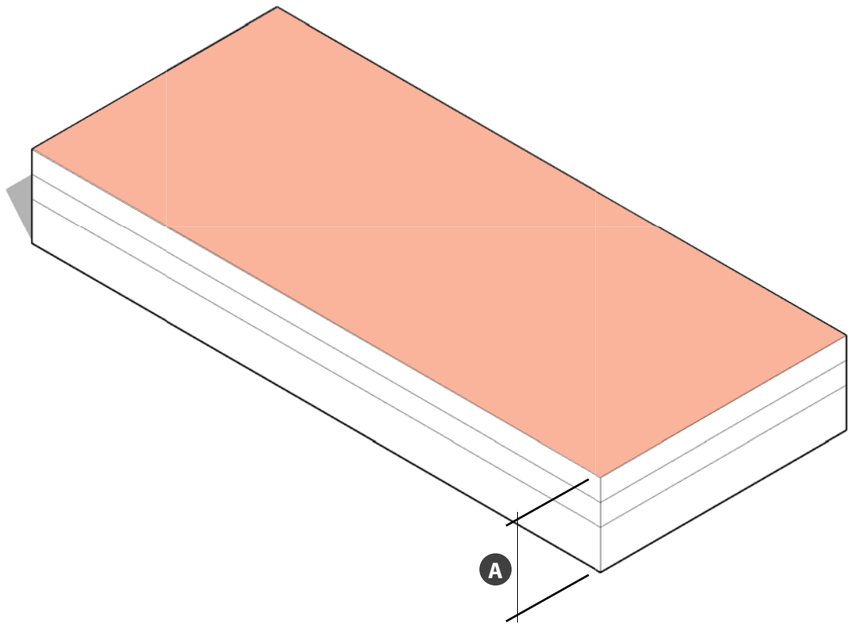
Office, General - shall not exceed one half of the base FAR or public benefit bonus FAR

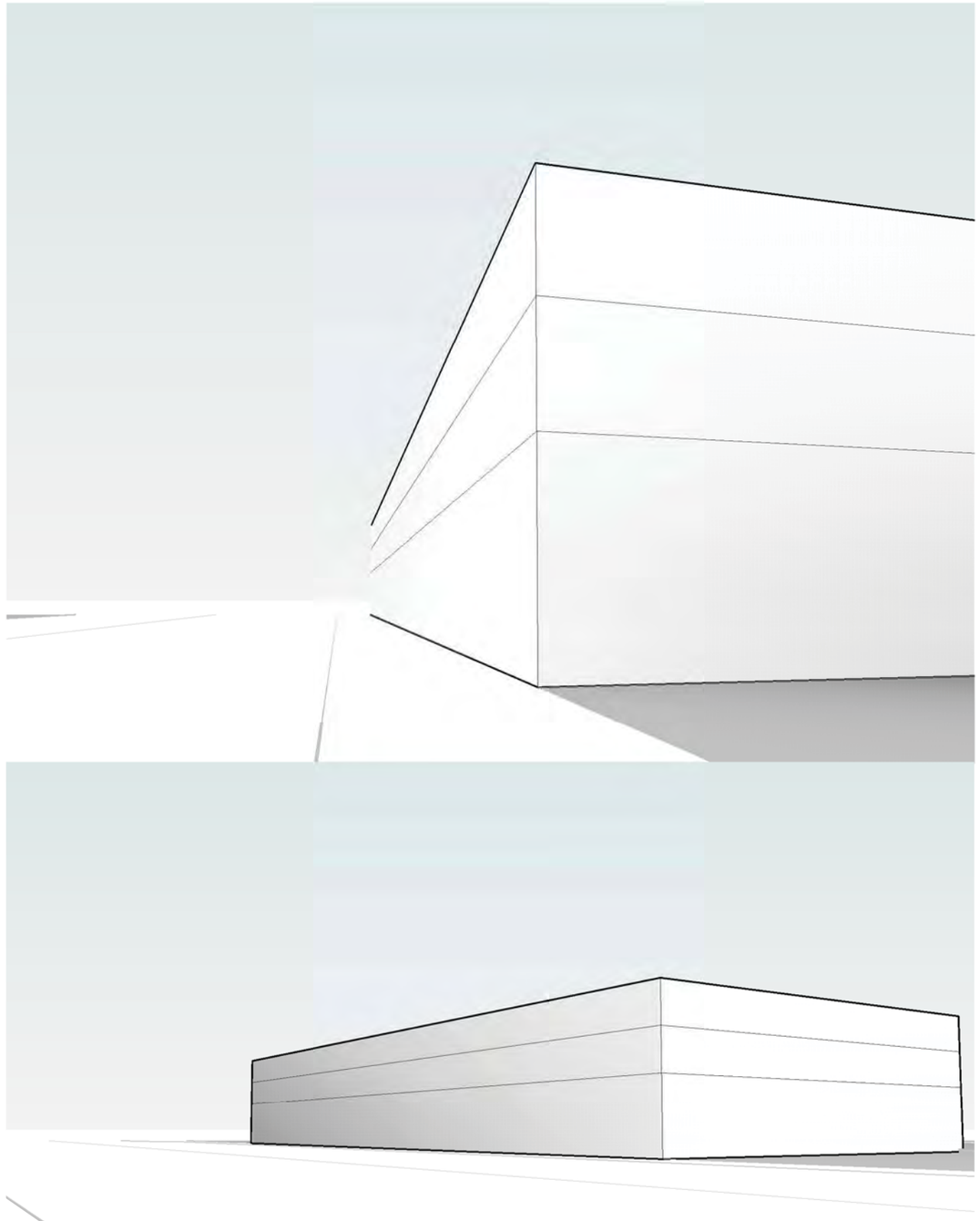
Office, Medical and Dental - shall not exceed one third of the base FAR or public benefit bonus FAR

FAR and DU/acre include both Base and Public Benefit Bonus standards, discussed in more detail in Section E.3.1 “Intensity”

Table E2. *Development Standards and Guidelines*

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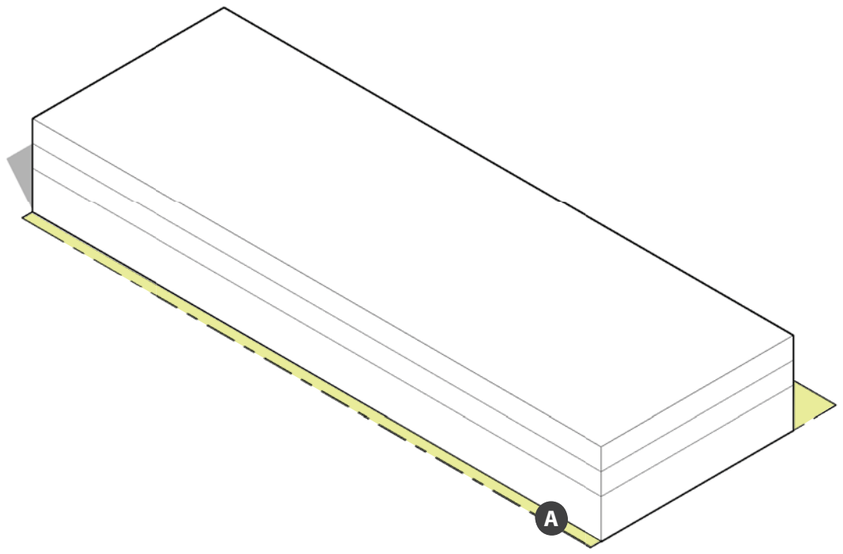


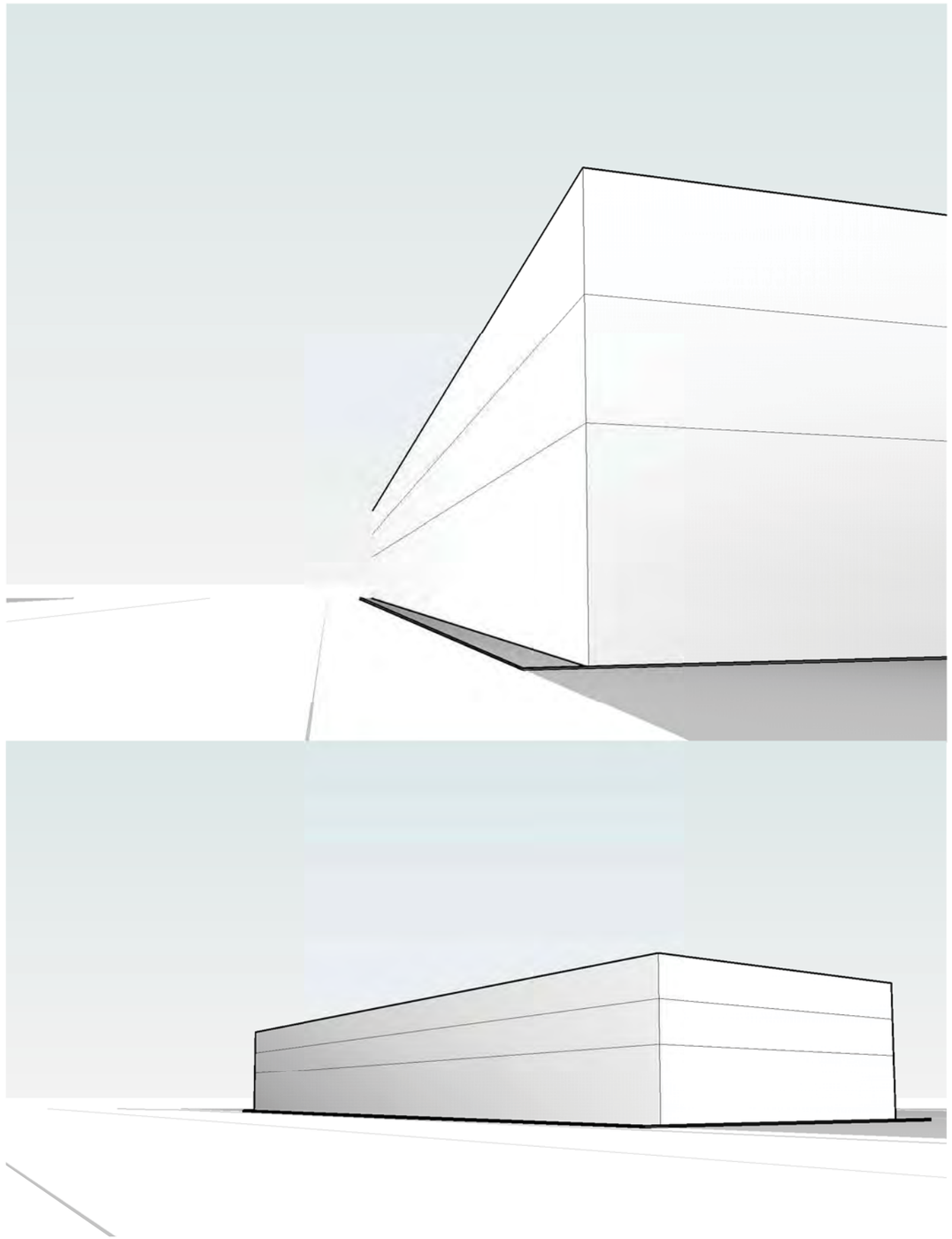


A **Maximum Height:** Building heights shall not exceed the applicable maximum height as indicated in Figure E4: Maximum Building Heights.

Note - Guidelines outlined in red are new or suggested revised guidelines

38’ Height Limit / 38’ Facade Height : MAXIMUM HEIGHT

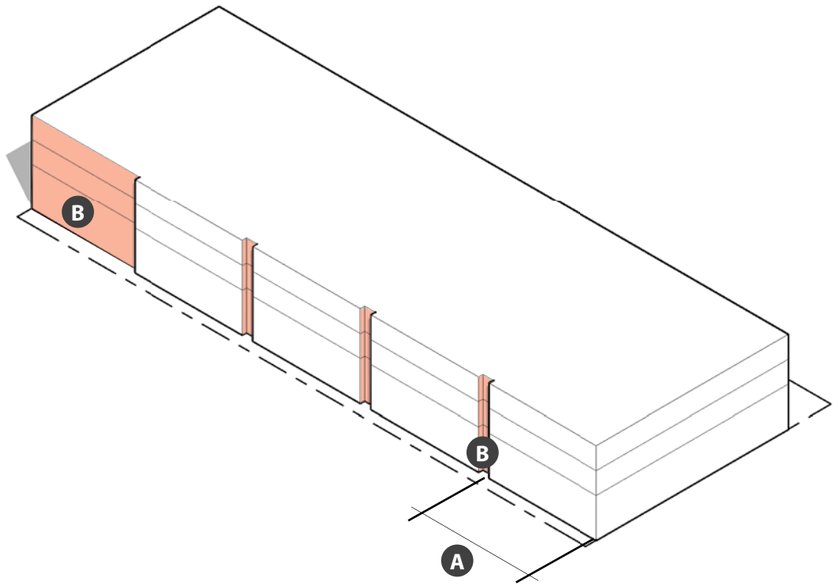


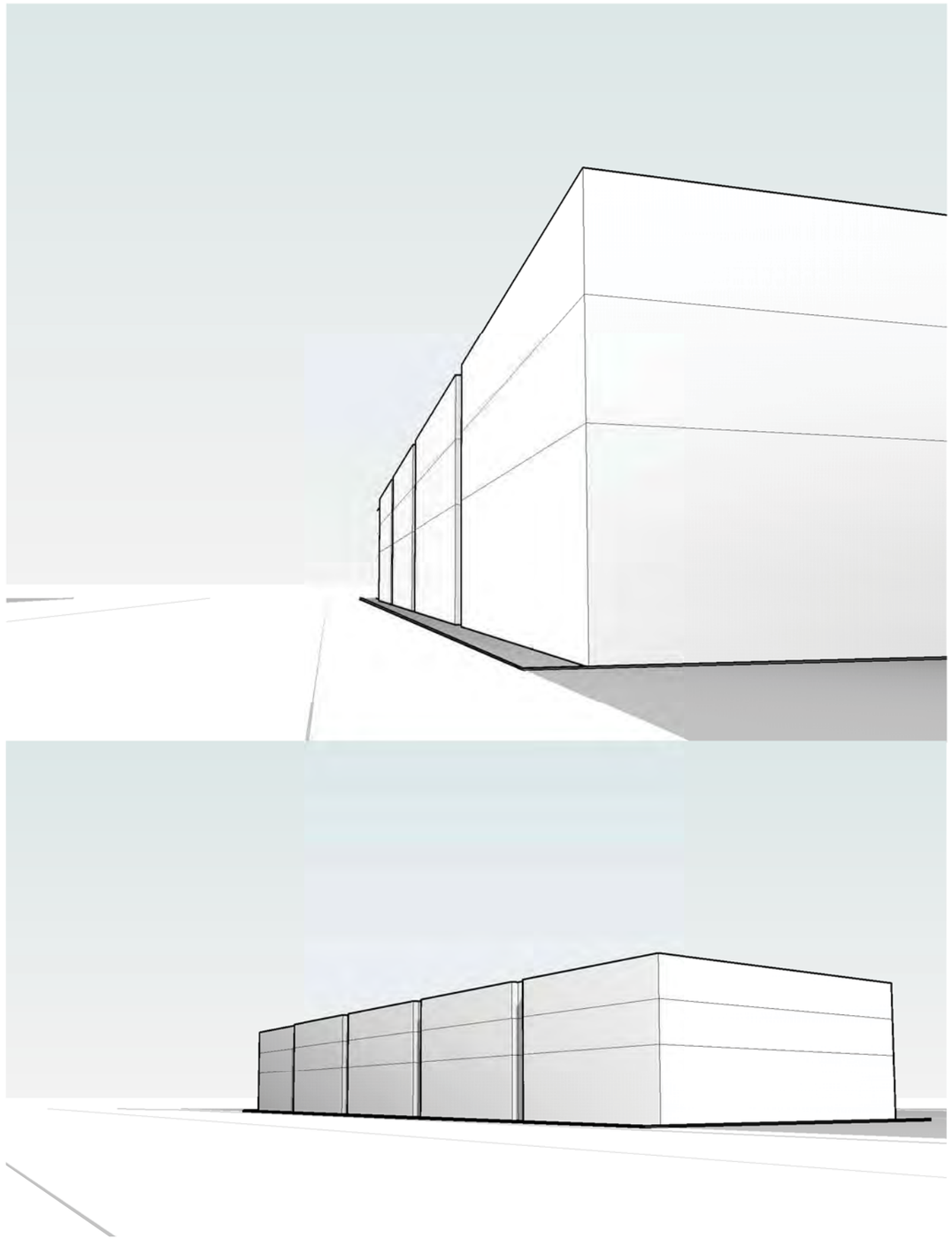


A **Setbacks:** Buildings must setback from the property line as indicated in Figure E7: Building Placement Setback.

Note - Guidelines outlined in red are new or suggested revised guidelines

38’ Height Limit / 38’ Facade Height : SETBACKS



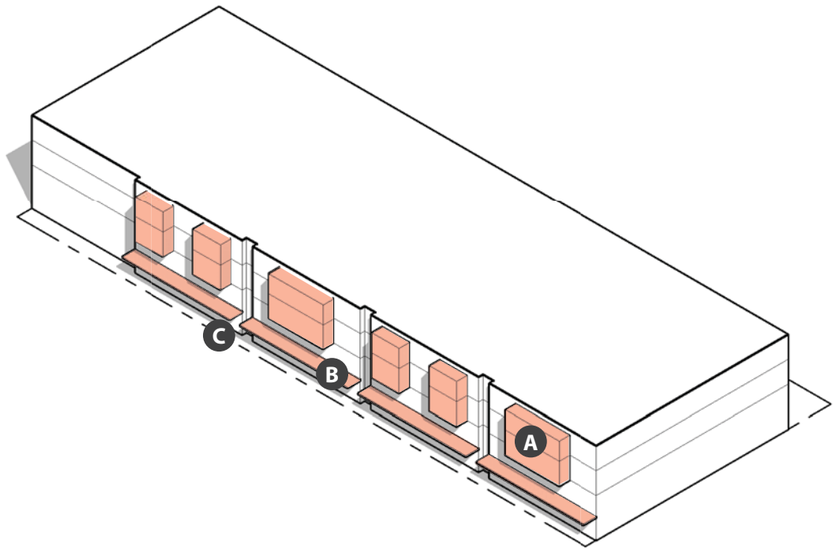


A **Minor Building Facade:** Building Facades facing public rights-of-way or public open spaces may not exceed 50 feet in length without a minor facade modulation.

B **Minor Facade Modulation:** A 2' deep x 5' wide recess or 2' setback of building plane from primary building facade.

Note - Guidelines outlined in red are new or suggested revised guidelines

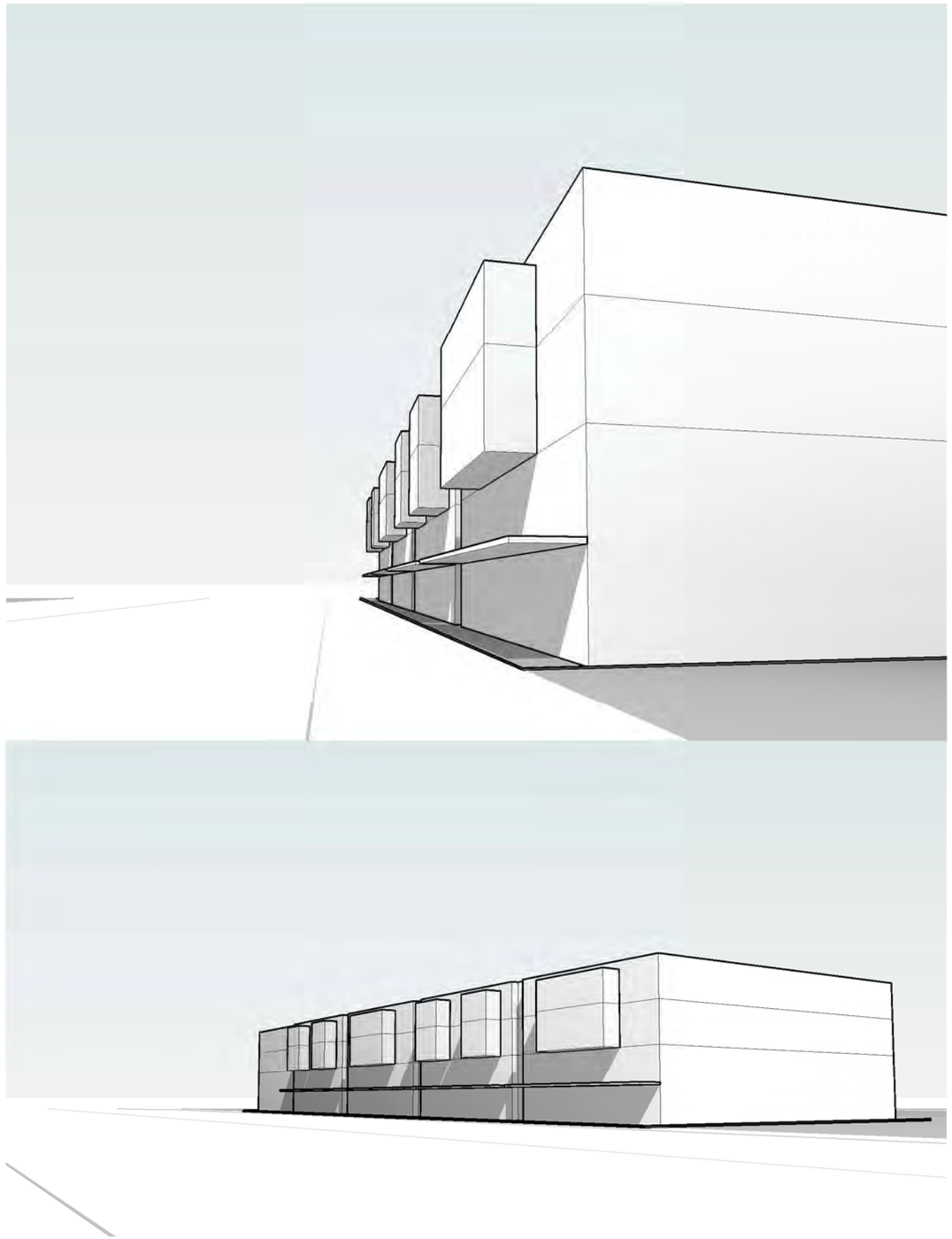
38' Height Limit / 38' Facade Height : MODULATION



A **Habitable Projections:** Occupied building area at or above the second habitable floor, may project 5’ into the setback area and, where feasible, up to 3’ into the right-of-way for a length of no greater than 25’.

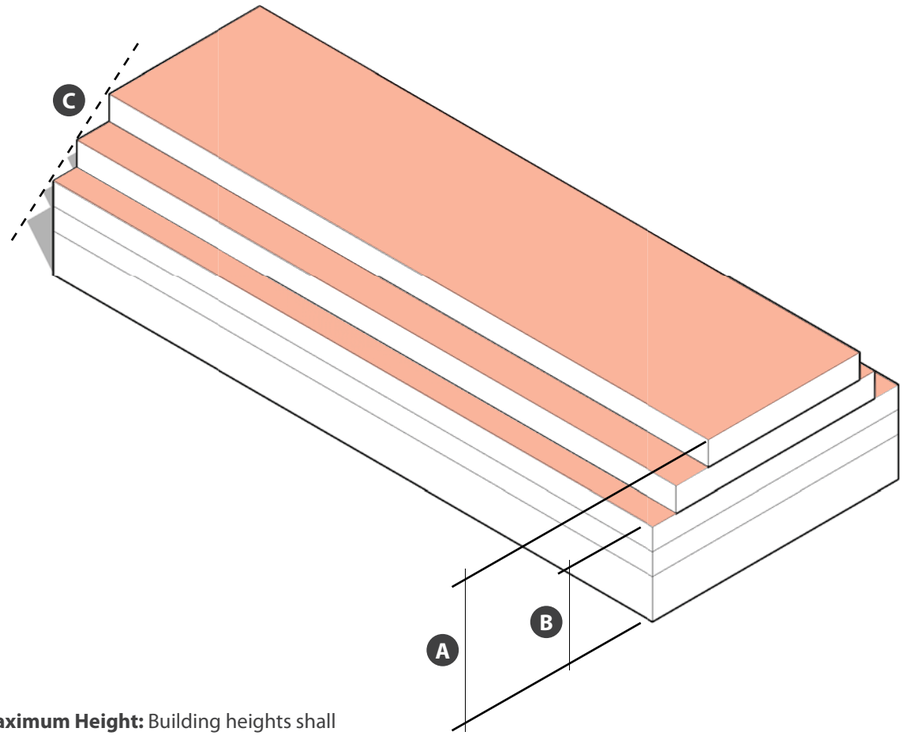
B **Architectural Projections:** Awnings, canopies, and shading devices may project 6’ into the setback area and the right-of-way.

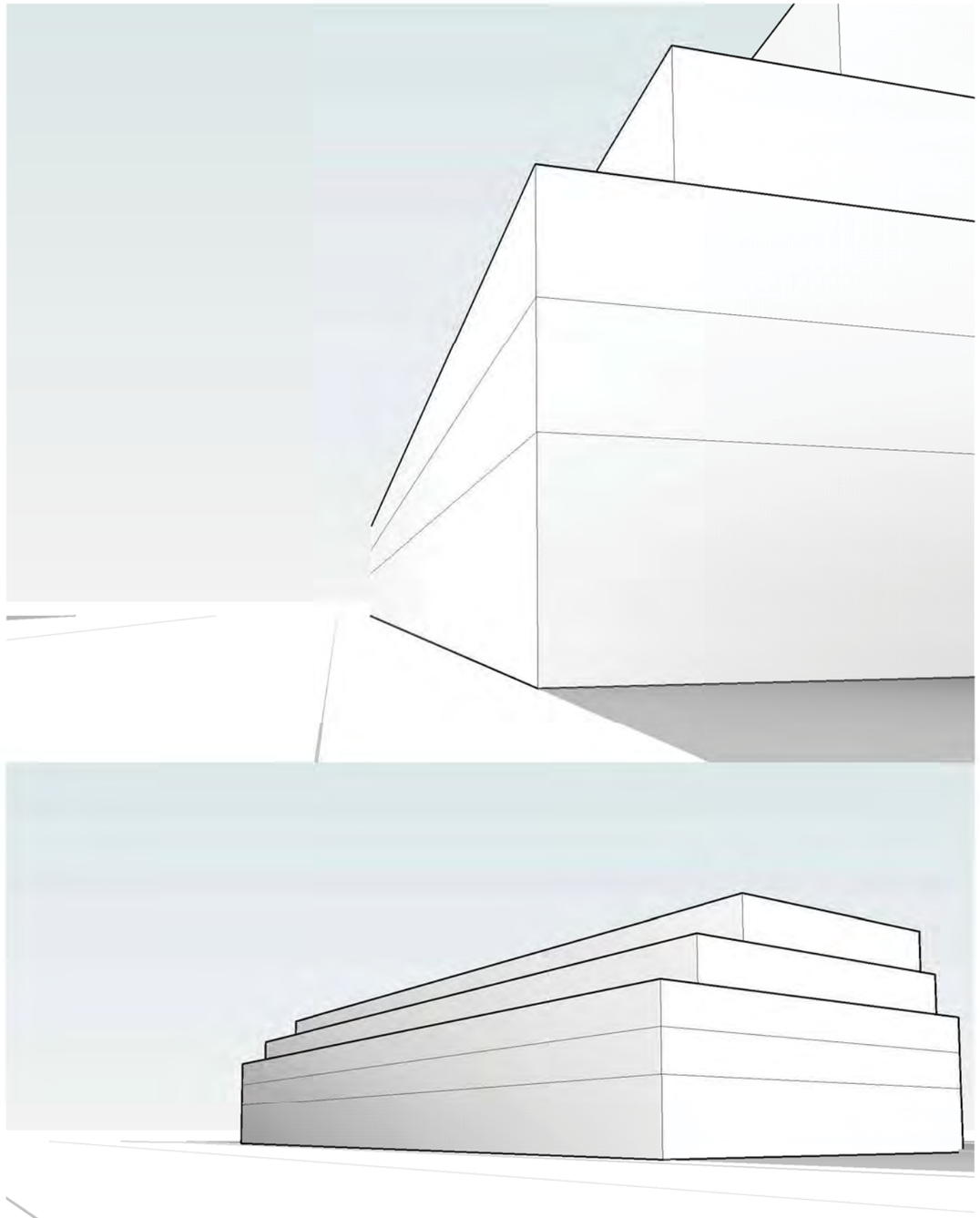
C **Ground Level Elements:** Walls, fences, lighting, elevated private outdoor space, stairs, guardrails, handrails and other similar architectural and landscape elements are permitted in the setback area.



Note - Guidelines outlined in red are new or suggested revised guidelines

38’ Height Limit / 38’ Facade Height : PROJECTIONS





A **Maximum Height:** Building heights shall not exceed the applicable maximum height as indicated in Figure E4: Maximum Building Heights.

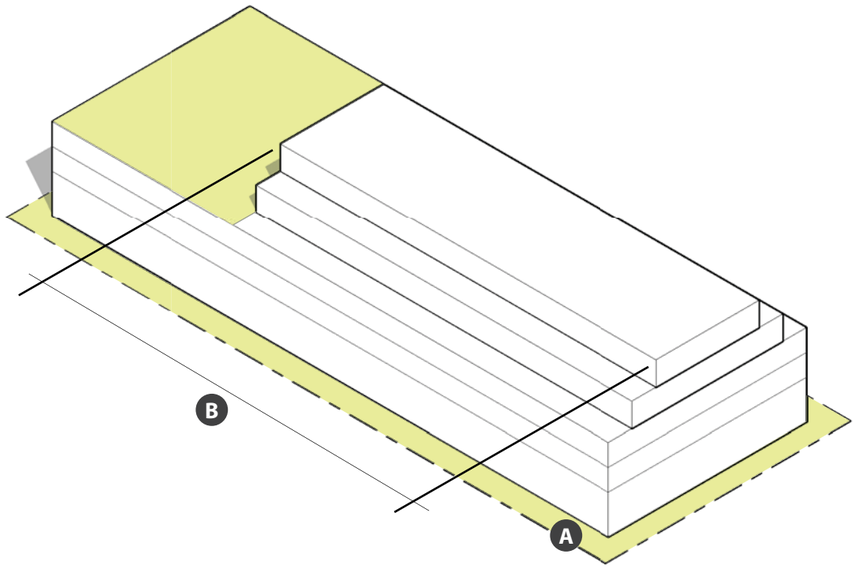
B **Facade Height:** Primary building facades facing a public right-of-way or open space shall not exceed the applicable maximum facade height as indicated in Figure E4: Maximum Building Heights.

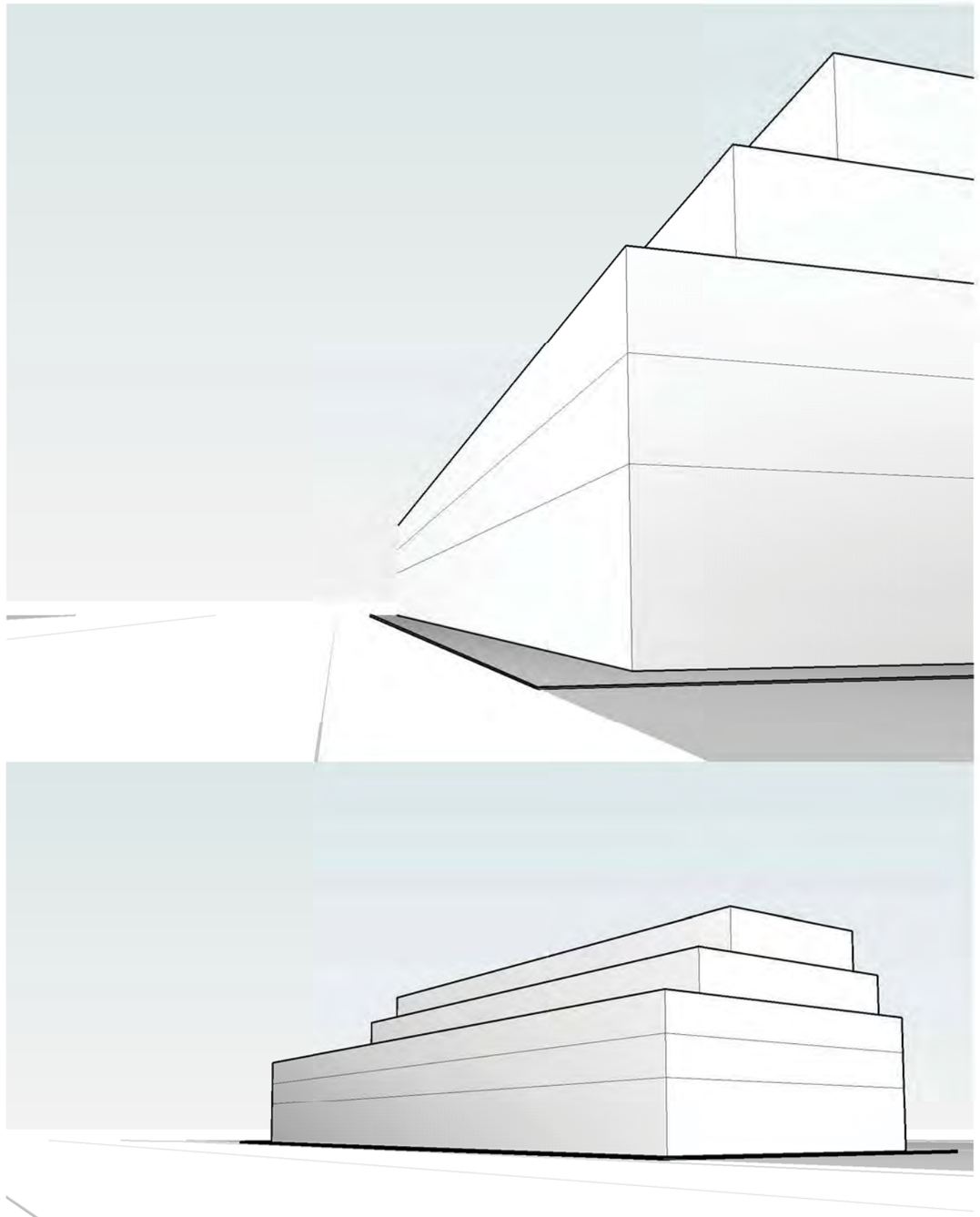
C **Stepback:** Building massing must stepback at a minimum 45 degree angle from the indicated maximum Facade Height on building facades as specified per district regulations.

Note - Guidelines outlined in red are new or suggested revised guidelines

60’ Height Limit / 38’ Facade Height : MAXIMUM HEIGHT + FACADE HEIGHT

9 February 2012



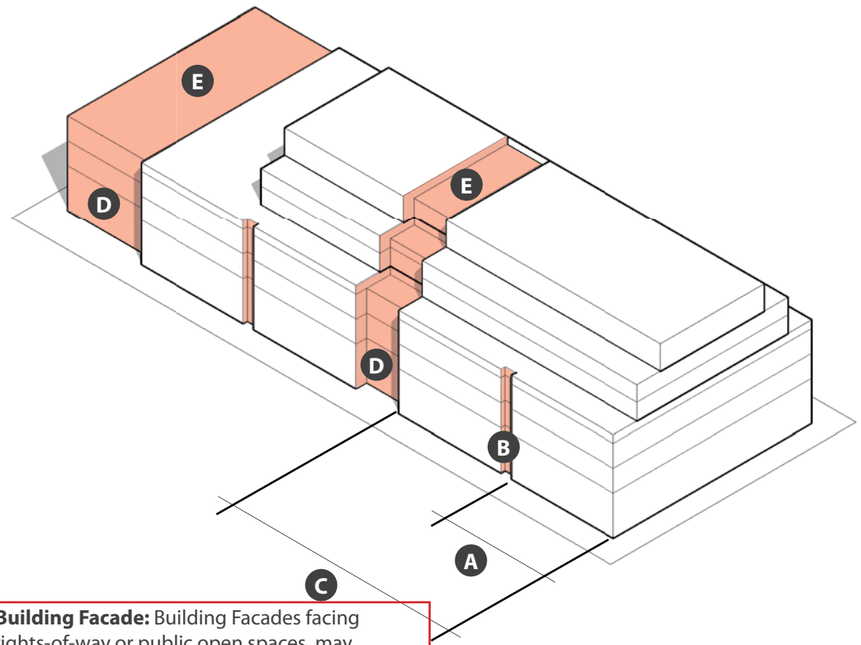


A **Setbacks:** Buildings must setback from the property line as indicated in Figure E7: Building Placement Setback.

B **Maximum Continuous Length of Floors:** The maximum continuous length of floors above the required facade height shall be no greater than175 ' for all portions of the building.

Note - Guidelines outlined in red are new or suggested revised guidelines

60’ Height Limit / 38’ Facade Height : SETBACKS + BULK REDUCTION



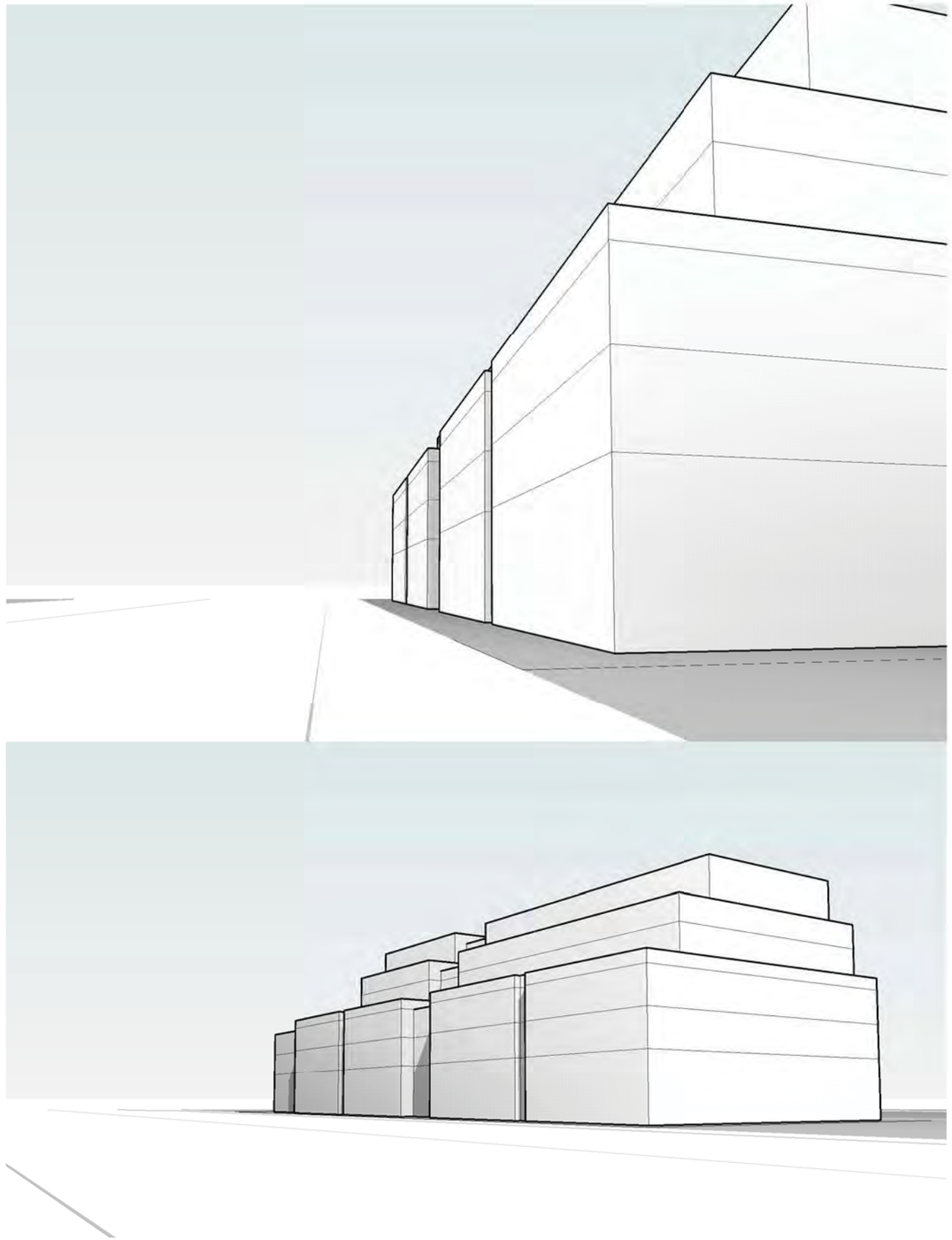
A **Minor Building Facade:** Building Facades facing public rights-of-way or public open spaces may not exceed 50 feet in length without a minor facade modulation.

B **Minor Facade Modulation:** A 2' deep x 5' wide recess or 2' setback of building plane from primary building facade.

C **Major Building Facade:** Building Facades facing public rights-of-way or public open spaces may not exceed 100 feet in length without a major facade modulation.

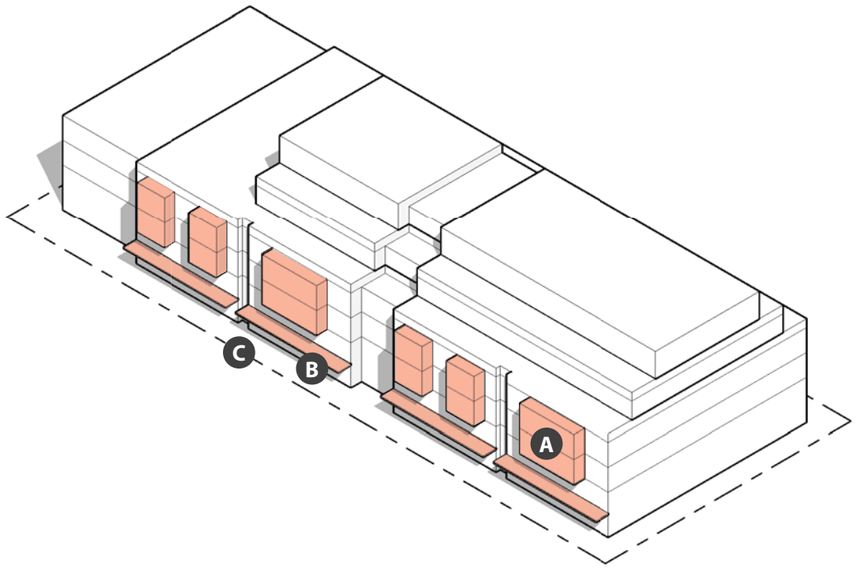
D **Major Facade Modulation:** A 6' deep x 20' wide recess or 6' setback of building plane from primary building facade for the entire height of the building, in conjunction with a major change in fenestration pattern and/or material and/or color.

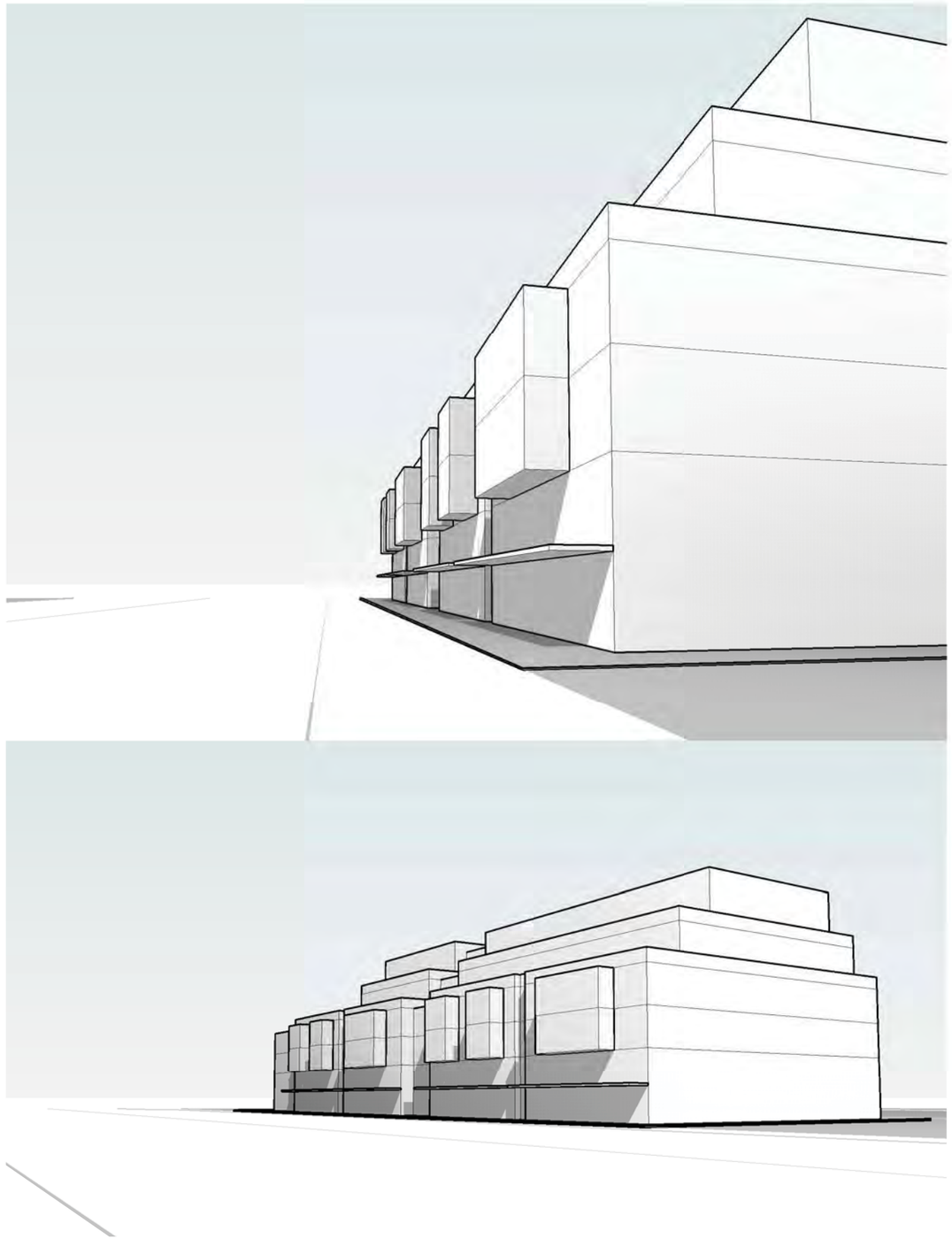
E **Height Modulation:** A minimum 4' change in building height is required in conjunction with the required major facade modulation.



Note - Guidelines outlined in red are new or suggested revised guidelines

60' Height Limit / 38' Facade Height : MODULATION





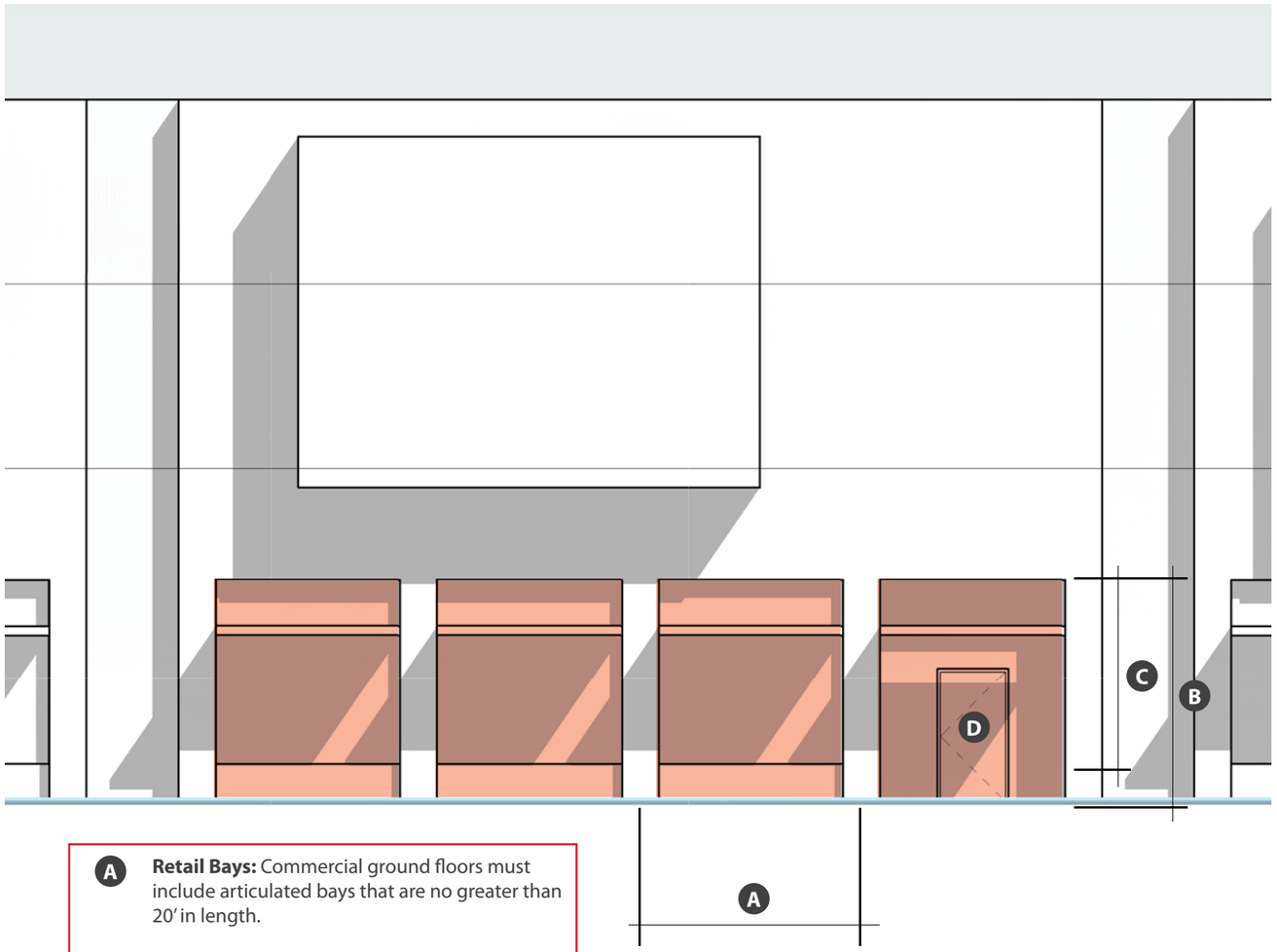
A **Habitable Projections:** Occupied building area at or above the second habitable floor, may project 5’ into the setback area and, where feasible, up to 3’ into the right-of-way for a length of no greater than 25’.

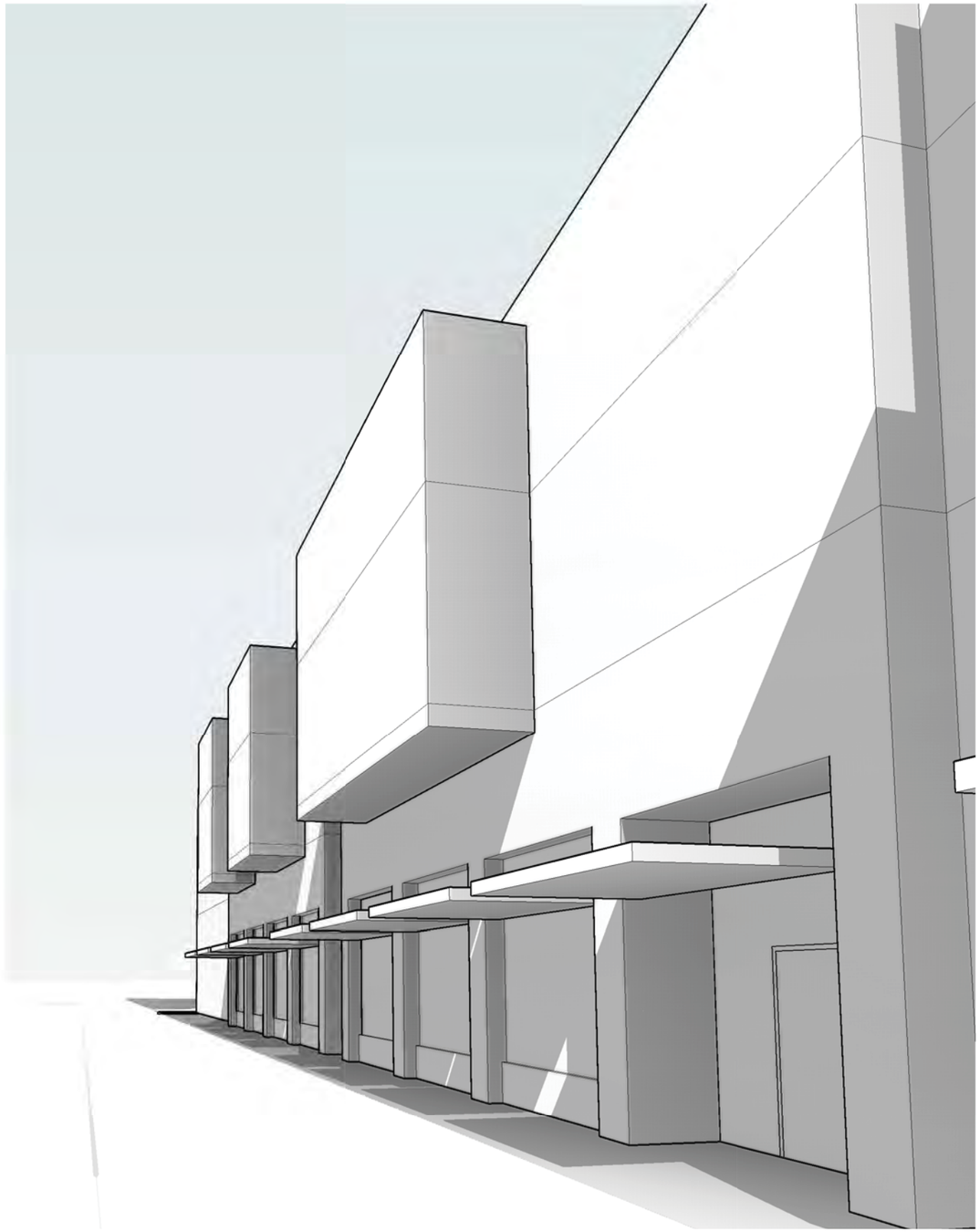
B **Architectural Projections:** Awnings, canopies, and shading devices may project 6’ into the setback area and the right-of-way.

C **Ground Level Elements:** Walls, fences, lighting, elevated private outdoor space, stairs, guardrails, handrails and other similar architectural and landscape elements are permitted in the setback area.

Note - Guidelines outlined in red are new or suggested revised guidelines

60’ Height Limit / 38’ Facade Height : PROJECTIONS





A **Retail Bays:** Commercial ground floors must include articulated bays that are no greater than 20' in length.

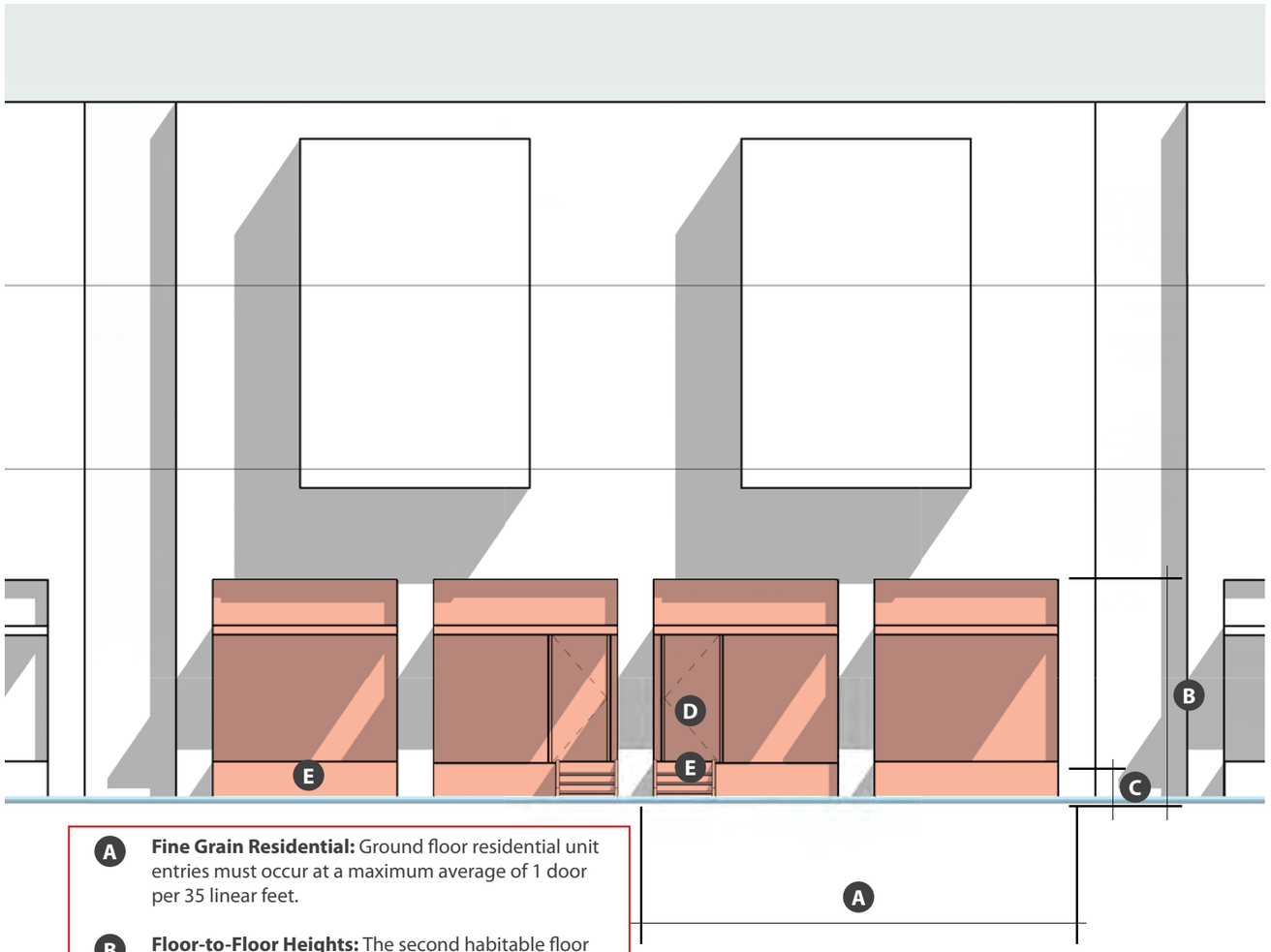
B **Floor-to-Floor Heights:** Commercial ground floors must have a minimum floor-to-floor height of 15' with a minimum 13' ceiling height.

C **Glazing:** At least 50% of the ground floor facade plane shall be devoted to transparent windows and doors.

D **Recessed Windows & Doors:** Windows shall be recessed from the primary building facade a minimum of 6". Main entry doors may be recessed up to a maximum of 6' from the primary building facade.

Note - Guidelines outlined in red are new or suggested revised guidelines

Building Base : COMMERCIAL





A **Fine Grain Residential:** Ground floor residential unit entries must occur at a maximum average of 1 door per 35 linear feet.

B **Floor-to-Floor Heights:** The second habitable floor of all residential buildings must be a minimum height of 15' above sidewalk grade.

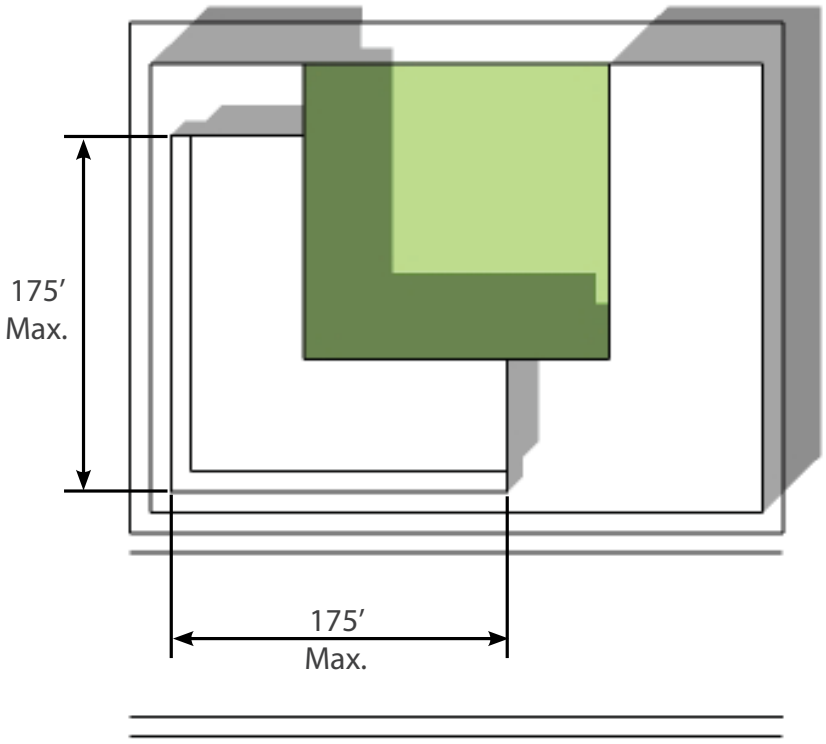
C **Raised Entries:** A 24" to 48" elevation change must be provided between the first habitable floor of ground floor residential units and the sidewalk grade.

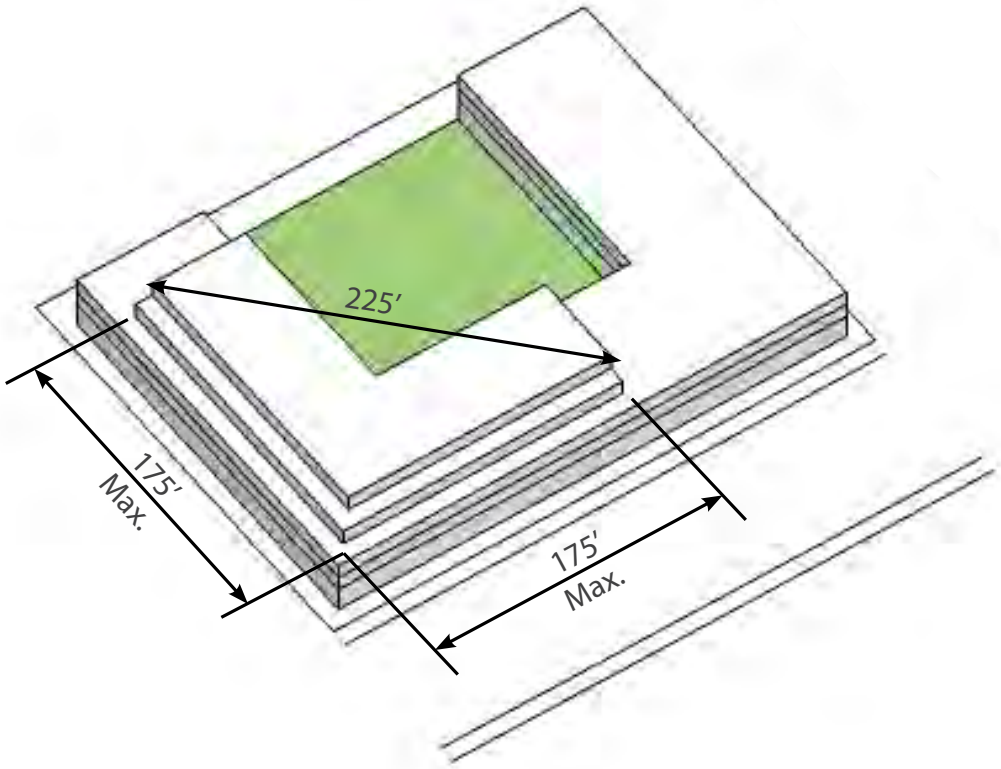
D **Recessed Entries:** Residential entries may be recessed up to a maximum of 6' from the primary building facade.

E **Transition Zone:** Building elements such as stairs, private yards, porches, planters, low walls are encouraged along the base of residential buildings.

Note - Guidelines outlined in red are new or suggested revised guidelines

Building Base : RESIDENTIAL


175′
Max.
175′
Max.


225′
175′
Max.
175′
Max.

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BUILDING FACADE ARTICULATION TO INCREASE THE ARCHITECTURAL INTEREST

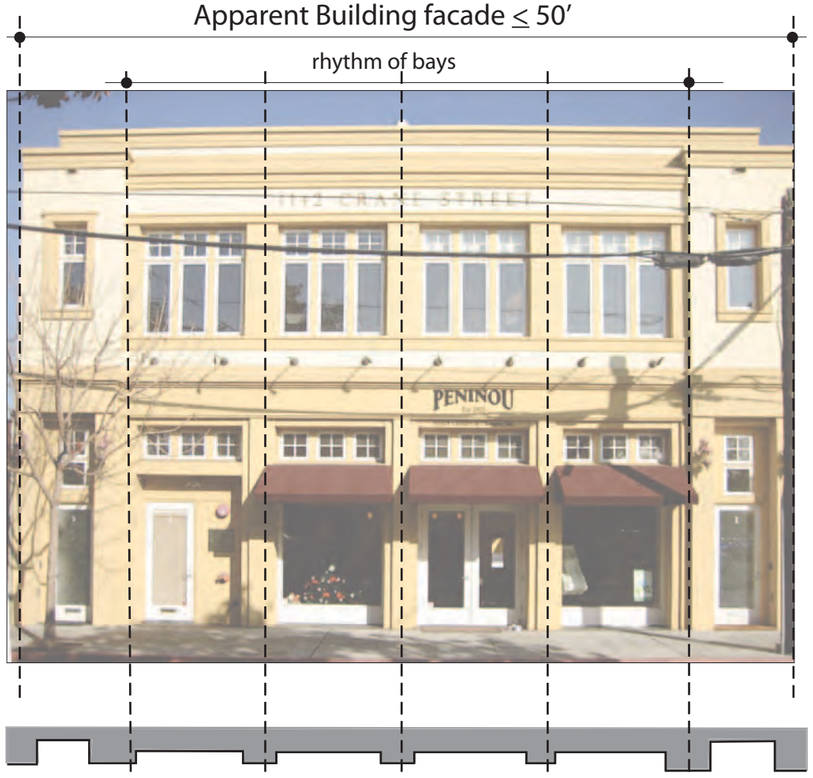
Apparent Building facade ≤ 50′



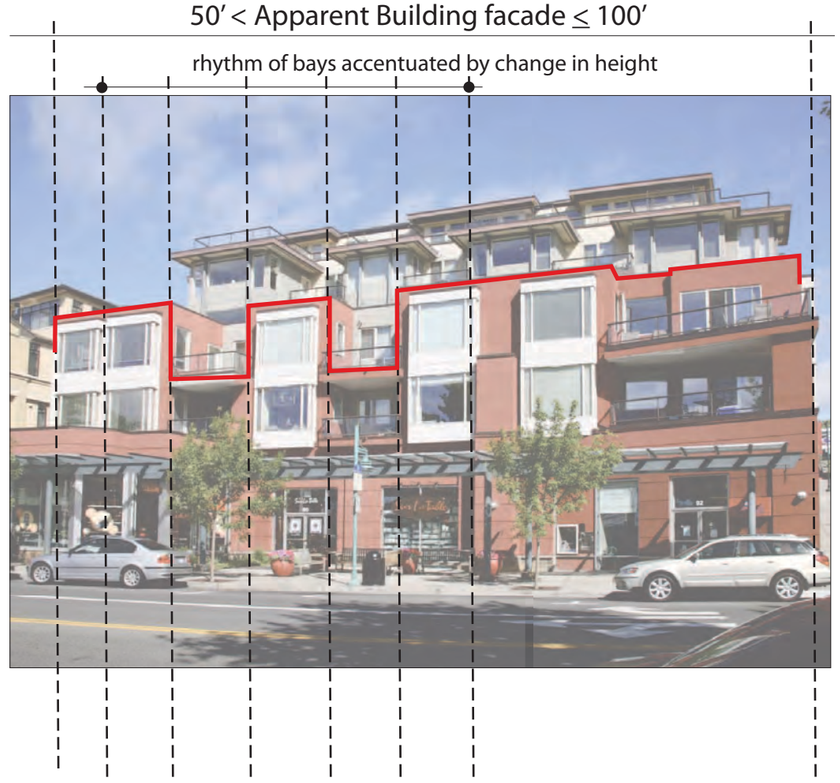
50′ < Apparent Building facade ≤ 100′



Apparent Building facade ≤ 50′



50′ < Apparent Building facade ≤ 100′



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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Mark Hoffheimer
Date:	March 6, 2012
Subject:	Task D. Stanford University Site and Bulk Control Revisions

Purpose

To analyze Stanford University's request for site planning and bulk control revisions, which generally cover building breaks (publicly-accessible and frontage breaks), setbacks, and open space requirements, and revise the Draft Specific Plan's standards and guidelines as appropriate.

Key Findings/Recommendations for Revisions

1. To break down building massing, three major building breaks are required and aligned with the street grid. At Middle, the building break is 120 feet wide, affording a sizable publicly-accessible open space, connection to Burgess Park and project entry. The width of the other two breaks at Partridge and Harvard are 60' wide, consistent with the intersecting streets rights-of-way dimensions
2. In addition, two major recesses (minimum 60'x 40') are required at College and Cambridge, which can function as courtyards/entrances for the buildings. This will allow Stanford to maximize the building floor plates and provide continuity of access between buildings, while still allowing the building form to be broken down and relate to the surrounding street grid.
3. Buildings will adhere to design guidelines standards to further break down building massing.
4. Rear setback should be reduced to fire lane only and as minimal as possible. This will allow for more functional floor plates.
5. Require only 30% open space requirement. Building studies have shown that in order to provide floor plates that are adequate for office buildings, the 30% open space requirement should be utilized. This is consistent with the other zones along El Camino Real. The front setback will allow for an adequate feeling of landscape/open space along El Camino Real.
6. Continue to require the 10' to 20' front setback to accommodate a sizable walkway along El Camino Real.

7. Proposed protected bike network could be considered for integration with plan for site as an alternative to a bikeway along El Camino Real.

8. As noted separately in the memo for Task B, C, and E, the façade height for this district is being reduced to 38', per City Council direction. Concurrently, it is recommended that the Building Profile standard be measured from the minimum setback, which will allow for buildings at the maximum setback to have taller façade heights, which would address another Stanford comment.

Methodology

The Perkins+Will team reviewed the Stanford letter dated 12 August 2011 and carefully re-analyzed site controls, responding to the desires of the community for appropriate site and building character while ensuring viable and flexible development pads for Stanford University.

Discussion of Findings

The table below summarizes Stanford University's concerns about site and bulk controls in Zoning District ECR SE and the proposed revisions to the Draft Specific Plan in response to those concerns. Stanford's concerns were expressed in a letter to the City of Menlo Park, dated 12 August 2011 (Attachment D.3).

Attachments D.1 and D.2 illustrate the Draft Specific Plan's site controls and the proposed revisions. Note that the attachments include all parcels south of Ravenswood on the east side of El Camino Real, consistent with the Draft Specific Plan. Figure D denotes Stanford property.

A discussion of the proposed revisions follows.

Building Breaks and Break Up of Building Mass

In conjunction with controls for building massing and articulation, the requirement for building breaks further reduces the mass and scale of buildings along the east side of El Camino Real south of Ravenswood. The distance between Ravenswood and the Menlo Park/Palo Alto border is 3,600 feet, with the Stanford property extending 2,400 feet, or nearly ½ mile, along El Camino Real. The building breaks are an essential tool in reducing the scale and character of development.

The proposed building breaks respond to the existing street character/pattern within the area while respecting Stanford's legitimate need for viable building pads and flexibility in design (see Attachment D.2).

Stanford Comments Specific to Stanford Lands (Major Comments)
Stanford Letter dated 12 August 2011

Site/Bulk Control	Draft Specific Plan	Stanford Request	Proposed Specific Plan Revisions
Building Breaks	4 Breaks Required, with 2 publicly accessible	Encourage Breaks; Require 1 Break at Middle	3 Breaks Required, with 1 publicly accessible at Middle
Middle Ave Break	120' minimum	60' minimum in vicinity of Middle	120' minimum; this would be the only publicly accessible break required, and it would allow for plaza and retail
Cambridge Ave Break	90' minimum	Articulate/recess building at Cambridge but no break	Articulate/recess building at Cambridge but no break
Additional Breaks South of Middle	2 required, with breaks located above a parking podium (vs. at-grade); Breaks to align with College and Partridge	Require no building breaks	Articulate/recess building at College but no break; Require building break at Partridge
Rear Setback	20' minimum	Require no rear setback, except what is required by the Fire District	Require no rear setback, except what is required by the Fire District
Open Space Requirement	40% minimum	20% minimum	30% minimum
Sustainability	LEED-ND for larger projects	No LEED-ND	LEED-ND for larger projects (with broader thresholds)

The major features of the proposed building breaks follow.

- The building breaks align with intersecting streets in the area, specifically Live Oak, Roble, Middle, College, Partridge, Cambridge and Harvard. (Note that the breaks north of Middle Avenue do not apply to Stanford lands but are retained as shown in the Specific Plan).
- The building breaks take the form of actual building separation or building recesses.
- To ensure viable building pads, building breaks in the form of building separation are required at Middle, Partridge and Harvard. These separations allow for building pads from 200 feet in length (for Stanford property north of Middle) to approximately 650 feet in length (Middle to Partridge and Partridge to Harvard).
    - The building break at Middle is to be publicly accessible (discussed below). The other two breaks are open space to be used as Stanford deems fit.
    - The building breaks have an added value of allowing those travelling on Middle, Partridge and Harvard towards El Camino Real to have a view of open space rather than buildings, thereby reducing the visibility of larger development from these neighborhoods.
- The building breaks at College and Cambridge take the form of building recesses, acknowledging the intersecting streets. The recesses can serve as courtyards/entrances for the buildings, including vehicular access as appropriate.
- With the exception of Middle (discussed below), the building breaks (both building separation and recesses) are 60 feet wide, generally consistent with the right-of-way dimensions of the intersecting streets.

Publicly Accessible Open Space at Middle

The proposed revisions provide one sizable publicly-accessible open space at Middle rather than two as proposed in the Draft Specific Plan. The 120-foot wide break affords a welcoming and amply sized open space to enhance east-west connectivity, via a passage under/over the railroad tracks. It also affords a prominent “front door” to the development, a vehicular and service entry from El Camino Real and a retail/café “node” serving both residents and building tenants.

The northern edge of the break aligns with the northern edge of the Middle Avenue right-of-way, and it extends southward 120 feet. This ensures a sizable building pad north of Middle.

Open Space at 30%

The proposed revisions change the open space requirement from 40% to 30%, consistent with several El Camino Real districts.

The definition of open space will be changed to make clear that open space, which includes all landscaping, plaza areas, pathways and walkways, are <u>not</u> preserved for public use.

Sustainable Development

The proposed revision retains LEED-ND "Silver" as a requirement of larger projects in the Specific Plan Study Area, but broadens the applicability thresholds so that additional properties other than Stanford will be required to meet this standard. Explained in more detail in the Task H Sustainability memo, LEED-ND has the added benefit of encouraging integrated "green" practices for larger projects with multiple buildings. It has particular merit for green infrastructure, such as on-site renewable energy sources, storm-water management and heat island reduction.

References and Attachments

- Attachment D.1. Draft Specific Plan Stanford Property Building Breaks
- Attachment D.2. Proposed Revisions to the Stanford Property Building Breaks
- Attachment D.3. Stanford Letter dated 12 August 2011

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Menlo Park City Boundary
Plan Area Boundary
Developable Area
Existing Building
Frontage Break
Publicly-accessible
Private

Ravenswood
Live Oak
Roble
MOREY
KENWOOD
Middle
Blake
College
Partridge
Cambridge
Harvard
CornellL
Creek
Alto
Alma Street
Laurel
Hopkins
Burgess
Waverly
Sherwood
Manor
Willow
Claremont
Creek Pl

20’
50’
50’
10’-20’
20’
50’
50’
120’
20’
50’
10’-20’
50’
20’
90’

Stanford Property - Frontage Breaks

ATTACHMENT D.1

El Camino Real/Downtown Specific Plan
City of Menlo Park

28 December 2009

PERKINS + WILL

Fehr & Peers
Strategic Economics
BKF Engineers
ESA
HDR/The Hoyt Company

Menlo Park City Boundary
Plan Area Boundary
Stanford Property Boundary
Developable Area
Existing Building

Frontage Break
Publicly-accessible
Private

Ravenswood
Live Oak
Roble
50’
50’
10’-20’
60’
60’
200’
120’
250’
60’
345’
60’
300’
60’
285’
60’
MOREY
KENWOOD
Middle
Blake
College
Partridge
Cambridge
Harvard
CornellL
Creek
Alto
Alma Street
Laurel
Hopkins
Burgess
Waverly
Sherwood
Manor
Willow
Claremont
Creek Pl

ECR SE Proposed Revisions to Stanford Property Building Breaks

9 February 2012

El Camino Real/Downtown Specific Plan

City of Menlo Park

PERKINS + WILL

ATTACHMENT D.2

STANFORD
UNIVERSITY

August 12, 2011

Mr. Thomas Rogers
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

Re: Menlo Park El Camino and Downtown Specific Plan ("the Plan")

Dear Mr. Rogers:

Stanford University owns six parcels, totaling approximately 12.8 acres, in the El Camino Real South-East portion of the Menlo Park El Camino and Downtown Specific Plan area. We appreciate the opportunity to provide comments to the City regarding the draft Plan's policies. As you are aware, Stanford has participated since the beginning of the planning process in order to understand the community's objectives as they relate to our properties. We support the Plan's goals and believe the thorough public outreach process conducted to date, which has included extensive community involvement and input, has resulted in a draft Plan that can provide significant benefits to the Menlo Park community.

The draft Plan determines that Stanford's land is suitable for multi-family residential, commercial and mixed use development, including a hotel, an east-west pedestrian and bicycle linkage near Middle Avenue connecting through Burgess Park, and a pedestrian promenade along El Camino Real.

The draft Plan allows a floor area ratio of 1.25 and a housing density of 40 dwelling units per acre on Stanford's properties, with a potential Public Benefit Bonus of 1.75 FAR and 60 units per acre. The Plan recognizes that the increase in FAR and density help to finance public improvements. In addition, the Plan states that density bonuses could be considered for senior housing, additional residential units including affordable units, a hotel, and platinum LEED certified buildings.

While we support the Plan's goals and policies, we are concerned that a few of the Plan's requirements could seriously undermine our ability to redevelop our property in the manner that the Plan envisions. Development of Stanford's property is highly constrained by the site's narrow configuration and location sandwiched between El Camino Real and the railroad tracks. In order to provide the transit-oriented mix of uses, intensity and amenities desired by the community, we request additional flexibility to

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position structures in a manner that enables optimal use of the site. As explained in more detail below, our suggested revisions are intended to promote the Plan's policies in a practical manner.

The following are specific concerns we have with the draft Specific Plan:

Building Breaks (Pages D3, D7, E33, E34, E35, E71 of the Plan)

The draft Plan's standards and guidelines for building massing and modulation are intended to reduce the monolithic character of buildings, ensure that all new buildings complement the existing character of the area, ensure appropriate transitions to adjacent neighborhoods and provide variety and visual interest. Stanford agrees with these goals. As depicted on page E32, there are a variety of ways to incorporate both horizontal and vertical modulation into an attractive building design. However, we ask that the City modify the Plan to allow for additional flexibility with regard to building breaks.

The draft Plan states that building and frontage breaks are encouraged in all areas of the Plan with one exception: rather than encouraging breaks, the Plan *requires* building breaks in the southeast area of El Camino Real. (Page E33) We ask that the Plan be modified to *encourage* building breaks in the ECR-SE area as one of several methods of ensuring that buildings are not monolithic, but to *require* a building break only at Middle Avenue.

The Plan (at page E71) requires seven building breaks in the ECR – SE area of the Plan, each of which must be at least 50 feet wide, with one at 90 feet and another at 120 feet. Figure D1 on page D3 shows two of the breaks. Figure D5 on page D7 provides a conceptual diagram showing six such breaks. Figure E12 on page E35 provides a more detailed diagram showing all seven breaks. With the exception of the break at Middle Avenue, none of these breaks would enhance pedestrian or bicycle connections due to the location of the train tracks at the rear of the properties. However, as can be seen on the diagrams, the breaks will substantially constrain site development, resulting in relatively small building areas that will render the type of transit-oriented mixed use development envisioned by the Plan far less likely.

While we acknowledge the need for building modulation along El Camino Real, we believe the required building breaks called out in the Plan are neither necessary nor practical. As previously stated, the Stanford site is narrow and backs up to the Caltrain tracks. Visual breaks would only open a view corridor to the railroad right-of-way, limiting the aesthetic rationale behind the concept. Also, the narrowness of the site causes the building breaks to significantly limit design flexibility, as well as the ability to provide the density and mix of uses desired in the Plan. We suggest the following modifications to the draft Plan:

Middle Avenue

The Plan requires a minimum 120 foot building break at Middle Avenue. While we support the concept of a bicycle and pedestrian crossing at the train tracks in

the vicinity of Middle Avenue, this can be achieved within a narrower building break that does not severely restrict the ability to redevelop for mixed use on sites adjacent to this break, each of which is located near transit and would be linked to Burgess Park via the pedestrian and bicycle crossing. We suggest a reduced building break requirement on the order of 60 feet in the general vicinity of Middle Avenue to allow for flexibility in redevelopment. Also, locating the building break closer to the parcel line between APNs 071-440-040 and 071-440-030 would allow for greater development efficiency if the two parcels were developed separately. The 60 foot break would mirror the width of Middle Avenue and would provide space for a publicly accessible plaza with pedestrian amenities.

Cambridge Avenue

The Plan requires a 90 foot building break at Cambridge Avenue. A break in this location would essentially prevent redevelopment of the parcel to the south of Cambridge Avenue. There is only a small sliver of land between the existing Stanford Park Hotel parking lot and Cambridge Avenue. (The diagram on page E35 does not depict the existing, leased surface parking lot.) As previously stated, we recognize the benefits of building modulation at this location. However, it would be possible to provide the desired articulation at this location, as well as a plaza area, without a building break. For example, a "U" shaped building aligned with the Cambridge cross street would serve the same purpose as a complete building break. By contrast, a complete break in this location would render the undeveloped parcel to the south of Cambridge Avenue unusable.

Additional Breaks to the North and South of Middle Avenue

In addition to the breaks at Cambridge and Middle Avenue, the draft Specific Plan requires an additional 50 foot break at Roble Avenue located at ground level, and four more 50 foot breaks that could be located above a parking podium. While breaks could be encouraged as a means to provide building modulation, they should not be required. Other design requirements of the Plan would achieve the Specific Plan's goal of mirroring the street grid on the other side of El Camino Real without unnecessarily constraining redevelopment opportunities. Given the site configuration and location, we ask that the Plan should be revised to address massing and modulation issues through means other than building breaks.

Setbacks (Page E70 of the Plan)

Front Setback

We support the Plan's 10 foot minimum front setback along El Camino Real. However, it would be helpful to clarify that the Plan's 15 foot sidewalk requirement includes 5 feet of existing right-of-way, in order to make the setback and sidewalk provisions consistent.

Rear Setback

The draft Plan requires a 20 foot rear setback. We feel that a rear setback adjacent to the Caltrain tracks is not necessary and could reduce the developable area of the parcels. We suggest no minimum rear setback, but recognize that fire district will retain the authority to impose specific building setbacks as needed. In some cases, uses such as surface or structured parking may be appropriate up to or close to the property line.

Open Space (Pages E70 and H10 of the Plan)

The draft Specific Plan proposes a minimum 40 percent open space requirement for the ECR-SE portion of the Plan area. Based on our review of the combined draft Specific Plan requirements applied to our parcels, we feel this level would be inconsistent with the high density transit-oriented mixed use development that the Plan envisions for our properties. The 20 percent open space requirement proposed for most other portions of the Plan area is more realistic for our area, and would still represent a significant improvement over the minimal open space currently on the sites.

The Plan recognizes that Stanford's properties are located in a developed area that is separated from housing and other sensitive uses. The Plan calls for a relatively high intensity and density of uses on the site and provides for density bonuses as an incentive for providing desirable uses such as senior housing and a hotel. A 40 percent open space requirement runs contrary to these goals and is not needed in light of the properties' location. Accordingly, we request a modification to the Plan to specify a 20 percent open space requirement in the ECR-SE portion of the Plan area.

In addition, we request a modification to the definition of Open Space, as found on page H10 of the draft Specific Plan, to clarify that open space includes all landscaping, plaza areas, pathways, and walkways, (including walkways along El Camino Real),and the phrase "and preserved from development for public use" be deleted. The current definition appears to restrict open space to a natural area, park, square or plaza open to the sky. Under such a restrictive definition, even a 20 percent open space requirement would be unduly restrictive and inconsistent with the Plan's goals for a higher intensity of development.

Sustainability (Page E49 of the Plan)

Stanford University has a strong commitment to, and extensive record of providing, sustainable development and supports the Plan's sustainability recommendations. However the assumption in policy E.3.8.3.03 on page E49 that redevelopment projects that are over 4 acres will have a greater ability to incorporate sustainability features than redevelopment projects that are less than 4 acres is not well reasoned or supported. Stanford's site is long and narrow. Due to the policies of the draft Specific Plan for our

site, which encourage multiple uses including a hotel use, coupled with the narrowness of our site, we do not believe that we will experience sustainability opportunities that are greater than other, smaller redevelopment properties. Accordingly, we ask that the City delete recommendation E.3.8.3.03.

Transportation Demand Management (TDM) (Page F33 of the Plan)

Stanford has a long history of strong support for voluntary TDM and is a recognized leader in TDM program development and implementation. However, as indicated in detail in our letter dated June 20, 2011, state law prohibits the City from mandating TDM. Instead, the Specific Plan should refer to the City's General Plan TDM Policy II-C-1, which encourages the City to work with employers to encourage employees to use alternatives to the single occupant vehicle.

We appreciate being able to provide our comments to you. We also want to reiterate our support for the City's planning process and to urge you to take advantage of the significant efforts of all in the community who participated over the past few years.

Sincerely,

Steve Elliott
Managing Director, Development

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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Mark Hoffheimer
Date:	March 8, 2012
Subject:	Task F. Downtown Parking Plaza 2 Study

Purpose

To conduct a feasibility study to determine how a parking structure might fit on Parking Plaza 2 within Draft Specific Plan standards and guidelines, to include gross and net parking counts.

Key Findings

A parking structure can be accommodated on Parking Plaza 2 providing from 250 parking spaces to 310 parking spaces, as follows:

- Parking structure using the entire parcel less a pocket park on the east side of the parcel (per the Draft Specific Plan): 250 spaces
- Parking structure using the entire parcel: 310 spaces

A parking structure would displace 95 existing parking spaces on the existing lot.

See attachment for garage layout, plan, massing and section.

Recommendations for Specific Plan Revisions

Replace the mixed-use project now showing on Parking Plaza 2 with a 5 level parking structure (4 levels above and one level below) and revise the parking count numbers accordingly in the Circulation chapter.

Methodology

The Perkins+Will Team conducted a parking structure accommodation study on Parking Plaza 2 using industry standards plus Menlo Park parking standards. The team also looked at garages in downtown Walnut Creek and Palo Alto as possible “precedents” for garages built on constrained sites.

Discussion of Findings

Parking Structure Features

The parking structure features:

- Two parking aisles;
- The southern aisle, with parking on ramp, sloped at 6.5%;
- Ingress and egress from Crane Street; and a
- Pocket Park, consistent with the Draft Specific Plan, on Chestnut Street opposite the garage entrance/exit on Crane Street to minimize pedestrian/auto conflict.

The parking structure is fully accessible, meeting ADA parking and access requirements.

Parking Structure Height

The parking structure falls within the 30-foot façade height limit and 38-foot building height limit established for the area, rising four levels to 28 feet (approximately 32 feet with parapet). Adding a fifth level above-grade, and stepping back the fifth level consistent with the Draft Specific Plan, would result in an inefficiently configured parking level and was not included.

Pocket Park and Adjacent Alley

The parking structure accommodates a pocket park along Chestnut Street, consistent with the Draft Specific Plan.

The parking structure could incorporate ½ of the adjacent alleyway to increase parking capacity. To ensure service access to the rear of buildings along Crane and Chestnut Streets and ease of circulation, only ½ of the alleyway should be used, if the alleyway is used at all. In addition, access to buildings along the alleyway adjacent to the garage could be adversely affected, suggesting that any use of the alleyway to increase parking capacity should be carefully considered. Using the alleyway in this manner could increase the parking count by approximately 45 spaces.

Parking Counts

The accommodation study results in the following parking counts:

Parking Spaces in Garage (Rounded)

- 250 spaces with pocket park
- 310 spaces without pocket park

Existing Parking Spaces on Surface

- 95 spaces

Parking Spaces Gained (Net)

- 155 spaces with pocket park
- 215 spaces without pocket park

Additional Parking Spaces Gained if Adjacent Alleyway Used

- 9 additional spaces per floor for a total of 45 spaces

Aesthetics

Given that the study shows a garage that is highly visible from the street on three sides, there will be additional costs to consider for façade treatments, such as decorative screening, to ensure compatibility with the surrounding downtown character.

Efficiency

The overall layout of the garage does not achieve the highest efficiency for a garage of this nature given that the site creates parking on only one side of the travel aisle on the south side (most efficient to have two-sided "double-loaded" parking). This inefficiency will create higher cost per space for the garage to that of other comparable and efficient parking garages that provide parking on both sides of the travel aisle.

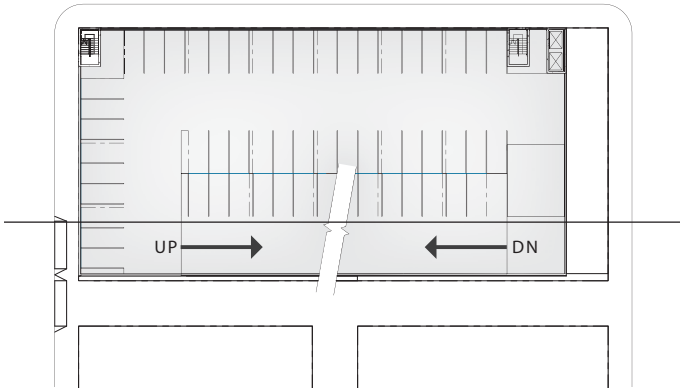
The precedent study of garages in downtown Walnut Creek and Palo Alto (see Figure F.2) show garages on narrow sites with garage lengths comparable to Parking Plaza 2. The High/Alma South Garage in Downtown Palo Alto, approximately 85' wide, accommodates only one "double-loaded" parking aisle and one ramp, an inefficient layout "shoe-horned" into a narrow downtown parcel providing needed parking in support of downtown businesses.

References

- City of Menlo Park Parking Plaza 2 Improvement Project – 06/01/11
- City of Menlo Park Parking Stalls and Driveway Design Guidelines
- TimHaahs Engineers Fundamentals of Parking

Attachments

- F.1 Perkins+Will Parking Plaza 2 Study
- F.2 Perkins+Will Parking Plaza 2 Study - Precedents



LEVELS 2, 3, 4, BELOW GRADE

Parking Garage Features:

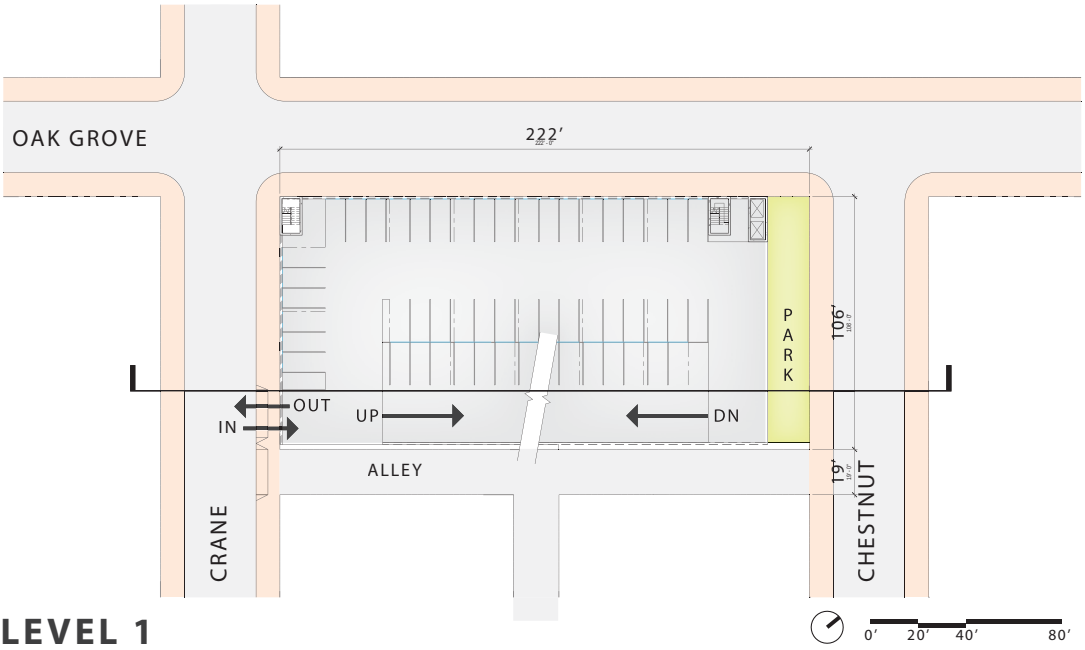
- Incorporates pocket park along Chestnut per Draft Specific Plan
- Access garage from Crane Street
- Five level garage: 4 levels above grade and 1 level below grade
- Garage height:
  28 feet
  32 feet with parapet

Parking Counts:

Parking Spaces in Garage (Rounded)
- 250 spaces
- 310 spaces without pocket park

Existing Parking Spaces on Surface
- 95 spaces

Parking Spaces Gained (Net)
- 155 spaces
- 215 spaces



LEVEL 1

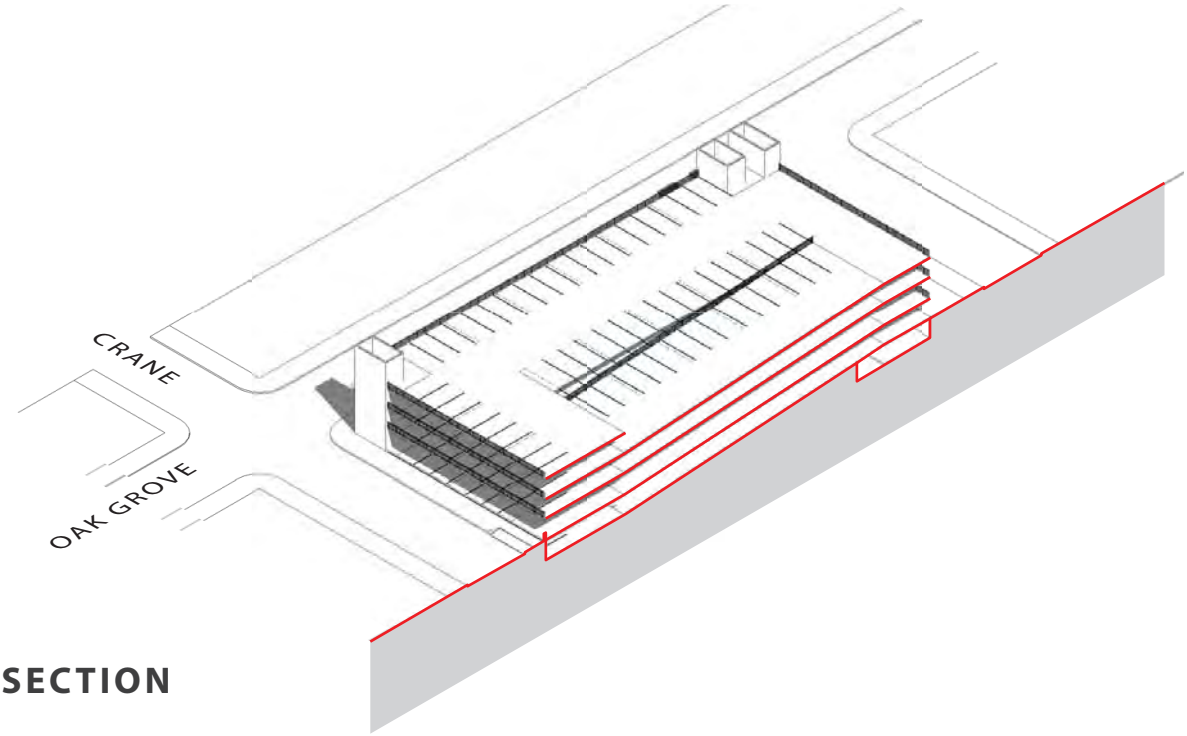
Parking Plaza 2 Study - Oak Grove Parking Garage

9 February 2012

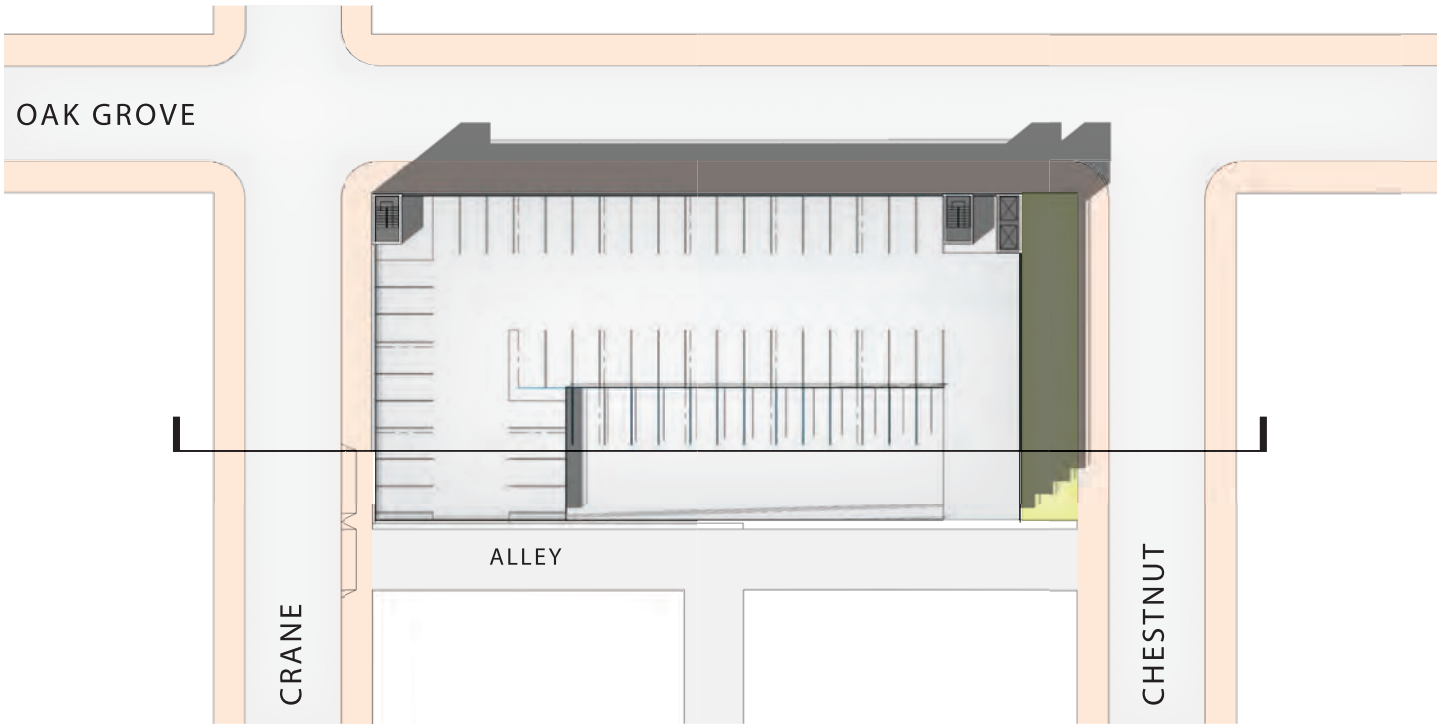
El Camino Real/Downtown Specific Plan
City of Menlo Park

PERKINS + WILL

ATTACHMENT F.1



AXON/SECTION



SITE PLAN

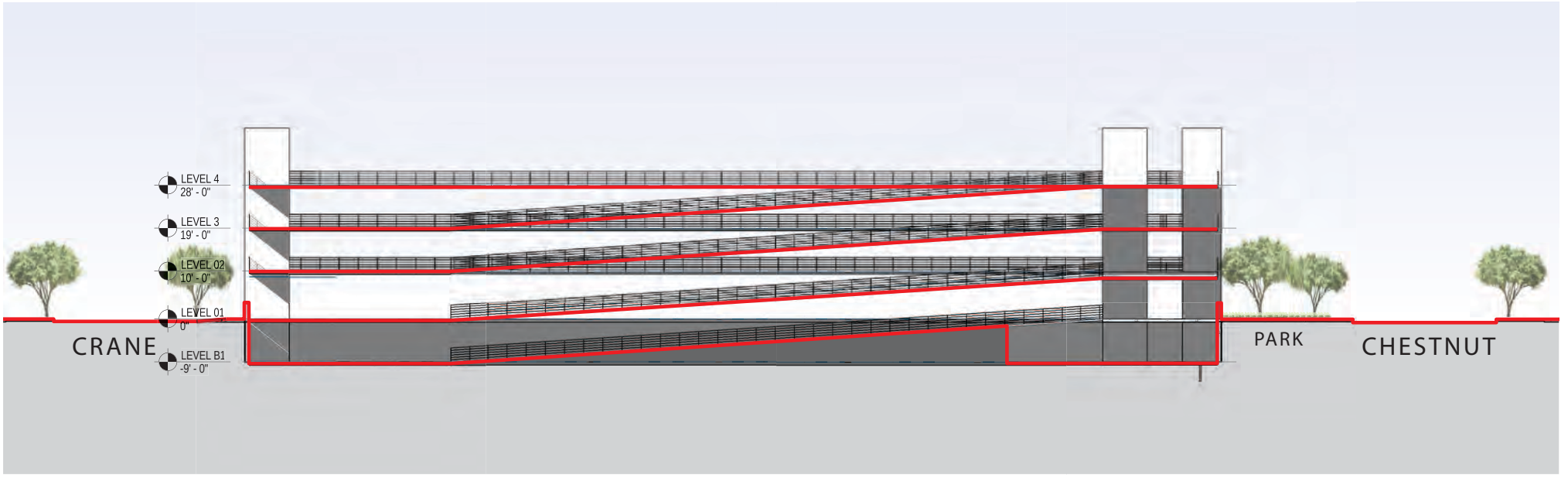
Parking Plaza 2 Study - Oak Grove Parking Garage

9 February 2012

El Camino Real/Downtown Specific Plan
City of Menlo Park

PERKINS + WILL

ATTACHMENT F.1



Parking Plaza 2 Study - Oak Grove Parking Garage

9 February 2012

El Camino Real/Downtown Specific Plan

City of Menlo Park

PERKINS + WILL

ATTACHMENT F.1

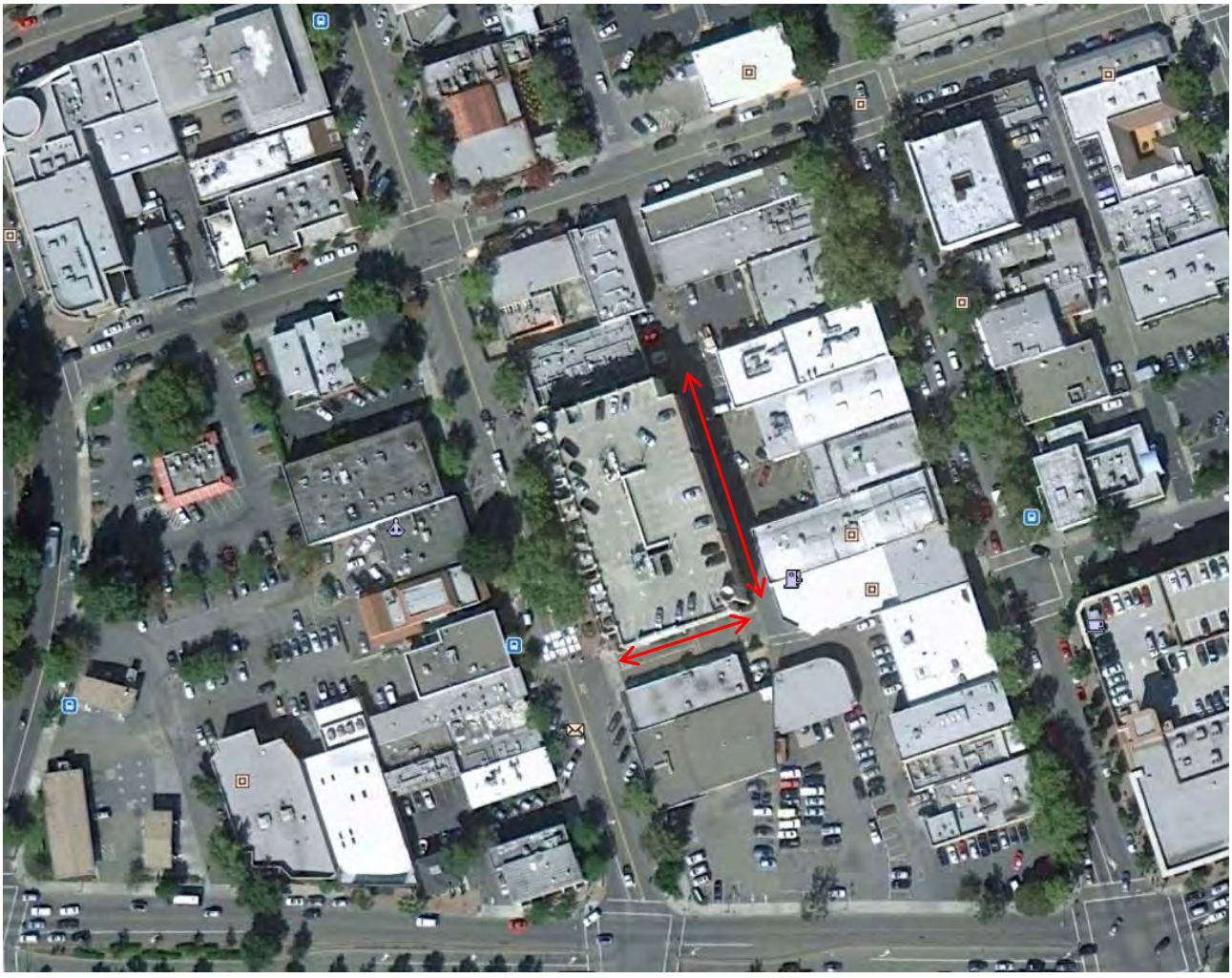
ATTACHMENT F.2

Menlo Park Parking Plaza 2 Study – Precedents Study

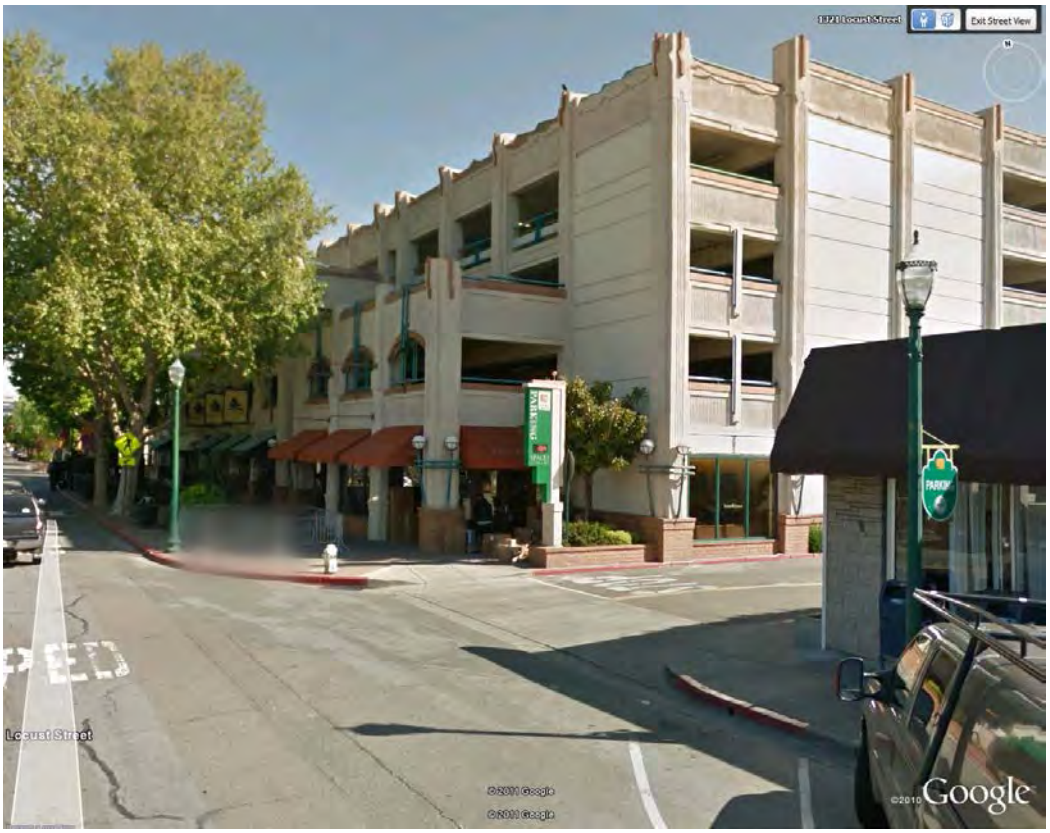
23 December 2011

Locust Street Garage – Downtown Walnut Creek

120’ x 200’



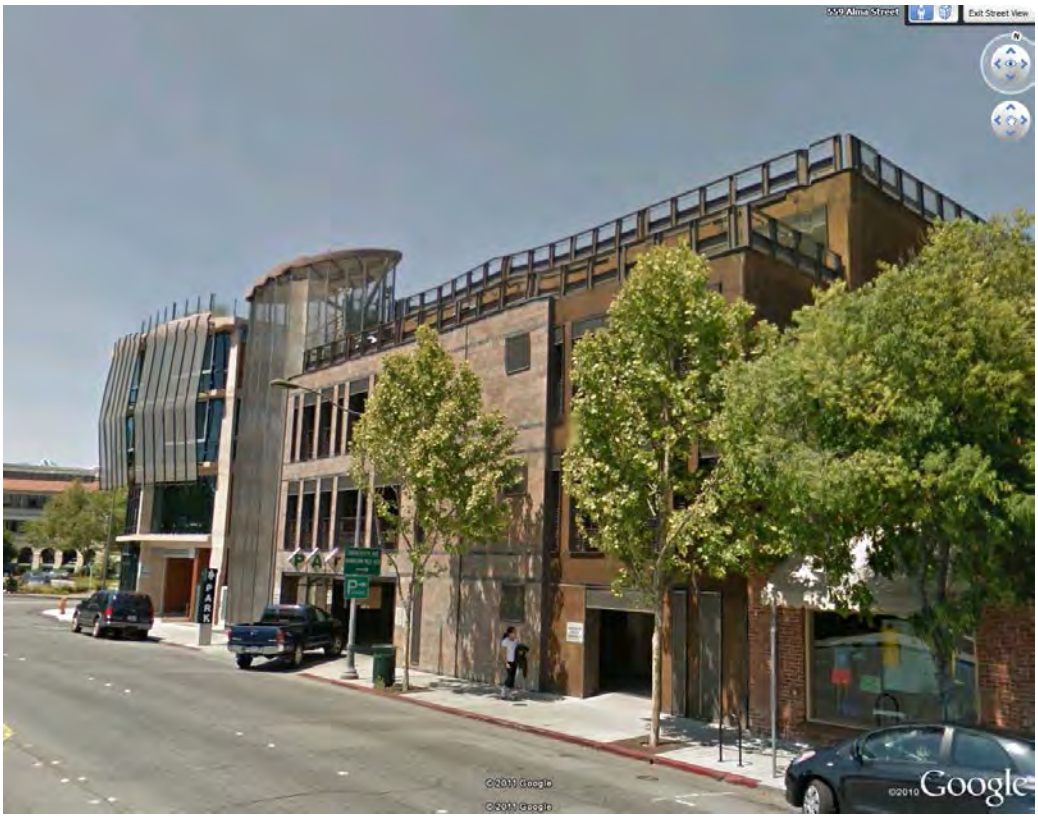
Locust Street Garage – Downtown Walnut Creek



High/Alma South Garage – Downtown Palo Alto
85’ x 220’



High/Alma South Garage – Downtown Palo Alto





Bryant/Lytton Garage – Downtown Palo Alto
128’ x 210’



Bryant/Lytton Garage – Downtown Palo Alto





STRATEGICECONOMICS

MEMORANDUM

Date: March 9, 2012

To: Thomas Rogers and Arlinda Heineck, City of Menlo Park

CC: Mark Hoffheimer, Perkins + Will

From: Sujata Srivastava, Principal, Strategic Economics

Project: 0834 Menlo Park El Camino Real/Downtown Specific Plan Update

Subject: Task G Public Benefit: Financial Feasibility Analysis

PURPOSE OF STUDY

This memorandum report summarizes the methodology and results of a financial feasibility study prepared by Strategic Economics with support from Perkins + Will, intended to inform the El Camino Real/Downtown Specific Plan. This analysis updates a previous financial analysis conducted by Strategic Economics in 2009, including using 2012 inputs and incorporating the Draft Specific Plan's zoning standards. **The purpose of the analysis is to test in a general way how allowed intensities, or floor-area-ratios (FARs), are likely to affect the feasibility of new development in the Specific Plan Area, and the resulting potential to garner public benefits in addition to inherent project benefits such as affordable housing or increased revenue generation. Because market conditions and development costs fluctuate over time, and because development opportunities vary from property to property, the results of this analysis are not necessarily directly applicable to a specific project.** However, the findings of this study can be extrapolated and applied to the overall Specific Plan area boundaries

More specifically, the objectives of the analysis are 1) to test the financial feasibility of a variety of building types and intensities in order to assess the recommended base and maximum FARs as designated in the Specific Plan; and 2) to assess the potential for developing a methodology for extracting additional benefits from private development projects that receive FAR bonuses.

About Financial Feasibility

Financial feasibility analysis is often used by cities to test the impact of regulatory mechanisms, such as zoning, parking requirements, and height limits on private development activity. The financial feasibility study is not intended to be prescriptive about the type of projects that should or will occur in the study area; nor is it representative of every development project or building type that could be possible. Each site and development project has unique circumstances, just as each developer has his/her own financial objectives, and those nuances are not possible to capture in this type of analysis. Rather than being a predictive model of the future, this financial feasibility analysis is a planning-level tool that allows decision-makers to compare different types of development projects and help them make regulatory decisions that are congruent with the community's vision and objectives for the study area. The analysis is based on judgments about what may be possible in the study area given current construction costs, land costs, and market conditions, obtained through interviews with developers, brokers, and published secondary sources.

The results of this financial feasibility analysis are strongly influenced by conditions in the real estate and construction materials markets. The market for real estate tends to be cyclical in nature and the region's housing market is still experiencing declines in both condominium and single-family home prices, according the latest Case-Shiller Home Price index.[1] While the commercial office market in the San Francisco Peninsula is showing signs of recovery, the overall vacancy rate remains over 10 percent according to a recent CBRE report.[2]

These factors, combined with tight credit markets, persistent unemployment, and weak national economic indicators, continue to slow down real estate development activity in the Bay Area; consequently, it is difficult to anticipate when the real estate market will be strong enough to attract a significant amount of new development. However, while current market conditions are not conducive to new development, the Specific Plan is a long-range document, and development projects affected by the policies therein will not be constructed and occupied until 2013 at the earliest. It is therefore important to consider not only what may be feasible given current market conditions, but also the likely feasibility once the market is restored. Where development was found to be infeasible in the current market, it was also tested with revenue increases and lower capitalization rates, in order to assess if the building types are likely to become feasible in the short- to medium-term.

KEY FINDINGS

The financial feasibility of each development scenario is summarized in Tables 1 and 2. Detailed pro forma statements are presented in Appendix B of the report. The following summarizes the key findings from the analysis:

- **Mixed-use residential development with the proposed Draft Specific Plan's base FARs is feasible given current land values.** The proposed base FAR of 1.1 for the ECR NW site for residential development is shown to generate sufficient revenues to offset the development and land costs. The proposed base FAR of 1.25 for the ECR SE site falls just slightly short of the threshold residual land value, but requires only a 0.3 percent increase in revenues to exceed development and land costs. Therefore, this report concludes that the base FARs for residential development on both ECR NW and ECR SE sites is feasible in the short term.

[1] Case-Shiller Home Price Index, November 2011. http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/us/?indexId=spusa-cashpidff--p-us----

[2] CBRE, MarketView San Francisco Peninsula Office, 4th Quarter 2011.

- **Residential development with the proposed Draft Specific Plan's bonus FARs for both parcel types appear to be more feasible than the base FAR scenarios, given current market values.** Housing developments at the bonus FARs (1.5 for the ECR NW site and 1.75 for the ECR SE site) can be reasonably expected to be built in the project area in the short term.

- **Development costs generally go up as density increases.** While higher FAR projects do generally produce higher revenues by allowing for more density on the site, these projects are also more costly to build because they require a higher number of underground or podium parking spaces. This pattern is applicable to residential and office projects.

- **Mixed-use office projects at the proposed base and bonus FARs appear not to be feasible on the small and larger parcels.** For the ECR NW and ECR SE sites, office projects at the base FARs of 0.55 and 0.625, respectively do not appear to be feasible based on current achievable office rents. Office buildings with bonus FAR (0.75 for the ECR NW site and 0.875 for the ECR SE site) were also not found to be feasible at this time. Even office buildings with FARs exceeding the proposed bonus density (1.5 on the ECR NW parcel and 1.75 on the ECR SE parcel) were unable to meet the threshold for feasibility. Therefore, under current market conditions, it is unlikely that new office development will occur in the study area for most small and large parcels. It should be noted that long-term property ownership, construction costs, parcel size/configuration, and other factors may make it more feasible for some properties to be developed into office use. It is also possible that office projects at these low densities could still be built in the project area, but without generating profits for the developer.

- **The financial performance of office development does not improve with projected growth in rents, largely due to the difficulty of building larger-scale office buildings on smaller infill sites.** With increased revenues of ten percent, as well as a more favorable capitalization rate of seven percent, office development still appears to fall short of feasibility, at the proposed, bonus, and full FARs for both ECR NW and ECR SE parcels. The high cost of providing underground parking for office buildings on parcels such as the ECR NW and ECR SE sites exceeds the revenues that can be generated from the office rents.

- **The proposed bonus density residential development generates a higher residual land value than base density. This added value to increased density suggests that there is potential for the city to pursue strategies to negotiate public benefits with developers that seek to maximize density for residential projects**. However, because of the added costs associated with meeting the Draft Specific Plan's design requirements, such as underground parking, and variability of financial performance from project to project, the value is likely to vary. In addition, the City should consider how such strategies could affect the Plan's ability to achieve inherent project goals, such as the provision of additional housing of a variety of types, and the activation of the station area and downtown. Such strategies would not be as likely for office developments, which do not currently generate sufficient revenues for developers even with the proposed bonus FAR.

  While there are various strategies for cities to receive public benefits from private development, few of them tie density bonuses to the provision of public benefits. One of the few examples of such a program is from San Diego, where the local redevelopment agency - Centre City Development Corporation (CCDC) – has implemented a voluntary FAR Bonus Payment Program that allows developers to purchase additional FAR for projects in the Downtown Community Plan Area. Under the program all payments go into a fund that is

primarily used for the acquisition of land and construction of public parks, but can also be used for other infrastructure improvements in the Downtown Community Plan Area. It is important to note that this program has not replaced development impact fees or developer agreements, but rather is complementary to those other funding sources for community facilities, amenities, and infrastructure. With the dismantling of the California redevelopment agency, the program will be transferred to the City of San Diego and remain in effect.

RECOMMENDATIONS FOR SPECIFIC PLAN REVISIONS

Perkins + Will, in association with Strategic Economics, analyzed and confirmed the proposed base and bonus FARs of the Draft Specific Plan. Perkins + Will and Strategic Economics do not recommend any revisions to the FARs set in the Draft Specific Plan at this time. However, the consultant team does recommend a periodic review of the base and bonus FARs every five years to ensure that the Plan's policies are responsive to market conditions.

Table 1: Results of Financial Feasibility Analysis on Small El Camino Real Parcel

Program Assumptions for Small Parcel - ECR NW	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office
Land use	Residential over Retail	Office over Retail	Residential over Retail	Office over Retail	Office over Retail
Density or FAR	$1.10	$0.55	$1.50	$0.75	$1.50
Number of Stories	$3.00	$2.00	$3.00	$2.00	3 (11.5 ft ceiling hts)
Net Revenues	$12,041,688	$7,697,738	$15,896,938	$9,452,813	$13,400,288
Net Costs (including Developer Profit)	$9,761,878	$8,370,342	$12,980,756	$10,317,964	$15,359,295
Residual Land Value per sq ft	$116	-$34	$148	-$44	-$100
Land Value	$100	$100	$100	$100	$100
Estimated Market Value of Land	$1,966,200	$1,966,200	$1,966,200	$1,966,200	$1,966,200
Revenues Minus Costs	$313,609	($2,638,805)	$949,982	($2,831,352)	($3,925,207)
% Increase in Revenues Needed	none	34.3%	none	30.0%	29.3%

Source: Perkins + Will, 2012; Strategic Economics, 2012.

Table 2: Results of Financial Feasibility Analysis on Large El Camino Real Parcel

Program Assumptions for Large Parcel - ECR SE	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office
Land use	Residential over Retail	Office over Retail	Residential over Retail	Office over Retail	Office over Retail
Density or FAR	1.25	0.625	1.75	0.875	1.75
Number of Stories	3	3	4	3	4
Net Revenues	$25,575,438	$13,863,713	$34,820,438	$18,087,023	$30,146,483
Net Costs (including Developer Profit)	$21,862,421	$15,272,284	$30,226,031	$20,003,459	$34,768,031
Residual Land Value/SF	$98	-$37	$121	-$51	-$122
Estimated Market Land Value per sf	$100	$100	$100	$100	$100
Estimated Market Value of Land	$3,785,600	$3,785,600	$3,785,600	$3,785,600	$3,785,600
Revenues Minus Costs	($72,583)	($5,194,171)	$808,806	($5,702,037)	($8,407,148)
% Increase in Revenues Needed	0.3%	37.5%	none	31.5%	27.9%

Source: Perkins + Will, 2012; Strategic Economics, 2012.

METHODOLOGY AND ASSUMPTIONS

The following section provides the methodology and key development assumptions used in the financial feasibility analysis, including a description of the process used to create the hypothetical development programs tested.

Residual Land Value Method

Financial feasibility was tested using a pro forma model that measures the **residual land value** of a given development project. Many pro forma models are structured to solve for the financial return for the developer or investors (internal rate of return). In contrast, the residual land value method of analysis solves for the value of the land. This method recognizes that the value of land is inextricably linked to what can be built on it, and that development potential is heavily influenced by zoning as well as lot size and configuration, neighborhood context, and other factors. The residual land value can be calculated using a static or multi-year model. A static pro forma model, which was used for this analysis, tallies all development costs (minus land) including construction costs, "soft" costs, and developer fees. Revenues from unit sales or rental leases are then summed. The total project costs are then subtracted from the total project revenues. If revenues exceed costs, the balance is the residual value, representing the price a developer would pay for the land if pursuing that project.

The residual land value is typically expressed on a per-square-foot basis. In order to understand what this measure says about feasibility, the residual land value is compared with the expected sales price for a particular site. If the residual value is higher than the market value, the project is feasible. If the residual value is lower than the market price, then the project is infeasible. While sales prices for land in Downtown Menlo Park and on El Camino Real can vary widely depending on the specific property, based on a survey of transactions and interviews with brokers and developers active on the Peninsula, the average land value in the study area is estimated at $100 per square foot.

Building Types Tested

Perkins + Will conducted site accommodation studies for prototypical parcels in the Study Area, to understand the types of projects that could be reasonably developed on the sites within proposed building height restrictions, setback and open space requirements, and parking standards for the various zoning districts identified in the Draft Specific Plan.

The prototypical parcels analyzed in the accommodation studies may assume some land assembly would be required in order to facilitate development parcels of a suitable size for development.

Table 3: Prototypical Parcels Studied

Parcel Prototype	General Location	Dimensions	Total Area
Small El Camino Real Parcel	ECR NW	113 feet x 174 feet	19,662 square feet
Large El Camino Real Parcel	ECR SE	182 feet x 208 feet	37,856 square feet
Source: Perkins+ Will, 2012			

Perkins + Will's site accommodation studies developed building types at a range of densities, measured as dwelling units per acre for residential buildings, and FARs for office buildings. **These building types represent potential development projects that could be built on the prototypical parcels given the physical limitations of size, configuration, and other characteristics, but they are not intended to be inclusive of every possible building type, nor predictive of how the study area will be developed in the future.** In addition to studying the proposed base and bonus FARs for each mixed-use residential and mixed-use office projects on each parcel, Perkins + Will also tested a maximum office FAR scenario for both sites that exceeds the proposed bonus FAR to understand the financial performance of projects that maximized the full building envelope that could be

accommodated on the sites. The site accommodation studies can be found in Appendix A of this report. Based on inputs from the site accommodation studies by Perkins + Will, Strategic Economics tested the financial feasibility of 10 building types, each with its own development program. These development programs are described in detail in Table 4 for the small parcel (ECR NW) and in Table 5 for the large parcel (ECR SE).

Table 4: Building Types Tested for El Camino Real Small Parcel – ECR NW

Program Assumptions for Small Parcel - ECR NW	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office (reduced office floor heights)
Land use	Residential over retail	Office over retail	Residential over retail	Office over retail	Office over retail
FAR	1.10	0.55	1.50	0.75	1.50
Zoning standards	25 du/acre	(1/2 of Base FAR 1.1)	40 du/acre	(1/2 of Base FAR 1.5)	NA
Site area in sq ft	19,662	19,662	19,662	19,662	19,662
Site developable area (minus setback area) in sq ft	16,837	16,837	16,837	16,837	16,837
Total buildable area in sq ft	21,628	10,814	29,493	14,747	29,493
Landscaped area in sq ft [1]	10,300	8,275	4,700	4,745	6,025
Ground floor retail area (in sq ft) [2]	4,100	5,300	5,300	5,300	2,500
Gross office area (in sq ft)	0	10,814	0	14,747	26,993
Net office area (in sq ft) [3]	0	9,192	0	12,535	22,944
Gross residential area (in sq ft)	17,528	$0.00	24,193	$0.00	0
Net residential area (in sq ft)	14,899	$0.00	20,564	0	0
Number of units [4]	11	0	15	0	0
Net unit size (in sq ft)	1,354	0	1,371	0	0
Number of stories [5]	3	2	3	2	3 (11.5 ft ceiling hts)
Surface parking spaces	0	0	0	0	0
Podium level spaces (level 1)	34	22	20	22	30
Podium level spaces (level 2)	0	0	23	0	0
Underground level spaces (level 1)	0	43	0	57	41
Underground level spaces (level 2)	0	0	0	0	42

The Total Buildable Area for Residential over Retail development type adds up the total gross residential and retail area to maximize the available FAR.

The Total Buildable Area for Office over Retail development type maximizes half the allowable FAR for office use and adds an appropriate retail space that counts against the remaining available FAR.

The Total Buildable Area for Office over Retail development type, in particular the Maximum Office scenario, adds up the total gross office and retail area to maximize the available FAR.

[1] Landscaped Area is calculated based on one potential accommodation study for each development. At the mimimum the 30% open space requirement for ECR SE is met.

[2] Ground Floor Retail is calculated based on a 40 feet deep retail space. The length of the Retail Area is the lot width minus the length required for entries, lobbies and any parking garage front as necessary.

[3] Net Office and Residential Area are considered to be 85% of Gross Office and Gross Residential Area respectively

[4] Residential unit area is assumed to be a 2 bedroom condominium unit of approximately 1,350-1,400 sf in size.The specific average unit size for each scenario was calculated based on the accommodations study's parameters, which take into account the physical constraints of the site, as well as zoning standards, including parking.

[5] Floor to ceiling height for residential =10' and office/retail = 15'. In the maximum office development type, the ceiling heights are 11.5' to remain within the building height limit.

Source: Perkins + Will, 2012; Strategic Economics, 2012

Table 5: Building Types Tested for El Camino Real Large Parcel – ECR SE

Program Assumptions for Large Parcel- ECR SE	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office
Land use	Residential over retail	Office over retail	Residential over retail	Office over retail	Office over retail
FAR	1.25	0.63	1.75	0.88	1.75
Zoning standards	40 du/acre	(1/2 of Base FAR 1.25)	60 du/acre	(1/2 of Base FAR 1.75)	NA
Site area in sq ft	37,856	37,856	37,856	37,856	37,856
Site developable area (minus setback area) in sq ft	28,576	28,576	28,576	28,576	28,576
Total buildable area in sq ft	47,320	23,660	66,248	33,124	66,248
Landscaped area in sq ft	14,000	14,200	14,000	14,200	11,300
Ground Floor Retail area (in sq ft)	6,100	6,100	6,100	6,100	6,100
Gross office area (in sq ft)	0	23,660	0	33,124	60,148
Net office area (in sq ft)	0	20,111	0	28,155	51,126
Gross residential area (in sq ft)	41,220	0	60,148	0	0
Net residential area (in sq ft)	35,037	0	51,126	0	0
Number of units	26	0	37	0	0
Net unit size (in sq ft)	1,348	0	1,382	0	0
Number of Stories	3	2	4	3	4
Surface parking spaces	0	0	0	0	0
Podium level spaces (level 1)	40	42	40	51	51
Podium level spaces (level 2)	34	0	54	0	0
Underground level spaces (level 1)	0	73	0	100	102
Underground level spaces (level 2)	0	0	0	0	101

Note - The Office over Retail Development Type uses only half the allowable FAR for the office use. The retail use area is counted against the remaining allowable FAR.

The Total Buildable Area for Residential over Retail development type adds up the total gross residential and retail area to maximize the available FAR.

The Total Buildable Area for Office over Retail development type maximizes half the allowable FAR for office use and adds an appropriate retail space that counts against the remaining available FAR.

The Total Buildable Area for Office over Retail development type, in particular the Maximum Office scenario, adds up the total gross office and retail area to maximize the available FAR.

[1] Landscaped Area is calculated based on one potential accommodation study for each development. At the mimimum the 30% open space requirement for ECR SE is met.

[2] Ground Floor Retail is calculated based on a 40 feet deep retail space. The length of the Retail Area is the lot width minus the length required for entries, lobbies and any parking garage front as necessary.

[3] Net Office and Residential Area are considered to be 85% of Gross Office and Gross Residential Area respectively

[4] Residential unit area is assumed to be a 2 bedroom condominium unit of approximately 1,350-1,400 sf in size.The specific average unit size for each scenario was calculated based on the accommodations study's parameters, which take into account the physical constraints of the site, as well as zoning standards, including parking.

[5] Floor to ceiling height for residential =10' and office/retail = 15'. In the maximum office development type, the ceiling heights are 11.5' to remain within the building height limit.

Source: Perkins + Will, 2012; Strategic Economics, 2012

Land Uses Tested

This study tested the feasibility of mixed-use development consisting of ground floor retail with residential floors or office space above. The residential land use is defined as for-sale condominiums. The office land use includes conventional Class A professional offices but does not consider medical offices, due to the additional Draft Specific Plan restrictions on medical office uses.

Typical Residential Unit Size

For the residential component of the prototypes development, several simplifying assumptions were made. The analysis assumed average unit sizes of between 1,350 and 1,400 square feet. This size range was determined based on a survey of recent development projects in the Menlo Park and Peninsula housing markets. For each prototype, the specific average unit size was calculated based on the accommodations study's parameters, which take into account the physical constraints of the site, as well as zoning standards, including parking.

Zoning Assumptions

Assumptions regarding setbacks, parking, heights, and other zoning requirements were based on the standards established in the Draft Specific Plan.

Development Cost Assumptions

Hard Costs

Project construction costs are based on Strategic Economics' research, published estimates from RS Means, and interviews with Peninsula developers engaged in building the construction type represented by this analysis. The objective of this exercise was to establish an average construction cost. One could expect that this average is roughly in the middle third of actual costs though it is possible to envision specific projects that would have costs outside this range. Table 6 shows the gross hard costs used for this analysis by unit type.

Table 6: Estimate of Project Hard Costs

Building Type/Structure	Unit	Cost
Condo (3-4 story)	psf	$ 250.00
Office Class A, Vanilla shell, LEED Silver	psf	$ 200.02
Retail ground floor + TI	psf	$ 185.00
Surface parking	per space	$ 5,000
Podium parking	per space	$ 20,000
Underground parking level 1	per space	$ 35,000
Underground parking level 2	per space	$ 40,000

Source: Developer interviews (2012), ENR Construction Cost Index, Perkins + Will, Strategic Economics.

Soft Costs

Estimated soft costs include items such as permits, architectural fees, engineering fees, developer overhead, insurance, taxes, legal, accounting fees, and marketing costs. Permits and other development impact fees were calculated based on the current fee schedule for the City of Menlo Park and the local school districts, as shown in Table 7 below. The remainder of the soft costs was estimated based on standard industry ratios and conversations with local developers and architects, and calculated as a percentage of hard costs.

Table 7: Schedule of City and Local District Fees

Fee	Calculation
Recreation fee	0.008 x Number of Units x Land Value
Building construction street impact fee	0.0058 X Project Valuation
Construction inspection fees	$500 + 3% X Site Improvement Costs
School district fee	
Residential	$2.97 per Square Foot
Commercial	$0.47 per Square Foot
BMR in lieu fees	
Commercial Office	$14.50 per Square Foot
Retail	$7.87 per Square Foot
Traffic Impact Fee	
Multifamily unit	$1,704.34 per Square Foot
Office	$4.10 per Square Foot
Retail	$4.10 per Square Foot
Building check fee	
Multifamily residential - New, Type V construction	
Size basis 5,000 square feet	$3,828 plus 0.205 each addtl sq ft
Size basis 8,333 square feet	$4,511 plus 0.130 each addtl sq ft
Size basis 12,500 square feet	$5,052 plus 0.404 each addtl sq ft
Office- Shell, Type I construction	
Size basis 5,000 square feet	$3,638 plus 0.169 each addtl sq ft
Size basis 10,000 square feet	$4,482 plus 0.083 each addtl sq ft
Size basis 25,000 square feet	$5,730 plus 0.053 each addtl sq ft
Retail Sales- TI, Type V construction	
Size basis 1,000 square feet	$912.50 plus 0.075 each addtl sq ft
Size basis 5,000 square feet	$1,211.80 plus 0.056 each addtl sq ft
Retail Sales- TI, Type I construction	
Size basis 1,000 square feet	$625.00 plus 0.051 each addtl sq ft
Size basis 5,000 square feet	$830 plus $0.039 each addtl sq ft
Specific Plan preparation fee [1]	$0.80 per Square Foot

[1] In December 2011, the City Council authorized staff and the consultant team to analyze a fee that would account for the costs of preparing the Specific Plan and associated EIR. The fee cited here is a preliminary estimate for the purposes of providing an accurate feasibility analysis, but does not necessarily represent the exact fee that will subsequently be proposed and reviewed.

Source: City of Menlo Park Schedule of Fees,1 July 2011; Sequoia Union High School District, 2012.

Financing Costs

Financing costs were estimated assuming that a construction loan would be obtained for 65 percent of the cost of development for a term of 24 months, with a 6.5 percent interest rate and a 1.5 percent loan fee. Given that the construction loan would be drawn down over the course of the project, the total financing cost was estimated assuming an average outstanding loan balance of 65 percent.

Developer Profit

The land residual method requires making an assumption about expected developer profit, since projects will not be built unless a developer feels that they have the potential to generate a return. The analysis assumes developer profit equal to 12 percent of other development costs, not including land, based on the industry standard for the Bay Area. While profit margin expectations change depending on a variety of factors including market conditions, expected timeframes to receive entitlements, and other factors, 12 percent is considered a conservative assumption for a threshold that would attract developers to Menlo Park.

Project Value

As mentioned earlier, the residual land value of a property is calculated by subtracting the estimated development costs (described above) from the estimated value of the property. The value of condominium units was estimated based on their expected sale prices. The value of office space and retail space were estimated using the income capitalization approach, wherein the value is estimated based on expected ongoing rental revenues from the space.

Condominiums

Condominium sales prices and sizes were estimated based on the Strategic Economics market study memorandum report for the study area and updated for current market conditions. Average condominium values were set at $700 per square foot for condominium flats. This is representative of the values achieved for recently constructed units in Menlo Park and comparable communities on the Peninsula (Table 8).

The City of Menlo Park currently requires that in residential developments of less than 20 units, 10 percent must be priced below-market rate. In developments with more than 20 units, 15 percent of units must be below-market rate (BMR). BMR units are to be priced for households at 110 percent of the area median income. It is the City's preference that the units are provided on-site. Therefore, the analysis assumed that the developer would choose to build the units in the condominium or rental project rather than pay in-lieu fees. In situations where the inclusionary housing percentage calculation yields a fraction of a unit, Strategic Economics assumed a full additional unit. BMR units are assumed to be identical in size and quality to market-rate units. Based on an interview with the City of Menlo Park Housing Division, Strategic Economics estimated an average per unit price of $370,000 for BMR units. Although the city's existing zoning ordinance allows for an FAR bonus for BMR units, the additional FAR for BMR units was not included in this study, in order to keep assumptions about development intensity conservative.

Table 8: Housing Value Assumptions

Unit Type	Average Price/ Sq Ft	Avg. Unit Price
Condominium Flats	$700	$945,000
Source: Hanley Wood; Zillow; Strategic Economics, 2011		

Retail

Based on Strategic Economics' market research, rent for the newly built, ground-floor retail component of a mixed-use project at a prime retail location was estimated at $4.25 per square foot per month (triple net)[3] in the study area. The average vacancy rate was assumed at 5.0 percent. Operating expenses not paid by the tenant were estimated at 10 percent of revenue. The value of the retail component was estimated assuming an 8.0 percent capitalization rate. Based on this calculation, the value of retail development was estimated to be $542 per square foot in the study area (Table 9).

Table 9: Operating and Valuation Assumptions for Ground-Floor Retail

Assumptions	Unit	Value
Monthly Rent (NNN)	Per SF	$4.25
Vacancy	Percent	5.0%
Non-Reimbursable Expenses	Percent	10.0%
Capitalization Rate	Percent	8.0%
Gross Annual Retail Income	Per SF	$51.00
Less Retail Vacancy	Per SF	-$2.55
Less Non-Reimbursable Exp	Per SF	-$5.10
Net Operating Income	Per SF	$43.35
Capitalized Value	Per SF	$541.88

Source: Retail brokers, 2012; Marcus & Millichap Investment Outlook, 2011

Office

Office rents were estimated at $5.00 a square foot (full service)[4] based on interviews with brokers and a survey of comparable new office buildings. The net income from office was estimated assuming 5.0 percent vacancy and operating expenses equal to 25 percent of gross income. The value of the units was estimated using an 8.0 percent capitalization rate. Based on this calculation, the value of office development was estimated to be $525 per square foot (Table 10).

Table 10: Operating and Valuation Assumptions for Office

Assumptions	Unit	Value
Monthly Rent (NNN)	Per SF	$ 5.00
Vacancy	Percent	5.0%
Non-Reimbursable Expenses	Percent	25.0%
Capitalization Rate	Percent	8.0%
Gross Annual Office Income	Per SF	$ 60.00
Less Office Vacancy	Per SF	$ (3.00)
Less Non-Reimbursable Exp	Per SF	$ (15.00)
Net Operating Income	Per SF	$ 42.00
Capitalized Value	Per SF	$ 525.00

Source: Office brokers, 2012; Marcus & Millichap Investment Outlook, 2011

[3]Triple-net leases require the tenant to pay for net real estate taxes on the leased asset, net building insurance and net common area maintenance.

[4]Full service leases require the landlord to be responsible for the payment of taxes, maintenance, insurance and utilities.

DISCUSSION OF FINDINGS

Residential development with bonus FAR appears to be the most likely type of development in the plan area given current market conditions. Projects with bonus FAR density on both the small and large parcels (FAR of 1.5 and 1.75, respectively) are feasible at current market conditions. Residential development projects at the base FAR of 1.25 on the large ECR SE parcel falls slightly short of being feasible given current land values. But with a very small increase in revenue, this building type does appear to be feasible.

The base and bonus FARs proposed in the Draft Specific Plan allow residential developers the flexibility to provide a range of unit sizes to accommodate a diverse market. The market niche for residential development in Menlo Park is currently for higher-end, larger two- and three-bedroom condominium and townhouse units. However, the proposed densities in the Draft Specific Plan allow developers flexibility to build these traditional types of units or to introduce projects that contain more compact units for young professionals and smaller households.

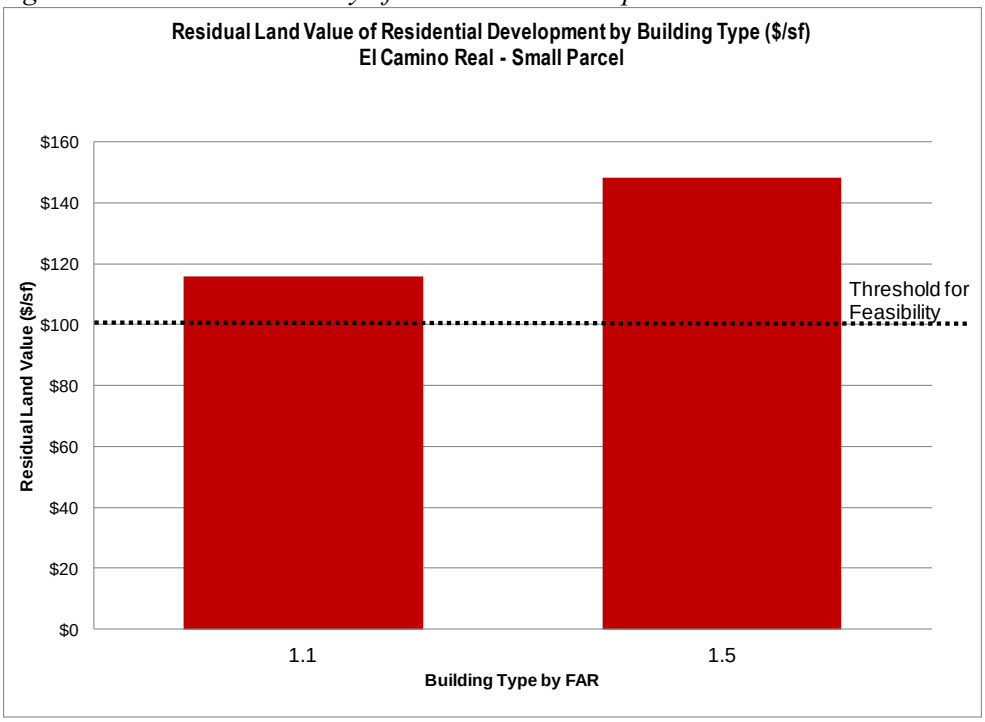
Increasing densities from the base FAR to the maximum FAR would enhance the financial feasibility of residential projects on both El Camino Real parcels.
According to the analysis, a building with a bonus density of 1.5 on the small parcel yields a residual land value of $148 per square foot, compared to $116 per square foot for a building with a base density of 1.1. Similarly, on the large ECR SE parcel, the bonus density residential building generates a land value of $121 compared to $98 at the base density (Figures 1 and 2).

This added value to increased density suggests that there is potential for the city to pursue strategies to negotiate public benefits with developers that seek to maximize density for residential projects. However, because of the added costs associated with meeting the Draft Specific Plan's design requirements, such as underground parking, and variability of financial performance from project to project, the value is likely to vary. In addition, a public benefit strategy that results in additional time and uncertainty could both reduce the amount of value that could be shared, and limit the Plan's ability to address inherent project objectives, such as the provision of additional housing and the activation of the station area and downtown. This strategy is not as likely for office developments, which do not currently generate sufficient revenues for most developers even with the maximum proposed FAR.

There are various strategies for cities to receive public benefits from private development. The most commonly used methods are development impact fees, which require a nexus study to be legally implemented, and negotiated developer agreements. There are fewer city programs that tie density bonuses to the provision of public benefits. One of the few examples is from San Diego, where the local redevelopment agency - Centre City Development Corporation (CCDC) – has implemented a voluntary FAR Bonus Payment Program that allows developers to purchase additional FAR for projects in the Downtown Community Plan Area. Under the program, an additional 1.0 to 2.0 of FAR (above a base FAR of 5.5 to 8.0) can be purchased. The FAR Bonus Payment program is administered by the CCDC, and all payments go into a fund that is primarily used for the acquisition of land and construction of public parks, but can also be used for other infrastructure improvements in the Downtown Community Plan Area. The fee, which is set at $15 per square foot, was based on a combination of independent financial analysis and negotiations with the local development community. CCDC staff report that the use of a below-market rate fee allows the program to be applied uniformly across land uses and building types. Yearly increases in the cost of FAR are tied to the consumer price index, and the City is free to reevaluate the cost of additional FAR at any time. It is important to note that this program has not replaced development impact fees or developer agreements, but rather is complementary to those other funding sources for community facilities,

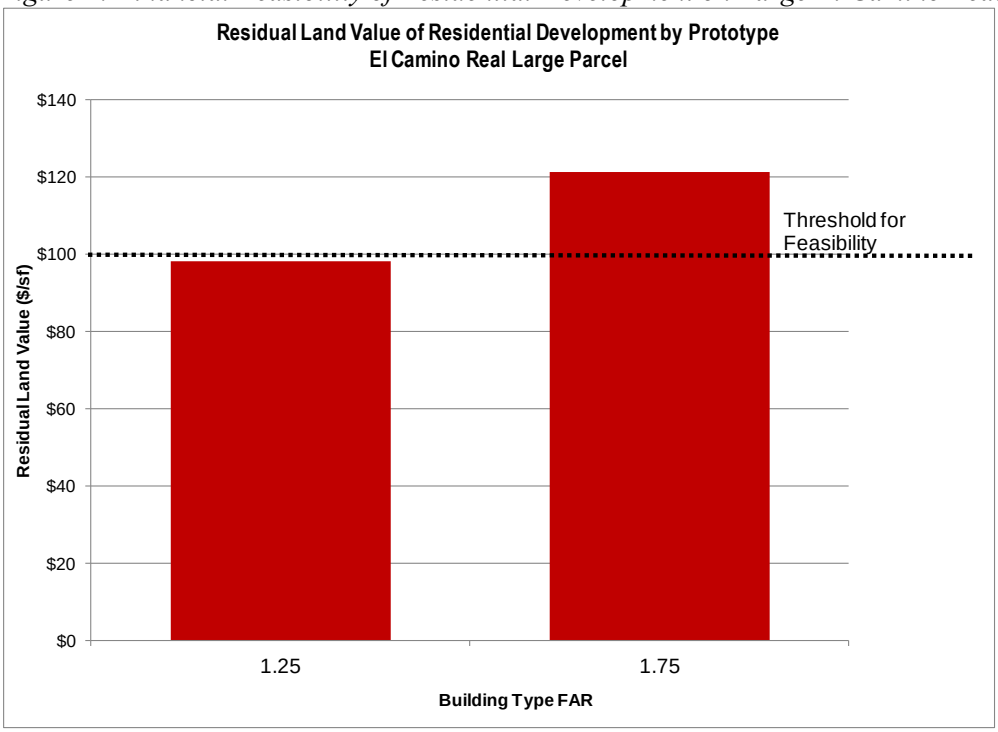
amenities, and infrastructure. Since its inception in 2007, the program has been used in four projects, generating $1.7 million in revenues for CCDC, with an average payment of approximately $425,000 per project. CCDC staff emphasized that there will be a need to reevaluate the program on a regular basis to ensure that the fees are consistent with market realities. With the dismantling of the redevelopment agency, the program will be transferred to the City of San Diego, and is expected to remain active.

Figure 1: Financial Feasibility of Residential Development on Small El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

Figure 2: Financial Feasibility of Residential Development on Large El Camino Real Parcel

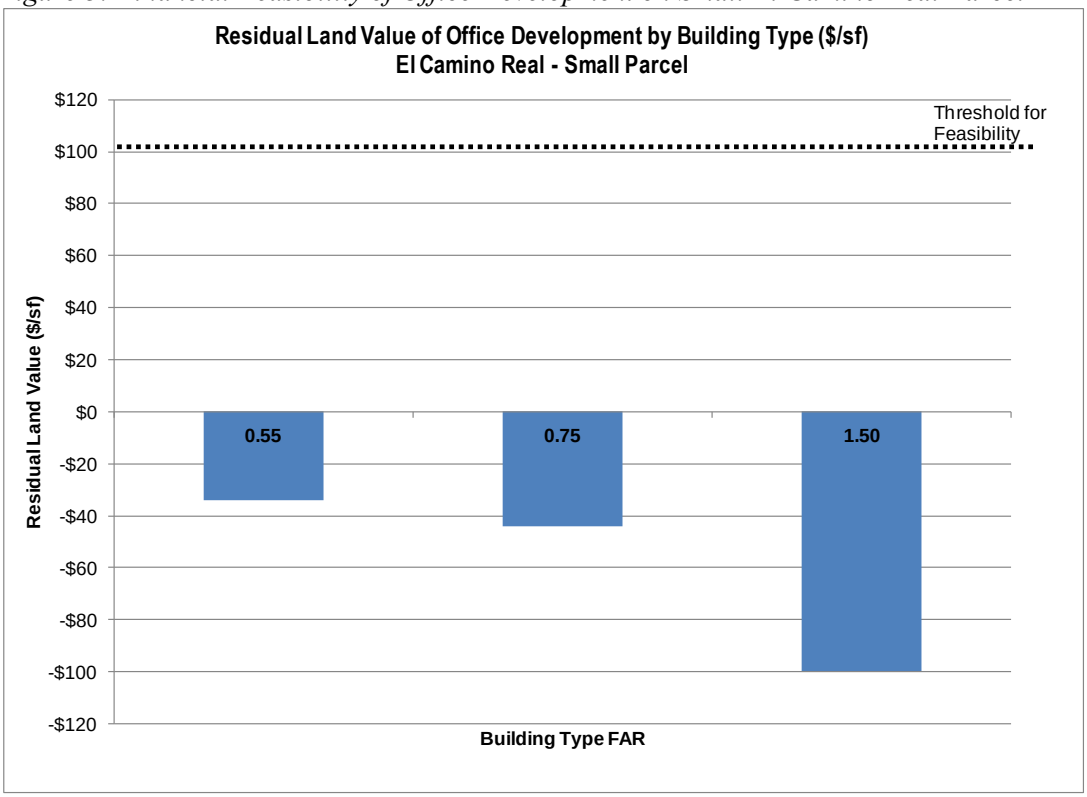


Source: Perkins + Will, 2012; Strategic Economics, 2012.

Office buildings are not feasible in the current market on either of the prototypical parcels. The proposed base and proposed bonus FAR office buildings do not generate enough revenue to offset the development costs (Figure 3).

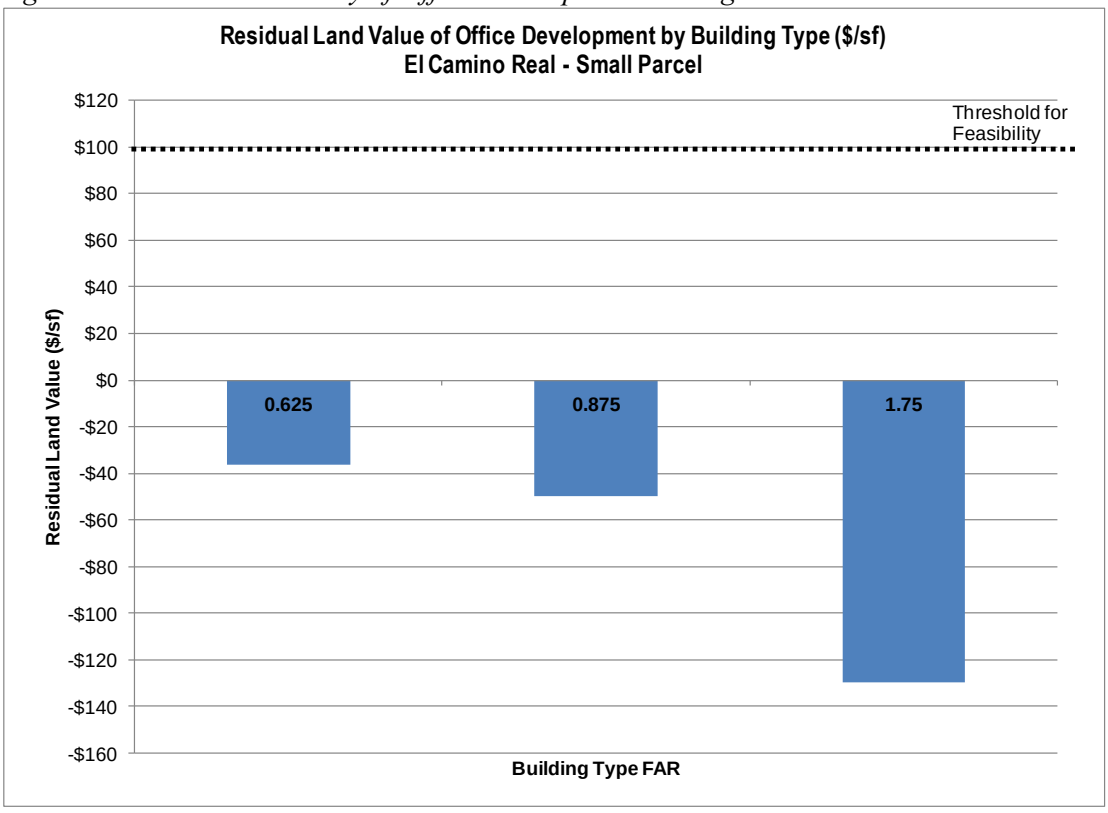
Office buildings with higher FARs than the proposed maximum are also infeasible based on current market conditions (Figures 3 and 4). This is in large part due to the fact that the office market has not fully recovered to command the high rents that would be required for these projects to be financially feasible.

Figure 3: Financial Feasibility of Office Development on Small El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

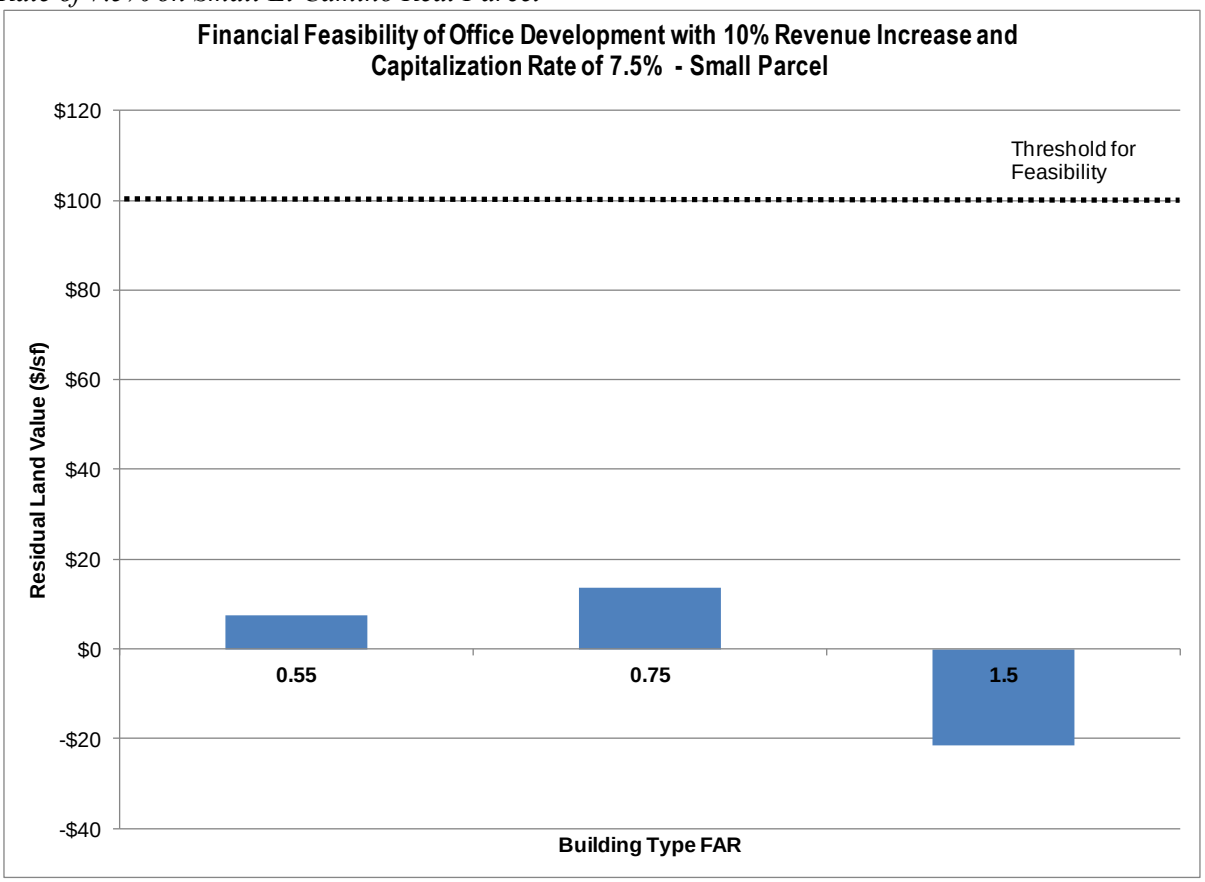
Figure 4: Financial Feasibility of Office Development on Large El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

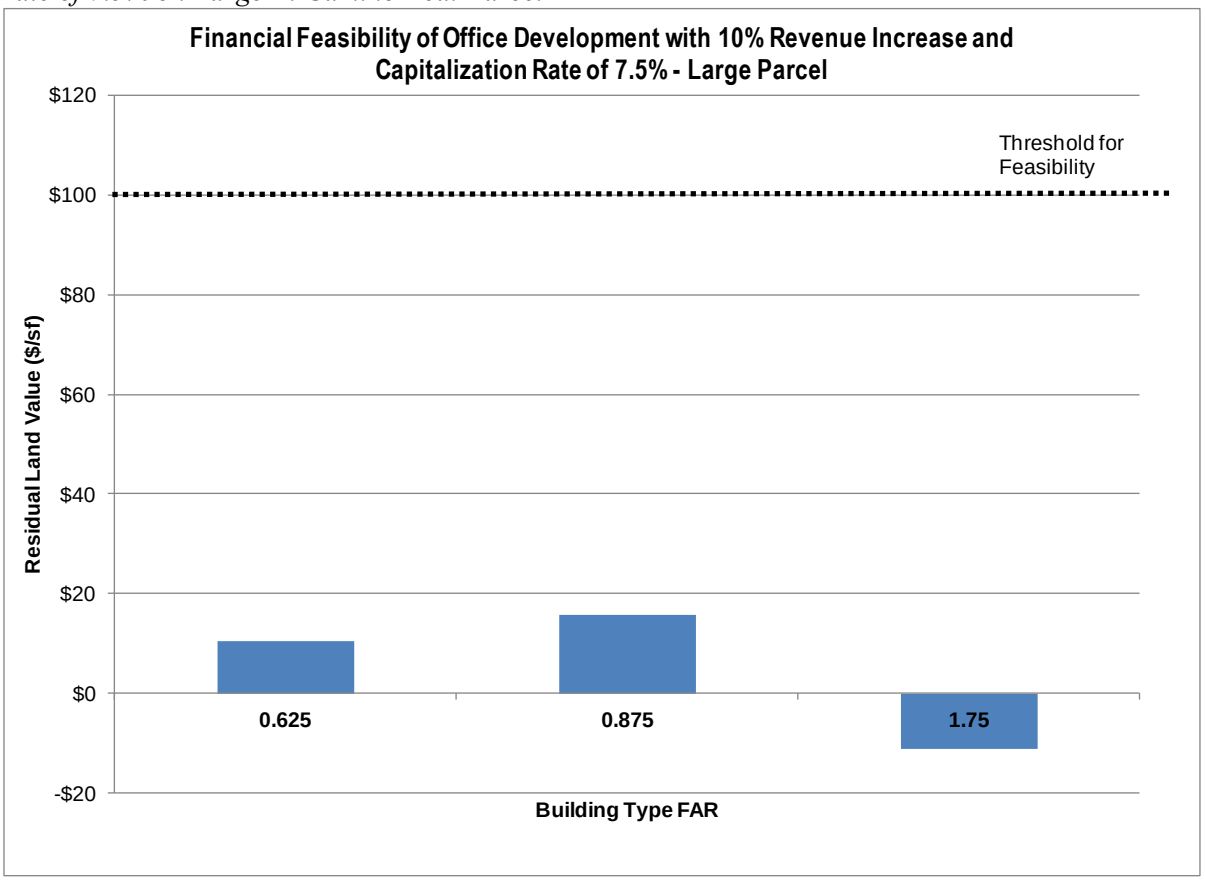
In the short- to mid-term, once the office market is restored, the analysis shows that the proposed base and maximum FAR office buildings would still be infeasible. To test the effect of a healthier office market on feasibility, Strategic Economics evaluated the financial feasibility of mixed-use office buildings with a rent increase of 10 percent and a more favorable capitalization rate of 7.5 percent. With these assumptions in place, the proposed base and maximum FAR buildings still do not pencil out (Figures 5 and 6). Office building types with FARs utilizing the full potential of the parcels (FARs of 1.5 on the small parcel and 1.75 on the large parcel) are also estimated to be infeasible under these conditions (Figure 6). It should be noted that long-term property ownership, construction costs, parcel size/configuration, and other factors may make it more feasible for some properties to be developed into office use.

Figure 5: Financial Feasibility of Office Development with 10% Revenue Increase and Capitalization Rate of 7.5% on Small El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

Figure 6: Financial Feasibility of Office Development with 10% Revenue Increase and Capitalization Rate of 7.5% on Large El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

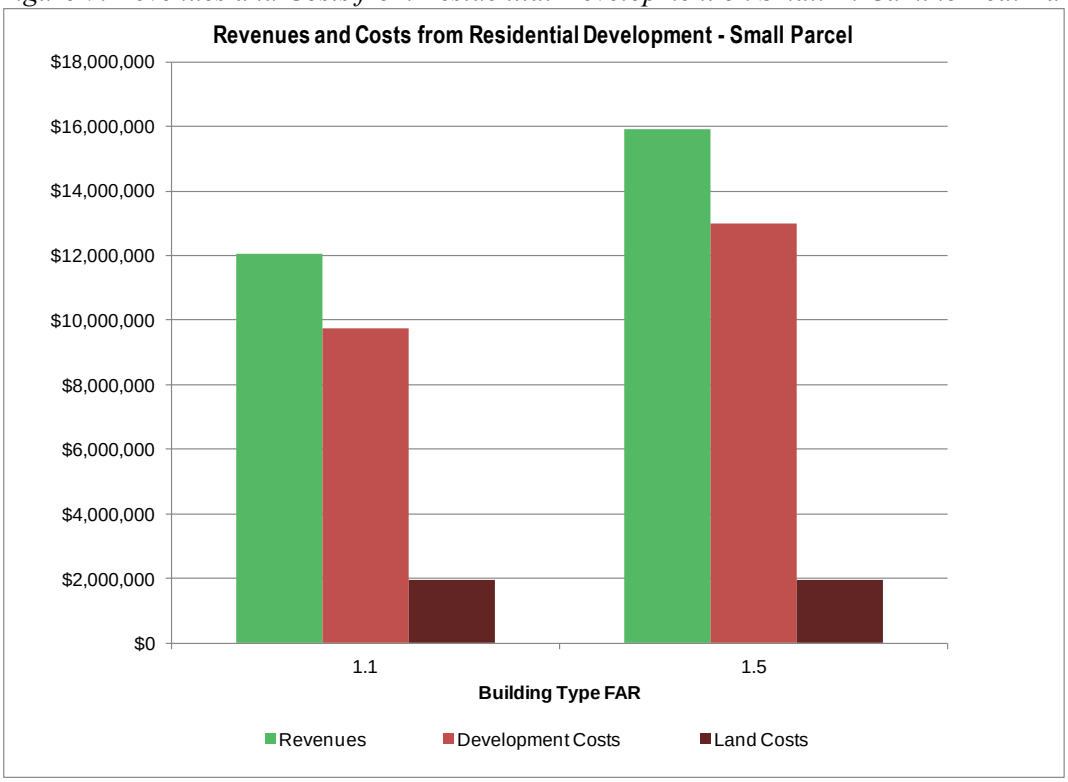
Ground floor retail on El Camino Real is feasible to build as long as the retail location is strong enough to support top-of-the-market rents.

The retail component of a mixed-use residential or office building can be a revenue generator, as long as the retail store front can be leased to a high-value tenant willing to pay the rents needed to offset the cost of building the space and associated parking. It is likely that developers will choose to build retail on the ground-floor in locations that are attractive to high-performing retailers. It is not likely that the entire El Camino Real corridor can support mixed-use development with ground-floor retail.

Development costs escalate along with revenues as densities increase.

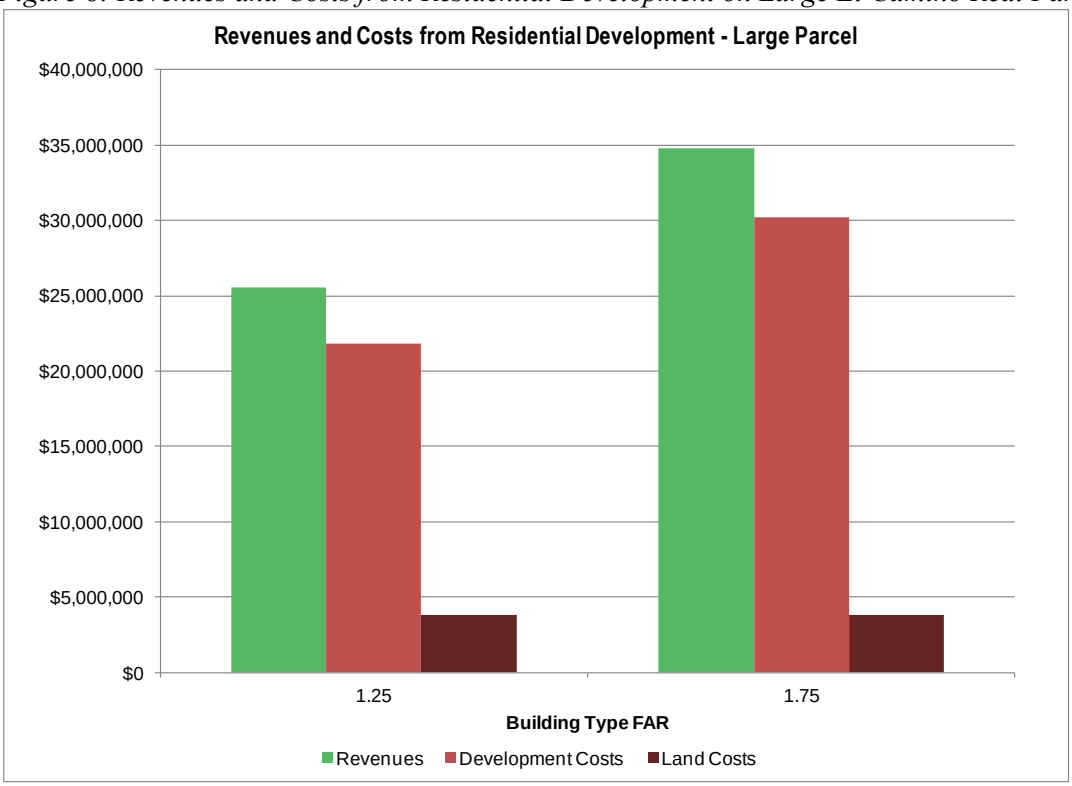
Though higher density projects can generate more revenues, they are also more costly to build due largely to the higher cost of underground parking relative to podium or surface parking (Figures 7 and 8). This holds true for both residential and office projects.

Figure 7: Revenues and Costs from Residential Development on Small El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

Figure 8: Revenues and Costs from Residential Development on Large El Camino Real Parcel



Source: Perkins + Will, 2012; Strategic Economics, 2012.

REFERENCES

The following sources were used in the analysis:

- Marcus & Millichap Investment Outlook 2011
- City of Menlo Park Schedule of Fees, 2011
- Douglas Frederick, City of Menlo Park Housing Division, 2012
- Sequoia Union High School District, 2012
- Zillow.com, 2012
- Case-Shiller Home Price Index, 2011
- Hanley-Wood Market Intelligence, 2011
- CBRE broker reports, 2011
- ENR Construction Cost Index, 2011
- RealFacts/Meyers Rental Trends, 2011
- Brad Richter, San Diego Centre City Development Corporation, 2012
- Mark Korsun, Cassidy Turley
- Howard E. Dallmar, Cornish and Carey
- Curtis Leigh, Hunter Properties
- James Gaglione, Terranomics
- Brad Wiblin, BRIDGE

APPENDIX A: SITE ACCOMMODATION STUDIES

APPENDIX B: DETAILED PRO FORMAS

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Small Parcel (ECR NW)					
	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office (Reduced Office flr. ht.)
Development Type	Residential over Retail	Office over Retail	Residential over Retail	Office over Retail	Office over Retail
Zoning Standards	25 du/acre	FAR = 0.55 (1/2 of Base FAR 1.1)	40 du/acre	FAR = 0.75 (1/2 of Base FAR 1.5)	FAR = 1.5 NA
	FAR = 1.1		FAR = 1.5		
Site area	113' x 174' = 19,662 sft = 0.45 acres				
Site developable area (minus setback area)	16,837 sft = 0.386 acres				
Total Buildable Area (sf)	21,628	10,814	29,493	14,747	29,493
Landscaped area (sf)[1]	10,300	8,275	4,700	4,745	6,025
BUILT AREA					
Ground Floor Retail area (sf)[2]	4,100	5,300	5,300	5,300	2,500
Gross office area (sf)	0	10,814	0	14,747	26,993
Net office area (sf)[3]	0	9,192	-	12,535	22,944
Gross residential area (sf)	17,528	-	24,193	-	-
Net residential area (sf)[3]	14,899	-	20,564	0	0
Number of Units[4]	11	-	15	0	0
Number of Stories[5]	3	2	3	2	3 (only possible if office floor to ceiling height is 11'-6")
PARKING COUNTS[6]					
Surface parking spaces	0	0	0	0	0
Podium level spaces (level 1)	34	22	22	22	30
Podium level spaces (level 2)	0	0	23	0	0
Underground level spaces (level 1)	0	42	0	57	41
Underground level spaces (level 2)	0	0	0	0	42

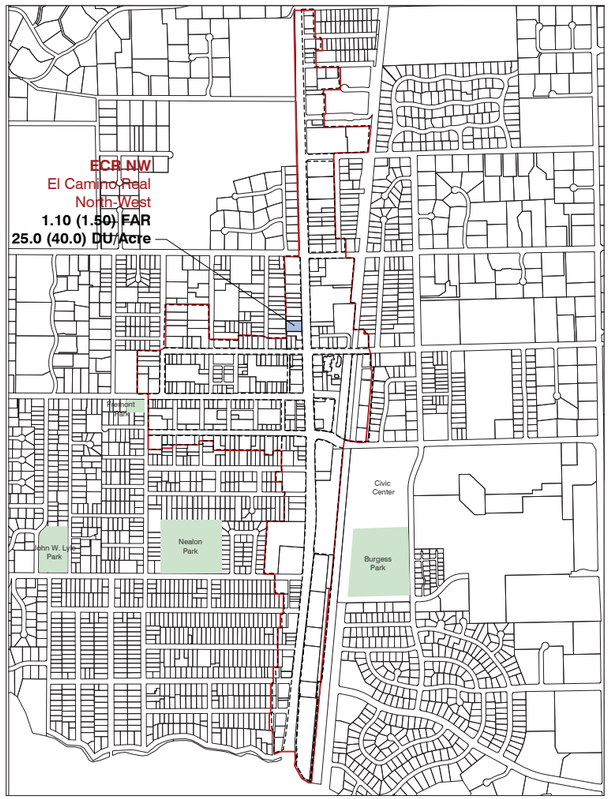
Assumptions

1. Landscaped Area is calculated based on one potential accommodation study for each development. At the mimimum the 20% open space requirement for ECR NW is met.
2. Ground Floor Retail Area varies from a 40 to 70 feet depth based on the one potential accommodation study for the specific development. The length of the Retail Area is the lot width minus the length required for entries, lobbies and any parking garage front as necessary.
3. Net Office and Residential Area are considered to be 85%of Gross Office and Gross Residential Area respectively
4. Residential unit area is assummed to be a 2 bedroom condominium unit of approximately 1,350 sf -1,400 sf in size.
5. Floor to ceiling height for residential =10' and office/retail = 15' except where noted differently
6. Parking Ratios considered are : residential = 1.5 spaces/unit, office = 3.8 spaces/1000 sf, and retail = 4.0 spaces/1000 sf

Note -

The Total Buildable Area for Residential over Retail development type adds up the total gross residential and retail area to maximize the available FAR.
The Total Buildable Area for Office over Retail development type maximizes half the allowable FAR for office use and adds an appropriate retail space that counts against the remaining available FAR.
The Total Buildable Area for Office over Retail development type, in particular the Maximum Office scenario, adds up the total gross office and retail area to maximize the available FAR.

El Camino Real - Parcel Small (ECR NW): Program Test Fit Matrix

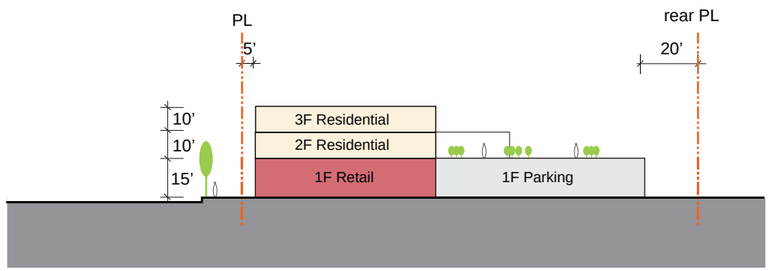


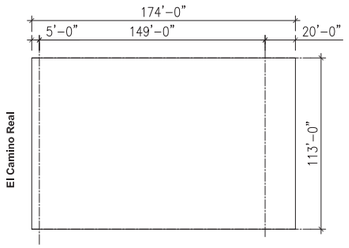
Parcel Dimension - 174’ x 113’
Parcel Size - 19,662 sf = 0.45 acres
Developable Area - 16,837 sf = 0.386 acres
Building Height - 35’
Total Buildable Area - 21,628 sf (excludes parking)
Dwelling units / acre - 25 du/ac at FAR=1.1

PROGRAM
Ground floor retail with 2 floors of residential units above podium parking

Net Residential Area - 14,899 sf (11 units)
Retail Area - 4,100 sf
Retail Parking - 17
Residential Parking - 17

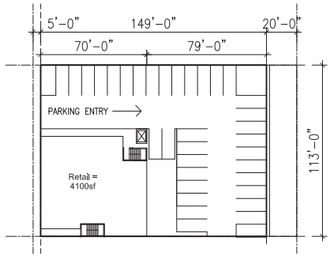




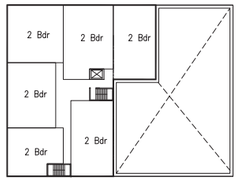


El Camino Real - Parcel Small (ECR NW)
Parcel Area = 19,662 sqft. = 0.45 ac

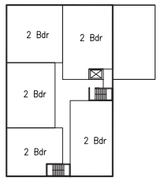
Developable Area
= 16,837 sqft.
= 0.386 ac



First Floor



Second Floor

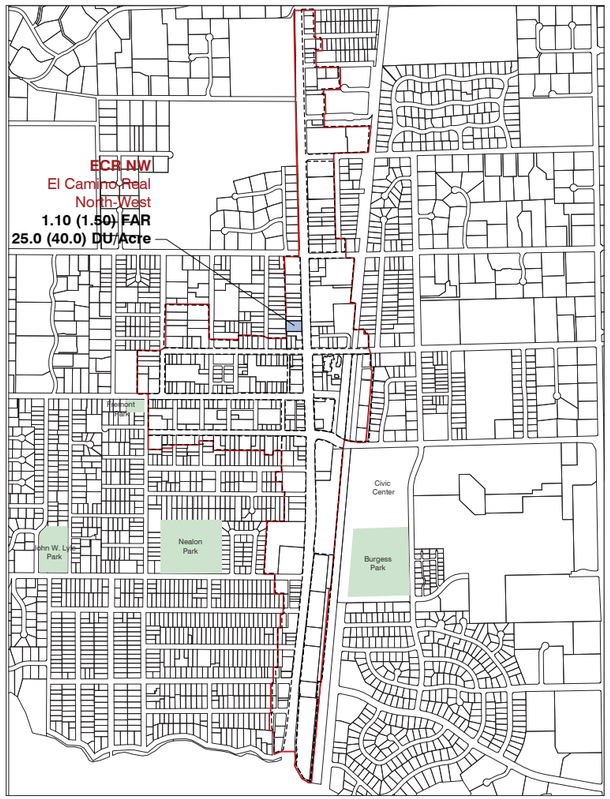


Third Floor

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Small (ECR NW): Residential @ 25 du/ac (Proposed Base Density)

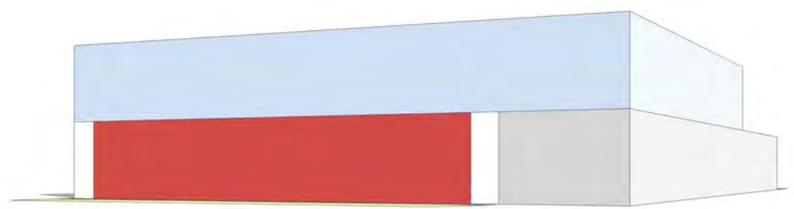
29 March 2012

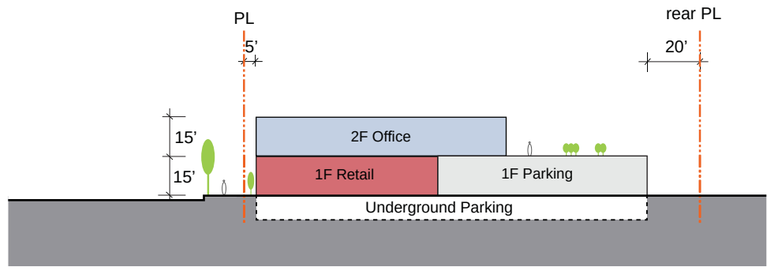


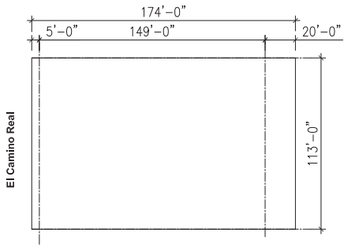
Parcel Dimension - 174’ x 113’
Parcel Size - 19,662 sf = 0.45 acres
Developable Area - 16,837 sf = 0.386 acres
Building Height - 30’
Total Buildable Area - 10,814 sf (excludes parking)
FAR - 0.55 (1/2 Proposed Base FAR)

PROGRAM
Ground floor retail with 1 floor of Office above,
podium parking & 1 level of basement parking

Net Office Area - 9,192 sf
Retail Area - 5,300 sf
Retail Parking - 22
Office Parking - 42

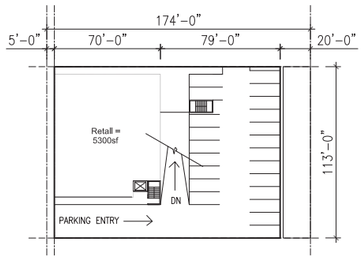




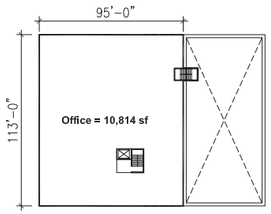


Developable Area
= 16,837 sqft.
= 0.386 ac

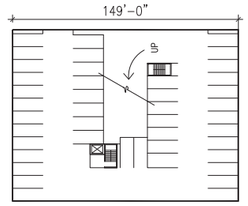
El Camino Real - Parcel Small (ECR NW)
Parcel Area = 19,662 sqft. = 0.45 ac



First Floor



Second Floor

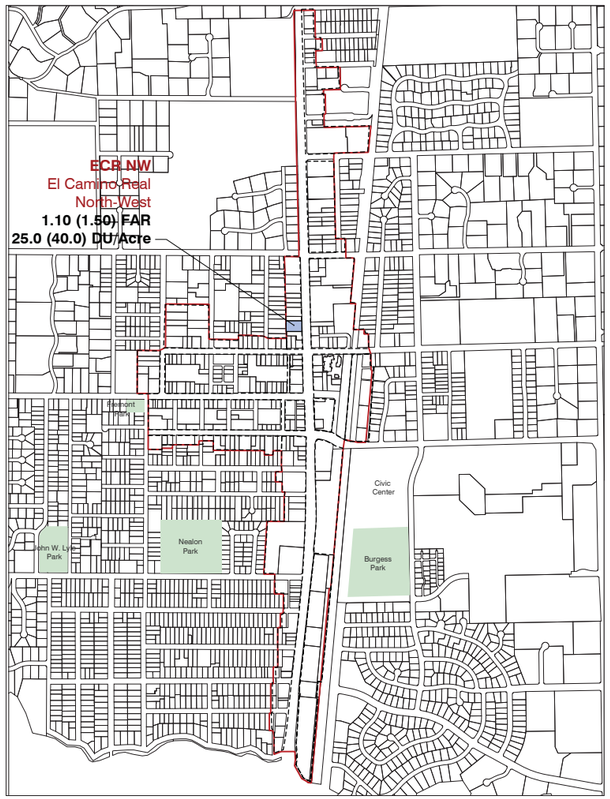


Basement

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Small (ECR NW): Office @ 0.55 (1/2 Proposed Base FAR)

29 March 2012

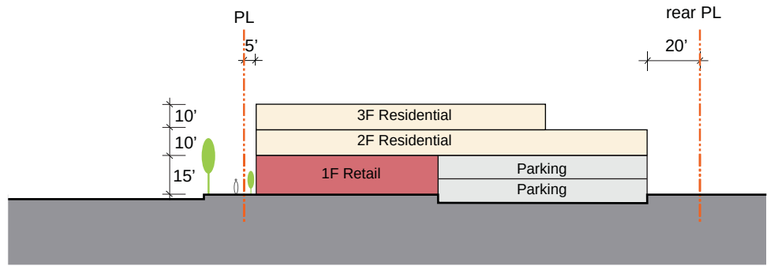


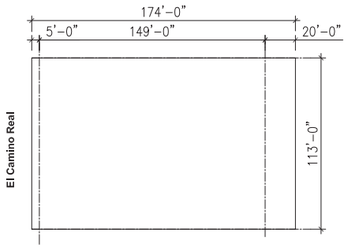
Parcel Dimension - 174’ x 113’
Parcel Size - 19,662 sf = 0.45 acres
Developable Area - 16,837 sf = 0.386 acres
Building Height - 35’
Total Buildable Area - 29,493 sf (excludes parking)
Dwelling units / acre - 40 du/ac at FAR=1.5

PROGRAM
Ground floor retail with 2 floors of residential units above, 2 levels of podium parking

Net Residential Area - 20,564 sf (15 units)
Retail Area - 5,300 sf
Retail Parking - 22
Residential Parking - 23

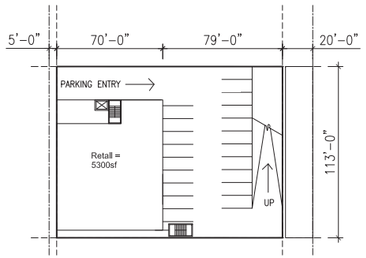




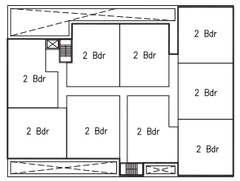


El Camino Real - Parcel Small (ECR NW)
Parcel Area = 19,662 sqft. = 0.45 ac

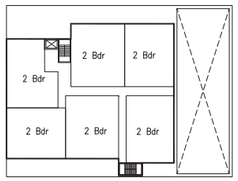
Developable Area
= 16,837 sqft.
= 0.386 ac



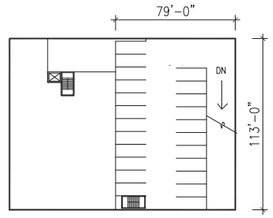
First Floor



Second Floor



Third Floor



Podium 2

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

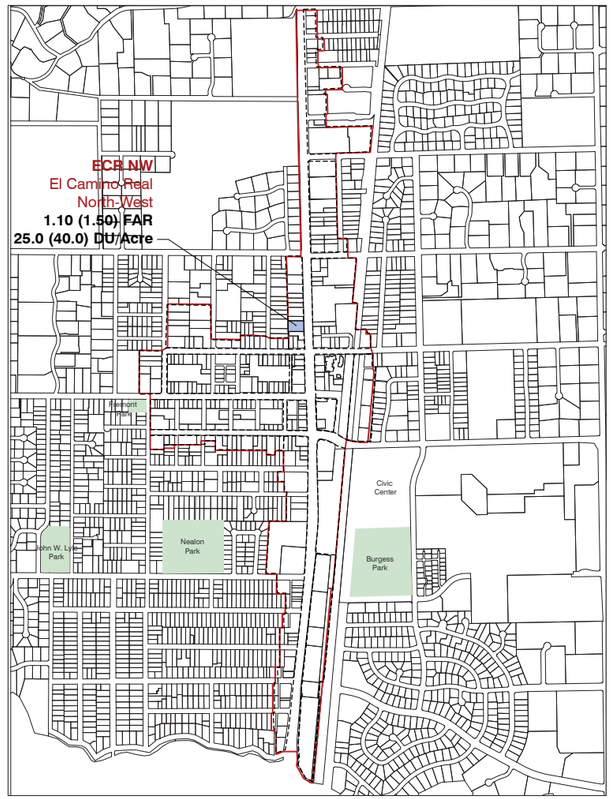
El Camino Real - Parcel Small (ECR NW): Residential @ 40du/ac (Proposed Bonus Density)

29 March 2012

El Camino Real/Downtown Specific Plan - Development Intensity Accommodation Study

City of Menlo Park

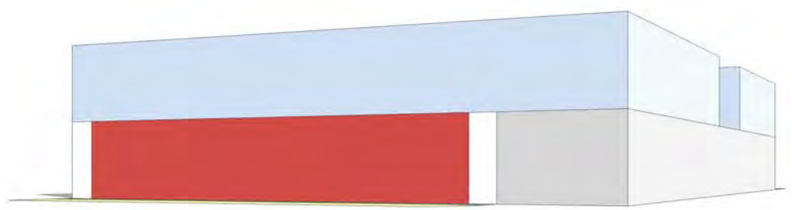
PERKINS + WILL

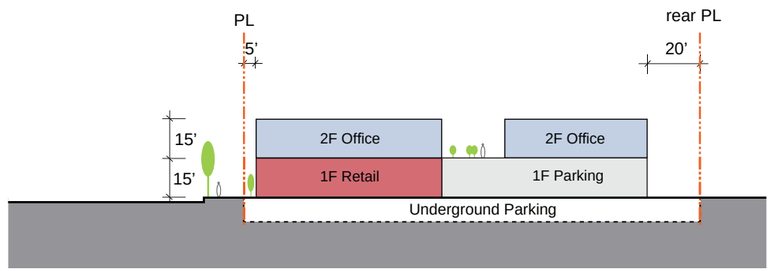


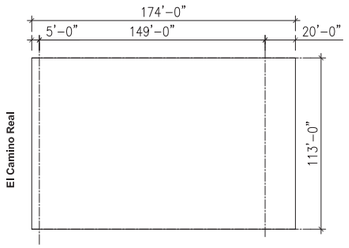
Parcel Dimension - 174’ x 113’
Parcel Size - 19,662 sf = 0.45 acres
Developable Area - 16,837 sf = 0.386 acres
Building Height - 30’
Total Buildable Area - 14,747 sf (excludes parking)
FAR - 0.75 (1/2 Proposed Bonus FAR)

PROGRAM
Ground floor retail with 1 floor of Office above, podium parking, 1 level of basement parking

Net Office Area - 12,535 sf
Retail Area - 5,300 sf
Retail Parking - 22
Office Parking - 57

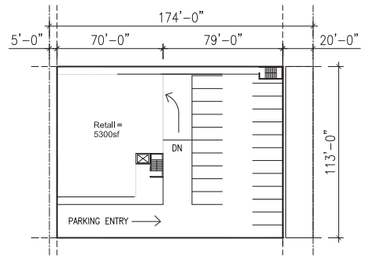




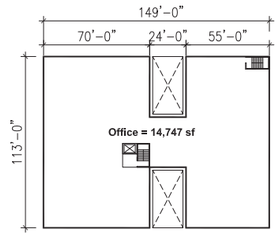


El Camino Real - Parcel Small (ECR NW)
Parcel Area = 19,662 sqft. = 0.45 ac

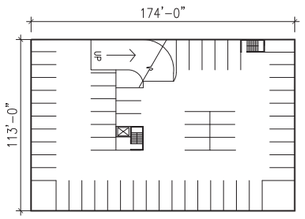
Developable Area
= 16,837 sqft.
= 0.386 ac



First Floor



Second Floor



Basement

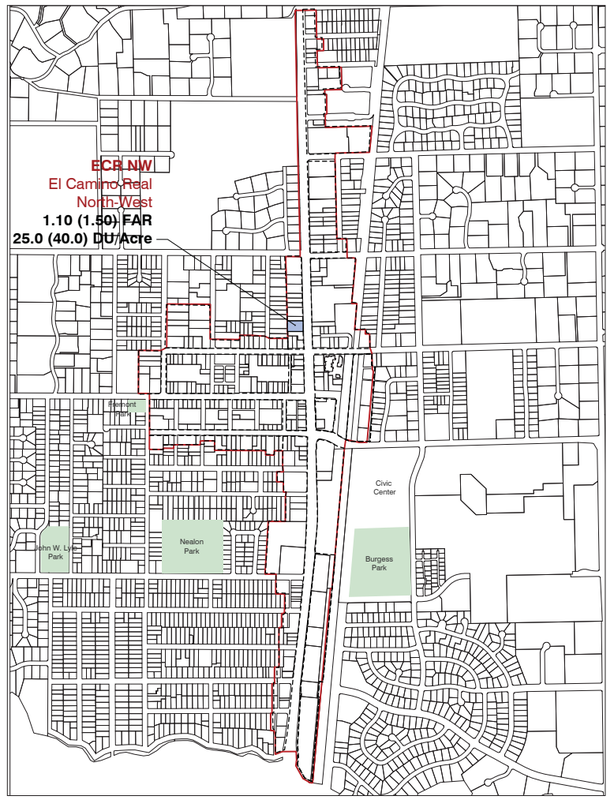
Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Small (ECR NW): Office @ 0.75 (1/2 Proposed Bonus FAR)

29 March 2012

El Camino Real/Downtown Specific Plan - Development Intensity Accommodation Study
City of Menlo Park

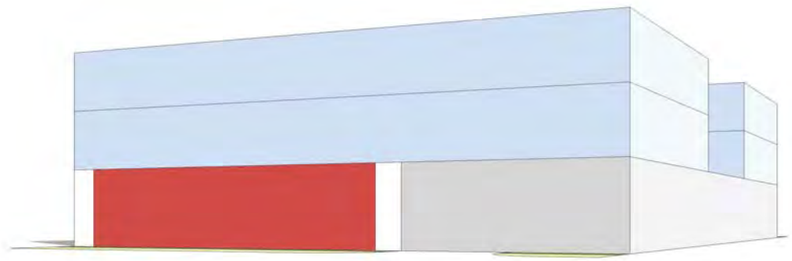
PERKINS + WILL

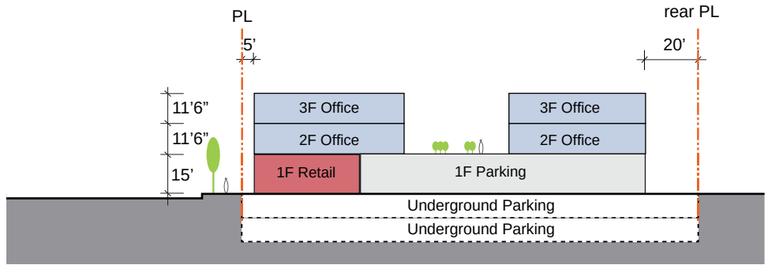


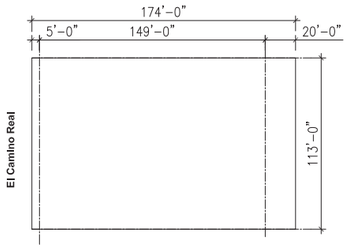
Parcel Dimension - 174’ x 113’
Parcel Size - 19,662 sf = 0.45 acres
Developable Area - 16,837 sf = 0.386 acres
Building Height - 38’
Total Buildable Area - 29,493 sf (excludes parking)
FAR - 1.5

PROGRAM
Ground floor retail with 2 floors of Office above, podium parking, 2 levels of basement parking

Net Office Area - 22,944 sf
Retail Area - 2,500 sf
Retail Parking - 10
Office Parking - 103

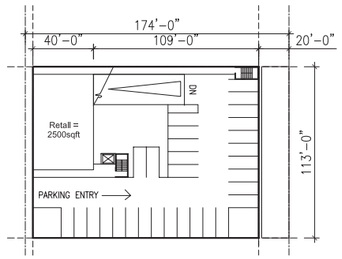




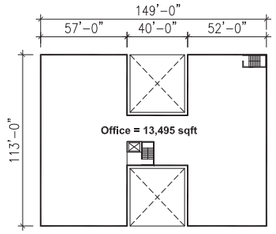


El Camino Real - Parcel Small (ECR NW)
Parcel Area = 19,662 sqft. = 0.45 ac

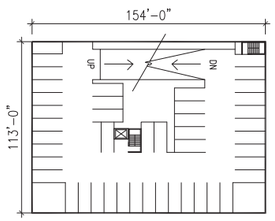
Developable Area = 16,837 sqft. = 0.386 ac



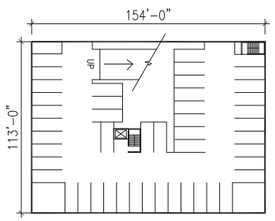
First Floor



Second & Third Floor (at a height of 11'-6")



Basement 1



Basement 2

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Small (ECR NW): Office @ 1.5 (Proposed Bonus FAR)

29 March 2012

Large Parcel (ECR SE)					
	Proposed Base FAR & New Zoning Standards		Proposed Bonus FAR & New Zoning Standards		Maximum Office
Development Type	Residential over Retail	Office over Retail	Residential over Retail	Office over Retail	Office over Retail
Zoning Standards	40 du/acre	FAR = 0.625 (1/2 of Base FAR 1.25)	60 du/acre	FAR = 0.875 (1/2 of Base FAR 1.75)	FAR = 1.75 NA
	FAR = 1.25		FAR = 1.75		
Site area	182' x 208' = 37,856 sft = 0.87 acres				
Site developable area (minus setback area)	28,576 sft = 0.656 acres				
Total Buildable Area (sf)	47,320	23,660	66,248	33,124	66,248
Landscaped area (sf)[1]	14,000	14,200	14,000	14,200	11,300
BUILT AREA					
Ground Floor Retail area (sf)[2]	6,100	6,100	6,100	6,100	6,100
Gross office area (sf)	0	23,660	0	33,124	60,148
Net office area (sf)[3]	0	20,111	-	28,155	51,126
Gross residential area (sf)	41,220	-	60,148	-	-
Net residential area (sf)[3]	35,037	-	51,126	0	0
Number of Units[4]	26	-	37	0	0
Number of Stories[5]	3	2	4	3	4
PARKING COUNTS[6]					
Surface parking spaces	0	0	0	0	0
Podium level spaces (level 1)	40	42	40	51	51
Podium level spaces (level 2)	34	0	54	0	0
Underground level spaces (level 1)	0	73	0	100	102
Underground level spaces (level 2)	0	0	0	0	101

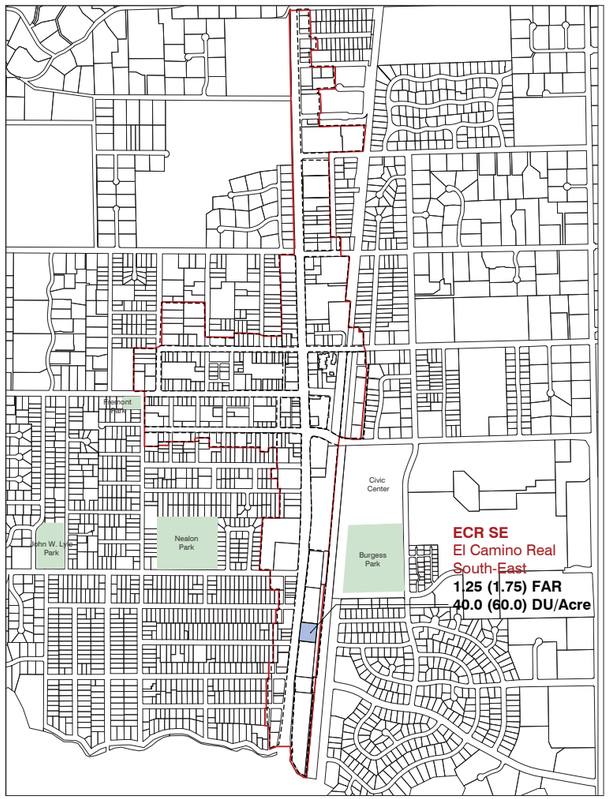
Assumptions

1. Landscaped Area is calculated based on one potential accommodation study for each development. At the mimimum the 30% open space requirement for ECR SE is met.
2. Ground Floor Retail is calculated based on a 40 feet deep retail space. The length of the Retail Area is the lot width minus the length required for entries, lobbies and any parking garage front as necessary.
3. Net Office and Residential Area are considered to be 85%of Gross Office and Gross Residential Area respectively
4. Residential unit area is assummed to be a 2 bedroom condominium unit of approximately 1,350 sf -1,400 sf in size.
5. Floor to ceiling height for residential =10' and office/retail = 15'
6. Parking Ratios considered are : residential = 1.85 spaces/unit, office = 3.8 spaces/1000 sf, and retail = 4.0 spaces/1000 sf

Note -

The Total Buildable Area for Residential over Retail development type adds up the total gross residential and retail area to maximize the available FAR.
The Total Buildable Area for Office over Retail development type maximizes half the allowable FAR for office use and adds an appropriate retail space that counts against the remaining available FAR.
The Total Buildable Area for Office over Retail development type, in particular the Maximum Office scenario, adds up the total gross office and retail area to maximize the available FAR.

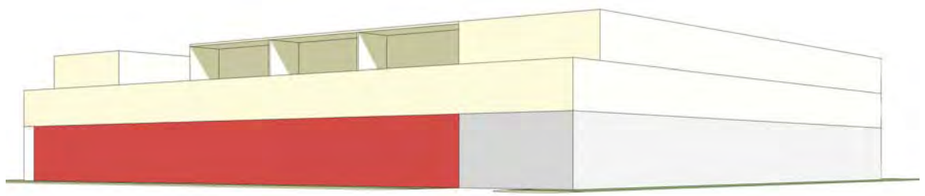
El Camino Real - Parcel Large (ECR SE): Program Test Fit Matrix

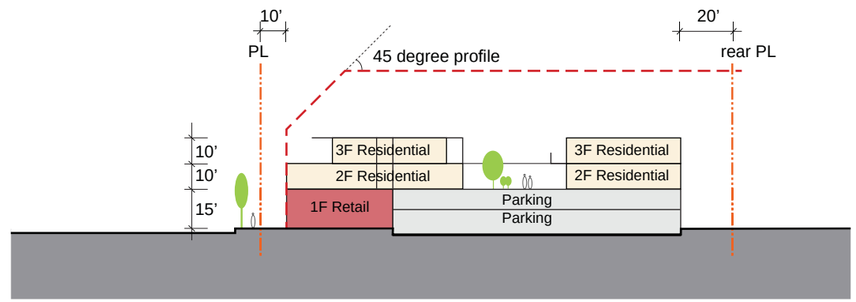


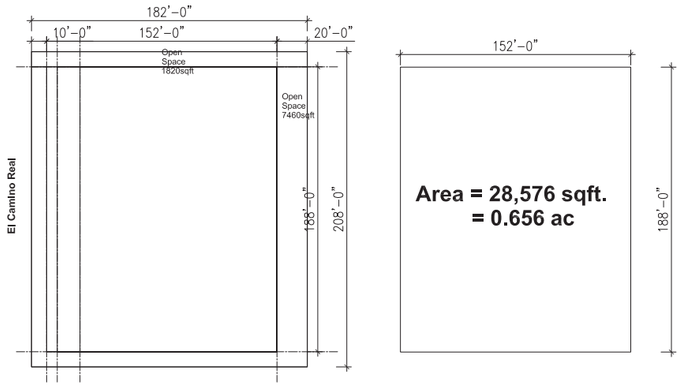
Parcel Dimension - 182’ x 208’
Parcel Size - 37,856 sf = 0.87 acres
Developable Area - 28,576 sf = 0.656 acres
Building Height - 35’
Total Buildable Area - 47,320 sf (excludes parking)
Dwelling units / acre - 40 du/ac at FAR=1.25

PROGRAM
Ground floor retail with 2 floors of residential units above, 2 levels of podium parking

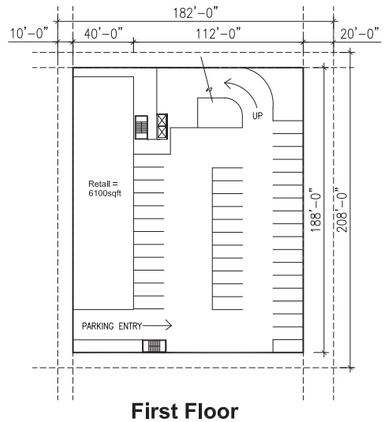
Net Residential Area - 35,037 sf (26 units)
Retail Area - 6,100 sf
Retail Parking - 25
Residential Parking - 49



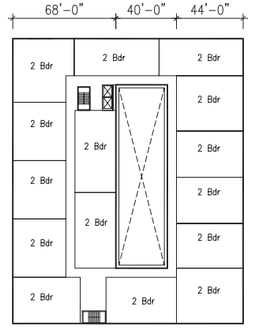




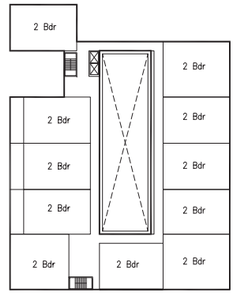
El Camino Real - Parcel Large (ECR SE)
Parcel Area = 37,856 sqft. = 0.87 ac



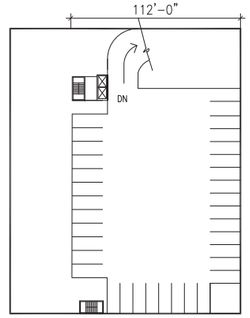
First Floor



Second Floor



Third Floor

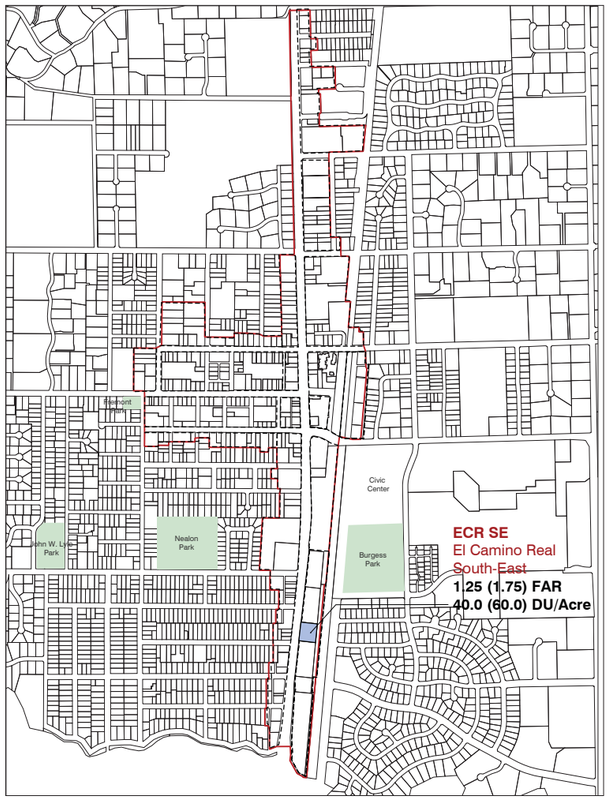


Podium 2

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Large (ECR SE): Residential @ 40du/ac (Proposed Base Density)

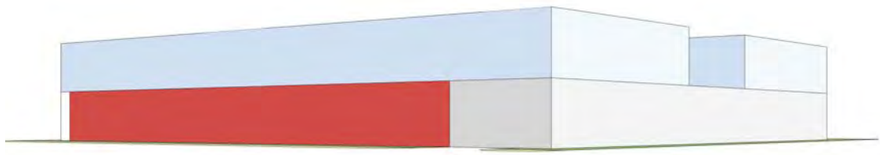
29 March 2012

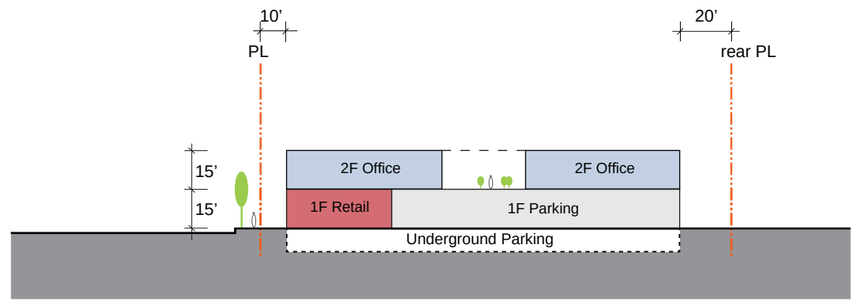


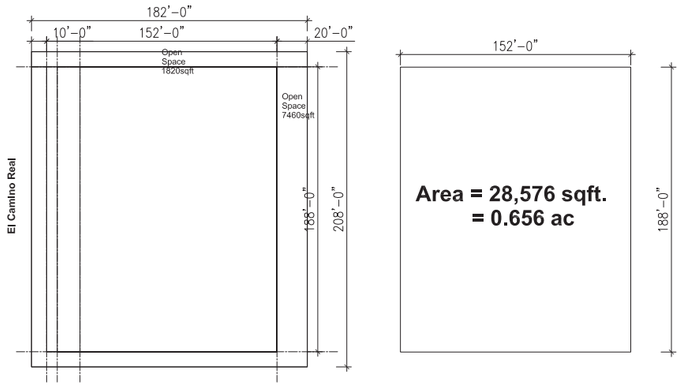
Parcel Dimension - 182’ x 208’
Parcel Size - 37,856 sf = 0.87 acres
Developable Area - 28,576 sf = 0.656 acres
Building Height - 30’
Total Buildable Area - 23,660 sf (excludes parking)
FAR - 0.625 (1/2 Proposed Base FAR)

PROGRAM
Ground floor retail with 1 floor of Office above, podium parking, 1 level of basement parking

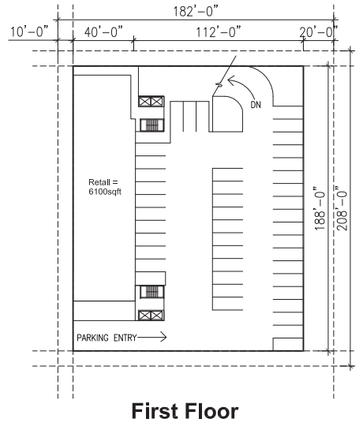
Net Office Area - 20,111 sf
Retail Area - 6,100 sf
Retail Parking - 25
Office Parking - 90



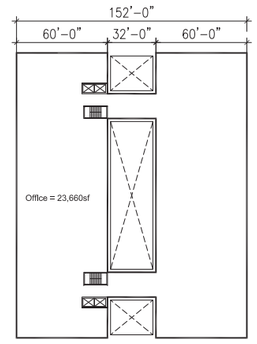




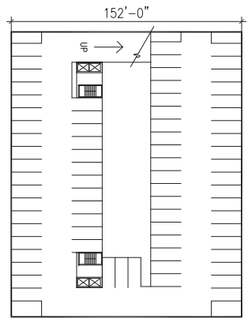
El Camino Real - Parcel Large (ECR SE)
Parcel Area = 37,856 sqft. = 0.87 ac



First Floor



Second Floor

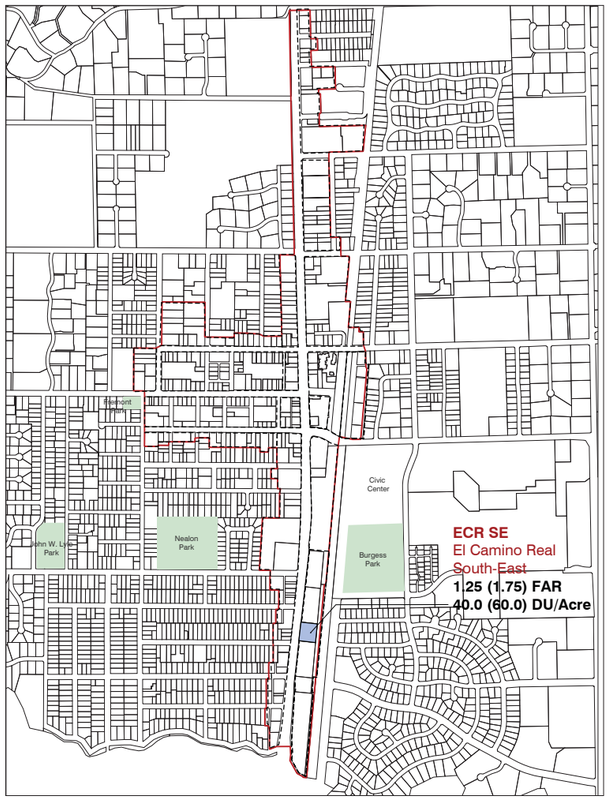


Basement

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Large (ECR SE): Office @ 0.625 (1/2 Proposed Base FAR)

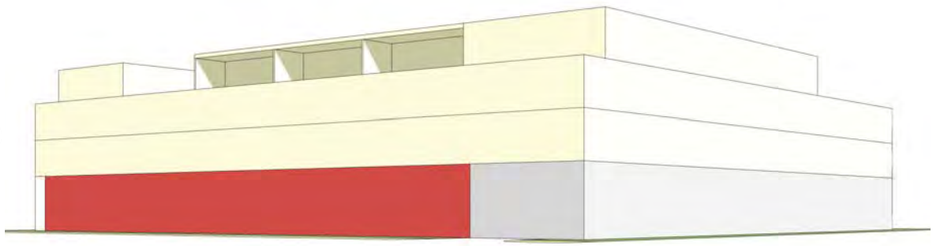
29 March 2012

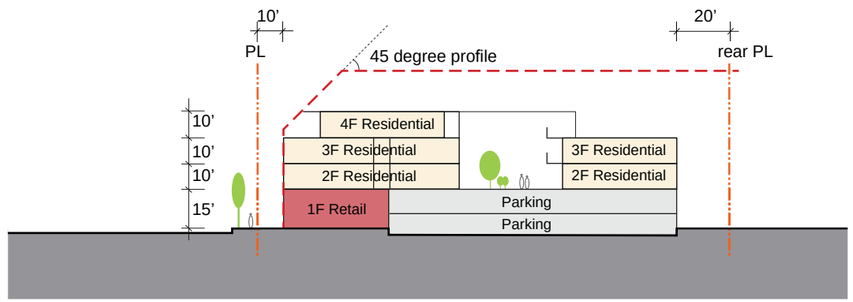


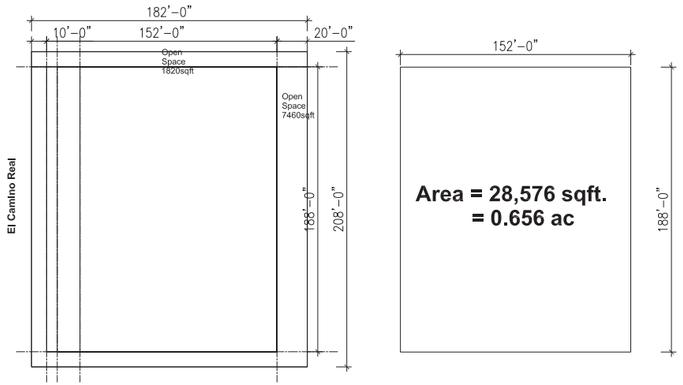
Parcel Dimension - 182’ x 208’
Parcel Size - 37,856 sf = 0.87 acres
Developable Area - 28,576 sf = 0.656 acres
Building Height - 45’
Total Buildable Area - 66,248 sf (excludes parking)
Dwelling units / acre - 60 du/ac at FAR=1.75

PROGRAM
Ground floor retail with 3 floors of residential units above, 2 levels of podium parking

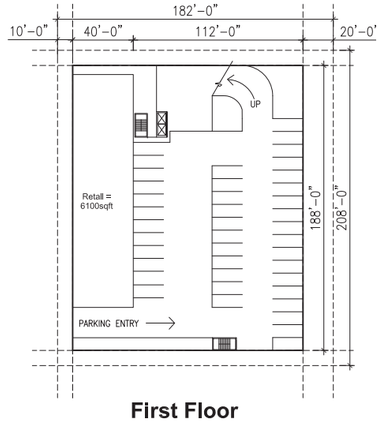
Net Residential Area - 51,126 sf (37units)
Retail Area - 6,100 sf
Retail Parking - 25
Residential Parking - 69



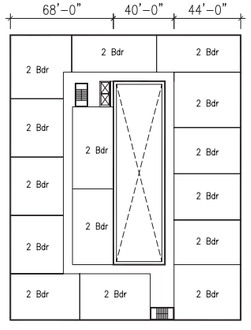




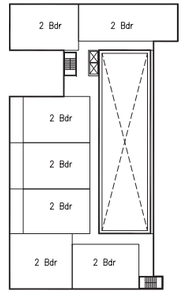
El Camino Real - Parcel Large (ECR SE)
Parcel Area = 37,856 sqft. = 0.87 ac



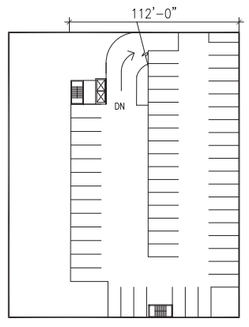
First Floor



Second & Third Floor



Fourth Floor

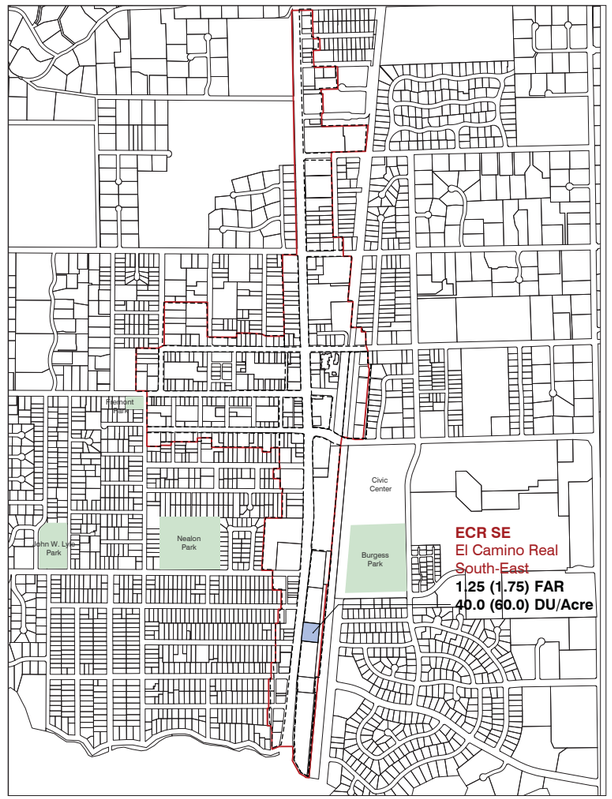


Podium 2

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Large (ECR SE): Residential @ 60du/ac (Proposed Bonus Density)

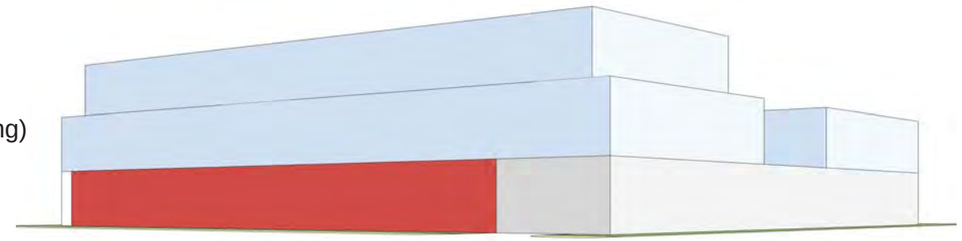
29 March 2012

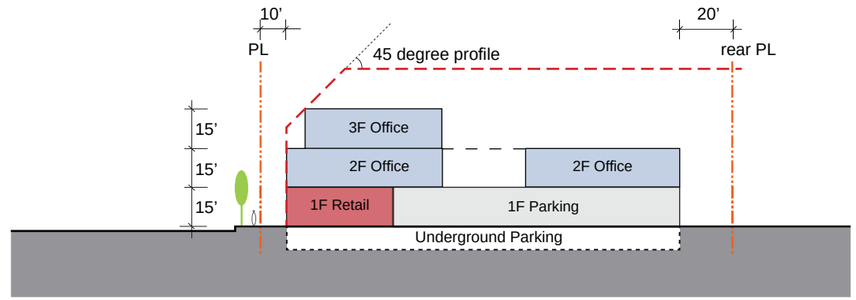


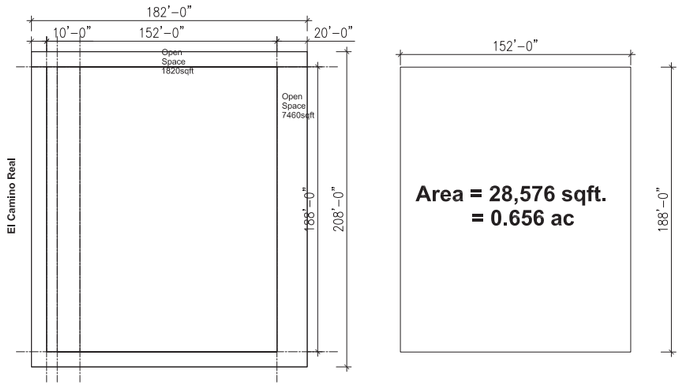
Parcel Dimension - 182’ x 208’
Parcel Size - 37,856 sf = 0.87 acres
Developable Area - 28,576 sf = 0.656 acres
Building Height - 45’
Total Buildable Area - 33,124 sf (excludes parking)
FAR - 0.875 (1/2 Proposed Bonus FAR)

PROGRAM
Ground floor retail with 2 floors of Office above, podium parking, 1 level of basement parking

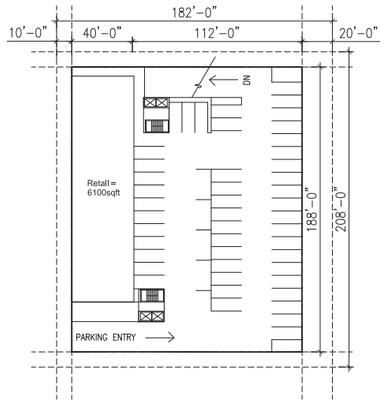
Net Office Area - 28,155 sf
Retail Area - 6,100 sf
Retail Parking - 25
Office Parking - 126



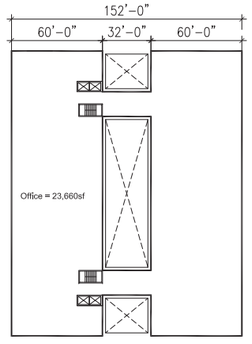




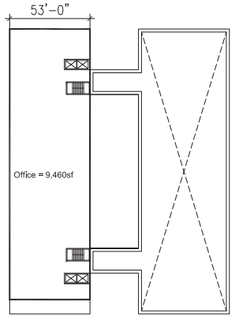
El Camino Real - Parcel Large (ECR SE)
Parcel Area = 37,856 sqft. = 0.87 ac



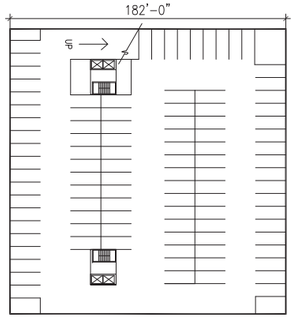
First Floor



Second Floor



Third Floor



Basement 1

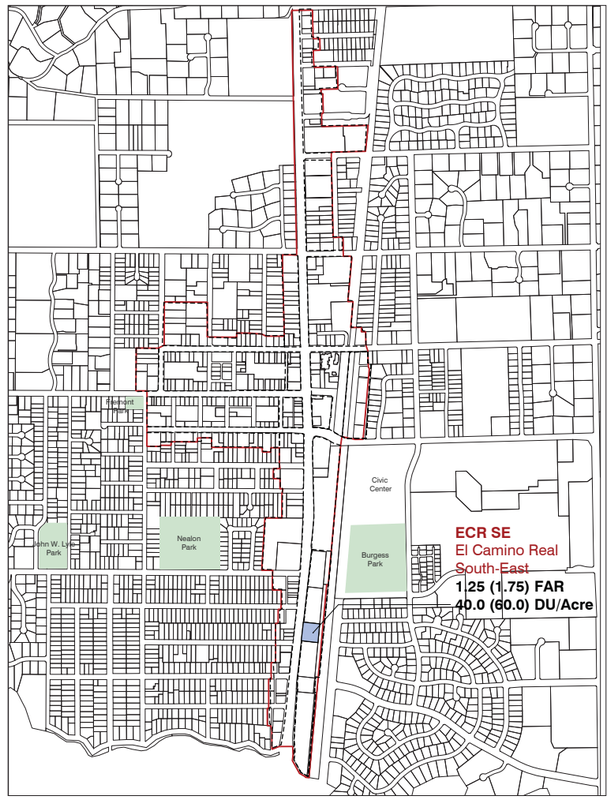
Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Large (ECR SE): Office @ 0.875 (1/2 Proposed Bonus FAR)

29 March 2012

El Camino Real/Downtown Specific Plan - Development Intensity Accommodation Study
City of Menlo Park

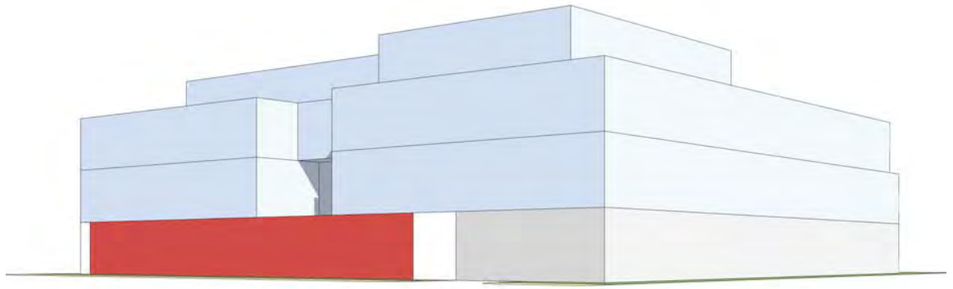
PERKINS + WILL

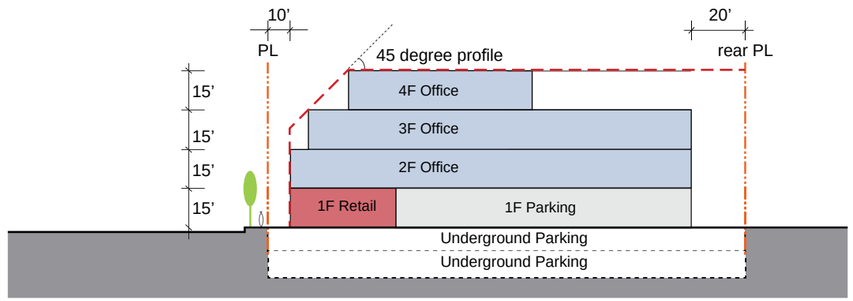


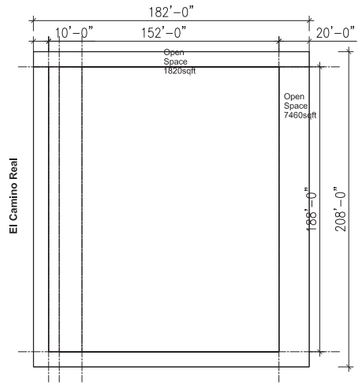
Parcel Dimension - 182’ x 208’
Parcel Size - 37,856 sf = 0.87 acres
Developable Area - 28,576 sf = 0.656 acres
Building Height - 60’
Total Buildable Area - 66,248 sf (excludes parking)
FAR - 1.75

PROGRAM
Ground floor retail with 3 floors of Office above, podium parking, 2 levels of basement parking

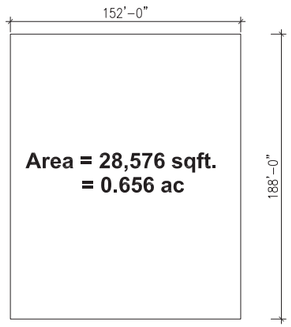
Net Office Area - 51,126 sf
Retail Area - 6,100 sf
Retail Parking - 25
Office Parking - 229

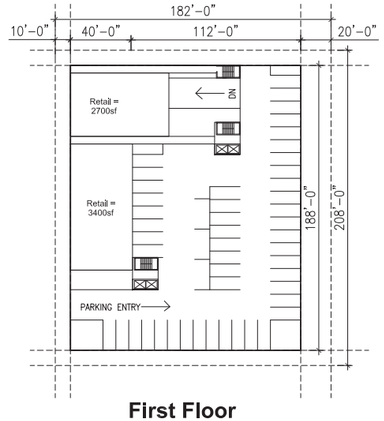




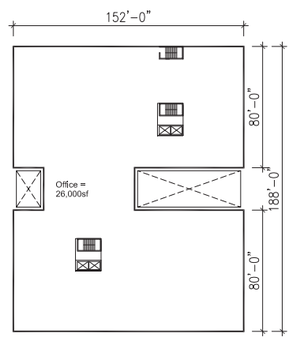


El Camino Real - Parcel Large (ECR SE)
Parcel Area = 37,856 sqft. = 0.87 ac

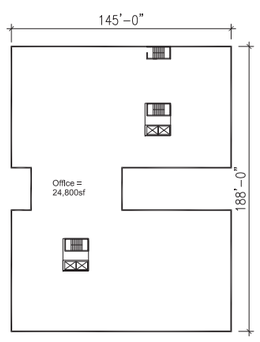




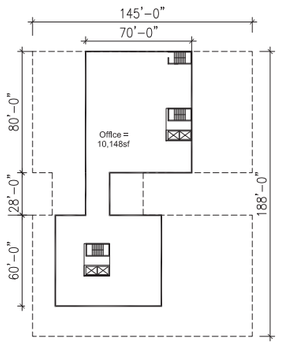
First Floor



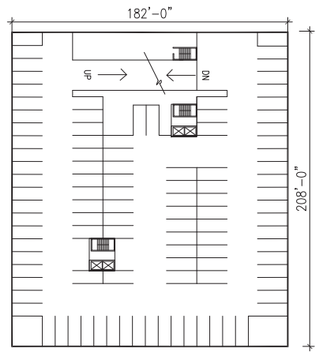
Second Floor



Third Floor



Fourth Floor



Basement 1 & 2

Note - For the purpose of this study a general 3-dimensional mass of the development program has been developed. This is not meant to be the only development type that could be developed.
It also does not incorporate the detailed facade modulation and articulation discussed in the Design Guidelines.

El Camino Real - Parcel Large (ECR SE): Office @ 1.75 (Proposed Full Bonus FAR)

29 March 2012

El Camino Real/Downtown Specific Plan - Development Intensity Accommodation Study
City of Menlo Park

PERKINS + WILL

APPENDIX B
El Camino Real Small Parcel (ECR NW)
Proposed Base FAR & New Zoning Standards
Residential

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$103,000
Site work/demolition	Per sf	$10	$196,620
Commercial Office	Per gross sf		
Retail	Per sf	$185	$758,500
Residential			
Condo	Per gross sf	$250	$4,382,000
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium Level 1	Per space	$20,000	$680,000
Podium Level 2	Per space	$20,000	$0
Underground	Per space	$35,000	$0
Subtotal Hard Costs			*$6,120,120*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$361,251
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$91,802
A&E	Pct hard costs	13%	$795,616
Developer costs/overhead	Pct hard costs	3%	$183,604
OCIP	Per unit	$9,000	$99,000
City Fees	Pct hard costs	6%	$357,278
Other indirect costs	Pct hard costs	5%	$306,006
Subtotal Soft Costs		*36%*	*$2,194,556*
Financing Costs			
Construction Loan Fee			$44,587
Construction Interest			$356,700
Total Financing Costs			*$401,287*
Subtotal Above Costs			*$8,715,963*
Developer Return on Cost		12%	$1,045,916
REVENUES			
Commercial Office	Per net sf		
Retail	Per net sf	$542	$2,221,688
Residential			
Condo	Per Unit	$945,000	$9,450,000
BMR	Per unit	$370,000	$370,000
Subtotal Revenues			*$12,041,688*
Residual Land Value	Project		$2,279,809
Residual Land Value per square foot	Per sf		$116

APPENDIX B
El Camino Real Small Parcel (ECR NW)
Proposed Bonus FAR & New Zoning Standards
Residential

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$47,000
Site work/demolition	Per sf	$10	$196,620
Commercial Office	Per gross sf		
Retail	Per sf	$185	$980,500
Residential			
Condo	Per gross sf	$250	$6,048,250
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$860,000
Underground	Per space	$35,000	$0
Subtotal Hard Costs			*$8,132,370*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$476,908
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$121,986
A&E	Pct hard costs	13%	$1,057,208
Developer costs/overhead	Pct hard costs	3%	$243,971
OCIP	Per unit	$9,000	$135,000
City Fees	Pct hard costs	6%	$482,292
Other indirect costs	Pct hard costs	5%	$406,619
Subtotal Soft Costs		*36%*	*$2,923,983*
Financing Costs			
Construction Loan Fee			$59,290
Construction Interest			$474,318
Total Financing Costs			*$533,607*
Subtotal Above Costs			*$11,589,961*
Developer Return on Cost		12%	$1,390,795
REVENUES			
Commercial Office	Per net sf		$0
Retail	Per net sf	$542	$2,871,938
Residential			
Condo	Per Unit	$945,000	$12,285,000
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	$740,000
Subtotal Revenues			*$15,896,938*
Residual Land Value	Project		$2,916,182
Residual Land Value per square foot	Per sf		$148

APPENDIX B
El Camino Real Small Parcel (ECR NW)
Proposed Base FAR & New Zoning Standards
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$82,750
Site work/demolition	Per sf	$10	$196,620
Commercial Office	Per gross sf	$200	$2,162,962
Retail	per sf	$185	$980,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$440,000
Underground	Per space	$35,000	$1,505,000
Subtotal Hard Costs			*$5,367,832*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$230,932
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$80,517
A&E	Pct hard costs	13%	$697,818
Developer costs/overhead	Pct hard costs	3%	$161,035
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$322,909
Other indirect	Pct hard costs	5%	$268,392
Subtotal Soft Costs		*33%*	*$1,761,603*
Financing Costs			
Construction Loan Fee			$38,232
Construction Interest			$305,853
Total Financing Costs			*$344,084*
Subtotal Above Costs			*$7,473,520*
Developer Return on Cost		12%	$896,822
REVENUES			
Commercial Office	Per net sf	$525	$4,825,800
Retail	Per net sf	$542	$2,871,938
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$7,697,738*
Residual Land Value	Project		-$672,605
Residual Land Value per square foot	Per sf		-$34

APPENDIX B
El Camino Real Small Parcel (ECR NW)
Maximum FAR
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$60,250
Site work/demolition	Per sf	$10	$196,620
Commercial Office	Per gross sf	$200	$5,399,005
Retail	per sf	$185	$462,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium level 1	Per space	$20,000	$600,000
Underground level 1	Per space	$35,000	$1,435,000
Underground level 2	Per space	$40,000	$1,680,000
Subtotal Hard Costs			*$9,833,375*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$402,009
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$147,501
A&E	Pct hard costs	13%	$1,278,339
Developer costs/overhead	Pct hard costs	3%	$295,001
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$634,380
Other indirect	Pct hard costs	5%	$491,669
Subtotal Soft Costs		*33%*	*$3,248,898*
Financing Costs			
Construction Loan Fee			$70,154
Construction Interest			$561,230
Total Financing Costs			*$631,383*
Subtotal Above Costs			*$13,713,656*
Developer Return on Cost		12%	$1,645,639
REVENUES			
Commercial Office	Per net sf	$525	$12,045,600
Retail	Per net sf	$542	$1,354,688
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$13,400,288*
Residual Land Value	Project		-$1,959,007
Residual Land Value per square foot	Per sf		-$100

APPENDIX B
El Camino Real Small Parcel (ECR NW)
Proposed Bonus FAR & New Zoning Standards
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$47,450
Site work/demolition	Per sf	$10	$196,620
Commercial Office	Per gross sf	$200	$2,949,621
Retail	per sf	$185	$980,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$440,000
Underground level 1	Per space	$35,000	$1,995,000
Underground level 2	Per space	$40,000	$0
Subtotal Hard Costs			*$6,609,191*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$283,584
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$99,138
A&E	Pct hard costs	13%	$859,195
Developer costs/overhead	Pct hard costs	3%	$198,276
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$408,478
Other indirect	Pct hard costs	5%	$330,460
Subtotal Soft Costs		*33%*	*$2,179,131*
Financing Costs			
Construction Loan Fee			$47,127
Construction Interest			$377,019
Total Financing Costs			*$424,146*
Subtotal Above Costs			*$9,212,468*
Developer Return on Cost		12%	$1,105,496
REVENUES			
Commercial Office	Per net sf	$525	$6,580,875
Retail	Per net sf	$542	$2,871,938
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$9,452,813*
Residual Land Value	Project		-$865,152
Residual Land Value per square foot	Per sf		-$44

APPENDIX B
El Camino Real Large Parcel ECR SE
Proposed Base FAR & New Zoning Standards
Residential

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$140,000
Site work/demolition	Per sf	$10	$378,560
Commercial Office	Per gross sf		
Retail	Per sf	$185	$1,128,500
Residential			
Condo	Per gross sf	$250	$10,305,000
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$1,480,000
Underground	Per space	$35,000	$0
Subtotal Hard Costs			*$13,432,060*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$767,263
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$201,481
A&E	Pct hard costs	13%	$1,746,168
Developer costs/overhead	Pct hard costs	3%	$402,962
OCIP	Per unit	$9,000	$234,000
City Fees	Pct hard costs	9%	$1,165,771
Other indirect costs	Pct hard costs	5%	$671,603
Subtotal Soft Costs		*39%*	*$5,189,248*
Financing Costs			
Construction Loan Fee			$99,857
Construction Interest			$798,854
Total Financing Costs			*$898,711*
Subtotal Above Costs			*$19,520,018*
Developer Return on Cost		12%	$2,342,402
REVENUES			
Commercial Office	Per net sf		
Retail	Per net sf	$542	$3,305,438
Residential			
Condo	Per Unit	$945,000	$20,790,000
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	$1,480,000
Subtotal Revenues			*$25,575,438*
Residual Land Value	Project		$3,713,017
Residual Land Value per square foot	Per sf		$98

APPENDIX B
El Camino Real Large Parcel ECR SE
Proposed Bonus FAR & New Zoning Standards
Residential

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$140,000
Site work/demolition	Per sf	$10	$378,560
Commercial Office	Per gross sf		
Retail	Per sf	$185	$1,128,500
Residential			
Condo	Per gross sf	$250	$15,037,000
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$1,880,000
Underground	Per space	$35,000	$0
Subtotal Hard Costs			*$18,564,060*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$1,044,613
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$278,461
A&E	Pct hard costs	13%	$2,413,328
Developer costs/overhead	Pct hard costs	3%	$556,922
OCIP	Per unit	$9,000	$333,000
City Fees	Pct hard costs	9%	$1,626,423
Other indirect costs	Pct hard costs	5%	$928,203
Subtotal Soft Costs		*39%*	*$7,180,949*
Financing Costs			
Construction Loan Fee			$138,058
Construction Interest			$1,104,461
Total Financing Costs			*$1,242,519*
Subtotal Above Costs			*$26,987,528*
Developer Return on Cost		12%	$3,238,503
REVENUES			
Commercial Office	Per net sf		
Retail	Per net sf	$542	$3,305,438
Residential			
Condo	Per Unit	$945,000	$29,295,000
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	$2,220,000
Subtotal Revenues			*$34,820,438*
Residual Land Value	Project		$4,594,406
Residual Land Value per square foot	Per sf		$121

APPENDIX B
El Camino Real Large Parcel ECR SE
Proposed Base FAR & New Zoning Standards
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$142,000
Site work/demolition	Per sf	$10	$378,560
Commercial Office	Per gross sf	$200	$4,732,355
Retail	per sf	$185	$1,128,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$840,000
Underground	Per space	$35,000	$2,555,000
Subtotal Hard Costs			*$9,776,415*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$415,911
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$146,646
A&E	Pct hard costs	13%	$1,270,934
Developer costs/overhead	Pct hard costs	3%	$293,292
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$616,142
Other indirect	Pct hard costs	5%	$488,821
Subtotal Soft Costs		*33%*	*$3,231,746*
Financing Costs			
Construction Loan Fee			$69,756
Construction Interest			$558,050
Total Financing Costs			*$627,806*
Subtotal Above Costs			*$13,635,968*
Developer Return on Cost		12%	$1,636,316
REVENUES			
Commercial Office	Per net sf	$525	$10,558,275
Retail	Per net sf	$542	$3,305,438
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$13,863,713*
Residual Land Value	Project		-$1,408,571
Residual Land Value per square foot	Per sf		-$37

APPENDIX B
El Camino Real Large Parcel ECR SE
Proposed Bonus FAR & New Zoning Standards
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$142,000
Site work/demolition	Per sf	$10	$378,560
Commercial Office	Per gross sf	$200	$6,625,297
Retail	per sf	$185	$1,128,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium	Per space	$20,000	$1,020,000
Underground level 1	Per space	$35,000	$3,500,000
Underground level 2	Per space	$40,000	$0
Subtotal Hard Costs			*$12,794,357*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$542,611
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$191,915
A&E	Pct hard costs	13%	$1,663,266
Developer costs/overhead	Pct hard costs	3%	$383,831
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$822,240
Other indirect	Pct hard costs	5%	$639,718
Subtotal Soft Costs		*33%*	*$4,243,581*
Financing Costs			
Construction Loan Fee			$91,366
Construction Interest			$730,928
Total Financing Costs			*$822,293*
Subtotal Above Costs			*$17,860,232*
Developer Return on Cost		12%	$2,143,228
REVENUES			
Commercial Office	Per net sf	$525	$14,781,585
Retail	Per net sf	$542	$3,305,438
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$18,087,023*
Residual Land Value	Project		-$1,916,437
Residual Land Value per square foot	Per sf		-$51

APPENDIX B
El Camino Real Large Parcel ECR SE
Maximum FAR
Office

	Unit	Amount	Total Project
DEVELOPMENT COSTS			
Hard Costs			
Landscaping	Per sf	$10	$113,000
Site work/demolition	Per sf	$10	$378,560
Commercial Office	Per gross sf	$200	$12,030,502
Retail	per sf	$185	$1,128,500
Residential			
Condo	Per gross sf	$250	
Townhouse	Per gross sf	$200	
Parking			
Surface	Per space	$5,000	$0
Podium level 1	Per space	$20,000	$1,020,000
Podium level 2	Per space	$20,000	$0
Underground level 1	Per space	$35,000	$3,570,000
Underground level 2	Per space	$40,000	$4,040,000
Subtotal Hard Costs			*$22,280,562*
Soft Costs			
Sales and Marketing Costs	Pct revenues	3%	$904,394
Purchase, Concept, Entitlements, etc	Pct hard costs	2%	$334,208
A&E	Pct hard costs	13%	$2,896,473
Developer costs/overhead	Pct hard costs	3%	$668,417
OCIP	Per res unit	$9,000	
City Fees	Pct hard costs	6%	$1,415,572
Other indirect	Pct hard costs	5%	$1,114,028
Subtotal Soft Costs		*33%*	*$7,333,093*
Financing Costs			
Construction Loan Fee			$158,803
Construction Interest			$1,270,426
Total Financing Costs			*$1,429,229*
Subtotal Above Costs			*$31,042,885*
Developer Return on Cost		12%	$3,725,146
REVENUES			
Commercial Office	Per net sf	$525	$26,841,045
Retail	Per net sf	$542	$3,305,438
Residential			
Condominium	Per Unit	$945,000	
Townhouse	Per Unit	$930,000	
BMR	Per unit	$370,000	
Subtotal Revenues			*$30,146,483*
Residual Land Value	Project		-$4,621,548
Residual Land Value per square foot	Per sf		-$122

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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Mark Hoffheimer
Date:	March 6, 2012
Subject:	Task H: Sustainability Revisions

Purpose

In accordance with the requirement that the Sustainability section of the Specific Plan be updated every two years, the Sustainability section (Chapter E, Section E.3.8, page E46) was reviewed and revised, with recommendations for revisions made to reflect code changes as well as best practices in other jurisdictions.

Other references to sustainability in the Draft Specific Plan (pages C19 and D48) will be revised, and made consistent with Section E.3.8, as part of the update to the Draft Specific Plan.

Key Findings/Recommendations for Revisions

The following revisions address updates to codes and initiatives

- Section 3.8.2, Local Initiatives: delete discussion of early adoption of CALGREEN code, as this is no longer relevant (see State Initiatives below); include information on the City's recent adoption of local amendments to CALGREEN.
- Section 3.8.2, Regional Initiatives: update section on San Mateo County Green Building Ordinance to reflect ordinance language.
- Section 3.8.2, State Initiatives: clarify application of CALGREEN code.

The following revisions were made to reflect best practices in other jurisdictions, or to clarify the intent of the recommendations:

- E3.8.3.03: revise requirements for large parcels to apply to projects with multiple buildings on lots one acre or more in size. Revise recommended LEED-ND certification level to silver so that this requirement aligns with requirements for single buildings. LEED-ND Silver would be in addition to LEED Silver for individual buildings. It recognizes that larger projects, with multiple buildings arranged on larger sites, have the potential to employ additional sustainable practices

beyond those employed in individual buildings, such as stormwater management and renewable energy sources. It also recognizes that such practices can be employed on sites as small as one acre with multiple buildings (more than one).

Methodology and References

The methodology for this update included review of applicable codes and initiatives, and a review of requirements in other jurisdictions, including San Francisco, Palo Alto and San Jose.

Attachments

- Revised Sustainable Practices Text from Specific Plan (Section E.3.8)

cc: Menlo Park El Camino Real/Downtown
Specific Plan – SA #498012.006

E.1 OVERVIEW

E. 3.8 Sustainable Practices

Sustainable practices for new construction support community and environmental well-being by utilizing finite resources in a responsible way, creating healthy environments for building inhabitants and minimizing impacts to both natural systems and existing utilities (i.e. water, wastewater and energy systems). The City of Menlo Park supports sustainable practices through its 2009 Climate Action Plan.

Sustainable practices address: 1) the environmental impacts of site development and building construction; and 2) the long-term environmental impacts of the operation of buildings resulting in the emission of greenhouse gases (GHGs), in particular carbon dioxide (CO2), which is causing the global climate to change. Currently, there are excellent tools to measure ways to reduce environmental impacts caused by building construction, and new tools are emerging to measure greenhouse gas emissions caused by building operations over the long term.

To address impacts caused by construction, the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating system measures specific site development and new building construction methods related to environmental issues, such as energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality and stewardship of resources and sensitivity to their impacts.

To address GHG emissions, the world's leading green building organizations have agreed to adopt a common global language for the measurement of the carbon footprint of buildings. The "common carbon metric" will be piloted by the leading green building rating tools. This should lead to the cost-effective GHG mitigation potential of buildings, which account for around 40% of the world's energy use and 33% of global GHG emissions.[1]

3.8.1 Measurement Tools

Development and Construction Tools

US Green Building Council Leadership in Energy and Environmental Design (LEED)

The LEED program has performance levels from "Certified" to "Platinum" and rating systems that address different types of construction and building operation, including LEED for New Construction and LEED for existing buildings, operations and maintenance. In addition, LEED for Neighborhood Development (LEED-ND) promotes best practices in location, design and development at the neighborhood scale.

GreenPoint Rating

Build It Green is a membership supported non-profit organization whose mission is to promote healthy, energy- and resource-efficient homes in California. Build it Green has a GreenPoint rating system specifically designed to address residential construction. Many municipalities in the Bay Area have adopted Green Building Ordinances that require certain levels of LEED certification or a GreenPoint

[1] US Green Building Council

rating for different types of projects. A residential building can be GreenPoint Rated if it achieves the performance requirements of the GreenPoint rating system; there is no sliding scale like there is with LEED (i.e. “Certified” to “Platinum”).

2030 Challenge Greenhouse Gas Reduction Targets

The 2030 Challenge is an initiative by Architecture 2030 asking for the adoption of a series of greenhouse gas reduction targets for new and renovated buildings. Architecture 2030, is a non-profit, non-partisan and independent organization established in 2002 by architect Edward Mazria in response to the global-warming crisis. 2030’s mission is to rapidly transform the US and global Building Sector from the major contributor of greenhouse gas emissions to a central part of the solution to the global-warming crisis.

3.8.2 Initiatives

A variety of state, regional and local initiatives address sustainable development and reduction of greenhouse gases.

State Initiatives

The State of California has adopted a green building code (CALGREEN) which took effect on January 1, 2011. The CALGREEN Code is a comprehensive and uniform regulatory code for certain categories of residential buildings and for commercial, hospital and school buildings. It is intended to ensure that most new buildings in California are built using environmentally advanced construction practices. Among the requirements of the code are the following:

- 20 percent mandatory reduction in indoor water use, with voluntary goal standards for 30, 35 and 40 percent reductions;
- Separate water meters for nonresidential buildings’ indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;
- Requiring diversion of 50 percent of construction waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects (Menlo Park currently implements a Construction and Demolition ordinance that requires construction projects to divert 60 percent of materials from the landfill);
- Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies; and
- Requiring low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particle board.

While the CALGREEN Code clearly advances “green” practices in building construction, the code complements, and does not replace, the LEED program, which takes a more comprehensive approach to sustainable design.

Regional Initiatives

San Mateo County has adopted a Green Building Ordinance that applies to buildings requiring permits issued by the County. San Mateo County's Green Building Ordinance requires new and 50 percent remodels of single family, two family and low rise multi-family residential buildings to receive either a GreenPoint rating or LEED certification and new commercial and industrial buildings greater than 3,000 square feet to receive LEED certification. .

Local Initiatives

Menlo Park published a Climate Action Plan (CAP) in 2009 that included measures to reduce greenhouse gas emissions. In 2011, the City Council adopted a supplemental report to the CAP, which updated Menlo Park's community greenhouse gas inventories between 2005 and 2009, and also provided a five year strategy of climate action initiatives. One of the initiatives includes the phased development of a sustainable building ordinance that would enhance energy efficiency in newly constructed buildings beyond that provided by CALGREEN. The first phase of work resulted in the City adoption of three local amendments to CALGREEN. The local amendments have been effective since January 1, 2012. The local amendments include the following new requirements for buildings currently subject to CALGREEN:

- All newly constructed buildings are required to exceed the minimum energy efficiency standards established in the 2010 California Energy Code by 15 percent.
- All newly constructed buildings are required to test heating and cooling ducts for leakage.
- All newly constructed residential buildings are required to install cool roofs or use alternative methods and materials to achieve equivalent energy savings.

The second phase of work is expected to begin in fiscal year 2012-2013 and will focus on the exploration of additional sustainability building measures, including the use of various rating systems.

All city-wide programs are applicable to the Specific Plan area.

3.8.3 Recommendations

The Specific Plan recommends that the City adopt the following policies regarding sustainable practices for the plan area. The policies reflect best practices as adopted by other cities. The costs relating to sustainable practices are absorbed by developers, which has become standard practice for developers. However, the policies reflect the potential of financial hardship for smaller buildings by establishing two sets of requirements -- one for larger buildings/developments and one for smaller buildings as noted below both in text and table format.

E.3.8.3.01 LEED certification, at a silver level or higher, shall be required for the types of projects listed below. The applicable LEED® versions of performance standards are: LEED®- v3 (2009) New Construction; LEED®- v3 (2009) Core and Shell; LEED®- v3 (2009) New Homes; LEED®- v3 (2009) Schools; and LEED®- v3 (2009) Commercial Interiors. LEED certification, at a silver lever or higher, should be required for:

- Newly constructed residential buildings of Group R (single-family, duplex and multi-family);

- Newly constructed commercial buildings of Group B (occupancies including among others office, professional and service type transactions) and Group M (occupancies including among others display or sale of merchandise such as department stores, retail stores, wholesale stores, markets and sales rooms) that are 5,000 gross square feet or more;
- New first-time build-outs of commercial interiors that are 20,000 gross square feet or more in buildings of Group B and M occupancies; and
- Major alterations that are 20,000 gross square feet or more in existing buildings of Group B, M and R occupancies, where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed.

E.3.8.3.02 The development of larger projects allows for more comprehensive sustainability planning and design, such as efficiency in water use, stormwater management, renewable energy sources and carbon reduction features. A larger development project is defined as one with two buildings or more on a lot 1 acre or larger in size. Such development projects should have sustainability requirements and GHG reduction targets that address neighborhood planning, in addition to the sustainability requirements for individual buildings (see E.3.8.3.01 above). These should include being certified at a LEED-ND (neighborhood development), at a silver level or higher, and could include mandating a phased reduction of GHG emissions over a period of time as prescribed in the 2030 Challenge.

E.3.8.3.03 Because green building standards are constantly evolving, the requirements in this section should be reviewed and updated on a regular basis of at least every two years.

Summary of Green Building Requirements

Building Type	Building Size	Recommended Minimal Standard
New Construction		
New Large Commercial	5,000 GSF (1) or larger	LEED Silver
New Residential	Single and duplex	LEED Silver
New Residential	Multi-Family 3 units or more	LEED Silver
New Multi-Building	More than one building on one acre or more	LEED-ND Silver
Interiors and Alterations		
Large First-Time Build Outs of Commercial Interiors	20,000 GSF or larger	LEED Silver
Major Alterations to Commercial and Residential Interiors	20,000 GSF or larger	LEED Silver
(1) GSF = Gross Square Feet		

3.8.4 Guidelines

The sustainable guidelines listed below are also relevant to the project area. They relate to but do not replace LEED certification rating requirements.

Building Design Guidelines

E.3.8.4.01 Buildings should incorporate narrow floor plates to allow natural light deeper into the interior.

E.3.8.4.02 Buildings should reduce use of daytime artificial lighting through design elements, such as bigger wall openings, light shelves, clerestory lighting, skylights, and translucent wall materials.

E.3.8.4.03 Buildings should allow for flexibility to regulate the amount of direct sunlight into the interiors. Louvered wall openings or shading devices like *bris soleils* help control solar gain and check overheating. *Bris soleils*, which are permanent sun-shading elements, extend from the sun-facing facade of a building, in the form of horizontal or vertical projections depending on sun orientation, to cut out the sun's direct rays, help protect windows from excessive solar light and heat and reduce glare within.

E.3.8.4.04 Where appropriate, buildings should incorporate arcades, trellis and appropriate tree planting to screen and mitigate south and west sun exposure during summer. This guideline would not apply to downtown, the station area and the west side of El Camino Real where buildings have a narrower setback and street trees provide shade.

E.3.8.4.05 Operable windows are encouraged in new buildings for natural ventilation.

E.3.8.4.06 To maximize use of solar energy, buildings should consider integrating photovoltaic panels on roofs.

E.3.8.4.07 Inclusion of recycling centers in kitchen facilities of commercial and residential buildings shall be encouraged. The minimum size of recycling centers in commercial buildings should be 20 cubic feet (48 inches wide x 30 inches deep x 24 inches high) to provide for garbage and recyclable materials.

Stormwater and Wastewater Management Guidelines

E.3.8.4.08 Effective stormwater management techniques are recommended. Such techniques could include bioswales on surface parking lots, rain gardens in landscaped areas, green roofs and porous materials on driveways and parking lots.

E.3.8.4.09 Buildings should incorporate intensive or extensive green roofs in their design. Green roofs harvest rain water that can be recycled for plant irrigation or for some domestic uses. Green roofs are also effective in cutting-back on the cooling load of the air-conditioning system of the building and reducing the heat island effect from the roof surface.

E.3.8.4.010 Projects should use porous material on driveways and parking lots to minimize stormwater run-off from paved surfaces.

Landscaping Guidelines

E.3.8.4.11 Planting plans should support passive heating and cooling of buildings and outdoor spaces.

E.3.8.4.12 Regional native and drought resistant plant species are encouraged as planting material.

E.3.8.4.13 Provision of efficient irrigation system is recommended, consistent with the City's Municipal Code Chapter 12.44 "Water-Efficient Landscaping".

Lighting Guidelines

E.3.8.4.14 Energy-efficient and color-balanced outdoor lighting, at the lowest lighting levels possible, are encouraged to provide for safe pedestrian and auto circulation.

E.3.8.4.15 Glare into dwelling units and light pollution into the night sky should be minimized by use of fixtures with low cut-off angles.

E.3.8.4.16 Improvements should use ENERGY STAR-qualified fixtures to reduce a building’s energy consumption.

E.3.8.4.17 Installation of high-efficiency lighting systems with advanced lighting control, including motion sensors tied to dimmable lighting controls, are recommended.

Green Building Material Guidelines

E.3.8.4.18 The reuse and recycle of construction and demolition materials is recommended. The use of demolition materials as a base course for a parking lot keeps materials out of landfills and reduces costs.

E.3.8.4.19 The use of products with identifiable recycled content, including post-industrial content with a preference for post-consumer content, are encouraged.

E.3.8.4.20 Building materials, components, and systems found locally or regionally should be used, thereby saving energy and resources in transportation.

E.3.8.4.21 A design with adequate space to facilitate recycling collection and to incorporate a solid waste management program, preventing waste generation, is recommended.

E.3.8.4.22 The use of material from renewable sources is encouraged.

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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Mark Hoffheimer
Date:	March 6, 2012
Subject:	Task I. Restaurant Study

Purpose

To consider revisions to the Draft Specific Plan's Eating and Drinking Establishments land use designations, with particular focus on the appropriateness of "Restaurant, Limited Service" for the Downtown/Station Area Retail/Mixed Use and Downtown/Station Area Main Street Overlay designations.

Key Findings

- Although the Draft Specific Plan took into consideration an earlier study in Menlo Park (see attached table – 2006 draft zoning ordinance study), there is no apparent or compelling reason to distinguish between Restaurants, Full Service and Restaurant, Limited Service for purposes of permitted uses in the downtown area.
    - Limited services restaurants are generally considered as those where food and beverages are prepared and may be consumed on the premises, taken out or delivered, but where limited or no table service is provided and patrons pay before eating.
    - Café Borrone and Le Boulanger are examples of a Restaurant, Limited Service
- Restaurants, Take Out Only should not be permitted in the downtown area, consistent with nearby communities.

Recommendations for Specific Plan Revisions

The following restaurant designations are recommended for the Downtown/Station Area Retail/Mixed Use and Downtown/Station Area Main Street Overlay designations:

- Restaurants, Full/Limited Service – Permitted;
- Restaurants, Full/Limited Service with Alcohol and/or Outdoor Seating – permitted with an Administrative Permit by the Community Development Director (no change from the Draft Specific Plan);

- Restaurants, Full/Limited Service with Live Entertainment – permitted with Use Permit by Planning Commission (no change from Draft Specific Plan; and
- Restaurants, Take-Out Only – Not Permitted.

Methodology

Perkins+Will reviewed restaurant designations in Redwood City and Palo Alto to understand how nearby communities handled different types of restaurants in their downtown area. Perkins+Will also considered the appropriate size limit for a limited service restaurant by reviewing existing Limited Service Restaurants in downtown Menlo Park and trade publications.

Discussion of Findings

The attached table summarizes definitions and permitted/conditional uses for restaurants for Menlo Park, Redwood City and Palo Alto. It also provides definitions for restaurants from the North American Industry Classification System, a standard used by Federal statistical agencies.

Eating and Dining Establishments in the Downtown/Station Area Retail/Mixed Use and Downtown/Station Area Main Street Overlay Designations

The Draft Specific Plan provides for the following Eating and Dining Establishment uses in the Downtown/Station Area Retail/Mixed Use and Downtown/Station Area Main Street Overlay Designations:

- Restaurants, Full Service – Permitted;
- Restaurants, Limited Service – Permitted subject to limitations (less than 3,000 SF); may be exceeded with Use Permit by Planning Commission;
- Restaurants, Full/Limited Service with Alcohol and/or Outdoor Seating – permitted with an Administrative Permit by the Community Development Director;
- Restaurants, Full/Limited Service with Live Entertainment – permitted with Use Permit by Planning Commission; and
- Restaurants, Take-Out Only – Permitted subject to limitations (less than 3,000 SF although may be exceeded with Use Permit by Planning Commission) in the Downtown/Station Area Retail/Mixed Use designation and prohibited in the Downtown/Station Area Main Street Overlay designation.

Definition of Restaurant, Limited Service

The Draft Specific Plan generally defines Limited Services Restaurants as those where food and beverages are prepared and may be consumed on the premises, taken out or delivered, but where limited or no table service is provided and patrons pay before eating. For the full and precise definition, see the attached table and/or Appendix H of the Draft Specific Plan.

Café Borrone and Le Boulanger in downtown Menlo Park are two examples of a limited service restaurant. The two restaurants are approximately 2,700 square feet and 4,500 square feet in size, respectively.

Draft Specific Plan compared to Redwood City and Palo Alto

The Draft Specific Plan makes a distinction between Restaurants, Full Service and Restaurants, Limited Service. The cities of Redwood City and Palo Alto make no such distinction.

The Draft Specific Plan permits Restaurants, Full Service and Restaurants, Limited Service (with limitations) in the Downtown/Station Area Retail/Mixed Use and Downtown/Station Area Main Street Overlay Designations. This is consistent with the cities of Redwood City and Palo Alto.

The Draft Specific Plan permits Restaurants, Take-Out only (with limitations) in the Downtown/Station Area Retail/Mixed Use designation but prohibits them in the Downtown/Station Area Main Street Overlay Designation. The Cities of Redwood City and Palo Alto do no permit such restaurants in their downtown area. In addition, the City of Palo Alto does not allow drive-in service in their downtown area.

The Draft Specific Plan permits Restaurants (Full Service and Limited Service) with alcohol service and/or outdoor seating through an Administrative Permit. The Draft Specific Plan permits Restaurants (Full Service and Limited) with live entertainment through a Use Permit by the Planning Commission. This is generally consistent with the City of Redwood City. No such review and approval is required by the City of Palo Alto.

Size of Restaurants, Limited Service

The following information provides a gauge for a reasonable size for Restaurants, Limited Service if the City were to choose to use such a designation with limitations based on size.

Typical Parcel Size

Typical Downtown Parcel Size: 50' x 100' to 125' = 5,000 SF to 6,500 SF

Café Borrone and Le Boulanger in downtown Menlo Park

- Café Borrone – approximately 2,700 square feet
- Le Boulanger – approximately 4,500 square feet

2009 Retail Tenant Directory

The Retail Tenant Directory, recognized throughout the industry as the most accurate data source available, contains in-depth profiles on over 6,000 retail chains across the U.S. and Canada. It is used by anyone interested in real estate development and the marketplace.

The directory includes a chart that demonstrates how new retail space is likely to be utilized by distinct retail categories. The Range of Average Square Feet for three restaurant types follows:

- Fast Casual Restaurants: 2,441 to 3,540 SF
- Fast Food: 1,861 – 3,420 SF
- Restaurants/bars: 4,686 – 6,770 SF

References

- 2009 Retail Tenant Directory, Trade Dimensions/Nielsen, pages 15-16

Attachments

- Task I: Restaurant Study Table

cc: Menlo Park El Camino Real/Downtown
Specific Plan – SA #498012.006

Menlo Park Additional Services
Task I: Restaurant Study, Downtown Menlo Park
6 March 2012

	Definitions	Permitted Use	Limitations/ Permits Required
Menlo Park Specific Plan			
Restaurants, Full Service	Restaurants providing food and beverage services to patrons who order and are served while seated and pay after eating. Takeout service may be provided. Alcohol service, outside seating, and live entertainment are not permitted except by administrative permit or use permit as allowed in the Land Uses table.	PERMITTED	
Restaurants, Limited Service	Establishments where food and beverages are prepared and may be consumed on the premises, taken out, or delivered, but where no table service is provided and patrons pay before eating. Limited Service Establishments include restaurants that sell ready-to-eat prepared foods and beverages for immediate consumption on- or off-premises that are packaged and served in or on disposable wrappers, containers, or plates. This classification includes cafeterias, delis, coffee shops, and snack bars but excludes take-out only establishments. Alcohol service, outside seating, and live entertainment are not permitted except by administrative permit or use permit as allowed in the Land Uses table.		Permitted subject to limitations (less than 3,000 SF); limitations may be exceeded with Use Permit by Planning Commission
Restaurants, , Full/Limited Service with Alcohol and/or Outdoor Seating	None		Permitted with Administrative Use Permit by Community Development Director
Restaurants, Full/Limited Service with Live Entertainment	None		Permitted with Use Permit by Planning Commission
Restaurants, Take Out Only	Establishments where food and beverages are prepared and may be taken out or delivered, but may not be consumed on the premises. No seating is provided on the premises.		Permitted subject to limitations (less than 3,000 SF); limitations may be exceeded with Use Permit by Planning Commission

	Definitions	Permitted Use	Limitations/ Permits Required
Menlo Park Specific Plan			
Menlo Park Commercial Zoning Ordinance Update: Draft Ordinance (9/27/06)			
Restaurants, Full Service	Restaurants providing food and beverage services to patrons whole order and are served while seating and pay after eating. Takeout service may be provided.	Not applicable	
Restaurants, Limited Service	Establishments where food and beverages are prepared and may be consumed on the premises, taken out, or delivered, but where no table service is provided and patrons pay before eating. Limited Service Establishments included restaurants that sell ready-to-eat prepared food and beverages for immediate consumptions on- or off-premises that are packaged and served in or on disposable wrappers, containers or plates. This classification includes cafeterias, delis, coffee shops, and snack bars but excludes take-out only establishments.	Not applicable	
Restaurants, Take Out Only	Establishments where food and beverages are prepared and may be taken out or delivered, but may not be consumed on the premises. No seating is provided on the premises.	Not applicable	
Redwood City			
Restaurant, Accessory Food Service	An establishment that sells food and/or beverages as an accessory use in a retail, office, or institutional structure and that does not change the character of the primary use.	Not applicable	
Restaurant, Drive-Through	An establishment that provides food and/or beverages accessible to persons who remain in their motor vehicles.		**X** - Not Permitted
Restaurant, Fast Food	A restaurant that supplies food and beverages primarily in disposable containers and that is characterized by self-service and short stays by customers.		**X** - Not Permitted

	Definitions	Permitted Use	Limitations/ Permits Required
Menlo Park Specific Plan			
Restaurant, Sit-down	An establishment engaged in the business of selling food and beverages, including alcoholic beverages, prepared on-site for primarily on-site consumption. Food and beverages are served to the customer at a fixed location (i.e., booth, counter, or table). Food and beverages are ordered from individual menus. Customers typically pay for food and beverages after service and/or consumption.	PERMITTED Restaurants and cafes, including the sale of beer and wine, but not including liquor;	Permitted with Conditional Use Permit; - Restaurants, cafes, and bars, including the sale of liquor and other alcoholic beverages, and including catering establishments when food is also sold on the premises - Restaurants with exterior seating
Take-Out Service	An establishment that offers a limited variety of food or beverages. Transactions are sales for off-site consumption. Customers are served either at a counter or service window. Incidental seating (less than two hundred fifty (250) square feet of seating area) may be provided for limited on-site consumption of food or beverages. Typical uses include bakeries, coffee stores, ice cream and frozen dessert stores, delivery-only pizza establishments, small delicatessens, and similar establishments.		**X** - Not Permitted
Palo Alto			
Definitions			
Eating and drinking service (47)	A use providing preparation and retail sale of food and beverages, including restaurants, fountains, cafes, coffee shops, sandwich shops, ice cream parlors, taverns, cocktail lounges and similar uses. A minimum of 50% of revenues from an "eating and drinking service" must be derived from the sale of food. Related definitions are provided in subsections (45) and (136).	PERMITTED	
Drive-in service (45)	A feature or characteristic of a use involving sales of products or provision of services to occupants in vehicles, including drive-in or drive-up windows and drive-through services such as mechanical automobile washing, pharmacy windows, coffee stands, automatic teller machines, etc.		**X** - Not Permitted

	Definitions	Permitted Use	Limitations/ Permits Required
Menlo Park Specific Plan			
Take-out service (136)	A characteristic of an eating or drinking service which encourages, on a regular basis, consumption of food or beverages, such as prepared or prepackaged items, outside of a building, in outdoor seating areas where regular table service is not provided, in vehicles parked on the premises, or off-site.		**X** - Not Permitted
North American Industry Classification System (NAICS)	Source 2002: The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.		
722211 Limited-Service Restaurants	This U.S. industry comprises establishments primarily engaged in providing food services (except snack and nonalcoholic beverage bars) where patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to the customer's location. Some establishments in this industry may provide these food services in combination with selling alcoholic beverages.	Not applicable	
7222 Limited-Service Eating Places	This industry group comprises establishments primarily engaged in providing food services where patrons generally order or select items and pay before eating. Most establishments do not have waiter/waitress service, but some provide limited service, such as cooking to order (i.e., per special request), bringing food to seated customers, or providing off-site delivery.	Not applicable	
72221 Limited-Service Eating Places	This industry comprises establishments primarily engaged in (1) providing food services where patrons generally order or select items and pay before eating or (2) selling a specialty snack or nonalcoholic beverage for consumption on or near the premises. Food and drink may be consumed on the premises, taken out, or delivered to the customer's location. Some establishments (except snack and nonalcoholic beverage bars) in this industry may provide these food services in combination with selling alcoholic beverages.	Not applicable	

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Memo

To:	Thomas Rogers, City of Menlo Park
From:	Mark Hoffheimer
Date:	March 6, 2012
Subject:	Task J. Live Work Study

Purpose

Investigate the purposes of and approaches and issues with permitting, encouraging and/or discouraging live/work spaces, including issues with "reversion" to all residential or all office uses. Make recommendations for refining the Specific Plan in regards to live/work housing.

Key Findings

- The purposes of live/work include providing affordable housing, providing appropriate housing for people with artistic endeavors, preservation of existing buildings and providing a variety of housing types, work spaces and employment opportunities.
- Live/work is typically located in "transition areas" – on residential edges between residential and commercial/industrial areas.
- While tools exist, controlling the "reversion" of live/work to live only or work only is challenging and hard to enforce. Some communities, such as Emeryville and Palo Alto, allow for reversions. If Menlo Park wants more certainty in its land use composition, the "flexible" and "fluctuating" nature of live/work may not be appropriate for the community.
- Other live/work issues include employment allowed, hours of operation, signage, parking and service.
- Currently, Menlo Park permits Home Occupation in residences.

Recommendations for Specific Plan Revisions

- Make no revisions to the Specific Plan regarding live/work. That is, remain silent on live/work, as the Specific Plan does now.
    - There does not appear to be strong reasons to explicitly include live/work in the Specific Plan area; the City's existing provisions for Home Occupation seem to meet the City's needs.
    - Because the City's current definition of a Home Occupation is fairly strict, the City at some future time could consider a modification of its definition, applicable to the Specific Plan area, which would allow for expanded use of home occupations, such as allowing for small numbers of employees or the storage of small amounts of stock or commodity.
    - The City could consider modifying the current definition of home occupation, and/or include live/work units, as part of an update of the City's Housing Element.

Methodology

Perkins+Will researched the characteristics of live/work, including definitions, land use implications and potential controls to encourage/discourage live/work. Perkins+Will also reviewed policies and codes for live/work of two Bay Area communities: the Cities of Emeryville and Palo Alto. In addition, Perkins+Will spoke with planners at the Cities of San Francisco and Emeryville about their issues and experiences with live/work.

Discussion of Findings

Purpose of Live/Work

The *Emeryville Municipal Code* states that the purpose of the Live/Work Regulations is to:

- Provide appropriate housing for persons engaged in artistic endeavors;
- Increase the supply of low-income housing, in the form of live/work units; and
- Encourage the preservation of existing buildings which are structurally sound and aesthetically worthy, while protecting the primary uses with each zoning district.

Other reasons for live/work space include[1]:

- Increase the supply of affordable housing;
- Increase the variety of housing types and resident types, creating additional vibrancy in a mixed-use districts;
- Increase the variety of employment opportunities, including small- and medium-sized businesses and "incubator" space for innovative industries; and
- Reduce traffic and green-house emissions by minimizing commutes.

[1] The Live/Work Institute, Thomas Dolan Architecture

Live/work is often located in “under-developed” neighborhoods or in areas transitioning (spatially) between residential and commercial/industrial areas, between downtown commercial and industrial areas or generally on residential neighborhood edges.

The purposes of live/work may not be particularly applicable to the Specific Plan Study Area. The Study Area is in close proximity to residential neighborhoods; there are no appropriate “transition” areas.

Purposes for live/work, such as providing affordable housing, work spaces and housing types, may be accomplished in other ways using convention product types, such as multi-family housing and allowance for Home Occupation.

Types of Live/Work

There are three types of live/work: Home Occupation, Live/Work and Work/Live.

Home Occupation

Home occupation refers to an occupation undertaken at home. The space is clearly a residence, and may or may not contain a workspace, typically in the form of an office or workshop. Reversion to commercial or work only is not desirable and is often not allowed.

Menlo Park permits home occupation in residences with a home occupation permit. Likewise, the City of San Francisco permits home occupation in residences; the City does not permit live/work units.

According to the *Menlo Park Zoning Ordinance* (Section 16.04.340), "home occupation" means any activity conducted on the premises by the occupant of the dwelling as a secondary use in connection therewith, and where there are no advertising signs, no display, no stock or commodity stored or sold on the premises, no employees in connection therewith and no mechanical equipment to be used in connection therein, other than that necessary or convenient for domestic purposes. Such activity shall not be conducted in an accessory building.

Live/Work

The predominant use of a live/work unit is residential, with commercial activity as a secondary use. Employees and walk-in trade are usually not permitted.

Both Emeryville and Palo Alto permit Live/Work units with certain provisos (discussed below).

Work/Live

The predominant use of a work/live unit is commercial, with residential activity as a secondary use. The term work/live means that the needs of the work component take precedence over the quiet enjoyment expectations of residents, in that there may be noise, odors, or other impacts as well as employees, walk-in trade or sales. Work/live may increase the need for additional off-street parking.

Work/live may be best suited in existing commercial/industrial areas and is not appropriate for the Specific Plan Study Area.

Land Use Issues

There are a number of issues that should be considered with Live/Work units and/or Home Occupation.

Land Use Conflicts between Residential and Non-Residential Uses

Land use conflicts between residential and non-residential uses become apparent when live/work is located in industrial zones and its associated noise, odors, traffic and other hazards. Work/live (rather than live/work) units may be more appropriate for these areas.

The City of Emeryville is considering a new Live/Work category called "Heavy Live/Work" intended for industrial areas.

"Work" Type

Work type refers to the type of work activities permitted in live/work units. If not specified in an ordinance, the work undertaken may include hazards (materials, odors, hazardous materials, etc.) inappropriate in residential areas.

The City of Palo Alto allows for a variety of commercial activities (see Sample Controls below) but explicitly disallows restaurants, cafes or any business involving the storage or use of hazardous materials in excess of Title 15 of the Municipal Code.

"Work" Operations

Because live/work units are places of work, other issues arise which should be carefully considered. Such issues include:

- Employment allowed;
- Hours of operation;
- Signage allowed;
- Customers allowed;
- Storage/warehousing;
- Additional parking for employees and customers, which could be on- or off-site; and
- Service of building, particularly those with on-site stock-in-trade, which can generate truck traffic.

The City of Palo Alto allows for up to two employees who do not reside within the unit.

The City of San Francisco does not permit live/work units within San Francisco, but it does permit Home Occupation. With Home Occupation, the City does not allow employment, signage and customers/walk-in traffic. It restricts the hours of operation and disallows storage of stock-in-trade. The City of San Francisco does allow professional services and those who visit by appointment (e.g. to see an accountant, therapist, etc.).

Impact Fees

Live/work units, particularly when they revert to pure residential use, may not generate the amount of developer impact fees for schools and other services, or create the amount of open space, appropriate for residential use.

Reversion to Pure Residential or Office Use

Challenging to regulate, a live/work unit can "revert" to live only or work only uses. Such a reversion can result in many of the issues summarized above, including increasing student enrollment at local schools.

In Palo Alto, a live/work unit may be converted to an entirely residential unit where residential use on the ground floor is not otherwise prohibited. The City of Emeryville has no policy relating to reversions.

Enforcement

Once a live/work unit is permitted, it can be challenging to enforce rules related to reversion, work activity, etc. Cities typically enforce such regulations only in response to a formal complaint.

Potential Controls to Encourage/Discourage Live/work

There are a variety of potential controls for encouraging or discouraging live/work, as summarized below.

- Zone to locate live/work in suitable areas
- Zone for appropriate work activity
- Require conditional use permit (e.g. Emeryville Municipal Code)
- Slow residential reversion through the use of regulations, sanctions/enforcement, financial incentives, tax policy incentives and design of unit for the appropriate level of proximity between living and working spaces.
    - In general, the limiting of reversions can be challenging to enforce.
- Allow artists to retain control of their spaces through ownership, long-term rent subsidies or the creation – and enforcement – of "Artists Protections Zones", providing long-term affordable live/work
- Designate certain live/work areas as rental only in existing buildings
- Create deed restrictions
- Designate certain areas of a city off-limits for condominium live/work, but appropriate for rental or limited equity coop ownership.
    - Make part of conditional use permit
- Create incentives for developers to include artists in their projects, through such means as density bonuses, parking requirement relaxations and other building code relaxations.
- Encourage non-profit developers to view low- and moderate income artists as an underserved group deserving of their support through the development of affordable live/work projects.

Sample Controls for the Design of Live/Work

Emeryville Municipal Code – Selected Elements

- The floor area of each live/work unit shall be 750 SF minimum to 2,000 SF maximum
- Not more than 50% of the floor area for each live/work unit shall be devoted to living area
- Parking standard: 1.5 off-street spaces per unit or 1.5 off-street spaces per 1,000 net SF, whichever is greater
- Open space standard: 36 SF of private or common usable outdoor recreation or landscaped open space per live/work unit
- Work activity per the zoning district regulations of the district
- Preference for ground-floor commercial activity

Palo Alto Pedestrian and transit Oriented Development (TOD) Combining District Regulations – Selected Elements

- The floor area of each live/work unit shall not exceed 2,500 SF
- Not less than 60% of the floor area for each live/work unit shall be devoted to living area
    - Resident of the living space must be the owner/operator of the work area
- Work area shall be located on the ground floor, oriented to the street and provide at least one external entrance/exit separate from the living space
- Work activity may be used for office, retail, personal services, or handcrafted goods, but shall not be used for restaurants or cafes or for any businesses involving the storage or use of hazardous materials in excess of Title 15 of the Municipal Code.
    - Maximum number of employees who do not reside within the unit is two.

References

- City of Emeryville Municipal Code
- City of Menlo Park Zoning Ordinance
- City of Palo Alto Municipal Code
- Diana Keena, Associate Planner, City of Emeryville, phone conversation, February 2012
- Joshua Switzky, Planner, City of San Francisco, phone conversation, February 2012
- The Live/Work Institute, Thomas Dolan Architecture, http://www.live-work.com/lwi/

cc: Menlo Park El Camino Real/Downtown
Specific Plan – SA #498012.006

STRATEGICECONOMICS

MEMORANDUM

Date:	February 29, 2012
To:	Thomas Rogers and Arlinda Heineck, City of Menlo Park
From:	Nadine Fogarty and Derek W. Braun
Project:	Menlo Park El Camino Real and Downtown Specific Plan
Subject:	Task K: Retail Case Study

Purpose

Strategic Economics was asked by the City of Menlo Park to examine whether Menlo Park could experience greater benefits from a strategy of concentrating retail in specific nodes along El Camino Real, compared to the existing linear commercial format of the corridor. Strategic Economics examined this question by reviewing literature on the topic, drawing from the experience of other places, and examining the local context in Menlo Park.

This memorandum opens with a summary of key findings and recommendations for revisions to the Menlo Park El Camino Real / Downtown Specific Plan, followed by a brief description of the methodology applied. A Discussion of Findings section then presents the detailed considerations, findings, and strategies to be considered for retail along El Camino Real.

Key Findings

- Retail in Menlo Park is focused on household-serving retail, specialty shopping, and a limited number of larger-format retailers such as the existing Big 5 Sporting Goods and Staples. Peninsula retail exists in a hierarchy of clustered retail uses, including anchored regional malls (Stanford Shopping Center), regional big-box "power centers" (Best Buy and Ikea in East Palo Alto), community shopping centers (Safeway in Menlo Park), and specialty downtowns (Downtown Menlo Park or Palo Alto). Downtown Menlo Park will largely remain a specialty retail location due to strong competition from neighbors with better freeway visibility, regional access, and/or existing regional retail centers.

- The Menlo Park El Camino Real / Downtown Specific Plan supports a long-term economic shift away from the historic pattern of auto-oriented convenience retail along El Camino Real to a mixed-use neighborhood with pedestrian-friendly supportive retail. Typical tenants for this kind of retail space include cafes, restaurants, and other small retail stores. These businesses will be supported by additional office and residential uses in the area.

- Concentration of corridor retail and restaurants in nodes will allow for better competitive positioning while other corridor locations are freed for better-positioned uses. Cities sometimes over-anticipate the amount of ground floor retail that is viable; for example, Redwood City was forced to reduce the number of locations in downtown requiring ground floor retail space due to vacant storefronts. Over-encouraging and/or dispersing retail can lead to high vacancies, drive rents down, and take vitality away from key retail nodes. Retail nodes are most likely to be successful in high-visibility locations such as freeway and arterial intersections.

- The section of El Camino Real adjacent to Downtown Menlo Park is an obvious location to focus additional retail. Middle Avenue and El Camino Real is a second choice for creating a pedestrian-friendly node given the existing shopping center, proposed plans to bridge the area with Burgess Park and neighborhoods east of the Caltrain tracks, and vacant land. However, the location is only 0.4 mile from the intersection of Santa Cruz Avenue and El Camino Real. To avoid direct competition, the Middle Avenue node could be more focused on cafes or restaurants and other small multi-tenant retail; the retail does not need to be located in a mixed-use building so long as it is well-connected to adjacent residential areas.

- Ground floor retail must be designed well in order to be successful. Where ground floor retail is required, it is important to also require appropriate ceiling heights (approximately 15 to 16 feet) and to ensure that the space can be serviced adequately (e.g., room for a separate dumpster from residential uses). Restaurant spaces, in particular, have additional ventilation and plumbing needs that need to be accommodated. Retail space is also more functional if it has sufficient depth; a common rule of thumb is 40 to 70 feet.

Recommendations for Specific Plan Revisions

The current Specific Plan already implies the creation of retail nodes near Downtown and Middle Avenue based on existing land use patterns and the Plan's emphasis on retail ground floor use along Santa Cruz Avenue. This is further supported by the Plan's higher residential densities and pedestrian-oriented infrastructure in the station area and northern portions of El Camino Real.

The Specific Plan's design and parking guidelines will also help ensure new development is compatible with creating functional nodes with internal pedestrian linkages and external linkages to housing. The Specific Plan only *requires* retail along Santa Cruz Avenue in the "Downtown/Station Area "Main Street" Overlay" but is otherwise flexible in most areas. This arrangement allows retail to ultimately locate in places where it makes the most sense from a market perspective. The plan also encourages development of retail nodes via its reduced on-site parking requirements and encouragement of shared parking between businesses.

The following additional tools can help enable the concentration of retail on El Camino Real at Santa Cruz Avenue and Middle Avenue:

- Maintain the current retail/restaurant requirement along Santa Cruz Avenue in Downtown.
- Require retail/restaurant uses at the east side of El Camino Real at Middle Avenue, regardless of whether retail is standalone or contained within mixed-use buildings. A minimum of 10,000 square feet of additional retail/restaurant space can help to create a critical mass of retail activity.
- Revisit the retail requirements along Santa Cruz Avenue and at Middle Avenue and El Camino Real every five years to determine if they are resulting in ongoing vacancies. Consider revising the requirements if necessary and practical.
- Implement design guidelines which ensure functional retail spaces when included in mixed-use buildings with ground-floor retail (such as recommendations for retail space dimensions, visibility, and access to separate refuse facilities).

Methodology

Strategic Economics examined corridor retail strategies based on previous experience working in cities, review of literature on the topic, as well as searching for additional news and academic articles exploring specific issues. These sources were used to gather information on benefits of different approaches, tools to apply, and examples from other places.

Discussion of Findings

This section provides a more detailed discussion of the findings, including the factors working for and against traditional linear commercial corridors, why the creation of retail "nodes" is sometimes a recommended strategy along corridors, whether and how a nodal strategy could work in Menlo Park, and tools and strategies used to promote retail nodes.

The factors which drove the creation of commercial corridors have changed over time.

The history of the automobile-oriented commercial corridor traces back to at least the early-1920s, but they truly came of age in the 1950s. As the automobile became the dominant form of transportation during the post-war period, a firm hierarchy of streets was established which funneled automobiles onto high-traffic, high-speed arterial corridors linking homes with business destinations.

Early, continuous commercial and retail-focused development along arterial corridors provided numerous benefits at the time. The high traffic volumes ensured visibility and access to retailers, in a time when freeways were new and freeway-oriented retail formulas were in their early stages. Commercial uses were also considered to be a desirable buffer between the heavy traffic of the arterial and the surrounding single-family neighborhoods. The adjacent households also provided a nearby population of customers.

While commercial corridors are sometimes still viable, multiple trends are decreasing their competitiveness:

- Overbuilding due to tax law: Between 1954 and 1986, Federal tax code was changed to allow seven-year depreciation for commercial buildings, compared to the previous forty year requirement. During that period, commercial buildings conferred rapid up-front tax advantages with little incentive for high-quality construction or reinvestment. A building boom ensued, resulting in retail space increasing five to six times faster than actual sales.[1] This building boom contributed to large quantities of antiquated and unnecessary retail space along commercial corridors.

- Shift to new retail formats and location preferences: Retail is increasingly concentrated and centralized in large-format stores such as Target, Best Buy, Nordstrom, and Home Depot, which prefer to locate near freeways and major arterial intersections. Those stores then support smaller stores clustered around them in malls, shopping centers, etc. Linear commercial corridors away from major crossroads are unlikely to support sufficient traffic volumes or shopping densities to be regionally competitive.

- Increasing share of online sales: Online sales have grown to comprise four to five percent of all retail sales,[2] resulting in a gradual decline in required physical retail space in the United States.

- Decreasing accessibility due to automobile traffic volumes: The same automobile traffic volumes that initially led to growth along older commercial corridors are now undercutting their accessibility. Growing traffic volumes make it more difficult for customers to access stores, especially when the linear retail format encourages customers to drive between stores – further worsening traffic on the street.

- Decline in appearance and condition of buildings: As stated earlier, older commercial corridors often feature cheaply constructed and antiquated structures. The situation is worsened by inadequate reinvestment in properties, particularly in those sections of corridors which are less ideal for retail and, therefore, provide lower cash flow for investment.

- Growing interest in shopping with multiple destinations and more pleasurable experience: Current shopping trends indicate an increased interest among customers in human-scaled, multi-destination places with an urban amenity atmosphere. Examples include mixed-use "lifestyle centers" such as Santana Row in San Jose, and older downtowns such as in Menlo Park and Palo Alto. These centers feature not just shopping, but also upscale restaurants, cafes, and often entertainment. This kind of pedestrian-scaled retail environment is challenging to replicate at the necessary scale along major commercial corridors.

[1] McMahon, Edward T. "The Future of the Strip." *Urban Land*, 2 March 2011.
[2] United States Census. "U.S. Census Bureau News, Quarterly Retail E-Commerce Sales, 3rd Quarter 2011." 17 November 2011.

Retail "nodes" are frequently encouraged as a way to foster smaller concentrations of successful retail, while avoiding the pitfalls of over-encouraging and dispersing retail.

Cities sometimes over-anticipate the amount of ground floor retail that is viable; for example, Redwood City was recently forced to reduce the number of locations in its downtown in which ground-floor retail was required due to vacant storefronts. Over-encouraging and/or dispersing retail can lead to high vacancies, drive rents down, and take vitality away from what could otherwise be successful retail areas.

When a commercial corridor is experiencing increasing vacancies or disinvestment, reconfiguration toward a pattern of such "nodes" may be appropriate. This strategy focuses on concentrating retail – often alongside other civic facilities, entertainment destinations, or office uses – within specific locations along the corridor, while the other portions of the corridor are allowed to become multi-family housing or other uses. Housing and mixed-use buildings can be included in such nodes, but retail, dining, and entertainment uses alone are acceptable. Strong connections to adjacent housing can create a horizontal mixed-use area rather than a cluster of vertical mixed-use buildings.

The creation of a node overcomes several of the linear commercial corridor's disadvantages. The concentration of uses allows significant nodes to function and compete as a single shopping area. Meanwhile, strong attention to design and pedestrian circulation can encourage easy multi-destination shopping and dining without requiring customers to drive between uses previously strung out along the corridor. Finally, an oversupply of retail in the corridor can be reduced by allowing less ideal retail locations to convert to alternative uses, including housing. Conversion of low-density retail uses to higher-intensity housing and commercial uses can also provide greater fiscal benefits to cities, as was recently demonstrated by Strategic Economics in work for the El Camino Real Grand Boulevard Initiative.[3]

The specific retail market position and El Camino Real context in Menlo Park suggests that a node approach – focused on El Camino Real near Downtown and near Middle Avenue – is a good strategy.

Menlo Park exists within a highly-competitive regional retail environment. Peninsula retail consists of a hierarchy of clustered retail uses, including regional malls with department store anchors (Stanford Shopping Center), regional big-box "power centers" (Best Buy and Ikea in East Palo Alto), community shopping centers (Safeway in Menlo Park), and specialty downtown (Downtowns in Menlo Park, Palo Alto, or Redwood City). The El Camino Real area of Menlo Park is unlikely to become a significant regional retail destination due to its lack of a high-visibility, high-traffic crossroads, and its proximity to Stanford Shopping Center.

The strengths of Menlo Park's retail in the study area are proximity to affluent residents, existence of a walkable downtown with pleasant character, and some regional visibility due to through-traffic along El Camino Real; these strengths imply that the corridor's retail mix must focus on serving local residents, and on unique retail and restaurants to draw shoppers to complement – but not cannibalize – downtown. Current retail in downtown and El Camino Real reflects these realities, with a focus on household-serving retail (e.g. grocery stores, pharmacies, dry cleaners), specialty shopping (e.g. independent shops in Downtown), and a limited number of larger-format retailers such as the existing Big 5 Sporting Goods and Staples.

Given the competitive retail environment, vacant properties along the corridor, and the benefits of concentrating retail in nodes, a node-based strategy makes sense for El Camino Real in Menlo Park.

[3] Grand Boulevard Initiative. *Economic & Housing Opportunities Assessment.* 20 December 2010.

The 2011 report *Restructuring the Commercial Strip*[4] lays out the criteria for selecting appropriate nodes in an older arterial, based on examining major crossroad locations, direction of evening commute, availability of property, pattern of existing local and regional retail locations, and likely hierarchy of locations based on access/visibility.

The portion of El Camino Real adjacent to Santa Cruz Avenue is an obvious and pre-existing location for a retail node, based on the existing concentration, existing retail base, and foot and vehicle traffic. Much of El Camino Real in that area already features retail, implying that reinvestment in the existing retail will be more critical than new development in the immediate future.

The intersection of Middle Avenue and El Camino Real is a strong secondary choice for creating a pedestrian-friendly node. The location already features a Safeway-anchored community shopping center, vacant land owned by Stanford University exists on the east side of the intersection (immediately southeast of another shopping center), and the Specific Plan calls for bridging across the Caltrain tracks, providing a pedestrian linkage to eastern neighborhoods, Burgess Park, and the civic center.

A variety of retail types can be accommodated in a Middle Avenue retail node, but ideally the retailers will not compete directly with downtown businesses. Middle Avenue is less than half a mile from Santa Cruz Avenue, presenting an opportunity to connect the two retail areas through pleasant pedestrian cross-traffic, but also a risk that retail at Middle Avenue will compete against Downtown. One possibility to avoid competition is to focus small multi-tenant retail and/or restaurants around Middle Avenue, so long as these businesses do not directly compete against Stanford Shopping Center.

The built format of new retail at Middle Avenue can vary from single-use retail to ground-floor retail in a mixed-use building, so long as the pedestrian environment is attractive, and the ground floor retail is physically designed to meet tenant needs. For example, industry standards tend to prefer minimum ceiling heights of 15 to 16 feet and depths of 40 to 70 feet, and provisions must be made for trash, delivery, ventilation, and plumbing (especially for restaurants).

Recommendations

The following tools can help enable the concentration of retail on El Camino Real at downtown and Middle Avenue nodes:

- Maintain the current retail and restaurant requirement along Santa Cruz Avenue in Downtown.

- Require retail/restaurant uses at the east side of El Camino Real at Middle Avenue, regardless of whether retail is standalone or contained within mixed-use buildings. A minimum of 10,000 square feet of additional retail/restaurant space can help to create a critical mass of retail activity.

- Revisit the retail requirements along Santa Cruz Avenue and at Middle Avenue and El Camino Real every five years to determine if they are resulting in ongoing vacancies. Consider revising the requirements if necessary and practical.

[4] ICF International and Freedman Tung & Sasaki. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors.* United States Environmental Protection Agency, 2011.

- Implement design guidelines which ensure functional retail spaces when included in mixed-use buildings with ground-floor retail (such as recommendations for retail space dimensions, visibility, and access to separate refuse facilities).

Notably, the current Specific Plan already implies the creation of retail nodes near Downtown and Middle Avenue, based on existing land use patterns and the Plan's emphasis on retail ground floor use along Santa Cruz Avenue. This is further supported by the Plan's higher residential densities and pedestrian-oriented infrastructure in the station area and northern portions of El Camino Real.

The Specific Plan's design and parking guidelines will also help ensure new development is compatible with creating functional nodes with internal pedestrian linkages and external linkages to housing. The Specific Plan only *requires* retail along Santa Cruz Avenue in the "Downtown/Station Area "Main Street" Overlay" but is otherwise flexible in most areas. This arrangement allows retail to ultimately locate in places where it makes the most sense from a market perspective. The plan also encourages development of retail nodes via its reduced on-site parking requirements and encouragement of shared parking between businesses.

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STRATEGICECONOMICS

MEMORANDUM

Date:	February 10, 2012
To:	Thomas Rogers and Arlinda Heineck, City of Menlo Park
From:	Sarah Graham and Nadine Fogarty
Project:	Menlo Park El Camino Real and Downtown Specific Plan Add Services
Subject:	Task L: Senior Housing, DRAFT

Purpose

The City of Menlo Park has asked Strategic Economics to evaluate methods for encouraging the development of senior housing, such as through increased density, lower parking ratios, or other incentives, in the Menlo Park El Camino Real and Downtown Specific Plan Area.

This memorandum opens with a summary of key findings and recommendations for encouraging senior housing in the plan, followed by a brief description of the methodology used. A Discussion of Findings section then presents the detailed considerations and potential strategies to be considered.

Key Findings

- There has been little recent development of senior housing under the City's existing Retirement Living Units (R-L-U) district overlay designation. The R-L-U designation was intended to incentivize the development of retirement rental housing for those over sixty and to meet the housing and social needs of the elderly. The designation requires that the housing be developed in accordance with a planned housing program by a charitable, nonprofit organization.

- Primary barriers to development of *market rate* senior housing are market based - the model for market-priced senior housing was based on the assumption that seniors would sell their existing single family homes and therefore be able to purchase into a new senior community. However, with the recent decline of the housing market, this model is not currently broadly effective. In addition, adding an age restriction to market-priced units limits the share of the market a development can attract. Developers interviewed for this memorandum stated that there is currently very little development of market-priced senior housing anywhere.

- A primary barrier to development of *affordable* senior housing is the perceived political climate in Menlo Park. Regional affordable housing developers interviewed for this memorandum stated that they are extremely reluctant to propose affordable housing in Menlo Park because of the difficulties in getting projects approved. Perceived difficulties include the entitlement process and the potential for a negative community reaction.

- The availability and price of land were also cited as major barriers to the development of senior housing in the region and Menlo Park, specifically. Senior housing developers therefore desire assistance with land assembly. There is no clear solution to this challenge, given that redevelopment was the primary tool that cities had at their disposal for the purchase and assembly of land and redevelopment agencies were recently disbanded by the State.

- Despite the challenges, there are developers interested in building senior housing in Menlo Park.

- Senior housing requires a certain scale of development to be most successful. The minimum size for a project is typically 50 to 75 units, but larger projects (at least 100 units) allow for the provision of more staffing and services. Since the allowed density determines the parcel size needed, an increase in allowed density can help reduce land costs and make a project feasible.

- A program that allows developers to provide community benefits in exchange for a density bonus or increased floor area ratio (FAR) could be structured such that the provision of senior housing is itself considered a community benefit and automatically qualifies for the bonus in FAR. Such a bonus for senior housing development could be very beneficial given the high cost of land needed for senior housing developers to achieve higher densities, as described in the previous section.

- An emerging model for the development of senior housing is university-led projects. Stanford University entered into a partnership to develop a 388-unit continuing care retirement community in Palo Alto.

Recommendations for Specific Plan Revisions

Below are recommendations for encouraging senior housing in the Menlo Park El Camino Real and Downtown Specific Plan area.

- The R-L-U zoning designation has not resulted in a significant level of senior housing development in Menlo Park, but developers noted that it is very helpful if a potential site is already zoned for the specific use so they can build it by right and do not have to go through a protracted approval process. The mixed use designation in the plan would allow senior housing development as a permitted use. We do not recommend adding a specific zoning designation for senior housing in the plan area, since that tool has not been particularly productive in the past.

- Consider reducing parking minimums for senior housing.

- Implement a community education process on the benefits of affordable and / or senior housing. Since much of the community process for the Plan area has already occurred, such

community education efforts may be incorporated into the community engagement process for a Housing Element / General Plan Update.

- Consider structuring any community benefit / density bonus program such that the provision of senior housing is itself considered a community benefit and automatically qualifies for the bonus.

Methodology

To prepare this memorandum, Strategic Economics conducted a review of previous analysis and literature on senior housing in Menlo Park and the peninsula, examined relevant examples of how other cities encourage senior housing, and conducted interviews with developers of senior housing.

Discussion of Findings

The City of Menlo Park established a Retirement Living Units (R-L-U) district overlay designation that was intended to incentivize the development of housing for those over sixty and to meet the housing and social needs of the elderly. The designation requires that the housing be developed in accordance with a planned housing program by a charitable, nonprofit organization. Although a few developments have used the R-L-U overlay in the past, there has been little recent development of senior housing under the existing designation. In order to understand why there has been so little development of senior housing in Menlo Park in recent years and what it would take to encourage increased activity, Strategic Economics reviewed market information and interviewed developers of senior housing on the peninsula.

This section provides a more detailed discussion of the findings, including a brief overview of the market demand for senior housing in Menlo Park, descriptions of the barriers to senior housing and an emerging model for the provision of senior housing by universities, and discussion of potential strategies for encouraging senior housing in Menlo Park.

Is There Demand for Senior Housing in Menlo Park?

The *Menlo Park Senior Housing Needs Assessment*, prepared by the City of Menlo Park, found that in 2009 there were 419 age-restricted housing units, as shown in **Table 1**. The plan area includes an income-restricted 93-unit rental complex in Downtown and a 120-unit rental complex near the northern portion of El Camino Real. An additional 122 ownership units are included in a single project.

Table 1: Senior Housing in Menlo Park

Name	Address	Number of Units	Purchase or Rental	Income Restriction
Canyon House	16 Coleman Place	48	Rental	None.
Crane Place	1331 Crane Street	93	Rental	30% of median.
Glenwood Inn	555 Glenwood Avenue	120	Rental	None.
Macedonia Senior Housing	611 Pierce Road	6	Rental	None.
Menlo Commons Association	2140 Santa Cruz Avenue	122	Purchase	None.
Partridge Kennedy Apartments	817 Partridge Avenue	30	Rental	30% of median.

Source: *Menlo Park Senior Housing Needs Assessment*, City of Menlo Park, Table 4, 2009

The market analysis conducted for the El Camino Real and Downtown Specific Plan found that although Menlo Park has attracted and retained younger people, families, and families with children, seniors have often sought alternatives to living in Menlo Park as they aged, choosing to cash out the equity in their homes and relocate outside the city. In the current market, however, most seniors are remaining in their homes. Anecdotal evidence also suggested that some older seniors may be inclined to stay in Menlo Park, if appropriate housing were available. Interviews conducted with local brokers for the market analysis in 2009 and general trends across the country demonstrate that seniors relocating out of their longtime homes show an interest in having access to amenities and transportation alternatives to the automobile.[1]

In addition, Strategic Economics' 2008 white paper *Livable Communities for Successful Aging in San Mateo County* (produced for the County of San Mateo) found strong future housing demand from senior households in the County (age 65 and older), with senior households comprising 43 percent of demand for housing near transit stations by 2030. San Mateo County's senior population will increase to almost 160,000 by 2030; 35 percent of the Bay Area will be over 55 by 2030, and 23 percent will be over 65.

The market analysis found that the Specific Plan Area offers an ideal location to construct senior housing in the future, given the high future demand for senior housing in Menlo Park and San Mateo County, growing preferences for walkable, amenity-filled environments, and the relative lack of senior-oriented housing supply in Menlo Park. In addition, affordable/senior housing developers interviewed for this memorandum expressed interest in specific sites within the plan area.

What Are the Barriers to Senior Housing Being Developed in Menlo Park?

Market Rate Senior Housing

Developers interviewed for this memorandum stated that in the past the model for market-priced senior housing was based on the assumption that seniors would sell their existing single family homes and therefore be able to purchase into a new senior community. The payments from seniors were used to finance the construction of the senior housing development. However, with the decline of the housing market, this model no longer works as seniors are not able to cash out the equity in their existing homes, and as a result developers are not able to finance new projects. In the absence of this model, developers are unlikely to develop senior-only housing because adding an age restriction to market-priced units limits the share of the market a development can attract. Developers interviewed for this memorandum stated that there is currently very little development of market-priced senior housing anywhere.

Affordable Senior Housing

Affordable housing developers interviewed cited the political climate in Menlo Park as a primary barrier to development of affordable senior housing. While a couple of affordable housing developers expressed interest in pursuing projects in Menlo Park, several others stated that they are reluctant to propose affordable housing in Menlo Park because of the difficulties in getting projects approved. Perceived difficulties in Menlo Park include the entitlement process and the potential for a negative reaction from the community. Because it is less contentious to propose affordable housing in other neighboring communities, affordable housing developers will choose to focus on those communities over Menlo Park.

The availability and price of land are other major barriers to the development of senior housing in the region and in Menlo Park, specifically. Although several affordable housing developers stated that El

[1] See, for example, "Beyond 50.5," 2005 by AARP; similar San Mateo County results were found in a survey conducted for the San Mateo County Aging Model in 2007.

Camino Real has appropriate sites for affordable senior housing, they cited the high cost of land as a challenge.

Developers of affordable senior housing stated that the minimum size for a project is typically 50 to 75 units and that the allowed density determines the parcel size needed. In urban areas parcel size can be very small if high densities are allowed, and senior projects tend to be more dense than other types of housing because the units are smaller, but around 30 units per acre is typical for a suburban development. Although smaller developments of around 50 units are possible, senior housing projects benefit from even more units (at least 100), to allow for the provision of more staffing and services.

Other Models for Providing Senior Housing

An emerging model for the development of senior housing is university-led projects. Since Stanford University is a major land owner within the plan area, this model is particularly relevant to Menlo Park. At least one senior/affordable housing developer interviewed for this memorandum expressed interest in the Stanford-owned sites for senior housing.

Vi at Palo Alto, Stanford University

In the early 2000s, Stanford University entered into a partnership with Hyatt Classic Residence to develop a 388-unit continuing care retirement community that provides independent living, assisted living, nursing care, and Alzheimer's /memory support services to residents. The University obtained permits from the City of Palo Alto for the project, conducted a national search for the developer, and then ground leased the land to Hyatt Classic Residence to build, own, and operate the facility (Stanford has a policy prohibiting the sale of University-owned land).

The project, now known as "Vi at Palo Alto," was designed to generate funds for Stanford and provide a way for retired faculty to remain part of the Stanford community as they age. In addition, Stanford hoped to alleviate the shortage of University-owned faculty housing, 35 percent of which was occupied by retired faculty – who may remain in faculty housing indefinitely after retirement – as of 2001. According to the terms of the University's agreement with Hyatt, the company is required to reserve 50 percent of the units for members of the Stanford community, with priority going to retired faculty who live on campus, then to retired faculty who live off-campus, and finally to other University-affiliated residents.

University Village, UC Berkeley

UC Berkeley is currently proposing to build a 186-unit senior housing development, including a Whole Foods on the ground floor, as part of the University Village property in the City of Albany. University Village is a 58 acre complex that currently includes 974 one, two and three bedroom apartments, and two bedroom townhouses, for UC Berkeley students with families. UC Berkeley has stated that in response to community concerns the project was redesigned to include "senior housing rather than more family housing ... to lessen the impacts on Albany's already crowded public schools."[2]

The University is in the process of selecting a developer for the senior housing component, who will ground lease the property. Construction on the project is scheduled to begin in 2012 and be completed in 2014. The project will make housing units available to Albany seniors and no affiliation with the University is required to live there.

[2] UC Berkeley, "University Village Senior Living and Marketplace," http://chancellor.berkeley.edu/gcr/docs/2010/FAQ-UniversityVillageSeniorLivingAndMarketplace-Nov2010.pdf.

How Can the City Encourage Senior Housing in the Plan Area?

Land Assembly Assistance
Senior housing developers expressed a need for assistance with land assembly. This challenge is exacerbated by the current dissolution of redevelopment agencies, as redevelopment was a primary tool that cities had at their disposal for the purchase and assembly of land. The City will no longer have redevelopment as a land assembly tool; however the City could work with major landholders to encourage senior housing on key parcels.

Reduced Parking Requirements
While parking was not raised by developers as a major barrier to the provision of senior housing in Menlo Park, it is a significant cost consideration, especially on smaller parcels. Other cities in California offer reduced parking minimums for senior housing. For example, Berkeley has implemented a 75 percent parking reduction for senior or disabled living facilities and San Leandro has a 50 percent parking reduction for senior or disabled living facilities.

Such parking minimum reductions are typically based on data related to the number of cars, trucks, and motorcycles that are owned, leased, rented, or provided by employers for a housing unit type, or "household vehicle availability." Studies have shown that senior households have lower rate of vehicle availability than most other household types. A recent survey conducted in San Diego found that while family households have a household vehicle availability of over 1.1, senior households had a rate of less than 0.4 vehicles per household.[3]

Studies have also shown that proximity to transit and walkability reduce parking demand and should be considered in making decisions about parking requirements. Some cities have reduced parking minimums for affordable housing in proximity to transit. For example, the City of Santa Clara has implemented a 25 percent parking reduction for affordable housing units for developments near transit stations, containing mixed uses, or participating in a transportation demand management (TDM) plan.[4] Reducing parking requirements may allow senior housing developers to include more housing units or reduce overall costs, making projects more feasible.

Based on City Council direction it is anticipated that the Final Specific Plan will include reduced parking requirements for residential uses. As of the writing of this memorandum, it is anticipated that the parking ratios for residential uses within the Station Area will be set at a minimum of 1.0 space per unit and a maximum of 1.5 spaces per unit.

Community Engagement
As discussed above, affordable housing developers cite community objections to affordable housing projects as a major barrier to development. It could be helpful for the City of Menlo Park to engage in an education process on the benefits of affordable and / or senior housing. Since much of the community process for the Plan area has already occurred, such community education efforts may be incorporated into the community engagement process for the Housing Element / General Plan Update.

Community Benefits and Density Bonuses
Developers interviewed for this memorandum stated that they typically pursue density bonuses if applicable to a project. The City of Menlo Park is considering the implementation of a program that would allow developers to provide community benefits in exchange for a density bonus or increased

[3] City of San Diego, Affordable Housing Parking Study, Fact Sheet #2: Understanding Parking Demands for Affordable Housing, February, 2011.
[4] Ibid.

floor area ratio (FAR). Such a program could be structured such that the provision of senior housing is itself considered a community benefit and automatically qualifies for the bonus in FAR. Such a bonus for senior housing development could be very beneficial given the high cost of land the need for senior housing developers to achieve higher densities, as described in the previous section.

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MEMORANDUM

Date: March 8, 2012

To: Linda Heineck, City of Menlo Park
Thomas Rogers, City of Menlo Park

Copy to: Mark Hoffheimer, Perkins + Will

From: Jane Bierstedt

Subject: ***Task N – East-West Connectivity***

SJ09-1089

PURPOSE

The proposed curb extensions or bulbouts at the downtown intersections (El Camino Real at Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue/Ravenswood Avenue) have been removed in the Final Specific Plan at the City Council's direction due to concerns they limit future cross-section options on El Camino Real in the downtown area, such as adding bicycle lanes or providing six travel lanes. More information about lane configurations in this area is available in the Task A memorandum. This memorandum addresses other measures that were considered (and rejected) to increase east-west pedestrian connectivity and provides more discussion on traffic signal timing/phasing changes.

The City Council direction regarding removal of bulbouts was focused on the downtown intersection. As such, bulbouts are still an option at other intersections, subject to more detailed project-level review.

KEY FINDINGS

- Curb extensions were initially included in the Draft Specific Plan because they improve pedestrian safety by slowing down vehicles turning across the crosswalk, create a larger sidewalk area for pedestrians at the intersection corner, and shorten the pedestrian crossing distance and exposure time to moving traffic. In addition, they are consistent with intersection crossing improvements identified in the *Grand Boulevard Multimodal Transportation Corridor Plan*.

- Other measures that were considered and rejected include a pedestrian overcrossing/bridge, trenching (or tunneling) through lanes on El Camino Real, and a pedestrian scramble phase at the intersection of Santa Cruz Avenue and El Camino Real.

- An intersection level of service analysis was conducted to evaluate the effect of a pedestrian scramble phase on vehicle traffic operations. The results show that it would

cause vehicle operations to degrade to an unacceptable level with projected traffic volumes and the existing four-lane cross section.

- If El Camino Real is reconfigured to have a six-lane cross-section and the pedestrian scramble phase is introduced, acceptable traffic operations could be retained. (See memorandum on *Task A – El Camino Real Street Sections Revisions* for discussion of the six-lane alternative, including review of associated negative effects on the north-south pedestrian environment.)

- Other signal timing and phasing changes were tested but none resulted in improved pedestrian east-west connectivity and acceptable intersection vehicular operations.

- North-south pedestrian connectivity may be improved on Santa Cruz Avenue at El Camino Real by increasing the frequency of the north-south pedestrian phase. The signal could be modified to provide a pedestrian walk phase when the pedestrian button is pushed *after* the start of the concurrent vehicle phase. (Currently, the walk phase is only provided if the button is pushed *before* the north-south through phase starts.) The City, working in conjunction with Caltrans, can decide how to modify the signal timing and which mode of travel (vehicles or pedestrians) should be prioritized.

- Curb extensions should be retained in the Specific Plan.

RECOMMENDED SPECIFIC PLAN REVISIONS

It is recommended that curb extensions be retained in the Specific Plan and that supporting text be added.

METHODOLOGY

Text was created to explain the rationale for curb extensions, along with some supporting materials, and to discuss other measures that were considered. The findings of a previous memorandum discussing a pedestrian overcrossing and the results of the preliminary tunnel study for El Camino Real were incorporated. Intersection level of service calculations were conducted to evaluate the effect of a pedestrian scramble phase at the intersection of El Camino Real and Santa Cruz Avenue on vehicle operations using traffic projections consistent with the Specific Plan's environmental impact report.

DISCUSSION OF FINDINGS

One of the goals of the *Menlo Park El Camino Real/Downtown Specific Plan* was to increase east-west connectivity, especially for pedestrians and bicycles. El Camino Real, with its high traffic volumes and fast vehicle travel speeds, creates a barrier for pedestrians and bicyclists. The Specific Plan addresses improving east-west flow for pedestrians by recommending enhanced pedestrian crossing treatments (basic and special) at numerous locations as illustrated on Draft Specific Plan Figure F2, Pedestrian Improvements. The basic treatments include marked crosswalks, accessible pedestrian signals, and sidewalk extensions, and special treatments include high visibility

crosswalks with enhanced pavement, accessible pedestrian signals, countdown pedestrian signals, sidewalk extensions, and median islands/pedestrian refuges.

A discussion of the rationale for including bulbouts is presented in the memorandum for *Task A – El Camino Real Street Sections Revisions* and dated February 10, 2012. That discussion is summarized in this memorandum as well. Other measures that were considered (and rejected) to increase east-west pedestrian connectivity are then presented. Additional measures, including traffic signal timing/phasing changes, are also discussed.

Rationale for Curb Extensions

There are numerous treatments that can be implemented to enhance pedestrian crossings. A table summarizing several of these treatments is attached to this memorandum. Most of these treatments are applicable for unsignalized or uncontrolled crossings. A recent publication from America Walks, "Signalized Intersection Enhancements that Benefit Pedestrians" is also attached. Many of the applicable enhancements in this attachment are currently being provided or are included in the recommended special treatments for the downtown intersections. One option to enhance signalized crossings is curb extensions. This option works well at locations with a high volume of traffic and on-street parking because they can be installed without reducing the number of travel lanes. Curb extensions improve pedestrian safety by calming or slowing down vehicles turning across the crosswalk, and by creating a larger sidewalk area for pedestrians at the intersection corner. Of primary importance for El Camino Real is that they shorten the pedestrian crossing distance and exposure time to moving traffic. Curb extensions were included in the Draft Specific Plan because of these numerous benefits, and are consistent with intersection crossing improvements identified in the *Grand Boulevard Initiative Multimodal Transportation Corridor Plan*.

As shown on Figure F1, Vehicular Circulation, in the Draft Specific Plan, the curb extensions would involve the removal of some of the right-turn lanes on El Camino Real at the downtown intersections. Implications of these turn-lane removals are discussed in the Draft EIR.

Other Improvements Considered but Not Included

There were several other improvements that were considered but not included in the Draft Specific Plan. These include a pedestrian overcrossing (or pedestrian bridge), depressing, trenching, or tunneling through lanes on El Camino Real, and pedestrian scramble phasing at Santa Cruz Avenue.

<u>Pedestrian Bridge</u>

The applicability of a pedestrian bridge over El Camino Real was addressed in a memorandum dated June 11, 2009. A copy of that memorandum is attached. The conclusions are:

"A pedestrian bridge over El Camino Real would not be an appropriate solution to provide improved pedestrian crossing and should not be considered. Improving the at-grade crossings

would provide more overall benefit at a much lower cost. This conclusion is based on the following:

1. There is insufficient room for the bridge's ramping system or elevator and stairs, unless the elevator and stairs can be incorporated into a new building to be built on a redeveloped site.

2. The pedestrian crossing time with the bridge and ramps would be 226 seconds, compared to the 26-to-186-second at-grade crossing time. Therefore the pedestrian bridge would be less convenient and people would not be inclined to use it.

3. The crossing time with an elevator would be shorter than with the ramps, but not always shorter than the at-grade crossing time. Elevators have other disadvantages, including unavailability during breakdowns and maintenance checks and security.

4. If the bridge were constructed, people would continue to cross El Camino Real at-grade because the crossing time would be shorter (see #2). The crosswalk and pedestrian signals would likely be removed at the bridge location thus creating an unsafe situation.

5. Measures to reduce pedestrian waiting times, decrease pedestrian crossing distances, and slow traffic speeds on El Camino Real would be less costly and more beneficial and therefore should be considered instead of a pedestrian bridge."

Trenching/Tunneling Through Lanes on El Camino Real

Another idea that was considered was to put the through lanes on El Camino Real in a trench or tunnel below grade with the cross streets, turn lanes, on-street parking, and pedestrian crossings remaining at-grade. The benefit of this option is an enhanced pedestrian environment at the downtown intersections. With less traffic at these intersections, there would be more signal time for pedestrians and pedestrians would have less exposure to moving vehicles. There is also the opportunity for increased landscaping and other amenities. Right-of-way was the primary constraint that made this option infeasible. It would be necessary to have one lane plus a shoulder in each direction in the trench/tunnel; with only one lane, a disabled vehicle would block an entire direction. There is not enough right-of-way on El Camino Real to accommodate a surface travel lane in each direction, the retaining walls for the trench, plus two travel lanes, two shoulders with a median in the tunnel. In addition, the areas between Middle and Roble Avenues and between Oak Grove and Valparaiso Avenues would have 750-foot ramps, creating extremely poor aesthetics, loss of street trees, removal of on-street parking, and removal of two traffic lanes. Cost implications are likely significant, and construction would be likely to be extremely disruptive. A copy of the preliminary tunnel study with more discussion of this option is attached.

Pedestrian Scramble Phasing

A pedestrian scramble phase is when traffic on all approaches of an intersection is stopped (gets a red signal indication) and pedestrians can cross in all directions, including diagonally. This type of signal phasing is considered at locations with high pedestrian volumes and high volumes of

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turning traffic. The length of the pedestrian scramble phase is based on the maximum diagonal crossing distance and an average walking speed of 3.5 feet per second. The diagonal crossing distance at El Camino Real and Santa Cruz Avenue is 130 feet requiring a minimum crossing time of 37 seconds. For comparison purposes, the crossing distance across El Camino Real is 95 feet, or a minimum crossing time of 27 seconds and the crossing distance across Santa Cruz Avenue is 17 seconds. The pedestrian scramble phase would require 10 additional seconds per cycle than the longest pedestrian phase with the current signal phasing. These 10 seconds would be deleted from the available signal time for vehicle traffic in order to accommodate pedestrian traffic.

Intersection level of service calculations were conducted to evaluate the effect of the scramble phase on intersection operations. Cumulative plus Project traffic projections from the Specific Plan's Draft Environmental Impact Report were used in the analysis. The calculations were conducted with the program Synchro as it is sensitive to signal timing and phasing changes. The results for both the existing four-lane cross-section and alternative six-lane cross-section are presented in Table 1.

TABLE 1:
EL CAMINO REAL AND SANTA CRUZ AVENUE
INTERSECTION OPERATIONS WITH PEDESTRIAN SCRAMBLE PHASE

El Camino Travel Lanes	Peak Hour	Without PED		With PED	
		Delay	LOS	Delay	LOS
Four Lanes (Existing)	AM	33.3	C	42.6	D
	PM	47.4	D	101.3	F
Six-Lane Alternative	AM	23.9	C	29.5	C
	PM	33.5	C	54.4	D

PED – pedestrian scramble phase
Delay –Weighted average control delay per vehicle in seconds.
LOS – Level of service
Source: Fehr & Peers

The implementation of a pedestrian scramble phase would result in unacceptable intersection operations (LOS F) during the PM peak hour with the existing four-lane cross-section. The intersection would retain acceptable operations with the pedestrian scramble phase and the added capacity with the six-lane alternative. However, the delay to vehicles would be increased compared to conditions without the scramble phase. Implementing a scramble phase at El Camino Real and Oak Grove Avenue would likely have similar effects. Adding one at El Camino Real and Ravenswood/Menlo Avenue would likely have significantly worse implications, given that intersection's already challenged operations and the fact that it does not currently have a standard four-leg crosswalk layout. (The crosswalk is missing on the south leg.)

The pedestrian scramble phase was rejected for further consideration because of its negative effect on traffic operations with the current four-lane cross-section and because it would not

serve desired pedestrian operations. (Based on field observations, most pedestrians at El Camino Real and Santa Cruz Avenue either cross El Camino Real or Santa Cruz Avenue – few cross both legs which would be supported by the pedestrian scramble phase.) The City could consider installing a pedestrian scramble phase if six-travel lanes were provided on El Camino Real and pedestrian travel patterns support it.

Other Options – Aggressive Traffic Signal Timing

The traffic signal timing on El Camino Real has been developed to move large groups of vehicles. Therefore the El Camino Real approaches receive a large percentage of the green time and signal cycles are long. As a result, the average east-west pedestrian crossing time (which includes the wait time plus the walking time) is about 100 seconds.

Many traffic signal timing and phasing changes were tested but none resulted in improved pedestrian east-west connectivity and acceptable intersection vehicular operations. The pedestrian wait time can be reduced by shortening the cycle length. The consequence is reduced vehicle capacity.

Another option that may be considered would be north-south pedestrian connectivity on Santa Cruz Avenue at El Camino Real, but not east-west connectivity. The signal could be modified to increase the frequency of the north-south pedestrian walk phase by allowing that phase to be activated when the pedestrian button is pushed *after* the start of the concurrent vehicle phase. (Currently, the walk phase is only provided if the button is pushed *before* the north-south through phase starts.) The City, working in conjunction with Caltrans, can decide how to modify the signal timing and which mode of travel (vehicles or pedestrians) should be prioritized.

Conclusions

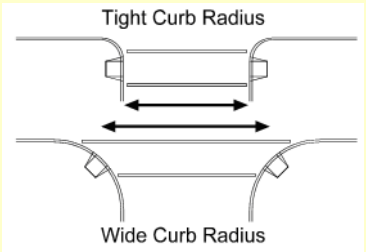
Curb extensions or bulbouts should still be considered to improve east-west connectivity for pedestrians. Their removal from the Specific Plan was directed by the City Council to allow a future six-lane cross-section or bicycle lanes on El Camino Real. Providing six-lanes on El Camino Real reduces east-west connectivity for pedestrians as it increases the distance pedestrians are exposed to high volumes of moving vehicles. Plus a six-lane cross-section creates minimal traffic operational improvements and has other drawbacks compared to the four-lane alternatives as discussed in the memorandum *Task A – El Camino Real Street Sections Revisions*, dated February 10, 2012. Depending on the precise four-lane alternative selected, bulbouts could potentially be retained.

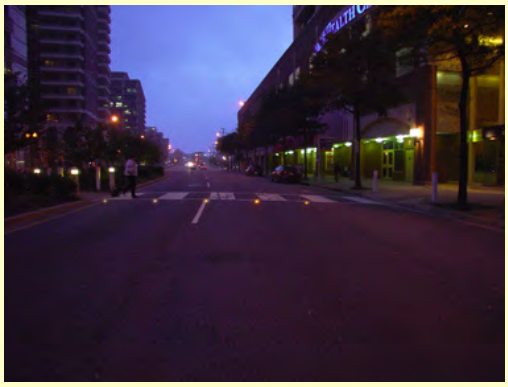
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Fehr & Peers, *Crosswalk Treatment Identification Tool Users Guide*
America Walks, "*Signalized Intersection Enhancements that Benefit Pedestrians*"

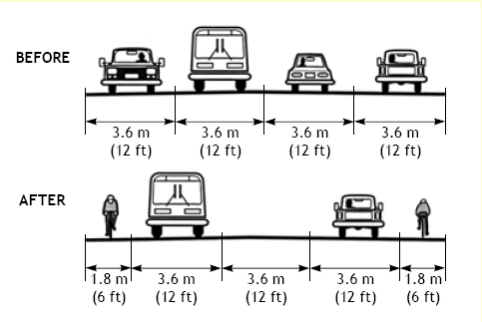
ATTACHMENTS

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
Level 1			
Marked Crosswalk  *Image source: exodusinnovations.com*	Marked crosswalks should be installed to provide designated pedestrian crossings at major pedestrian generators, crossings with significant pedestrian volumes (at least 15 per hour), crossings with high vehicle-pedestrian collisions, and other areas based on engineering judgment	Marked crosswalks provide a designated crossing, which may improve walkability by signaling a clear "channel" for pedestrian pathways to both pedestrians and vehicles.	Marked crosswalks alone should not be installed on multi-lane roads with more than about 10,000 vehicles/ day. Enhanced crosswalk treatments (as presented in this table) should supplement the marked crosswalk.
High-Visibility Signs and Markings  	High-visibility markings include a family of crosswalk striping styles such as the "ladder" and the "continental." High-visibility fluorescent yellow green signs are made of the approved fluorescent yellow-green color and posted at crossings to increase the visibility of a pedestrian crossing.	FHWA recently ended its approval process for the experimental use of fluorescent yellow crosswalk markings and found that they had no discernable benefit over white markings.	Beneficial in areas with high pedestrian activity, as near schools, and in areas where travel speeds are high and/or motorist visibility is low.
Advanced Yield or Stop Lines  *Image source: www.saferoutesinfo.org*	Standard white stop or yield limit lines are placed in advance of marked, uncontrolled crosswalks. Stop or yield lines are determined based on state vehicle codes (requiring the driver to either stop or yield to the pedestrian).	This measure increases the pedestrian's visibility to motorists, reduces the number of vehicles encroaching on the crosswalk, and improves general pedestrian conditions on multi-lane roadways. It is also an affordable option.	Useful in areas where pedestrian visibility is low and in areas with aggressive drivers, as advance limit lines will help prevent drivers from encroaching on the crosswalk. Addresses the multiple-threat collision on multi-lane roads.

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
In-Street Pedestrian Crossing Signs 	This measure involves posting regulatory pedestrian signage on lane edge lines and road centerlines. The In-Street Pedestrian Crossing sign may be used to remind road users of laws regarding right of way at an unsignalized pedestrian crossing. The legend STATE LAW may be shown at the top of the sign if applicable. The legends STOP FOR or YIELD TO may be used in conjunction with the appropriate symbol.	This measure is highly visible to motorists and has a positive impact on pedestrian safety at crosswalks.	Mid-block crosswalks, unsignalized intersections, low-speed areas, and two-lane roadways are ideal for this pedestrian treatment. The STOP FOR legend shall only be used in states where the state law specifically requires that a driver must stop for a pedestrian in a crosswalk.
Level 2			
Curb Extension/ Bulb Outs  *Image source: Dan Burden*	Also known as a pedestrian bulb-out, this traffic-calming measure is meant to slow traffic and increase driver awareness. It consists of an extension of the curb into the street, making the pedestrian space (sidewalk) wider.	Curb extensions narrow the distance that a pedestrian has to cross and increases the sidewalk space on the corners. They also improve emergency vehicle access and make it difficult for drivers to turn illegally.	Due to the high cost of installation, this tool would only be suitable on streets with high pedestrian activity, on-street parking, and infrequent (or no) curb-edge transit service. It is often used in combination with crosswalks or other markings.
Reduced Curb Radii  *Image Source: www.ci.austin.tx.us*	The radius of a curb can be reduced to require motorists to make a tighter turn.	Shorter radii narrow the distance that pedestrians have to cross; they also reduce traffic speeds and increase driver awareness (like curb extensions), but are less difficult and expensive to implement.	This measure would be beneficial on streets with high pedestrian activity, on-street parking, and no curb-edge transit service. It is more suitable for wider roadways and roadways with low volumes of heavy truck traffic.

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
Staggered Median Pedestrian Island  *Image Source: www.tfhrc.gov/*	This measure is similar to traditional median refuge islands; the only difference is that the crosswalks in the roadway are staggered such that a pedestrian crosses half the street and then must walk towards traffic to reach the second half of the crosswalk. This measure must be designed for accessibility by including rails and truncated domes to direct sight-impaired pedestrians along the path of travel.	Benefits of this tool include an increase in the concentration of pedestrians at a crossing and the provision of better traffic views for pedestrians. Additionally, motorists are better able to see pedestrians as they walk through the staggered refuge.	Best used on multi-lane roads with obstructed pedestrian visibility or with off-set intersections
Level 3			
In-Roadway Warning Lights  *Image Source: www.tfhrc.gov/*	Both sides of a crosswalk are lined with pavement markers, often containing an amber LED strobe light. The lights may be push-button activated or activated with pedestrian detection.	This measure provides a dynamic visual cue, and is increasingly effective in bad weather	Best in locations with low bicycle ridership, as the raised markers present a hazard to bicyclists. May not be appropriate in areas with heavy winter weather due to high maintenance costs. May not be appropriate for locations with bright sunlight. The lights may cause confusion when pedestrians fail to activate them and/or when they falsely activate.
Overhead Flashing Beacons  *Image source: tti.tamu.edu*	Flashing amber lights are installed on overhead signs, in advance of the crosswalk or at the entrance to the crosswalk.	The blinking lights during pedestrian crossing times increase the number of drivers yielding for pedestrians and reduce pedestrian-vehicle conflicts. This measure can also improve conditions on multi-lane roadways.	Best used in places where motorists cannot see a traditional sign due to topography or other barriers.

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
Stutter Flash*  *Image source: mutcd.fhwa.dot.gov*	The Overhead Flashing Beacon is enhanced by replacing the traditional slow flashing incandescent lamps with rapid flashing LED lamps. The beacons may be push-button activated or activated with pedestrian detection.	Initial studies suggest the stutter flash is very effective as measured by increased driver yielding behavior. Solar panels reduce energy costs associated with the device.	Appropriate for multi-lane roadways.
Level 4			
Hawk Beacon Signal*  *Image Source: www.tfhrc.gov/*	HAWK (High Intensity Activated Crosswalks) are pedestrian-actuated signals that are a combination of a beacon flasher and a traffic control signal. When actuated, HAWK displays a yellow (warning) indication followed by a solid red light. During pedestrian clearance, the driver sees a flashing red “wig-wag” pattern until the clearance interval has ended and the signal goes dark.	Reduces pedestrian-vehicle conflicts and slows traffic speeds	Useful in areas where it is difficult for pedestrians to find gaps in automobile traffic to cross safely, but where normal signal warrants are not satisfied. Appropriate for multi-lane roadways.
Level 5			
Traffic Signal  *Image source: www.livablestreets.com*	Conventional traffic control devices with warrants for use based on the Manual on Uniform Control Devices (MUTCD)	Reduces pedestrian-vehicle conflicts and slows traffic speeds	Must meet warrants based on traffic and pedestrian volumes; however, exceptions are possible based on demonstrated pedestrian safety concerns (collision history)

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
Pedestrian Overpass/ Underpass  *Image source: omahamidcenturymodern.blogsome.com*	This measure consists of a pedestrian-only overpass or underpass over a roadway. It provides complete separation of pedestrians from motor vehicle traffic, normally where no other pedestrian facility is available, and connects off-road trails and paths across major barriers.	Pedestrian overpasses and underpasses allow for the uninterrupted flow of pedestrian movement separate from the vehicle traffic. However, for underpasses, security is known to be a major issue.	Grade separation via this measure is most feasible and appropriate in extreme cases where pedestrians must cross roadways such as freeways and high-speed, high-volume arterials. Use of either type of facility falls off rapidly when the additional time required for such use amounts to 20% or more of the time required to cross at grade. This measure should be considered only with further study.
Consider for All Multi-Lane Roads			
Road Diet (aka Lane Reduction)  *Image Source: www.tfhrc.gov/*	The number of lanes of travel is reduced by widening sidewalks, adding bicycle and parking lanes, and converting parallel parking to angled or perpendicular parking.	This is a good traffic calming and pedestrian safety tool, particularly in areas that would benefit from curb extensions but have infrastructure in the way. This measure also improves pedestrian conditions on multi-lane roadways.	Roadways with surplus roadway capacity (typically multi-lane roadways with less than 15,000 to 17,000 ADT) and high bicycle volumes, and roadways that would benefit from traffic calming measures.

CROSSWALK TREATMENTS			
Measure	**Description**	**Benefits**	**Application**
Median Pedestrian Island  *Image source: http://thegoodcity.wordpress.com/category/transportation/*	Raised islands are placed in the center of a roadway, separating opposing lanes of traffic with cutouts for accessibility along the pedestrian path.	This measure allows pedestrians to focus on each direction of traffic separately, and the refuge provides pedestrians with a better view of oncoming traffic as well as allowing drivers to see pedestrians more easily. It can also split up a multi-lane road and act as a supplement to additional pedestrian tools.	Recommended for multi-lane roads wide enough to accommodate an ADA-accessible median
Source: Fehr & Peers, *Crosswalk Treatment Identification Tool Users Guide*. * Treatment not included in the current version of the MUTCD			

America WALKS

SIGNALIZED INTERSECTION ENHANCEMENTS THAT BENEFIT PEDESTRIANS



Making America a Great Place To Walk

Table of Contents

Introduction ii

Geometric Treatments 1

Signal Hardware 4

Operational Measures 6

Prepared for America Walks by

FEHR & PEERS

America WALKS

Making America a Great Place To Walk

WELCOME

America Walks is a national resource which fosters walkable communities by engaging, educating, and connecting.

Walking is a healthy, environmentally friendly, and socially equitable form of transportation. Improvements to the safety and convenience of walking are critical to maximizing the number of people who walk.

According to *Bicycling and Walking in the United States – 2010 Benchmarking Report* (Alliance for Biking & Walking, 2010), pedestrians account for 11.3% of all traffic fatalities nationwide and 25% of all traffic fatalities in major U.S. cities. Signalized intersections are an inherent element of the roadway network in cities; they are a common point of convergence for pedestrians and vehicles and many pedestrian traffic fatalities occur at signalized intersections. Improving safety at signalized intersections is therefore critical to reducing the number of pedestrian traffic fatalities.

The purpose of this resource is to educate decision makers, planners, engineers, and citizens on signalized intersection enhancements that can improve pedestrian safety and convenience. This resource is intended to summarize a wide array of potential treatments for a variety of signalized intersections; not all of the treatments summarized in this resource are appropriate for every signalized intersection.

This resource categorizes signalized intersection enhancements into three types:

- Geometric treatments
- Signal hardware
- Operational measures

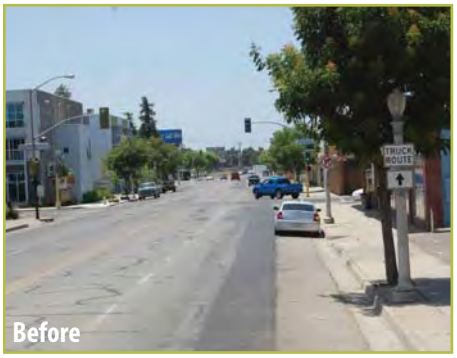
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GEOMETRIC DESIGN TREATMENTS

Geometric design treatments are those that relate to an intersection's physical attributes: it's dimensions, pavement or concrete layout, and striping pattern.

Fewer Travel Lanes



Fewer travel lanes decrease roadway width and crosswalk length. It takes an average pedestrian almost four seconds to cross each additional travel lane. Therefore, reducing the number of travel lanes minimizes the amount of time that pedestrians are in the crosswalk. More travel lanes than necessary can also increase vehicle travel speeds; research has shown that the severity of pedestrian collisions increases sharply with increased vehicle speed.



Narrower Travel Lanes



Travel lanes are typically designed to be 12 feet wide. Where fewer travel lanes are not possible, research shows travel lanes can be safely narrowed to as little as nine feet, especially left- and right-turn pockets. Narrower travel lanes decrease roadway width and crosswalk length, thereby minimizing the amount of time that pedestrians are in the crosswalk.

Median Pedestrian Island



Median pedestrian islands provide a safe place for pedestrians to stand if they do not have sufficient time to cross a street. They can be enhanced with median pedestrian push buttons.

Corner Bulbouts



Corner bulbouts extend the curb and sidewalks further into the roadway, shortening the length of the crosswalk. They act as a traffic calming device by narrowing the effective width of the roadway. Because they extend into the roadway, often past parallel-parked vehicles, they improve visibility for pedestrians. Corner bulbouts can be constructed with reduced curb radii and to accommodate ADA improvements, such as directional curb ramps.

Reduced Curb Radius



Vehicles travel faster through turns with a large turn radius than turns with a small curb radius. Reducing the radius of a corner curb is an effective way of reducing vehicle speeds. In suburban

environments turn radii generally do not need to exceed 30 feet. In urban environments turn radii can be 10 feet or less, especially where the meeting of one-way streets prohibits turning movements. Where on-street parking is permitted on one or both streets, consideration for further reductions of radii should occur acknowledging that the effective radius is increased with on-street parking. Corner curb radii on multi-lane streets should acknowledge that trucks turning right can turn into two lanes.

Directional Curb Ramps (with Truncated Domes)



Curb ramps offer wheelchair access to/from the sidewalk and crosswalk. Truncated domes, which are often yellow, warn pedestrians with limited or no sight that they are about to enter a crosswalk. The best practice for curb ramps is to install two per corner so that each ramp points directly into the crosswalk and to the curb ramp at the other side of the street. Directional curb ramps help blind pedestrians by pointing them in the correct direction while crossing. Corner bulbouts can be used to increase the amount of space available for directional curb ramps. Flared sides may not be necessary when two ramps are provided per corner.

Raised Crosswalk



Raised crosswalks are speed tables (flat-topped speed humps) outfitted with crosswalk markings and signage, providing pedestrians with a level street crossing. By raising the level of the crossing, vehicles drive more slowly through the crosswalk and pedestrians are more visible to approaching motorists. At signalized intersections, they are most appropriate where "pork-chop" islands separate channelized right-turn lanes from the adjacent through lanes.

Improved Right-Turn Slip-Lane Design

Free right-turns allow vehicles to turn right on red without stopping. Since the vehicles are never controlled by the traffic signal, pedestrians must always treat crosswalks across a free right-turn lane as an uncontrolled crosswalk. Controlled right-turn movements are preferable for pedestrians because they require a vehicle to stop on red before turning right. Where "pork-chop" islands that channelize right-turns are necessary to provide acceptable turning radii, raised crosswalks are a pedestrian enhancement. The geometry of the free right-turn lane can enforce a safe turning speed.

Advanced Yield Lines



Advanced yield lines, often referred to as "sharks teeth", are placed in front of uncontrolled crosswalks to improve yield compliance. At signalized intersections, they can be used to remind free right-turning vehicles to yield to pedestrians.

Textured Pavement



Textured pavement can be used in crosswalks or in intersections as an aesthetic enhancement. Because of its texture, it also calms traffic by slowing vehicles before they cross an intersection. It can also make crosswalks more visible. Textured pavement can be made of brick or, alternatively, both concrete and asphalt can be stamped to look like brick or stone.

Anti-Skid Surfacing

Roadway paint, including the paint used to mark crosswalks, can become slippery when wet. Alternative pavement marking materials, such as tape and thermoplastic, are less slippery than paint when wet.

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Advanced Stop Bars



Advanced stop bars are placed in front of crosswalks. They keep vehicles from encroaching into the crosswalk when stopped at a red light. On multi-lane roads, advanced stop bars placed at least one car-length back from the crosswalk allow pedestrians to be seen by drivers in adjacent lanes.

Marked Crosswalks (on all approaches)



Marking a crosswalk across all approaches of an intersection improves pedestrian accessibility. At a four-way intersection, a missing crosswalk forces pedestrians to cross three times instead of once. Crosswalks on all approaches can often be accommodated without a significant impact to traffic signal operations.

High-Visibility Markings



Design policies should require different crosswalk markings for controlled and uncontrolled crosswalks. Standard crosswalks are generally acceptable across controlled approaches; however, high-visibility crosswalks are appropriate in areas with high pedestrian volumes. High-visibility crosswalks should also be used across uncontrolled locations including midblock and at free right-turns. Continental, zebra, ladder, or triple-four crosswalks are all examples of high-visibility crosswalks. High-visibility markings improve yield compliance. Having a uniform design policy for marked and unmarked crosswalks delivers a clear message to pedestrians when they are about to enter a crosswalk.

Colored Crosswalks / Intersections



Colored crosswalks improve crosswalk visibility for motorists. They can be designed to complement the colors of a city or school.

Proper Locations for Signal Controllers



Signal controller boxes should be located such that they do not present a barrier for pedestrians. The best placement for signal controller boxes is completely off of the sidewalk, but still accessible for maintenance.

SIGNAL HARDWARE

Signal hardware includes all of the physical elements of a traffic signal: signal heads, pedestrian signals, and push buttons.

Blank Out Turn Restriction LED Signs



The ubiquity of conventional turn restriction signs, usually for no right-turn on red, contributes to their disregard by motorists. Blank out turn restriction signs, usually for no right-turn on red, activate only when the specified movement is prohibited.

Protected Left-Turn Signals



The "Walk" signal at a crosswalk usually begins at the same time that through- and turning-vehicles in the same direction receive a green light. Where permitted left-turns are allowed, denoted by a "Left Turn Yield on Green" sign, left-turning vehicles can conflict with pedestrians in the crosswalk. By making the left-turn protected, so that it is allowed only with a green arrow, the "Walk" signal at a crosswalk occurs at the same time that through- and right-turning vehicles in the same direction receive a green light. This reduces the risk of left-turning vehicle conflicts with the opposing crosswalk; since left-turns typically occur at a higher speed than right-turns, collisions of increased severity can be avoided by protecting left-turns.

Pedestrian Signals



Pedestrian signal heads minimize vehicle-pedestrian conflicts by assisting pedestrians in deciding when to begin crossing the roadway. For best results, post pedestrian signal heads in the same general vicinity as vehicle heads for conflicting movements such that pedestrians know what to expect from traffic. This is especially important where permitted left-turns are allowed, denoted by a "Left Turn Yield on Green" sign.

Pedestrian heads should be located on the same post as the vehicle indications and on the intersection side of the crosswalk rather than at the back of the crosswalk. This reduces the likelihood of view obstruction by large vehicles.

Pedestrian Countdown Signals



Pedestrian countdown signals give pedestrians "Walk" and "Don't Walk" signals and inform them how long they have to cross the street. Research suggests that pedestrians are more likely to obey the "Don't Walk" signal when delivered using a countdown signal. The 2009 Manual on Uniform Traffic Control Devices requires that all new pedestrian signals be countdown signals.

Animated Eyes Pedestrian Signals



Animated eyes pedestrian signals feature eyes that look from side to side when a "Walk" signal is given. The signals remind pedestrians to look for turning vehicles before proceeding into the crosswalk. Research has indicated that animated eyes pedestrian signals reduce conflicts between vehicles and pedestrians.

Pedestrian Push buttons



To receive a "Walk" signal at a crosswalk, pedestrians are often required to use a push button. The location and design of buttons should comply with ADA guidelines.

Median Pedestrian Push buttons



Where median pedestrian islands exist, median pedestrian push buttons can be provided for pedestrians who become stranded mid-crossing. Occasionally, pedestrians who walk slowly, such as the elderly or children, are unable to cross the street in one cycle length. Providing a push button in the pedestrian median island allows them to receive a "Walk" signal for the next phase of their crossing. In general, the benefits of a median pedestrian push button are more pronounced when the total crossing distance is 60 feet or greater.

Passive Detection Devices

Passive detection of pedestrians, which can be accomplished using video or radar detection devices, register the presence of a pedestrian waiting to cross a street without the use of a push button. Additionally, they can track the location of a pedestrian as he crosses the street to determine if more crossing time is needed. Advances in video and infrared technology are improving the reliability of passive detection devices; in Santa Clara, CA, the City recently began using infrared technology at traffic signals to extend the crossing time when needed.

Accessible Pedestrian Signals



Accessible pedestrian signals and detectors provide information, such as "Walk" indications and direction of crossing, in non-visual formats to improve accessibility for blind pedestrians. Audible options for accessible pedestrian signals include audible tones and speech messages. Vibrotactile push-buttons are effective options that alleviate the impacts of noise created by audible pedestrian signals.

Braille Wayfinding



Braille characters can be added to the "Push Button for Walk Signal" plaques to provide basic information about the intersection.

Extended Push button

Some pedestrians may need extra time to safely cross a street. Traffic signals can be retrofitted to allow pedestrians to increase the crossing time by pressing the push button a bit longer.

OPERATIONAL MEASURES

Changes to a signalized intersection's operations can often be made inexpensively without making physical changes to the intersection.

Short Cycle Lengths

Long cycle lengths at signalized intersections result in long pedestrian wait times to cross a street. By shortening an intersections cycle length, pedestrians do not have to wait as long to cross after pushing the button to request a "Walk" signal.



Longer crossing times at crosswalks ensure that all pedestrians are safely able to cross the street within the allotted time. Previous to 2009, crossing time for crosswalks at signalized intersections was based on an average walking speed of 4.0 feet per second. Guidance in the 2009 Manual on Uniform Traffic Control Devices specifies that a walking speed of 3.5 feet per second should be assumed to determine crossing times. A speed slower than 3.5 feet per second can be used where slower pedestrians routinely use the crosswalk, such as locations near schools, hospitals, or senior centers. Additionally, where a crosswalk's concurrent green vehicle phase is greater than the minimum phase for pedestrians, the duration of the pedestrian phase can be increased to be the same as the concurrent vehicle phase.

Leading Pedestrian Interval



A leading pedestrian interval illuminates the "Walk" signal for a few seconds prior to stopped through-vehicles receiving a green light. Allowing pedestrians a head start into the intersection can reduce conflicts between pedestrians and turning vehicles and makes crossing pedestrians more visible. The Manual on Uniform Traffic Control Devices recommends that leading pedestrian intervals be at least three seconds in duration.

Pedestrian Scramble Phase



Pedestrians usually have to cross two roadways to get from one corner of an intersection to the opposite corner. A scramble phase allows pedestrians to cross in all directions, including diagonally. Right-turn on red for vehicles must be restricted during the walk phase to ensure pedestrian safety.

No Right-Turn on Red



When attempting to turn right on red, vehicles must look left to see if the road is clear; drivers often forget to look right before turning and may not see pedestrians to their right. Restricting right-turns on red can reduce conflicts between vehicles and pedestrians. Blank out turn restriction signs are more effective than conventional "No Right Turn on Red" signs. "No Right Turn on Red" signs that specify time-of-day restrictions or "When Pedestrians are Present" are confusing to motorists and are often disregarded.

Pedestrian Recall

Pedestrian recall gives pedestrians a "Walk" signal at every cycle. No push-button or detection is necessary since a "Walk" signal will always be given. Pedestrian recalls are useful in areas with high levels of pedestrian activity. They demonstrate that an intersection is meant to serve both vehicles and pedestrians. In general, pedestrian recall should be used if pedestrians actuate a "Walk" signal 75 percent of the time during three or more hours per day.

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MEMORANDUM

Date: June 11, 2009

To: Mark Hoffheimer

From: Jane Bierstedt
Joe Fernandez

Subject: ***Pedestrian Bridge over El Camino Real in Downtown Menlo Park***

SJ09-1089

This memorandum discusses whether a pedestrian bridge would be a good option to improve pedestrian crossing of El Camino Real in downtown Menlo Park. Currently, pedestrians wishing to cross El Camino Real do so at one of several signalized intersections located at Oak Grove Road, Santa Cruz Avenue, and Menlo/Ravenswood Avenue. The City has received complaints of long wait times at the pedestrian signals and a less-than-pleasant pedestrian environment due to the high traffic volumes and vehicle speeds on El Camino Real. For these reasons, a pedestrian bridge has been discussed as a potential improvement to the current pedestrian crossing conditions. This memorandum discusses the circumstances where pedestrian bridges are appropriate and their applicability to El Camino Real in downtown Menlo Park.

SITUATIONS WHERE PEDESTRIAN BRIDGES ARE APPROPRIATE

Pedestrian bridges are needed in locations where there are physical or operational issues that prohibit at-grade pedestrian crossings. These include:

1. Across freeways where road bridges are far apart. An at-grade crossing is not possible because freeway vehicles cannot be stopped. (Examples include the pedestrian bridges over US 101 in Palo Alto at The Embarcadero/Oregon Expressway and in Sunnyvale at Borregas Avenue.)

2. Across railroad yards with multiple tracks and/or electrified third rails. An at-grade-crossing would be difficult to control and would degrade train service for multiple track locations and is too dangerous with electrified rails. (An example is the pedestrian bridge over the Caltrain and LRT tracks in Mountain View.)

3. Across a natural feature such as a river or ravine where an at-grade crossing is not physically possible.

EL CAMINO REAL

El Camino Real does not fall into any of the categories identified in the previous section. Therefore, other factors need to be considered before a pedestrian bridge can be recommended. These factors are:

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1. Is the roadway in a depression such that the pedestrian bridge is at grade level and therefore more convenient to use than walking down to the roadway and crossing it?

2. Is there enough right-of-way (land) to construct ramps on both ends of the bridge?

    a. Are the ramps compatible with adjacent land uses?

3. If land is not available for ramps, are elevators with stairs a viable solution?

    a. Would elevators have sufficient capacity for their demand?

    b. Will people feel safe in the elevators?

    c. Is it acceptable to not provide ADA-compliant access when the elevators are not working?

4. Would the pedestrian bridge be more convenient to use than an at-grade crossing?

    a. Will the crossing time be shorter?

    b. Will people be willing to walk up and down the ramps or stairs or wait to use the elevator?

5. Will a fence in the median and signage be needed to force pedestrians to use the bridge?

    a. Will the fence and signage meet the aesthetic requirements of the community?

El Camino Real is not below grade so the pedestrian bridge would be an overhead structure.

The ramps would be a minimum of 8 feet wide and they would be approximately 350-feet long to meet Americans with Disabilities Act (ADA) requirements. Alternatively, a wide spiral ramp would be needed. There is insufficient right-of-way to accommodate ramps at any of the potential downtown crossing locations. Plus the ramps would be obtrusive to adjacent business owners.

There is also insufficient room for the stairs and elevators, unless they can be incorporated into a new building to be built on a redeveloped site.

El Camino Real at Santa Cruz Avenue is approximately 90 feet wide. The pedestrian crossing time is 26 seconds, based on an average walking speed of 3.5 feet per second. The maximum amount of waiting time for the pedestrian signal to turn on is 160 seconds, although the average wait time is lower. Therefore the total crossing time under existing conditions, including waiting for the pedestrian signal, can range from 26 seconds to 186 seconds.

If there was room for ramps, the walking distance across El Camino Real using a bridge would be approximately 790 feet, which includes two 350-foot ramps and the overhead span of 90 feet. At an average walking speed of 3.5 feet per second, this corresponds to a walking time of 226 seconds to cross the street. The crossing time with a bridge and ramps is longer than the current at-grade crossing time.

The crossing time with an elevator is estimated to be 60 to 120 seconds (depending on the wait time for the elevator).

Fencing in the median of El Camino Real would be required to direct pedestrians to use the bridge. However, since the median does not extend through the intersections, pedestrians could still cross El Camino Real at grade; and unsafe situation.

CONCLUSIONS

A pedestrian bridge over El Camino Real would not be an appropriate solution to provide improved pedestrian crossing and should not be considered. Improving the at-grade crossings would provide more overall benefit at a much lower cost. This conclusion is based on the following:

1. There is insufficient room for the bridge's ramping system or elevator and stairs, unless the elevator and stairs can be incorporated into a new building to be built on a redeveloped site.

2. The pedestrian crossing time with the bridge and ramps would be 226 seconds, compared to the 26 to 186 second at-grade crossing time. Therefore the pedestrian bridge would be less convenient and people would not be inclined to use it.

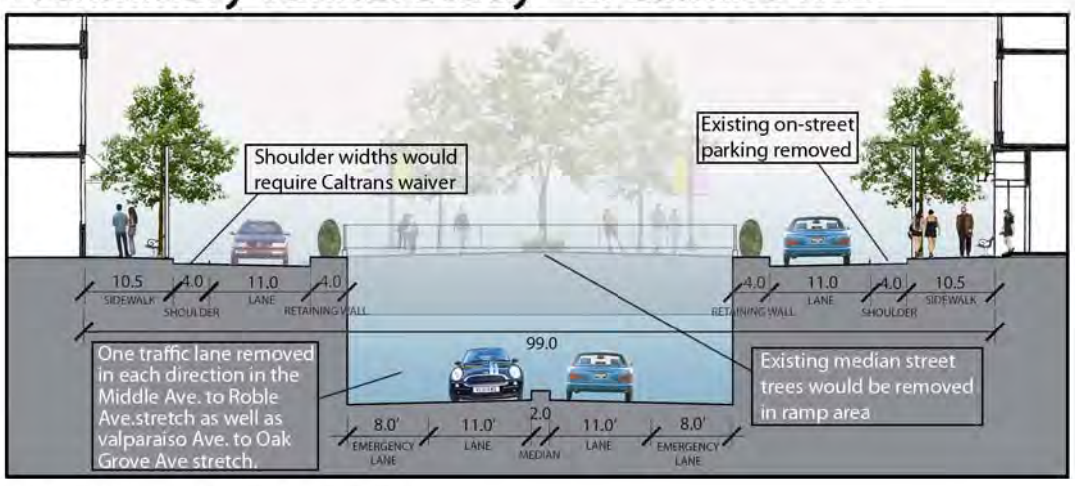
3. The crossing time with an elevator would be shorter than with the ramps, but not always shorter than the at-grade crossing time. Elevators have other disadvantages, including unavailability during breakdowns and maintenance checks and security.

4. If the bridge were constructed, people would continue to cross El Camino Real at grade. The crosswalk and pedestrian signals would be removed at the bridge location thus creating an unsafe situation.

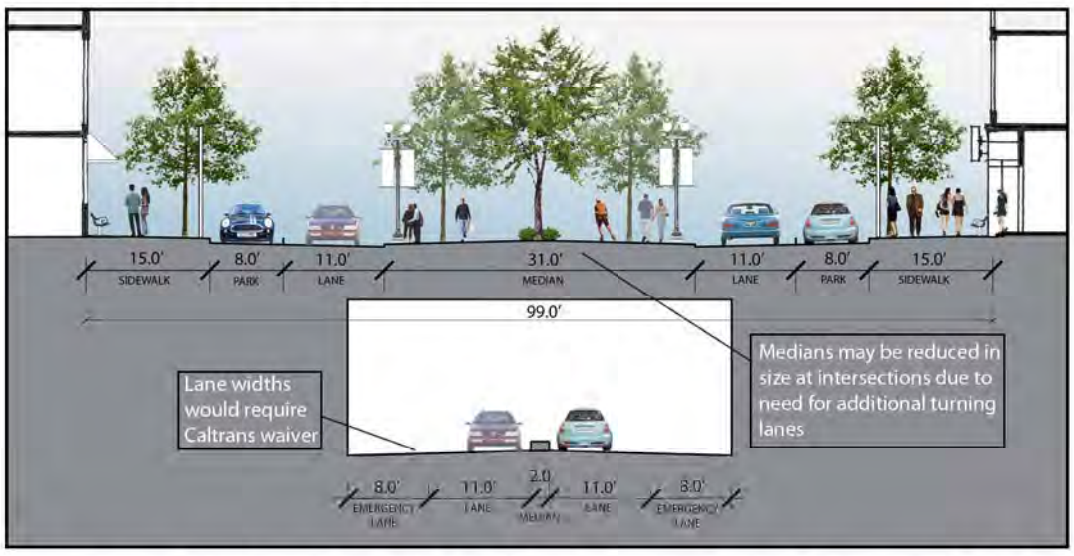
5. Measures to reduce pedestrian waiting times, decrease pedestrian crossing distances, and slow traffic speeds on El Camino Real would be less costly and more beneficial and therefore should be considered instead of a pedestrian bridge.

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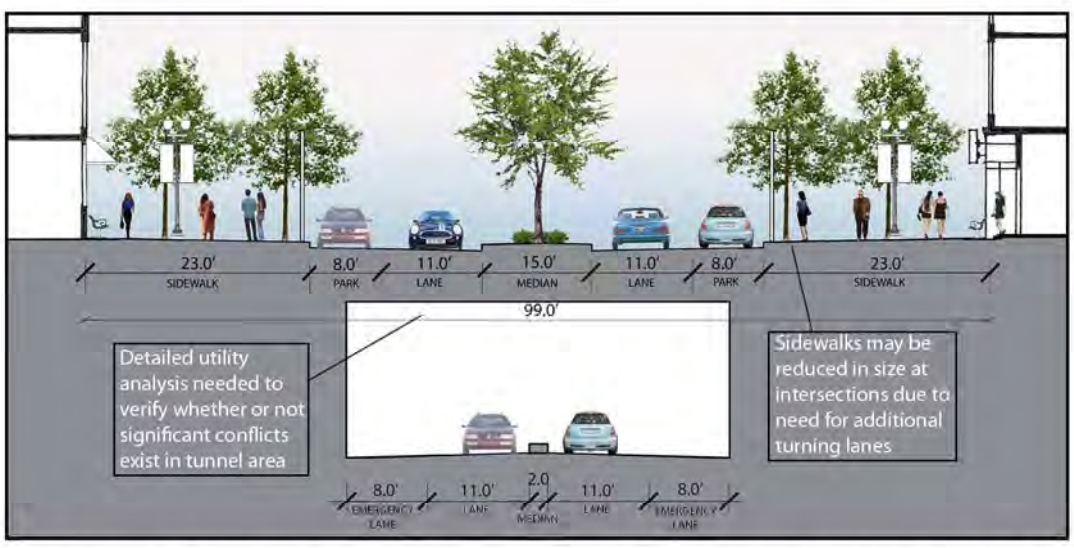
Preliminary Tunnel Study - El Camino Real



A SECTION - RAMP CONDITION



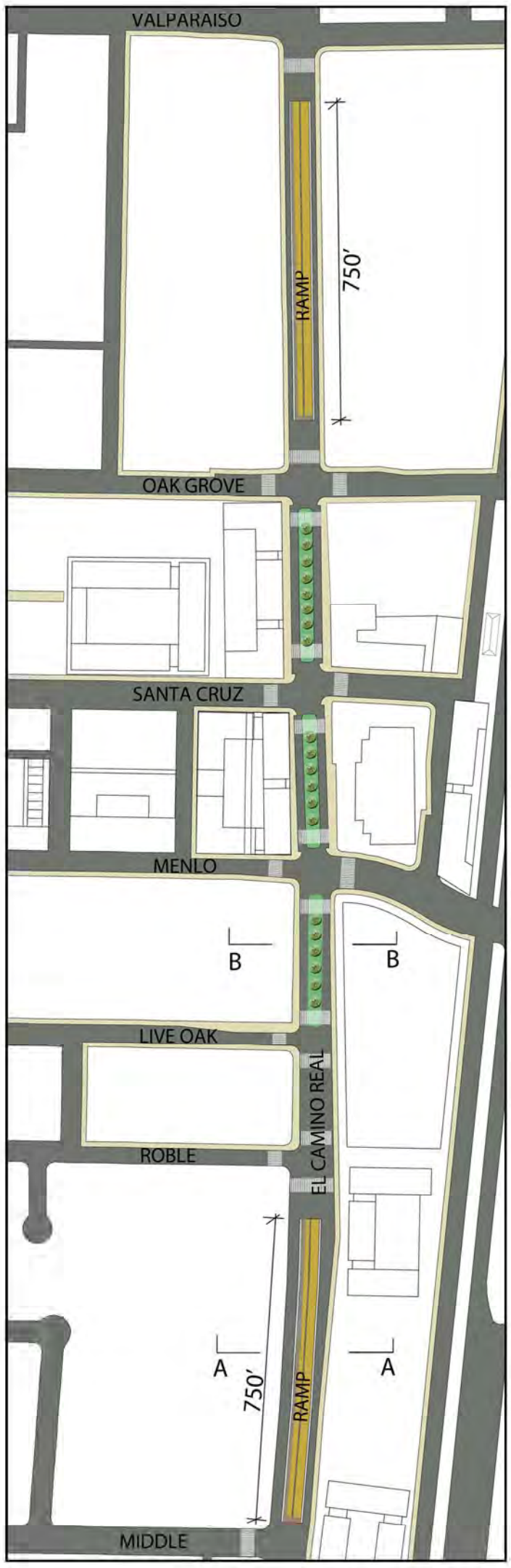
B SECTION ALTERNATIVE #1- TUNNEL CONDITION WITH WIDE MEDIAN ABOVE



B SECTION ALTERNATIVE #2- TUNNEL CONDITION WITH WIDE SIDEWALK ABOVE

Preliminary Findings

- The existing El Camino Real right-of-way constrains the amount of space available for ramp infrastructure, travel lanes, parking lanes, and sidewalks, particularly where ramp conditions are proposed.
- The preliminary traffic analysis results indicate the concept may work technically, with through traffic (approximately 50% of traffic flow) and primary turning movements accommodated. However, a detailed traffic analysis would need to be conducted to understand the full impacts and it could result in the need for additional turn lanes and other improvements that minimize the potential aesthetic impacts discussed below.
- The primary benefits would be seen in the stretch between Roble and Oak Grove Avenues, where two lanes of through traffic (one in each direction) would be fully underground. In this area, significant aesthetic and pedestrian/bicycle connectivity improvements would be possible through widened sidewalks/medians and reduced automotive traffic.
- Between Middle and Roble Avenues and Oak Grove and Valparaiso Avenues, two 750-foot-long open ramps would present significant challenges with poor aesthetics, loss of existing street trees, removal of on-street parking, removal of two traffic lanes (in the stretch between Middle and Roble Avenues), and impacts to existing business with loss of access.
- Costs would clearly be significant, with no likely funding sources identified. There are still many unknowns at this point, including location and potential impediments from underground utilities and potential objections or concerns from Caltrans.
- Construction would require delays and/or rerouting over an extended period.



DOWNTOWN TUNNEL PLAN

- From a business perspective, the tunnel could send a message that Menlo Park is a market to be bypassed, with the gains from an improved visual character and pedestrian/bicycle connectivity in the central area offset by a loss of visibility and unclear access.

Assumptions (based on typical Caltrans standards)

- Ramp slope: 5%
- Ramp length: 750 feet, inclusive of vertical approach
- Vertical clearance: 16.5 feet
- Tunnel cover: 6 feet
- Travel line widths: 11 feet (with require Caltrans waiver)
- Shoulder widths: 8 feet in tunnel and 4 feet at-grade (latter of which would require Caltrans waiver)

FEHR PEERS

MEMORANDUM

Date: March 13, 2012

To: Linda Heineck, City of Menlo Park
Thomas Rogers, City of Menlo Park

Copy to: Mark Hoffheimer, Perkins + Will

From: Ian Moore, AICP and Carrie Nielson

Subject: ***Menlo Park El Camino Real/Downtown Specific Plan Bicycle–Related Comments – Tasks O, P, and Q***

SJ09-1089

PURPOSE

This draft memorandum responds to the City of Menlo Park's comments dated October 20, 2011 on the *Menlo Park El Camino Real/Downtown Specific Plan* regarding bicycle facilities. Based on the comments, Fehr & Peers analyzed roadway segments for potential bicycle lanes and other bicycle related facilities/considerations:

- ***Protected Bicycle Network (Comment O):*** Protected bicycle network between Roble Avenue and Cambridge Avenue to connect with the planned Middle Avenue bicycle/pedestrian grade-separated crossing.
- ***Ravenswood Avenue east of El Camino Real (Comment P):*** Bicycle improvements (signage, lanes, etc.) to extend westbound bicycle facilities to El Camino Real.
- ***Menlo Avenue west of El Camino Real (Comment P):*** Bicycle improvements (signage, lanes, etc.) to provide bicycle lanes on Menlo Avenue, including the approach to El Camino Real.
- ***El Camino Real (Comment Q):*** Bicycle lanes within City limits and/or possibility of paths, lanes, or routes.
- ***University Drive (Comment Q):*** Feasibility of bicycle lanes.
- ***Middle Avenue (Comment Q):*** Bicycle improvements (e.g., bicycle lanes, buffered bicycle lanes, and sharrows) as a route to local schools.
- ***Encinal Avenue (Comment Q):*** Bicycle improvements as a route to local schools.
- ***Valparaiso Avenue (Comment Q):*** Bicycle improvements as a route to local schools.
- ***Bicycle Parking (Comment Q):*** Bicycle parking as a public benefit.
- ***Signage (Comment Q):*** Signage as a public benefit.
- ***Bicycle Sharing (Comment Q):*** Bicycle sharing as a public benefit.
- ***Environmental considerations*** for new bicycle facility designation.

The Specific Plan includes two new pedestrian/bicycle grade-separated crossings – a currently planned one across the Caltrain tracks near Middle Avenue and a proposed one across the Caltrain tracks (after a grade separation) near Santa Cruz Avenue. Bicycle improvements at intersections are addressed as part of the bicycle lane feasibility discussions for individual streets.

KEY FINDINGS

The key findings are:

- ***Protected Bicycle Facility***: A separated bikeway for the segment of El Camino Real from Roble Avenue to Cambridge Avenue was analyzed and is not recommended. Instead, bicycle lanes on El Camino Real along this segment and connecting to the planned Middle Avenue grade-separated crossing are recommended. There are several locations with insufficient curb-to-curb width to accommodate bicycle lanes. Therefore it is recommended that this portion of El Camino Real be designated a "Future Class II/Minimum Class III" bikeway, to allow for the Class III designation in the short-term and the goal of adding bicycle lanes in the future.

- ***Ravenswood Avenue East of El Camino Real***: A westbound bicycle lane may be feasible on Ravenswood Avenue from El Camino Real to the railroad right-of-way with the removal of a portion of the center median and adjustment to the northern curb line west of Merrill Street. The adjustment of the northern curb line would need to ensure that it would not conflict with the existing underground parking nor impact the existing pedestrian walkway. These actions may be cost prohibitive and/or have other negative effects. With this bicycle lane, this segment of Ravenswood Avenue would be designated as "Future Class II/Minimum Class III" in the Specific Plan. Additionally, Ravenswood Avenue from Alma Street to Noel Drive should be classified as Class III facility. The preferred bicyclist alignment through the Ravenswood Avenue/Alma Street intersection should also be striped. The design strategy must be considered in conjunction with the Draft EIR Mitigation Measure TR-7b specifying various changes to the southbound, northbound and eastbound travel directions to ensure its feasibility.

- ***Menlo Avenue West of El Camino Real***: A westbound bicycle lane can be added to the existing lane configuration on the Menlo Avenue approach to El Camino Real through restriping. An eastbound bicycle lane cannot be accommodated within the existing curb-to-curb distance. Possibly a combined bicycle lane/right-turn lane could be incorporated. The ultimate design of this approach must be considered in conjunction with the Specific Plan's Draft EIR Mitigation Measure TR-7b if it were to be implemented. The mitigation measure calls for the eastbound approach to be widened to accommodate a left-turn lane, two through lanes, and a right-turn lane. Adding bicycle lanes on the rest of Menlo Avenue would entail the removal of one parking lane. The south side of the street is recommended for parking removal (34 spaces). Modifications would also be needed at its intersection with University Drive. Menlo Avenue would be designated as "Future Class II/Minimum Class III" with the short-term designation as a bicycle route in the Specific Plan.

- ***El Camino Real – Class II Bicycle Lanes***: In addition to the proposed/planned bicycle lanes from the Menlo Park/Atherton city boundary to Encinal Avenue identified in the City's *Comprehensive Bicycle Development Plan* and forwarded into the Draft Specific Plan that may require widening the existing paved shoulder in the southbound direction and reducing the width of the east side parking lane (northbound direction) and some parking space removal, Class II bicycle lanes may be feasible on El Camino Real from Encinal Avenue to Valparaiso Avenue through the reduction of outside lane widths and paving the existing dirt shoulder, pending future design review. Bicycle lanes also may be feasible on El Camino Real between Valparaiso/Glenwood Avenues and Ravenswood/Menlo Avenues as discussed in the memorandum *Task A – El Camino Real Street Sections Revisions*, which would require reducing the width of the outside travel lane in the southbound direction and removing 16 parking spaces on the east side of the street (northbound direction). South of Menlo/Ravenswood Avenues, there is insufficient curb-to-curb width to accommodate bicycle lanes on several segments. As properties redevelop, additional right-of-way (as needed) should be acquired/dedicated to ultimately provide Class II bicycle lanes. Therefore it is recommended that El Camino Real south of Encinal Avenue be designated as a "Future Class II/Minimum Class III" bikeway, to allow for the Class III designation in the short-term and the goal of adding bicycle lanes in the future.

- ***University Drive***: Bicycle lanes are not feasible between Santa Cruz Avenue and Menlo Avenue. A southbound combined bicycle/left-turn lane at Menlo Avenue would support observed bicycle and auto activity in this area. Bicycle lanes are feasible to the north and south of this area through the removal of one lane of parking (38-40 spaces from Santa Cruz Avenue to Valparaiso Avenue and 40-44 spaces Menlo Avenue to Middle Avenue). University Drive north of Santa Cruz Avenue and south of Menlo Avenue would be designated as "Future Class II/Minimum Class III".

- ***Middle Avenue***: In order to accommodate 5' bicycle lanes on Middle Avenue, a lane of parking would need to be removed. The selection of the parking lane to be removed would be dependent on the results of a parking utilization survey. There are 4 southside spaces that would need to be removed to accommodate bicycle lanes at the intersection of Middle Avenue and University Drive in addition to 12 northside or 13 southside parking spaces that would need to be removed to accommodate bike lanes for the remainder of the segment. Middle Avenue from University Drive to El Camino Real would be designated a "Future Class II/Minimum Class III" bikeway in the plan.

  When bicycle lanes are striped, a combined bicycle lane/right-turn lane at the intersection of Middle Avenue and El Camino Real should be striped to facilitate bicycle traffic across El Camino Real to access the Middle Avenue grade-separated crossing. Should automobiles be allowed to make a through movement onto the Middle Avenue extension once the area is redeveloped, the left-turn lane could become a shared left- and through-lane, with the right-turn pocket remaining a combined bicycle lane/right-turn only lane to prevent right-hook auto/bicyclist collisions. The westbound bicycle lane would be created by narrowing the westbound through lane. The proposed mitigation measure at this

intersection identified in the Draft EIR is to add a second northbound left-turn lane which would require two receiving lanes on westbound Middle Avenue. A detailed design would need to be conducted to determine the feasibility of a bicycle lane in this segment.

- **Encinal Avenue**: Just outside the Specific Plan area, Encinal Avenue was found to have adequate safe routes to school transportation support facilities. Consideration may be given to sidewalk improvements east of the Study Area under a separate planning/grant effort.

- ***Valparaiso Avenue***: Within the Specific Plan area, striping the unmarked crossing on Hoover Street at Valparaiso Avenue would support safe routes to school. Additional measures are feasible west of the Specific Plan area.

- ***Bicycle Parking***: Section F.5 of the Specific Plan, which discusses bicycle parking standards and guidelines, should be updated with land use-based guidance from the Association of Bicycle and Pedestrian Professional's *Bicycle Parking Guidelines, 2nd Edition* with modifications for residential uses.

- ***Signage***: The Specific Plan should include references to bicycle wayfinding signage.

- ***Bicycle Sharing***: While factors such as employment and population density and tourism may be challenging to a successful bicycle sharing program in Menlo Park today, this topic should be reexamined as lessons are learned from Peninsula cities included the BAAQMD Bicycle Share Pilot Program.

RECOMMENDATIONS FOR SPECIFIC PLAN REVISIONS

Based on the analysis of the feasibility of Class I and Class II bikeways and assessment of other bicycle-related issues presented in this memorandum, Fehr & Peers recommends updating the following sections of the Specific Plan:

- Figure B6 Bicycle Facilities in Plan Area from Field Observations and the *Menlo Park Comprehensive Bicycle Development Plan*, 2005

- Section F.4 Bicycle Facilities

- Section F.4 Recommended Bicycle Facilities

- Figure F3 Bicycle Facilities

- Section F.5 Bicycle Storage Standards and Guidelines

Plus a discussion of bicycle wayfinding should be added to Section F.4.

Figure B6

Figure B6 *Bicycle Facilities in Plan Area from Field Observations and the Menlo Park Comprehensive Bicycle Development Plan, 2005* should be updated with the same legend as Figure F3. "Class II Bike Path" should be changed to "Class II Bike Lane."

Section F.4 Bicycle Facilities Types – New "Future Class II/Minimum Class III" Bikeway Designation

A fourth bikeway category "Future Class II/Minimum Class III" will be added to the in-text discussion of proposed bicycle facilities in Section F.4 as well as Figure F3 *Bicycle Facilities*. This new bikeway category would address locations where bicycle lanes are desirable but where existing constraints, such as on-street parking and insufficient right-of-way may currently prevent the striping of bicycle lanes. These facilities would be designated Class III facilities in the short-term, which may include the striping of shared use pavement markings (sharrows) as appropriate, but would have the long-term goal of Class II bicycle lanes.

The new "Future Class II/Minimum Class III" category may be coupled with thresholds/triggers for future implementation through the City's Capital Improvement Program such as:

- Bicycle lanes in proximity to Downtown may be considered for implementation after development of a parking garage.
- Construction of the Middle Avenue grade-separated railroad crossing may be considered a trigger for implementation of the Middle Avenue bicycle lanes.
- Redevelopment of a significant continuous stretch of private property may justify implementing lanes along that stretch.

The development allowed by the Specific Plan will increase the volume of vehicles, pedestrians and bicyclists in the area which could lead to an increase in the number of conflicts. However, an increase in the number of conflicts is different than an increase in the rate of conflicts due to design features. An increase in the rate of conflicts would be a safety concern. This is the basis for the City's adopted significance criteria for pedestrian and bicycle impacts that are based on project design aspects, not increased traffic volumes. The recommended enhancements of bicycle facilities will not introduce design features that could increase the conflict rate. Additionally, the proposed Class II lanes include design features that would help to reduce the conflict rate, thus enhancing the bicycle environment. Detailed designs, additional studies, such as parking occupancy surveys, and detailed environmental review, would need to be completed before bicycle lanes would be implemented.

Update Recommended Bicycle Facilities

The Recommended Bicycle Facilities portion of Section F.4 and Figure F3 should be updated. The following street segments should be identified as "Future Class II/Minimum Class III":

- Menlo Avenue from University Drive to El Camino Real;
- University Drive from Valparaiso Avenue to Santa Cruz Avenue and from Menlo Avenue to Middle Avenue;
- Middle Avenue from University Drive to El Camino Real.
- Westbound Ravenswood Avenue from Alma Street to El Camino Real
- El Camino Real from Encinal Avenue to the Palo Alto border

Additionally, Ravenswood Avenue from Alma Street to Noel Drive should be classified as Class III facility.

The updated contents of Figure F3 are attached at the end of this memorandum. It will need to be incorporated into the Specific Plan figure format.

Bicycle Wayfinding

A section on bicycle wayfinding will be added to Section F.4.

Update Bicycle Parking Guidelines

Section F.5 Bicycle Storage Standards and Guidelines addresses bicycle parking in the Specific Plan. This section should be updated to change the LEED-ND-based bicycle parking guidelines and add the land use-based short-term and long-term bicycle parking guidelines from the Association of Bicycle and Pedestrian Professional's Bicycle Parking Guidelines: A Set of Recommendations, 2nd Edition as presented in Table 1 of this report.

METHODOLOGY

Fehr & Peers conducted a field review of the segments listed in the City's comments in order to establish the feasibility of Class I and II bicycle facilities, as appropriate, on Wednesday January 4, 2012. For each segment, the memorandum presents a summary of the existing conditions, potential design solutions, and a feasibility assessment.

The identified bicycle facility design solutions are presented with consideration of the existing right-of-way constraints as well as planned and observed critical bicycle connections. Major opportunities and constraints relative to the installation of Class II bicycle lanes, buffered bicycle lanes, and Class I separated bikeways are identified in the supporting graphics, with alternatives illustrated and additional recommendations made as appropriate. The installation of a Class I bicycle facility was only considered along El Camino Real between Roble Avenue and Cambridge Avenue, with the remainder of segments analyzed for the application of Class II bicycle facilities.

Generally, Class I paths substantially separated from the auto travel lanes are appropriate in an urban context only under certain conditions including:

- limited driveway crossings and intersection conflicts
- sufficient right-of-way to buffer the pathway from parallel moving traffic
- separation from adjacent buildings to limit potential bicyclist conflict with pedestrians entering and exiting buildings, and
- available right-of-way to provide for lower speed pedestrian behavior common to urban environments as well as local and through bicycle travel.

For this reason, Class I facilities are not explored elsewhere in the Specific Plan Area. Furthermore, Class I paths should be distinguished from street-level cycletracks or separated bikeways (synonymous terms). Separated bikeways are examined in this study for the protected bicycle network between the Middle Avenue pedestrian/bicycle grade-separated crossing and both Roble and Cambridge Avenues.

Other bicycle-related issues are addressed by incorporating the results of recent research. A detailed parking inventory table is included at the end of the memorandum.

DISCUSSION OF FINDINGS

Protected Bicycle Facility from Roble Avenue to Cambridge Avenue

In response to the proposed bicycle and pedestrian grade-separated crossing at Middle Avenue, protected bicycle facilities (Class I bicycle path or Class II bicycle lanes) connecting the crossing to Roble Avenue and Cambridge Avenue within the El Camino Real corridor were analyzed.

Existing Conditions

There are no existing bicycle facilities in the immediate area. The existing structures east of El Camino Real are currently auto-oriented with parking located behind the building or are unoccupied.

Design Solution – Separated Bikeway

An urban, sidewalk level Class I bicycle path, commonly known as a separated bikeway, is a potential option along El Camino Real between Roble Avenue and Cambridge Avenue. Illustrations, including an excerpt from the *Grand Boulevard Multimodal Transportation Corridor Study* are presented to the right.

A separated bikeway in this context would be designed as follows:



Vassar Street Cycle track (Cambridge, MA)
Source: calmstreetsboston.blogspot.com

- Located between the outside travel lane and pedestrian sidewalk; with the pedestrian sidewalk clearly defined by a different paving material, striping, or other design strategy.

- Include a minimum 5-foot horizontal separation/buffer from the adjacent travel lane per Caltrans Highway Design Manual (HDM) Ch. 1000 requirements. This horizontal separation may be reduced to a lesser distance with the addition of a continuous barrier, which might consist of landscaping and street trees, decorative rail and bollards, etc.



- Accommodate two-way bicycle travel with a minimum of 12' in width.

- Have carefully designed transitions at either end to connect to the on-street bicycle facilities regardless of facility type, which may include treatments such as bicycle boxes, special signage, and/or bicycle signals. Future consideration for how the Class I facility integrates with signal phasing at signalized intersections would be needed.

Given the setbacks identified in the Specific Plan as well as the planning guidance set forth in the *Grand Boulevard Initiative*, the space for a separated bikeway would come from the proposed building setbacks, rather than the existing El Camino Real right-of-way. Increasing the setbacks would significantly reduce the developable area on the adjacent sites. Plus, the transitions at each end and its short length (it would only span a few blocks) diminish its attractiveness as a useful bicycle facility. Therefore Class II bicycle lanes were considered.

Design Solutions – Bicycle Lanes

Class II bicycle lanes could ultimately provide a continuous separated on-street bicycle facility through Menlo Park connecting with planned future bicycle lanes in Atherton to the north and Palo Alto to the south. Therefore bicycle lanes are recommended as the ultimate solution. However, there are several segments south of the downtown where there is insufficient curb-to-curb width to accommodate bicycle lanes and additional right-of-way would be needed through property acquisition or dedication as the adjacent properties redevelop. Since bicycle lanes cannot be implemented in the near-term due to right-of-way constraints, it is recommended that this section of El Camino Real be designated a "Future Class II/Minimum Class III" bikeway, to allow for the Class III designation in the short-term and the goal of adding bicycle lanes in the future.

Other Considered Solutions

A conceptual alignment alternative at the rear of the envisioned buildings for these parcels was also considered but is not recommended. This alignment would have several negative consequences including:

- Potentially exposing cyclists to vehicles pulling into and out of parking spaces.
- Directing bicyclists to the backdoor of buildings rather than to the front entrances.
- Increasing personal safety and law enforcement concerns from an "eyes on the street" standpoint, by separating bicyclists from the active street life on El Camino Real that is envisioned under the Plan.
- Creating the need for additional property dedication or placing the pathway on private property thereby limiting maintenance access and creating management challenges

Ravenswood Avenue

Existing Conditions

The installation of a westbound bicycle lane on Ravenswood Avenue from Alma Street to El Camino Real was studied. East of Alma Street, Ravenswood Avenue has bicycle lanes in both directions that begin at Noel Drive. Within the Specific Plan area, an eastbound bicycle lane currently exists on Ravenswood Avenue from El Camino Real to the train tracks. Ravenswood Avenue has a 48' cross-section, with two travel lanes in each direction and a median with mature trees, opening up to a six-lane cross-section (totaling 68') at its intersection with El Camino Real. The travel lanes are 10 to 12' wide.

A 10'-wide sidewalk is present on the south side of the street. On the north side, there is no sidewalk from the Caltrain access road to El Camino Real; instead, pedestrian access is provided through the public plaza and walkways surrounding Menlo Center. A vegetated area separates the outside travel lane from the public walkway, with structured parking underneath it.

Design Solutions

The proposed roadway modifications and striping to accommodate a westbound bicycle facility is shown on **Figure 1**. Because of the narrow travel lanes east of the railroad right-of-way, a bicycle lane cannot be accommodated. Fehr & Peers recommends the portion from Alma Street to Noel Drive should be classified as Class III facility. A striping pattern consisting of either a 5'-wide green colored area with dashed white lines or "staccato" sharrows, which consists of closely spaced sharrow markings, could be provided through the Ravenswood Avenue/Alma Street intersection to identify where bicyclists should ride.

The bicycle lane would begin at the western extent of the railroad right-of-way and continue to El Camino Real. After the intersection at Merrill Street, the bicycle lane would shift away from the

curb, with a green "conflict zone" treatment and dashed white striping, and be located between the through lane and the right-turn pocket to El Camino Real.

In order to accommodate a 5′ westbound bicycle lane, the northern curb line would need to be moved back between El Camino Real and the railroad right-of-way and the median would need minor modifications. The adjustments to the median would preserve the existing mature trees located mid-block. The adjustment of the northern curb line would need to ensure that it would not conflict with the existing underground parking nor impact the existing pedestrian walkway.

Intersection vehicle lane additions and modifications to the southbound, northbound and eastbound travel directions at the intersection of El Camino Real and Ravenswood/Menlo Avenues have been recommended in Draft EIR Mitigation Measure TR-7b. Changes to the westbound approach/receiving lane are not included in the mitigation measure. The proposed modifications on **Figure 1** should be incorporated into the final design of the intersection improvements. Further detailed design would be needed to ensure the bicycle lane feasibility.

Since a westbound bicycle lane cannot be implemented in the near-term due to right-of-way constraints, and these actions may be cost prohibitive and/or have other negative effects, it is recommended that this section of Ravenswood Avenue be designated a "Future Class II/Minimum Class III" bikeway, to allow for the Class III designation in the short-term and the goal of adding a bicycle lane in the future.

Menlo Avenue

Existing Conditions

The Specific Plan area includes all of Menlo Avenue, from University Drive to El Camino Real. Over most of this area, Menlo Avenue is 40′ wide curb-to-curb with an 8′ parking lane and 12′ travel lane in each direction. Menlo Avenue has retail and commercial uses associated with the Downtown on its northern side and commercial uses and apartments on the southern side. At El Camino Real, Menlo Avenue widens to a 50′ cross section, with an 18′ westbound travel lane, 4′ painted median, 11′ eastbound shared left-turn and through lane, and a 17′ shared through and right-turn lane. The intersection of Menlo Avenue and El Camino Real is an active truck access point to downtown grocery stores and other businesses. Menlo Avenue continues across El Camino Real to become Ravenswood Avenue. Ravenswood Avenue has an existing eastbound bicycle lane from El Camino Real to Alma Street, where it drops. East of Noel Drive, Ravenswood Avenue has bicycle lanes in both directions. With these existing facilities, Menlo Avenue is a heavily-used bicycle route from points east of the railroad tracks through Downtown.

At the western end, cyclists were observed turning north on to/off of University Drive to jog north to the existing bicycle lanes on Santa Cruz Avenue west of University Drive. At the stop-sign controlled intersection with University Drive, Menlo Avenue's geometry comprises a 13′ right-turn lane, 11′ left-turn pocket, and a 14′ eastbound travel lane.

Design Solutions

On Menlo Avenue, one parking lane would need to be removed in order to accommodate a bicycle lane within the existing right-of-way. An illustration of how bike lanes would be accommodated is presented on **Figure 2**. . Parking removal on the southern side of the street may be more feasible, as the southern side of the street has fewer retail uses and the northern side is closer to downtown. Thirty-four (34) parking spaces would need to be removed.

Between El Camino Real and Johnston Lane, Menlo Avenue widens from a 40' to 50' cross-section. Between Doyle Street and Johnston Lane, an additional eastbound travel lane is added in the 40' cross section. A westbound bicycle lane can be striped in this section. There is insufficient space for an eastbound bicycle lane so sharrows should be considered. Pending future level of service analysis, the City could consider turning the existing shared through and right-turn lane at El Camino Real into a combined right-turn lane/bike lane to avoid right-hook conflicts between cars turning right onto El Camino Real and cyclists traveling straight through the intersection onto Ravenswood Avenue, as shown in **Figure 3.** The intersection approach design scheme is shown on **Figure 1**.

The Draft EIR for the Specific Plan identifies improvements at the intersection of El Camino Real and Ravenswood Avenue/Menlo Avenue to mitigate intersection operational impacts. The improvements include widening the Menlo Avenue approach to accommodate a left-turn lane, two through lanes, and a right-turn lane. These lane additions will likely require right-of-way acquisition. The proposed modifications on **Figure 1** could be incorporated into the final design of the intersection improvements. More detailed design would be needed to assess bicycle lane feasibility.

Many bicyclists travel between Menlo Avenue and Santa Cruz Avenue using a short portion of University Drive. The Menlo Avenue/University Drive intersection is a busy, offset intersection which can make it complex to navigate. Though other striping configurations were considered, dropping the westbound bicycle lane where the turn pocket begins allows bicyclists and motorists enough distance to negotiate their positing correctly prior to the intersection. For eastbound bicycle traffic, the eastbound and westbound outside travel lane widths should be reduced to accommodate a 5' eastbound bicycle lane at the intersection.

In the Specific Plan, Menlo Avenue will be designated as a "Future Class II/Minimum Class III" bikeway, to allow for the Class III designation in the short-term and the goal of striping bicycle lanes in the future.

El Camino Real: Class II Bicycle Lanes

Existing Conditions

Though the alignment and right-of-way shifts throughout the Specific Plan area, El Camino Real in downtown Menlo Park primarily consists of two through lanes in each direction, divided by a landscaped median. Outside of downtown, El Camino Real has three lanes in each direction. In the northern portion of El Camino Real, left- and right-turn pockets are typically added at

intersections. South of downtown, the three-travel lane cross section adds a left-turn pocket only at intersections, allowing shared through/right-turn lanes. In several segments, the outside travel lane is very wide, approximately 16 to 18' in width. On-street parking is present in some segments throughout the Specific Plan area.

Bicycle lanes from the Menlo Park/Atherton boundary to Encinal Avenue are already identified as planned facilities in the Draft Specific Plan. South of Encinal Avenue to the Menlo Park/Palo Alto city boundary, El Camino Real is currently planned as a Class III bicycle route.

Design Solutions

Bicycle lanes are proposed on El Camino Real in Atherton and in Palo Alto. Therefore it would be desirable to provide bicycle lanes on El Camino Real in Menlo Park to provide a continuous Class II bicycle facility throughout the region. Bicycle lanes would also meet Caltrans Complete Street specifications.

The curb-to-curb width varies throughout the corridor. Some segments have sufficient width to stripe bicycle lanes. In many segments on-street parking would need to be removed. In others, additional right-of-way would be needed to provide sufficient curb-to-curb width. Parking removal and right-of-way acquisitions are constraints that may make bicycle lanes infeasible in the near term.

Continuous Class II bicycle lanes are feasible on El Camino Real from the Atherton town limit to Valparaiso Avenue/Glenwood Avenue in the northbound and southbound directions. Bicycle lanes are also feasible between Valparaiso Avenue/Glenwood Avenue and Menlo Avenue/Ravenswood Avenue and are discussed in the *Task A – El Camino Real Street Sections Revision* memorandum to City staff, dated February 27, 2012. South of the downtown area, there are many right-of-way constraints that make continuous bicycle lanes infeasible at present. Fehr & Peers recommends classifying El Camino Real between Encinal Avenue and the Palo Alto border as a "Future Class II/Minimum Class III" facility. In the short-term, these segments would be designated a Class III bicycle route; however, bicycle lanes would be added with parking removal and when additional right-of-way can be acquired/dedicated as properties redevelop in the future. The required changes (reduced lane widths, parking removal, and right-of-way acquisition) to accommodate bicycle lanes on El Camino Real are presented on **Figure 4**.


Source: K_Gradinger/flickr.com

The majority of the Class II bicycle lanes will consist of 5' lanes; however, in some locations, sufficient width may be provided to accommodate buffered bicycle lanes. Buffered bicycle lanes are bicycle lanes that have a designated buffer space, typically striped, between the bicycle lane and the outside travel lane and/or parking lane. They may include additional measures such as soft-hit posts located in the striped buffer. Assuming sidewalk and median curb lines are not moved, the design solution – conventional bicycle lane or buffered

bicycle lane – must be considered on each side of the street on each block segment individually. That is, an 8′ parking lane on the eastern side could be restriped into a 2′ striped buffer and 6′ bicycle lane, while on the west side, a wide outside travel lane may accommodate a 5′ or 6′ bicycle lane with a reduced buffer or no buffer, as space allows.

Intersection Design Solutions

Though wide outside travel lanes and parking removal may allow for bicycle lanes in the mid-block sections, carrying bicycle lanes through the intersections along El Camino Real requires additional design considerations. In its northern portion, El Camino Real has 12′ to 13′ right-turn lanes. Several approaches to accommodate bicycles are possible. To fully accommodate a 5′ bicycle lane, right-turn pockets would have to be removed. Intersection operations would need to be evaluated to determine the implications of the right-turn pocket removal. Other options are striping a combined bicycle lane/turn-lane, as shown in **Figure 3**, or dropping the bicycle lane prior to intersections, which has both pros and cons. The combined bicycle lane/turn-lane would provide a suggested bicycle alignment at the intersection without turn-lane removal; however, it is not currently Caltrans or Manual Uniform Traffic Control Devices (MUTCD) approved though design guidance is provided in the NACTO *Urban Bikeway Guide*. Dropping the bicycle lane at the intersection is not a best practice in bikeway design. Dropping the bicycle lane does not provide guidance to cyclists or drivers in an important conflict zone, as right-turning drivers merge across to enter the turn-pocket.

In the southern section, the outside travel lane is a shared through/right-turn lane. The outside travel lane varies in width, with some intersections allowing the addition of a bicycle lane while other curb-to-curb distances are too narrow. As properties redevelop on both sides of the street, additional right-of-way may need to be acquired to accommodate bicycle lanes at intersections south of downtown. Additionally, a specific design solution would need to be devised for the Sand Hill Road/Alma Street/El Camino Real intersection in order to stripe future bicycle lanes through to the Menlo Park border, connecting to planned El Camino Real bicycle lanes in Palo Alto. The City should work with City of Palo Alto and Caltrans to create continuous bicycle lanes from Menlo Park to Palo Alto in the future.

Mid-Block Design Solutions

Fehr & Peers recommends the following measures to accommodate bicyclists on El Camino Real.

From the **Atherton town boundary to Encinal Avenue**, parking on the east side of the street (northbound direction) between Encinal Avenue and Stone Pine Lane would need to be removed to accommodate a Class II bicycle lane. The parking lane varies in width from 10 to 12′, and would allow for a 5′ bicycle lane with 5 to 7′ of buffer. North of Stone Pine Lane, a bicycle lane could be added with striping and narrowing the wide parking lane. In the southbound direction, the outside travel lane is adjacent to a paved shoulder that ranges from 3-5′ in width. Striping this area as a bicycle lane and widening the shoulder as needed would allow for a 5′ bicycle lane. At the intersection with Encinal Avenue, the southbound outside travel lane is wide and would allow for a 5′ bicycle lane and an 11′ travel lane. Bicycle lanes on this segment are already proposed in the City's *Comprehensive Bicycle Development Plan*.

From **Encinal Avenue to Valparaiso Avenue**, the northbound outside travel lane is approximately 17′ in width. This would allow for a 5′ bicycle lane, preserving the existing parallel parking. The southbound direction has three travel lanes and an unpaved dirt shoulder, approximately 6′ in width. Paving and striping this 6′ strip would allow for a bicycle lane. To accommodate cyclists at the intersection with Valparaiso Avenue, removing the existing curb on the northeast corner of the intersection should be analyzed. Removing that area would allow for a 5′ southbound bicycle lane at the intersection without removing a turn pocket or dropping the bicycle lane.

From **Valparaiso Avenue to Oak Grove Avenue**, 16 parking spaces on the east side of the street (northbound direction) would need to be removed to provide a Class II bicycle lane. Bicycle lanes can be striped within the wide outside travel lane in the southbound direction.

South of Menlo Avenue/Ravenswood Avenue, several isolated segments provide enough right-of-way to accommodate bicycle lanes; however, continuous bicycle lanes south of Menlo/Ravenswood Avenues are not currently feasible due to right-of-way constraints. This segment of El Camino Real may be able to accommodate bicycle lanes in the future should right-of-way acquisition occur as properties redevelop. Additional right-of-way could be needed in the following locations:

- Northbound from approximately 100′ north of Roble Avenue to Ravenswood Avenue
- Northbound from College Avenue to Middle Avenue
- Southbound from Live Oak Avenue to Middle Avenue
- Southbound from Cambridge Avenue to Harvard Avenue

Several segments of El Camino Real south of Menlo Avenue/Ravenswood Avenue may require parking removal (59 east side, 15 west side). Detailed parking analysis should be done to identify the exact number of spaces.

University Drive

Existing Conditions

The study area includes University Drive from approximately Rose Avenue to Oak Lane. However, in order to provide continuous bicycle lanes in the greater downtown area, University Drive was studied from Valparaiso Avenue to Middle Avenue. At Santa Cruz Avenue, the northern segment of University Drive jogs approximately 150′ to the west. The feasibility of facilities on the one-block section of Santa Cruz was considered in this analysis. The block-long segment of Santa Cruz Avenue consists of a travel lane and left-turn lane in each direction. The south side of the street has on-street parallel parking. The Santa Cruz Avenue bicycle lanes begin just to the west of this segment.

North of Santa Cruz Avenue and south of Menlo Avenue, University Drive has a 40′ cross section with one travel lane in each direction and two lanes of parking. Between Santa Cruz and Menlo Avenues, University Drive has a 35′ cross-section, with many autos and bicyclists making a southbound left on to Menlo Avenue to reach downtown and areas east of El Camino Real. The

cross-section consists of a travel lane in each direction with a two-way center left-turn lane. Additionally, this block-long stretch accesses public off-street parking lots for the Downtown area, including major trip generating uses such as grocery stores.

Design Solutions: Between Santa Cruz and Menlo Avenues and On Santa Cruz Avenue

Design solutions to accommodate bicycle lanes on University Drive are shown on **Figure 5**. University Drive between Santa Cruz and Menlo Avenues has an extremely constrained right-of-way, with no opportunity for lane removal to accommodate Class II facilities. It is recommended that this stretch of University, including the block-long jog at Santa Cruz Avenue, remain a Class III bicycle route with several striping enhancements, also shown on **Figure 5**. Sharrows should be considered on the portion along Santa Cruz Avenue.

At University Drive's intersection with Menlo Avenue, the southbound University Drive lane configuration should shift to allow for dedicated space for cyclists who are making a southbound left-turn onto Menlo Avenue. As shown on **Figure 5**, the southbound approach should be striped with a combined bicycle lane/left-turn lane, allowing for bicyclists and autos to share the turn pocket. The striping consists of a 4' minimum bicycle area inset on the left side of the turn pocket with a 4" dashed stripe between the bicycle area and auto area. This configuration indicates a preferred bicyclist positioning while allowing cars to use the area when cyclists are not present. The combined left-turn lane configuration should be striped on the existing left-turn pocket, breaking at the existing "Keep Clear" stenciling. Additionally, the existing lane widths should be modified so that the southbound through lane is 10' and the combined turn-lane is 12'.

Design Solutions: North of Santa Cruz Avenue and South of Menlo Avenue

Given the narrow right-of-way configuration of University Drive to the north of Santa Cruz Avenue and to the south of Menlo Avenue, one parking lane would need to be removed to accommodate Class II bicycle lanes in both directions as shown on **Figure 5**. From Valparaiso Avenue to Santa Cruz Avenue, 38 spaces on the east side or 40 west side parking spaces would be removed. From Menlo Avenue to Middle Avenue, 44 east side or 40 west side spaces would need to be removed. Because parking removal may be challenging in the short-term, it is recommended that University Drive north of Santa Cruz Avenue and south of Menlo Avenue be designated as a "Future Class II/Minimum Class III" facility.

Middle Avenue

Existing Conditions

The Specific Plan area encompasses Middle Avenue from El Camino Real to just east of Kenwood Drive. Middle Avenue is 42' curb-to-curb, with a 20' westbound travel lane, 12' left-turn lane, and a 10' right-turn lane. Within the Specific Plan area, the adjacent land uses consist of a shopping center and a gas station, transitioning to single family housing, with no parking allowed on the north side of the street during all times of the day and from 7:00 am to 7:00 pm on the south side of the street. West of the Specific Plan area, Middle Avenue has a travel lane and parking lane in each direction with single family housing on both sides of the street. In the residential area,

posted parking restrictions consist of 2-hour parking from 7:00 am to 7:00 pm. The Little House Activity Center and Nealon Park and the Menlo Atherton Nursery School are also located to the west of the Specific Plan area.

The Specific Plan proposes a possible extension of Middle Avenue as a public access area to future development on the east side of El Camino Real. The Plan also assumes a proposed and previously studied bicycle and pedestrian grade-separated crossing of the railroad tracks at Middle Avenue. As such, potential design solutions were assumed to continue through the intersection with El Camino Real.

Design Solutions

In order to accommodate 5' bicycle lanes on Middle Avenue, parking would need to be removed from University Drive to approximately 150' east of University Drive (4 south side spaces) and from 100' west of Morey Drive to El Camino Real (13 north side or 12 south side parking spaces). Parking would not need to be removed in front of Little House, where the outside travel lane is 20' in width. One concern is that vehicles parking in the perpendicular spaces adjacent to Nealon Park would have to back into the bicycle lane to exit the spaces. Parking utilization should be studied along Middle Avenue to confirm that a sufficient number of spaces would be retained if one lane was removed. As a result, Middle Avenue from University Drive to El Camino Real should be designated a "Future Class II/Minimum Class III" bikeway in the plan.

When bicycle lanes are striped, a combined bicycle lane/right-turn lane at the intersection of Middle Avenue and El Camino Real should be striped to facilitate bicycle traffic across El Camino Real to access the Middle Avenue crossing. Should automobiles be allowed to make a through movement onto a future Middle Avenue extension once the area is redeveloped, the left-turn lane could become a shared left- and through-lane, with the right-turn pocket remaining a combined bicycle lane/right-turn only lane to prevent right-hook auto/bicyclist collisions. The westbound bicycle lane would be created by narrowing the westbound through lane. The proposed mitigation measure at this intersection identified in the Draft EIR is to add a second northbound left-turn lane which would require two receiving lanes on westbound Middle Avenue. A detailed design would need to be conducted to determine the feasibility of a bicycle lane in this segment.

Prior to the intersection and gas station driveway, the bicycle lane should shift from running against the curb to its eventual alignment between the left- and right-turn pockets. This area should be demarcated by dashed white striping on the outside of the bicycle lanes, with the optional application of a 6'-wide green-colored asphalt strip to further highlight the conflict zone. This is presented conceptually on **Figure 6**.

Encinal Avenue

Existing Conditions

Existing and proposed pedestrian and bicycle facilities were evaluated on Encinal Avenue within the Specific Plan area in support of safe routes to school. Encinal Elementary School is located approximately 0.5 miles to the east of the Specific Plan area, prompting a review of the adequacy

of pedestrian and bicycle facilities linking the school and downtown. The existing curb-to-curb dimension of Encinal is 40', reflecting a parking lane and through lane in each direction. At its intersection with El Camino Real, Encinal Avenue has a wide receiving lane, right-turn pocket, and shared through- and left-turn lane. Crossings are marked on the north and west legs of the intersection. Within the Specific Plan Area, Encinal Avenue has sidewalks on both sides of the street.

Outside of the Specific Plan area, just east of the railroad tracks, Encinal Avenue has no sidewalks. From Felton Drive to Middlefield Road, a sidewalk is present on the north side of Encinal only. Eastbound and westbound bicycle lanes begin east of the railroad tracks and continue to Middlefield Road.

Design Solutions

Within the Specific Plan area, Encinal Avenue was observed to have adequate pedestrian facilities and does not have additional room within the right-of-way for the continuation of the existing bicycle lanes to the west. The City may consider reviewing the pedestrian- and bicycle-related signage for compliance with 2010 MUTCD Part 7, School Signage.

East of the Specific Plan area, Encincal Avenue may be a candidate for sidewalk improvements under a safe routes to school grant. Given the narrow width of the paved area on Encinal, the City should review the boundaries of the city-owned right-of-way to determine if it is wide enough to provide for a sidewalk.

Valparaiso Avenue

Existing Conditions

Valparaiso Avenue is a two-lane roadway with bicycle lanes in both directions. A parking lane and sidewalk are provided on the south side of Valparaiso Avenue only. The westbound bicycle lane is 7' in width and has a very wide concrete gutter pan. The Specific Plan area includes approximately one block of Valparaiso Avenue, ending at Victoria Drive. In this area adjacent to its intersection with El Camino Real, Valparaiso Avenue widens to one receiving lane with eastbound left-turn, through, and right-turn lanes and a through bicycle lane between the through and right-turn lanes.

Outside of the Specific Plan area, the Menlo School is located at the intersection of Valparaiso Avenue and University Drive. Just east of University Drive, the westbound bicycle lane splits off from the roadway and becomes a paved asphalt path, reconnecting with the roadway just west of the school's driveway. There is no north sidewalk in front of the school; however, the northern side of Valparaiso Avenue is in the Town of Atherton. On the west side of the intersection, there is a sidewalk gap on the southern side of Valparaiso from the University Drive intersection approximately 80' to the west. The sidewalk gap is also the site of a SamTrans bus stop.

Design Solutions

Within the Menlo Park city boundaries, a marked crossing could be considered on the south leg of Valparaiso Avenue's intersection with Hoover Street. Outside of the Specific Plan area, the City should strongly consider completing the sidewalk gap closure just west of University Drive with a safe routes to school grant funding source. These improvements are presented on **Figure 7**.

Bicycle Sharing

Bicycle sharing refers to programs that make a fleet of shared bicycles available typically for short-term public use and may require a fee. Bicycle pods store the fleet of bicycles and are located throughout an area—whether that be a private campus, particular district, or city, allowing users to check out a bicycle and return it to the same station or any other station in the network. Locally, the first phase of the Bay Area Air Quality Management District (BAAQMD) Bicycle Share Pilot program will include the Caltrain corridor in San Francisco, Mountain View, Palo Alto, Redwood City and San Jose. The project is funded through a combination of local, regional and federal grants with major funding coming from the Metropolitan Transportation Commission's Innovative Bay Area Climate Initiatives Grant Program (BACI). This pilot program will be implemented in 2012-2014 in the above listed communities. Subsequent investments in the Bay Area bicycle share system and additional implementation will be determined based on the success/findings from the pilot program. One of the primary lessons to be learned from the Caltrain corridor sites (Redwood City, Palo Alto, and Mountain View) will be how to site and operate bicycle share pods in smaller transit-served downtowns. Bicycle share systems globally have to date been located in major cities with significant density and tourism providing support for both membership and point of use customer groups. While Menlo Park may not share these characteristics, the City might reexamine the viability of bicycle sharing as lessons are learned from Peninsula cities included the BAAQMD Pilot Program.



Bicycle Parking

Section F.5 of the Draft Specific Plan provides standards and guidelines for the provision and siting of bicycle parking within the Specific Plan area, many of which meet the requirements of Leadership in Energy and Environmental Design, Neighborhood Design (LEED-ND). Though the standard requires new commercial development outside of the downtown to provide secure bicycle parking facilities on-site and may provide the bicycle parking necessary to qualify for the corresponding LEED-ND credit, these bicycle parking guidelines may not be enforceable, as

bicycle parking is not currently included in the existing off-street parking requirements set forth in the Draft Specific Plan.

For the purpose of the Specific Plan, it is recommended that the plan replace the existing discussion of standards and guidelines related to LEED-ND with the bicycle parking requirements presented in **Table 1**, which presents Association of Bicycle and Pedestrian Professionals (APBP)'s *Bicycle Parking Guidelines* bicycle parking generation by land use with modification to the requirements for residential uses. These requirements would be applied to uses both within and outside downtown.

APBP's *Bicycle Parking Guidelines* also provides detailed information on design, materials and coatings, and spacing of racks and bicycle lockers. The document should be consulted to provide more specific guidance on types of short-term (used for visitors and guests) and long-term (used for employees and residents) bicycle parking preferred by the City and cyclists to avoid designs that do not offer two points of contact to support the bicycle from falling over or do not allow a U-lock to secure the bicycle frame and one wheel. Additionally, the *Caltrain Bicycle Parking and Access Plan* provides additional guidance on bicycle parking and access.

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TABLE 1
LONG-TERM AND SHORT-TERM BICYCLE PARKING REQUIREMENTS BY LAND USE TYPE

Land Use	Long-Term Bicycle Parking Requirement (Employees and Residents)	Short-Term Bicycle Parking Requirement (Visitors and Guests)
Commercial		
Retail-general food sales or groceries	1 space for each 12,000 SF of floor area. Minimum requirement 2 spaces.	1 space for each 2,000 SF of floor area. Minimum requirement 2 spaces.
Retail-general retail	1 space for each 12,000 SF of floor area. Minimum requirement 2 spaces.	1 space for each 5,000 SF of floor area. Minimum requirement 2 spaces.
Office	1 space for each 10,000 SF of floor area. Minimum requirement 2 spaces	1 space for each 20,000 SF of floor area. Minimum requirement 2 spaces
Automotive sales, rental, and delivery; automotive servicing; automotive repair and cleaning	1 space for each 12,000 SF of floor area. Minimum requirement 2 spaces	1 space for each 20,000 SF of floor area. Minimum requirement 2 spaces
Off-street parking lots and garages available to the general public (with or without fee)	1 space for each 20 automobile spaces. Minimum requirement is 2 spaces. Unattended surface parking lots excepted.	Minimum of 6 spaces or 1 per 20 auto spaces. Unattended surface parking lots excepted.
Residential		
Single Family Dwelling	No spaces required.	No spaces required.
Multi-Family Dwelling-with private garage for each unit[1]	No spaces required.	1 per 10 units.
Multi-Family Dwelling-without private garage for each unit	1 per unit.	1 per 10 units.

1. A private locked storage unit may be considered as a private garage if a bicycle can fit in it.

Source: Association of Bicycle and Pedestrian Professionals (APBP), *Bicycle Parking Guidelines*, 2010, with modifications.

Wayfinding Signage



Source: oaklandlocal.com

Signage that easily and effectively guides cyclists to major destinations within Menlo Park and neighboring communities and on to major east/west and north/south routes is important for making bicycling comfortable and intuitive for a wide variety of users. The existing Draft Plan contains many references to the importance of pedestrian wayfinding in the Plan Area; however, it includes no specific references to wayfinding for cyclists.

The City has implemented the first phase of a bicycle wayfinding signage program in the Willows neighborhood. The second phase is under review by the Bicycle Commission for the western portion of the city. The conclusions and recommendations of the commission should include standards and guidelines related to the design of signs, information to be included on them, and their location along major bicycle routes. To be most effective, wayfinding should be implemented through the City's bicycle network and integrated into the next update of the City's *Comprehensive Bicycle Development Plan*.

FEHR & PEERS

REFERENCES

Association of Pedestrian and Bicycle Professionals (APBP), *Bicycle Parking Guidelines: A Set of Recommendations*, 2nd Edition (2010).

Caltrain Bicycle Parking and Access Plan (October 2008).

City of Menlo Park, Zoning Ordinance (December 2010).

Design Guidelines for Bicycle Wayfinding Signage, City of Oakland (July 2011). http://www2.oaklandnet.com/oakca/groups/pwa/documents/report/oak025118.pdf

El Camino Real and Downtown Menlo Park Specific Plan, DRAFT.

Field Observations performed by Fehr & Peers, Wednesday, January 4, 2012.

Final Grand Boulevard Multimodal Transportation Corridor Study (October 2010).

National Association of City Transportation Officials, *Urban Bikeway Guide*, 2010. http://nacto.org/cities-for-cycling/design-guide/

ATTACHMENTS

TABLE A-1
PARKING INVENTORY ALONG FUTURE CLASS II/MINIMUM CLASS III BIKEWAYS

Street	To	From	Number of Parking Spaces	
North/South Roadways			**East Side of Street**	**West Side of Street**
El Camino Real (North of Menlo/Ravenswood Avenue)[1]	Encinal Avenue	Valparaiso Avenue	0	0
	Valparaiso Avenue	Oak Grove Avenue	16	-
	Oak Grove Avenue	Santa Cruz Avenue	0[3]	0[3]
	Santa Cruz Avenue	Menlo Avenue/Ravenswood Avenue	0[3]	0[3]
		Total	**16**	**0**
El Camino Real (South of Menlo/Ravenswood Avenue)[1]	400' north of Middle Avenue	Middle Avenue	11	-
	Middle Avenue	College Avenue	-	8
	College Avenue	Partridge Avenue	11	4
	Partridge Avenue	Cambridge Avenue	11	-
	Cambridge Avenue	Harvard Avenue	10	-
	Harvard Avenue	200' north of Creek Drive	16	3
		Total	**59**	**15**
University Drive (North)[2]	Valparaiso Avenue	Rose Avenue	16	16
	Rose Avenue	Millie Avenue	6	6
	Millie Avenue	Oak Grove Avenue	2	4
	Oak Grove Avenue	Santa Cruz Avenue	14	14
		Total	**38**	**40**
University Drive (South)[2]	Santa Cruz Avenue	Menlo Avenue	-	-
	Menlo Avenue	Oak Lane (SB), Live Oak Avenue (NB)	5	5
	Oak Lane	Live Oak Avenue	2	3
	Live Oak Avenue	Roble Avenue	7	5
	Roble Avenue	Florence Lane	7	9
	Florence Lane	Alice Lane	13	9
	Alice Lane	Middle Avenue	10	9
		Total	**44**	**40**
East/West Roadways			**South Side of Street**	**North Side of Street**
Menlo Avenue[2]	University Drive	Evelyn Street	1	3
	Evelyn Street	Crane Street	10	9
	Crane Street	Chestnut Street	8	6
	Chestnut Street	Curtis Street	9	7
	Curtis Street	Doyle Street	6	9
	Doyle Street	El Camino Real	-	-
		Total	**34**	**34**
Middle Avenue[4]	University Drive	150' east of University Drive	4	-
	Blake Street	Morey Drive	2	4
	Morey Drive	Kenwood Drive	5	5
	Kenwood Drive	El Camino Real	5	4
		Total	**16**	**13**

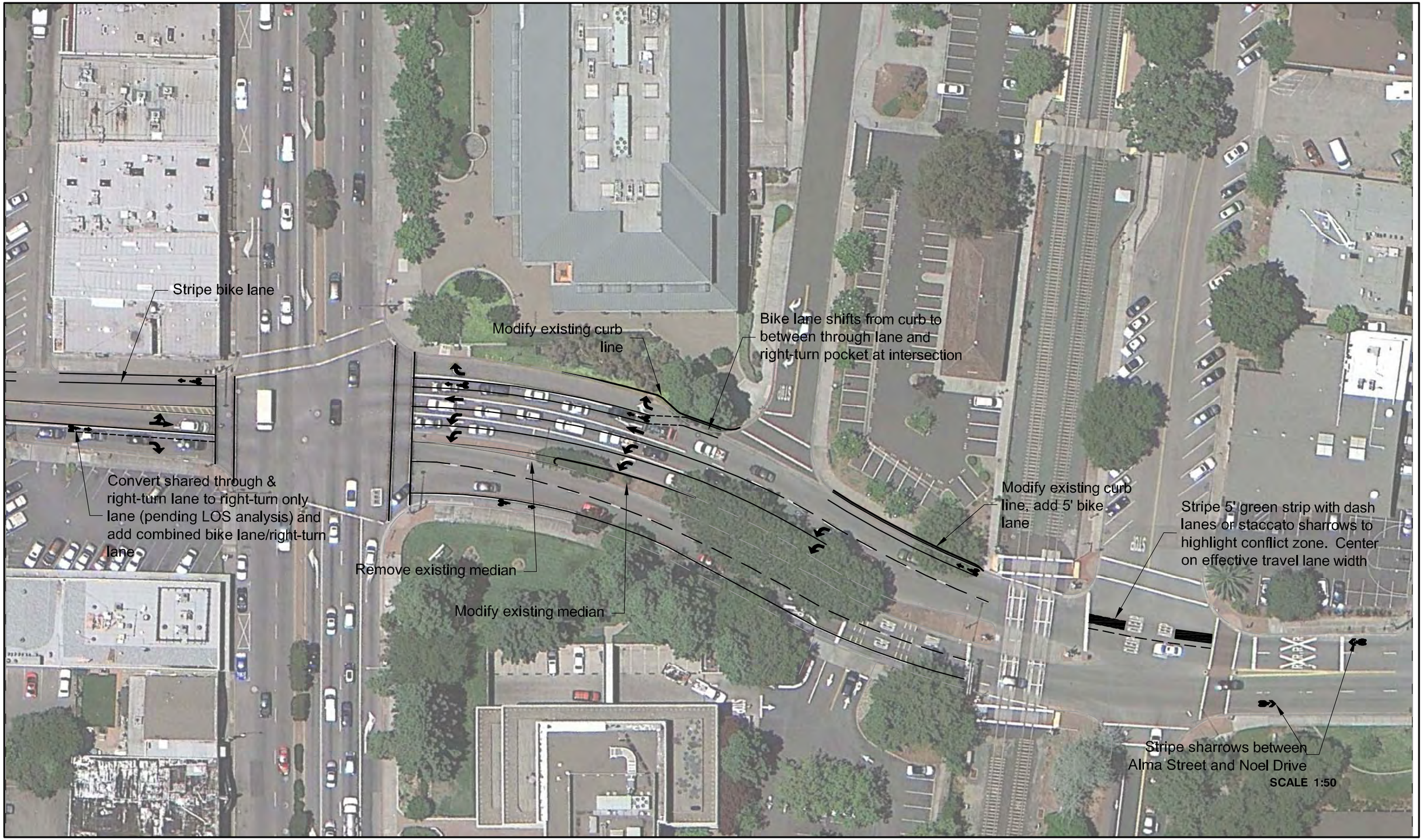
1. Parking inventory for El Camino Real is only shown if it would need to be removed in order to accommodate a bicycle lane. For El Camino Real only, parking may need to be removed in both directions to accommodate bicycles lanes. Detailed analysis is required to identify the exact number of parking spaces south of Menlo Avenue/Ravenswood Avenue.

2. Only one parking lane would need to be removed to allow for two bicycle lanes. The parking estimates include the parking inventory for the whole Future Class II/Minimum Class III segment, which may include areas outside of the Study Area.

3. Up to 19 parking spaces total could be removed in downtown, depending on the preferred cross-section.

4. To accommodate bicycle lanes on Middle Avenue, parking would only have to be removed eastbound from University Drive to approximately 150' east of University Drive and on one side of the street from approximately 100' west of Morey Drive to El Camino Real. Whether eastbound or westbound parking spaces are chosen for removal, the 4 spaces from University Drive to 150' east of University Drive would also have to be removed in order to accommodate the bicycle lanes at the University Drive/Middle Avenue intersection.

Source: Fehr & Peers, 2012. Parking estimates based on field observations and Google Earth.



FEHR PEERS

RAVENSWOOD AVENUE & MENLO AVENUE APPROACH TO EL CAMINO REAL
CONCEPTUAL DESIGN FOR POTENTIAL BICYCLE LANES

FIGURE 1

Mar 19, 2012 FPA
N:\PROJECTS\Other_Office_Projects_SJ Projects\SJ09-1089 Menlo Park Downtown Specific Plan ADD ON\Ravenswood CAD_Plot_Styles.dwg

Menlo Avenue

Menlo Avenue at University Drive
DESIGN SOLUTION
-Narrow eastbound & westbound travel lanes to allow for 5' eastbound bike lane beginning at the intersection

Menlo Avenue at University Drive
DESIGN SOLUTION
-Drop bicycle lane before intersection

Menlo Avenue, University Drive to El Camino Real
DESIGN SOLUTION
-Stripe 5'-wide Class II Bicycle Lanes

DESIGN REQUIREMENTS
-Requires removal of one lane of parking, the southside is recommended given limited retail uses and proximity to downtown on the north side



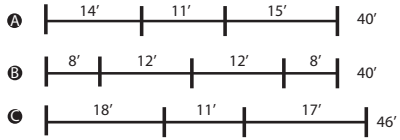
KEY
Ultimate Design
Bicycle Route
Bicycle Lane

Menlo Avenue , from Doyle Street to Johnston Lane
DESIGN SOLUTION
-Stripe sharrows in eastbound outside travel lane where Menlo Avenue adds a travel lane
-Stripe westbound bicycle lane

DESIGN REQUIREMENTS
-Reduce width of westbound travel lane

Menlo Avenue at El Camino Real
DESIGN SOLUTION
-Consider converting shared through & right-turn lane into a right-turn only lane
-Add combined bicycle lane/right-turn lane

EXISTING CROSS-SECTIONS

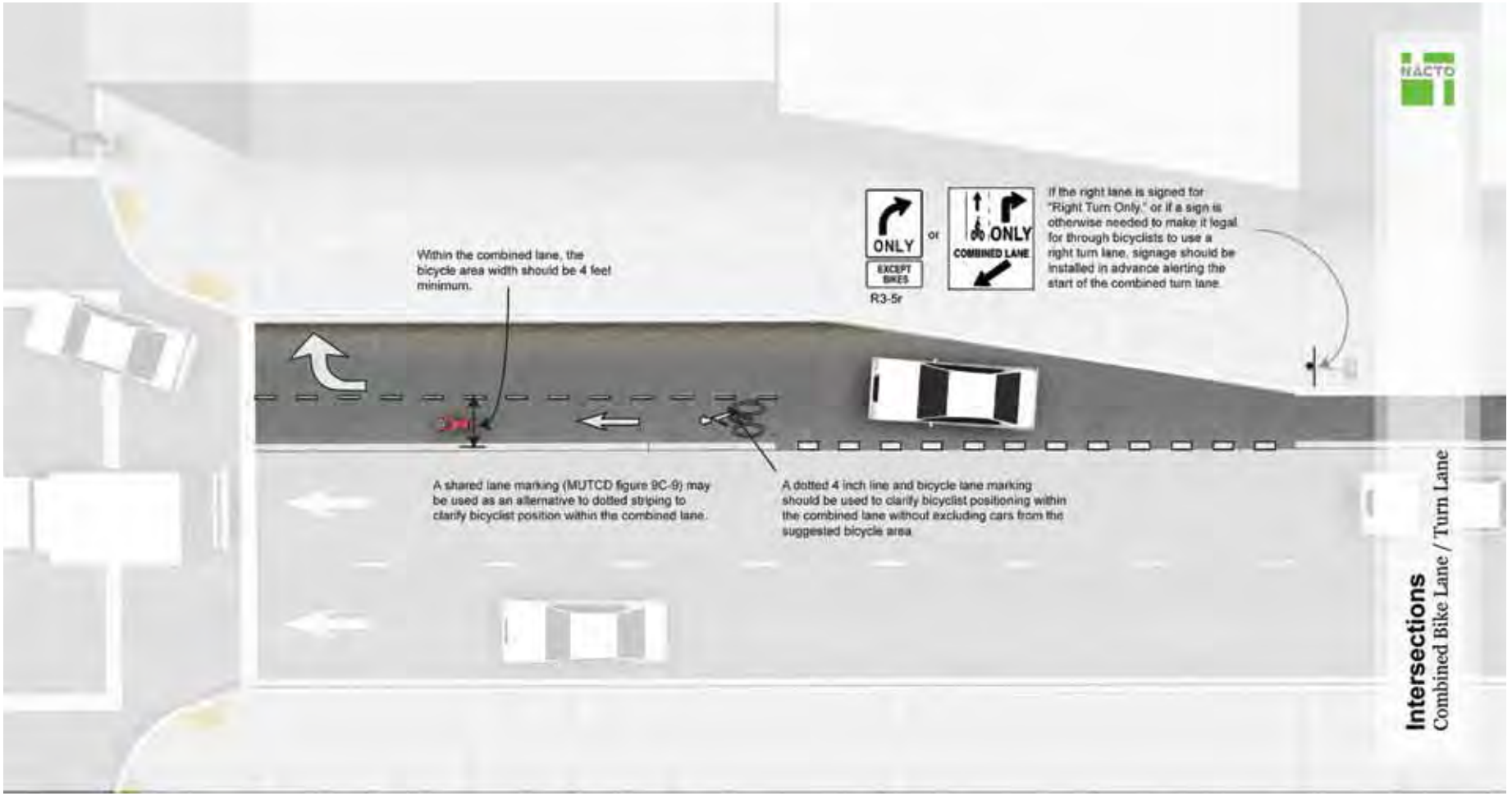


PARKING SPACES TO BE REMOVED

34 WEST SIDE or EAST SIDE SPACES
(UNIVERSITY DRIVE
TO EL CAMINO REAL)

RECOMMENDATION

Designate Middle Avenue as Future Class II/Minimum Class III.



N

NOT TO SCALE

Source: National Association of City Transportation Officials, *Urban Bikeway Guide*, 2010.
http://nacto.org/cities-for-cycling/design-guide/

El Camino Real

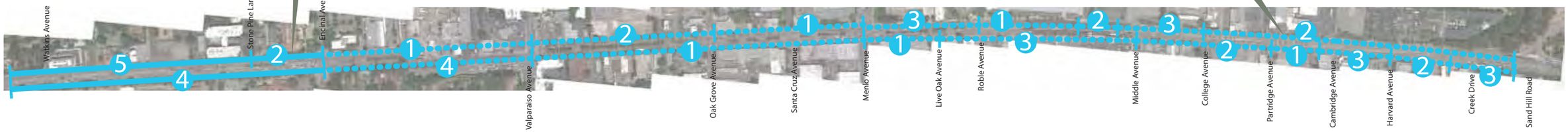
El Camino Real, Menlo Park/Atherton boundary to Menlo Avenue/ Ravenswood Avenue
DESIGN SOLUTION
-Stripe Class II bicycle lanes, including buffer (painted and/or soft-hit posts, as shown at right) as space allows

DESIGN REQUIREMENTS
-Add striping for bicycle lanes by narrowing outside travel lanes or by removing parking (from Valparaiso to Oak Grove Avenues)
-Bicycle lanes may need to be dropped at intersections, depending on right-of-way constraints


Source: Steve Vance/flickr

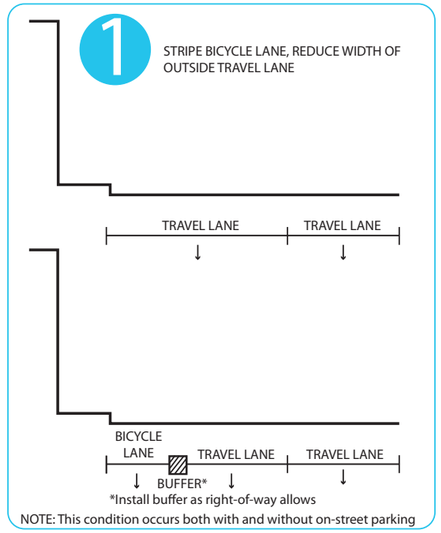
El Camino Real, from Menlo Avenue/Ravenswood Avenue to Menlo Park/Palo Alto boundary
DESIGN SOLUTIONS
-Consider Class II bicycle lanes in future through parking removal and right-of-way acquisition as properties redevelop

DESIGN REQUIREMENTS
-Reduce width of outside travel lane and remove parking, as necessary
-Acquire right-of-way in currently constrained areas

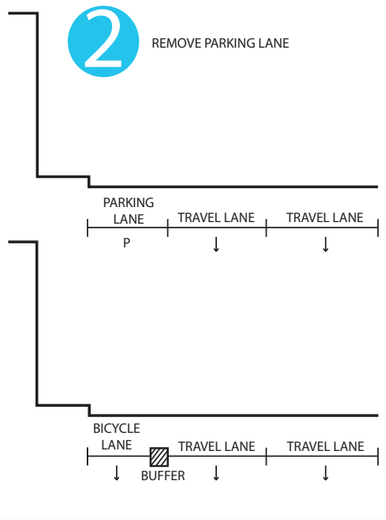


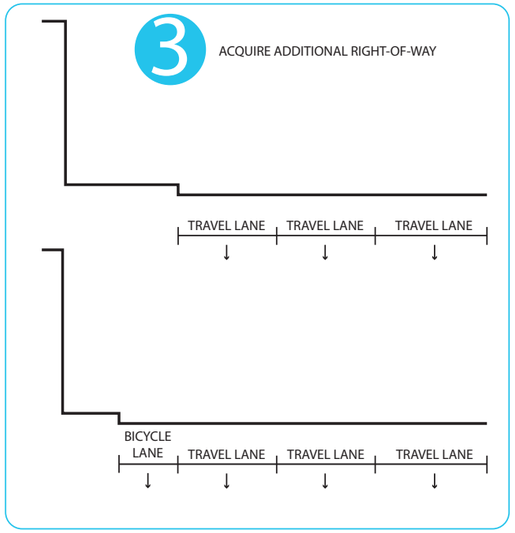
KEY
- Class II Bicycle Lane
- Future Class II/Minimum Class III

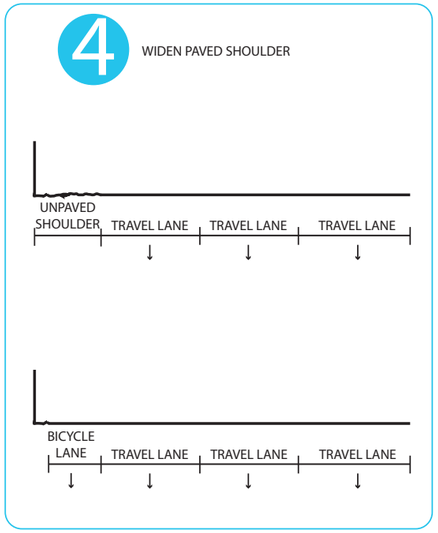
BICYCLE LANE DESIGN REQUIREMENTS

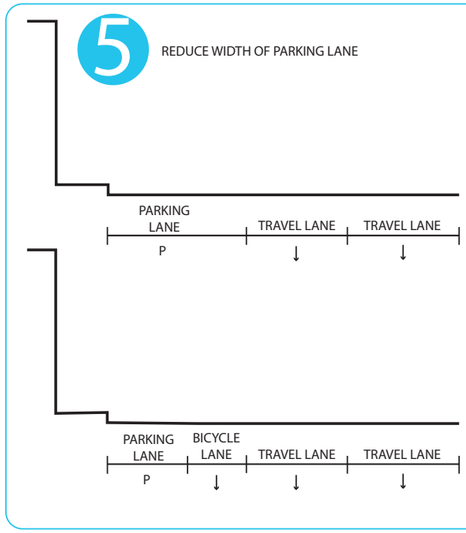


NOTE: This condition occurs both with and without on-street parking









RECOMMENDATION

El Camino Real north of Encial Avenue is recommended as future Class II bicyle lanes. El Camino Real south of Encinal Avenue is recommended as Future Class II/Minimum Class III due to right-of-way constriants.

PARKING SPACES TO BE REMOVED

NORTH OF RAVENSWOOD:	SOUTH OF RAVENSWOOD:
21 SPACES EAST SIDE (OAK GROVE AVENUE TO STONE PINE LANE)	59 SPACES EAST SIDE + 15 SPACES WEST SIDE (ROBLE AVENUE/MENLO AVENUE TO MENLO PARK/PALO ALTO BOUNDARY)

N

NOT TO SCALE

FEHR & PEERS

EL CAMINO REAL BICYCLE LANE FEASIBILITY & RECOMMENDATIONS

FIGURE 4

University Drive



University Drive, between Valpariso Avenue and Santa Cruz Avenue
DESIGN SOLUTION
-Stripe 5' Class II bicycle lanes

DESIGN REQUIREMENTS
-Need to remove one lane of on-street parking

Santa Cruz Avenue, between eastern + western University Drive
DESIGN SOLUTION
-Paint sharrows on Santa Cruz Avenue, with the facility remaining a Class III bike route

University Drive, between Menlo Avenue and Middle Avenue
DESIGN SOLUTION
-Stripe 5' Class II bicycle lanes

DESIGN REQUIREMENTS
-Need to remove one lane of on-street parking

University Drive, between Santa Cruz Avenue and Menlo Avenue
DESIGN SOLUTION
-Stripe shared southbound left-turn lane on University Drive in support of cyclists making the southbound left on to Menlo Avenue
-Widen left-turn lane to 12' and narrow through lane to 10'

DESIGN REQUIREMENTS
-No lane removal required: bicycle lane is striped on eastern edge of existing turn pocket per image below from NACTO Urban Bikeway Guide

PARKING SPACES TO BE REMOVED

38 EAST SIDE OR 40 WEST SIDE SPACES (VALPARAISO AVENUE TO SANTA CRUZ AVENUE)

44 EAST SIDE OR 40 WEST SIDE SPACES (SANTA CRUZ AVENUE TO MIDDLE AVENUE)

EXISTING CROSS-SECTION





KEY
Ultimate Design
Bicycle Route
Bicycle Lane

N

NOT TO SCALE

RECOMMENDATION

Designate University Drive as Future Class II/Minimum Class III.

Middle Avenue



Middle Avenue, west of Specific Plan border
DESIGN SOLUTION
-Stripe 5′ Class II bike lanes

DESIGN REQUIREMENTS
-Bike lanes require removal of one parking lane
-Conduct parking utilization to verify low utilization levels and to determine which parking lane to remove.

Middle Avenue, between Specific Plan border & El Camino Real
DESIGN SOLUTION
-Stripe 5′ Class II Bicycle Lanes
-Stripe combined bicycle lane/right-turn lane at intersection with El Camino Real per NACTO Urban Bikeway Guidance (striping of dashed bike transition lane may change depending on bicycle lane alignment)

DESIGN REQUIREMENTS
-Reduce outside travel lanes to 11′

KEY
Ultimate Design
Bicycle Lane

EXISTING CROSS-SECTION



PARKING SPACES TO BE REMOVED

4 SPACES +
12 NORTH SIDE or 13 SOUTH SIDE SPACES
(UNIVERSITY DRIVE TO 150′ TO THE EAST +
100′ WEST OF MOREY DRIVE TO EL CAMINO REAL)

RECOMMENDATION

Designate Middle Avenue as Future Class II/Minimum Class III.

Valparaiso Avenue

Valparaiso Avenue, just west of University Drive
DESIGN SOLUTION
-Close sidewalk gap under separate planning grant effort

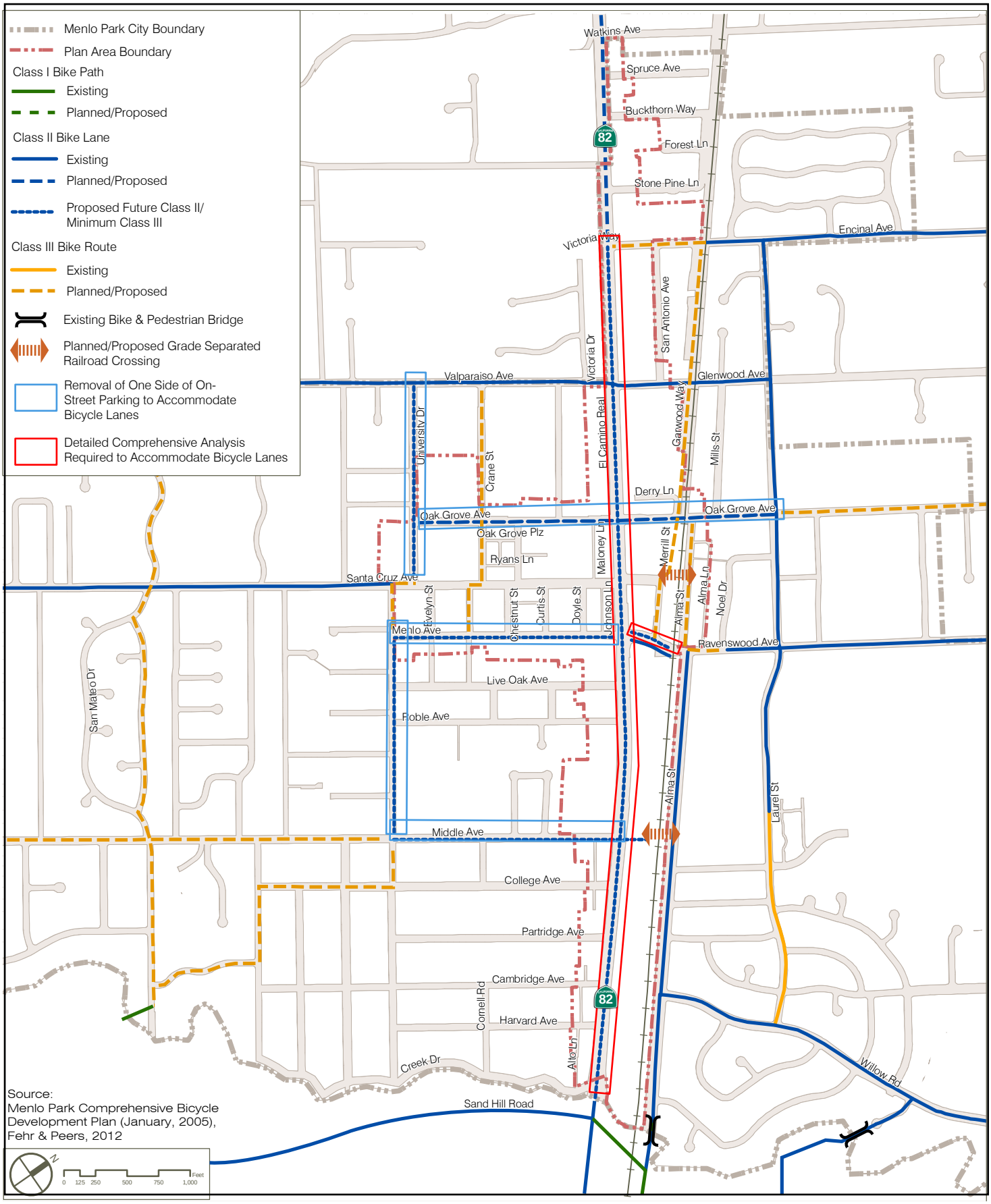


Hoover Street at Valparaiso Avenue
DESIGN SOLUTION
-Consider striping crossing

KEY
Proposed sidewalk
Proposed Crossing

N

NOT TO SCALE



FEHR PEERS

Existing & Planned Bicycle Facilities

February 2012
SJ09-1089

Figure 8

STRATEGICECONOMICS

MEMORANDUM

Date:	March 2, 2012
To:	Thomas Rogers and Arlinda Heineck, City of Menlo Park
From:	Sarah Graham and Nadine Fogarty, Strategic Economics
Project:	Menlo Park El Camino Real and Downtown Specific Plan
Subject:	Urban Decay Evaluation

Purpose

The City of Menlo Park has asked Strategic Economics to evaluate the potential that "urban decay" could result from the proposed Menlo Park El Camino Real and Downtown Specific Plan and to determine the need for an urban decay analysis for the environmental impact report (EIR) being conducted for the Specific Plan. This memorandum defines "urban decay" for the purposes of an EIR, summarizes the potential impacts of the Specific Plan, and evaluates the need for an urban decay analysis for the EIR.

Key Findings

Under the California Environmental Quality Act (CEQA), an urban decay analysis is required if a development project is likely to cause economic impacts that result in significant physical impacts, such as persistent vacancies and blight. Urban decay is an indirect physical impact that must be analyzed if significant. For the purposes of CEQA, urban decay is typically defined as physical deterioration resulting from economic pressures of a project on existing development, such as similar businesses in the same market area. If such pressures are likely to result in physical deterioration such as persistent vacant buildings and commercial sites, neglect, and vandalism, it is considered urban decay.[1]

The market analysis conducted for the Specific Plan concluded that streetscape and pedestrian improvements, and additional downtown housing or office uses could enhance the success of retail in the plan area. The proposed Specific Plan includes such improvements to the public realm that are designed to strengthen retail activity, including adding public plazas and streetscape improvements.

[1] Bakersfield Citizens for Local Control v. City of Bakersfield, 124 Cal.App.4th 1184, 2004.

Investments in the public realm can play a significant role in enhancing a shopping district. There is an emerging body of research illustrating that the types of amenities and improvements proposed in the Specific Plan have a positive impact on property values and consumer spending, both indicators of a vital downtown.

None of the evidence examined showed that the types of zoning changes and public improvements proposed in the Menlo Park El Camino Real and Downtown Specific Plan would lead to blight conditions or urban decay. Therefore an urban decay analysis is not warranted by the Specific Plan.

Methodology

To prepare this memorandum, Strategic Economics conducted a review of literature, examined relevant examples, and reviewed the market analysis conducted for this project to draw conclusions on the likelihood that the plan will result in urban decay. Strategic Economics also conducted interviews as possible to address questions that have been raised about negative impacts of development in neighboring jurisdictions.

A representative of the Menlo Park Downtown Alliance, a coalition of downtown business and property owners, submitted comments on the draft EIR (DEIR) claiming that the EIR "must consider the potential for urban decay" within the downtown area, based on a number of newspaper articles and letters to the editor. The City asked Strategic Economics to address questions that were raised in comments on the DEIR. Strategic Economics evaluated the potential for urban decay using the methodology described above. This memorandum summarizes the findings of Strategic Economics' evaluation.

Discussion of Findings

What is Urban Decay?

The California Environmental Quality Act (CEQA) does not require the consideration of social and economic impacts. However, if a project is likely to cause economic impacts that result in significant physical impacts, such as vacancies and physical deterioration, under CEQA such economic impacts need to be analyzed.

Generally, the economic impacts of a project are considered to have a significant effect on existing retail development if the project is likely to result in stores closing and becoming vacant, and those buildings and/or properties remain vacant, deteriorate, and lead to further vacancies and deterioration. Closures of individual stores are not sufficient to cause urban decay if the vacated space is reoccupied in a reasonable amount of time.

What Happened in Redwood City and Sunnyvale? How Do Those Experiences Relate to Menlo Park?

The City asked Strategic Economics to address questions that were raised in comments on the DEIR about alleged urban decay in the nearby jurisdictions of Redwood City and Sunnyvale due to the construction of parking garages and additional residential density, policies supported by the Specific Plan. To better understand the experience in those two cities and the relevance to Menlo Park's situation, Strategic Economics reviewed published sources and conducted interviews as possible.

Redwood City Downtown

Redwood City invested heavily in downtown revitalization during the late 1990s and 2000s, prior to the adoption of the City's Downtown Precise Plan in 2011. Major projects that were recently completed in the downtown include:

- A new City Hall (completed in 1997) and renovation of the historic San Mateo County Courthouse building and public plaza (completed in 2007).
- Cinema Block (completed in 2006), an 85,000 square foot retail building anchored by a 4,200 seat Century Theaters Cinema. The project included 585 underground public parking spaces.
- Traffic calming and bicycle and pedestrian connectivity improvements, including narrowing roadways, widening sidewalks, adding pedestrian bulbouts and bicycle lanes on multiple streets, as well as adding wayfinding signage to assist visitors in finding their way around downtown.
- Jefferson Avenue Undercrossing (completed in 1999), which allows motorists, bicyclists, and pedestrians to travel underneath the Caltrain tracks without delays due to trains.
- Affordable housing development, including 353 units completed between 1997 and 2009.
- A parking management program that structures prices to encourage long-term parkers to park in public garages or in less-used parking spaces, freeing up spaces in the downtown core for short-term visitors.

Downtown Redwood City has struggled to fill vacant retail spaces. According to newspaper articles, the downtown vacancy rate rose from 5.4 percent in mid-2007, to about 13 percent by the end of 2008, then spiked at nearly 30 percent in July 2010 before falling to 19.5 percent in December 2011. (Note that because these vacancy rates are from various news articles over the years, they may not be directly comparable.) The recent reduction in vacancy rates in downtown Redwood City appears to be coinciding with the more positive trends in real estate in recent months.

The rise in vacancy rates in Redwood City coincided with the national recession and decline in the real estate market and there is no evidence that the fluctuation in vacancy rates is related to the Downtown Precise Plan, to the construction of parking garages, or to residential development in the downtown. Further the vacancies in Redwood City do not constitute urban decay as described by the courts: "a chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake".[2]

Sunnyvale Town Center
The Sunnyvale Town Center project featured in the *San Jose Mercury News* article from February 2010 is a redevelopment project of a scale much larger than anything proposed in the Menlo Park El Camino Real and Downtown Specific Plan. The project involves the redevelopment of a 34-acre, former shopping mall that has gone through multiple defaults and changed ownership several times since the late 1990s. In contrast, the Menlo Park El Camino Real and Downtown Specific Plan will establish a framework to guide private and public improvements over the next 30 years.

The article from February 2010 also discusses the impact that roadwork on Murphy Avenue was having on local businesses at the time. The roadwork discussed in the article was led by the City of Sunnyvale and included upgrades of dry and wet utilities, new sidewalks, and street lights on one block of Murphy Avenue. The project began in late 2009 and was completed in 2010. Retail sales and vacancy data for Murphy Avenue/Downtown Sunnyvale are not available. However, City staff interviewed for this memo reported that while the roadwork was in progress, the only business that closed on Murphy Avenue was a bar whose liquor license the City revoked. This does not constitute urban decay.

It should be noted that similar to Redwood City, recent announcements in Sunnyvale regarding tenancy in the Town Center appear to be coinciding with more positive trends in real estate. In the last several months at least two major tenants have announced moves into Sunnyvale Town Center. In the

[2] Bakersfield Citizens for Local Control v. City of Bakersfield, 124 Cal.App.4th 1184, 2004.

fall of 2011, Nokia Inc. moved approximately 500 employees into a new regional office located in the Town Center and in January 2012, Apple Inc. announced that it would move approximately 400 employees into a new building there as well.[3]

Potential Impacts from the Menlo Park El Camino Real and Downtown Specific Plan

This section of the memorandum summarizes potential economic impacts from the plan, including changes to parking in the downtown, changes to zoning, and the implementation of improvement projects. It should be noted that the Menlo Park El Camino Real and Downtown Specific Plan is the result of a community-driven process that included the active participation of the Chamber of Commerce and local businesses.

Potential Impacts from Changes to Parking in Downtown

Comments on the DEIR claimed that the conversion of parking plazas to other uses, including structured parking "will have a detrimental impact on local businesses." Evidence submitted in support of this claim included two letters to the editor of the Daily Post newspaper and statements of a member of the Downtown Alliance.

The letter dated September 28, 2010, incorrectly states that the overall number of parking spaces would be reduced with implementation of the Specific Plan. Because the total number of parking spots in the Plan Area would increase, it should be easier to find a parking space under the Specific Plan, not more difficult. In addition, many communities implement a "park once" strategy to encourage walking and enhance the retail experience.

In addition to adding to the overall number of parking spaces, the plan will also establish other parking management practices, such as directing long-term parkers (e.g. downtown workers) to park in the structures, with the intent of improving availability of surface parking for short-term customers.

In another letter to the editor (dated January 5, 2011), a resident of Los Altos notes "I refuse to park in a parking garage. They feel threatening, particularly at night, and even more so as the crime rate rises." It appears that there is little research on the impact of the transition to parking structures from surface parking lots on transportation and retail behaviors. This may be because it is well established that many people will actually park in structures and there are many examples of thriving shopping centers and downtown areas (e.g. downtown Palo Alto, downtown Mountain View, Bay Street in Emeryville) that rely on structured parking. In addition, security of parking structures is a design issue that can be addressed by measures such as good lighting and the presence of security staff.

Based on the success of downtowns where structured parking is provided, while individual shoppers may object to structured parking, there is no substantial evidence that structured parking, by itself, will lead to closures of retail stores and to urban decay.

Potential Impacts from Zoning Changes and Public Improvements

The Menlo Park El Camino Real and Downtown Specific Plan is not an individual large development project that could draw business away from existing retail outlets, but rather it is a zoning and planning framework that will guide incremental development over decades and is intended to enhance the attractiveness of the downtown and to increase retail sales for existing businesses. The Specific Plan does not incentivize large-format or big box uses, and most parcels within the plan area are small and owned by disparate entities, making them unlikely to develop as new large-format stores.

[3] Azevedo, Mary Ann, "Apple Moving 400 to Sunnyvale Town Center," Silicon Valley / San Jose Business Journal, February 8, 2012.

There is widespread recognition that increasing the number of people in a shopping area will increase retail sales. For example, a recent article on how Mountain View revitalized its downtown includes the following advice:

> The lifeblood of any retail business is its customers. Without enough customers, the business will wither and die. Traditional downtowns knew this and brought enough people together in a compact place to support shops, restaurants, and other services. Remember, the more people living and working in your downtown, the fewer people and cars that need to be imported from other areas for a business to survive. [4]

Public improvements (such as sidewalk extensions or parking garages) may have short-term construction-related effects on businesses. However, as noted in Section G.5 of the Specific Plan, future implementation of public improvements should limit impacts on nearby businesses and other uses, such as by prohibiting multiple major projects occurring in close proximity at the same time. Nearby jurisdictions of Mountain View and Palo Alto have used a variety of approaches to reduce potential impacts of construction projects on businesses and residents, including ensuring that entrances to businesses remain clear, providing temporary signage indicating businesses remain open and accessible, and implementing advertising and education programs to inform residents how to access businesses.

The market analysis conducted in conjunction with the planning process concluded that streetscape and pedestrian improvements could enhance the success of retail in the plan area. In addition the market analysis concluded that an increase in residents or office workers in the downtown area, as envisioned in the Specific Plan, is likely to have a positive impact on retail spending.

In fact, investments in the public realm can play a significant role in enhancing a shopping district. An emerging body of research shows that the types of amenities and improvements proposed in the Specific Plan have a direct impact on property values and consumer spending, both indicators of a vital downtown. Examples of public investments that may enhance the Specific Plan area are:

- Streetscape Improvements: Streetscaping has been found to have a considerable impact on property values and consumer spending. For example, a Philadelphia study found that new tree plantings are associated with a 9 percent increase in property values.[5] In Cleveland, Ohio, landscaping with good aesthetic value was also shown to increase average commercial office rental rates by 7 percent.[6] In a national study, business districts with street trees were found to generate 9 to 12 percent more consumer spending than districts without trees.[7]

- Walkable Streets: Public investments that improve walkability and quality of life are also shown to have a significant impact on property values. One recent national study looked at the relationship between property values and walkability as measured by "Walkscore," an index that ranks communities based on how many businesses, parks, theaters, schools and

[4] Liedstrand, Bruce, "How Mountain View revived its downtown: A short, step-by-step guide to revitalization of a town once known as a dormitory for high-tech workers." New Urban Network, March 30, 2011.
[5] Wachter and Gillen, "Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia," The Wharton School, University of Pennsylvania (April 2006).
[6] Laverne, R.J., and K. Winson-Geideman. 2003. "The Influence of Trees and Landscaping on Rental Rates at Office Buildings." Journal of Arboriculture 29, 5: 281-290.
[7] Wolf, K.L. 2005. "Business District Streetscapes, Trees and Consumer Response." Journal of Forestry 103, 8: 396-400.

other destinations are within walking distance.[8] The study found that office and retail properties command a 54 percent price premium over properties with lower Walkscores.[9]

[8] http://www.walkscore.com/

[9] Pivo, Gary, and Fisher Jeff. "Walkability Premium in Commercial Real Estate Investments." (Working Paper) Responsible Property Investment Center, University of Arizona. Benecki Center for Real Estate Studies, Indiana University. 2010.

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