

C. TRANSPORTATION AND CIRCULATION

This section evaluates potential transportation and circulation impacts at a program-level of analysis (see discussion in Chapter III, Project Description) that may result from implementing the City of Mountain View Draft General Plan and the Greenhouse Gas Reduction Program (GGRP), the proposed project. The evaluation of environmental effects presented in this section focuses on the potential transportation and circulation impacts associated with the full range of transportation concerns, including vehicle traffic circulation, transit use, bicycle circulation, and pedestrian circulation. Mitigation measures to reduce or eliminate potential significant impacts of the project are included, where feasible and necessary. Discussion is also provided when mitigation measures are determined to be infeasible.

The analysis is based on an evaluation of the City's General Plan adopted in 1992, other relevant circulation plans, and an assessment of the Mobility Element and mobility policies in other elements of the Draft General Plan (the proposed project). This analysis recognizes the programmatic nature of the project and therefore uses system wide performance indicators developed using the City of Mountain View's Travel Demand Forecasting (TDF) model and CEQA best practices. A series of technical memorandums were prepared by Fehr & Peers traffic consultants and are included in Appendix B of this EIR. Appendix B is the primary source of technical information for this chapter of the Draft EIR and summarizes the approach used to evaluate the base year and future year transportation system for the project. Appendix B also includes analysis of the 1992 General Plan in 2030, which is also discussed in the Alternatives section of this environmental document.

1. Setting

The City of Mountain View is located in Santa Clara County. The City is approximately 11 miles northwest of downtown San Jose and approximately 32 miles southeast of San Francisco. Figure IV.C-1 illustrates the study area and its relationship to the surrounding road system.

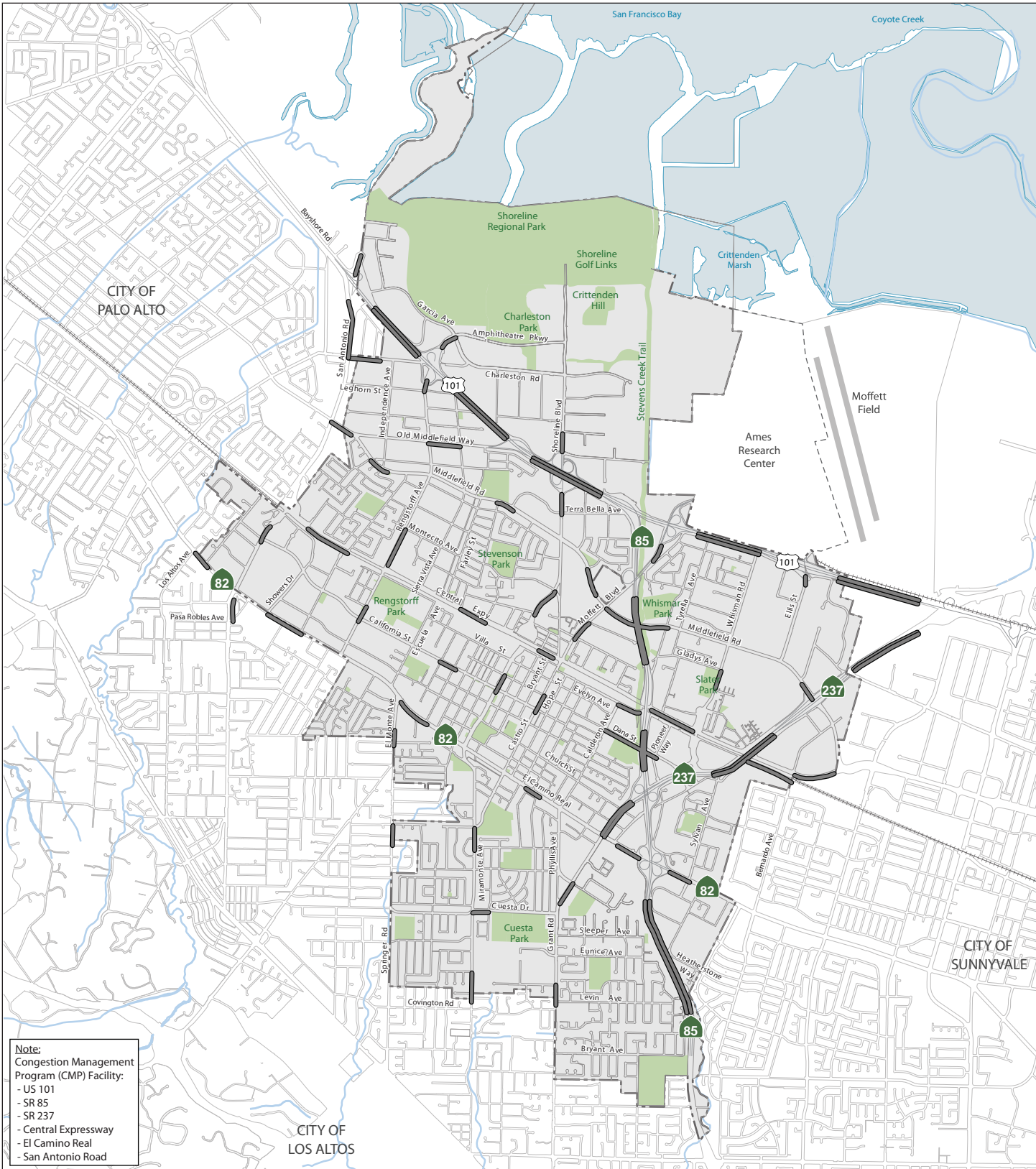
Mountain View has a diverse and high quality, multi-modal transportation system that connects to the surrounding region and the rest of the City through a network of roads, transit services, trails, and bicycle and pedestrian facilities. The Mobility Chapter of the Draft General Plan includes goals, policies, and actions that respond to existing conditions and projected jobs and population growth, and are aimed at enhancing Mountain View's long-standing strategy of supporting multi-modal transportation options and compact development.

This Setting section includes descriptions of the scope of analysis, methods used for the analysis, existing setting for transportation and circulation issues, assumptions regarding future transportation and circulation conditions, and regulatory context. Transportation and circulation impacts that would likely occur with implementation of the project are analyzed and documented following the Setting section, as described below.

a. Scope of Study. This section of the Draft EIR describes the potentially significant adverse impacts of the Draft General Plan on the surrounding transportation system and recommends mitigation measures in compliance with the California Environmental Quality Act (CEQA) and assesses the Draft General Plan's consistency with transportation-related regulatory goals and policies. Impacts of the project are evaluated for an increase in vehicle miles traveled (VMT), increased congestion on specified roadway and freeway segments, impacts to roadways in adjacent jurisdictions, impacts to transit, bicycle, and pedestrian facilities, increased air traffic, and impacts to emergency access.

(1) Roadway and Freeway Segments Studied. This transportation analysis evaluated the operations of 47 of the most important arterial and expressway roadway segments that affect Citywide circulation within and near Mountain View. These study locations were selected in consultation with City staff and were based on select zone analysis from the City of Mountain View travel demand model that indicated critical travel patterns within the community. The locations of these roadway segments are presented on Figure IV.C-1 and listed below:

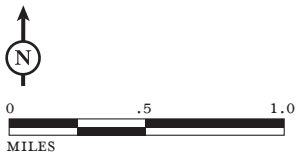
1. Amphitheatre Pkwy. between Charleston Rd. and NB US 101 Ramps
2. California St. between Escuela Ave. and Shoreline Blvd.
3. Castro St. between Evelyn Ave. and California St.
4. Central Expy. between San Antonio Rd. and Rengstorff Ave.*
5. Central Expy. between Rengstorff Ave. and Shoreline Blvd.*
6. Central Expy. between Shoreline Blvd. and Moffett Blvd.*
7. Central Expy. between SR 85 and Whisman Ave.*
8. Central Expy. between Bernardo Ave. and Middlefield Rd.*
9. Charleston Rd. between San Antonio Rd. and Rengstorff Ave.
10. Cuesta Dr. between Miramonte Ave. and Grant Rd.
11. Dana St. between Calderon Ave. and Pioneer Wy.
12. El Camino Real between Los Altos Ave. and San Antonio Rd.*
13. El Camino Real between Showers Dr. and Rengstorff Ave.*
14. El Camino Real between El Monte Ave. and Shoreline Blvd.*
15. El Camino Real between Phyllis Ave. and Castro St.*
16. El Camino Real between Grant Rd. and SB SR 85 Ramps*
17. El Camino Real between NB SR 85 Ramps and Sylvan Ave.*
18. Ellis St. between SB US 101 Ramps and Middlefield Rd.
19. El Monte Ave. between El Camino Real and Springer Rd.
20. Evelyn Ave. between Calderon Ave. and SB SR 85 Ramp
21. Evelyn Ave. between SR 237 and Bernardo Ave.
22. Grant Rd. between Phyllis Ave. and Cuesta Dr.
23. Grant Rd. between Cuesta Dr. and Covington Rd.
24. Middlefield Rd. between San Antonio Rd. and Old Middlefield Wy.
25. Middlefield Rd. between Old Middlefield Wy. and Independence Ave.
26. Middlefield Rd. between Sierra Vista Ave. and Terra Bella Ave.
27. Middlefield Rd. between Shoreline Blvd. and Moffett Blvd.
28. Middlefield Rd. between Moffett Blvd. and Tyrella Ave.
29. Middlefield Rd. between Ellis St. and SR 237
30. Miramonte Ave. between El Camino Real and Cuesta Dr.
31. Miramonte Ave. between Cuesta Dr. and Covington Rd.
32. Moffett Blvd. between SB US 101 Ramps and NB SR 85 Ramp
33. Moffett Blvd. between Middlefield Rd. and Central Ave.
34. Old Middlefield Wy. between Rengstorff Ave. and SB US 101 Ramps
35. Rengstorff Ave. between SB US 101 Ramps and Old Middlefield Wy.
36. Rengstorff Ave. between Montecito Ave. and Central Expy.
37. Rengstorff Ave. between Central Expy. and California St.
38. San Antonio Rd. between Bayshore Rd. and NB US 101 Ramps* (Palo Alto)
39. San Antonio Rd. between SB US 101 Ramps and Charleston Rd.* (Palo Alto)
40. San Antonio Rd. between Central Expy. and California St.*



Note:
 Congestion Management Program (CMP) Facility:
 - US 101
 - SR 85
 - SR 237
 - Central Expressway
 - El Camino Real
 - San Antonio Road

LSA

FIGURE IV.C-1



- City of Mountain View
- Roadway and Freeway Study Locations

*City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Roadway and Freeway Study Locations*

SOURCES: CITY OF MOUNTAIN VIEW; FEHR & PEERS, NOVEMBER 2011.
 I:\CMT0801 Mtn View\figures\EIR\Fig_IVC1.ai (11/4/11)

This page intentionally left blank.

41. San Antonio Rd. between California St. and Paso Robles Ave.* (Los Altos)
42. Shoreline Blvd. between Charleston Rd. and NB US 101 Ramps
43. Shoreline Blvd. between SB US 101 Ramps and Middlefield Rd.
44. Shoreline Blvd. between Montecito Ave. and Central Expy.
45. Shoreline Blvd. between Central Expy. and California St.
46. Springer Rd. between El Monte Ave. and Cuesta Dr.
47. Whisman Rd. between Middlefield Rd. and Central Expy.

* Denotes Congestion Management Program (CMP) facility

This study also included evaluation of the following freeway segments:

1. SR 85 between Fremont Ave. and El Camino Real*
2. SR 85 between SR 237 and Evelyn Ave.*
3. SR 85 between Evelyn Ave. and Moffett Blvd.*
4. US 101 between SR 237 and Ellis St.*
5. US 101 between Ellis St. and Moffett Blvd.*
6. US 101 between SR 85 and Old Middlefield Wy.*
7. US 101 between Old Middlefield Wy. and Rengstorff Ave.*
8. US 101 between Rengstorff Ave. and San Antonio Rd.*
9. SR 237 between El Camino Real and SR 85*
10. SR 237 between Sylvan Wy. and Middlefield Rd./ Maude Ave.*
11. SR 237 between Middlefield Rd./ Maude Ave. and US 101*

*Denotes Congestion Management Program (CMP) facility

(2) Mountain View Travel Demand Forecasting (TDF) Model and 2009 Base Year. The City's TDF model was updated as part of the Draft General Plan update process using the most recent land use and transportation information available. The updated TDF model was used for this Draft General Plan EIR to develop and refine the project description included in the Draft General Plan Notice of Preparation (NOP) circulated in January 2011 and conduct the environmental analysis. The TDF model 2009 base year provides the most recent land use and transportation information available at the time of the NOP; thus, the existing roadway machine counts, transit, bicycle, and pedestrian systems identified herein are based on transportation conditions from 2009. Delaying the TDF model validation until after the Draft General Plan project description was developed for the NOP would have substantially delayed the analytic process without substantially improving the quality of the environmental analysis.

(3) Project Impacts and Scenarios Evaluated. The City of Mountain View TDF model was used to evaluate impacts of the project for a number of transportation measures including: increased vehicle miles traveled (VMT), increased congestion at specified roadway and freeway segments, impacts to roadways in adjacent jurisdictions, impacts to transit, bicycle, and pedestrian facilities, increased air traffic, and impacts to emergency access for the following scenarios:

Scenario 1: *Existing Conditions 2009* – Existing daily roadway segment volumes obtained from counts. Citywide daily VMT and adjacent jurisdiction analysis obtained using the base year (2009) travel demand forecasting model assuming the existing land use and roadway system.

Scenario 2: *Existing Plus Draft General Plan Conditions 2009* – Existing Plus Draft General Plan (and GGRP, while not explicitly mentioned in the title of this scenario, implementation of the GGRP is included as part of the proposed project) daily roadway segment volumes, citywide daily VMT and adjacent jurisdiction analysis based on the changes in the Draft General Plan land use, assuming that the existing roadway system remains unchanged and the GGRP is implemented. No growth was assumed for any other land uses within other jurisdictions (e.g., Moffett Federal Airfield and NASA Ames Research Center) other than the City of Mountain View.

Scenario 3: *Draft General Plan Conditions 2030* – Year 2030 cumulative daily roadway segment volumes, citywide daily VMT and adjacent jurisdiction analysis based on Draft General Plan land use and GGRP implementation for Mountain View and the Association of Bay Area Governments (ABAG) land use projections for adjacent jurisdictions and planned and funded transportation system improvements in the *Valley Transportation Plan (VTP) 2030*.¹

The findings of the *Sunnyvale West Neighborhood Association v. City of Sunnyvale Council (2010)*, indicates that an Existing Plus Project scenario should always be included, even in cases where the analysis may not match the long-term planning horizon of the general plan land use growth and may not provide decision-makers with relevant information to the general plan project, such as analyzing the impacts of a long range development plan that is projected to take 20 years to build out beyond the Existing Conditions. Thus, to address this new case law, this Draft General Plan and GGRP Draft EIR includes the Existing Plus Draft General Plan Conditions scenario.

b. Methods. The methods used to evaluate the traffic conditions are described in the following sections. This discussion includes descriptions of the data requirements, analysis methods, and applicable level of service standards.

(1) Data Requirements. Roadway and freeway lane configurations, daily traffic counts, public transit routes and facility locations, and bicycle and pedestrian facilities were collected.

(2) Mountain View Travel Demand Forecasting (TDF) Model. The Mountain View travel demand forecasting (TDF) model was recently updated as part of continued planning efforts to address transportation infrastructure needs and to assist in the City's General Plan Update. The intent of the City's TDF model update is to improve the accuracy of the model for local application while maintaining consistency with the structure of the Santa Clara Valley Transportation Authority (VTA) regional TDF model. This update allows regional travel patterns and behavior to be accounted for in the focused area of Mountain View, which has become more important due to the recent legislative requirements associated with greenhouse gas quantification and impacts. Both the base (2009) and future (2030) year land use and roadway network inputs were updated in the TDF model.

The model assigns vehicles to the roadway network for a typical weekday, as well as during the morning (AM) peak one-hour and evening (PM) peak one-hour. At present, the Mountain View travel demand model is the best tool available for developing long-range traffic forecasts for streets and highways within greater Mountain View and to estimate daily citywide performance indicators such as vehicle hours traveled (VHT), vehicle trips (VT), and vehicle miles traveled (VMT). The technical

¹ Valley Transportation Authority, 2005. *Valley Transportation Plan 2030*. February.

memorandum, entitled *Mountain View Travel Demand Model Update* (Fehr & Peers, June 2011), summarizes the results of the sub-area TDF model development validation and Year 2030 land use and network assumptions (see Appendix B2).

As part of the City of Mountain View TDF model update, the following two related tasks were undertaken to adjust and improve model sensitivity to:

- Land Use Strategies
- Transportation Demand Management (TDM) Strategies

Trip Adjustments for Land Use Strategies. Urban development patterns directly influence vehicle travel demand. As such, the City of Mountain View is employing a variety of compact growth measures, plans, and techniques for redeveloping existing areas and for infill development. Compact growth development patterns encourage walking, biking, and transit use, and typically reduce demand for vehicle travel.

The updated City of Mountain View TDF model includes trip adjustments due to land use variables such as density, diversity, design and destination (the 4Ds) to enhance its sensitivity to the built environment. By quantifying changes in the 4Ds, the process adjusts the number of vehicle trips based on a set of elasticities that relate changes in vehicle trips to changes in the 4D inputs. These effects are typically not captured in a standard four step travel demand model. This enhancement provides policy makers with more reliable forecasts of the likely effects of 4Ds and their policies.

Recent research has been conducted to determine the vehicle trip effect, including change in VMT, due to the 4Ds.² The technical memorandum *4D Enhancement User's Guide* provides background on the 4Ds and describes in detail how the City of Mountain View TDF model script was enhanced to include the 4Ds (See Appendix B3). The 4Ds and their affect on vehicle trips are summarized below:

- **Net Residential and Employment Density.** This variable is measured in dwelling units or employment per acre. A wide body of research suggests that, all else being equal, denser developments generate fewer vehicle-trips per dwelling unit than less dense developments.
- **Jobs/Housing Diversity.** Research suggests that having residences and jobs in close proximity will reduce the vehicle-trips generated by each use by allowing some trips to be made on foot or by bicycle. This variable measures how closely the neighborhood in question matches the “balanced” mix of jobs and households, which is assumed to be the ratio of jobs to households measured across the region as a whole.
- **Walkable Design.** Many pedestrian and bicycle improvement projects are based on the assumption (supported by research findings) that improving the walking/biking environment will result in more non-auto trips and a reduction in auto travel. Although, the walkable design variable, when isolated, usually has the weakest influence on the overall adjustment of the D variables, it also seems to have important synergistic effects in conjunction with density and diversity.
- **Destination Accessibility.** Research shows that, all else being equal, households situated near regional centers of activity generate fewer auto trips and VMT. When comparing different potential sites for the same type of development, this variable is very important. This variable can

² Ewing, R., and R. Cervero, 2001. “Travel and the Built Environment.” *Transportation Research Board*, Vol. 1780, pp. 87-114.

be quantified by estimating the total travel time to all destinations/attractions. Sensitivity to variations in regional accessibility is characteristic of most TDF models and the City of Mountain View TDF model, based on tests described in the validation and 4D Enhancement User’s Guide technical memorandum (Fehr & Peers, June 2011; See Appendix B3), appears to adequately account for this D variable.

Trip Adjustments for Transportation Demand Management (TDM) Strategies. In addition to a land use plan, the Draft General Plan contains a number of transportation policies, programs, and initiatives intended to help reduce per service population vehicle trips, strengthen Mountain View’s alternative transportation network, and encourage travelers to shift to other travel modes. A menu of TDM policies and potential measures and the effect of these strategies was investigated and reported in the technical memorandum entitled *Mountain View General Plan Update Trip Reduction Impacts* (Nelson\Nygaard, May 2011 – See Appendix B4).

The trip adjustment effects of TDM strategies are not a part of the 4-D equations. However, Fehr & Peers has incorporated into the model the ability to take daily and peak hour TDM adjustments for commute and non-commute trip purposes. The TDM reductions are taken after the 4-D reductions and include floor (minimum) and ceiling (maximum) limits to avoid overstating the trip reductions due to the combined effects of the 4D and TDM reductions.

The existing and new TDM commute trip reductions (e.g., the home-based-work trip purpose) were identified by Nelson\Nygaard across specific geographic areas of the City (Figure IV.C-2), and were applied by Fehr & Peers in the model as follows:

- Vehicle trips were extracted by trip purpose (e.g., home-based work, home-based shop, non-home based, etc.) for each geographic area identified in Appendix B5 and Figure IV.C-2.
- The commute (home-based work) trip reductions were applied to existing and net new home-based drive alone trips. Net new trips are the additional trips beyond the existing trips.
- Aggregate reductions of commute (home-based work) trips (e.g., existing plus net new trips) were calculated for each geographic area as presented in Table IV.C-1.

Table IV.C-1: City of Mountain View TDM Trip Reduction Summary

Geographic Area	Time Period	Year 2009 Scenarios	Year 2030 Scenario
		Existing Plus Draft General Plan	Draft General Plan
North Bayshore	Daily	3.5%	3.5%
	Peak Hour	12.6%	12.7%
Whisman/Pioneer	Daily	2.6%	2.5%
	Peak Hour	9.3%	8.9%
El Camino/San Antonio	Daily	1.1%	1.1%
	Peak Hour	3.9%	3.8%
Downtown	Daily	2.2%	2.1%
	Peak Hour	7.8%	7.7%
Remainder of City	Daily	0.8%	0.8%
	Peak Hour	3.0%	3.0%

Note: Home-based work drive-alone trip reductions percentages shown for each area of the City relative to Existing Conditions. In other words, these TDM trip reductions are based on additional policies that further modify peak and daily trip rates in the City of Mountain View. Trip reduction percentages would be lower after accounting for other trip purposes.

Source: Fehr & Peers, June 2011.

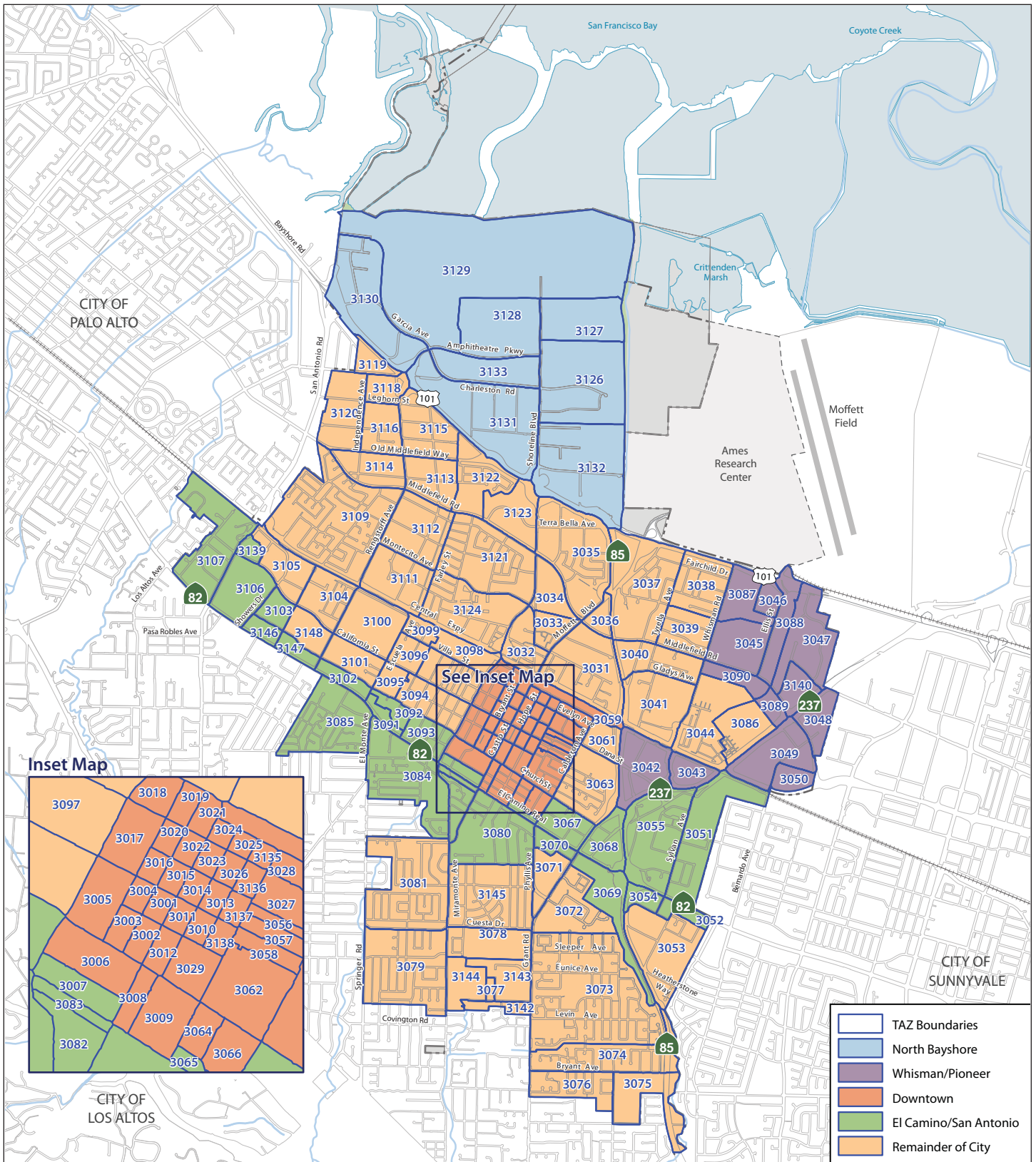
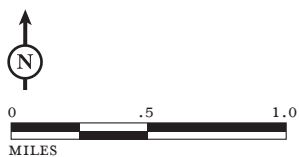


FIGURE IV.C-2

LSA



- City of Mountain View
- Traffic Analysis Zone (TAZ)

*City of Mountain View
Draft General Plan and
Greenhouse Gas Reduction Program EIR
TDM Reduction Areas*

This page intentionally left blank.

(3) Measurement of Vehicle Miles Traveled. Daily vehicle miles traveled, are calculated using the TDF model. Daily VMT is often quantified in terms of a per capita rate (residents and workers) for purposes of evaluating the effect of future land use changes. The combination of residents and employees is referred to as the “Service Population” or SP.

VMT measurement has one primary limitation: it is not directly observed and therefore cannot be directly measured. It is calculated based on the number of cars multiplied by an assumption of the distance traveled by each car. The amount of VMT can be obtained through extensive surveys of residents, visitors, and employees, or through the use of a validated travel demand model that estimates vehicle demand. VMT estimates derived from TDF models are dependent on the level of detail in the network and input from other known variables related to vehicle movement through the network. The volume of traffic and distance travelled depends on land use types, density/intensity, and distribution patterns as well as the supporting transportation system.

The City’s travel demand forecasting (TDF) model was used to develop citywide daily VMT. The simplest calculation of VMT is the number of cars multiplied by the distance traveled by each car, there are other VMT related performance measures that can be reported. Based on the state of the practice technique for determining the VMT estimates for municipalities, the following assumptions were used to allocate VMT to the City of Mountain View:

- **Internal-internal (II):** All daily trips made entirely within the Mountain View city limits.
- **One-half of internal-external (IX):** One-half of daily trips with an origin within Mountain View city limit and destination outside of Mountain View. This assumes that Mountain View shares half the responsibility for trips traveling to other municipalities.
- **One-half of external-internal (XI):** One-half of daily trips with an origin outside of Mountain View city limit and destination within Mountain View. Similar to the IX trips, Mountain View shares the responsibility of trips traveling from other municipalities.
- **External-external (XX):** Trips through the city are not included. This approach is consistent with the concept used for the IX and XI trips. Therefore, the XX VMT would be assigned to other municipalities such as Palo Alto, Sunnyvale, and San Jose.

Because we have included a portion of the XI trips (typically employment commute trips), the per service population VMT were calculated using the total residential population and employment within the City of Mountain View. Furthermore, this approach quantifies the City-related VMT so that the City staff and decision makers can develop polices to alter VMT and greenhouse gas (GHG) emissions.

(4) Motor Vehicle Level of Service. Traffic operations are traditionally measured using a qualitative measure called level of service (LOS). LOS is a general measure of traffic operating conditions whereby a letter, from A (the best) to F (the worst), is assigned. These levels of service represent the perspective of drivers and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver. Table IV.C-2 describes the characteristics of each LOS designation for motor vehicle traffic. For purposes of this EIR, roadway segment LOS was analyzed per the procedures in the *Highway Capacity Manual* (Transportation Research Board, 2000).

Table IV.C-2: Qualitative Description of Level of Service

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

Source: Fehr & Peers and Highway Capacity Manual, Transportation Research Board, 2000.

This LOS method does not consider the potential impact on walking, bicycling, and transit. Pedestrians, bicyclists, and transit riders are all users of the roadway system but may not be fully recognized in the traffic operations analysis and the calculation of LOS. Identifying the need for roadway improvements based on the resulting roadway LOS, while necessary at times, can also have unintended impacts to other modes, such as increasing the walking time for pedestrians. In evaluating the roadway system, a lower vehicle LOS may be desired when balanced against other community values related to resource protection, social equity, economic development, and consideration of pedestrians, bicyclists, and transit users.

The City of Mountain View has historically used LOS to evaluate morning and evening peak hour traffic operations for individual development projects. The City also uses LOS to help determine roadway infrastructure needs based on the defined level of service standard in the 1992 General Plan Circulation Element during peak periods.

(5) Daily Roadway and Freeway Segment Forecasts and Operations. Roadway segment forecasts were developed using guidelines published in National Cooperative Highway Research Program (NCHRP) Report 255³ for converting raw model results into forecasted volumes. The difference forecast method is based on existing counts and the difference between the model's

³ National Cooperative Highway Research Program (NCHRP). *Report 255: Highway Traffic Data for Urbanized Area Project Planning and Design*. Washington, D.C.: National Academy Press, 1982.

baseline and future volumes. This method normalizes the model projections based on the accuracy of the model validation and the existing roadway conditions.

Roadways were analyzed by comparing the daily volume to threshold volumes based on roadway type as presented in Table IV.C-3. Daily roadway capacity is an indicator used to evaluate roadway segment operations at the General Plan planning-level. This daily analysis approach is consistent with the level of planning detail addressed in a General Plan where specific development details and locations are not typically known. This approach helps to evaluate and determine the roadway cross-sections (e.g., two, four or six travel lanes) rather than detailed operational issues at the intersection level, which are dependent on the number of turn lanes, signal timing, adjacent driveway operations, and development details and locations that are not typically known at the time of a program level general plan analysis. In addition to being the most feasible level of analysis for program level general plan environmental evaluation, daily operations better indicate the use of a roadway over a longer period of time outside the traditional peak hours and account for the non-peak times when roadways are substantially underutilized.

It is important to note that daily volume thresholds are used for General Plan and traffic during peak periods may result in worse operations than illustrated by the daily LOS. Thus, the City of Mountain View has traditionally used peak hour intersection operations during the morning and evening peak hours to evaluate the effect individual projects have on the transportation system. Therefore, the daily volume thresholds are used for the General Plan, with the understanding that traffic during peak periods may result in worse operations than illustrated by the daily LOS. As specific development details and locations are known (e.g., precise plans or development projects) a project level analysis will evaluate the transportation system (e.g., vehicle, transit, bicycle, and pedestrian systems) including traffic operations along roadway segments to ensure that the roadway system is optimized for steady, safe, and orderly traffic flow operations, and balances the need of all users of the transportation system.

Currently, the City has adopted LOS D as the minimum overall performance measure for City-controlled roadways, except those roadways within the Downtown and San Antonio Center areas for which the adopted standard is LOS E. The City has also adopted LOS E as the minimum overall performance measure for Congestion Management Program (CMP) monitored roadways (e.g., Central Expressway, El Camino Real, and San Antonio Road).

The Congestion Management Program is discussed in greater detail later in the Regulatory Setting section, under the Valley Transportation Authority (VTA).

Table IV.C-3: Daily Roadway Capacity Summary

Roadway Type	Maximum Daily Volume ^{1,2} (both directions except freeway segments)				
	LOS A	LOS B	LOS C	LOS D	LOS E
2-Lane Freeway	13,320	24,120	34,560	42,840	48,120
3-Lane Freeway	20,400	36,960	52,800	64,920	72,720
4-Lane Freeway	27,840	50,400	71,400	87,360	97,680
5-Lane Freeway	39,360	64,440	90,600	110,040	122,760
2-Lane Undivided Arterial ³			10,920	20,040	21,240
2-Lane Divided Arterial ³			11,640	21,120	22,440
3-Lane Arterial (2 lanes in one direction) ³			15,720	24,720	26,040
4-Lane Undivided Arterial ³			21,000	32,880	34,680
4-Lane Divided Arterial ³			23,040	42,480	44,880
5-Lane Divided Arterial ³			27,120	53,160	56,040
6-Lane Divided Arterial ³			32,520	63,840	67,200
8-Lane Divided Arterial ³			44,640	85,320	89,640
2-Lane Collector ⁴			3,120	6,240	9,360

- ¹ The LOS capacity thresholds are based on HCM 2000 method and are generally appropriate for suburban communities.
- ² Based on available roadway counts, non-directional peak hour traffic volumes are 1/12th (~8%) of the daily traffic volume. All volumes are approximate and assume ideal roadway characteristics.
- ³ LOS A and B are not achievable for arterial roadways using the HCM 2000 methods.
- ⁴ For collector roadway segments, the capacity limitation is related to neighborhood quality of life rather than the physical carrying capacity of the road. This assumes a standard suburban neighborhood, 40-foot roadway width, and 25 mile per hour speed limit with normal speed violation rates.

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Freeway Segments. Freeway segments were also evaluated using daily planning thresholds delineated in Table IV.C-3. Although freeway analysis is typically conducted using density, it is not possible to accurately project future travel speeds on freeway segments in 2030. Thus, planning volume thresholds were used to identify operations on freeway segments within the City of Mountain View. The Congestion Management Program (CMP) maintains an LOS E standard for CMP-monitored roadways, which include US 101, I-280, SR 237 and SR 85. Caltrans strives to maintain facilities at the LOS C/D cusp per its *Guide for the Preparation of Traffic Impact Studies* (December 2002).

Roadway Segments Outside the City. Operations of roadway segments outside the City of Mountain View boundaries and in adjacent jurisdictions were also reviewed to determine potential impacts of the Draft General Plan. A roadway segment within an adjacent jurisdiction is considered to be deficient if the future volume-to-capacity (V/C) ratio is 1.0 or greater during the AM and PM peak one-hour periods under existing and future conditions. Given the large population and employment projected to reside in the region, and the complex travel patterns, only a portion of trips on any roadway segment in adjacent jurisdictions are expected to have originated from a resident or job within the City of Mountain View. The adjacent jurisdiction roadway segment impact thresholds were selected because the thresholds are identical to the criteria developed and used by the City of San Jose recent General Plan update and therefore provides a consistent approach to evaluate adjacent jurisdiction analysis. The 25 percent threshold represents a level of increase that would be a noticeable change in traffic due to the proposed Mountain View General Plan land use changes.

Freeway facilities operated by Caltrans and expressways operated by the County of Santa Clara are regarded as adjacent jurisdictions. Operations of these facilities, which include facilities that are part of VTA’s Congestion Management Program, are evaluated according to the adjacent jurisdiction impact criteria.

c. Existing Transportation Setting. The following section generally describes the transportation system in the area, including key facilities of the roadway, transit, bicycle, and pedestrian networks.

(1) Travel Characteristics. Transportation in Mountain View includes an array of components. These range from shared-use bicycle and pedestrian paths meandering along the Stevens Creek Trail to tree-lined streets in the Downtown neighborhood to Caltrain service and the VTA light rail lines extending from Castro Street to the cities of Campbell, San Jose and Milpitas. This section examines historical trends and current characteristics of travel in Mountain View.

Table IV.C-4 compares the commute characteristics of Mountain View residents to those of Santa Clara County, the State of California, and the United States (U.S.) as a whole based on 2000 Census data (or the data available at the time this Draft EIR was prepared as noted in the “source” of the information presented in a table). Approximately 87 percent of Mountain View residents commute by automobile, which is slightly lower compared to Santa Clara County (90 percent) but consistent with the State and national trends of 87 and 88 percent, respectively. Mountain View commuters tend to carpool less compared to the rest of the County, the State, and the nation as whole.

Table IV.C-4: Existing Conditions: Mountain View Residents Journey to Work Travel Characteristics

Travel Characteristics	Mountain View	Santa Clara County	California	United States
<i>Commute Mode Choice</i>				
Single-Occupant Automobile	78.3%	77.4%	71.9%	75.8%
Carpool	8.4%	12.3%	14.6%	12.2%
Commute by Automobile ¹	86.7%	89.7%	86.5%	88.0%
Public Transit	4.8%	3.6%	5.2%	4.7%
Bicycle	2.0%	1.2%	0.8%	0.4%
Walk	2.2%	1.8%	2.9%	2.9%
Other Means	0.9%	0.6%	0.8%	0.7%
Work at Home	3.4%	3.1%	3.8%	3.3%
<i>Other Commute Related Data</i>				
Percentage who work outside county of residence	18%	12%	17%	23%
Percentage who leave for work between midnight and 7:00 am	15%	25%	32%	31%
Percentage who leave for work between 7:00 am and 9:00 am	57%	50%	45%	47%
Average Travel Time to Work	23.4 minutes	28.1 minutes	29.3 minutes	27.0 minutes

¹ Commute by Automobile is subtotal including Single-Occupant Automobile and Carpool mode choice.

Source: Census 2000, Summary File 3. Based on available Census information as of September 2011.

Mountain View transit usage is higher than transit usage in Santa Clara County as a whole, but is comparable to State and national data. Mountain View's share of bicycle commuters is about twice that of the County and the State. Compared to the nation, Mountain View's share of bicycle commuters is five times as high. Approximately 2 percent of Mountain View and County residents walk to work, which is lower than the 3 percent of walk commuters for the State and nation. The 2000 Census shows that the share of Mountain View workers who work at home is comparable to data from the County, State, or nation. Compared to County data, Mountain View data shows higher percentages of residents working outside their county of residence, while Mountain View's data is similar to those for the State or nation. However, Mountain View's average commute time is lower than the average commute time of 28 minutes for the County, State, and nation. Generally, a larger percentage of Mountain View workers leave for work during the typical morning commute period compared to the County, State and nation for the same time period.

(2) Daily Citywide Vehicle Miles Traveled. Daily vehicle miles traveled, are calculated using the TDF model. Daily VMT is often quantified in terms of a rate per resident and employee for purposes of evaluating the effect of future land use changes. The combination of residents and employees is referred to as the "service population." Based on the TDF model results, the City's daily transportation performance indicators under existing conditions (2009) are as follows:

- 2,452,696 vehicle miles traveled per day
- 18.26 vehicle miles per service population per day

(3) Existing Roadway Network. Regional access to the City of Mountain View is provided by a combination of several freeways, expressways, and State highways. Local access to the City is provided by a variety of arterial roads, collectors and local streets. Below is a summary of the City's existing 1992 General Plan roadway classifications by function only.

Freeways. Freeways are facilities designed solely for traffic movement, providing no access to abutting properties, and designed to separate all conflicting traffic movements through the use of grade-separated interchanges.

Highway 101 is a north-south hybrid highway/freeway extending from the city of Los Angeles through Mountain View and San Francisco to Oregon. Through Mountain View, Highway 101 is aligned generally in a northwest-southeast orientation and is entirely a freeway. The freeway includes three mixed-flow lanes and one high occupancy vehicle (HOV) lane per direction except for a short section at State Route 85 where two HOV lanes are provided. HOV lanes, also known as diamond or carpool lanes, have restricted use to vehicles with two or more persons (carpools, vanpools, and buses) or motorcycles during the peak morning (5:00 am to 9:00 am) and evening (3:00 pm to 7:00 pm) commute periods. Through the City, northbound is generally the peak morning commute direction. Highway 101 extends through Mountain View from the western city limits near San Antonio Road to Ellis Street near the eastern city limits. Access to and from Highway 101 is provided via interchanges with San Antonio Road, Rengstorff Avenue/Amphitheatre Parkway, Shoreline Boulevard, State Route 85, Moffett Boulevard, Ellis Street and State Route 237.

Interstate 280 is a north-south freeway extending from the Highway 101 interchange in the city of San Jose north to San Francisco. The freeway includes four to five mixed-flow lanes per direction with HOV lanes north of the Interstate 280/Interstate 880/State Route 17 interchange. The peak commute directions on Interstate 280 are northbound during the morning and southbound during the evening. Interstate 280 is south and southwest of the city of Mountain View in Los Altos Hills.

State Route 85 is a north-south freeway extending from the State Route 85/Highway 101 interchange in Mountain View to the State Route 85/Highway 101 interchange in south San Jose. This facility includes three to four mixed-flow lanes per direction and HOV lanes during peak periods. Northbound State Route 85 is the commute direction during the morning peak hour, and southbound State Route 85 is the commute direction during the evening peak hour. Access to and from State Route 85 is provided via interchanges with Moffett Boulevard, Central Expressway/Evelyn Avenue, State Route 237, El Camino Real, and Fremont Avenue.

State Route 237 is an east-west freeway extending between the city of Mountain View (El Camino Real/State Route 85) and the city of Milpitas (Interstate 680). This freeway includes three mixed-flow lanes per direction except in Mountain View where there are two mixed flow lanes. In Mountain View eastbound State Route 237 is the commute direction during the morning peak hour, and westbound State Route 237 is the commute direction during the evening peak hour. The freeway enters the city at Maude Avenue and terminates at El Camino Real. Access to and from State Route 237 is provided via an at grade intersection with El Camino Real/Grant Road and interchanges with State Route 85, Whisman Road, and Maude Avenue.

Expressways. Expressways are facilities designed primarily for traffic movement and they provide limited access to abutting properties. These facilities generally include median areas dividing traffic directions, some intersecting streets allowing only right turn access, some grade-separated interchanges, and some signalized intersections allowing full access. Expressways are maintained and operated by the Santa Clara County Roads and Airports Department. While the city coordinates with the County regarding expressway operations and improvements, the County controls access to adjacent parcels and the operation of traffic signals on each of these facilities.

Central Expressway is an east-west, four- to six-lane mostly grade-separated expressway which is parallel to Highway 101 between San Antonio Road in Mountain View and De La Cruz Boulevard in the city of Santa Clara. Within the city, the major access points include San Antonio Road, Rengstorff Avenue, Shoreline Boulevard, Moffett Boulevard/Castro Street, State Route 85, State Route 237 and Middlefield Road.

Foothill Expressway is an east-west, four-lane divided roadway that parallels Interstate 280 between Page Mill Road and Interstate 280 in Cupertino. Although this expressway does not pass through Mountain View, it is accessible via Springer Road, Miramonte Avenue and Grant Road.

Arterials, Collectors, and Local Streets. Streets in Mountain View are assigned a classification based on the following descriptions presented in the 1992 General Plan:

- **Arterials.** Drivers use these streets to travel to activity centers, freeways, expressways and other arterials. Driveways connect adjacent land uses directly; collector streets generally link neighborhoods to arterials.
- **Residential Arterials.** Drivers reach adjacent residential areas on these streets, which pass through and immediately serve adjacent residential land uses. These roadways generally have more landscaping and less paving than non-residential arterials.
- **Collectors.** Drivers use these streets to travel within and between neighborhoods and to get directly to adjacent land uses. These streets collect traffic from local streets and route it to arterials.

- **Local Streets.** Drivers travel on these streets only to reach adjacent land uses. Local streets are not intended to serve through traffic.

Below is a summary of the key streets in the City with an existing *arterial* designation:

- Amphitheatre Parkway
- California Street
- Castro Street
- Charleston Road
- El Camino Real
- Ellis Street
- Evelyn Avenue
- Grant Road
- Middlefield Road
- Moffett Boulevard
- Old Middlefield Way
- Rengstorff Avenue
- San Antonio Road
- Shoreline Boulevard
- Whisman Road

Below is a summary of the key streets in the City with an existing *collector* designation:

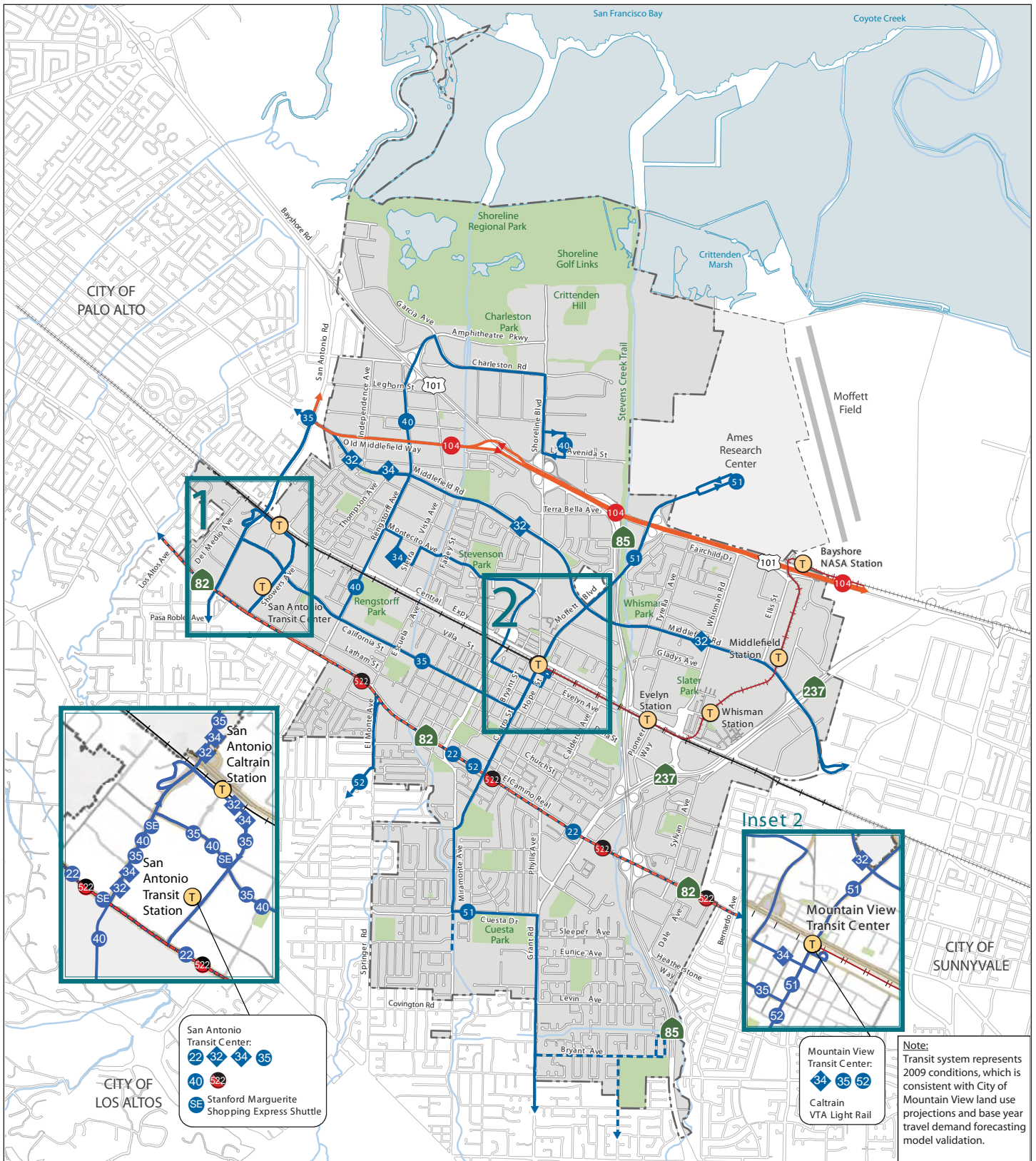
- Cuesta Drive
- El Monte Avenue
- Miramonte Avenue

(4) Existing Transit Service. The City has been working in cooperation with the VTA to provide all people with adequate access to attractive, convenient, and dependable public transit that is a safe alternative to the automobile. Local bus service in the area is provided by the VTA, light rail transit service is also provided by the VTA, and commuter rail service is provided by Caltrain. Figure IV.C-3 shows the existing transit services in Mountain View in 2009, which is consistent with the City of Mountain View land use projections and base year travel demand forecasting model validation. The most up to date transit service network can be found on the VTA website.

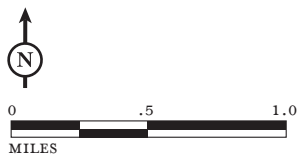
Bus Service. VTA operates bus service in Santa Clara County. There are 45 local/community routes, four limited stop routes, six shuttle routes, and 12 express routes in the County. Nine of the routes serve the city of Mountain View (see Table IV.C-5). Most bus routes typically operate along major arterial corridors. These are relatively linear, evenly spaced routes that operate from early morning into the late evening. VTA also operates limited stop services such as the 522 line. Table IV.C-5 summarizes the hours of operation, headways and average weekday ridership for each route serving Mountain View.

Local Bus routes 22, 35, 40, 51, and 52 connect the city with adjacent jurisdictions via local roads and provide frequent stops. Community Bus Routes 32 and 34 use smaller 25-passenger buses and lower fares, to serve Downtown, the San Antonio Shopping Center, local schools, and employment centers.

Route 104 is one of 12 VTA Express Bus lines (100 series) that utilize highways and freeways to bypass local facilities and reduce travel time. To provide efficient service for working commuters around the Bay, the Express Bus lines operate mornings and afternoons to and from major residential and employment areas of Santa Clara County with few local stops. The only Mountain View express bus stop is at the intersection of Rengstorff Avenue and Old Middlefield Way.



LSA



- City of Mountain View
- Caltrain
- VTA Light Rail
- T Stations & Transit Centers
- Alternative Route
- 32 Community Bus
- 104 Express Bus
- 40 Local Bus
- 522 Rapid Bus

FIGURE IV.C-3

*City of Mountain View
Draft General Plan and
Greenhouse Gas Reduction Program EIR
Existing Transit Routes*

This page intentionally left blank.

Table IV.C-5: Existing Conditions: Transit Service

Route	From	To	Weekdays		Weekends		Average Weekday Ridership ³	
			Operating Hours	Headway ¹ (minutes)		Operating Hours		Headway ¹ (minutes)
				Peak	Mid-day			Peak
22	Eastridge Transit Center	Palo Alto Transit Center	24 hours	12		24 hours	15	16,330
32	Santa Clara Transit Center	San Antonio Shopping Center	6:00am-8:00pm	30	60	9:00am-6:00pm ²	60	1,470
34	San Antonio Shopping Center	Downtown Mountain View Transit Center	9:20am-4:05pm	60		No Weekend Service		1,220
35	Stanford Shopping Center	Downtown Mountain View Transit Center	5:45am-10:45pm	30		7:20am-8:50pm	30-60	950
40	La Avenida & Inigo	Foothill College	5:30am-10:35pm	30		7:50am-7:15pm	30-60	100
51	De Anza College	Moffett Federal Airfield/NASA Ames Research Center	5:45am-7:05pm	30	60	No Weekend Service		1,060
52	Downtown Mountain View Transit Center	Foothill College	7:00am-5:20pm	30		No Weekend Service		340
104	Penitencia Creek Transit Center	Palo Alto	5:20-7:50am 3:15-5:50pm	40		No Weekend Service		100
522	Eastridge Transit Center	Palo Alto Transit Center	4:55am-9:00pm	12		6:20am-8:25pm ²	15	6,350

¹ Headways are defined as the time interval between two transit vehicles traveling in the same direction over the same route.

² Saturday service provided only.

³ 2008 average weekday ridership from VTA.

Source: VTA, January 2009.

VTA's current Rapid 522 is similar to Bus Rapid Transit (BRT) service, and operates in the El Camino Real corridor. It provides high quality rapid transit service with rubber-tire buses that are more flexible than fixed-guideway systems such as steel-wheel trains. BRT is premium level bus service, with higher operating speeds, greater reliability, and fewer stops than local bus service. The Rapid 522 service operates with signal priority, but does not have dedicated lanes or specialized station features, which are more typical of BRT service.

Light Rail Services. VTA also operates approximately 40 miles of light rail service in Santa Clara County. The system includes three light rail lines: Alum Rock-Santa Teresa, Mountain View-Winchester, and Ohlone/Chynoweth-Almaden. Stops are located between 0.25 and 1.5 miles apart and service is provided via one- to three-car trains. Bicycles are permitted on all light rail vehicles at any time of day to facilitate multi-modal travel. Connections to Caltrain passenger rail service is provided at the Mountain View Caltrain Station and the Diridon Station in downtown San Jose.

The Mountain View–Winchester Line operates between the Downtown Mountain View Station and the Winchester Station in Campbell, passing through downtown San Jose. It is approximately 22 miles long and serves 37 stations, with five in or near Mountain View, including:

- Mountain View Transit Center;
- Evelyn Station;
- Whisman Station;
- Middlefield Station; and
- Bayshore/NASA Station.

This line operates approximately 19 hours a day on weekdays and for 18 hours on weekend days. Weekday service operates on 15-minute headways during the peak commute hours, and 30-minute service the rest of the day except late evenings when headways are 60 minutes. Weekend and holiday service operates on 30-minute headways during most of the day, except in the early mornings and late evenings when headways are 60 minutes.

Commuter Rail Services. Caltrain is owned by the Peninsula Corridor Joint Powers Board, operated under contract with Amtrak, and managed under contract with the San Mateo County Transit District (SamTrans). Caltrain operates 50 miles of commuter rail between San Francisco and San Jose, and limited commute service trains that serve Gilroy during weekday commute periods. There are two Caltrain stations in Mountain View, the Mountain View Station located in Downtown on Evelyn Avenue and Castro Street and the San Antonio Station near San Antonio Road.

On weekdays, Caltrain operates approximately 86 trains per day of local, limited stop, and Baby Bullet express services in both directions. All trains stop at the Mountain View Station. Some limited stop trains and all local trains stop at the San Antonio Station. Travel times between San Jose and San Francisco is approximately 90 minutes for local services and 70 minutes for limited stop services. Caltrain's Baby Bullet trains travel between San Francisco and San Jose in 59 minutes. Caltrain offers 22 weekday commute-hour bullet trains, of which 16 stop in Downtown Mountain View. Caltrain

operates 32 trains on Saturdays and 28 trains on Sundays with local stops only⁴. These trains operate in both directions between San Francisco and San Jose Diridon Station.

(5) Existing Bicycle Facilities. The bicycle network promotes bicycling as an alternative mode of transportation for both commuting and recreation with the specific goal of implementing the 2008 Bicycle Transportation Plan (May 2008).

The Planning Division implements the bike parking ordinance through review of development projects. Planning also works with developers to obtain right-of-way to develop bike paths. The City Public Works Department is responsible for overseeing the implementation and maintenance of a comprehensive bikeway system, as well as coordinating bike linkages to adjacent communities. A description of the bicycle facilities in Mountain View follows. Figure IV.C-4 shows the location of existing and under construction bicycle facilities and the city's trail network, including pedestrian/bicycle bridges and barriers to pedestrian and bicycle travel in 2009, which is consistent with the City of Mountain View land use projections and base year travel demand forecasting model validation. Key changes since 2009 include the City of Mountain View completing the Stevens Creek Trail over Moffett Boulevard, and the extension from Stevens Creek Trail from El Camino to Sleeper Way. The City of Mountain View has begun construction of the Stevens Creek Trail from Sleeper Way to Heatherstone Way and Permanente Creek Trail extension from Charleston Road to Old Middlefield Way.

The 2008 Bicycle Transportation Plan describes the four bikeway classifications in the City, which all meet the design guidelines of the: (1) VTA Bicycle Technical Guidelines for bicycle facilities, and (2) the Caltrans Highway Design Manual (HDM), Chapter 1000: Bikeway Planning and Design for multi-use trails. These bicycle facility types are described below (italicized text is from the HDM) and shown on Figure IV.C-4.

- **Bike paths (Class I):** These provide *a completely separate right of way for the exclusive use of bicycles and pedestrians* with minimal roadway crossings. Existing Class I facilities include the Stevens Creek Trail, Hetch Hetchy Trail, Permanente Creek Trail, existing light rail trails, and a portion of the Bay Trail through Shoreline Regional Park, all of which have asphalt or concrete surfaces.
- **Bike lanes (Class II):** These provide *a striped lane and signage for one-way bike travel on a street or highway* and are designed for the exclusive use of cyclists with certain exceptions. For instance, right-turning vehicles must merge into the lane before turning. Bike lanes in Mountain View meet VTA's Bicycle Technical Guidelines, which follows all applicable local, State and Federal requirements. Sample existing Class II facilities include bike lanes on Middlefield Road, Evelyn Avenue, California Street, Shoreline Boulevard, and Grant Road.
- **Bike routes (Class IIIa):** These may be identified on a local residential or collector street when the travel lane is wide enough and the traffic volume is low enough to allow both cyclists and motor vehicles. Although some streets with high volumes of traffic have been designated as bike routes, most official bike routes in Mountain View are on low-volume streets. Example existing bike routes include L'Avenida, Hans Avenue, and Calderon Avenue.

⁴ Transit system represents 2009 conditions, which is consistent with City of Mountain View land use projections and base year travel demand forecasting model validation. Since 2009 Caltrain has implemented weekend Baby Bullet service between San Francisco and San Jose.

- **Bike boulevards (Class IIIb):** These are a modified bicycle route providing a more convenient and efficient through route for cyclists of all skill levels than a typical bike route. A bike boulevard includes signage, pavement markings, and in some cases, traffic calming (e.g., mid-block closures to vehicles), and bike lanes. The City has implemented the Mayfield-Whisman Bicycle Boulevard for cross-town (east-west) travel north of Central Expressway shown on Figure IV.C-4 as a demonstration project.

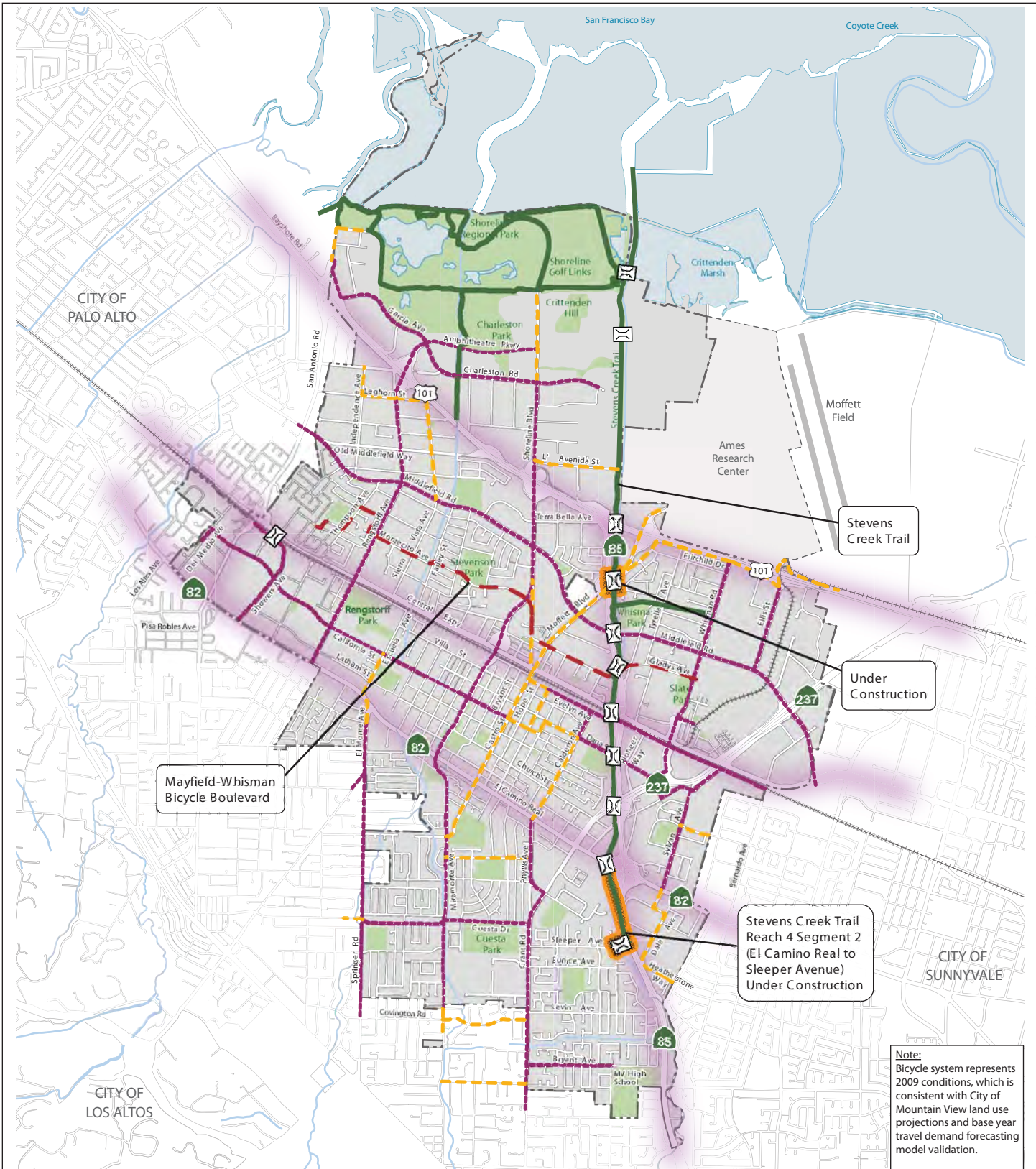
Approximately 54 miles of bicycle facilities are currently provided in the City, with 13 miles designated as Class I multi-use trails, approximately 26 miles designated as Class II bicycle lanes, nearly 12 miles designated as Class IIIa bicycle routes, and three miles designated as a Class IIIb bicycle boulevard. Additionally, the City has 12 pedestrian-bicycle freeway over- or undercrossings. Although many other roadways are suitable for bicycling, they are not designated bicycle facilities and they are not shown on Figure IV.C-4.

Mountain View has many views of San Francisco Bay and the surrounding hillsides. In addition, Stevens Creek crosses the valley floor providing a natural linear corridor for a shared-use path. These attributes provide the City with many scenic and recreation (as well as commuter) opportunities. Trails and pathways create outdoor recreational facilities for bicyclists, pedestrians, and other recreational activities. The City's trails and pathways corridors are illustrated on Figure IV.C-4, along with the City's bicycle facilities.

The San Francisco Bay Trail is a planned 500-mile paved path network around the San Francisco Bay that can be used by pedestrians and bicyclists. Approximately 310 miles of the Bay Trail are complete, including off-street segments of the trail in the North Bayshore Area of Mountain View have already been completed between San Antonio Road and the Stevens Creek Trail. Since 2009, a segment was completed to connect Stevens Creek Trail and the existing terminus northeast of Moffett Federal Airfield in Sunnyvale. Once the Bay Trail is complete, it will provide for recreational and commute travel by users of all levels and provide proximate access to many of the Bay's numerous visual resources.

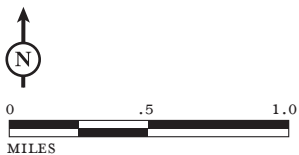
(6) Existing Pedestrian Facilities. The overall citywide street network is essentially built out and most streets include at least a four-foot wide sidewalk on one or both sides.

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities and services. Walkability varies substantially within Mountain View. In the North Bayshore Area, some streets have relatively high traffic volumes and include an extensive array of sidewalks, but residential and retail services located within a reasonable walking distance of ½-mile to a mile are limited. In Downtown Mountain View, residents near Castro Street and the Mountain View Transit Center are able to walk or bike to grocery stores, other retail stores, and office buildings within a 10- to 15-minute period. They are also able to easily access bus lines, light rail, or Caltrain.



Note:
 Bicycle system represents 2009 conditions, which is consistent with City of Mountain View land use projections and base year travel demand forecasting model validation.

LSA



- City of Mountain View
- Bicycle/Pedestrian Crossing
- Under Construction
- Bicycle and Pedestrian Barriers
- Bicycle Path
- Bicycle Lane
- Bicycle Route
- Bicycle Boulevard

FIGURE IV.C-4

*City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Existing Bicycle and Trail Facilities*

SOURCES: CITY OF MOUNTAIN VIEW; FEHR & PEERS, NOVEMBER 2011.
 I:\CMT0801 Mtn View\figures\EIR\Fig_IVC4.ai (11/4/11)

This page intentionally left blank.

Many of the community’s schools are located within residential neighborhoods on lower volume roadways, which allow many students of all ages to regularly walk or bike to their campus (However, many students still arrive by automobile causing congestion around schools). Similarly, neighborhood and community shopping centers located on major and minor arterial roadways surrounding neighborhoods can be accessed via residential collector streets with sidewalks. Countdown pedestrian signal heads have been installed at all City, County and Caltrans signals within the City. Per the City’s ADA Transition Plan, the City continues installing and upgrading access ramps at intersections to meet the access demands of a diverse population and to enhance the overall pedestrian experience.

The City is considered pedestrian friendly and continues to actively look for opportunities to enhance pedestrian travel and better balance the needs of all street users including pedestrians, bicyclists and automobile drivers. In the Downtown, for example, the City has installed pedestrian refuge islands, mid-block crosswalks, and signage on Castro Street to increase driver awareness of pedestrians and provide acceptable gaps in traffic to allow for crossings. This effort has helped the business district to thrive and has greatly improved pedestrian connectivity to the surrounding neighborhoods. In the Moffett/Whisman Road area, new office buildings built under the Transit Zone have been required to construct, or to contribute funds to, improvements to the pedestrian circulation system under a plan approved by the City. This system is intended to improve access to the Middlefield Light Rail Station and to provide more direct routes through the long blocks in the area.

(7) Existing Conditions/No Project Roadway and Freeway Analysis. Existing roadway types and daily two-way volumes were used as inputs for the LOS calculations. The results of the LOS analysis for Existing Conditions are presented in Table IV.C-6. Measured against the City of Mountain View LOS standards, San Antonio Road between Northbound Highway 101 Ramps and W. Charleston Road (in Palo Alto) currently operates at an unacceptable LOS (LOS D or worse) under daily conditions.

Existing freeway types and daily two-way volumes were used as inputs for the freeway segment LOS calculations summarized in Table IV.C-7. Measured against the Caltrans LOS standard, 16 of the freeway segments operate at an unacceptable LOS D or worse under daily conditions. In contrast, only six segments do not meet the VTA CMP LOS standard because they operate at LOS F. However, Caltrans and the VTA typically use different methods for analyzing freeway LOS operations that are generally focused on the peak period. As such, these results are presented for program level general plan environmental evaluation.

Table IV.C-6: Existing Conditions: Daily Roadway Segment Volume and Level of Service

Roadway Segment ¹	Existing Roadway Type	Year 2009 Scenario	
		Existing	
		Daily Volume ²	LOS ³
1. Amphitheatre Pkwy. between Charleston Rd. and NB US 101 Ramps	4-Lane Divided Arterial	14,700	C
2. California St. between Escuela Ave. and Shoreline Blvd.	4-Lane Undivided Arterial	11,400	C
3. Castro St. between Evelyn Ave. and California St.	2-Lane Undivided Arterial	9,000	C
4. Central Expy. between San Antonio Rd. and Rengstorff Ave.*	4-Lane Divided Arterial	26,000	D
5. Central Expy. between Rengstorff Ave. and Shoreline Blvd.*	4-Lane Divided Arterial	25,600	D

Table IV.C-6 Continued

Roadway Segment ¹	Existing Roadway Type	Year 2009 Scenario	
		Existing	
		Daily Volume ²	LOS ³
6. Central Expy. between Shoreline Blvd. and Moffett Blvd.*	4-Lane Divided Arterial	28,100	D
7. Central Expy. between SR 85 and Whisman Ave.*	6-Lane Divided Arterial	28,300	C
8. Central Expy. between Bernardo Ave. and Middlefield Rd.*	4-Lane Divided Arterial	25,500	D
9. Charleston Rd. between San Antonio Rd. and Rengstorff Ave.	4-Lane Divided Arterial	20,700	C
10. Cuesta Dr. between Miramonte Ave. and Grant Rd.	4-Lane Divided Arterial	16,300	C
11. Dana St. between Calderon Ave. and Pioneer Wy.	2-Lane Divided Arterial	6,200	C
12. El Camino Real between Los Altos Ave. and San Antonio Rd. *	6-Lane Divided Arterial	38,800	D
13. El Camino Real between Showers Dr. and Rengstorff Ave.*	6-Lane Divided Arterial	38,200	D
14. El Camino Real between El Monte Ave. and Shoreline Blvd.*	6-Lane Divided Arterial	47,800	D
15. El Camino Real between Phyllis Ave. and Castro St.*	6-Lane Divided Arterial	51,900	D
16. El Camino Real between Grant Rd. and SB SR 85 Ramps*	6-Lane Divided Arterial	51,200	D
17. El Camino Real between NB SR 85 Ramps and Sylvan Ave.*	6-Lane Divided Arterial	53,600	D
18. Ellis St. between SB US 101 Ramps and Middlefield Rd.	4-Lane Divided Arterial	9,000	C
19. El Monte Ave. between El Camino Real and Springer Rd.	4-Lane Undivided Arterial	16,500	C
20. Evelyn Ave. between Calderon Ave. and SB SR 85 Ramp	4-Lane Undivided Arterial	12,600	C
21. Evelyn Ave. between SR 237 and Bernardo Ave.	4-Lane Divided Arterial	13,300	C
22. Grant Rd. between Phyllis Avenue and Cuesta Dr.	4-Lane Divided Arterial	37,200	D
23. Grant Rd. between Cuesta Dr. and Covington Rd.	4-Lane Divided Arterial	23,100	D
24. Middlefield Rd. between San Antonio Rd. and Old Middlefield Wy.	4-Lane Undivided Arterial	17,300	C
25. Middlefield Rd. between Old Middlefield Wy. and Independence Ave.	4-Lane Divided Arterial	6,200	C
26. Middlefield Rd. between Sierra Vista Ave. and Terra Bella Ave.	4-Lane Divided Arterial	11,300	C
27. Middlefield Rd. between Shoreline Blvd. and Moffett Blvd.	4-Lane Divided Arterial	13,700	C
28. Middlefield Rd. between Moffett Blvd. and Tyrella Ave.	4-Lane Divided Arterial	13,200	C
29. Middlefield Rd. between Ellis St. and SR 237	4-Lane Divided Arterial	14,300	C
30. Miramonte Ave. between El Camino Real and Cuesta Dr.	4-Lane Undivided Arterial	13,400	C
31. Miramonte Ave. between Cuesta Dr. and Covington Rd.	4-Lane Undivided Arterial	9,700	C

Table IV.C-6 *Continued*

Roadway Segment ¹	Existing Roadway Type	Year 2009 Scenario	
		Existing	
		Daily Volume ²	LOS ³
32. Moffett Blvd. between SB US 101 Ramps and NB SR 85 Ramp	4-Lane Divided Arterial	15,200	C
33. Moffett Blvd. between Middlefield Rd. and Central Ave.	4-Lane Undivided Arterial	13,500	C
34. Old Middlefield Wy. between Rengstorff Ave. and SB US 101 Ramps	4-Lane Divided Arterial	16,900	C
35. Rengstorff Ave. between SB US 101 Ramps and Old Middlefield Wy.	4-Lane Undivided Arterial	18,100	C
36. Rengstorff Ave. between Montecito Ave. and Central Expy.	4-Lane Undivided Arterial	18,300	C
37. Rengstorff Ave. between Central Expy. and California St.	4-Lane Undivided Arterial	18,800	C
38. San Antonio Rd. between Bayshore Pkwy. and NB US 101 Ramps* (Palo Alto)	2-Lane Undivided Arterial	10,800	C
39. San Antonio Rd. between SB US 101 Ramps and Charleston Rd.* (Palo Alto)	3-Lane Arterial (2 in one direction)	35,600	F
40. San Antonio Rd. between San Antonio Cir. and California St.*	6-Lane Divided Arterial	40,500	D
41. San Antonio Rd. between El Camino Real and Paso Robles Ave.* (Los Altos)	4-Lane Divided Arterial	24,900	D
42. Shoreline Blvd. between Charleston Rd. and NB US 101 Ramps	4-Lane Divided Arterial	30,000	D
43. Shoreline Blvd. between SB US 101 Ramps and Middlefield Rd.	4-Lane Divided Arterial	25,000	D
44. Shoreline Blvd. between Montecito Ave. and Central Expy.	4-Lane Divided Arterial	26,800	D
45. Shoreline Blvd. between Central Expy. and California St.	6-Lane Divided Arterial	23,300	C
46. Springer Rd. between El Monte Ave. and Cuesta Dr.	2-Lane Collector	7,400	C
47. Whisman Rd. between Middlefield Rd. and Central Expy.	4-Lane Undivided Arterial	7,300	C

¹ Major roadways nearest the count location

² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.

³ LOS – Level of Service

Notes:

Bold text indicates a segment that exceeds the City of Mountain View LOS D standard for local streets and LOS E standard for streets within the Downtown and San Antonio Center areas and CMP facilities (e.g., Central Expressway, El Camino Real) under the 1992 General Plan Circulation Element. Local streets in Palo Alto and Los Altos have a LOS D standard too.

* Denotes Congestion Management Program (CMP) facility

Source: *Highway Capacity Manual*, Transportation Research Board, 2000 and Fehr & Peers, June 2011.

Table IV.C-7: Existing Conditions: Daily Freeway Segment Volume and Level of Service Summary

Roadway Segment ¹	Existing Roadway Type ⁴	Year 2009 Scenario		
		Existing		
		Daily Volume ²	LOS ³	
NB SR 85*	Fremont Ave. to El Camino Real	3-Lane Freeway	57,500	D
	SR 237 to Evelyn Ave.	3-Lane Freeway	39,000	C
	Evelyn Ave. to Moffett Blvd.	3-Lane Freeway	37,500	C
SB SR 85*	Moffett Blvd. to Evelyn Ave.	3-Lane Freeway	37,500	C
	Evelyn Ave. to SR 237	3-Lane Freeway	39,000	C
	El Camino Real to Fremont Ave.	3-Lane Freeway	57,500	D
NB US 101*	SR 237 to Ellis St.	4-Lane Freeway	79,000	D
	Ellis St. to Moffett Blvd.	4-Lane Freeway	78,000	D
	SR 85 to Old Middlefield Wy.	4-Lane Freeway	113,500	F
	Old Middlefield Wy. to Rengstorff Ave.	4-Lane Freeway	105,000	F
	Rengstorff Ave. to San Antonio Rd.	4-Lane Freeway	97,000	E
SB US 101*	San Antonio Rd. to Rengstorff Ave.	4-Lane Freeway	97,000	E
	Rengstorff Ave. to Old Middlefield Wy.	4-Lane Freeway	105,000	F
	Old Middlefield Wy. to SR 85	4-Lane Freeway	113,500	F
	Moffett Blvd. to Ellis St.	4-Lane Freeway	78,000	D
	Ellis St. to SR 237	4-Lane Freeway	79,000	D
EB SR 237*	El Camino Real to SR 85	2-Lane Freeway	22,500	B
	Sylvan Wy. to Middlefield Rd./ Maude Ave.	2-Lane Freeway	37,000	D
	Middlefield Rd./ Maude Ave. to US 101	2-Lane Freeway	37,500	D
WB SR 237*	US 101 to Middlefield Rd./Maude Ave.	2-Lane Freeway	37,500	D
	Middlefield Rd./ Maude Ave. to Sylvan Wy.	2-Lane Freeway	37,000	D
	SR 85 to El Camino Real	2-Lane Freeway	22,500	B

¹ Major roadways nearest the count location

² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.

³ LOS – Level of Service

⁴ The number of lanes of a freeway segment includes high occupancy vehicle (HOV) lanes but excludes auxiliary lanes.

Notes:

Bold text indicates a segment that exceeds the Caltrans standard (C/D cusp) or VTA CMP standard (LOS E).

* Denotes Congestion Management (CMP) facility

Source: *Highway Capacity Manual*, Transportation Research Board, 2000 and Fehr & Peers, June 2011.

(8) Transportation Demand Management. Transportation Demand Management (TDM) programs are intended to reduce vehicle trips and parking demand by promoting the use of multi-modal transportation options. By implementing TDM programs, municipalities and private entities can use available transportation resources more efficiently. These programs can include a wide variety of measures such as shuttle services, transit pass subsidies, improved access to transit, park and ride facilities, and improved bicycle and pedestrian amenities among others. The City has required several TOD (Transit-Oriented Development) projects to incorporate TDM elements as conditions of project approval.

Shuttle Service. Shuttle services are provided at a number of locations throughout the City of Mountain View. Shuttles serve passengers traveling to and from Downtown Mountain View, VTA light rail stations, Caltrain stations, Stanford University, the San Antonio Shopping Center and employers in the North Bayshore and Whisman areas.

Employer-Based Shuttles. There are a number of employer-based (non-Caltrain) shuttle services located in Mountain View as well as adjacent cities. The Google Commute Program provides free shuttle service for Google employees. The extensive shuttle service provides wide coverage within the Bay Area including San Francisco, and parts of the south and east bay. Headways are approximately 15 minutes in peak commute hours.

In addition to the Google Commute Program, companies and institutions such as Yahoo, Intuit, TiVo, Microsoft, Apple, NASA Ames Research Center, and Boston Scientific also provide shuttle services for their employees and students.

Stanford Marguerite Shuttle Service. The Stanford Marguerite Shopping Express shuttle service is provided by Stanford University and operates during the academic year (mid-September to mid-June). With all but one shuttle line operating near the Stanford campus in Palo Alto, the Shopping Express shuttle line travels between the Palo Alto Transit Center and San Antonio Shopping Center via El Camino Real. During the academic year, shuttle service is provided from 4:00 pm to 10:00 pm on weekdays and from 10:00 am to 10:00 pm on the weekend. Headways are approximately 45 minutes.

ACE Shuttle Service. Altamont Commuter Express (ACE) is a passenger rail line that extends to San Jose with a stop at the Great America Station in Santa Clara. ACE and VTA sponsor free shuttles including the ACE Orange Shuttle that provides service from the Great America Station to eastern Palo Alto via Shoreline Boulevard, Charleston Boulevard, Garcia Avenue and Marine Way in Mountain View. The shuttle includes multiple stops in Mountain View's North Bayshore Area. Headways are between approximately 60 and 75 minutes during commute periods on weekdays only. In 2008, this shuttle served an average of 110 weekday riders.

Caltrain Shuttle Service. Caltrain provides an extensive shuttle program in the Santa Clara County with 12 shuttle lines running from and to various Caltrain stations during commute hours only. In Mountain View, four shuttles serve portions of the employment areas in the North Bayshore and Moffett/Whisman Road areas and the Mountain View and Lawrence Caltrain stations as presented in Figure IV.C-5. The purpose of the shuttle program is to provide Caltrain station access to various employment locations within the city. All four Caltrain shuttle lines are free and open to the public and are jointly funded by the Bay Area Air Quality Management District Transportation Fund for Clean Air, Peninsula Corridor Joint Powers Board and the participating employers. Table IV.C-8 summarizes the weekday operating hours and headways for the four Caltrain Shuttles in the city: 1) AMD Duane Area, 2) Mary/Moffett Area, 3) North Bayshore Area, and 4) Shoreline Area. The Caltrain shuttle lines serve approximately 3,240 passengers on an average weekday in Santa Clara County.

Park & Ride Lots. Park & Ride Lots are locations where commuters can park their cars and use another mode to complete their trip, usually via transit or carpool. As shown in Figure IV.C-5 Shuttle Routes and Park & Ride Lots, Mountain View has four park & ride lots with parking capacity ranging from 52 spaces at the Whisman light rail station to 328 spaces at the Mountain View Caltrain Station.

Table IV.C-8: Existing Conditions: Caltrain and ACE Shuttle Service

Shuttle Name	Stations Served	Weekday Operating Hours	Commute Headway
<i>Caltrain Shuttle Service</i>			
Duane Avenue Area	Mountain View/ Lawrence	7:50am-10:06am 4:28pm-7:05pm	40-60 minutes
Mary/Moffett Area	Mountain View	6:35am-10:23am 3:00pm-6:30pm	60-65 minutes 50-60 minutes
North Bayshore Area	Mountain View	7:09am-10:05pm 4:30pm-6:30pm	50-60 minutes 30-40 minutes
Shoreline Area	Mountain View	6:35am-10:40am 2:55pm-7:40pm	30 minutes 45 minutes
<i>ACE Shuttle Service</i>			
Orange Shuttle	Great America	6:14am-9:09am 3:02pm-5:37pm	75 minutes 60 minutes

Sources: Caltrain, March 2009. VTA, March 2009

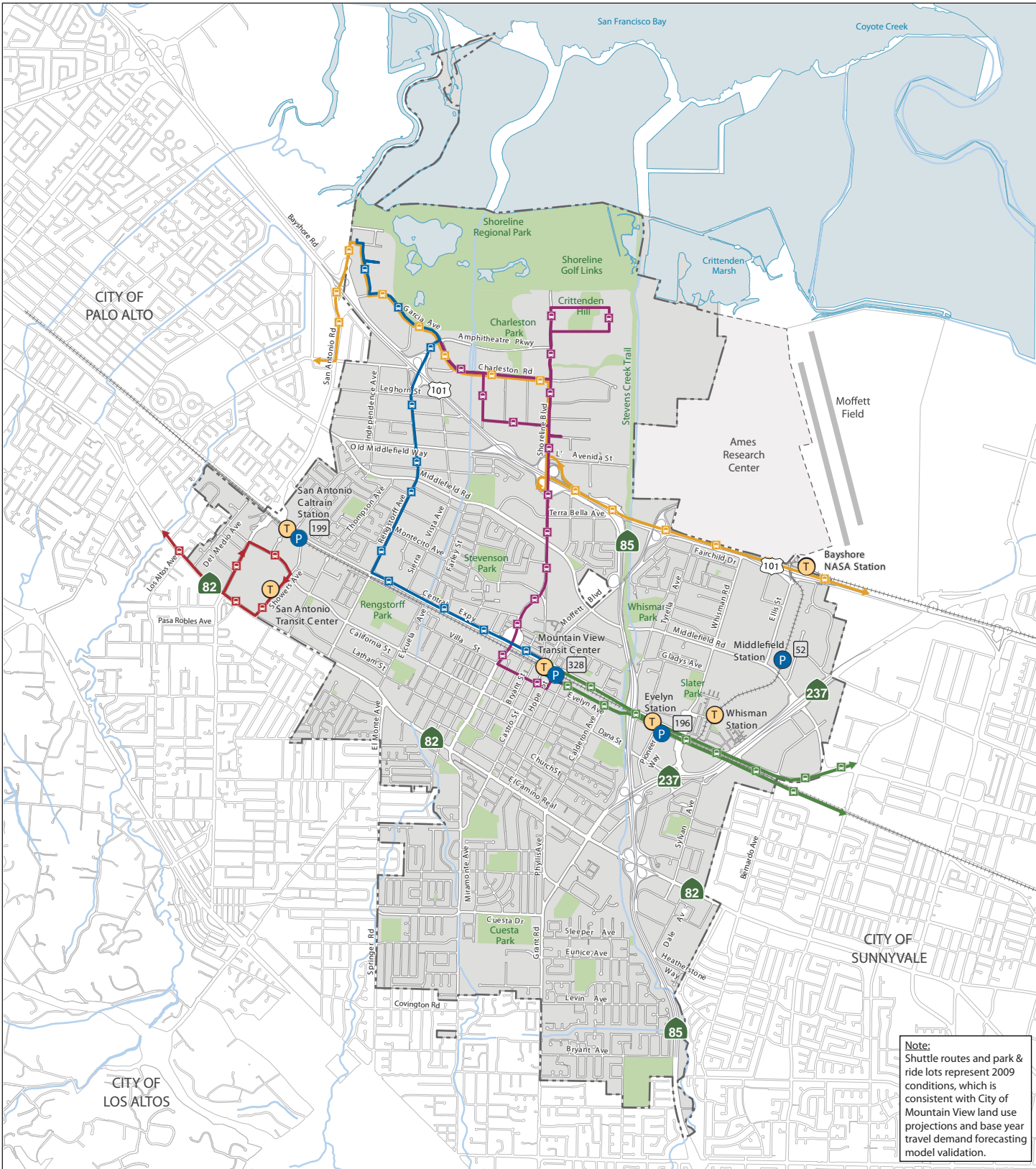
Other TDM Elements. Numerous other elements are included in TDM programs that are in use by both public agencies and private employers in the city. Other TDM elements include, but are not limited to:

- Transit Passes (e.g., Eco Pass, Go Pass, Clipper, Commuter Check);
- Reduced parking space requirements;
- Secure bicycle parking;
- TDM coordinator;
- Showers and changing rooms;
- Preferential carpool/vanpool parking;
- Flexible work hours;
- Guaranteed ride home programs;
- On-site amenities (e.g., day care, ATM, dry cleaners);
- Charging for parking; and
- Parking cash-outs.

(9) Public Safety Considerations. Efficient operation of City streets helps to reduce response times for emergency responders including Mountain View Police and Fire Department personnel, as well as private ambulance services.

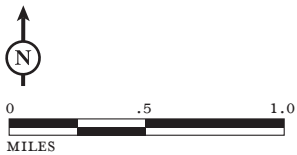
The design of primary response routes need to reasonably accommodate emergency vehicles while still reducing speeds for traffic in general by minimizing unnecessarily long curb radii at intersections or maintaining extra wide street sections. To that end, the City has limited the installation of vertical traffic control devices (e.g., speed humps) except on local streets where they are appropriate and where the Fire Department can maintain satisfactory response times. If the City allows additional congestion in certain areas to minimize roadway infrastructure and balance community needs, the effect on emergency responders will need to be considered.

(10) Aviation. Moffett Federal Airfield is located immediately east of the Mountain View city limits and adjacent to the NASA Ames Research Center. However, Moffett Federal Airfield is a restricted federal airfield and requires permission prior to landing. Otherwise, no public or private aviation facilities are located within the City’s sphere of influence.



Note: Shuttle routes and park & ride lots represent 2009 conditions, which is consistent with City of Mountain View land use projections and base year travel demand forecasting model validation.

LSA



- City of Mountain View
- Stations & Transit Centers
- Park & Ride Lots
- ACE Orange Shuttle
- AMD Caltrain Shuttle
- North Bayshore Caltrain Shuttle
- Shoreline Caltrain Shuttle
- Stanford Margeurite Shuttle

FIGURE IV.C-5

*City of Mountain View
Draft General Plan and
Greenhouse Gas Reduction Program EIR
Existing Shuttle Routes and Park & Ride Lots*

SOURCES: CITY OF MOUNTAIN VIEW; FEHR & PEERS, NOVEMBER 2011.
I:\CMT0801 Mtn View\figures\EIR\Fig_IVC5.ai (11/4/11)

This page intentionally left blank.

The closest general aviation facility is the City of Palo Alto Municipal Airport, which has only one runway and is located approximately 2.5 miles northwest of Mountain View. The closest commercial freight and passenger aviation facility is Norman Y. Mineta San Jose International Airport (SJC). SJC is located approximately 11 miles south of Mountain View and is owned and operated by the City of San Jose. Approximately 10.7 million passengers per year travel through this airport on 13 airlines. Over 200 million pounds of freight, cargo, and mail pass through the airport every year.

(11) Freight Movement. The freight transportation system in Mountain View consists of truck routes and rail. Moffett Federal Airfield has aviation facilities limited to use for military, National Guard, and NASA operations, as well as a select number of private entities; however, Moffett Federal Airfield is not used for freight or passenger activities. The section below discusses truck and rail operations within the city.

Truck Routes. The City’s Municipal Code Section 19.60 defines truck routes as shown on Figure IV.C-6. In general, the City encourages truck traffic to use State freeways, County expressways, and arterial streets. Trucks are allowed to deviate from a designated truck route to their destination by the most direct and shortest path.

Table IV.C-9 summarizes daily truck traffic on State-operated facilities in Mountain View based on data available in the *2007 Annual Average Daily Truck Traffic on the California State Highway System* (Caltrans, 2008) report. As shown in the table, trucks account for about 4 percent of the traffic on Highway 101, between 2 and 4 percent on State Route 82 and State Route 85, and 1 to 5 percent on State Route 237. State Route 85 generally carries the lowest percentage of trucks because commercial truck traffic is limited to vehicles with less than 9 tons of gross weight south of Interstate 280.

Table IV.C-9: Existing Conditions: Average Daily Truck Volumes

Roadway Segment	ADT ¹	Truck Traffic ²	Percent Truck Traffic ³
SR 82 - Sylvan Avenue to SR 85*	51,000	1,400	2.7%
SR 82 - SR 85 to SR 237*	50,000	1,100	2.2%
SR 82 - SR 237 to Calderon Avenue*	46,500	1,200	2.6%
SR 85 - Fremont Avenue to El Camino Real*	115,000	2,600	2.3%
SR 85 - El Camino Real to SR 237*	102,000	2,800	2.8%
SR 85 - SR 237 to Dana Street*	78,000	1,500	1.9%
SR 85 - Evelyn Avenue to Middlefield Road*	75,000	1,400	1.9%
SR 85 - Moffett Boulevard US 101*	68,000	1,400	2.0%
US 101 - SR 237 to Ellis Street*	158,000	6,000	3.8%
US 101 - Moffett Boulevard SR 85*	156,000	7,100	4.6%
US 101 - SR 85 to Shoreline Boulevard*	227,000	10,200	4.5%
SR 237 - SR 82 to Centre Street*	45,000	500	1.0%
SR 237 - Centre Street to SR 85*	45,000	1,400	3.0%
SR 237 - SR 85 to Dana Street*	70,000	3,800	5.4%
SR 237 - Maude Avenue to US 101*	75,000	3,300	4.4%

¹ ADT = Average Daily Traffic

² Average Daily Truck Traffic rounded to nearest 100 trucks.

³ Percent truck traffic rounded to nearest tenth of a decimal.

* Denotes Congestion Management Program (CMP) facility

Source: 2007 Annual Average Daily Truck Traffic on the California State Highway System, Caltrans, 2008.

Freight Rail Service. Union Pacific Railroad provides freight rail service on the Caltrain line between San Francisco and San Jose during the non-peak passenger service periods. Freight rail service is not provided within the city limits because neither spurs nor sidings are available to store freight rail cars for loading and unloading.

d. Future Year (2030) Analysis. This subsection describes the future land use and network input assumptions for the Year 2030 in the City of Mountain View without the project (Draft General Plan and GGRP).

(1) Land Use Changes. Future land use data is instrumental in estimating daily and peak hour trip generation and subsequently future traffic demand. Fehr & Peers reviewed and refined Year 2030 land use estimates based on input from City of Mountain View and VTA land use projections. For all other areas outside Mountain View, Fehr & Peers used future year land use data from the VTA model which incorporates Association of Bay Area Governments (ABAG) 2007 Projections.

(2) Roadway Network Changes. The future roadway network was developed based on planned and funded improvements identified in the financially constrained roadway improvement project list from the Valley Transportation Plan (VTP) 2035 published by the Santa Clara Valley Transportation Authority Valley (January 2009) and the City's current General Plan Circulation Chapter (October 1992). This roadway network is used for the Future Year (2030) scenario and the regional roadway improvements within Mountain View are summarized below with VTP 2035 project numbers.

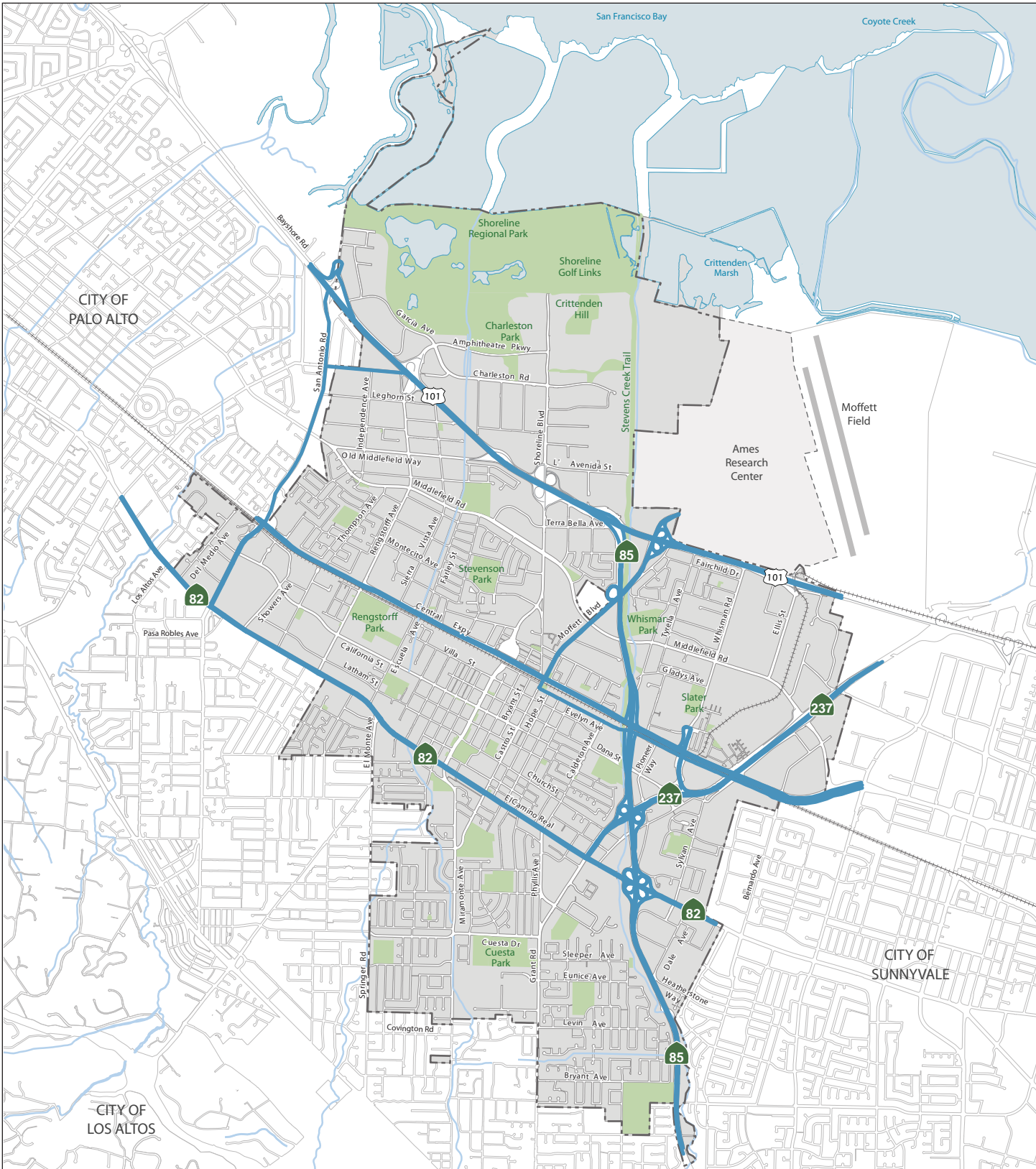
- SR 237 HOV/Express Lanes: Mathilda Avenue to SR 85. (H11)*
- SR 85 Northbound to Eastbound SR 237 Connector Ramp and Northbound SR 85 Auxiliary Lane. Includes braided SR 237 eastbound off-ramp between SR 85 and Dana Street. (H19)*
- Southbound US 101 Auxiliary lanes between Ellis Street and SR 237. (H49)*
- US 101 Southbound Improvements from San Antonio Road to Charleston/Rengstorff Avenue. (H55)*
- SR 237 Westbound On-Ramp at Middlefield Road. (H63)*
- SR 237 Eastbound Auxiliary Lanes: Mathilda Avenue to Fair Oaks Avenue. (H68)*

* Denotes Congestion Management Program (CMP) facility

The above list of projects is consistent with the Year 2030 roadway network used in the VTA travel demand model for which the productions and attractions outside the City of Mountain View were extracted. Because land use projections in Mountain View are for the year 2030, and to be consistent with the VTA travel demand model for which the key inputs of the City of Mountain View were extracted (e.g., productions and attractions, and mode split factors), the VTP 2030 was used to define roadway projects built by Year 2030. Thus, the VTP 2035 financially constrained roadway improvements listed below are not included in the VTP 2030 project list. The following VTP 2035 roadway improvements also are not included in the City of Mountain View future roadway network:

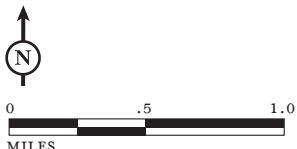
- US 101 Auxiliary lanes between Embarcadero Road and SR 85. (H33)*
- SR 237/Mathilda Avenue and US 101/Mathilda Avenue Interchange improvements. (H65)*
- SR 237 Westbound to Northbound US 101 Ramp Improvements. (H67)*

* Denotes Congestion Management Program (CMP) facility



LSA

FIGURE IV.C-6



- City of Mountain View
- Truck Routes

*City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Existing Truck Routes*

SOURCES: CITY OF MOUNTAIN VIEW; FEHR & PEERS, NOVEMBER 2011.
 I:\CMT0801 Mtn View\figures\EIR\Fig_IVC6.ai (11/4/11)

This page intentionally left blank.

(3) Planned Bicycle Improvements. In addition to the roadway changes, the City of Mountain View has a Bicycle Transportation Plan which provides for a comprehensive bikeway and trail system. The following are major projects proposed in the City or under construction in 2009 when baseline data for TDF model validation was collected, or are now under construction):

- Stevens Creek Trail – Sleeper Avenue to Dale/Heatherstone (under construction)
- Stevens Creek Trail (Dale/Heatherstone to Mountain View High School)
- Permanente Creek Trail – US 101 overcrossing and new trail north and south of US 101 to old Middlefield Way (under construction)
- Permanente Creek Trail – Old Middlefield Way to Rock Street
- Permanente Creek Trail – Rock Street to Middlefield Road.
- Permanente Creek Trail – Undercrossing at Charleston Road
- Charleston Road bicycle lanes
- Bicycle Boulevards on roadways such as Calderon Avenue, Independence Avenue, Farley Street, and Dale Avenue
- Hetch-Hetchy Trail between West Middlefield Road and Shoreline Boulevard
- Landels School Pathway between the Stevens Creek Trail and Landels School near the intersection of Dana Street and Calderon Avenue (in *VTP 2035*)
- City is participating in a Bike Share pilot program sponsor by the VTA and BAAQMD.

e. Regulatory Setting. For the purposes of this discussion, a jurisdiction is a level of government (city, county, state, or federal) or regulatory authority (local, regional, state, or federal) responsible for some or all aspects of the planning, implementation, operations, and maintenance of transportation facilities and services in a defined area. The City of Mountain View has jurisdiction over all City streets and City-operated traffic signals. The neighboring cities of Palo Alto, Los Altos, Sunnyvale, and Cupertino have jurisdiction over local roadways within their respective jurisdictional boundaries. The California Department of Transportation (Caltrans) has jurisdiction over State facilities including US 101, I-280, SR 82 (El Camino Real), SR 85, and SR 237. Caltrans also has jurisdiction over on- and off-ramp intersections with local streets. The County of Santa Clara has jurisdiction over streets in unincorporated areas, as well as all of the County Expressways. Transit agencies operating within the City limits are VTA, and Caltrain. Several regional, state and federal agencies have jurisdiction over transportation planning and implementation of circulation improvements in the City of Mountain View.

Each agency or relevant planning document is described below.

(1) Federal Regulations. Federal regulations are described below.

Americans with Disabilities (ADA) Act of 1990. Titles I, II, III and V of the ADA have been codified in Title 42 of the United States Code, beginning at section 12101. Title III prohibits discrimination on the basis of disability in “places of public accommodation” (businesses and non-profit agencies that serve the public) and “commercial facilities” (other businesses). The regulation includes Appendix A to Part 36 (Standards for Accessible Design) establishing minimum standards for ensuring accessibility when designing and constructing a new facility or altering an existing facility.

Examples of key guidelines include detectable warnings for pedestrians entering traffic where there is no curb, a clear zone of 48” inches for the pedestrian travel way, and a vibration-free zone for pedestrians.

Federal Highway Administration (FHWA). The FHWA is a major agency of the United States Department of Transportation. In partnership with State and local agencies, the FHWA carries out Federal highway programs to meet the Nation’s transportation needs. The FHWA administers and oversees Federal highway programs to ensure that Federal funds are used efficiently.

(2) **State Regulations.** State transportation agencies and plans are described below.

California Department of Transportation (Caltrans). Caltrans has authority over the State highway system, including freeways, interchanges, and arterial State Routes. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities including Highway 101, State Route (SR) 82 (El Camino Real), SR 85, SR 237, and the associated interchanges for these facilities located in Mountain View. Caltrans requirements are described in their *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2001), which covers the information needed for Caltrans to review the impacts on state highway facilities including freeway segments.

Statewide Transportation Improvement Program. The California Transportation Commission (CTC) administers transportation programming. Transportation programming is the public decision-making process, which sets priorities and funds projects envisioned in long-range transportation plans. It commits expected revenues over a multi-year period to transportation projects. The State Transportation Improvement Program (STIP) is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the State Highway Account and other funding sources. The California Department of Transportation (Caltrans) manages the operation of State Highways in Mountain View.

AB 32 and SB 375. With the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resources Board (CARB) is coordinating the response to comply with AB 32.

In 2007, CARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, CARB defined its 1990 baseline level of emissions, and by 2011 it will complete its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, will take effect January 1, 2012.

On December 11, 2008, CARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of Senate Bill (SB) 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

There are four major components to SB 375. First, SB 375 requires regional GHG emissions targets. CARB’s Regional Targets Advisory Committee will guide the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the State. These targets, which MPOs may propose themselves, will be updated every eight years in conjunction with the revision schedule of housing and transportation elements.

Second, MPOs will be required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the Regional Transportation Plan (RTP) must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.

Third, SB 375 requires that regional housing elements and transportation plans be synchronized on eight-year schedules. In addition, Regional Housing Needs Assessment (RHNA) allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years.

Finally, MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the CTC. Regional Transportation Planning Agencies, cities, and counties are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

Complete Streets (AB 1358). Assembly Bill 1358, also known as the California Complete Streets Act of 2008, requires cities and counties to include complete streets policies in their general plans. These policies address the safe accommodation of all users, including bicyclists, pedestrians, motorists, public transit vehicles and riders, children, the elderly, and the disabled. These policies can apply to new streets as well as the redesign of corridors such as El Camino Real or redesigned streets in North Bayshore, East Whisman, or other change areas.

California High Speed Rail. While not an existing service within the city, a recently passed statewide bond measure has initiated the planning and design process upon which the City is commenting and providing input. The California High-Speed Rail Authority (CHSRA) has formed working groups to coordinate with cities and VTA, Caltrain, County Roads, BART and other agencies on the Peninsula to address planning and construction of this project. The City's current scoping comments focus on the grade-separations at Rengstorff Avenue and Castro Street/Moffett Boulevard, but also address all aspects of the project including overall traffic and circulation, noise and construction impacts, as well as urban design issues and impacts on Downtown and the Downtown Transit Station.

(3) Regional Transportation Agencies and Plans. Regional transportation agencies and plans are described below.

Metropolitan Transportation Commission (MTC). The MTC is the Bay Area's regional transportation planning agency and federally designated Metropolitan Planning Organization (MPO). MTC is responsible for preparing the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities. The RTP is a 20-year plan that is updated every three years to reflect new planning priorities and changing projections of future growth and travel demand. The long-range plan must be based on a realistic forecast of future revenues, and the transportation projects taken as a whole must help improve regional air quality. The Commission also screens requests from local agencies for State and federal grants for transportation projects to determine compatibility with the RTP.

Bay Area Air Quality Management District. The BAAQMD is the regional agency with the authority to develop and enforce regulations for the control of air pollution throughout the Bay Area. The Clean Air Plan is BAAQMD's plan for reducing the emissions of air pollutants that lead to

ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the Guidelines describe is that plans, including General Plans, must demonstrate reasonable efforts to implement transportation control measures (TCM) included in the Clean Air Plan that identify local governments as the implementing agencies. On-road motor vehicles are the largest source of air pollution in the Bay Area. To address the impact of vehicles, the California Clean Air Act requires air districts to adopt, implement, and enforce TCM.

Santa Clara Valley Transportation Authority (VTA). VTA serves two roles in Santa Clara County: (1) as primary transit operator and (2) as the Congestion Management Agency (CMA). In its role as transit operator, VTA is responsible for the development, operation, and maintenance of the bus and light rail system within the County. VTA operates over 70 bus lines and three light rail lines, in addition to shuttle and paratransit service. The VTA also provides transit service to major regional destinations and transfer centers in adjoining counties.

During the Valley Transportation Plan 2020 update, the VTA and member agencies (including the City of Mountain View) published the Community Design & Transportation (CDT) Program (August 2003), which "... provides design guidelines, planning tools, and policy guidance for coordinating transportation and land use in projects across the county." This report identifies future growth areas including Downtown Mountain View, the El Camino corridor, and the station areas adjacent to the light rail and Caltrain station.

As the County's CMA, VTA is responsible for managing the County's blueprint to reduce congestion and improve air quality. VTA is authorized to set State and federal funding priorities for transportation improvements affecting the Santa Clara County Congestion Management Program (CMP) transportation system. CMP designated transportation system components in Mountain View include a regional roadway network, a transit network, and a bicycle network. The CMP roadway network in Mountain View includes all State highways, County expressways, and some principal arterials and intersections, while the transit network includes rail service and selected bus service. The bicycle network focuses on the Cross County Bicycle Corridors, which is a network of 16 routes that are identified in the Santa Clara Countywide Bicycle Plan (June 2008). The long-range countywide transportation plan and the means by which projects compete for funding and prioritization are documented in the Valley Transportation Plan (VTP) 2030 (adopted in February 2005). An update to this plan (VTP 2035) is currently being prepared and generally is completed in advance of the MTC RTP.

The Santa Clara Valley Transportation Authority (VTA) oversees the Santa Clara County Congestion Management Program (CMP). The relevant State legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of gas tax revenues. The CMP legislation requires that each CMP contain the following five mandatory elements: 1) a system definition and traffic level of service standard element; 2) a transit service and standards element; 3) a trip reduction and transportation demand management element; 4) a land use impact analysis program element; and 5) a capital improvement element. The Santa Clara County CMP includes the five mandated elements and three additional elements, including: a county-wide transportation model and data base element; an annual monitoring and conformance element; and a deficiency plan element. Preparation of a deficiency plan is required by cities for CMP facilities that operate at unacceptable levels based on the CMP's standard. The purpose of a deficiency plan is to improve system-wide traffic flow and air quality. According to the VTA's Requirements for Deficiency Plans (1992), plans "allow local jurisdictions to adopt innovative and comprehensive transportation strategies for

improving system wide [operations] rather than adhering to strict traffic level of service standard that may contradict other community goals.”

VTA also requires local jurisdictions to analyze impacts of new developments or land use policy changes on CMP facilities if they are expected to generate 100 or more new peak hour trips. VTA developed the Transportation Impact Analysis Guidelines (updated March 2004) that were adopted by all Cities and the County to provide local jurisdictions with a uniform program for evaluating the transportation impacts of land use decisions on the designated CMP System.

VTA’s Short Range Transit Plan (SRTP) is a federally mandated planning document that describes the plans, programs and goals of VTA’s transit service. It has a 10-year planning horizon and is updated annually. It focuses on the characteristics and capital needs of the existing system, and on committed (funded) expansion plans. The current plan proposes to keep bus and light rail service at existing levels, expand Community Bus services (neighborhood-based circulator and feeder routes that travel within a limited area), to continue to contribute monetarily to Caltrain service, and to replace and expand the bus vehicle fleet.

Santa Clara County. Streets in unincorporated areas, as well as all of the County expressways (including Central Expressway in Mountain View), are under the auspices of the Santa Clara County Roads and Airports Department. Roads and airports staff is responsible for maintaining and operating all of the expressways and all of the streets on County property.

The Santa Clara County Trails Master Plan was approved by the Santa Clara County Board of Supervisors in 1995. The goal of the plan is to direct the County’s trail implementation efforts well into the 21st century with a balanced regard for the public good and individual desires for privacy. The plan implements the vision to provide a contiguous trail network that connects cities to one another, connects cities to the County’s regional open space resources, connects County parks to other County parks, and connects the northern and southern urbanized regions of the County. The plan identifies regional trail routes, sub-regional trail routes, connector trail routes, and historic trails.

The Santa Clara Countywide Bicycle Plan synthesizes other local and County plans into a comprehensive 20-year cross-county bicycle corridor network and expenditure plan (May 2008). Nine identified cross county bicycle corridors are within Mountain View.

Caltrain/Peninsula Corridor Joint Powers Board. Caltrain is owned by the Peninsula Corridor Joint Powers Board, operated under contract with Amtrak, and managed under contract with the San Mateo County Transit District (SamTrans). Caltrain operates 50 miles of commuter rail between San Francisco and San Jose, and limited commute service trains that serve Gilroy during weekday commute periods. There are two Caltrain stations in Mountain View, the Mountain View Station located in Downtown on Evelyn Avenue and Castro Street, and the San Antonio Station near San Antonio Road.

Planned short-range improvements to Caltrain focus on a strategy called the State of Good Repair which provides a systematic approach to optimize the current system’s condition and performance. The 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. Hold-out stations are where the platform configuration requires trains to wait outside the platform area while another train is stopped at the station resulting in

increases in service delays. Planned long-range improvements to Caltrain include electrification of the entire line to improve operating efficiency and provide environmental benefits.

(4) Local Regulations. The City of Mountain View has adopted several plans that provide guidance for managing the City's transportation system. Key plans are described below.

City of Mountain View Circulation Element. The 1992 General Plan encourages pedestrian travel as a viable mode of movement between high-density residential and commercial areas throughout the City and in activity areas such as schools, parks, transit stations, and the Downtown and neighborhood business districts, by providing safe and convenient pedestrian facilities. The "Circulation Chapter" of the 1992 General Plan identifies six planned under- or overpass improvements to enhance the pedestrian and bicycle networks on the Stevens Creek Trail (e.g., US 101, SR 85 at Gladys Avenue, SR 237, El Camino Real and SR 85 at Dale Avenue/Heatherstone Way). The 1992 General Plan has a policy to encourage higher levels of walking in the Downtown.

The 1992 General Plan calls for the development of a safe, direct and well-maintained transportation bicycle network that links residences, employment centers, schools, parks and transit facilities. The 1992 General Plan also called for bicycle parking in the City and allowing bikes on transit, both of which are now available.

Bicycle Transportation Plan. The bicycle network promotes bicycling as an alternative mode of transportation for both commuting and recreation with the specific goal of implementing the 2008 Bicycle Transportation Plan (May 2008):

To provide a safe and efficient bicycle network that improves access, eliminates barriers to bicycle travel, encourages automobile trip reduction and promotes cycling as a recreational activity as well as a transportation/commute alternative.

The 2008 Bicycle Transportation Plan describes the four bikeway classifications in the City: bike paths, bike lanes, bike routes, and bike boulevards. The 2008 Bicycle Transportation Plan includes city ordinance number 96, which amended Chapter 36, Article IV, Section 36.37 of the Mountain View City Code to include bicycle parking requirements by land use. The 2008 Bicycle Transportation Plan and Parking Ordinance Section 36.37.100 defines three bicycle parking classifications in the City: (1) short-term (one to two hours), (2) long-term (two hours to a full day) and (3) overnight (one night or more). The classifications correspond to the physical form of bicycle parking.

City-Wide Emergency Evacuation Plan. In the event of a fire, geologic, or other hazardous occurrence, the City's Emergency Evacuation Plan provides comprehensive, detailed instructions and procedures regarding the responsibilities of City personnel and coordination with other agencies to ensure the safety of Mountain View citizens.

The Emergency Evacuation Plan states that the disruptions produced by a major earthquake throughout the Bay Area would close trans-bay bridges, freeways, major airports, and rail transportation infrastructure. The Bay Bridge, San Mateo Bridge, and Dumbarton Bridge are expected to be opened to emergency vehicles within 36 hours. Most of the western Santa Clara County freeways will be open and subject to delays and detours. Because the San Francisco and Oakland airports are built entirely on "fill" or artificially compacted earth or gravel, and the water table is within 5 feet of the surface, runways are expected to be unusable due to major damage. Moffett Federal Airfield and the

Mineta San Jose International Airport are expected to have a reasonable chance of surviving a major earthquake without serious disruption of runway integrity for most aircraft types. These major airports will be open for limited use after the earthquake. Ground failure is expected to damage the alignment of railroads.

2. Impacts and Mitigation Measures

This section identifies potential adverse impacts to transportation and circulation that may result from the implementation of the Draft General Plan and GGRP, as well as appropriate mitigation measures, where feasible. Significant impacts are identified according to the significance criteria identified below. The significance criteria are followed by a discussion of the project's potential less-than-significant and significant impacts to transportation and circulation in the area.

As discussed in the setting section, the following scenarios were evaluated for this impact analysis. Please note that the GGRP emissions reduction analysis incorporates TDM policy direction from the Draft General Plan Mobility Element consistent with the TDF model analysis for trip reductions, and therefore the Draft General Plan analysis includes the GGRP VMT reduction strategies.

- Existing Conditions, which represents transportation conditions in 2009.
- Existing Plus Draft General Plan Conditions 2009, representing Draft General Plan land use (2030) and existing roadway system (2009). No land use or roadway changes were made for jurisdictions outside Mountain View.
- Draft General Plan Conditions 2030, which represents conditions based on Draft General Plan land use for Mountain View and the Association of Bay Area Governments (ABAG) land use projections for adjacent jurisdictions and planned and funded transportation system improvements in the *Valley Transportation Plan (VTP) 2030*.

The Mobility Element of the Draft General Plan includes goals, policies, and actions that respond to existing conditions and projected jobs and population growth, and are aimed at enhancing Mountain View's long-standing strategy of supporting multi-modal transportation options and compact development. The Draft General Plan goals, policies and actions for mobility are described in Appendix A. The GGRP measures are also listed in Appendix A.

a. Criteria of Significance. This section provides first the general CEQA and program-level criteria of significance and then more specific significance criteria against which the proposed project is evaluated. According to the 2010 *CEQA Guidelines*, implementation of the Draft General Plan and GGRP would have a significant impact if they would do any of the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the **performance of the circulation system**, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. (See transportation impact criteria 1 through 4)
- Conflict with an applicable **congestion management program**, including, but not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways. (See transportation impact criteria 2, 3 and 4)

- Result in a change in **air traffic patterns**, including either an increase in traffic levels or a change in location that results in substantial safety risks. (See transportation impact criteria 8)
- Substantially **increase hazards due to a design feature** (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (Not applicable⁵)
- Result in **inadequate emergency access**. (See transportation impact criteria 9)
- Conflict with adopted **policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities**, or otherwise decrease the performance or safety of such facilities. (See transportation impact criteria 5, 6, and 7)

The *CEQA Guidelines* are intended to provide general guidance for lead agencies evaluating impacts to the transportation system. For purposes of evaluating the Draft General Plan conditions, the above significance criteria are interpreted as described below and earlier in the “Methods” discussion within the Setting section. As the City of Mountain View does not have adopted local program level significance criteria, these significance criteria were developed in consultation with City staff and based on similar impact thresholds developed for other general plan updates in Santa Clara County and the land use project level VTA CMP significance criteria.

(1) Vehicle Miles of Travel Impact Criteria (A Measure of Circulation System Effectiveness): A change in land use based vehicle miles of travel (VMT) per service population is considered significant when:

- The proposed project causes daily land use-based VMT per service population to increase over existing conditions.

(2) Roadway Segment Criteria: A daily roadway segment operation⁶ is considered significant if implementation of the proposed project would cause:

- Mountain View roadway segment operations to deteriorate from an acceptable level (LOS D outside of Downtown and San Antonio Center areas) to an unacceptable level (LOS E or F).
- Palo Alto or Los Altos roadway segment operations to deteriorate from an acceptable level (LOS D) to an unacceptable level (LOS E or F).
- Mountain View roadway segment operations to deteriorate from an acceptable level (LOS E within the Downtown and San Antonio Center areas) to an unacceptable level (LOS F).
- Santa Clara County roadway segment operations to deteriorate from an acceptable level (LOS E) to an unacceptable level (LOS F).

If a segment is already operating at unacceptable levels, as defined by the controlling agency (i.e., the City of Mountain View for local streets, Santa Clara County for expressways, and Caltrans or VTA

⁵ The Draft General Plan will not substantially increase hazards due to a design feature e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There is no impact in this area and it will not be addressed further in this environmental document.

⁶ Daily roadway segment versus peak hour intersection level of analysis is discussed in subsection 1.a.(5) “Daily Roadway and Freeway Segment Forecasts and Operations.”

for El Camino Real), an increase in traffic volume on the segment representing more than one (1.0) percent of the facilities' capacity is considered significant.

(3) Freeway Segment Criteria: Similar to the roadway segment significance criteria, roadway and freeway segment significant impacts are defined to occur under the VTA CMP standard (LOS E) when the addition of traffic from the proposed project causes:

- Roadway or freeway segment operations to deteriorate from an acceptable level to an unacceptable level (LOS F).

The Caltrans LOS standard and significance criteria from the *Guide for the Preparation of Traffic Impact Studies* (December 2002) traffic impacts on Caltrans freeway segments are defined to occur when:

- Caltrans freeway segment and other state route operations to deteriorate from an acceptable level (LOS C/D cusp) to an unacceptable level (LOS D, E or F).

If a segment is already operating at unacceptable levels, as defined by the controlling agency (i.e., Caltrans or VTA for freeway segments), an increase in traffic volume on the segment representing more than one (1.0) percent of the facilities' capacity is considered significant.

(4) Adjacent Jurisdiction Roadway Segment Criteria: An impact to an adjacent community is considered significant if implementation of the proposed project would cause 25 percent or more of its major street lane miles to meet the following conditions in a peak-hour:

- A future volume-to-capacity ratio is greater than 1.0; and
- More than ten (10) percent of the peak-hour traffic volume on the segment is attributable to the project (in either peak hour)

(5) Transit Impact Criteria: A transit impact is considered significant if implementation of the proposed project would:

- Disrupt existing, or interfere with planned transit services or facilities.

(6) Bicycle Facilities Impact Criteria: A bicycle impact is considered significant if implementation of the proposed project would:

- Disrupt existing bicycle facilities; or
- Conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards.

(7) Pedestrian Facilities Impact Criteria: A pedestrian impact is considered significant if implementation of the proposed project would:

- Disrupt existing pedestrian facilities; or
- Create inconsistencies with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies or standards.

(8) **Air Traffic Impact Criteria:** An air traffic impact is considered significant if implementation of the proposed project would:

- Increase air traffic levels resulting in a substantial safety risk.

(9) **Emergency Access Impact Criteria:** An emergency vehicle access impact is considered to be significant if implementation of the proposed project would:

- Provide inadequate access to accommodate emergency vehicles.

b. Impacts Analysis. The following section summarizes the analysis of various citywide transportation and circulation factors. Each section includes a discussion of impacts under Existing Plus Draft General Plan Conditions (2009) and Draft General Plan Conditions (2030).

(1) **Daily Vehicle Miles Traveled.** The proposed project creates a land use context and transportation policies supportive of travel by all modes of transportation in the city. A complete list of draft goals, policies and actions is included in Appendix A, and the GGRP in its entirety is included in Appendix A3. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include key policies and their associated actions that seek to reduce vehicle miles traveled including:

POLICY MOB-1.1: **Multi-modal planning.** Adopt and maintain master plans and street design standards to optimize mobility for all transportation modes.

POLICY MOB 1.2: **Accommodating all modes.** Plan, design and construct new transportation improvement projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists and persons of all abilities.

POLICY MOB-1.3: **Pedestrian and bicycle placemaking.** Promote pedestrian and bicycle improvements that improve connectivity between neighborhoods, provide opportunities for placemaking, and foster a greater sense of community.

POLICY MOB 1.4: **Street design.** Ensure street design standards allow a variety of public and private roadway widths.

POLICY MOB-1.5: **Public accessibility.** Ensure all new streets are publicly accessible.

POLICY MOB 1.6: **Traffic calming.** Provide traffic calming, especially in neighborhoods and around schools, parks and gathering places.

POLICY MOB 2.1: **Broad accessibility.** Improve universal access within private developments and public and transit facilities, programs and services.

POLICY MOB 3.1: **Pedestrian network.** Provide a safe and comfortable pedestrian network.

POLICY MOB 3.2: **Pedestrian connections.** Increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, village centers, and other destinations throughout the City.

POLICY MOB 3.3: **Pedestrian and bicycle crossings.** Enhance pedestrian and bicycle crossings at key locations across physical barriers.

POLICY MOB 3.4: **Avoiding street widening.** Preserve and enhance citywide pedestrian connectivity by limiting street widening as a means of improving traffic.

POLICY MOB 3.5: **Walking and bicycling outreach.** Actively engage the community in promoting walking and bicycling through education, encouragement, and outreach on improvement projects and programs.

POLICY MOB 4.1: **Bicycle network.** Improve facilities and eliminate gaps along the bicycle network to connect destinations across the City.

POLICY MOB 4.2: **Planning for bicycles.** Use existing planning processes to identify or implement improved bicycle connections and bicycle parking facilities.

POLICY MOB 4.3: **Public bicycle parking.** Increase the amount of well-maintained, publicly accessible bicycle parking and storage throughout the City.

POLICY MOB 4.4: **Bicycle parking standards.** Maintain bicycle parking standards and guidelines for well-sited bicycle parking and storage in private development to enhance the bicycle network.

POLICY MOB 4.5: **Promoting safety.** Educate bicyclists and motorists on bicycle safety.

POLICY MOB 5.1: **Transit agencies.** Coordinate with local and regional transit agencies, including MTC, VTA, JPB (Caltrain), SamTrans, and the California High-Speed Rail Authority, to improve transportation service, infrastructure and access in the city.

POLICY MOB 5.3: **Local transportation services.** Create or partner with transit providers, employers, educational institutions, and major commercial entities and event organizers to improve local transportation services.

POLICY MOB 5.4: **Connecting key areas.** Identify and implement new or enhanced transit services to connect Downtown, El Camino Real, San Antonio, North Bayshore, East Whisman and NASA Ames Research Center.

POLICY MOB 5.5: **Access to transit services.** Support right-of-way design and amenities consistent with local transit goals to facilitate access to transit services and improve transit as a viable alternative to driving.

POLICY MOB 5.6: **Emerging technologies.** Explore emerging transit technologies such as Personal Rapid Transit and their citywide applicability.

POLICY MOB 6.1: **Safe routes to schools.** Promote safe routes to schools programs for all schools in the City.

POLICY MOB 6.2: **Prioritizing projects.** Ensure bicycle and pedestrian safety improvements include projects to enhance safe accessibility to schools.

POLICY MOB 6.3: **Connections to trails.** Connect schools to the citywide trail systems.

POLICY MOB 6.4: **Education.** Support education programs that promote safe walking and bicycling to schools.

POLICY MOB 8.1: **Multi-modal performance measures.** Develop performance measures and indicators for all modes of transportation, including performance targets that vary by street type and/or location.

POLICY MOB 8.2: **Level of service.** Ensure performance measurement criteria optimize travel by each mode.

POLICY MOB 10.2: **Reducing travel demand.** Promote effective Transportation Demand Management programs for existing and new development.

POLICY MOB 10.3: **Avoiding street widening.** Limit widening of streets as a means of improving traffic, and focus instead on operational improvements to preserve community character.

POLICY MOB 11.3: **Facility types.** Maintain and enhance walking, bicycling and transit-related facilities to address community needs.

POLICY LUD 3.1: **Land use and transportation.** Focus higher land use intensities and densities within ½ mile of public transit service and along major commute corridors.

POLICY LUD 9.4: Enhanced pedestrian activity. Ensure commercial development enhances pedestrian activity through the following strategies:

- Encourage the first level of the building to occupy a majority of the lot’s frontage, with exceptions for vehicle and pedestrian access.
- Allow for the development of outdoor plazas and dining areas.
- Encourage the majority of a building’s ground floor frontage to provide visibility into the building by incorporating windows and building entrances.
- Require that ground floor uses be primarily pedestrian-oriented.
- Ensure pedestrian safety and access when designing parking and/or drive-thru operations.
- Minimizing vehicle driveways.

Existing Plus Draft General Plan Conditions 2009. The absolute number of citywide VMT increases between the Existing Conditions and Existing Plus Draft General Plan Conditions. As shown in Table IV.C-10 below; however, the daily VMT *per service population* under Existing Plus Draft General Plan Conditions would decrease by approximately 0.73 vehicle miles per person per day. This VMT per service population decrease indicates that the average resident or employee’s trip lengths are shorter when adding the planned land use changes to the existing conditions.

Table IV.C-10: Existing Plus Draft General Plan Conditions 2009: Citywide Vehicle Miles Traveled

Measure ^{1,2}	Year 2009 Scenarios	
	Existing	Existing Plus Draft General Plan
Daily vehicle miles traveled (VMT)	2,452,696	2,993,630
Service Population	134,320	170,800
Daily VMT per service population	18.26	17.53

¹ VMT = vehicle miles traveled; Service population = residents + employees

² Citywide VMT based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*X I).

Source: Fehr & Peers, June 2011.

Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would not result in increased daily land-use-based vehicle miles of travel (VMT) per service population due to population and employment growth planned within the City. Thus, there is a less-than-significant impact associated with the Existing Plus Draft General Plan Condition and no mitigation measures are required.

Draft General Plan Conditions 2030. The absolute number of citywide VMT increases between the Existing Conditions and Draft General Plan Conditions (2030). As shown in Table IV.C-11 below, the VMT per service population is projected to slightly increase by approximately 0.75 vehicle miles per person per day. This VMT per service population increase indicates that trip lengths are longer in the future as compared to today.

Table IV.C-11: Draft General Plan Conditions 2030: Citywide Vehicle Miles Traveled

Measure ^{1,2}	Year 2009 Scenario	Year 2030 Scenario
	Existing	Draft General Plan
Daily vehicle miles traveled (VMT)	2,452,696	3,247,067
Service Population	134,320	170,800
Daily VMT per service population	18.26	19.01

¹ VMT = vehicle miles traveled; Service population = residents + employees

² Citywide VMT based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*XII).

Source: Fehr & Peers, June 2011.

Impact TRANS-1: Implementation of the Draft General Plan and GGRP would result in increased daily land-use-based vehicle miles of travel (VMT) per service population in 2030 due to population and employment growth planned within the City. (S)

This impact is projected to occur because of overall growth and increased destination choices throughout the Bay Area region and within Mountain View, which influences travel patterns. Furthermore, although the allocation of a significant percentage of the new development will be located near major transit facilities, and/or nearby complementary land uses, the average trip length in Year 2030 increases due to the greater rate of increase in jobs than population in the City of Mountain View from Existing Conditions. Specifically, the jobs-to-population ratio in the City remains high (approximately 1.0) compared to the Santa Clara County ratio (0.45), which represents a more “balanced” mix of jobs-to-population⁷.

Adoption of the proposed project would include goals, policies, and action items that seek to reduce the City’s VMT per service population over time. Key policies to reduce vehicle trips are listed during the introduction of this section. Implementation of the Draft General Plan creates a land use context supportive of travel by all modes of transportation in the city.

However, impacts as the result of implementation of the Draft General Plan would likely remain significant until policies and analysis assumptions within the General Plan are modified to significantly increase the density, diversity, and location of land uses above the changes identified in the Draft General Plan. The Draft General Plan policies, land use forecasts, and targeted areas for are the result of an extensive outreach process among staff, policymakers and the public to arrive at a that balance competing concerns about accommodating growth and jobs and quality of life. Therefore, implementation of the proposed project would result in VMT that would be considered a significant and unavoidable impact.

Although it would remain a significant and unavoidable impact, the following mitigation measure is proposed to better measure the effectiveness and progress of implementation of the proposed policies and actions and reduce the impact over time.

⁷ Research suggests that having residences and jobs in close proximity will reduce the vehicle-trips generated by each use by allowing some trips to be made on foot or by bicycle. Ewing, R., and R. Cervero, 2001. “Travel and the Built Environment.” *Transportation Research Board*, Vol. 1780, pp. 87-114.

Mitigation Measure TRANS-1: The City shall include the following new policy in the Mobility chapter:

POLICY MOB ###: Multi-modal transportation monitoring. Monitor progress on the effectiveness of proposed policies to reduce VMT per service population by establishing transportation mode share targets and periodically comparing travel survey data to established targets.

The City shall include the following new action under Policy MOB 8.1:

ACTION MOB 8.1.3: Interim level of service (LOS) standards. Until adoption of the mobility plans described in Action MOB 1.1.1, maintain the Citywide vehicle LOS standards from the 1992 General Plan, which include a target peak hour LOS policy of LOS D for all intersections and roadway segments, with the following exceptions in high-demand areas:

- Use LOS E for intersections and street segments within the Downtown Core and San Antonio areas where vitality, activity and multi-modal transportation use are primary goals; and
- Use LOS E for intersections and street segments on CMP designated roadways in Mountain View (e.g., El Camino, Central Expressway and San Antonio Road).

Monitoring will assist the City in evaluating the effectiveness of the proposed Mobility Element and Land Use and Design Element policies listed in the introduction of this section and associated VMT reduction measures (e.g., land use/location, neighborhood/site enhancement, parking policy/pricing, transit system improvements, and commute trip reduction programs) that may be needed to reduce VMT. However, until such time that additional measures can be incorporated, implementation of the proposed project would result in an increase in VMT that would be considered a significant and unavoidable impact. (SU)

(2) **Roadway Segment Analysis.** The proposed project recognizes and accepts that some levels of congestion will occur both in Mountain View and elsewhere in Santa Clara County and the region resulting from new development. This congestion will generally occur during the typical morning and evening peak commute periods on a weekday, but in almost all cases will not occur during the vast majority of the typical day. In evaluating the roadway system, an impact to roadways may be acceptable or desired when balanced against other community values related to resource protection, social equity, economic development, and consideration of street improvements for pedestrians, bicyclists, and transit users.

The proposed project creates a land use context and transportation policies supportive of travel by all modes of transportation in the city, to balance each travel mode and avoid expanding roadways that conflict with benefits such as economic vitality, ability to provide enhanced multi-modal facilities, and urban design amenities. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include all the policies listed previously that seek to reduce and/or manage vehicle trips ~~including~~.

Existing Plus Draft General Plan Conditions 2009. Daily roadway volumes and level-of-service under Existing Conditions (2009) and Existing Plus Draft General Plan Conditions (2009), are summarized on Figures IV.C-7 and IV.C-8. Existing Conditions and Existing Plus Draft General Plan Conditions have similar operations for local roadway segments. The Existing Conditions and Existing Plus Draft General Plan Conditions scenarios are based on the 2009 roadway system. Table IV.C-12 identifies the one significant impact roadway segment for Existing Plus Draft General Plan Conditions (2009).

Table IV.C-12: Existing Plus Project Conditions 2009: Daily Roadway Segment Volume and Level of Service Summary

Roadway Segment ¹	Existing/Future Roadway Type (Potential Mitigation)	Year 2009 Scenarios				Does Not Meet Current GP LOS Standard ⁴	Significant Impact Based on Current GP Criteria ⁵
		Existing		Existing Plus Draft General Plan			
		Daily Volume ²	LOS ³	Daily Volume	LOS ³		
39. San Antonio Rd. between SB US 101 Ramps and Charleston Rd.* (Palo Alto)	3-Lane Arterial (4-Lane Divided Arterial)	35,600	F	39,200	F	√	√

¹ Major roadways nearest the count location

² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.

³ LOS = Level of Service

⁴ Does not meet Current General Plan (GP) LOS Standard – Does not meet the LOS D standard for on local streets and LOS E standard for streets within the Downtown and San Antonio Center areas and CMP facilities (e.g., Central Expressway, El Camino Real) under the 1992 General Plan Circulation Element. Local streets in Palo Alto and Los Altos have a LOS D standard too.

⁵ Roadway segment impact criteria are discussed in subsection 2.a.(2).

* Denotes Congestion Management Program (CMP) facility

Source: Fehr & Peers, June 2011.

Impact TRANS-2a: Under Existing Plus Draft General Plan Conditions 2009, implementation of the proposed project would increase motor vehicle traffic and congestion, which would result in decreased roadway segment levels of service on one roadway study segment (39. San Antonio Road between SB US 101 Ramps and Charleston Road). This would be considered a potentially significant impact. (S)

Roadway segments that exceed the LOS thresholds in the 1992 General Plan would be considered a significant impact because of the minimum level of service policy. Therefore, increased traffic and congestion from implementation of the Draft General Plan and GGRP is considered a significant impact.

Adoption of the proposed project would include goals, policies, and action items (as described above) that seek to reduce the City’s vehicle trip impacts Implementation of the Draft General Plan creates a land use context that utilizes and is supportive of travel by all modes of transportation in the City. The traffic management practices identified in the Draft General Plan would reduce vehicle trips, traffic and congestion, and enhance travel by other modes of transportation. This would require the City to monitor and manage traffic operations along roadway segments as development occurs to ensure that the roadway system is optimized for steady, safe, and orderly traffic flow operations. In other words, as specific development details and locations are known (e.g., precise plans or development projects),

a project level analysis will evaluate the transportation system (e.g., vehicle, transit, bicycle, and pedestrian systems) including traffic operations, which may include project specific transportation improvements. This segment of San Antonio Road is a CMP facility in the City of Palo Alto, and is not under the jurisdiction of Mountain View; thus, implementation cannot be guaranteed. Therefore, implementation of the Draft General Plan would result in increased LOS that would be considered a significant impact.

Partial mitigation could include operational improvements, such as signal timing and coordination to maximize efficiency of the streets during peak periods; however, this segment is ultimately operating at an unacceptable LOS due to vehicle demand exceeding capacity. Mitigation could also include widening a road to achieve a lower volume to capacity ratio. While limited roadway widening, such as at intersections, may be necessary to improve operations, it can create substantial secondary impacts and should be avoided where feasible. Roadway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore wider roadways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources and discourage roadway use by pedestrians and bicyclists. Widening can also result in higher expenditure of infrastructure dollars for wider roadways that do not necessarily serve all users of the circulation system.

A fair share contribution toward roadway improvement costs is considered an acceptable mitigation measure for a study at the general plan program level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding over the long term, additional sources would be needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, local impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee should it be proposed by regional agencies, such as VTA, and would support the use of these fees to improve facilities for all travel modes to achieve optimal transportation system performance. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any roadway improvements would be located outside of the City of Mountain View's jurisdiction, their implementation cannot be guaranteed. Therefore, this impact would continue to be significant and unavoidable.

Mitigation Measure TRANS-2a: To improve the LOS, the roadway segments could be widened to meet Palo Alto's citywide level of service standard. However, unless complete funding is available from various sources including the City of Mountain View, implementation of the necessary widening and roadway improvements is not likely or feasible. Additionally, since any roadway improvements would be located outside of the City of Mountain View's jurisdiction, implementation of the roadway improvements cannot be guaranteed by the City. Therefore, no feasible mitigation measures have been identified; this impact would remain significant and unavoidable under Existing Plus Draft General Plan Conditions. (SU)

Draft General Plan Conditions 2030. Daily roadway volumes and level-of-service under Existing Conditions (2009) and Draft General Plan Conditions (2030), are summarized in Figures IV.C-7 and IV.C-9. The LOS E and F roadway segments are either:

- Arterial streets that are used for access to/from the freeway system:
 - El Camino Real between Grant Rd. and SB SR 85 Ramps

- Grant Road between Phyllis Avenue and Cuesta Drive
- Rengstorff Ave. between SB US 101 Ramps and Old Middlefield Way
- San Antonio Road between SB US 101 Ramps and Charleston Road
- Arterial streets crossing barriers such as the caltrain railroad tracks or sub-regional facilities such as Central Expressway and El Camino Real:
 - Rengstorff Avenue between Montecito Ave. and Central Expressway
 - Rengstorff Avenue between Central Expressway and California Street
 - Shoreline Boulevard between Montecito Avenue and Central Expressway
- Arterial streets parallel to congested roadways such as El Camino Real, Central Expressway and Grant Road:
 - California Street between Escuela Avenue and Shoreline Boulevard
 - Miramonte Avenue between El Camino Real and Cuesta Drive

The City of Mountain View's transportation network is dominated by motor vehicle travel. High levels of motor vehicle travel result in increased congestion at locations where arterials access regional facilities, cross barriers or parallel congested sub-regional roadways. Because the street and freeway system within the City is nearly complete, the potential for expanding vehicle capacity on major roadways is limited. Some improvements are possible at key constraint points such as intersections and interchanges. However, congestion on freeways and expressways will continue to place more of the regional travel burden on arterial and collector streets – a use that these streets were generally not intended to serve. Table IV.C-13 identifies the roadway segments with significant impacts in the Draft General Plan Conditions 2030 scenario.

Impact TRANS-2b: Under Draft General Plan Conditions 2030, implementation of the proposed project would increase motor vehicle traffic and congestion, which would result in decreased roadway segment levels of service on several roadway study segments. This would be considered a potentially significant impact. (S)

Under the 1992 General Plan, roadway segments that exceed the LOS threshold would be considered a significant impact because of the minimum level of service policy. Therefore, increased traffic and congestion from implementation of the Draft General Plan and GGRP is considered a significant impact, as identified in Table IV.C-13.

Adoption of the proposed project would include new goals, policies, and action items that seek to reduce the City's vehicle trips. Implementation of the Draft General Plan creates a land use context supportive of travel by all modes of transportation in the city. The traffic management practices identified in the Draft General Plan would reduce vehicle trips, traffic and congestion, and enhance travel by other modes of transportation. This would require the City to monitor and manage traffic operations along roadway segments as development occurs to ensure that the roadway system is optimized for steady, safe, and orderly traffic flow operations. In other words, as specific development details and locations are known (e.g., precise plans or development projects), a project level analysis will evaluate the transportation system (e.g., vehicle, transit, bicycle, and pedestrian systems) including traffic operations, which may include project specific transportation improvements. Furthermore, the roadway segment of San Antonio Road is a CMP facility in the City of Palo Alto;

thus, implementation cannot be guaranteed. Therefore, implementation of the Draft General Plan would result in increased LOS on roadway segments that would be considered significant impacts.

Table IV.C-13: Draft General Plan Conditions 2030: Daily Roadway Segment Volume and Level of Service Summary

Roadway Segment ¹	Existing/Future Roadway Type (Potential Mitigation)	Year 2009 Scenario		Year 2030 Scenario		Does Not Meet Current GP LOS Standard ⁴	Significant Impact Based on Current GP Criteria ⁵
		Existing		Draft General Plan			
		Daily Volume ²	LOS ³	Daily Volume	LOS ³		
2. California St. between Escuela Ave. and Shoreline Blvd.	4-Lane Undivided Arterial (4-Lane Divided Arterial)	11,400	C	38,500	F	√	√
16. El Camino Real between Grant Rd. and SB SR 85 Ramps*	6-Lane Divided Arterial (8-Lane Divided Arterial)	51,200	D	69,800	F	√	√
22. Grant Rd. between Phyllis Ave. and Cuesta Dr.	4-Lane Divided Arterial (6-Lane Divided Arterial)	37,200	D	43,400	E	√	√
30. Miramonte Ave. between El Camino Real and Cuesta Dr.	4-Lane Undivided Arterial (4-Lane Divided Arterial)	13,400	C	39,100	F	√	√
35. Rengstorff Ave. between SB US 101 Ramps and Old Middlefield Wy.	4-Lane Undivided Arterial (4-Lane Divided Arterial)	18,100	C	36,100	F	√	√
36. Rengstorff Ave. between Montecito Ave. and Central Expy.	4-Lane Undivided Arterial (4-Lane Divided Arterial)	18,300	C	34,800	F	√	√
37. Rengstorff Ave. between Central Expy. and California St.	4-Lane Undivided Arterial (4-Lane Divided Arterial)	18,800	C	40,400	F	√	√
39. San Antonio Rd. between SB US 101 Ramps and Charleston Rd.* (Palo Alto)	3-Lane Arterial (6-Lane Divided Arterial)	35,600	F	48,700	F	√	√
44. Shoreline Blvd. between Montecito Ave. and Central Expy.	4-Lane Divided Arterial (6-Lane Divided Arterial)	26,800	D	48,800	F	√	√

¹ Major roadways nearest the count location.

² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.

³ LOS – Level of Service

⁴ Does not meet Current General Plan (GP) LOS Standard – Does not meet the LOS D standard for on local streets and LOS E standard for streets within the Downtown and San Antonio Center areas and CMP facilities (e.g., Central Expressway, El Camino Real) under the 1992 General Plan Circulation Element. Local streets in Palo Alto and Los Altos have a LOS D standard too.

⁵ Roadway segment impact criteria are discussed in subsection 2.a.(2).

* Denotes Congestion Management Program (CMP) facility

Source: Fehr & Peers, June 2011.

The proposed Draft General Plan recognizes and acknowledges that there will be increased levels of congestion resulting from new development both within Mountain View and elsewhere in the Bay Area. This reflects a change in policy for the City to acknowledge that transportation planning based solely on roadway traffic operations (i.e. analysis based on traffic level of service and volume to capacity ratios), which considers only driver comfort and convenience, is not always desirable since it fails to acknowledge other users of the circulation system and other community values. In evaluating the roadway system, an impact to vehicle operations on roadways may be acceptable when balanced against other community values related to resource protection, social equity, economic development, and consideration of pedestrians, bicyclists, and transit users.

To improve the LOS, these roadway segments could alternatively be widened to meet the current level of service standard. While widening these roadways would result in improved levels of service and decreased vehicle delays, the additional pavement width and crossing distance would conflict with the City's multimodal goals and desire to better balance transportation investments. Widening a road to achieve a lower volume to capacity ratio results in higher expenditure of infrastructure dollars for wider roadways that do not necessarily serve all users of the circulation system.

Roadway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore wider roadways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources and discourage roadway use by pedestrians and bicyclists. In addition, mitigating impacts to affected roadway segments can have high infrastructure costs including additional right-of-way.

With respect to San Antonio Road outside the City of Mountain View, a fair share contribution toward roadway improvement costs is an acceptable mitigation measure for a study at the General Plan level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding, additional sources are needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, local impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee should it be proposed by regional agencies, such as VTA, and would support the use of these fees to improve facilities for all travel modes to achieve optimal system performance. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any roadway improvements located outside of the City of Mountain View, their implementation cannot be guaranteed.

Mitigation Measure TRANS-2b: To improve the LOS, the roadway segments can be widened to meet the citywide level of service standard. Widening roadways will result in improved levels of service and decreased vehicle delays; however, the additional pavement width and crossing distance conflicts with the City's multi-modal goals and desire to better balance transportation investments. Alternatively, the City can consider potential operational improvements, such as signal timing and coordination, to ensure that the roadway system is optimized for safe and efficient traffic flow where these improvements are feasible and under the authority and jurisdiction of the City to implement. In the case of San Antonio Road between SB US 101 Ramps and Charleston Road, implementation of roadway widening cannot be guaranteed because this roadway segment is located outside of the City of Mountain View's jurisdiction. While signal timing and coordination may reduce levels of service impacts on some roadways, the City cannot be certain at this time that such improvements would fully mitigate these impacts and no other feasible mitigation measures have been identified as part of this General

Plan planning-level analysis. Due to the conflicts with the City's multi-modal policies and physical constraints, these impacts would remain significant and unavoidable under Draft General Plan Conditions 2030. (SU)

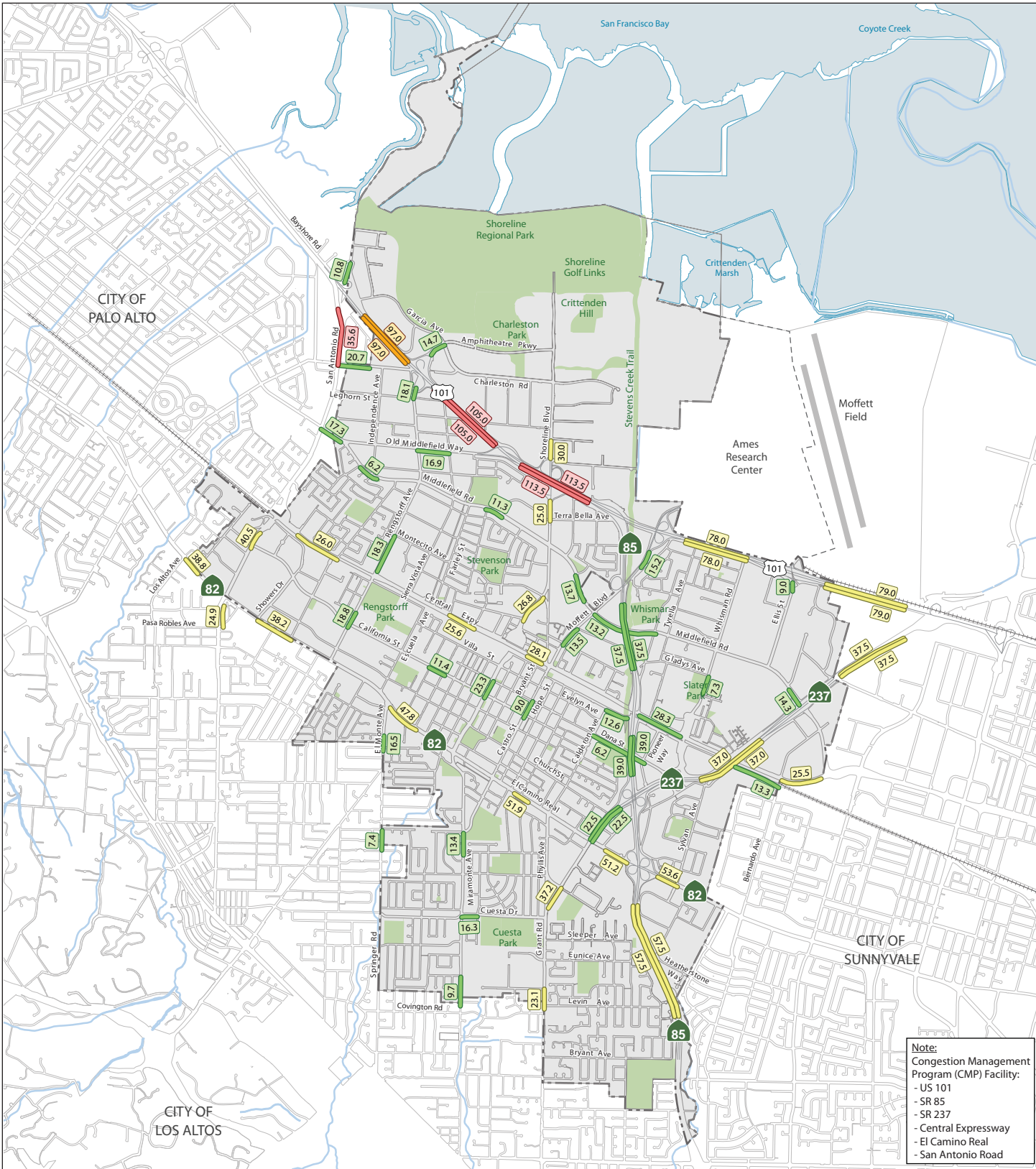
(3) Freeway Segment Analysis. Freeway daily segment volumes and level of service summary under Existing Conditions (2009), Existing Plus Draft General Plan Conditions (2009), and Draft General Plan Conditions (2030) are summarized on Figures IV.C-7 to IV.C-9. It is important to note that planning for regional facilities is ultimately the responsibility of the VTA and Caltrans, and that the VTA's regional TDF model is a more appropriate tool for analyzing long-term regional travel needs that involve land use changes not only in Santa Clara County and other Bay Area counties, but also in Monterey, San Benito, and Merced Counties. Thus, these forecasts are meant to supplement, rather, than replace regional forecasting using the VTA travel demand model, which may use different land use assumptions.

The proposed project creates a land use context and transportation policies supportive of travel by all modes of transportation in the city. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include the key policies listed previously and these additional ones that seek to reduce vehicle trips including:

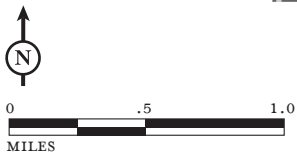
POLICY MOB 8.1: Multi-modal performance measures. Develop performance measures and indicators for all modes of transportation, including performance targets that vary by street type and/or location.

POLICY MOB 8.2: Level of service. Ensure performance measurement criteria optimize travel by each mode.

Existing Plus Draft General Plan Conditions 2009. Daily freeway volumes and level-of-service under Existing Conditions (2009) and Existing Plus Draft General Plan Conditions (2009), are summarized on Figures IV.C-7 and IV.C-8. Most LOS E and F roadway segments are along US 101 and SR 237. Existing Conditions and Existing Plus Draft General Plan Conditions have similar operations for freeway segments. The Existing Conditions and Existing Plus Draft General Plan Conditions are based on the 2009 roadway system. Table IV.C-14 identifies the freeway segments with significant LOS impacts.



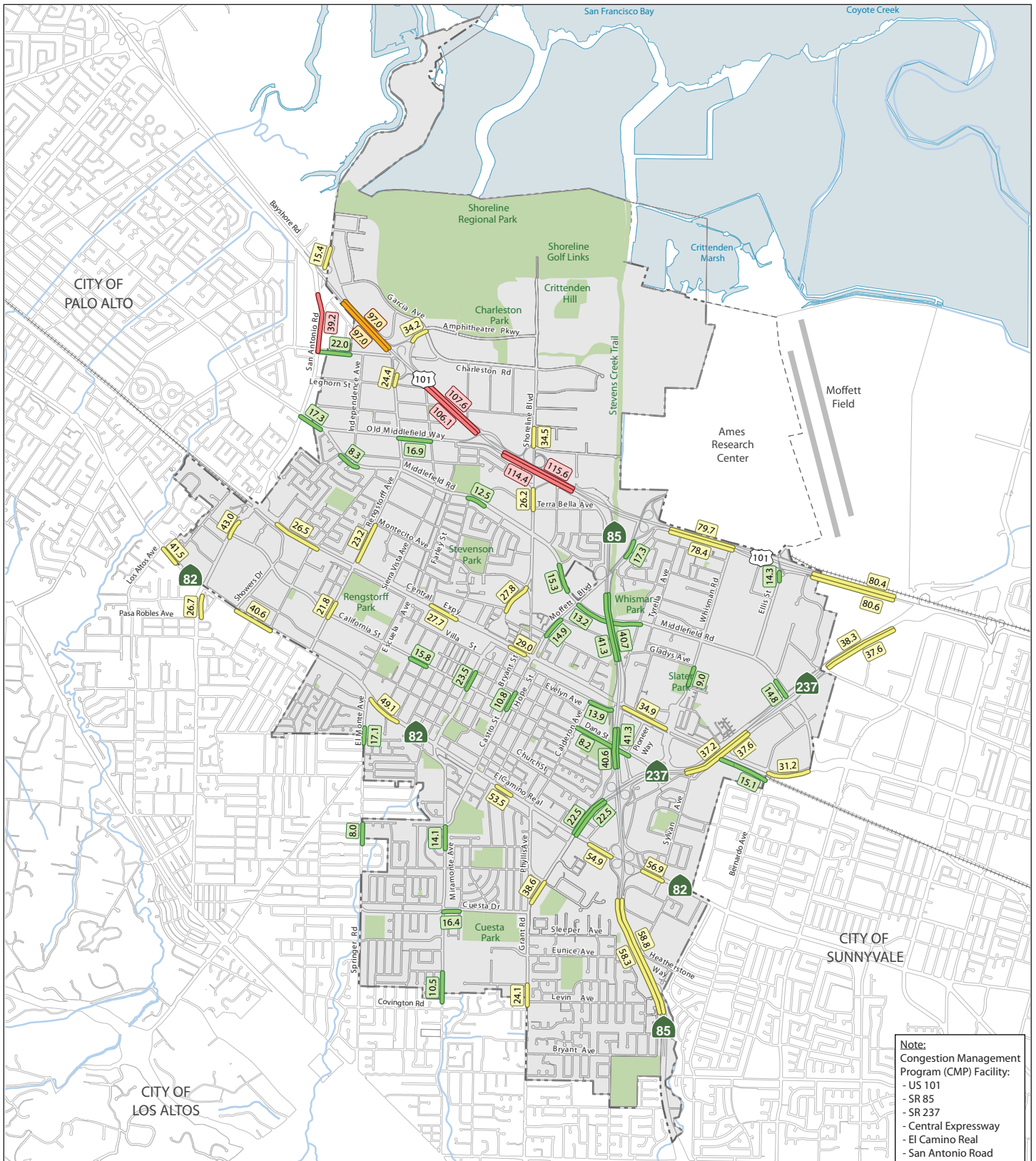
LSA



- City of Mountain View
- LOS B & C with ADT (x1,000)
- LOS D
- LOS E
- LOS F

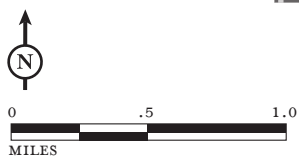
FIGURE IV.C-7

*City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Existing Daily Roadway Volumes
 and Levels of Service (2009)*



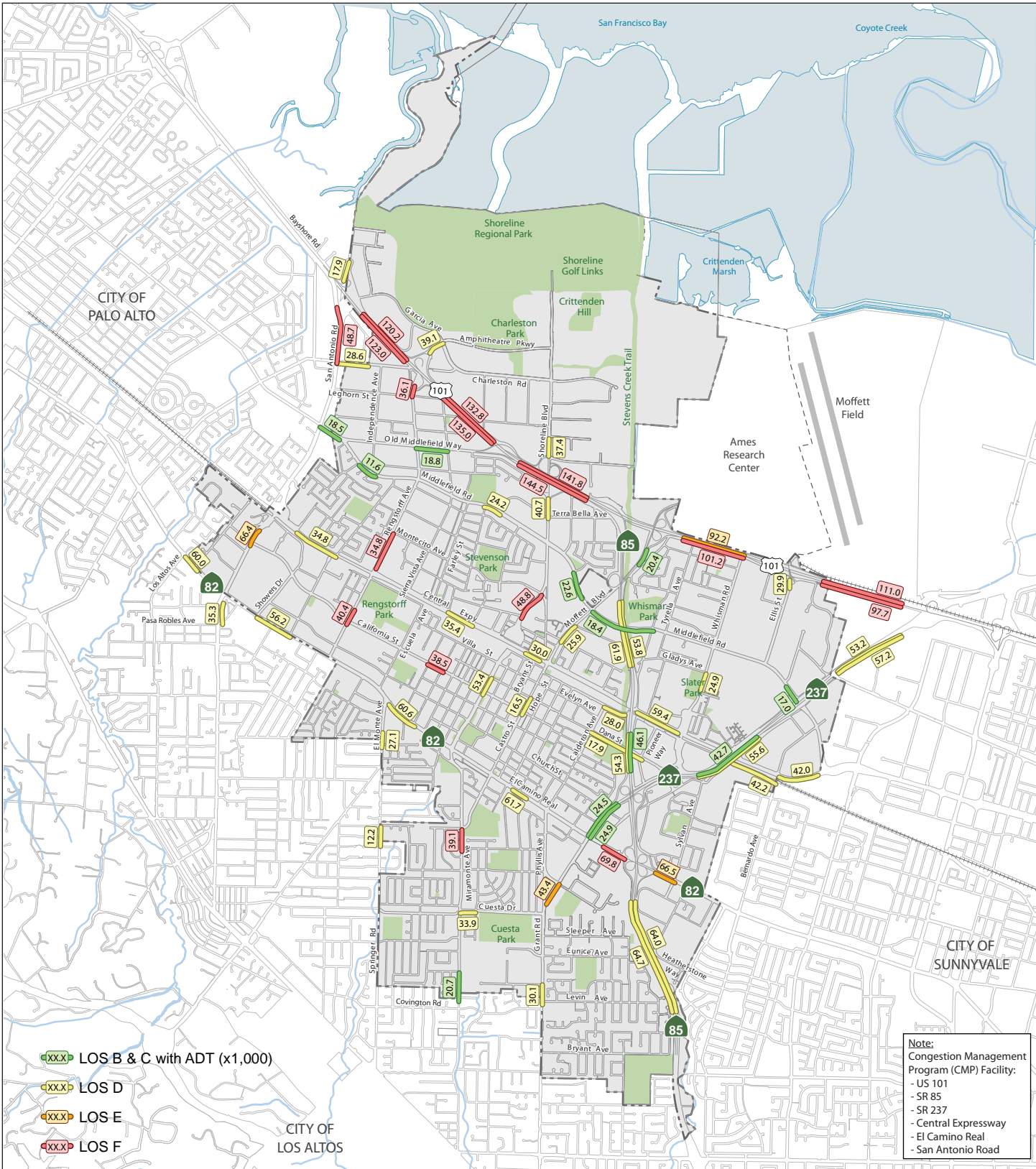
LSA

FIGURE IV.C-8

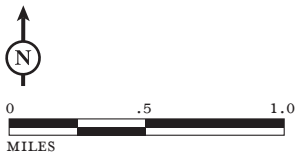


- City of Mountain View
- LOS B & C with ADT (x1,000)
- LOS D
- LOS E
- LOS F

City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Existing Plus Draft General Plan
 Roadway Daily Volumes and Levels of Service (2009)



LSA



- City of Mountain View
- LOS B & C with ADT (x1,000)
- LOS D
- LOS E
- LOS F

FIGURE IV.C-9

*City of Mountain View
 Draft General Plan and
 Greenhouse Gas Reduction Program EIR
 Draft 2030 General Plan Daily
 Roadway Volumes and Levels of Service (2030)*

SOURCES: CITY OF MOUNTAIN VIEW; FEHR & PEERS, NOVEMBER 2011.
 I:\CMT0801 Mtn View\figures\EIR\Fig_IVC9.ai (11/4/11)

This page intentionally left blank.

Table IV.C-14: Existing Plus Draft General Plan Conditions 2009: Daily Freeway Segment Volume and Level of Service Summary

Roadway Segment ¹		Existing Roadway Type	Year 2009 Scenarios				Does Not Meet Caltrans LOS Standard ⁴	Does Not Meet VTA CMP LOS Standard ^{4,5}	Significant Impact Based on Caltrans Criteria ⁶	Significant Impact Based on VTA CMP Criteria ^{6,7}
			Existing		Existing Plus Draft General Plan					
			Daily Volume ²	LOS ³	Daily Volume ²	LOS ³				
NB SR 85*	Fremont Ave. to El Camino Real	3-Lane Freeway	57,500	D	58,800	D	√		√	
	SR 237 to Evelyn Ave.	3-Lane Freeway	39,000	C	41,300	C				
	Evelyn Ave. to Moffett Blvd.	3-Lane Freeway	37,500	C	40,700	C				
SB SR 85*	Moffett Blvd. to Evelyn Ave.	3-Lane Freeway	37,500	C	41,300	C				
	Evelyn Ave. to SR 237	3-Lane Freeway	39,000	C	40,600	C				
	El Camino Real to Fremont Ave.	3-Lane Freeway	57,500	D	58,300	D	√		√	
NB US 101*	SR 237 to Ellis St.	4-Lane Freeway	79,000	D	80,600	D	√		√	
	Ellis St. to Moffett Blvd.	4-Lane Freeway	78,000	D	79,700	D	√		√	
	SR 85 to Old Middlefield Wy.	4-Lane Freeway	113,500	F	115,600	F	√	√	√	√
	Old Middlefield Wy. to Rengstorff Ave.	4-Lane Freeway	105,000	F	107,600	F	√	√	√	√
	Rengstorff Ave. to San Antonio Rd.	4-Lane Freeway	97,000	E	97,000	E	√			
SB US 101*	San Antonio Rd. to Rengstorff Ave.	4-Lane Freeway	97,000	E	97,000	E	√			
	Rengstorff Ave. to Old Middlefield Wy.	4-Lane Freeway	105,000	F	106,100	F	√	√	√	√
	Old Middlefield Wy. to SR 85	4-Lane Freeway	113,500	F	114,400	F	√	√		
	Moffett Blvd. to Ellis St.	4-Lane Freeway	78,000	D	78,400	D	√			
	Ellis St. to SR 237	4-Lane Freeway	79,000	D	80,400	D	√		√	
EB SR 237*	El Camino Real to SR 85	2-Lane Freeway	22,500	B	22,500	B				
	Sylvan Wy. to Middlefield Rd./Maude Ave.	2-Lane Freeway	37,000	D	37,600	D	√		√	
	Middlefield Rd./Maude Ave. to US 101	2-Lane Freeway	37,500	D	37,600	D	√			

Table IV.C-14 Continued

Roadway Segment ¹		Existing Roadway Type	Year 2009 Scenarios				Does Not Meet Caltrans LOS Standard ⁴	Does Not Meet VTA CMP LOS Standard ^{4,5}	Significant Impact Based on Caltrans Criteria ⁶	Significant Impact Based on VTA CMP Criteria ^{6,7}
			Existing		Existing Plus Draft General Plan					
			Daily Volume ²	LOS ³	Daily Volume ²	LOS ³				
WB SR 237*	US 101 to Middlefield Rd/Maude Ave.	2-Lane Freeway	37,500	D	38,300	D	√		√	
	Middlefield Rd./Maude Ave. to Sylvan Wy.	2-Lane Freeway	37,000	D	37,200	D	√			
	SR 85 to El Camino Real	2-Lane Freeway	22,500	B	22,500	B				

¹ Major roadways nearest the count location
² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.
³ LOS – Level of Service
⁴ The number of lanes of a freeway segment includes high occupancy vehicle (HOV) lanes but excludes auxiliary lanes.
⁴ Does not meet Caltrans LOS Standard – Does not meet the LOS C/D cusp Standard.
⁵ Does not meet CMP LOS Standard – Does not meet the VTA CMP LOS E Standard.

Table notes continued on next page.

⁶ Roadway segment impact criteria are discussed in subsection 2.a.(2).
⁷ One percent of a 2-Lane Freeway capacity is ~480 vehicles per day (one percent of LOS E maximum daily volume threshold). One percent of a 3-Lane Freeway capacity is approximately ~720 vehicles per day. One percent of a 4-Lane Freeway capacity is ~970 vehicles per day.

* Denotes Congestion Management Program (CMP) facility
 Source: Fehr & Peers, June 2011.

Impact TRANS-3a: Under Existing Plus Draft General Plan Conditions 2009, implementation of the proposed project would increase motor vehicle traffic and congestion, which would result in decreased freeway segment levels of service on several freeway study segments. This would be considered a potentially significant impact. (S)

Under the VTA and Caltrans standards, freeway segments that exceed the LOS threshold would be considered a significant impact because of the minimum level of service policy. Thus, this would be considered a potentially significant impact.

Partial mitigation could include operational improvements, such as auxiliary ramps to improve ramp operations; however, these freeway segments are ultimately operating unacceptably due to vehicle demand exceeding capacity.

In Santa Clara County, widening freeways to provide additional travel lanes is no longer feasible in most cases because available right-of-way is already constrained and utilized by other land uses or transportation facilities such as freeway overpasses. Dedication of additional land to paved freeways results in higher expenditure of infrastructure dollars for wider freeways that do not necessarily serve all users of the circulation system. Freeway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore wider freeways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources and

discourage travel by pedestrians, bicyclists and transit. In addition, mitigating impacts to affected freeway segments can have high infrastructure costs.

The proposed Draft General Plan recognizes and acknowledges that there will be increased levels of congestion resulting from new development both within Mountain View and elsewhere in the Bay Area. This reflects a change in policy for the City to acknowledge that transportation planning based solely on roadway traffic operations (i.e. analysis based on traffic level of service and volume to capacity ratios), which considers only driver comfort and convenience, is not desirable since it fails to acknowledge other users of the circulation system and other community values. In evaluating the roadway system, an impact to freeways may be acceptable when balanced against other community values related to resource protection, social equity, economic development, neighborhood preservation and consideration of pedestrians, bicyclists, and transit users.

A fair share contribution toward freeway improvement costs is an acceptable mitigation measure for a study at the general plan program level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding, additional sources are needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, local impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee should it be proposed by regional agencies, such as VTA. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any freeway improvements would be located outside of the City of Mountain View's control, their implementation cannot be guaranteed. Thus, implementation of the Draft General Plan would have a significant and unavoidable impact on freeway segment LOS and no feasible mitigation measures have been identified that would reduce the impact to a less-than-significant level; this impact would remain significant and unavoidable under Draft General Plan Conditions.

Mitigation Measure TRANS-3a: To improve the LOS, these freeway segments could be widened by one or more freeway lanes to meet the VTA and/or Caltrans level of service standard. While widening these freeways would result in ~~increased~~improved levels of service and decreased vehicle delays, most of the freeways serving Mountain View are constrained by the available right of way and funding. Additionally, all of the segments are under Caltrans jurisdiction and the City of Mountain View cannot ensure that improvements to freeway segments are made. Therefore, this impact would remain significant and unavoidable. (SU)

Draft General Plan Conditions 2030. Daily freeway volumes and level-of-service under Existing Conditions (2009) and Draft General Plan Conditions (2030), are summarized in Figures IV.C-7 and IV.C-8. Most LOS E and F roadway segments are along US 101 and SR 237. Because freeways are part of the regional roadway network operations, are particularly sensitive to region wide development. The Existing Conditions and Draft General Plan Conditions are based on the 2009 and 2030 roadway systems, respectively. Table IV.C-15 identifies the significant impact freeway segments.

Table IV.C-15: Draft General Plan Conditions 2030: Daily Freeway Segment Volume and Level of Service Summary

Roadway Segment ¹		Existing Roadway Type/ Future Roadway Type	Year 2009 Scenario		Year 2030 Scenario		Does Not Meet Caltrans LOS Standard ⁴	Does Not Meet VTA CMP LOS Standard ⁵	Significant Impact Based on Caltrans Criteria ⁶	Significant Impact Based on VTA CMP Criteria ^{6,7}
			Existing		Draft General Plan					
			Daily Volume ²	LOS ³	Daily Volume ²	LOS ³				
NB SR 85*	Fremont Ave. to El Camino Real	3-Lane Freeway	57,500	D	64,000	D	√		√	
	SR 237 to Evelyn Ave.	3-Lane Freeway	39,000	C	46,100	C				
	Evelyn Ave. to Moffett Blvd.	3-Lane Freeway	37,500	C	53,800	D	√		√	
SB SR 85*	Moffett Blvd. to Evelyn Ave.	3-Lane Freeway	37,500	C	61,900	D	√		√	
	Evelyn Ave. to SR 237	3-Lane Freeway	39,000	C	54,300	D	√		√	
	El Camino Real to Fremont Ave.	3-Lane Freeway	57,500	D	64,700	D	√		√	
NB US 101*	SR 237 to Ellis St.	4-Lane Freeway	79,000	D	97,700	F	√	√	√	√
	Ellis St. to Moffett Blvd.	4-Lane Freeway	78,000	D	92,200	E	√		√	
	SR 85 to Old Middlefield Wy.	4-Lane Freeway	113,500	F	141,800	F	√	√	√	√
	Old Middlefield Wy. to Rengstorff Ave.	4-Lane Freeway	105,000	F	132,800	F	√	√	√	√
	Rengstorff Ave. to San Antonio Rd.	4-Lane Freeway	97,000	E	120,200	F	√	√	√	√
SB US 101*	San Antonio Rd. to Rengstorff Ave.	4-Lane Freeway	97,000	E	123,000	F	√	√	√	√
	Rengstorff Ave. to Old Middlefield Wy.	4-Lane Freeway	105,000	F	135,000	F	√	√	√	√
	Old Middlefield Wy. to SR 85	4-Lane Freeway	113,500	F	144,500	F	√	√	√	√
	Moffett Blvd. to Ellis St.	4-Lane Freeway	78,000	D	101,200	F	√	√	√	√
	Ellis St. to SR 237	4-Lane Freeway	79,000	D	111,000	F	√	√	√	√
EB SR 237*	El Camino Real to SR 85	2-Lane Freeway	22,500	B	24,900	C				
	Sylvan Wy. to Middlefield Rd./Maude Ave.	2-Lane Freeway/ 3-Lane Freeway	37,000	D	55,600	D	√		√	
	Middlefield Rd./Maude Ave. to US 101	2-Lane Freeway/ 3-Lane Freeway	37,500	D	57,200	D	√		√	

Table IV.C-15 Continued

Roadway Segment ¹		Existing Roadway Type/ Future Roadway Type	Year 2009 Scenario		Year 2030 Scenario		Does Not Meet Caltrans LOS Standard ⁴	Does Not Meet VTA CMP LOS Standard ⁵	Significant Impact Based on Caltrans Criteria ⁶	Significant Impact Based on VTA CMP Criteria ^{6,7}
			Existing		Draft General Plan					
			Daily Volume ²	LOS ³	Daily Volume ²	LOS ³				
WB SR 237*	US 101 to Middlefield Rd./Maude Ave.	2-Lane Freeway/ 3-Lane Freeway	37,500	D	53,200	D	√		√	
	Middlefield Rd./Maude Ave. to Sylvan Wy.	2-Lane Freeway/ 3-Lane Freeway	37,000	D	42,700	C				
	SR 85 to El Camino Real	2-Lane Freeway	22,500	B	24,500	C				

¹ Major roadways nearest the count location

² Average Daily Traffic (ADT) volume based on traffic counts collected in February and March 2009.

³ LOS – Level of Service

⁴ The number of lanes of a freeway segment includes high occupancy vehicle (HOV) lanes but excludes auxiliary lanes.

⁵ Does not meet Caltrans LOS Standard – Does not meet the LOS C/D cusp Standard.

⁶ Does not meet CMP LOS Standard – Does not meet the VTA CMP LOS E Standard.

Table notes continued on next page.

⁶ Roadway segment impact criteria are discussed in subsection 2.a.(2).

⁷ One percent of a 2-Lane Freeway capacity is ~480 vehicles per day (one percent of LOS E maximum daily volume threshold). One percent of a 3-Lane Freeway capacity is approximately ~720 vehicles per day. One percent of a 4-Lane Freeway capacity is ~970 vehicles per day.

* Denotes Congestion Management Program (CMP) facility

Source: Fehr & Peers, June 2011.

Impact TRANS-3b: Under Draft General Plan Conditions 2030, implementation of the proposed project would increase motor vehicle traffic and congestion, which would result in decreased freeway segment levels of service on several freeway study segments. This would be considered a potentially significant impact. (S)

Under the VTA and Caltrans standards, freeway segments that exceed the LOS threshold would be considered a significant impact because of the minimum level of service policy. Thus, this would be considered a potentially significant impact.

Partial mitigation could include operational improvements, such as auxiliary ramps to improve ramp operations; however, these freeway segments are ultimately operating unacceptable due to vehicle demand exceeding capacity. The Draft General Plan contains several policies that seek to reduce automobile travel. Implementation of these policies and associated actions would help reduce the magnitude of traffic impacts on freeways in Mountain View.

In Santa Clara County, widening freeways to provide additional travel lanes is no longer feasible in most cases because available right-of-way is already constrained and utilized by other land uses or transportation facilities such as freeway overpasses. Dedication of additional land to pave freeways results in higher expenditure of infrastructure dollars for wider freeways that do not necessarily serve all users of the circulation system. Freeway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore, wider roadways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources and discourage travel by pedestrians, bicyclists, and transit. In addition, mitigating impacts to affected freeway segments can have high infrastructure costs.

The proposed Draft General Plan recognizes and acknowledges that there will be increased levels of congestion resulting from new development both within Mountain View and elsewhere in the Bay Area. This reflects a change in policy for the City to acknowledge that transportation planning based solely on roadway traffic operations (i.e. analysis based on traffic level of service and volume to capacity ratios), which considers only driver comfort and convenience, is not desirable since it fails to acknowledge other users of the circulation system and other community values. In evaluating the roadway system, an impact to freeways may be acceptable when balanced against other community values related to resource protection, social equity, economic development, neighborhood preservation and consideration of pedestrians, bicyclists, and transit users.

A fair share contribution toward freeway improvement costs is an acceptable mitigation measure for a study at the general plan program level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding, additional sources are needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, City impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee should it be proposed by regional agencies, such as VTA. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any freeway improvements would be located outside of the City of Mountain View's control, their implementation cannot be guaranteed. Thus, implementation of the Draft General Plan would have a significant and unavoidable impact on freeway segment LOS and no feasible mitigation measures have been identified that would reduce the impact to a less-than-significant level; this impact would remain significant and unavoidable under Draft General Plan Conditions. (SU)

Mitigation Measure TRANS-3b: To increase the LOS, these freeway segments could be widened by one or more freeway lanes to meet the level of service standard. While widening these freeways would result in increased levels of service and decreased vehicle delays, most of the freeways serving Mountain View are constrained by the available right of way and funding. Additionally, all of the segments are under Caltrans jurisdiction and the City of Mountain View cannot ensure that improvements to freeway segments are made. Thus, implementation of the Draft General Plan would have a significant and unavoidable impact on freeway segment LOS and no feasible mitigation measures have been identified that would reduce the impact to a less-than-significant level; this impact would remain significant and unavoidable under Draft General Plan Conditions. (SU)

(4) Adjacent Jurisdiction Roadway Segment Analysis. Operations of roadway segments outside the City of Mountain View boundaries and in adjacent jurisdictions were also reviewed to determine potential impacts of the Draft General Plan and GGRP. A roadway segment within an adjacent jurisdiction is considered to be deficient if the future volume-to-capacity (V/C) ratio is 1.0 or greater during the AM and PM peak one-hour periods in the year 2009 or 2030. Given the large population and employees projected to reside in the region, and the complex travel patterns, only a portion of trips on any roadway segment in adjacent jurisdictions are expected to have originated from a resident or job within City of Mountain View. Therefore, a deficient roadway segment is attributed to the City of Mountain View's General Plan when 10 percent or more of the trips are from the City. The impact is considered significant when 25 percent or more of total deficient lane miles in that jurisdiction are attributable to Mountain View. The 25 percent threshold represents what would be a noticeable change in traffic due to the City of Mountain View General Plan and is a threshold used by other General Plan EIRs in Santa Clara County.

The proposed project creates a land use context and transportation policies supportive of travel by all modes of transportation in the city. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include the key policies listed previously and these additional ones that seek to reduce vehicle trips including:

POLICY MOB 5.2: California High Speed Rail. Actively participate with the High Speed Rail Authority in planning any future high-speed rail service to address urban design, traffic, noise and compatibility issues.

POLICY MOB 7.1: Parking codes. Maintain efficient parking standards that consider reduced demand due to development conditions such as transit accessibility.

POLICY MOB 7.2: Off-street parking. Ensure new off-street parking is efficiently utilized and properly designed.

POLICY MOB 7.3: Public parking management. Manage parking so that adequate parking is available for surrounding uses.

Existing Plus Draft General Plan Conditions 2009. Peak hour adjacent jurisdiction analysis for Existing Conditions and Existing Plus Draft General Plan Conditions are presented in Tables IV.C-16 and IV.C-17. Some degradation of roadway and freeway segment operations is anticipated due to the addition of traffic from proposed land uses in Mountain View's Draft General Plan.

**Table IV.C-16: Existing Plus Draft General Plan Conditions 2009: AM Peak Hour
 Adjacent Jurisdiction Impacts Summary**

City	Year 2009 Scenarios					
	Existing			Existing Plus Draft General Plan		
	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles
<i>Major Arterial and Collector Roadways</i>						
Campbell	0.0	0.0	0.0%	0.0	0.0	0.0%
Cupertino	0.0	0.0	0.0%	0.0	0.0	0.0%
Gilroy	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Altos	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Altos Hills	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Gatos	0.0	0.0	0.0%	0.0	0.0	0.0%
Milpitas	38.7	0.0	0.0%	36.2	0.0	0.0%
Monte Sereno	0.0	0.0	0.0%	0.0	0.0	0.0%
Morgan Hill	3.1	0.0	0.0%	3.1	0.0	0.0%
Palo Alto	4.4	3.3	74.3%	5.6	3.1	56.1%
San Jose	24.5	0.0	0.0%	24.6	0.0	0.0%
Santa Clara	1.0	0.0	0.0%	0.6	0.0	0.0%
Saratoga	0.9	0.0	0.0%	1.2	0.0	0.0%
Sunnyvale	1.1	0.7	62.9%	1.4	1.0	71.3%
<i>Freeways, State Highways, and Expressways</i>						
Caltrans Facilities ³	295.4	37.0	12.5%	305.6	50.0	16.4%
Expressways ⁴	17.7	0.0	0.0%	22.1	0.5	2.1%

¹ Lane miles of less than 0.5 were rounded to 0.

² Impacted lane miles are where Mountain View traffic is greater than or equal to 10 percent of the roadway volume. For evaluating significant impacts, if impacted lane miles attributable to the City are less than 0.5, impacts are considered *less-than-significant*. Mountain View traffic based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*X1).

³ Includes all Caltrans facilities (freeways and state highways) within Santa Clara County but outside of the Mountain View city limits.

⁴ Includes all expressway facilities within Santa Clara County but outside of the Mountain View city limits.

Significant impacts are identified in **bold text**.

Source: Fehr & Peers, June 2011.

Table IV.C-17: Existing Plus Draft General Plan Conditions 2009: PM Peak Hour Adjacent Jurisdiction Impacts Summary

City	Year 2009 Scenarios					
	Existing			Existing Plus Draft General Plan		
	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles
<i>Major Arterial and Collector Roadways</i>						
Campbell	1.1	0.0	0.0%	1.1	0.0	0.0%
Cupertino	0.0	0.0	0.0%	0.0	0.0	0.0%
Gilroy	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Altos	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Altos Hills	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Gatos	0.0	0.0	0.0%	0.0	0.0	0.0%
Milpitas	23.1	0.0	0.0%	21.6	0.0	0.0%
Monte Sereno	0.0	0.0	0.0%	0.0	0.0	0.0%
Morgan Hill	0.0	0.0	0.0%	0.0	0.0	0.0%
Palo Alto	1.7	0.0	0.0%	1.7	1.2	70.0%
San Jose	10.7	0.0	0.0%	10.6	0.0	0.0%
Santa Clara	0.0	0.0	0.0%	0.0	0.0	0.0%
Saratoga	1.0	0.0	0.0%	1.0	0.0	0.0%
Sunnyvale	0.0	0.0	0.0%	0.0	0.0	0.0%
<i>Freeways, State Highways, and Expressways</i>						
Caltrans Facilities ³	220.8	40.7	18.4%	229.2	51.8	22.6%
Expressways ⁴	10.7	0.0	0.0%	9.8	0.0	0.0%

¹ Lane miles of less than 0.5 were rounded to 0.

² Impacted lane miles are where Mountain View traffic is greater than or equal to 10 percent of the roadway volume. For evaluating significant impacts, if impacted lane miles attributable to the City are less than 0.5, impacts are considered *less-than-significant*. Mountain View traffic based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*XI).

³ Includes all Caltrans facilities (freeways and state highways) within Santa Clara County but outside of the Mountain View city limits.

⁴ Includes all expressway facilities within Santa Clara County but outside of the Mountain View city limits.

Significant impacts are identified in **bold text**.

Source: Fehr & Peers, June 2011.

Impact TRANS-4a: Under Existing Plus Draft General Plan Conditions 2009, implementation of the proposed project would increase motor vehicle traffic and congestion outside the City of Mountain View. This would be considered a significant and unavoidable impact. (S)

With implementation of the proposed Draft General Plan and GGRP, under Existing Plus Draft General Plan Conditions, two communities would be impacted: Palo Alto and Sunnyvale. Traditionally, traffic-related impacts or substantial increases in automobile trips on roadway segments are mitigated by increasing roadway capacity through construction or payment toward additional lanes or other new facilities. The Draft General Plan contains several policies that seek to reduce automobile travel. Implementation of these policies and associated actions would help reduce the magnitude of traffic impacts on roadways in adjacent jurisdictions. In Santa Clara County, widening roads to provide additional travel lanes is no longer feasible in most cases because available right-of-way is already constrained and utilized by other land uses or transportation facilities. Dedication of

additional land to paved roadways decreases landscaping, eliminates street trees/bus stops/bicycle lanes, reduces sidewalk widths, increases intersection sizes, and moves vehicular traffic (with associated noise and pollution) closer to residences and businesses.

For these reasons, widening roadways is generally not environmentally preferable, or economically and physically feasible.

The proposed Draft General Plan recognizes and acknowledges that there will be increased levels of congestion resulting from new development, both within Mountain View and elsewhere in the Bay Area. This reflects a change in policy for the City to acknowledge that transportation planning based solely on roadway traffic operations (i.e. analysis based on traffic level of service and volume to capacity ratios), which considers only driver comfort and convenience, is not desirable since it fails to acknowledge other users of the circulation system and other community values. In evaluating the roadway system, an impact to adjacent roadways may be acceptable when balanced against other community values related to resource protection, social equity, economic development, and consideration of pedestrians, bicyclists, and transit users.

Widening a road to achieve a lower volume to capacity ratio results in higher expenditure of infrastructure dollars for wider roadways that do not necessarily serve all users of the circulation system. Roadway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore, wider roadways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources, and discourage roadway use by pedestrians and bicyclists. In addition, mitigating impacts to affected roadway segments can have high infrastructure costs.

A fair share contribution toward roadway improvement costs is an acceptable mitigation measure for a study at the General Plan level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding, additional sources are needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, local impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee should it be proposed by regional agencies, such as VTA. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any roadway improvements would be located outside of the City of Mountain View, their implementation cannot be guaranteed.

Mitigation Measure TRANS-4a: No feasible mitigation measures are available since implementation of the necessary improvements does not have complete funding available and the implementation of any roadway improvements cannot be guaranteed because the improvements would be located outside of the City of Mountain View's jurisdiction. Thus, implementation of the Draft General Plan would remain a significant and unavoidable impact and no feasible mitigation measures have been identified that would reduce the impact to less-than-significant level. (SU)

Implementation of proposed Goal LUD-2 (Effective Coordination with regional agencies and other local governments on planning issues) as well as the associated policy and action items would require the City to collaborate with neighboring jurisdictions and agencies on issues such as transportation. Regional efforts are also underway as required by SB375, to more closely align transportation funding with compact land use planning and smart growth strategies. This collaboration would help

foster implementation of transportation projects that would help mitigate this impact. However, as stated previously, since any roadway improvements would be located outside of the City of Mountain View, their implementation cannot be guaranteed. Thus, implementation of the Draft General Plan would remain a significant and unavoidable impact and no feasible mitigation measures have been identified that would reduce the impact to less-than-significant level.

Draft General Plan Conditions 2030. Peak hour adjacent jurisdiction analysis for Existing Conditions 2009 and Draft General Plan Conditions 2030 are presented in Tables IV.C-18 and IV.C-19. Degradation of roadway and freeway segment operations by Year 2030 and beyond is anticipated due to future growth within and outside Santa Clara County, as well as the addition of traffic from proposed land uses in Mountain View’s Draft General Plan. Already planned increases in land use and changes to regional travel patterns will contribute to these unacceptable operations. Given changes in land use, trip patterns, and behavior between the two scenarios, vehicular traffic on roadway segments within several jurisdictions is projected to increase under each scenario as compared to Existing Conditions.

Table IV.C-18: Draft General Plan Conditions 2030: AM Peak Hour Adjacent Jurisdiction Impacts Summary

City	Year 2009 Scenario			Year 2030 Scenario		
	Existing			Draft General Plan		
	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles
Major Arterial and Collector Roadways						
Campbell	0.0	0.0	0.0%	4.7	0.0	0.0%
Cupertino	0.0	0.0	0.0%	8.4	0.0	0.0%
Gilroy	0.0	0.0	0.0%	1.3	0.0	0.0%
Los Altos	0.0	0.0	0.0%	5.4	2.6	48.6%
Los Altos Hills	0.0	0.0	0.0%	7.2	0.0	0.0%
Los Gatos	0.0	0.0	0.0%	4.1	0.0	0.0%
Milpitas	38.7	0.0	0.0%	93.8	0.0	0.0%
Monte Sereno	0.0	0.0	0.0%	0.0	0.0	0.0%
Morgan Hill	3.1	0.0	0.0%	4.5	0.0	0.0%
Palo Alto	4.4	3.3	74.3%	27.9	7.7	27.6%
San Jose	24.5	0.0	0.0%	216.5	0.0	0.0%
Santa Clara	1.0	0.0	0.0%	21.1	0.0	0.0%
Saratoga	0.9	0.0	0.0%	8.3	0.0	0.0%
Sunnyvale	1.1	0.7	62.9%	13.4	5.4	40.0%
Freeways, State Highways, and Expressways						
Caltrans Facilities ³	295.4	37.0	12.5%	630.8	28.8	4.6%
Expressways ⁴	17.7	0.0	0.0%	96.8	4.6	4.8%

¹ Lane miles of less than 0.5 were rounded to 0.

² Impacted lane miles are where Mountain View traffic is greater than or equal to 10 percent of the roadway volume. For evaluating significant impacts, if impacted lane miles attributable to the City are less than 0.5, impacts are considered *less-than-significant*. Mountain View traffic based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*XII).

³ Includes all Caltrans facilities (freeways and state highways) within Santa Clara County but outside of the Mountain View city limits.

⁴ Includes all expressway facilities within Santa Clara County but outside of the Mountain View city limits.

Significant impacts are identified in **bold text**.

Source: Fehr & Peers, June 2011.

Table IV.C-19: Draft General Plan Conditions 2030: PM Peak Hour Adjacent Jurisdiction Impacts Summary

City	Year 2009 Scenario			Year 2030 Scenario		
	Existing			Draft General Plan		
	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles	Total Lane Miles with Deficient V/C Ratio ¹	Impacted Lane Miles ^{1,2}	Percent of Impacted Lane Miles
Major Arterial and Collector Roadways						
Campbell	1.1	0.0	0.0%	3.3	0.0	0.0%
Cupertino	0.0	0.0	0.0%	2.1	0.0	0.0%
Gilroy	0.0	0.0	0.0%	0.0	0.0	0.0%
Los Altos	0.0	0.0	0.0%	1.3	0.7	56.2%
Los Altos Hills	0.0	0.0	0.0%	3.6	0.0	0.0%
Los Gatos	0.0	0.0	0.0%	0.6	0.0	0.0%
Milpitas	23.1	0.0	0.0%	72.2	0.0	0.0%
Monte Sereno	0.0	0.0	0.0%	0.0	0.0	0.0%
Morgan Hill	0.0	0.0	0.0%	1.6	0.0	0.0%
Palo Alto	1.7	0.0	0.0%	18.4	5.8	31.3%
San Jose	10.7	0.0	0.0%	94.1	0.0	0.0%
Santa Clara	0.0	0.0	0.0%	9.2	0.0	0.0%
Saratoga	1.0	0.0	0.0%	3.5	0.0	0.0%
Sunnyvale	0.0	0.0	0.0%	4.3	0.5	11.8%
Freeways, State Highways, and Expressways						
Caltrans Facilities ³	220.8	40.7	18.4%	549.1	29.3	5.3%
Expressways ⁴	10.7	0.0	0.0%	54.9	2.5	4.6%

¹ Lane miles of less than 0.5 were rounded to 0.

² Impacted lane miles are where Mountain View traffic is greater than or equal to 10 percent of the roadway volume. For evaluating significant impacts, if impacted lane miles attributable to the City are less than 0.5, impacts are considered *less-than-significant*. Mountain View traffic based on select zone analysis using one-half external trip approach (II, 0.5*IX, and 0.5*XII).

³ Includes all Caltrans facilities (freeways and state highways) within Santa Clara County but outside of the Mountain View city limits.

⁴ Includes all expressway facilities within Santa Clara County but outside of the Mountain View city limits.

Significant impacts are identified in **bold text**.

Source: Fehr & Peers, June 2011.

Impact TRANS-4b: Under Draft General Plan Conditions 2030, implementation of the proposed project would increase motor vehicle traffic and congestion outside the City of Mountain View. This would be considered a significant and unavoidable impact. (S)

With implementation of the proposed Draft General Plan and GGRP, under Draft General Plan Conditions, three communities would be impacted: Los Altos, Palo Alto and Sunnyvale. Traditionally, traffic-related impacts or substantial increases in automobile trips on roadway segments are mitigated by increasing roadway capacity through construction or payment toward additional lanes or other new facilities. The Draft General Plan contains several policies that seek to reduce automobile travel. Implementation of these policies and associated actions would help reduce the magnitude of traffic impacts on roadways in adjacent jurisdictions. In Santa Clara County, widening roads to provide additional travel lanes is no longer feasible in most cases because available right-of-way is already constrained and utilized by other land uses or transportation facilities. Dedication of

additional land to paved roadways decreases landscaping, eliminates street trees/bus stops/bicycle lanes, reduces sidewalk widths, increases intersection sizes, and moves vehicular traffic (with associated noise and pollution) closer to residences and businesses. For these reasons, widening roadways is generally not preferred, or economically and physically feasible.

The proposed Draft General Plan recognizes and acknowledges that there will be increased levels of congestion resulting from new development, both within Mountain View and elsewhere in the Bay Area. This reflects a change in policy for the City to acknowledge that transportation planning based solely on roadway traffic operations (i.e. analysis based on traffic level of service and volume to capacity ratios), which considers only driver comfort and convenience, is not desirable since it fails to acknowledge other users of the circulation system and other community values. In evaluating the roadway system, an impact to adjacent roadways may be acceptable when balanced against other community values related to resource protection, social equity, economic development, and consideration of pedestrians, bicyclists, and transit users.

Widening a road to achieve a lower volume to capacity ratio results in higher expenditure of infrastructure dollars for wider roadways that do not necessarily serve all users of the circulation system. Roadway widening also provides capacity that is not needed for the majority of the day outside the peak periods. Furthermore wider roadways, in general, are inconsistent with goals promoting a more livable city, cause greater impacts to biological resources and discourage roadway use by pedestrians and bicyclists. In addition, mitigating impacts to affected roadway segments can have high infrastructure costs.

A fair share contribution toward roadway improvement costs is an acceptable mitigation measure for a study at the General Plan level. However, significant impacts would not be reduced or eliminated until the improvement is constructed. To provide adequate funding, additional sources are needed, which may include State Transportation Improvement Program funds for projects identified in the RTP, City impact fees, and/or a future regional impact fee. The City of Mountain View would support and participate in development of a regional fee, should it be proposed by regional agencies such as VTA. However, unless complete funding is available, implementation of the necessary improvements is not feasible. Additionally, since any roadway improvements would be located outside of the City of Mountain View, their implementation cannot be guaranteed.

Mitigation Measure TRANS-4b: No feasible mitigation measures are available since implementation of the necessary improvements does not have complete funding available and the implementation of any roadway improvements cannot be guaranteed because the improvements would be located outside of the City of Mountain View's jurisdiction. Thus, implementation of the Draft General Plan would remain a significant and unavoidable impact and no feasible mitigation measures have been identified that would reduce the impact to less-than-significant level. (SU)

Implementation of proposed Goal LUD-2 (Effective Coordination with regional agencies and other local governments on planning issues) as well as the associated policy and action items would require the City to collaborate with neighboring jurisdictions and agencies on issues such as transportation. Regional efforts are also underway as required by SB 375, to more closely align transportation funding with compact land use planning and smart growth strategies. This collaboration would help foster implementation of transportation projects that would help mitigate this impact. However, as stated previously, since any roadway improvements would be located outside of the City of Mountain

View, their implementation cannot be guaranteed. Thus, implementation of the Draft General Plan would remain a significant and unavoidable impact and no feasible mitigation measures have been identified that would reduce the impact to less-than-significant level.

(5) Transit Analysis. The proposed project encourages transit use in the city by improving access to transit and creating a land use context supportive of transit travel. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include the key policies listed previously and the additional one listed below that seek to support transit including:

POLICY MOB 9.2: Reduced vehicle miles traveled. Support development and transportation improvements that help reduce greenhouse gas emissions by reducing per service population vehicle miles traveled.

Existing Plus Draft General Plan Conditions 2009. Under Existing Plus Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for transit service. This would be considered a less than significant impact.

Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would increase the number of potential transit users on the various transit systems within the City. Roadway traffic congestion may affect several transit corridors by increasing travel times and decrease headway reliability. Implementation of the project would not disrupt existing or interfere with planned transit facilities and this would be considered a less-than-significant impact.

To promote transit as a practical alternative to the automobile; consistent, reliable, and frequent transit service with high frequency headways (such as ten (10) minutes or better) is critical. Improvements such as signal pre-emption and coordination at highly congested areas would help maintain on-time performance that would potentially add additional daily riders. Likewise, an unreliable service caused by poor on-time performance could shift transit riders to other travel modes such as the automobile which in turn would cause greater levels of congestion, further reducing the effectiveness of transit.

The Draft General Plan includes policies to encourage an increase in the City's share of transit ridership, decrease dependence on motor vehicles, and reduce transit delays. The Draft General Plan also includes specific strategies to address transportation needs of some high-use areas currently underserved by transit. The increase in demand for transit service would be accommodated by existing and planned improvements to the transit system. Transit vehicle pre-emption, signal coordination, and other improvements would help reduce the magnitude of peak hour congestion on transit operations. Implementation of the Draft General Plan would not disrupt existing or interfere with planned transit services or facilities. Therefore, with implementation of the Draft General Plan 2030 and GGRP, this project would have a less-than-significant effect on transit ridership and facilities and no mitigation measures would be required.

Draft General Plan Conditions 2030 and GGRP. Under Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for transit service. This would be considered a less than significant impact.

Under Draft General Plan Conditions, implementation of the proposed project would increase the number of potential transit users on the various transit systems within the City. Roadway traffic congestion may affect several transit corridors by increasing travel times and decrease headway reliability. Implementation of the project would not disrupt existing or interfere with planned transit facilities and this would be considered a less-than-significant impact.

To promote transit as a practical alternative to the automobile; consistent, reliable, and frequent transit service with high frequency headways (such as ten (10) minutes or better) is critical. Improvements such as signal pre-emption and coordination at highly congested areas would help maintain on-time performance that would potentially add additional daily riders. Likewise, an unreliable service caused by poor on-time performance could shift transit riders to other travel modes such as the automobile which in turn would cause greater levels of congestion, further reducing the effectiveness of transit.

The Draft General Plan includes policies to encourage an increase the City's share of transit ridership, decrease dependence on motor vehicles, and reduce transit delays. The Draft General Plan also includes specific strategies to address transportation needs of some high-use areas currently under-served by transit. The increase in demand for transit service would be accommodated by existing and planned improvements to the transit system. Transit vehicle pre-emption, signal coordination, and other improvements would help reduce the magnitude of peak hour congestion on transit operations. Implementation of the Draft General Plan would not disrupt existing or interfere with planned transit services or facilities. Therefore, with implementation of the Draft General Plan, this project would have a less-than-significant effect on transit ridership and facilities and no mitigation measures would be required.

(6) Bicycle Facilities Analysis. The proposed project places a strong emphasis on bicycling as a means of replacing short automobile trips in the city. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would include key policies listed previously and these additional ones that seek to support bicycling including:

POLICY MOB 4.1: Bicycle network. Improve facilities and eliminate gaps along the bicycle network to connect destinations across the City.

POLICY MOB 4.2: Planning for bicycles. Use existing planning processes to identify or implement improved bicycle connections and bicycle parking facilities.

POLICY MOB 4.3: Public bicycle parking. Increase the amount of well-maintained, publicly accessible bicycle parking and storage throughout the City.

POLICY MOB 4.4: Bicycle parking standards. Maintain bicycle parking standards and guidelines for well-sited bicycle parking and storage in private development to enhance the bicycle network.

POLICY MOB 4.5: Promoting safety. Educate bicyclists and motorists on bicycle safety.

Existing Plus Draft General Plan Conditions 2009. Under Existing Plus Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for bicycle facilities. This would be considered a less-than-significant impact.

Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would increase the number of bicyclists on the roadways and pathways citywide, which could overload existing facilities, including bicycle parking, and could add bicyclists to locations with unsafe conditions.

However, the Mountain View Bicycle Transportation Plan provides a foundation for enhancing the bikeway network and increasing the mode share of bicycle travelers. The Draft General Plan policies rely on bicycling to access transit and replace short automobile trips within Mountain View. The Draft General Plan would encourage bicycle access by placing complementary uses (housing, shopping, offices, and transit facilities) within bicycling distance of each other, and by providing additional bicycle facilities. Policies in the Draft General Plan support the goals outlined in the Bicycle Transportation Plan and encourage bicycle trips.

Implementation of the proposed project would not disrupt existing bicycle facilities or conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards. Furthermore, implementation of the proposed project will have a beneficial impact on bicycle circulation and access. Therefore, with implementation of the Draft General Plan, this project would be considered a less-than-significant impact on bicycle facilities and no mitigation measures would be required.

Draft General Plan Conditions 2030. Under Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for bicycle facilities. This would be considered a less-than-significant impact.

Under Draft General Plan Conditions, implementation of the proposed project would increase the number of bicyclists on the roadways and pathways citywide, which could overload existing facilities, including bicycle parking, and could add bicyclists to locations with unsafe conditions.

However, the Mountain View Bicycle Transportation Plan provides a foundation for enhancing the bikeway network and increasing the mode share of bicycle travelers. The Draft General Plan policies rely on bicycling to access transit and replace short automobile trips within Mountain View. The Draft General Plan would encourage bicycle access by placing complementary uses (housing, shopping, offices, and transit facilities) within bicycling distance of each other, and by providing additional bicycle facilities. Policies in the Draft General Plan support the goals outlined in the Bicycle Transportation Plan and encourage bicycle trips.

Implementation of the proposed project would not disrupt existing bicycle facilities or conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards. Furthermore, implementation of the proposed project will have a beneficial impact on bicycle circulation and access. Therefore, with implementation of the Draft General Plan, this project would be considered a less-than-significant impact on bicycle facilities and no mitigation measures would be required.

(7) Pedestrian Facilities Analysis. The proposed project encourages walking in the city by improving pedestrian facilities and creating a land use context supportive of walking. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Each of the change areas (e.g., North Bayshore, East Whisman, El Camino Real, San Antonio and Moffett Boulevard) in the Land Use Element of the General Plan includes policies that would reduce vehicle trips; however, for brevity these change area policies are not listed here. Adoption of the proposed project would

include key policies listed previously and these additional ones that seek to support walkability including:

POLICY MOB 3.1: **Pedestrian network.** Provide a safe and comfortable pedestrian network.

POLICY MOB 3.2: **Pedestrian connections.** Increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, village centers, and other destinations throughout the City.

POLICY MOB 3.3: **Pedestrian and bicycle crossings.** Enhance pedestrian and bicycle crossings at key locations across physical barriers.

POLICY MOB 3.4: **Avoiding street widening.** Preserve and enhance citywide pedestrian connectivity by limiting street widening as a means of improving traffic.

POLICY MOB 3.5: **Walking and bicycling outreach.** Actively engage the community in promoting walking and bicycling through education, encouragement, and outreach on improvement projects and programs.

POLICY MOB 6.1: **Safe routes to schools.** Promote safe routes to schools programs for all schools in the City.

POLICY MOB 6.2: **Prioritizing projects.** Ensure bicycle and pedestrian safety improvements include projects to enhance safe accessibility to schools.

POLICY MOB 6.3: **Connections to trails.** Connect schools to the citywide trail systems.

POLICY MOB 6.4: **Education.** Support education programs that promote safe walking and bicycling to schools.

POLICY MOB 7.1: **Parking codes.** Maintain efficient parking standards that consider reduced demand due to development conditions such as transit accessibility.

POLICY MOB 7.2: **Off-street parking.** Ensure new off-street parking is efficiently utilized and properly designed.

POLICY MOB 7.3: **Public parking management.** Manage parking so that adequate parking is available for surrounding uses.

POLICY MOB 10.2: **Reducing travel demand.** Promote effective Transportation Demand Management programs for existing and new development.

POLICY MOB 10.3: **Avoiding street widening.** Limit widening of streets as a means of improving traffic, and focus instead on operational improvements to preserve community character.

POLICY MOB 11.3: **Facility types.** Maintain and enhance walking, bicycling and transit-related facilities to address community needs.

Existing Plus Draft General Plan Conditions 2009. Under Existing Plus Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for pedestrian facilities. This would be considered a less-than-significant impact.

Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would increase the number of pedestrians on the roadways and pathways citywide, which could overload existing facilities such as sidewalks, crosswalks, and pathways, and could add pedestrians to locations with unsafe conditions.

However, the Draft General Plan relies on walking to access transit and replace short automobile trips within Mountain View. Policies in the Draft General Plan would encourage walking in Mountain View by improving pedestrian conditions, increasing pedestrian safety, providing additional pedestrian facilities, and creating a land use context supportive of non-motorized travel by placing

complementary uses (housing, shopping, offices, transit facilities) within walking distance of each other.

Implementation of the proposed project would not interfere with existing pedestrian facilities or conflict with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies, or standards. Furthermore, implementation of the proposed project will have a beneficial impact on pedestrian circulation and access. Therefore, with implementation of the Draft General Plan, this project would be considered a less-than-significant impact on pedestrian facilities and no mitigation measures would be required.

Draft General Plan Conditions 2030. Under Draft General Plan Conditions, implementation of the proposed project may potentially result in increased demand for pedestrian facilities. This would be considered a less-than-significant impact.

Under Draft General Plan Conditions, implementation of the proposed project would increase the number of pedestrians on the roadways and pathways citywide, which could overload existing facilities such as sidewalks, crosswalks, and pathways, and could add pedestrians to locations with unsafe conditions.

However, the Draft General Plan relies on walking to access transit and replace short automobile trips within Mountain View. Policies in the Draft General Plan would encourage walking in Mountain View by improving pedestrian conditions, increasing pedestrian safety, providing additional pedestrian facilities, and creating a land use context supportive of non-motorized travel by placing complementary uses (housing, shopping, offices, transit facilities) within walking distance of each other.

Implementation of the proposed project would not interfere with existing pedestrian facilities or conflict with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies, or standards. Furthermore, implementation of the proposed project will have a beneficial impact on pedestrian circulation and access. Therefore, with implementation of the Draft General Plan, this project would be considered a less-than-significant impact on pedestrian facilities and no mitigation measures would be required.

(8) Air Traffic Patterns Analysis. Impacts associated with air traffic patterns are described below.

Existing Plus Draft General Plan Conditions 2009. Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would not result in changes to air traffic patterns. This would be considered a less-than-significant impact.

Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would not result in substantial safety risks due to changes in air traffic levels, and due to the nature and scope of the Draft General Plan, its implementation would not have the potential to result in a change in air traffic patterns at any airport in the area. Thus, this would not be considered an impact and no mitigation measures are necessary.

Draft General Plan Conditions 2030. Under Draft General Plan Conditions, implementation of the proposed project would not result in changes to air traffic patterns. This would be considered a less-than-significant impact.

Under Draft General Plan Conditions, implementation of the proposed project would not result in substantial safety risks due to changes in air traffic levels, and due to the nature and scope of the Draft General Plan, its implementation would not have the potential to result in a change in air traffic patterns at any airport in the area. Thus, this would not be considered an impact and no mitigation measures are necessary.

(9) Emergency Access Analysis. Impacts associated with emergency response times are described below. The proposed project includes policies to maintain emergency access including MOB 10.1 and PSA 1.2. A complete list of draft goals, policies and actions, and the GGRP are included in Appendix A. Adoption of the proposed project would include the following key policies that seek to support maintenance of emergency response times including:

POLICY MOB 10.1: Efficient automobile infrastructure. Strive to maximize the efficiency of existing automobile infrastructure and manage major streets to discourage cut-through traffic on neighborhood streets.

POLICY PSA 1.1: Adequate staffing. Maintain adequate police and fire staffing, performance levels and facilities to serve the needs of the community.

POLICY PSA 1.2: Design for safety. Support and promote crime prevention and fire safety strategies in the design of new developments.

Existing Plus Draft General Plan Conditions 2009. Implementation of the Draft General Plan would result in increased traffic congestion, which may indirectly result in increased emergency response times.

Impact TRANS-5a: Under Existing Plus Draft General Plan Conditions, implementation of the proposed project would increase traffic congestion, which may indirectly result in increased emergency response times. This would be considered a potentially significant impact. (S)

The Draft General Plan seeks to reduce the number of new automobile trips through implementation of transportation demand management (TDM) programs that discourage driving, coordinated with improvements to transit, bicycle, and pedestrian facilities to accommodate increased demands to those modes of transportation as a result of TDM.

According to Policy LU-4A of the 1992 General Plan, the City strives to achieve a response time of four minutes for 90 percent of emergency service calls. At a program-level analysis, it is not possible to quantify any potential changes in response times as no site-specific project plans are proposed. Consequently, potential emergency access impacts due to individual development project layouts, access, or land use types are unknown. Without such detail, it is not possible, using available traffic analysis procedures, to estimate impacts to emergency access, which would be considered a potentially significant impact. Potential impacts to emergency response times associated with future development should be reviewed on a case-by-case basis as they are proposed. The Draft General Plan requires future development to meet all applicable local and state regulatory standards for adequate emergency access. Additionally, each development project would be required to comply with applicable Municipal Code and Fire Code requirements regarding emergency access. Imple-

mentation of the following mitigation measure would ensure that these standard conditions apply to future development to ensure that any potential impacts to emergency response times would be reduced to a less-than-significant level.

Mitigation Measure TRANS-5a: The City shall adopt the following new policy as part of the Draft General Plan in order to maintain acceptable emergency response times in the existing plus project condition:

POLICY MOB 10.4: **Emergency response.** Monitor emergency response times and where necessary consider appropriate measures to maintain emergency response time standards. Measures to ensure provision of adequate response times may include the expanded use of emergency vehicle signal preemption, evacuation route modifications, or the construction of new facilities (e.g., fire stations). (LTS)

Implementation of the above mitigation measure, combined with policies in the proposed project, would reduce the potential impact to emergency response times to a less-than-significant impact.

Draft General Plan Conditions 2030. Implementation of the Draft General Plan would result in increased traffic congestion, which may indirectly result in increased emergency response times.

Impact TRANS-5b: Under Draft General Plan Conditions, implementation of the proposed project would increase traffic congestion, which may indirectly result in increased emergency response times. This would be considered a potentially significant impact. (S)

The Draft General Plan seeks to reduce the number of new automobile trips through implementation of transportation demand management (TDM) programs that discourage driving, coordinated with improvements to transit, bicycle, and pedestrian facilities to accommodate increased demands to those modes of transportation as a result of TDM.

According to Policy LU-4A of the 1992 General Plan, the City strives to achieve a response time of a four minutes for 90 percent of emergency service calls. At a program-level analysis, it is not possible to quantify any potential changes in response times as no site-specific project plans are proposed. Consequently, potential emergency access impacts due to individual development project layouts, access, or land use types are unknown. Without such detail, it is not possible, using available traffic analysis procedures, to estimate impacts to emergency access, which would be considered a potentially significant impact. Potential impacts to emergency response times associated with future development should be reviewed on a case-by-case basis as they are proposed. The Draft General Plan requires future development to meet all applicable local and state regulatory standards for adequate emergency access. Additionally, each development project would be required to comply with applicable Municipal Code and Fire Code requirements regarding emergency access. Implementation of the following mitigation measure would ensure that these standard conditions apply to future development to ensure that any potential impacts to emergency response times would be reduced to a less-than-significant level.

Mitigation Measure TRANS-5b: ~~Implement Mitigation Measure TRANS-5a. The City shall adopt the following new policy as part of the Draft General Plan in order to maintain acceptable emergency response times in the cumulative condition:~~

POLICY MOB 10.4: **Emergency response.** Monitor emergency response times and where necessary consider appropriate measures to maintain emergency response time standards. Measures to ensure provision of adequate response times may include the expanded use of emergency vehicle signal preemption, evacuation route modifications, or the construction of new facilities (e.g., fire stations). (LTS)

Implementation of the above mitigation measure, combined with policies in the proposed project, would reduce the potential impact to emergency response times to a less-than-significant impact.

c. Cumulative Impacts of the Draft General Plan and GGRP. Cumulative impacts related to transportation and circulation issues are addressed for Scenario 3 (2030 Draft General Plan Conditions) for the 2030 cumulative with project conditions in each of the previous sections.

This page intentionally left blank.

D. AIR QUALITY

This section has been prepared using methods and assumptions outlined in the Bay Area Air Quality Management District's (BAAQMD) *CEQA Air Quality Guidelines* document.¹ In keeping with these guidelines, this analysis describes existing air quality and the potential impacts of emissions generated by the City of Mountain View Draft General Plan and GGRP on local carbon monoxide levels, toxic air contaminants, odors, and regional air pollution. Mitigation measures to reduce or eliminate significant air quality impacts are identified, where available.

1. Setting

This section describes the existing air quality conditions in the City of Mountain View, beginning with a discussion of the ambient air quality standards and regulatory framework, typical air pollutant types and sources, and climatology relating to air quality.

a. Background. State and federal air quality standards and the regulatory framework for air quality are described in this section.

(1) Ambient Air Quality Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (EPA) established national ambient air quality standards (NAAQS). The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the EPA and the California Air Resources Board (ARB) have established ambient air quality standards for common pollutants: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants.

Federal standards include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.² California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants are listed in Table IV.D-1.

¹ Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

² U.S. Environmental Protection Agency, 2007. Website: www.epa.gov/air/criteria.html. January.

Table IV.D-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ^a		Federal Standards ^b		
		Concentration ^c	Method ^d	Primary ^{c,e,i}	Secondary ^{c,f}	Method ^g
Ozone (O₃)	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	No Federal Standard	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		–		
Fine Particulate Matter (PM_{2.5})	24-Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		–		
Nitrogen Dioxide (NO₂)	Annual Arithmetic Mean	0.03 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³) (see footnote h)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 µg/m ³)		0.100 ppm (see footnote h)	None	
Lead ^j	Rolling 3-Month Average	–	Atomic Absorption	0.15 µg/m ³	Same as Primary Standard	High-Volume Sampler and Atomic Absorption
	30-day average	1.5 µg/m ³		–		
	Calendar Quarter	–		1.5 µg/m ³		
Sulfur Dioxide (SO₂)	24-Hour	0.04 ppm (105 µg/m ³)	Ultraviolet Fluorescence	–	–	Spectrophotometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m ³) (see footnote i)	
	1-Hour	0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³) (see footnote i)	–	
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ^j	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Table notes on next page.

- ^a California standards for ozone, carbon monoxide (except in the Lake Tahoe air basin), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter – PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ^b National standards (other than for ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- ^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ^d Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- ^e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ^f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ^g Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
- ^h To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the U.S. EPA standards are in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national standards to the California standards, the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
- ⁱ On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. U.S. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older parasaniline methods until the new FRM has adequately permeated State monitoring networks. The U.S. EPA also revoked both the existing 24-hour SO₂ standard of 0.14 ppm and the annual primary SO₂ standard of 0.30 ppm, effective August 23, 2010. The secondary SO₂ standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of ppb. California standards are in units of ppm. To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
- ^j The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: ARB, 2011.

(2) Air Pollutants and Health Effects. Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. The health effects and sources of air pollutants are summarized in Table IV.D-2. As shown in Table IV.D-2, long-term exposure to elevated levels of criteria pollutants could result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin’s attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and may adversely affect or delay the projected attainment target year for certain criteria pollutants.

Table IV.D-2: Health Effects and Sources of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	<ul style="list-style-type: none"> • Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter. 	<ul style="list-style-type: none"> • Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO ₂)	<ul style="list-style-type: none"> • Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions. 	<ul style="list-style-type: none"> • Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O ₃)	<ul style="list-style-type: none"> • Atmospheric reaction of organic gases with nitrogen oxides in sunlight. 	<ul style="list-style-type: none"> • Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	<ul style="list-style-type: none"> • Contaminated soil. 	<ul style="list-style-type: none"> • Impairment of blood functions and nerve construction. • Behavioral and hearing problems in children.
Suspended Particulate Matter (PM _{2.5} and PM ₁₀)	<ul style="list-style-type: none"> • Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions. 	<ul style="list-style-type: none"> • Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Sulfur Dioxide (SO ₂)	<ul style="list-style-type: none"> • Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes. 	<ul style="list-style-type: none"> • Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: ARB, 2008.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation between a single project and localized health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and reactive organic gases (ROG).

Overall, the potential for an individual project to significantly degrade regional air quality or contribute to a significant health risk is small, even if the emission thresholds are exceeded by that project. Because of the overall improvement trend in air quality in the air basin, it is unlikely that regional air quality would worsen or that the overall health risk would increase compared to current conditions, as a result of emissions from an individual project.

Types of air pollution and their health effects, and other air pollution-related considerations, are summarized in Table IV.D-2 and are described in more detail below.

Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide. CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM₁₀ for particles less than 10 microns in diameter and PM_{2.5} for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the ARB, studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children. The ARB also reports that Statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.³

³ California Air Resources Board, 2004. *Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution*. Website: www.arb.ca.gov/research/health/fs/PM-03fs.pdf. January.

Nitrogen Dioxide. NO₂ is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO₂. Aside from its contribution to ozone formation, NO₂ also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO₂ may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO₂ decreases lung function and may reduce resistance to infection. On January 22, 2010 the U.S. Environmental Protection Agency (U.S. EPA) strengthened the health-based National Ambient Air Quality Standards (NAAQS) for NO₂.

Sulfur Dioxide. SO₂ is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO₂ has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease.⁴ SO₂ also reduces visibility and the level of sunlight.

Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. TACs do not have ambient air quality standards, but are regulated by the EPA and ARB. In 1998, ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. ARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.⁵ High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as having posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers

⁴ Bay Area Air Quality Management District, 2011, op. cit.

⁵ California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

or schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

The BAAQMD regulates TAC's using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.⁶ As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine health risk to Bay Area residents.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over one half of the average calculated cancer risk from ambient air in the Bay Area.⁷ According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has been reduced to 143 in 1,000,000; however, this risk does not include the risk resulting from exposure to diesel particulate matter or other compounds not monitored.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily “off-road” sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at changeable locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the City of Mountain View include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.⁸ The ARB's Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines. The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. ARB anticipates that by 2020, average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk

⁶ In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

⁷ Bay Area Air Quality Management District, 2007. *Toxic Air Contaminant Control Program Annual Report 2003 Volume 1*. August.

⁸ Ibid.

from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

Odors. Odors are also an important element of local air quality conditions. Specific activities allowed within each land use category of the General Plan can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and manufacturing plants. Other odor producers include the industrial facilities within the region. BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. This regulation limits the “discharge of any odorous substance which causes the ambient air at or beyond the property line...to be odorless and to remain odorless after dilution with four parts of odor-free air.” The BAAQMD must receive odor complaints from 10 or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the BAAQMD if a test panel of people can detect an odor in samples collected periodically from the source. While sources that generate objectionable odors must comply with air quality regulations, the public’s sensitivity to locally produced odors often exceeds regulatory thresholds.

Sensitive Receptors. Occupants of facilities such as schools, day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

High Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways and human health studies have consistently demonstrated that children living within 100 to 200 meters of freeways or busy roadways have reduced lung function and higher rates of respiratory disease.⁹ At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics. Four epidemiological studies on roadways and health impacts conducted in California populations are described below.

- In Oakland, California, children at schools in proximity to high volume roadways experienced more asthma and bronchitis symptoms.¹⁰

⁹ Delfino, R.J., 2002. Epidemiologic Evidence for Asthma and Exposure to Air Toxics: Linkages Between Occupational, Indoor, and Community Air Pollution Research. *Environmental Health Perspectives*.

¹⁰ Kim, J., et al., 2004. Traffic-Related Air Pollution and Respiratory Health: East Bay Children’s Respiratory Health Study. *American Journal of Respiratory and Critical Care Medicine*.

- In a low-income population of children in San Diego, children with asthma living within 550 feet of high traffic volumes were more likely than those residing near lower traffic volumes to have more medical care visits for asthma.¹¹
- In a study of Southern California school children, residence location within 75 meters (246 feet) of a major road was associated with an increased risk of asthma.¹²
- In a study conducted in 12 Southern California communities, children who lived within 500 feet of a freeway had reduced growth in lung capacity compared to those living greater than 1,500 feet from a freeway.¹³

Federal and State regulations control air pollutants at the regional level by limiting vehicle and stationary source emissions. However, air quality regulations have not limited the use of vehicles and generally have not protected sensitive land uses from air pollution “hot spots” associated with proximity to transportation facilities. Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the ARB created guidance for avoiding air quality conflicts in land use planning in its Air Quality and Land Use Handbook: A Community Health Perspective.¹⁴ In its guidance, the ARB advises that new sensitive uses (e.g. residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

ARB guidance suggests that the use of these guidelines should be customized for individual land use decisions, and take into account the context of development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

b. Regulatory Framework. The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. The BAAQMD’s jurisdiction encompasses seven counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa—and portions of Solano and Sonoma counties. The California ARB and the U.S. EPA regulate direct emissions from motor vehicles.

(1) Federal Air Quality Regulations. At the federal level, the U.S. EPA has been charged with implementing national air quality programs. U.S. EPA’s air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

¹¹ English, P., et al., 1999. Examining Associations Between Childhood Asthma and Traffic Flow Using a Geographic Information System. *Environmental Health Perspectives*.

¹² McConnell, R., et al., 2006. Traffic, Susceptibility, and Childhood Asthma. *Environmental Health Perspectives*.

¹³ Gauderman, W. J. The Effect of Air Pollution on Lung Development From 10 to 18 Years of Age. *New England Journal of Medicine*. September 2004 and March 2005.

¹⁴ California Environmental Protection Agency and Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Website: www.arb.ca.gov/ch/landuse.htm.

The FCAA required U.S. EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implement Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. U.S. EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in the application of sanctions on transportation funding and stationary air pollution sources in the air basin.

(2) State Air Quality Regulations. In 1992 and 1993, the ARB requested delegation of authority for the implementation and enforcement of specified New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants to the BAAQMD. U.S. EPA's review of the State of California's laws, rules, and regulations showed them to be adequate for the implementation and enforcement of federal standards, and the U.S. EPA granted the delegations as requested.

The ARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. ARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. ARB combines this data and submits the completed SIP to U.S. EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

(3) Bay Area Air Quality Management District. The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

Clean Air Plan. The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the California Ambient Air Quality Standards. The BAAQMD's 2010 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_x), particulate matter and greenhouse gas emissions.

The Bay Area 2010 Clean Air Plan, which was adopted on September 15, 2010 by the BAAQMD's board of directors:

- Updates the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Establishes emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

BAAQMD CARE Program. The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted. The City of Mountain View has not been included as an impacted community, however, nearby Redwood City, East Palo Alto and San Jose have all been identified as in need of immediate mitigation action.

BAAQMD CEQA Air Quality Guidelines. The BAAQMD *CEQA Air Quality Guidelines* were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures and background air quality information. They also include assessment methodologies for air toxics, odors and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

(4) Attainment Status Designations. The ARB is required to designate areas of the State as attainment, nonattainment or unclassified for each State standard. An "attainment" designation for an area signifies that pollutant concentrations did not violate pollutant standards. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding

those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that data do not support either an attainment or nonattainment status. The law divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO₂ as “does not meet the primary standards,” “cannot be classified,” or “is better than national standards.” For SO₂, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified” or “is better than national standards.” In 1991, new nonattainment designations were assigned to areas for PM₁₀ based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated “unclassified.” Table IV.D-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

Table IV.D-3: Bay Area Attainment Status

Pollutant	Averaging Time	California Standards ^a		National Standards ^b	
		Concentration	Attainment Status	Concentration ^{c,j}	Attainment Status
Ozone (O ₃)	8-Hour	0.070 ppm (137 µg/m ³)	Nonattainment ^h	0.075 ppm	Nonattainment ^d
	1-Hour	0.09 ppm (180 µg/m ³)	Nonattainment	Not Applicable	Not Applicable ^e
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Attainment ^f
	1-Hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Attainment
Nitrogen Dioxide (NO ₂)	1-Hour	0.18 ppm (339 µg/m ³)	Attainment	0.100 ppm	Unclassified
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Not Applicable	0.053 ppm (100 µg/m ³)	Attainment
Sulfur Dioxide (SO ₂)	24-Hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	1-Hour	0.25 ppm (655 µg/m ³)	Attainment	Not applicable	Not applicable
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m ³)	Attainment
Particulate Matter - Coarse (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	Nonattainment ^g	Not Applicable	Not Applicable
	24-Hour	50 µg/m ³	Nonattainment	150 µg/m ³	Unclassified
Particulate Matter - Fine (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	Nonattainment ^g	15 µg/m ³	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m ³ ⁱ	Nonattainment

^a California standards for ozone, carbon monoxide (except in the Lake Tahoe air basin), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM₁₀, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM₁₀ annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

Table notes continued on next page.

- ^b National standards shown are the “primary standards” designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than $150 \mu\text{g}/\text{m}^3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than $35 \mu\text{g}/\text{m}^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially-designed clusters of sites falls below the standard.
- ^c National air quality standards are set by U.S. EPA at levels determined to be protective of public health with an adequate margin of safety.
- ^d In June 2004, the Bay Area was designated as a marginal nonattainment area for the national 8-hour ozone standard. U.S. EPA lowered the national 8-hour ozone standard from 0.80 to 0.75 PPM (i.e., 75 ppb), effective May 27, 2008.
- ^e The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
- ^f In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
- ^g In June 2002, ARB established new annual standards for $PM_{2.5}$ and PM_{10} .
- ^h The 8-hour California ozone standard was approved by the ARB on April 28, 2005 and became effective on May 17, 2006.
- ⁱ U.S. EPA lowered the 24-hour $PM_{2.5}$ standard from $65 \mu\text{g}/\text{m}^3$ to $35 \mu\text{g}/\text{m}^3$ in 2006. The U.S. EPA designated the Bay Area as nonattainment for the $35 \mu\text{g}/\text{m}^3$ $PM_{2.5}$ standard on October 8, 2009. The effective date of the designation is December 14, 2009, and the BAAQMD has 3 years to develop a plan called a State Implementation Plan (SIP) that demonstrates how the Bay Area will achieve the revised standard by 2014. The SIP for the new standard must be submitted to the U.S. EPA by December 14, 2012.
- ^j To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million

mg/m^3 = milligrams per cubic meter

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Source: Bay Area Air Quality Management District, Bay Area Attainment Status, 2011.

c. Existing Climate and Air Quality. Regional air quality, local climate and air quality in the Santa Clara Valley region, and air pollution climatology are described below.

The City of Mountain View is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Northwesterly and northerly winds are most common in Mountain View, reflecting the orientation of the Bay and the San Francisco Peninsula. Winds from these directions carry pollutants released by autos and factories from upwind areas of the Bay Area toward Mountain View, particularly during the summer months. Winds are lightest on the average in fall and winter at which time local pollutants tend to build up in the atmosphere.

Pollutants can be diluted by mixing in the atmosphere both vertically and horizontally. Vertical mixing and dilution of pollutants are often suppressed by inversion conditions, when a warm layer of air traps cooler air close to the surface. During the summer, inversions are generally elevated above ground level, but are present over 90 percent of both the morning and afternoon hours. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

Topography can restrict horizontal dilution and mixing of pollutants by creating a barrier to air movement. The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Diablo Range on either side of the South Bay restrict horizontal dilution, and this alignment of the terrain also channels winds from the north to the south, carrying air pollution from the northern Peninsula toward Mountain View.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution, and terrain that restricts horizontal dilution give Mountain View a relatively high atmospheric potential for air pollution compared to other parts of the San Francisco Bay Air Basin.

The City of Mountain View is within the jurisdiction of the BAAQMD, which has seen air quality conditions improve significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons. Pollutant monitoring results for the years 2008 to 2010 at the San Jose-Jackson Street ambient air quality monitoring station (the closest monitoring station to the City of Mountain View) are shown in Table IV.D-4.

Pollutant monitoring results shown in Table IV.D-4 indicate that air quality in the project area has generally been good. No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health, however levels of ozone have exceeded the State's 1-hour standard two of the last three years; in addition, both the State and federal 8-hour standards were also exceeded twice over this time period.

As indicated in the monitoring results, only one violation of the State PM₁₀ daily standard was recorded during the 3-year period and no violations of the federal PM₁₀ standards were recorded. The area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM₁₀ standard.

PM_{2.5} levels exceeded the federal 24-hour standard five times in 2008, and three times in 2010. However, no violations of the State's PM_{2.5} standard were recorded during the 3-year period.

SO₂ and NO₂ standards were not exceeded in this area during the 3-year period.

Table IV.D-4: Ambient Air Quality at the 158 Jackson Street, San Jose Monitoring Station

Pollutant	Standard	2008	2009	2010
Carbon Monoxide (CO)				
Maximum 1 hour concentration (ppm)		3.3	ND	ND
Number of days exceeded:	State: > 20 ppm	0	ND	ND
	Federal: > 35 ppm	0	ND	ND
Maximum 8 hour concentration (ppm)		2.48	2.50	2.19
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O₃)				
Maximum 1 hour concentration (ppm)		0.118	0.088	0.126
Number of days exceeded:	State: > 0.09 ppm	1	0	5
Maximum 8 hour concentration (ppm)		0.080	0.068	0.086
Number of days exceeded:	State: > 0.07 ppm	3	0	3
	Federal: > 0.08 ppm	2	0	3
Coarse Particulates (PM₁₀)				
Maximum 24 hour concentration (µg/m ³)		55.0	41.1	44.2
Number of days exceeded:	State: > 50 µg/m ³	1	0	0
	Federal: > 150 µg/m ³	0	0	0
Annual arithmetic average concentration (µg/m ³)		23.4	20.3	19.5
Exceeded for the year:	State: > 20 µg/m ³	Yes	Yes	Yes
	Federal: > 50 µg/m ³	No	No	No
Fine Particulates (PM_{2.5})				
Maximum 24 hour concentration (µg/m ³)		41.9	35.0	41.5
Number of days exceeded:	Federal: > 35 µg/m ³	5	0	3
Annual arithmetic average concentration (µg/m ³)		11.5	10.1	9.0
Exceeded for the year:	State: > 12 µg/m ³	No	No	No
	Federal: > 15 µg/m ³	No	No	No
Nitrogen Dioxide (NO₂)				
Maximum 1 hour concentration (ppm)		0.080	0.069	0.064
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.017	0.015	0.014
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO₂)				
Maximum 1 hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.25 ppm	ND	ND	ND
Maximum 3 hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.5 ppm	ND	ND	ND
Maximum 24 hour concentration (ppm)		ND	0.001	0.002
Number of days exceeded:	State: > 0.04 ppm	ND	0	0
	Federal: > 0.14 ppm	ND	0	0
Annual arithmetic average concentration (ppm)		ND	ND	0.000
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	No

ppm = parts per million

µg/m³ = micrograms per cubic meter

ND = No data. There was insufficient (or no) data to determine the value.

Source: ARB and EPA, 2011.

2. Impacts and Mitigation Measures

This section provides an assessment of the potential adverse impacts related to air quality within the City of Mountain View. It begins with the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this section identifies potential

impacts and evaluates how they relate to policies and actions of the Draft General Plan and the GGRP. Where potentially significant impacts are identified, mitigation measures are recommended.

a. Criteria of Significance. Implementation of the Draft General Plan and GGRP would have a significant effect on the environment if it would:

- (1) **Conflict with** or obstruct implementation of the **current Air Quality Plan**;
- (2) **Violate any air quality standard** or contribute substantially to an existing or projected air quality violation;
- (3) **Result in a cumulatively considerable net increase of any criteria pollutant** for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- (4) Expose sensitive receptors or the general public to **substantial pollutant concentrations** as defined by federal or State air quality standards; or
- (5) **Create objectionable odors** affecting a substantial number of people.

According to the BAAQMD *CEQA Air Quality Guidelines*, to meet the threshold of significance for operational-related criteria air pollutant and precursor impacts, a proposed plan must satisfy the following criteria: Consistency with current air quality plan (AQP) control measures (this requirement applies to project-level as well as plan-level analyses); and a proposed plan's projected vehicle miles travelled (VMT) or vehicle trips (VT) increase is less than or equal to its project population increase.

A plan would also have a significant air quality impact related to criteria air pollutants and precursors if it would cause the rate of increase in VMT or VT to be greater than the rate of increase in population.

For toxic air contaminants, the BAAQMD *CEQA Air Quality Guidelines* also call for showing special overlay zones around existing and planned sources of TACs and overlay zones of at least 500 feet from all freeways and high volume roadways.

b. Impacts Analysis. The following section provides an evaluation and analysis for the potential impacts of the Draft General Plan and GGRP for each of the criteria of significance listed above.

(1) **Conflict With Current Air Quality Plan.** The applicable air quality plan is the BAAQMD's 2010 Clean Air Plan, which was adopted on September 15, 2010. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines a control strategy to reduce emissions and reduce ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project does the following: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) if the project would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

The primary goals of the 2010 Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate. The Draft General Plan and GGRP support the goals of the Clean Air Plan by including, and ultimately implementing, the following policies and actions related to air quality:

Draft General Plan

POLICY INC 20.1: Pollution prevention. Discourage mobile and stationary sources of air pollution.

ACTION INC 20.1.1: Wood-burning ordinance. Enforce the City's wood-burning ordinance.

ACTION INC 20.1.2: Air quality through CEQA. Use the development review process to evaluate the cumulative effects of new development on air quality and impose appropriate mitigation measures through the CEQA process.

POLICY INC 20.2: Collaboration. Participate in state and regional planning efforts to improve air quality.

ACTION INC 20.2.1: Sensitive receptors. Utilize BAAQMD guidelines to protect residential uses and other sensitive receptors from stationary sources of pollution.

ACTION INC 20.2.2: Regional Clean Air Plan. Cooperate with the Bay Area Air Quality Management District in implementing the regional Clean Air Plan.

ACTION INC 20.2.3: Congestion Management Plan. Work with the Congestion Management Agency to implement the Congestion Management Plan.

ACTION INC 20.2.4: Regulation of specific businesses. Improve awareness of the Bay Area Air Quality Management District's enforcement program to regulate specific businesses, especially those near residential neighborhoods.

POLICY INC 20.3: Pollution-reduction technologies. Encourage the use of non-fossil fuels and other pollution-reduction technologies in transportation, machinery, and industrial processes.

ACTION INC 20.3.1: Pollution prevention. Encourage the community and City employees to minimize single-occupancy auto travel through employer incentives and other strategies.

Policies, including the following, for reducing greenhouse gas emissions and improving air quality work in tandem with the accompanying GGRP as well as other Draft General Plan policies to reduce municipal and community-wide greenhouse gas emissions and improve air quality throughout the City.

POLICY MOB 9.1: Greenhouse gas emissions. Develop cost-effective strategies for reducing greenhouse gas emissions, in coordination with the Greenhouse Gas Reduction Program.

ACTION MOB 9.1.1: Greenhouse Gas Inventory. Maintain and regularly update the City's municipal and community Greenhouse Gas Inventory to track emissions.

ACTION MOB 9.1.2: Greenhouse Gas Reduction Program. Regularly update the Greenhouse Gas Reduction Program to address transportation emissions reductions.

POLICY MOB 9.2: Reduced vehicle miles traveled. Support development and transportation improvements that help reduce greenhouse gas emissions by reducing per capita vehicle miles traveled.

ACTION MOB 9.2.1: Mixed use in higher densities. Seek to create higher-intensity mixed use districts along transit, bicycle and pedestrian corridors.

ACTION MOB 9.2.2: Alternative modes. Promote walking, bicycling, transit and other highly efficient modes of transportation to reduce per capita vehicle miles traveled.

POLICY MOB 9.3: Low-emission vehicles. Promote use of fuel-efficient, alternative fuel and low-emissions vehicles.

ACTION MOB 9.3.1: Municipal vehicles. Minimize emissions from City-owned and operated vehicles through equipment retrofits, purchasing of more efficient models, changes in operation protocols, or other actions.

ACTION MOB 9.3.2: Sustainable infrastructure. Support the installation of innovative, sustainable infrastructure for low-emission vehicles (e.g. electric charging stations, etc.)

GGRP Strategies and Measures. The following measures and actions in the GGRP are targeted at reducing greenhouse gas emissions. The full text of the following measures are included in the GGRP in Appendix A3.

Energy Efficiency

- E-1.1 Residential Energy Efficiency Retrofit
- E-1.2 Non-Residential Energy Efficiency Retrofit
- E-1.3 Non-Residential Lighting Retrofit
- E-1.4 Residential Energy Star Appliances
- E-1.5 Smart Grid
- E-1.6 Exceed State Energy Standards in New Residential Development
- E-1.7 Exceed State Energy Standards in New Non-Residential Development
- E-1.8 Building Shade Trees in Residential Development

Renewable Energy

- E-2.1 Residential Solar Water Heaters
- E-2.2 Non-Residential Solar Water Heaters
- E-2.3 Residential Solar Photovoltaic System
- E-2.4 Non-Residential Solar Photovoltaic System
- E-2.5 Landfill Gas to Energy

Municipal Building Energy

- E-3.1 Energy Efficiency in Municipal Buildings

Municipal Streetlights and Traffic Lights

- E-4.1 Energy Efficiency in Streetlights and Traffic Lights

Municipal Renewables

- E-5.1 Solar Photovoltaic Systems on Municipal Buildings

Solid Waste Strategy

- SW-1.1 Implementation of a Zero-Waste Plan

Water Strategy

- W-1.1 Urban Water Management Plan Conservation Strategies

Transportation Strategy

- T-1.1 Transportation Demand Management

Carbon Sequestration Strategy

- CS-1.1 Enhance the Urban Forest

The Draft General Plan and GGRP support the primary goals of the Air Quality Plan by implementing the measures outlined above.

The control measures of the 2010 Clean Air Plan include measures in the traditional categories of stationary source measures, mobile source measures (MSM), and transportation control measures (TCM). This latest Clean Air Plan identifies two new categories of control measures including: land use and local impact measures and energy and climate measures. Stationary source measures are not specifically applicable to the Draft General Plan and GGRP and therefore, are not evaluated further in this EIR. The project’s consistency with other measures in the 2010 Clean Air Plan are discussed below.

Transportation and Mobile Source Control Measures. The BAAQMD identifies control measures as part of their Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile and transportation sources. The transportation control measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and VMT in addition to vehicle idling and traffic congestion. Table IV.D-5 below lists the proposed Draft General Plan and GGRP policies that are supportive of the Bay Area 2010 Clean Air Plan measures related to transportation and mobile sources. A description of each applicable TCM and MSM is provided along with the listing of the relevant proposed Draft General Plan and GGRP policies, actions and measures. (See Appendix A for the full text of the policies, actions and GGRP measures.)

Table IV.D-5: Transportation Control Measures and Draft General Plan Policies and GGRP Measures^a

Bay Area 2010 Clean Air Plan Transportation Control Measures	Draft General Plan and GGRP Policies and Actions
<p>TCM A-1 – Local and Area-wide Bus Service Improvements</p> <p>This measure will improve transit by sustaining and improving existing service, including new Express Bus or Bus Rapid Transit on major travel corridors, funding the replacement of older and dirtier buses, and implementing the Transit Priority Measures (TPMs) component of the Transportation Climate Action Campaign.</p>	<p>Draft General Plan</p> <p>POLICY MOB 5.3: Local transportation services. Create or partner with transit providers, employers, educational institutions, and major commercial entities and event organizers to improve local transportation services.</p> <p>ACTION MOB 5.3.1: Citywide shuttles. Study a possible citywide shuttle system in coordination with VTA, employers, project developers, and other stakeholders.</p> <p>ACTION MOB 5.3.2: Caltrain and VTA. Work with Caltrain and VTA to maintain and enhance convenient, ADA accessible train, light rail, bus and shuttle service.</p> <p>ACTION MOB 6.3.3: Bicycle amenities. Encourage bicycle amenities and access on public transit.</p> <p>POLICY MOB 5.1: Transit agencies. Coordinate with local and regional transit agencies, including MTC, VTA, JPB (Caltrain), SamTrans, and the California High-Speed Rail Authority, to improve transportation service, infrastructure and access in the city.</p> <p>ACTION MOB 5.1.1: Commuter rail. Actively support commuter rail in Santa Clara County and along the Peninsula.</p> <p>ACTION MOB 5.1.2: Light rail. Actively support enhanced existing light rail service to transit-oriented employment centers and residential development in Mountain View.</p>

Table IV.D-5 Continued

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM A-1 <i>Continued</i></p>	<p>ACTION MOB 5.1.3: Protection from negative effects. Collaborate with service providers in transit planning processes to support designs that address visual, noise and vibration impacts and avoid creating barriers that divide the community.</p> <p>ACTION MOB 5.1.4: Caltrans and VTA. Plan for and work with Caltrans and VTA to implement Bus Rapid Transit improvements along El Camino Real.</p> <p>ACTION MOB 5.1.5: Signal timing. Collaborate with Caltrans to consider additional signal timing adjustment and transit prioritization to minimize transit delay along El Camino Real, in coordination with service needs of other modes of travel (e.g. pedestrian crossing, vehicle travel along corridor, etc.).</p> <p>ACTION MOB 5.1.6: Transit outreach. Provide informational and promotional support for new and existing transit services.</p>
<p>TCM A-2 – Local and Regional Rail Service Improvements</p> <p>This measure will improve rail service by sustaining and expanding existing services and by providing funds to maintain railcars, stations, and other rail capital assets. Specific projects for implementation include BART extensions, Caltrain electrification, Transbay Transit Center Building and rail foundation, Capital Corridor intercity rail service, and Sonoma Marin Area Rail Transit (SMART) District commuter rail project.</p>	<p>Draft General Plan</p> <p>POLICY MOB 5.1: Transit agencies. Coordinate with local and regional transit agencies, including MTC, VTA, JPB (Caltrain), SamTrans, and the California High Speed Rail Authority, to improve transportation service, infrastructure, and access in the City.</p> <p>ACTION MOB 5.1.6: Transit outreach. Provide informational and promotional support for new and existing transit services.</p> <p>POLICY MOB 5.2: California High Speed Rail. Actively participate with the High Speed Rail Authority in planning any future high-speed rail service to address urban design, traffic, noise and compatibility issues.</p> <p>ACTION MOB 5.2.1: California High Speed Rail Corridor. Work with the California High Speed Rail Authority to provide enhanced pedestrian and bicycle access as well as economic development opportunities along and across the rail corridor.</p> <p>ACTION MOB 5.2.2: Community preservation. Support the preservation of the Downtown business district, historic buildings, pedestrian-friendly environment, and adjacent residential character along the rail corridor.</p> <p>ACTION MOB 5.2.3: Downtown circulation. Support protection of Downtown Transit Center operations and access, downtown mobility, and Central Expressway level of service impacts of high speed rail.</p>
<p>TCM B-1 – Freeway and Arterial Operations Strategies</p> <p>This measure will improve the performance and efficiency of freeway and arterial systems through operational improvements.</p>	<p>Draft General Plan</p> <p>POLICY MOB 10.1: Efficient automobile infrastructure. Strive to maximize the efficiency of existing automobile infrastructure and manage major streets to discourage cut-through traffic on neighborhood streets.</p>

Table IV.D-5 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM B-1 <i>Continued</i></p>	<p>ACTION MOB 10.1.2: Roadway System Management. Use Transportation Systems Management (TSM) principles when considering roadway system improvement projects to improve traffic flow, in balance with the needs of other modes.</p> <p>ACTION MOB 10.1.3: Roadway improvements. Include roadway operation improvement requirements as part of the review process for new development and significant rehabilitation or expansion projects.</p> <p>ACTION MOB 10.1.4: Surrounding jurisdictions. Collaborate with surrounding jurisdictions and transit agencies such as VTA to implement intelligent transportation systems and minimize the potential negative impacts on Mountain View from projects in surrounding jurisdictions.</p> <p>ACTION MOB 10.1.5: Transportation impact fee. Consider adopting a transportation impact fee to mitigate transportation impacts of new development.</p> <p>POLICY MOB 10.2: Reducing travel demand. Promote effective Transportation Demand Management programs for existing and new development.</p> <p>ACTION MOB 10.2.1: New development. Impose and regularly update TDM requirements for new development and significant expansion or rehabilitation projects.</p> <p>ACTION MOB 10.2.2: Existing development. Encourage TDM implementation for existing development.</p> <p>ACTION MOB 10.2.3: Local trip management. Facilitate the formation and foster the success of Transportation Management Associations (TMAs), Business Improvement Districts (BIDs), or other public-private partnerships to help manage vehicle trips at a local level.</p> <p>ACTION MOB 10.2.4: Project design. Ensure project designs support achievement of TDM measures.</p> <p>ACTION MOB 10.2.5: Funding and reporting. Develop requirements and funding mechanisms for TDM performance reporting to the City.</p> <p>ACTION MOB 10.2.6: Targeted improvements. Explore opportunities to apply traffic impact fees toward bicycle, pedestrian, transit and roadway improvements in order to improve the overall transportation system and optimize travel by all modes.</p> <p>POLICY MOB 10.3: Avoiding street widening. Limit widening of streets as a means of improving traffic, and focus instead on operational improvements to preserve community character.</p> <p>GGRP</p> <p>GGRP Measure T-1.1: Transportation Demand Management</p>

Table IV.D-5 Continued

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM B-2 – Transit Efficiency and Use Strategies</p> <p>This measure will improve transit efficiency and make transit more convenient for riders</p>	<p>Draft General Plan</p> <p>POLICY MOB 5.1: Transit agencies. Coordinate with local and regional transit agencies, including MTC, VTA, JPB (Caltrain), SamTrans, and the California High Speed Rail Authority, to improve transportation service, infrastructure, and access in the City.</p> <p>ACTION MOB 5.1.1: Commuter rail. Actively support commuter rail in Santa Clara County and along the Peninsula.</p> <p>ACTION MOB 5.1.2: Light rail. Actively support enhanced existing light rail service to transit-oriented employment centers and residential development in Mountain View.</p> <p>ACTION MOB 5.1.6: Transit outreach. Provide informational and promotional support for new and existing transit services.</p> <p>POLICY MOB 5.4: Connecting key areas. Identify and implement new or enhanced transit services to connect Downtown, El Camino Real, San Antonio, North Bayshore, East Whisman and NASA Ames Research Center.</p> <p>ACTION MOB 5.4.1: NASA/Ames. Partner with NASA Ames Research Center to plan and fund transportation connections with Mountain View, including potential shuttle, bicycle, and pedestrian connections to Downtown, North Bayshore and East Whisman.</p> <p>ACTION MOB 5.4.2: Shuttle access. Support improvements for continued private shuttle access to the Downtown Transit Center and Caltrain.</p> <p>POLICY MOB 5.5: Access to transit services. Support right-of-way design and amenities consistent with local transit goals to facilitate access to transit services and improve transit as a viable alternative to driving.</p> <p>ACTION MOB 5.5.1: Multi-modal station access. Collaborate with Caltrain, VTA, and the High-Speed Rail Authority to optimize station access for all modes, provide safe routes to transit, and ensure adequate bicycle and automobile station parking.</p> <p>ACTION MOB 5.5.2: Caltrain station access. Support Caltrain station improvements identified in the Caltrain Bicycle Access and Parking Plan, and prioritize non-single occupancy vehicle modes of access.</p> <p>POLICY MOB 5.6: Emerging technologies. Explore emerging transit technologies such as Personal Rapid Transit and their citywide applicability.</p>
<p>TCM C-1 – Voluntary Employer Based Trip Reduction Programs</p> <p>This measure will support voluntary efforts by Bay Area employers to encourage their employees to use alternative commute modes, such as transit, ridesharing, bicycling, walking, telecommuting, etc.</p>	<p>Draft General Plan</p> <p>ACTION INC 20.3.1: Pollution prevention. Encourage the community and City employees to minimize single-occupancy auto travel through employer incentives and other strategies.</p>

Table IV.D-5 Continued

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM C-2 – Safe Routes to Schools and Safe Routes to Transit Programs</p> <p>This measure will encourage walking, bicycle and transit use by facilitating safe routes to schools and transit by providing funds and working with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists.</p>	<p>Draft General Plan</p> <p>POLICY MOB 6.1: Safe routes to schools. Promote safe routes to schools programs for all schools in the City.</p> <p>ACTION MOB 6.1.1: Funding. Pursue public and private agency grant funding sources for Safe Routes to Schools programs.</p> <p>POLICY MOB 6.2: Prioritizing projects. Ensure bicycle and pedestrian safety improvements include projects to enhance safe accessibility to schools.</p> <p>ACTION MOB 6.2.1: Filling gaps. Identify opportunities to install sidewalks, pathways and bicycle facilities, which may include right-of-way acquisition, to complete gaps along routes to schools.</p> <p>POLICY MOB 6.3: Connections to trails. Connect schools to the citywide trail systems.</p> <p>ACTION MOB 7.3.1: Trail access. Plan and construct school-accessible trailheads or neighborhood access points.</p> <p>POLICY MOB 6.4: Education. Support education programs that promote safe walking and bicycling to schools.</p> <p>ACTION MOB 6.4.1: Education and outreach. Work with the school districts to develop and distribute safe routes to schools plans and information.</p> <p>POLICY MOB 5.5: Access to transit services. Support right-of-way design and amenities consistent with local transit goals to facilitate access to transit services and improve transit as a viable alternative to driving.</p> <p>ACTION MOB 5.5.1: Multi-modal station access. Collaborate with Caltrain, VTA, and the High-Speed Rail Authority to optimize station access for all modes, provide safe routes to transit, and ensure adequate bicycle and automobile station parking.</p>
<p>TCM D-1 – Bicycle Access and Facilities Improvements</p> <p>This measure will expand bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements include bike lanes, routes, paths, and bicycle parking facilities. This TCM also includes improving bicycle access to transit and supporting the annual Bike to Work event.</p>	<p>Draft General Plan</p> <p>POLICY MOB 4.1: Bicycle network. Improve facilities and eliminate gaps along the bicycle network to connect destinations across the City.</p> <p>ACTION MOB 4.1.1: Bicycle Transportation Plan. Regularly update and implement a comprehensive Bicycle Transportation Plan, including identification of projects that extend and improve the on-street bike network, and consideration of bicycling mode share targets to achieve a well-utilized network.</p> <p>ACTION MOB 4.1.2: Funding. Seek funding and revenue sources to install bicycle network improvements and parking.</p>

Table IV.D-5 Continued

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-1 <i>Continued</i></p>	<p>POLICY MOB 4.2: Planning for bicycles. Use existing planning processes to identify or implement improved bicycle connections and bicycle parking facilities.</p> <p>ACTION MOB 4.2.1: Off-street trails. Maintain and extend the City’s off-street trail network to improve bicycle and pedestrian access, including Stevens Creek, Hetch Hetchy and Permanente Creek Trails.</p> <p>POLICY MOB 4.3: Public bicycle parking. Increase the amount of well-maintained, publicly accessible bicycle parking and storage throughout the City.</p> <p>ACTION MOB 4.3.1: Public bicycle parking. Enhance the availability of convenient and publicly accessible bicycle parking facilities at transit stations and ensure availability on public and private property at key commercial locations such as Downtown.</p> <p>POLICY MOB 4.4: Bicycle parking standards. Maintain bicycle parking standards and guidelines for well-sited bicycle parking and storage in private development to enhance the bicycle network.</p> <p>ACTION MOB 4.4.1: Update bicycle parking requirements. Update the bike parking requirements, including potential standards such as:</p> <ul style="list-style-type: none"> • New requirements based on number of dwelling units and commercial square footage, instead of percentage of car parking spaces. • Updated bike parking standards and guidelines that distinguish requirements for visitor, resident and employee facilities. • Updated standards and siting guidelines for shopping centers and other village centers to significantly improve and increase bicycle access, parking, and safety. <p>ACTION MOB 4.4.2: Bicycle parking innovations. Encourage new and innovative means for complying with bike parking and storage requirements.</p> <p>POLICY MOB 4.5: Promoting safety. Educate bicyclists and motorists on bicycle safety.</p> <p>ACTION MOB 4.5.1: Bicycle education. Provide bicycle education and promotion programs.</p>
<p>TCM D-2 – Pedestrian Access and Facilities Improvements</p> <p>This measure will improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment and major activity centers. Improvements may include sidewalks/paths, benches, reduced street width, reduced intersection turning radii, crosswalks with activated signals, curb extensions/ bulbs, buffers between sidewalks and traffic lanes, and street trees.</p>	<p>Draft General Plan</p> <p>POLICY MOB 3.1: Pedestrian network. Provide a safe and comfortable pedestrian network.</p> <p>ACTION MOB 3.1.1: Pedestrian Master Plan. Regularly update and implement the goals, policies and actions of the Pedestrian Master Plan.</p> <p>ACTION MOB 3.1.2: Sidewalk database. Maintain a database of missing sidewalk segments, and ensure closure of gaps in the sidewalk network.</p>

Table IV.D-5 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-2 <i>Continued</i></p>	<p>ACTION MOB 3.1.3: Pedestrian paths. Include publicly-accessible pedestrian paths in major new developments and public facilities, and ensure that they are clearly identified and safe.</p> <p>ACTION MOB 3.1.4: Curbs, gutters, and sidewalks. Implement existing policy to install curbs, gutters, and sidewalks, where desired on unimproved local streets and identify funding for the improvements.</p> <p>ACTION MOB 3.1.5: Reduced Standard Policy. Create a set of guidelines to improve pedestrian accommodation within the roadway where sidewalks are not desired by neighborhood residents, according to the City’s Reduced Standard Policy.</p> <p>ACTION MOB 3.1.6: Sustainable streetscapes. Consider adopting and/or updating sustainable streetscape standards and guidelines for public improvements and frontage design of private development aimed at creating attractive pedestrian environments, particularly along high-traffic roadways.</p> <p>POLICY MOB 3.2: Pedestrian connections. Increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, village centers, and other destinations throughout the City.</p> <p>ACTION MOB 3.2.1: Connections through super-blocks. Develop pedestrian improvement standards aimed at breaking down large blocks, where vehicular intersections are not feasible.</p> <p>ACTION MOB 3.2.2: Existing neighborhoods. Identify and enhance pedestrian and bicycle facilities and connections through existing neighborhoods to commercial locations and amenities.</p> <p>ACTION MOB 3.2.3: Pedestrian crossings to parks. Improve and enhance pedestrian crossings to parks and other public facilities in accordance with current standards and best engineering practices.</p> <p>ACTION MOB 3.2.4: Safety and security. Encourage building design features in new developments such as windows and entries that orient towards public pathways to improve the safety and security of pedestrians.</p> <p>POLICY MOB 3.3: Pedestrian and bicycle crossings. Enhance pedestrian and bicycle crossings at key locations across physical barriers.</p> <p>ACTION MOB 3.3.1: Key pedestrian crossings. Develop a priority list for enhanced pedestrian and bicycle crossings along key barriers, such as railroad tracks, El Camino Real, Highway 85, Highway 101, Highway 237, Shoreline Boulevard, Grant Road, Middlefield Road, and Central Expressway.</p>

Table IV.D-5 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-2 <i>Continued</i></p>	<p>ACTION MOB 3.3.2: Pedestrian connections. Identify and prioritize pedestrian access to connect neighborhood cul-de-sacs and connect neighborhoods to the citywide trail system.</p> <p>POLICY MOB 3.4: Avoiding street widening. Preserve and enhance citywide pedestrian connectivity by limiting street widening as a means of improving traffic.</p> <p>ACTION MOB 3.4.1: Roadway reductions. Identify opportunities to reduce roadway widths at specific intersections and along key corridors to enhance pedestrian and bicycle facilities, including landscape amenities.</p> <p>POLICY MOB 3.5: Walking and bicycling outreach. Actively engage the community in promoting walking and bicycling through education, encouragement, and outreach on improvement projects and programs.</p> <p>ACTION MOB 3.5.1: Bicycle and Pedestrian Advisory Committee. Support the Bicycle and Pedestrian Advisory Committee work on pedestrian and bicycle facility projects.</p> <p>ACTION MOB 3.5.2: Programs to promote walking. Implement new and enhanced sustainability and health programs that promote walking and bicycling.</p> <p>POLICY MOB-1.1: Multi-modal planning. Adopt and maintain master plans and street design standards to optimize mobility for all transportation modes.</p> <p>ACTION MOB 1.1.1: Mobility plans. Ensure mobility plans include or reference priority project lists intended to maintain and enhance the multi-modal transportation system.</p> <p>ACTION MOB-1.1.2 Multi-modal design. Update street design standards to address roadway function, adjacent land use, and accommodations for all modes.</p> <p>ACTION MOB 1.1.3: Existing resources. Consult existing resources for design guidance in developing street design standards.</p> <p>POLICY MOB 1.2: Accommodating all modes. Plan, design and construct new transportation improvement projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists and persons of all abilities.</p> <p>ACTION MOB 1.2.1: Complete Streets. Implement Complete Streets policies and standards in new street design standards, new streets projects and in street rehabilitation projects.</p> <p>ACTION MOB 1.2.2: Grand Boulevard Initiative. Implement principles of the Grand Boulevard Initiative along El Camino Real.</p>

Table IV.D-5 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-2 <i>Continued</i></p>	<p>ACTION MOB 1.2.3: Targeted standards. Consider additional corridor-specific and/or precise plan-based street design standards and guidelines to enhance multi-modal environments (e.g. streets, sidewalks, landscaping, furniture, etc).</p> <p>POLICY MOB-1.3: Pedestrian and bicycle placemaking. Promote pedestrian and bicycle improvements that improve connectivity between neighborhoods, provide opportunities for placemaking, and foster a greater sense of community.</p> <p>ACTION MOB 1.3.1: Pedestrian and bicycle connections. Ensure precise plans and zoning standards include guidelines for public greenways to create strong pedestrian and bicycle connections, particularly in locations where large blocks are prevalent and vehicular through-connections may not be feasible.</p> <p>ACTION MOB 1.3.2: Development review. Use the development review process to identify and implement pedestrian and bicycle improvements in private development projects and along adjacent street frontages.</p> <p>ACTION MOB 1.3.3: Grade separation policy. Develop grade separation policies for the Caltrain rail and Central Expressway corridor.</p> <p>ACTION MOB 1.3.4: Grade separations. Support plans for new grade-separated infrastructure (e.g. bridges, underpasses, etc.) and updates to existing infrastructure consistent with grade separation policies, to reduce conflicts between modes and improve accommodations for non-automotive travel.</p> <p>POLICY MOB 1.4: Street design. Ensure street design standards allow a variety of public and private roadway widths.</p> <p>ACTION MOB 1.4.1: Street grid. Identify and leverage opportunities for a street grid of smaller blocks and improved connections as parcels redevelop.</p> <p>ACTION MOB 1.4.2: Municipal uses. Review street design standards to ensure they consider utility infrastructure, emergency access, and service access needs.</p> <p>POLICY MOB-1.5: Public accessibility. Ensure all new streets are publicly accessible.</p> <p>ACTION MOB 1.5.1: Connected network. During review of new subdivisions and major redevelopments, ensure new development provides or enhances a highly interconnected transportation network.</p> <p>POLICY MOB 1.6: Traffic calming. Provide traffic calming, especially in neighborhoods and around schools, parks and gathering places.</p>

Table IV.D-5 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-2 <i>Continued</i></p>	<p>ACTION MOB 1.6.1: Traffic calming. Provide traffic calming improvements through the City’s Neighborhood Traffic Management Program.</p> <p>ACTION MOB 1.6.2: Neighborhood Traffic Management Program. Update Neighborhood Traffic Management Program guidelines to ensure they are current with traffic calming design options.</p>
<p>TCM D-3 – Local Land Use Strategies</p> <p>This measure will support and promote land use patterns, policies, and infrastructure investments that support higher density mixed use, residential and employment development near transit in order to facilitate walking, bicycling and transit use.</p>	<p>Draft General Plan</p> <p>POLICY LUD 3.1: Land use and transportation. Focus higher land use intensities and densities within ½ mile of public transit service and along major commute corridors.</p> <p>ACTION LUD 3.1.1: Transit Zone Overlay requirements. Update the Transit Zone Overlay Zoning Ordinance requirements and standards.</p> <p>ACTION LUD 3.1.2: Increase public transit use. Develop strategies to increase public transit ridership through coordination with transit agencies and private employers.</p> <p>POLICY LUD 3.2: Mix of land uses. Encourage a mix of land uses, housing types, retail and public amenities, and public neighborhood open spaces accessible to the community.</p> <p>ACTION LUD 3.2.1: Zoning Ordinance update. Update the allowed uses and development standards for each zoning district in the Zoning Ordinance to encourage village centers, transit-oriented development, and a flexible mix of land uses where appropriate.</p> <p>ACTION LUD 3.2.2: Mixed Use development standards. Amend the mixed use development standards in the Zoning Ordinance to facilitate mixed use development.</p> <p>POLICY MOB 10.2: Reducing travel demand. Promote effective Transportation Demand Management programs for existing and new development.</p> <p>ACTION MOB 10.2.1: New development. Impose and regularly update Transportation Demand Management (TDM) requirements for new development and significant expansion or rehabilitation projects.</p> <p>ACTION MOB 10.2.2: Existing development. Encourage Transportation Demand Management implementation for existing development.</p> <p>ACTION MOB 10.2.3: Local trip management. Facilitate the formation and foster the success of Transportation Management Associations (TMAs), Business Improvement Districts, or other public-private partnerships to help manage vehicle trips at a local level.</p> <p>ACTION MOB 10.2.4: Project design. Ensure project designs support achievement of TDM measures.</p>

Table IV.D-5 Continued

<p align="center">Bay Area 2010 Clean Air Plan Transportation Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
<p>TCM D-3 <i>Continued</i></p>	<p>ACTION MOB 10.2.5: Funding and reporting. Develop requirements and funding mechanisms for TDM performance reporting to the City.</p> <p>ACTION MOB 10.2.6: Targeted improvements. Explore opportunities to apply traffic impact fees toward bicycle, pedestrian, transit and roadway improvements in order to improve the overall transportation system and optimize travel by all modes.</p>
<p>TCM E-2 – Promote Parking Policies to Reduce Motor Vehicle Travel</p> <p>This measure will reduce emission of the key ozone precursors, ROG and NO_x by implementing parking policies that support infill and transit-oriented development, and reduce vehicle miles traveled, and vehicle emissions through increased transit use, walking and bicycling.</p>	<p>Draft General Plan</p> <p>POLICY MOB 7.1: Parking codes. Maintain efficient parking standards that consider reduced demand due to development conditions such as transit accessibility.</p> <p>ACTION MOB 7.1.1: Parking requirements. Update and revisit parking requirements regularly to:</p> <ul style="list-style-type: none"> • Determine if it is feasible to reduce or remove minimum requirements for certain districts, land use categories or development types. • Consider the use of parking maximums. • Consider allowing developers to meet minimum parking requirements by alternative means, such as shared parking between uses, payment of in-lieu fees, or off-site parking within a reasonable walking distance. • Encourage all new commercial and mixed use parking to be designed so that it is interconnected with adjacent parking facilities. • Provide preferred parking locations for prioritized vehicles such as carshare vehicles, rideshare vehicles and zero emissions vehicles. <p>ACTION MOB 7.1.2: Reduced parking with reduced demand. Consider modifying minimum parking requirements for development projects that implement Transportation Demand Management programs, locate near major transit nodes, and/or feature specialized uses with lower parking demand (e.g. senior housing, etc.).</p>
<p>MSM C-1 – Construction and Farming Equipment</p> <p>Reduce emissions from construction and farming equipment by 1) cash incentives to retrofit construction and farm equipment with diesel particulate matter filters or upgrade to a Tier III or IV offroad engine; 2) work with CARB, CEC and others to develop more fuel efficient off-road engines and drive-trains; 3) work with local communities, contractors and developers to encourage the use of renewable alternative fuels in applicable equipment.</p>	<p>Draft General Plan</p> <p>POLICY INC 20.3: Pollution-reduction technologies. Encourage the use of non-fossil fuels and other pollution-reduction technologies in transportation, machinery, and industrial processes.</p>

^a Appendix A of this Draft EIR contains the full text of all Draft General Plan policies and actions and GGRP measures. Source: BAAQMD, Bay Area 2010 Clean Air Plan; City of Mountain View, 2011.

Land Use and Local Impact Measures. The BAAQMD’s 2010 Clean Air Plan includes Land Use and Local Impacts Measures (LUMs) to achieve the following: promote mixed use; compact development to reduce motor vehicle travel and emissions; and ensure that planned growth is focused in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions. Table IV.D-6 lists the proposed Draft General Plan and GGRP policies that support the Bay Area 2010 Clean Air Plan land use measures.

Table IV.D-6: Land Use and Local Impact Control Measures and Draft General Plan Policies

Bay Area 2010 Clean Air Plan Land Use and Local Impact Control Measures	Draft General Plan Policies and Actions
<p>LUM 1 Goods Movement</p> <p>This measure aims to reduce diesel PM and GHG emissions from goods movement in the Bay Area through targeted enforcement of CARB diesel ATCMs in impacted communities, partnerships with ports and other stakeholders, increased signage indicating truck routes and anti-idling rules, shifts in freight transport mode, shore-side power for ships, and improvement in the efficiency of engine drive trains, distributions systems (roadways, logistic systems) and land use patterns.</p>	<p>Draft General Plan</p> <p>ACTION NOI 1.6.3: Truck traffic. Encourage a limitation on commercial, industrial and construction truck traffic through residential areas by measures such as requiring truck traffic routes and traffic plans be identified for new construction and new commercial and industrial uses.</p>
<p>LUM 3 Updated CEQA Guidelines and Enhanced CEQA Review</p> <p>The purpose of this measure is to develop revised CEQA Guidelines and thresholds of significance and to expand the review of CEQA documents.</p>	<p>Draft General Plan</p> <p>ACTION INC 20.1.2: Air quality through CEQA. Use the development review process to evaluate the cumulative effects of new development on air quality and impose appropriate mitigation measures through the CEQA process.</p>

^a Appendix A of this Draft EIR contains the full text of all Draft General Plan policies and actions and GGRP measures. Source: BAAQMD, Bay Area 2010 Clean Air Plan; City of Mountain View, 2011.

Energy and Climate Control Measures. The BAAQMD’s 2010 Clean Air Plan also includes a new category of measures, Energy and Climate Control Measures (ECM) which are designed to reduce ambient concentrations of criteria pollutants and reduce emissions of CO₂. Implementation of these measures should promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the “urban heat island” effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-VOC emitting) trees to reduce biogenic emissions from trees, lower air temperatures, provide shade and absorb air pollutants. Table IV.D-7 lists the proposed City of Mountain View Draft General Plan and GGRP ECMs. A description of the ECM’s applicable to the City of Mountain View is provided along with a listing of relevant proposed Draft General Plan and GGRP policies that would implement each measure.

Table IV.D-7: Energy and Climate Control Measures and Draft General Plan and GGRP Policies^a

Bay Area 2010 Clean Air Plan Energy and Climate Control Measures	Draft General Plan and GGRP Policies and Actions
<p>ECM-1 Energy Efficiency</p> <p>The purpose of this measure is to provide: 1) education to increase energy efficiency; 2) technical assistance to local governments to adopt and enforce energy-efficient building codes; and 3) incentives for improving energy efficiency at schools.</p>	<p>Draft General Plan</p> <p>POLICY INC 13.1: Energy efficiency and conservation. Increase energy efficiency and conservation in public buildings and infrastructure.</p>
<p>ECM-1 Continued</p>	<p>ACTION INC 13.1.1: Building energy conservation and efficiency. Develop and implement a plan to increase energy efficiency and conservation in public buildings and infrastructure.</p> <p>ACTION INC 13.1.2: Efficient city infrastructure. Find opportunities to install more energy efficient lighting and infrastructure in the public right-of-way and on City-owned properties.</p> <p>POLICY INC 14.1: Renewable energy. Promote the deployment of renewable energy technologies throughout the city.</p> <p>ACTION INC 14.1.1: Track new renewable energy installed. Institute a process to track the amount of new solar, wind, or other types of renewable energy generation permitted yearly.</p> <p>ACTION INC 14.1.2: Promoting renewables. Regularly investigate and publicize opportunities for community members or the City to utilize renewable energy technologies such as solar, co-generation, or wind.</p> <p>ACTION INC 14.1.3: Methane extraction. Extract methane gas from the sanitary landfill for energy production.</p> <p>ACTION INC 14.1.4: Renewables in development review. Use the development review process to inform developers of the advantages of renewable energy production, including wind and solar.</p> <p>ACTION INC 14.1.5: Large institutions. Promote co-generation and district heating and cooling systems for large companies and institutions.</p> <p>POLICY INC 14.2: Solar energy. Encourage active and passive solar energy use.</p> <p>ACTION INC 13.2.1: Solar design. Incorporate solar designs into new City facilities.</p> <p>POLICY INC 14.3: Regional renewable energy. Participate in regional initiatives to encourage and develop renewable energy sources.</p> <p>POLICY INC 14.4: Renewable energy advocacy. Support legislation to facilitate and increase renewable energy choices for community residents such as “green” utility power options or distributed generation.</p>

Table IV.D-7 *Continued*

<p align="center">Bay Area 2010 Clean Air Plan Energy and Climate Control Measures</p>	<p align="center">Draft General Plan and GGRP Policies and Actions</p>
	<p>ACTION INC 14.4.1: Incentives for renewables. Develop a program of incentives, fee waivers, or other strategies to facilitate community members installing renewable energy technologies.</p>
<p>ECM-1 <i>Continued</i></p>	<p>GGRP</p> <ul style="list-style-type: none"> E-1.1 Residential Energy Efficiency Retrofit E-1.2 Non-Residential Energy Efficiency Retrofit E-1.3 Non-Residential Lighting Retrofit E-1.4 Residential Energy Star Appliances E-1.5 Smart Grid E-1.6 Exceed State Energy Standards in New Residential Development E-1.7 Exceed State Energy Standards in New Non-Residential Development E-3.1 Energy Efficiency in Municipal Buildings E-4.1 Energy Efficiency in Streetlights and Traffic Lights
<p>ECM-2 Renewable Energy</p> <p>This measure calls for promotion of distributed renewable energy generation (solar, micro wind turbines, cogeneration, etc.) on commercial and residential buildings, and at industrial buildings.</p>	<p>Draft General Plan</p> <p>POLICY LUD 10.5: Building energy efficiency. Incorporate energy efficient design features and materials into new and remodeled buildings.</p> <p>POLICY LUD 10.6: On-site energy technologies. Support on-site renewable energy technologies that help reduce community energy demand.</p> <p>ACTION LUD 10.6.1: Development standards. Update the City’s Zoning Ordinance to include development standards for installing on-site renewable energy technologies.</p> <p>ACTION LUD 10.6.2: Minimize permit fees and timelines. Minimize permit fees and process timelines for the installation of on-site renewable energy technologies.</p> <p>GGRP</p> <ul style="list-style-type: none"> E-2.1 Residential Solar Water Heaters E-2.2 Non-Residential Solar Water Heaters E-2.3 Residential Solar Photovoltaic System E-2.4 Non-Residential Solar Photovoltaic System E-2.5 Landfill Gas to Energy E-5.1 Solar Photovoltaic Systems on Municipal Buildings

Table IV.D-7 Continued

Bay Area 2010 Clean Air Plan Energy and Climate Control Measures	Draft General Plan and GGRP Policies and Actions
<p>ECM-3 Urban Heat Island Mitigation</p> <p>The purpose of this measure is to mitigate the “urban heat island” effect by promoting the implementation of cool roofing, cool paving, and other strategies.</p>	<p>Draft General Plan</p> <p>POLICY LUD 10.9: Sustainable roofs. Encourage sustainable roofs that reduce a building’s energy use and provide other ecological benefits.</p> <p>ACTION LUD 10.9.1: Sustainable roof standards. Update the City’s Zoning Ordinance to address sustainable roof standards.</p> <p>GGRP</p> <p>E-1.6 Exceed State Energy Standards in New Residential Development</p> <p>E-1.6 Exceed State Energy Standards in New Non-Residential Development</p>
<p>ECM-4 Tree Planting</p> <p>The purpose of this measure is to promote planting of low-VOC emitting shade trees to reduce urban heat island effects, save energy, and absorb CO₂ and other air pollutants.</p>	<p>GGRP</p> <p>E-1.8 Building Shade Trees in Residential Development</p> <p>CS-1.1 Enhance the Urban Forest</p>

^a Appendix A of this Draft EIR contains the full text of all Draft General Plan policies and actions and GGRP measures.
Source: BAAQMD, Bay Area 2010 Clean Air Plan; City of Mountain View, 2011.

As shown in Table IV.D-5 above, the Draft General Plan and GGRP incorporates or is consistent with many of the transportation control measures outlined in the BAAQMD 2010 Clean Air Plan. The Draft General Plan and GGRP is consistent with the BAAQMD 2010 Clean Air Plan in the area of transportation control measures and mobile source measures. However, as shown in Table IV.D-6, the Draft General Plan has one action related to goods movement, and as shown in Table IV.D-7, has a policy to address the heat island effect, and mitigation would be required.

Impact AIR-1: The Draft General Plan and GGRP would not include all feasible control measures (particularly those related to goods movement and the heat island effect) consistent with the BAAQMD 2010 Clean Air Plan resulting in a cumulatively considerable net increase in criteria air pollutants. (S)

The BAAQMD 2010 Clean Air Plan includes air emission control measures relevant to the proposed project in the areas of: transportation and mobile source emissions, land use and energy conservation. The following mitigation measure would allow for the City of Mountain View to incorporate all feasible air quality plan control measures and reduce this impact to a less-than-significant level:

Mitigation Measure AIR-1a: Amend the Infrastructure and Conservation chapter of the Draft General Plan to include the following policies:

POLICY INC 20.4: **Maintain freight routes.** Identify and maintain primary freight routes that provide direct access to industrial and commercial areas.

POLICY INC 20.5: **Truck access.** Plan industrial and commercial development to avoid truck access through residential areas and minimize truck travel on streets designated Residential in the General Plan.

Mitigation Measure AIR-1b: Amend the Land Use and Design chapter of the Draft General Plan as follows:

POLICY LUD 10.9: **Sustainable roofs.** Encourage sustainable roofs that reduce a building's energy use, reduce the heat island effect of new and existing development and provide other ecological benefits. (LTS)

The Draft General Plan includes all air quality control measures that can feasibly be incorporated into the project design or applied as mitigation. Therefore, the project would not disrupt or hinder implementation of any Clean Air Plan control measures.

Implementation of Mitigation Measures AIR-1a and AIR-1b would ensure the Draft General Plan and GGRP would not disrupt or hinder implementation of any control measures in the Clean Air Plan and would incorporate all applicable air quality plan control measures of the 2010 Clean Air Plan. Therefore, this impact would be less than significant.

(2) Violate Any Air Quality Standards. To evaluate this significance criterion for general plan projects, according to the BAAQMD's *CEQA Air Quality Guidelines*, a general plan would meet air quality standards for operational-related criteria air pollutant and air precursor impacts, if it satisfies the following criteria: 1) consistency with current air quality plan control measures and 2) the percentage of the general plan's projected VMT increase is less than or equal to its project population increase. Additionally, construction of the development allowed under the Draft General Plan could generate dust and exhaust emissions that could violate air quality standards.

Clean Air Plan Consistency. Consistency with the BAAQMD's 2010 Clean Air Plan was discussed above, and as indicated, the Draft General Plan and GGRP would be consistent with air quality control measures associated with the Clean Air Plan with implementation of Mitigation Measure AIR-1a and AIR-1b.

Vehicle Miles Traveled Analysis. Section IV.C, Transportation and Circulation, of this EIR discusses the traffic modeling for the Draft General Plan. Based on the transportation analysis and as shown in Table IV.D-8, average daily VMT would increase by 12 percent in 2030 and the rate of population growth is projected to increase by 10 percent while the service population would increase by 14.7 percent. This VMT increase indicates that trip lengths are longer in the future as compared to today. This increase in average trip length is due to the higher rate of increase in jobs than population in the City of Mountain View from the existing baseline conditions. Specifically, the jobs-to-population ratio in the City in 2030 remains high (1.0) compared to the average Santa Clara County ratio (0.45). Additionally, although the allocation of a significant percentage of new development will be located near major transit facilities, and/or nearby complementary land uses, the average trip length in year 2030 increases due to the greater rate of increase in jobs than population. Therefore the VMT per capita is projected to increase under the proposed Draft General Plan. This would be considered a significant impact, as according to the traffic modeling, as shown in Table IV.D-8, implementation of the Draft General Plan would result in the rate of VMT growth to be greater than

the rate of population growth resulting in emissions beyond those anticipated in the BAAQMD's 2010 Clean Air Plan.

Table IV.D-8: City of Mountain View Population, VMT and Vehicle Trips Projections

Factors	Year 2009 Scenarios			Year 2030 Scenarios		
	Existing	Existing Plus Draft General Plan	Percent Change With General Plan	1992 General Plan	Draft General Plan	Percent Change with General Plan
Daily vehicle miles traveled (VMT)	2,452,696	2,993,630	22.1	2,898,269	3,247,067	12.0
Residential Population	73,860	88,570	20.0	80,580	88,570	10.0
Service Population (residents plus employees)	134,320	170,800	27.2	148,950	170,800	14.7

Sources: Fehr & Peers, June 2011; City of Mountain View, Background Data and Documentation General Plan Land Use Projection 2008-2030. January 2011; LSA Associates, Inc., September 2011.

As shown in Table IV.D-8, VMT under the 2030 scenario would grow 12 percent with implementation of the Draft General Plan and GGRP, while population would increase by 10 percent, resulting in a 2 percent difference in growth rates. Therefore, implementation of the Draft General Plan and GGRP with the associated Transportation Demand strategies would result in a VMT increase greater than the population which would be considered a significant and unavoidable impact.

Although it would remain a significant and unavoidable impact, Mitigation Measure TRANS-1 as outlined in Section IV.C, Transportation and Circulation, would monitor progress on effectiveness of proposed policies by establishing mode share targets and periodically comparing travel survey data to the targets.

Impact AIR-2: Implementation of the Draft General Plan and GGRP could contribute to or result in a violation of air quality standards in the existing and cumulative conditions by increasing VMT greater than the population increase. (S)

Mitigation Measure AIR-2: Implement Mitigation Measure TRANS-1. Implementation of Mitigation Measure TRANS-1 and the policies and measures identified above would reduce the impact over time and would assist the City in considering additional measures that may be needed to reduce VMT, however until such time additional measures can be incorporated, implementation of the proposed project would result in an increase in VMT that would be considered a significant and unavoidable impact. (SU)

Construction Emissions Analysis. During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter (PM_{2.5} and PM₁₀), and TACs such as diesel exhaust particulate matter. Development allowed under the City of Mountain View Draft General Plan would require construction which could contribute to violations of air quality standards.

In addition to dust-related PM₁₀ emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, VOCs and some soot particulate (PM_{2.5}

and PM₁₀) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction sites. However, development allowed under Draft General Plan would allow for construction of multiple projects citywide which could contribute to a violation of air quality standards.

The BAAQMD *CEQA Air Quality Guidelines* suggest that the significance of construction period emissions should be based on implementation of a set of feasible control measures designed to reduce particulate and exhaust emissions near construction sites.

The Draft General Plan does not include policies that would implement the suggested measures to reduce construction dust or exhaust emissions added by future development.

Impact AIR-3: Implementation of the Draft General Plan and GGRP could contribute to or result in a violation of air quality standards in the existing and cumulative conditions from construction exhaust and particulate emissions. (S)

Mitigation Measure AIR-3: Amend the Infrastructure and Conservation chapter of the Draft General Plan to add the following new policies as follows:

POLICY INC 20.6: **Air quality standards.** Protect the public and construction workers from construction exhaust and particulate emissions.

ACTION 20.6.14: **Air quality measures.** Adopt and periodically update standard mitigation measures and development conditions for dust, particulate, and exhaust control standard measures for demolition and grading activities in compliance with the BAAQMD *CEQA Air Quality Guidelines*. (LTS)

Implementation of Mitigation Measure AIR-2 would implement program-level support of BAAQMD's recommendations and reduce this impact to a less-than-significant level for existing and cumulative conditions.

(3) Result in a Cumulatively Considerable Net Increase of any Criteria Pollutant. The San Francisco Bay Area Air Basin is a nonattainment area for federal and State 8-hour ozone standards, nonattainment for the State 1-hour standard and nonattainment for State and federal PM_{2.5} standards. The San Francisco Bay Area Air Basin is a nonattainment area for federal and State 8-hour ozone standards, nonattainment for the State 1-hour standard and nonattainment for State and federal PM_{2.5} standards. Air pollution is a regional issue affected by climate, land uses and topography. Development projects from the past, present and future contribute to the region's adverse air quality impacts on a cumulative basis because air pollutants, once emitted at a particular location, move throughout the atmosphere and air basin. If a project's contribution at the individual level is considerable, then the project's cumulative impact on air quality would also be considered significant.

The analysis presented above discusses air quality conditions related to implementation of the City of Mountain View Draft General Plan and GGRP, as well as the General Plan's conformance with the BAAQMD's 2010 Bay Area Clean Air Plan. The BAAQMD 2010 Bay Area Clean Air Plan is the region's plan for attaining criteria pollutant air quality standards (including ozone and PM_{2.5}) and

accounts for future cumulative regional growth. Therefore, at the General Plan level, consistency with the Clean Air Plan would indicate the project would not result in a cumulative considerable net increase of any criteria pollutant. While the Draft General Plan includes policies and actions that reduce air emissions mitigation measures in the form of additional policies and actions identified as Mitigation Measures AIR-1, AIR-2 and AIR-3 would be required to reduce criteria air pollutant emissions and reduce cumulative level air impacts to a less-than-significant level.

Impact AIR-4: Implementation of the Draft General Plan and GGRP would result in a cumulatively considerable net increase in ozone and particulate emissions. (S)

Mitigation Measure AIR-4: Implement Mitigation Measures AIR-1, AIR-2 and AIR-3. (SU)

Implementation of Mitigation Measure AIR-4 would reduce the cumulative air impacts; however implementation of the proposed project would result in an increase in VMT that would be considered a significant and unavoidable cumulative impact related to an increase in criteria pollutants.

As discussed above, implementation of the project would cause the average trip length in the Year 2030 to increase, resulting in a VMT growth that is greater than population growth and a cumulatively considerable net increase in ozone precursor emissions. Therefore, implementation of the project would contribute at the project level and under cumulative conditions to a net increase in cumulatively considerable criteria air pollutants by releasing emissions greater than those anticipated under the region's Clean Air Plan. Implementation of Mitigation Measures AIR-1, AIR-2 and AIR-3 would help the City to reduce this impact over time. However, this impact would remain a significant and unavoidable cumulative impact.

(4) Substantial Pollutant Concentrations. According to the BAAQMD, for general plans to have a less-than-significant impact with respect to potential toxic air contaminants (TACs), special overlay zones need to be established around existing and proposed land uses that emit TACs. Special overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. A land use diagram must identify the following: 1) special overlay zones around existing and planned sources of TACs; and 2) special overlay zones of at least 500 feet on each side of all free-ways and high-volume roadways (10,000 average daily trips or more). The general plan must also identify goals and policies to minimize potential impacts and create overlay zones for sources of TACs and receptors.

According to the BAAQMD's database of permitted sources in Mountain View the majority of stationary sources with TAC emissions are from diesel generators associated with various businesses throughout the City. Additional sources of TACs include dry cleaners which are a source of Perchloroethylene (Perc) a substance known to the State of California as a toxic air contaminant. The most prevalent TACs in Mountain View and Santa Clara County are benzene and 1,3-Butadiene from combustion of gasoline by vehicles. Other sources of toxic air contaminants include manufacturing facilities and the NASA-Ames Research Center at Moffett Federal Airfield in Mountain View. A complete list of toxic air contaminants in Mountain View is included in Appendix C.

On July 1, 2010, the ARB required the elimination of Perc for use at co-residential dry cleaning facilities. Therefore, use of Perc at facilities that share a wall or are in the same building as a residence is no longer permitted. Additionally, the ARB requires that all use of Perc in dry cleaning

be phased out by 2023. The regulations established by the ARB related to dry cleaning will reduce impacts related to Perc exposure to sensitive receptors in the City of Mountain View by 2030.

Figure IV.D-1 indicates high volume roadways which are also significant sources of toxic air contaminants. Traffic on Highway 101, State Route 85 (SR-85), State Route 237 (SR-237), and high volume roadways such as El Camino Real and Central Expressway are some of the primary sources of toxic air contaminants from motor vehicles in the City of Mountain View. Another mobile source of toxic air contaminants are train operations along the Caltrain line that traverses the City.

When considering the toxic risk from railroad lines, the primary risk from trains occurs when trains are left idling, for example at a rail yard. The ARB Land Use Handbook recommends a 1,000 foot setback from major railyards, however, neither the ARB nor BAAQMD have established specific setback recommendations for new receptors from railroad lines or commuter train lines such as Caltrain. The Caltrain line has less than 100 daily train passbys and substantial setbacks are not required to protect health from toxic risk from the rail lines. However, because trains do idle at stations, a setback for new receptors is recommended in those locations. The light rail that operates in Mountain View is electric powered and is therefore, not a source of TAC emissions.

Proposed projects that would emit TACs would require review under the BAAQMD rules and regulations or review under CEQA, especially if near sensitive receptors. However, projects with sensitive receptors proposed near localized sources of TAC emissions (e.g., residences to be located near major roadways) could expose new sensitive populations to TACs and PM_{2.5}. According to the ARB and BAAQMD, exposure to elevated levels of TACs and PM_{2.5} contributes to elevated health risks. BAAQMD recommends that buffers to avoid the exposure of sensitive receptors to TAC sources should be reflected in General Plan land use maps, and implementing ordinances.

The General Plan does not include policies that would provide buffers to reduce or avoid exposure of sensitive receptors to TACs. Therefore, implementation of the Draft General Plan could expose sensitive receptors to substantial pollutant concentrations.

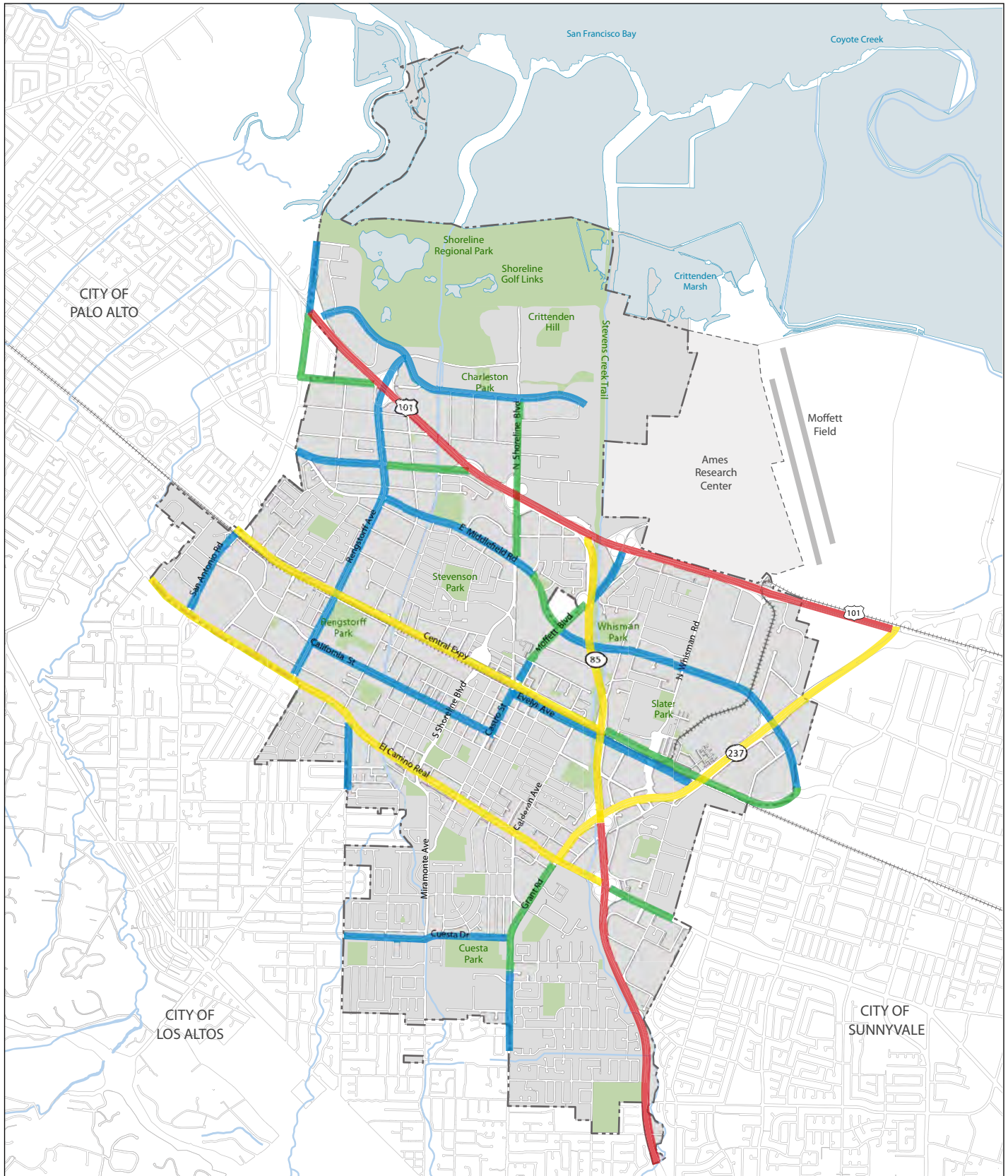
Impact AIR-5: Implementation of the Draft General Plan could expose sensitive receptors to substantial pollutant concentrations under existing and cumulative conditions. (S)

The Draft General Plan shall incorporate the following mitigation measure that would allow for the inclusion of policies and actions that provide program-level mitigation for exposure to toxic air contaminants within the City of Mountain View.

Mitigation Measure AIR-5: Amend the Infrastructure and Conservation chapter of the Draft General Plan to include new policies and actions as follows:

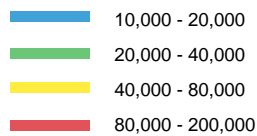
POLICY 20.740: Protect sensitive receptors. Protect the public from substantial pollutant concentrations.

ACTION 20.740.1: Protection of sensitive receptors. Adopt procedures to require health risk assessments, emissions analysis and risk reduction plans in accordance with BAAQMD-recommended procedures for sensitive land uses and establish standard mitigation measures and development conditions to comply with BAAQMD standards. (LTS)



LSA

FIGURE IV.D-1



*City of Mountain View
Draft General Plan and
Greenhouse Gas Reduction Program EIR
Existing Roadways with
Average Daily Trips Over 10,000*

This page intentionally left blank.

With implementation of Mitigation Measure AIR-5, the City of Mountain View Draft General Plan and GGRP will include a mechanism for screening and mitigating the effects of pollutants that would expose sensitive receptors to substantial TAC pollutant concentrations under existing conditions, and this impact would be less than significant.

(5) Odor Impacts. According to the BAAQMD, a general plan must identify the location of existing and planned odor sources in the plan area. The general plan must also include policies to reduce potential odor impacts in the plan area. During the period from January 1, 2008 through August 1, 2011, the BAAQMD has received a total of 16 odor complaints within the City, two of which have been confirmed, while the other 14 are unconfirmed. A copy of the odor report obtained by LSA is included in Appendix C. Within the City, painting from auto body shops and sulfur odors from the area of Moffett Federal Airfield are the primary sources of odors. No violation notices were issued by the BAAQMD during the 3 year period surveyed. The Draft General Plan does not include policies that would help reduce exposure to odors added by future development.

Impact AIR-6: Implementation of the proposed Draft General Plan and GGRP could result in the exposure of residents to offensive odors under existing and cumulative conditions. (S)

The following mitigation measure would reduce impacts related to odors to a less-than-significant level:

Mitigation Measure AIR-6: Modify the Infrastructure and Conservation chapter of the Draft General Plan to include new policies and actions as follows:

POLICY 20.845: Offensive odors. Protect residents from offensive odors.

ACTION 20.845.1: Odor control. Adopt and periodically update City Code regulations, standard mitigation measures and/or development conditions for sources of objectionable odors. (LTS)

Implementation of Mitigation Measure AIR-6 would provide for adequate buffers between sources of odors mitigating the effects of odors on sensitive receptors under existing conditions and new residences or sensitive receptors to a less-than-significant level.

c. Cumulative Impacts of the Draft General Plan and GGRP. As discussed above, air pollution is a regional issue affected by climate, land uses and topography. Development projects from the past, present and future contribute to the region's adverse air quality impacts on a cumulative basis because air pollutants, once emitted at a particular location, move throughout the atmosphere and air basin. If a project's contribution at the individual level is considerable, then the project's cumulative impact on air quality would also be considered significant.

The analysis presented above discusses air quality conditions related to implementation of the Draft General Plan and GGRP, as well as the General Plan's conformance with the BAAQMD's 2010 Bay Area Clean Air Plan. The BAAQMD 2010 Bay Area Clean Air Plan is the region's plan for attaining air quality standards and accounts for future cumulative regional growth. Therefore, consistency with the Clean Air Plan would indicate the project would not result in a cumulative air quality impact.

While the Draft General Plan includes policies and actions that reduce air emissions, mitigation measures in the form of additional policies and actions identified as Mitigation Measures AIR-1,

would be required to bring the General Plan into compliance with the Clean Air Plan and reduce this cumulative impact to a less-than-significant level. As described under impacts AIR-2, AIR-3, and AIR-4 implementation of the project would cause the average trip length in the Year 2030 to increase resulting in a VMT growth that is greater than population growth. Therefore, implementation of the project would contribute under existing and cumulative conditions to a violation in air quality standards by releasing emissions greater than those anticipated under the region's clean air plan. Implementation of Mitigation Measures AIR-2 and AIR-3 would help the City to reduce this impact over time. However, this impact would remain a significant and unavoidable cumulative impact.

As discussed under Impact AIR-3, implementation of the project would result in significant emissions due to construction activity. Implementation of Mitigation Measure AIR-3 would reduce construction emissions associated with the Draft General Plan to a less-than-significant level under existing and cumulative conditions. Implementation of the Draft General Plan would also expose sensitive receptors to substantial pollutant concentrations at the existing and cumulative level, however implementation of Mitigation Measures AIR-5 would reduce this cumulative impact to a less than significant level. Implementation of the Draft General Plan could result in the exposure of residents to odors at the existing and cumulative level. Implementation of Mitigation Measure AIR-6 would reduce this impact to a less than significant level.

E. GLOBAL CLIMATE CHANGE

This section has been prepared using methods and assumptions outlined in the Bay Area Air Quality Management District's *CEQA Air Quality Guidelines* document.¹ In keeping with these guidelines, this analysis evaluates greenhouse gas emissions resulting from implementation of the City of Mountain View Draft General Plan and GGRP. Mitigation measures to reduce or eliminate significant cumulative impacts on global climate change are identified, where appropriate.

This section begins by providing general background information on climate change and meteorology. It then discusses the regulatory framework for global climate change, provides data on the existing global climate setting, and evaluates potential global greenhouse gas (GHG) emissions associated with the proposed project. This section also discusses and evaluates the potential impacts of climate change on the City of Mountain View. See also Sections IV.C, Transportation and Circulation, regarding transportation demand management programs, IV.H, Hydrology and Water Quality, for flooding issues, and IV.M, Utilities and Infrastructure, for water supply and energy issues.

1. Setting

The following discussion provides an overview of global climate change (GCC), its causes, and its potential effects, emission sources, and inventories. The regulatory framework relating to GCC is also summarized.

a. Greenhouse Gases. GCC is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. Global surface temperatures have risen by $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$ or $1.1 \pm 0.4^{\circ}$ Fahrenheit ($^{\circ}\text{F}$) over the last 100 years (1906 to 2005). The rate of warming over the last 50 years is almost double that over the last 100 years.² The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.³

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)

¹ Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

² Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC*.

³ The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF₆)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, and SF₆ are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e). Table IV.E-1 shows the GWPs for each type of GHG. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide. The following discussion summarizes the characteristics of the six GHGs.

Table IV.E-1: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF ₄)	50,000	7,390
PFC: Hexafluoromethane (C ₂ F ₆)	10,000	12,200
Sulfur Hexafluoride (SF ₆)	3,200	22,800

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

(1) Carbon Dioxide (CO₂). In the atmosphere, carbon generally exists in its oxidized form, as CO₂. Natural sources of that release CO₂ and that remove CO₂ from the atmosphere include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO₂ include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO₂ each year, far outweighing the 7 billion tons of man-made emissions of CO₂ each year. Nevertheless, natural removal processes, such as photosynthesis by

land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO₂, and consequently, the gas is building up in the atmosphere.

In 2002, CO₂ emissions from fossil fuel combustion accounted for approximately 98 percent of man-made CO₂ emissions and approximately 84 percent of California's overall GHG emissions (CO₂e). The transportation sector accounted for California's largest portion of CO₂ emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second largest category of GHG emissions.

(2) Methane (CH₄). Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH₄ emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH₄ in California. Methane accounted for approximately 6 percent of gross climate change emissions (CO₂e) in California in 2002.

Total annual emissions of methane are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO₂, the major removal process of atmospheric methane – a chemical breakdown in the atmosphere – cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

(3) Nitrous Oxide (N₂O). Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N₂O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N₂O emissions in California. Nitrous oxide emissions accounted for nearly 7 percent of man-made GHG emissions (CO₂e) in California in 2002.

(4) Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF₆). HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.⁴ PFCs and SF₆ are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF₆ accounted for about 3.5 percent of man-made GHG emissions (CO₂e) in California in 2002.

b. Impacts of Climate Change. The potential impacts of global climate change are described in the following section.

(1) Temperature Increase. The latest projections, based on state-of-the art climate models, indicate that temperatures in California are expected to rise 3 to 10.5°F by the end of the century.⁵

⁴ The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

⁵ California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California*. July.

Because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere cannot be tied to a specific point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun,
- Natural processes within the climate system (e.g., changes in ocean circulation and reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions), and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., from deforestation, reforestation, urbanization, and desertification).

The primary effect of GCC has been a rise in the average global temperature. The impact of human activities on GCC is readily apparent in the observational record. For example, surface temperature data show that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental record for global surface temperature.⁶ Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include, but are not limited to:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;
- Decline of the Sierra snowpack, which accounts for a significant amount of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;
- Increase in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

(2) Precipitation and Water Supply. Global average precipitation is expected to increase overall during the 21st century as the result of climate change, but will vary in different parts of the world. However, global climate models are generally not well suited for predicting regional changes

⁶ California, State of, 2008. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

in precipitation because of the scale of regionally important factors, such as the proximity of mountain ranges that affect precipitation.⁷

Most of California's precipitation falls in the northern part of the State during the winter. A vast network of man-made reservoirs and aqueducts capture and transport water throughout the State from northern California rivers, as the greatest demand for water comes from users in the southern part of the State during the spring and summer.⁸ The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

Some models predict drier conditions and decreased water flows, while others predict wetter conditions in various parts of the world. If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent over the next 100 years.

The extent to which various meteorological conditions will impact groundwater supply is unknown. Warmer temperatures could increase the period when water is on the ground by reducing soil freeze. However, warmer temperatures could also lead to higher evaporation or shorter rainfall seasons, shortening the recharge season. Warmer winters could increase the amount of runoff available for groundwater recharge. However, the additional runoff would occur at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity.

Where precipitation is projected to increase in California, the increases are focused in Northern California. However, various California climate models provide mixed results regarding changes in total annual precipitation in the State through the end of this century; therefore, no conclusion on an increase or decrease can be made. Considerable uncertainties about the precise effects of climate change on California hydrology and water resources will remain until there is more precise and consistent information about how precipitation patterns, timing, and intensity will change.⁹ The San Francisco Public Utilities Commission (SFPUC) supplies approximately 90 percent of the water for the City of Mountain View.¹⁰ The Sierra Nevada snowpack, including the Hetch Hetchy watershed, provides the majority of the SFPUC's total water needs. The SFPUC is a member of Water Utilities Climate Alliance, which is a coalition of water utilities that is improving climate change research and developing strategies for adapting to climate change impacts on water supply.¹¹

(3) Sea Level Rise. Rising sea level is one of the major areas of concern related to GCC. Two of the primary causes for a sea level rise are the thermal expansion of ocean waters (water expanding as it heats up) and the addition of water to ocean basins by the melting of land-based ice.

⁷ Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

⁸ California Climate Change Center, 2006, op. cit.

⁹ California, State of, 2006. Department of Water Resources, *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

¹⁰ Mountain View, City of, 2009. City of Mountain View Water Conservation. Website: www.mountainview.gov/news/displaynews.asp?NewsID=154&TargetID=1.

¹¹ San Francisco Public Utilities Commission, 2009. Water Utilities Climate Alliance. Website: www.wucaonline.org/.

From 1961 to 2003, global average sea level rose at an average rate of 0.07 inches per year, and at an accelerated average rate of about 0.12 inches per year during the last decade of this period (1993 to 2003).¹² Over the past 100 years, sea levels along California's coasts and estuaries have risen about 7 inches.¹³

Sea levels could rise an additional 22 to 35 inches by the end of the century as GCC continues.¹⁴ Although these projections are on a global scale, the rate of sea level rise along California's coast is relatively consistent with the worldwide average rate observed over the past century. Therefore, it is reasonable to assume that changes in worldwide sea level rise will also be experienced along California's coast.¹⁵

Sea level rise of this magnitude would increasingly threaten California's coastal regions with more intense coastal storms, accelerated coastal erosion, threats to vital levees, and disruption of inland water systems, wetlands and natural habitats. Rising sea levels and more intense storm surges could increase the risk for coastal flooding. The San Francisco Bay Conservation and Development Commission (BCDC) employed geographic information system software to identify the shoreline areas likely to be most impacted by a one meter rise in sea level.¹⁶ Figure IV.E-1 shows the projected impact to the area of South San Francisco Bay, including the City of Mountain View.

According to the BCDC, changes in climate may cause increased storm activity, which in combination with higher sea level, may cause even greater flooding. It is expected that extreme storm events will cause most of the shoreline damage from flooding. Rising sea levels could impact the delivery of petroleum products, electricity, and drinking water to Bay Area residents and businesses. Residents may also suffer if wastewater treatment is compromised by inundation from rising sea levels, given that a number of treatment plants discharge to the Bay.

(4) Water Quality. Water quality depends on a wide range of variables such as water temperature, flow, runoff rates and timing, waste discharge loads, and the ability of watersheds to assimilate wastes and pollutants. Climate change could alter water quality in a variety of ways, including higher winter flows that reduce pollutant concentrations (through dilution) or increase erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers. Water temperature increases and decreased water flows can result in increasing concentrations of pollutants and salinity. Increases in water temperature alone can likely lead to adverse changes in water quality, even in the absence of changes in precipitation.

Land and resource use changes can have impacts on water quality comparable to or even greater than those from GCC. The net effect on water quality for rivers, lakes, and groundwater in the future is

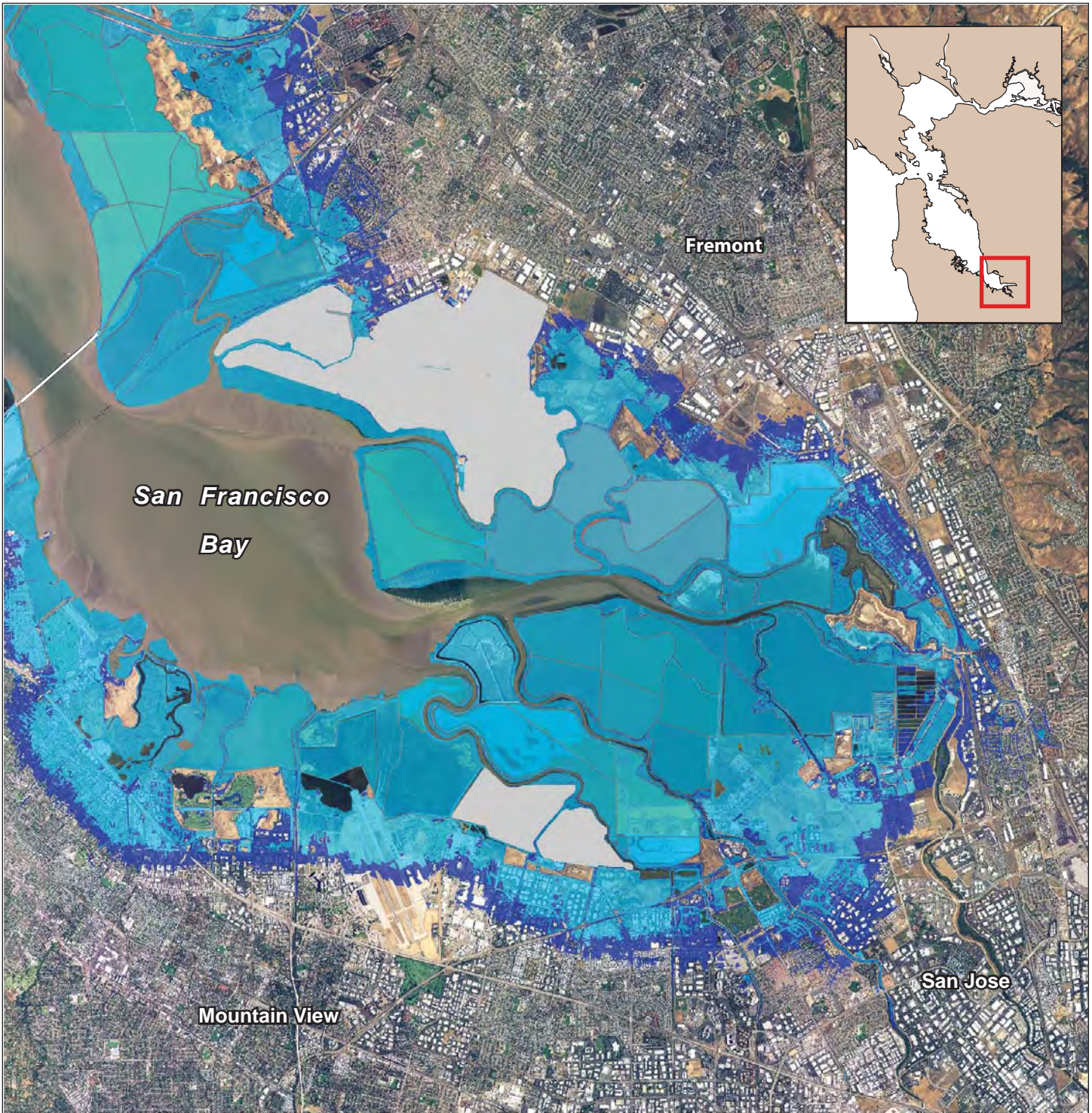
¹² California, State of, 2008. California Energy Commission's Public Interest Energy Research Program. *The Future is Now: An Update on Climate Change Science, Impacts, and Response Options for California*. September.

¹³ Ibid.

¹⁴ California Climate Change Center, 2006, op. cit.

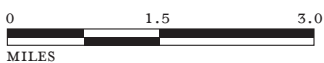
¹⁵ California, State of, 2006. Department of Water Resources. *Progress on Incorporating Climate Change into Management of California's Water Resources*. July.

¹⁶ California, State of, 2011. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*. September.



DISCLAIMER: Inundation data does not account for existing shoreline protection or wave activity. These maps are for informational purposes only. Users, by their use, agree to hold harmless and blameless the State of California and its representatives and its agents for any liability associated with its use in any form. The maps and data shall not be used to assess actual coastal hazards, insurance requirements, or property values or be used in lieu of Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA).

LSA



- Area potentially exposed to an approximate 16-inch sea level rise
- Area potentially exposed to an approximate 55-inch sea level rise
- No Data

FIGURE IV.E-1

*City of Mountain View
Draft General Plan and
Greenhouse Gas Reduction Program EIR
San Francisco Bay Scenarios for
Sea Level Rise - South Bay*

SOURCES: DRAFT STAFF REPORT-LIVING WITH A RISING BAY: VULNERABILITY AND ADAPTATION IN SAN FRANCISCO BAY AND ON ITS SHORELINE, AS REVISED THROUGH SEPT. 23, 2011; SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION, 2009; KNOWLES, 2008; SIEGEL & BACHAND, 2002; NAIP, 2005.

This page intentionally left blank.

dependent not just on climate conditions, but also on a wide range of other human actions and management decisions.

(5) **Public Health.** Global climate change is anticipated to result in not only changes to average temperature, but also to more extreme heat events.¹⁷ These extreme heat events increase the risk of death from dehydration, heart attack, stroke, and respiratory distress, especially with people who are ill, children, the elderly, and the poor, who may lack access to air conditioning and medical assistance. The City of Mountain View's Environmental Sustainability Task Force (ESTF) has identified health risks as one of the significant impacts from GCC that will affect residents of the City.¹⁸ According to the California Climate Change Center, more research is needed to understand the effects of higher temperatures and how adapting to these temperatures can minimize health effects.¹⁹

c. **Emissions Sources and Inventories.** An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, California, local GHG emission inventories, and the GGRP inventory.

(1) **Global Emissions.** Worldwide emissions of GHGs in 2004 were 27 billion metric tons of CO₂e per year.²⁰ Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

(2) **U.S. Emissions.** In 2010, the United States emitted about 1,633.2 million metric tons of CO₂e with each individual at home releasing approximately 4 metric tons per year. Of the four major sectors nationwide – residential, commercial, industrial and transportation – transportation accounts for the highest amount of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2009, total U.S. GHG emissions rose by 7.3 percent, but from emissions decreased from 2008 to 2009 by 6.1 percent. This decrease was primarily due to (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas decreased significantly. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent.²¹

(3) **State of California Emissions.** According to ARB emission inventory estimates, California gross emissions of GHG increased 4.3 percent from 458 million metric tons²² of CO₂e

¹⁷ California Climate Change Center, 2006, op. cit.

¹⁸ Mountain View, City of, 2008. *Mountain View Environmental Sustainability Task Force Final Report*. September.

¹⁹ California Climate Change Center, 2006, op. cit.

²⁰ Combined total of Annex I and Non-Annex I Country CO₂e emissions. United Nations Framework Convention on Climate Change (UNFCCC), 2007. *Greenhouse Gas Inventory Data*. Information available at: unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php and maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf.

²¹ U.S. Environmental Protection Agency, 2011. The U.S. Greenhouse Gas Emissions and Sinks: Fast Facts. Website: www.epa.gov/climatechange/emissions/usinventoryreport.html.

²² A metric ton is equivalent to approximately 1.1 tons.

emissions in 2000 to 477.7 million in 2008, with a maximum of 483.9 million in 2004.²³ During the same period, California's population grew by 11.8 percent from 34.1 to 38.1 million people and GHG emissions per person decreased from 13.4 to 12.5 metric tons of CO₂e per person. The year 2008 saw a small decrease in Statewide GHG emissions, driven by a noticeable drop in on-road transportation emissions. The year 2008 also reflects the beginning of the economic recession and fuel price spikes. As the economy recovers, GHG emissions are likely to rise again without other mitigation actions.

California has the fourth lowest per-capita carbon dioxide emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.²⁴

ARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program, discussed below. ARB's current GHG emission inventory for the years 2000 to 2008 are shown in Figure IV.E-2 according to categories as defined by ARB. The emission inventory estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions within California.

ARB staff has projected 2020 unregulated GHG emissions, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions. CARB staff estimates the Statewide 2020 unregulated GHG emissions will be 596 million metric tons (MMT) of CO₂e. GHG emissions in 2020 from the transportation and electricity sectors as a whole are not expected to increase, but remain at approximately 38 percent and 23 percent of total CO₂e emissions, respectively. The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions is projected to be 17 percent of total CO₂e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 8 percent, residential and commercial activities at 8 percent, agriculture at 5 percent, and recycling and waste at 1 percent.²⁵

(4) Bay Area Emissions Inventory. The BAAQMD has also prepared an inventory of GHG emissions for the Bay Area. The latest version of the inventory, updated in 2010, provides information on 2007 emissions.²⁶ Transportation and industrial/commercial are the largest source of GHG emissions, each contributing 36.4 percent of the area's total CO₂e emissions in the year 2007. The estimated GHG emissions for the year 2007 for the nine county Bay Area totaled 95.8 MMT of CO₂e. The Bay Area GHG emissions by sector for the year 2007 are shown in Figure IV.E-3.

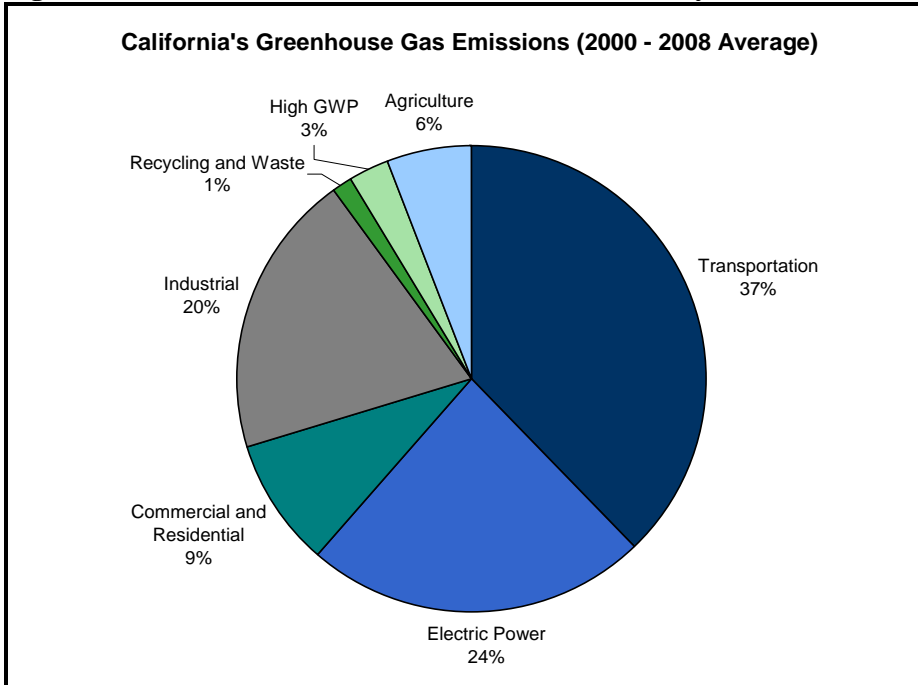
²³ California Air Resources Board, 2010. *Trends in California Greenhouse Gas Emissions for 2000 to 2008 by Category as Defined in the Scoping Plan*. Website: www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-08_2010-05-12.pdf (accessed November 2011)

²⁴ California Energy Commission, 2007. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report*, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

²⁵ California Air Resources Board, 2008. Website: www.climatechange.ca.gov/inventory/index.html. September.

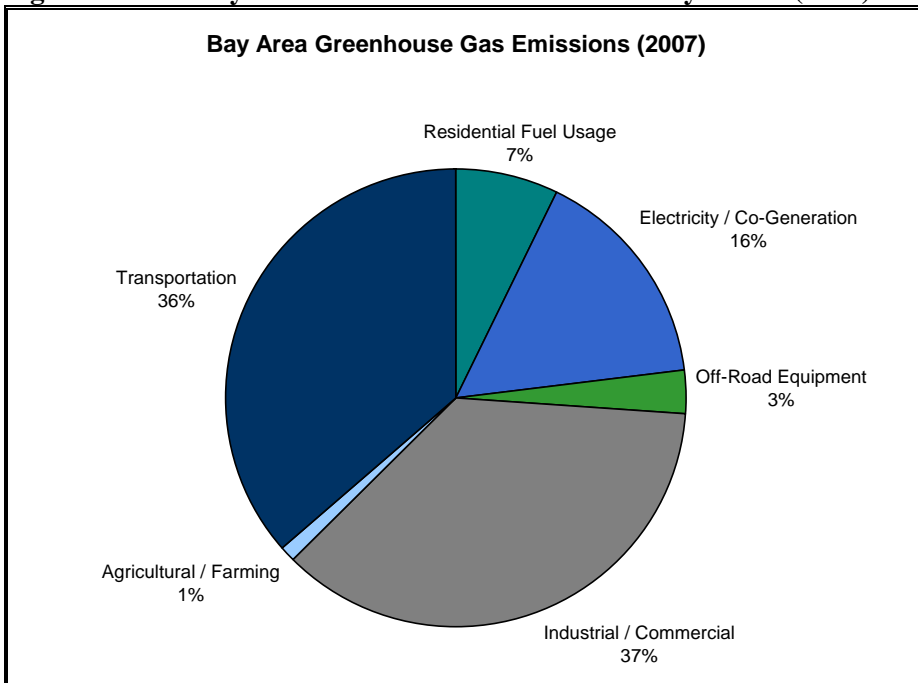
²⁶ Bay Area Air Quality Management District, 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions*. Website: www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. February

Figure IV.E-2: California Greenhouse Gas Emissions by Sector (2000 – 2008)



Source: ARB, 2010. *Trends in California Greenhouse Gas Emissions for 2000 to 2008 – by Category as Defined in the Scoping Plan*. May 28. Available at: www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf.

Figure IV.E-3: Bay Area Greenhouse Gas Emissions by Sector (2007)



Source: BAAQMD, 2010. *Source Inventory of Bay Area Greenhouse Gas Emissions*. February.

BAAQMD’s inventory also provides a breakdown of GHG emissions by county. Santa Clara County’s GHG emissions from electricity and natural gas, transportation, agriculture, and solid waste totaled approximately 18.8 million metric tons in 2007, including both incorporated and unincorporated areas.²⁷ These emissions made up 19.6 percent of the GHG emissions for the nine Bay Area counties; this occurred while over 25 percent of the Bay Area’s population resided in Santa Clara County for that year.

(5) City of Mountain View Emissions. As part of the Mountain View GGRP, the City of Mountain View developed a baseline emissions inventory for the 2005 operational year, per the BAAQMD’s GHG Plan Level Quantification Guidance from May 2005.²⁸ The inventory addresses the following emission sectors: residential and nonresidential energy use, transportation, solid waste, water use, wastewater treatment, and off-road transportation. See Chapter 3, Emissions Inventory, Projections and Goals of the GGRP.

Mountain View’s 2005 GHG inventory estimates that the community-wide GHG emissions totaled 796,988 metric tons CO₂e. As shown in Table IV.E-2, approximately 60 percent of the GHG emissions are related to transportation. Emissions from the energy sector (including residential, industrial, and commercial building energy consumption) totaled approximately 37 percent of the GHG emissions for the year. The GHG emissions inventory does not account for emissions from air travel or other flights, including uses at Moffett Field.

Table IV.E-2: City of Mountain View Greenhouse Gas Emissions by Sector (2005)

Sector	CO ₂ e Emissions (metric tons)	Percent
Energy	295,562	37.1
Transportation	474,180	59.5
Waste	11,183	1.4
Water	9,502	1.2
Off-Road Mobile	6,561	0.8
Total	796,988	100.0

Source: Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*. September 7.

d. Regulatory Framework. The regulatory framework and other governmental activities addressing GHG emissions and GCC are discussed in this section.

(1) International. The following items are the international efforts underway to reduce greenhouse gas emissions.

Kyoto Protocol. Over a decade ago, most countries joined an international treaty – the United Nations Framework Convention on Climate Change (UNFCCC) – to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. A number of nations approved an addition to the treaty: the Kyoto Protocol; the goal of the Protocol is to achieve overall emissions reduction targets for six greenhouse gases by the period of 2008 to 2012. The six greenhouse gases regulated under the Protocol are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. Each nation has an emissions reduction target for which they must reduce greenhouse gas emissions a certain percentage below 1990 levels; the

²⁷ Ibid.

²⁸ The City’s adoption targets use 2005 emissions as a baseline year, whereas AB 32 uses 1990 as a baseline year. However, the California Air Resources Board (CARB) has acknowledged it is not feasible or practical for many cities to accurately use 1990 levels as a baseline. Therefore Mountain View and most Bay Area cities are using 2005 emissions as their baseline level.

average reduction target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels. To date, 192 parties have ratified the treaty; the United States has not ratified the Protocol (from the UNFCCC website; online at: http://unfccc.int/essential_background/items/2877.php).

Intergovernmental Panel on Climate Change (IPCC). The IPCC is the leading body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences. The IPCC is a scientific body; its main activity is to provide “Assessment Reports” at regular intervals of the state of knowledge on climate change. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change, but does not conduct research or monitor climate-related data. Thousands of scientists from all over the world contribute to the work of the IPCC on a voluntary basis. The IPCC also produces special reports and technical papers. Review is an essential part of the IPCC process, to ensure an objective and complete assessment of current information. The IPCC seeks to reflect a range of views and expertise (see Intergovernmental Panel on Climate Change website, “Organization” page).

The IPCC developed the Global Warming Potential (GWP) concept to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. The reference gas used is CO₂, and GWP weighted emissions are measured in teragrams (or million metric tons) of CO₂ equivalent (Tg CO₂ Eq.) (U.S. EPA, February 2011). A million metric tons of CO₂ equivalent also is referenced as MMTCO₂E.

ICLEI – Local Governments for Sustainability. ICLEI is an international organization that assists local governments in reaching their goals of sustainability and climate change mitigation. ICLEI was founded in 1990 as the International Council for Local Environmental Initiatives, when more than 200 local governments from 43 countries convened at the inaugural World Congress of Local Governments for a Sustainable Future at the United Nations in New York City. ICLEI is currently a membership association of over 1,200 local governments and their associations from over 70 countries that are committed to sustainable development. ICLEI works with hundreds of local governments through international performance-based, results-oriented campaigns and programs. ICLEI's mission is to build and serve a worldwide movement of local governments to achieve tangible improvements in global sustainability with special focus on environmental conditions through cumulative local actions. The organization provides technical consulting, training and information services to share knowledge and support local governments in the implementation of sustainable development at the local level (see ICLEI website).

(2) **Federal.** The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the Environmental Protection Agency (EPA) has the authority to regulate CO₂ emissions under the federal Clean Air Act (CAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 that are required to implement a regulatory approach to GCC.

On September 22, 2009, EPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement will provide the

EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO₂ per year. This publically available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufactures will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to GCC. This EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below. EPA received ten petitions challenging this determination. On July 29, 2010, EPA denied these petitions.

In February 2010, the White House Council of Environmental Quality released a document title “Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions.” The draft guidance recognizes that many federal actions will result, directly or indirectly, in the GHG emissions. The draft guidance encourages agencies to quantify cumulative emissions over the life of the project in project analysis; to discuss measures to reduce emissions, including the consideration of reasonable alternatives; and to discuss from a qualitative perspective the link between the project’s emissions and climate change. The guidance recognizes scientific limits on the ability to predict climate change effects, and therefore cautions the use of speculative analyses or attempting to link a particular project to specific climatological changes.

On April 1, 2010, the EPA and the Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. EPA is finalizing the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. The EPA GHG standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg).

On May 13, 2010, the EPA issued a final rule to address GHG emissions from stationary sources under the CAA permitting programs. This final rule sets thresholds for GHG emissions that define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and title V Operating Permit programs are required for new and existing industrial facilities.

In December 2010, the U.S. EPA issued its plan for establishing greenhouse gas (GHG) pollution standards under the Clean Air Act in 2011. The agency looked at a number of sectors and is moving forward on GHG standards for fossil fuel power plants and petroleum refineries—two of the largest industrial sources, representing nearly 40 percent of the GHG pollution in the United States.²⁹

²⁹ U.S. EPA, 2010. Press Release. December 23.

On August 9, 2011, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced the first-ever standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses. The final combined standards of the Heavy-Duty National Program will reduce CO₂ emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years. The heavy duty sector addressed in the EPA and NHTSA rules (including the largest pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses in between) accounts for nearly 6 percent of all U.S. GHG emissions and 20 percent of transportation emissions. In addition, air quality will continue to improve as less fuel use leads to reduced ozone and particulate matter; improving the health of Americans.

(3) State. The ARB is the lead agency for implementing climate change regulations in the State. Since its formation, the ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California's CO₂ emissions, Assembly Bill 1493 (AB 1493, Pavley) was enacted on July 22, 2002. AB 1493 required the ARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. To set its own GHG emissions limits on motor vehicles, California needed to receive a waiver from the EPA. On June 30, 2009, the EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Notice of the decision was published in the Federal Register on July 8, 2009.

Executive Order S-3-05 (2005). Governor Schwarzenegger signed Executive Order S-3-05 on June 1, 2005 which proclaimed California is vulnerable to the impacts of climate change. The executive order declared increased temperatures could reduce snowpack in the Sierra Nevada Mountains, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established California's greenhouse gas emissions reduction targets, which established the following goals:

- Greenhouse gas emissions should be reduced to 2000 levels by 2010;
- Greenhouse gas emissions should be reduced to 1990 levels by 2020; and
- Greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various state agencies in order to collectively and efficiently reduce greenhouse gases. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward greenhouse gas emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline and forestry and report possible mitigation and adaptation plans to combat these impacts.

The Secretary of CalEPA leads this Climate Action Team (CAT) made up of representatives from State agencies as well as numerous other Boards and Departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the

State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under the Global Warming Solutions Act of 2006 (Assembly Bill 32). The first Climate Action Team Report to the Governor and the Legislature was released in March 2006, in which it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The Climate Action Team Report to the Governor and Legislature and will be updated and issued every two years thereafter; the most recent was released in December 2010.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "Global Warming Solutions Act," passed by the California State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The ARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO₂e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to GCC. The Scoping Plan was approved by the ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures.³⁰ The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The Scoping Plan, even after Board approval, remains a recommendation. The measures in the Scoping Plan will not be binding until after they are adopted through the normal rulemaking process. The ARB rulemaking process includes preparation and release of each of the draft measures, public input through workshops and a public comment period, followed by an ARB Board hearing and rule adoption.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created Climate Action Team (CAT) to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

In June 2007, the ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture).³¹ Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of perfluorocarbons from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and

³⁰ California Air Resources Board, 2008. *Climate Change Scoping Plan: a framework for change*. December.

³¹ California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

sulfur hexafluoride (SF₆) reductions from the non-electricity sector. The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT.³²

To assist public agencies in analyzing the effects of GHGs under CEQA, Senate Bill 97 (Chapter 185, 2007) requires the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to minimize and mitigate a project's GHG emissions. On December 30, 2009, the Natural Resources Agency adopted CEQA Guidelines Amendments related to climate change. These amendments became effective on March 18, 2010.

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 169 million metric tons (MMT) of CO₂e, or approximately 30 percent from the state's projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT CO₂e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e);
- The Low-Carbon Fuel Standard (15.0 MMT CO₂e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO₂e).

The Scoping Plan identifies 18 emissions reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roofs program, industrial emissions, high speed rail, green building strategy, recycling, sustainable forests, water and air (California Air Resources Board, December 2008). The measures would result in a total reduction of 174 MMTCO₂E by 2020 (Ibid.).

Final CARB regulations were due January 1, 2011, and will not be operative until January 1, 2012. By the former date, CARB must adopt "greenhouse gas emissions limits and emissions reductions measures ... to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit[.]" (Health & Safety Code, § 38562(a).)

On March 18, 2011, Judge Ernest Goldsmith of the San Francisco Superior Court issued a ruling in a case brought by a citizens group against the ARB, challenging the agency's CEQA compliance for the approval of the cap and trade component of ARB's Scoping Plan. [*Association of Irrigated Residents et al v. California Air Resources Board*, San Francisco Superior Court Case No. CPF-09-509562.] The court found substantive and procedural flaws in ARB's CEQA compliance and enjoined ARB from any further implementation of the measures contained in the Scoping Plan,

³² California Air Resources Board, 2007. "ARB approves tripling of early action measures required under AB 32". News Release 07-46. Website: www.arb.ca.gov/newsrel/nr102507.htm. October 25.

including the cap and trade program scheduled to go into effect on January 1, 2012 until after ARB “comes into complete compliance with its obligations” under CEQA. Specifically, the court found that ARB violated CEQA by failing to fully evaluate possible alternatives to the measures described in the Scoping Plan. The decision criticized the Scoping Plan CEQA analysis for failing to specifically discuss in detail a carbon fee alternative to cap and trade.

The ARB has appealed the superior court’s ruling, and the Court of Appeal for the First Appellate District issued an order on June 3, 2011, temporarily staying the enforcement of the superior court’s writ of mandate, giving the parties some time to further brief the issues. (Court of Appeal Case No. A132165.) On July 26, 2011, a petitioners’ group filed a petition for review with a request for stay with the California Supreme Court asking to lift the stay on the injunction to again stop ARB from continuing to work on the cap-and-trade program. On September 28, 2011, after review of the advocates’ petition and ARB’s answer, the California Supreme Court declined to immediately halt implementation of the cap-and-trade program. The Supreme Court’s decision was limited only to the stay application instituted by the Appellate Court, and was not a ruling on the merits. The Court of Appeal will continue to hear ARB’s appeal on the merits of the Superior Court’s final order.

On August 24, 2011, in response to the trial court’s ruling, the ARB Board unanimously approved both ARB’s new supplemental assessment (“Supplement”) and re-approved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The Board also approved a more robust California Environmental Quality Act equivalent document supporting the supplemental analysis of the cap-and-trade program. ARB also announced that it would be delaying the date that entities would be required to comply with its cap-and-trade program until 2013.

ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the State’s GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO₂e will be achieved associated with implementation of SB 375, which is discussed further below.

Senate Bills 1078, 107, and 2 and Executive Orders S-14-08 and S-21-09. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date for implementing the Renewable Portfolio Standard (RPS) to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state’s 33 percent renewable power by 2020. Executive Order S-21-09 directs ARB to adopt regulations increasing California’s RPS to 33 percent by 2020. Senate Bill 2 (2011) codified the 33 percent by 2020 RPS requirement into law.

Senate Bill 1368 (2006). SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission

(PUC) to establish a GHG emission performance standard for baseload generation from investor owned utilities and local publicly owned utilities. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

Executive Order S-1-07. Executive Order S-1-07 in 2007 which proclaimed the transportation sector as the main source of GHG emissions in California. The executive order proclaims the transportation sector accounts for over 40 percent of statewide GHG emissions. The executive order also establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020.

In particular, the executive order established a Low-Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the life-cycle carbon intensity of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by CEC on December 24, 2007) and was submitted to ARB for consideration as an early action item under AB 32. The ARB adopted the LCFS on April 23, 2009.

Senate Bill 97 (2007). SB 97, signed by the Governor of California in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA which were certified in 2010.

This bill also removes, both retroactively and prospectively, as legitimate causes of action in litigation any claim of inadequate CEQA analysis of effects of GHG emissions associated with environmental review for projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 (Proposition 1B) or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1E). This provision was repealed by provision of law on January 1, 2010, such that projects, if any remain unapproved, will no longer enjoy protection against litigation claims based on failure to adequately address issues related to GHG emissions.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for GHG emission, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

Senate Bill 375 (2008). SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. As part of the alignment, SB 375 requires Metropolitan Planning Organizations

(MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) which prescribes land use allocation in that MPO's Regional Transportation Plan (RTP). The ARB, in consultation with MPOs, is required to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned GHG emission reduction targets. If MPOs do not meet the GHG reduction targets, transportation projects located in the MPO boundaries would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the Regional Housing Needs Allocation (RNHA) cycle from 5 years to 8 years for local governments located in an MPO that meets certain requirements. City or County land use policies (e.g., General Plans) are not required to be consistent with the RTP including associated SCSs or APSs. Qualified projects consistent with an approved SCS or APS and categorized as transit priority projects would receive incentives under new provisions of CEQA.

Executive Order S-13-08. Governor Schwarzenegger signed Executive Order S-13-08 on November 14, 2008 which directs California to develop methods for adapting to climate change through preparation of a statewide plan. The executive order directed OPR, in cooperation with the California Resources Agency (CRA), to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009. The order also directed the CRA to develop a state Climate Adaptation Strategy by June 30, 2009 and to convene an independent panel to complete the first California Sea Level Rise Assessment Report. The assessment report was required to be completed by December 1, 2010 and required to include the following four items:

1. Project the relative sea level rise specific to California by taking into account issues such as coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates;
2. Identify the range of uncertainty in selected sea level rise projections;
3. Synthesize existing information on projected sea level rise impacts to state infrastructure (e.g., roads, public facilities, beaches), natural areas, and coastal and marine ecosystems; and
4. Discuss future research needs relating to sea level rise in California.

An interim report was released in October 2010, with the final report expected in 2012.³³

Office of Planning and Research. On December 30, 2009, the California Natural Resources Agency adopted CEQA Guidelines Amendments related to Climate Change. These amendments became effective on March 18, 2010, and state under section 15064.4:

- (a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to

³³Sea-Level Risk Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), 2010. *State of California Sea-Level Risk Interim Guidance Document*. October.

describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

- (1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
 - (2) Rely on a qualitative analysis or performance based standards.
- (b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:
- (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
 - (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
 - (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

CEQA Guidelines Section 15064(b) provides that the “determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data,” and further, states that an “ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.”

Individual projects incrementally contribute toward the potential for GCC on a cumulative basis in concert with all other past, present, and probable future projects. While individual projects are unlikely to measurably affect GCC, each of these projects incrementally contribute toward the potential for GCC on a cumulative basis, in concert with all other past, present, and probable future projects.

The revisions also included the addition of Section 15183.5. Tiering and Streamlining the Analysis of Greenhouse Gas Emissions which states that:

- (a) Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section

15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

- (b) Greenhouse Gas Emissions Reduction Plans. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions reduction plan or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.
- (1) Plan Elements. A plan for the reduction of greenhouse gas emissions should reduction plan may:
- (A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
 - (B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
 - (C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;
 - (D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
 - (E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.

Revisions to Appendix G of the *CEQA Guidelines* suggest that the project be evaluated for the following impacts:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

(4) Bay Area Air Quality Management District. BAAQMD is the regional government agency that regulates sources of air pollution with the nine San Francisco Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

Regional Clean Air Plans. BAAQMD and other air districts prepare clean air plans in accordance with the State and federal Clean Air Acts. The Bay Area 2010 Clean Air Plan (CAP) provides a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and decrease ambient concentra-

tions of harmful pollutants. The most recent CAP also includes measures designed to reduce GHG emissions.

Bay Area Air Quality Management District Climate Protection Program. The BAAQMD established a climate protection program to reduce pollutants that contribute to GCC and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of GHG and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines. The BAAQMD adopted revised *CEQA Air Quality Guidelines* on June 2, 2010 and then adopted a modified version of the Guidelines in May, 2011. The BAAQMD *CEQA Air Quality Guidelines* include thresholds of significance for GHG emissions. Under the latest *CEQA Air Quality Guidelines*, a local government may prepare a qualified GHG Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified GHG Reduction Strategy and General Plan that address the project's GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA.³⁴

The adopted thresholds for BAAQMD General Plan CEQA review employ either a GHG efficiency-based metric or a GHG Reduction Strategy option. If a General Plan would result in operational-related GHG emissions of 6.6 metric tons (MT) per Service Population (residents plus employees) per year of CO₂e or more, it would make a cumulatively considerable contribution to GHG emissions and result in a cumulatively significant impact to GCC. The BAAQMD *CEQA Air Quality Guidelines* also outline a methodology for estimating GHGs and components of a Greenhouse Gas Reduction Strategy that once adopted, can be employed in lieu of GHG analyses for individual projects where the project is consistent with an adopted GHG reduction strategy.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the 2011 BAAQMD CEQA Air Quality Guidelines. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. In view of the court's order, the BAAQMD is no longer recommending that the thresholds of significance be used as a generally applicable measure of a project's significant air quality impacts. However, these thresholds have not been rescinded and are still being used to evaluate and determine GHG emission impacts. On May 4, 2012, BAAQMD commenced an appeal in the First District of the California Court of Appeal seeking to overturn the Alameda County Superior Court decision.

2. Impacts and Mitigation Measures

This section evaluates significant impacts to global climate change that could result from implementation of the proposed Draft General Plan and the GGRP. It establishes the thresholds of significance, identifies the methodology used in this section, and then evaluates the Draft General Plan and GGRP. Where potentially significant impacts are identified, mitigation measures are recommended as appropriate.

³⁴ BAAQMD, 2011. CEQA Air Quality Guidelines. May. pages 4-7 through 4-11.

a. Criteria of Significance. The BAAQMD and *CEQA Guidelines* have identified the following significance criteria for evaluating greenhouse gas impacts for General Plan documents. Implementation of the Draft General Plan and the GGRP would result in significant adverse impacts on GCC if it would:

- (1) **Conflict with a qualified greenhouse gas reduction strategy;**
- (2) Result in operational-related **greenhouse gas emissions** that exceed 6.6 metric tons of CO₂e annually per service population; or
- (3) **Conflict with any applicable plan, policy or regulation** of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

As discussed under the BAAQMD *CEQA Air Quality Guidelines* section above, the BAAQMD allows for consistency with an adopted greenhouse gas reduction strategy for use in determining CEQA compliance for individual projects. The Mountain View GGRP has been prepared following BAAQMD guidance and achieves the criteria established by the BAAQMD for a qualified GHG Reduction Strategy for future use in streamlining the CEQA process related to project level GHG analyses, as described in more detail below and in Appendix C of the GGRP that describes how the GGRP conforms to the BAAQMD guidelines for a qualified GHG reduction plan.

As permitted under the BAAQMD's *CEQA Air Quality Guidelines*, the analysis of climate change impacts from the project relies upon a quantitative GHG emissions threshold. The threshold established by the BAAQMD enables the determination of whether the Draft General Plan and GGRP meet statewide emission reduction goals. The evaluation of the service population (residents plus employees) considers efficiency in terms of the GHG emissions compared to the sum of the number of jobs and the number of residents. The information used in this analysis is based on the data contained in the Mountain View Draft General Plan and GGRP documents which are incorporated herein by reference.³⁵ Refer to these documents for a detailed discussion of the methodology used in the calculation of the citywide GHG emissions and for emissions estimates for the proposed Draft General Plan.

b. Impacts Analysis. The following section provides an evaluation and analysis for the potential impacts of the Draft General Plan and/or the GGRP for each of the criteria of significance listed above.

(1) **Conflict With a Qualified GHG Reduction Strategy.** With the adoption of the Draft General Plan and GGRP, it is the City's intent to have the GGRP qualified by the BAAQMD for future use under this CEQA criterion.

The purpose of creating a "qualified plan" is to: 1) reduce the GHG emissions resulting from the project to a less than significant level and 2) establish a program EIR to enable a GHG Reduction Strategy to be used for future project-level environmental analysis. As such, the Draft General Plan and GGRP do not conflict with a qualified greenhouse gas reduction strategy; rather, the intent is for them to become the Greenhouse Gas Reduction Strategy for the City. The General Plan and GGRP meet the Air Quality Guidelines "qualified plan" definition, as described below:

³⁵ Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*, September 26.

Definition Criteria #1: Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.

The Mountain View GGRP includes an emissions inventory that quantifies an existing baseline level of emissions for 2005 and projected GHG emissions from forecast scenarios for 2020 and 2035 (See Chapter 3, Emissions Inventory, Projections, and Goals of the GGRP incorporated by reference into this document). The baseline year is based on the existing 2005 development pattern. Projected GHG emissions are based on anticipated growth through 2020 and 2030 as proposed within the General Plan.

Furthermore:

- The baseline inventory includes one complete calendar year of data for 2005. CO₂ is inventoried for the residential, commercial, industrial, transportation, waste and water sectors. CH₄ and N₂O emissions are also accounted for, where feasible.
- Projected emissions are directly related to the land uses proposed on the General Plan Land Use Diagram (See Appendix A, Emissions Inventory and Projections Methodology of the GGRP incorporated by reference into this document).

Definition Criteria #2: Establish a level, based on substantial evidence, below which the contribution of GHG emissions from activities covered by the plan would not be cumulatively considerable.

The Mountain View GGRP establishes a goal to improve communitywide Service Population (SP - which is determined by adding the number of residents to the number of jobs as estimated for a given point in time) emissions efficiency by 15 percent to 20 percent over 2005 levels by 2020 (to 5.1 - 5.4 MT CO₂e/SP/yr), and by 30 percent over 2005 levels by 2030 (to 4.5 MT CO₂e/SP/year). The 2020 goal exceeds BAAQMD's plan-level efficiency threshold (6.6 MTCO₂e/SP/year), and the 2030 goal places the City on a trajectory to meet EO S-3-05 reduction goals.

Definition Criteria #3: Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.

The Mountain View GGRP identifies and analyzes, and quantifies GHG reductions from local actions and State policies and regulations that are planned or adopted to achieve GHG reduction goals. Specifically, the GGRP identifies and analyzes the effects of statewide GHG emission reductions related to implementation of passenger vehicle and light-duty truck fuel efficiency standards, low carbon fuel standards, medium- and heavy-duty vehicle efficiency improvement programs, 2008 Title-24 standards, and California's renewable portfolio standard (33 percent by 2020) (See Chapter 3, Emissions Inventory, Projections, and Goals of the GGRP).

Definition Criteria #4: Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.

The Mountain View GGRP includes mandatory and enforceable measures that reinforce the implementation of current codes and ordinances, or recommend changes to the City's codes and

ordinances that would result in GHG reductions. (See Appendix A3 of this EIR for the complete GGRP.)

All new projects would be required to comply with these codes and ordinances, as applicable. This would make these measures binding and enforceable on new projects, within the meaning established by State CEQA Guidelines Section 15183.5(b)(2). A proposed project would describe how each measure would be integrated into the development in its application materials and environmental documentation. The GGRP includes quantification of expected GHG emission reductions from each measure where substantial evidence is available (See Chapter 4, Reduction Strategies and Measures of the GGRP incorporated by reference into this document), including disclosure of calculation methods and assumptions (See Appendix B of the GGRP, Greenhouse Gas Reductions incorporated by reference into this document). Quantification reflects annual GHG reductions and demonstrates how the GHG reduction goal will be met. In 2020, the reduction measures, together with the communitywide effects of State and federal legislation in Mountain View, have potential to reduce communitywide mass emissions by 156,171 metric tons of carbon dioxide equivalent emissions per year (MT CO₂e/year) from projected levels. Taking into account the anticipated 2020 communitywide SP of 152,359, this would result in an emissions efficiency metric of 4.9 MT CO₂e/SP/year. This metric achieves both the City's 2020 reduction goal (5.1 to 5.4 MT CO₂e/SP/year) and the BAAQMD 2020 plan-level significance threshold (6.6 MT CO₂e/SP/year), and represents a 23.5 percent improvement in emissions efficiency compared to 2005 conditions.

In 2030, the reduction measures, together with the communitywide effects of State and federal legislation in Mountain View, have the potential to reduce communitywide mass emissions by 242,452 MT CO₂e/year from projected levels. Taking into account the anticipated 2030 communitywide SP of 170,779, this would result in an emissions efficiency metric of 4.4 MT CO₂e/SP/year. This metric is below the City's 2030 reduction goal (4.5 MT CO₂e/SP/year), puts the City on a trajectory to meet EO S-3-05 goals, and represents a 31.2 percent improvement in emissions efficiency compared to 2005 conditions.

Definition Criteria #5: Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specific levels.

The City of Mountain View will monitor results that are achieved by the various GGRP measures and actions. Monitoring results is a critical step in verifying that the measures and actions are achieving the anticipated GHG emission reductions. To ensure that new development projects are incorporating all applicable measures contained within the GGRP, the GGRP includes an implementation chapter (See Chapter 5 of the GGRP, Implementation and Monitoring incorporated by reference into this document).

The following BAAQMD implementation requirements are addressed within the GGRP:

- Identification of which measures apply to different types of new development projects, discerning between voluntary and mandatory measures (See Chapter 5, Implementation and Monitoring of the GGRP).
- Mechanism for reviewing and determining if all applicable mandatory measures are being adequately applied to new development projects (See Chapter 5, Implementation and Monitoring of the GGRP).

- Identification of implementation steps and parties responsible for ensuring implementation of each action (See Chapter 4, Reduction Strategies and Measures of the GGRP).
- Schedule of implementation identifying near-term and longer-term implementation steps (See Chapter 4, Reduction Strategies and Measures of the GGRP).
- Procedures for monitoring and updating the GHG inventory and reduction measures in 2015, 2020, 2025, and 2030 (See Chapter 5, Implementation and Monitoring of the GGRP).

Definition Criteria #6: Adopt the GHG Reduction Strategy in a public process following environmental review.

The GGRP is a component of the project evaluated in this EIR. This EIR documents the potential environmental effects of implementing the GGRP, and will be certified through a public review process, as required by CEQA.

Additional documentation of how the GGRP meets the requirements for a qualified plan under the BAAQMD guidelines is presented in Appendix C of the GGRP incorporated by reference into this document. The CEQA determination of significance is therefore based on the Draft General Plan and GGRP's projected GHG efficiency metric for service population as discussed below.

(2) Greenhouse Gas Emissions. GHG emissions generated by the Draft General Plan would predominantly consist of CO₂. In comparison to criteria air pollutants, such as ozone and PM₁₀, CO₂ emissions persist in the atmosphere for a substantially longer period of time. While emissions of other GHGs, such as CH₄, are important with respect to GCC, emission levels of other GHGs are less dependent on the land use and circulation patterns associated with the proposed land use development project than are levels of CO₂.

The efficiency metric of 6.6 MT per SP per year of carbon dioxide equivalent (CO₂e) established by the BAAQMD was derived from statewide emissions estimates and would accommodate statewide projected population and employment growth while allowing for consistency with AB 32 goals, which mandate achieving 1990 GHG emissions levels by 2020. To determine the efficiency of the Draft General Plan and GGRP, the BAAQMD recommends a four-step analysis method:

Step 1. Emissions Quantification. The emissions inventory should be conducted for a base year at or before the current year of the plan; and should follow published ARB protocols for municipal and community-wide inventories (when available). The base year inventory should be expressed in terms of metric tons CO₂e emissions and account for municipal and community-wide emission sectors applicable in the jurisdiction such as, transportation, commercial, residential, water use and treatment, solid waste, and agriculture.

Step 2. Emissions Projections. BAAQMD recommends preparing a community-wide GHG emission projection to identify the expected levels of GHG emissions for: 1) 2020 (i.e., the AB 32 benchmark year), and 2) the projected year of the plan build out. Two projections should be prepared for each year:

- A projection reflecting existing conditions (e.g., business-as-usual), and
- A projection that accounts for proposed policies, programs, and plans included within the general plan that would reduce GHG emissions from build-out of the plan.

The first projection should be used as the basis for evaluation of the No Project alternative in the plan's EIR. The second projection should be used as the basis for evaluation of the proposed project. Where possible, emission projections should account for population and employment growth rates published by ABAG, VMT growth rates available from MTC, energy consumption growth rates available from California Energy Commission (CEC) planned expansions of municipal infrastructure or services, and anticipated statewide legislative requirements or mandates (e.g., Renewable Energy Portfolio, Green Building Code Standards, on-road vehicle emission regulations).

Step 3. Population and Employment Determinations. State law requires that general and area plans identify the planned density and intensity of land uses for all lands within the planning area established by the lead agency. These measures of density (typically dwelling units/acre) and intensity (typically floor-area ratios) are often translated into expected population and employment levels for estimating traffic impacts associated with the proposed plan. Most demand-based transportation models use population and employment to determine trip generation. Measures of population and employment are typically available for general and area plans. Service population (SP) is an efficiency-based measure used by BAAQMD to estimate the development potential of a general or area plan, and is determined by adding the number of residents to the number of jobs estimated for a given point in time.

Step 4. Compare Service Population to 2020 GHG Projections and Thresholds of Significance. The 2020 GHG emissions inventory is divided by 2020 SP estimates to determine the per-SP emissions associated with the proposed general or area plan and then compared to the significance thresholds.

Emissions Quantification. As documented in the Mountain View GGRP, a baseline inventory was collected for the 2005 operational year. The inventory addressed the following emission sectors: residential and non residential energy use, transportation, solid waste, water use, wastewater treatment, and off-road transportation. The baseline emissions inventory was prepared using energy consumption data from Pacific Gas & Electric (PG&E), solid waste data from landfills, and vehicle travel data from the citywide travel model. The data was used with emission factors to develop the City's baseline communitywide emissions. Baseline emissions are shown in Table IV.E-3.

Table IV.E-3: City of Mountain View 2005 Baseline Emissions

Emission Sector	Subsector	Emissions (MT CO ₂ e/year)	Communitywide Total (%)
Energy - Residential	Electricity	36,307	4.6
	Natural Gas	64,065	8.0
Energy – Non Residential	Electricity	108,220	13.6
	Natural Gas	52,005	6.5
Energy - Industrial	Electricity	4,308	0.5
	Natural Gas	5,066	0.6
Direct Access	Electricity	25,591	3.2
	Subtotal	295,562	24.5
Transportation			
	Subtotal	474,180	59.5
Waste	Solid Waste	11,113	1.4
	Alternate Daily Cover	70	0.0
	Subtotal	11,183	1.4
Water	Water Demand	4,384	0.6
	Wastewater Treatment	5,117	0.6
	Subtotal	9,502	1.2
Off-Road Mobile	Construction	4,793	0.6
	Lawn and Garden Equipment	1,767	0.2
	Subtotal	6,561	0.8
Total		796,987	100.0

Source: Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*, September 26.

Greenhouse Gas Emission Projections. Using land use data from the Draft General Plan, projected future communitywide emissions were estimated. As shown in Table IV.E-4, emissions would increase by 13 percent between 2005 and 2020, and by 25 percent between 2005 and 2030. The increase in emissions is primarily due to anticipated future population and employment growth in Mountain View, as well as land use changes recommended in the Draft General Plan.

Table IV.E-4: City of Mountain View Projected 2020 and 2030 Emissions Without the GGRP

Emission Sector	2005 Emissions (MT CO ₂ e/yr)	2020 Emissions (MT CO ₂ e/yr)	Increase from 2005 (MT CO ₂ e/yr)	2030 Emissions (MT CO ₂ e/yr)	Increase from 2005 (MT CO ₂ e/yr)
Energy	295,562	234,432	57,798	266,498	104,181
Transportation	474,180	518,057	43,877	561,555	87,375
Waste	11,183	11,360	177	11,505	322
Water	9,502	10,689	1,187	11,565	2,063
Off-Road Mobile	6,561	8,088	1,527	9,300	2,739
Total	796,987	901,554	104,567	993,668	196,681
% Increase	--	--	(13%)	--	(25%)

Source: Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*, September 26.

Planned Population and Employment Levels and Service Population. Population and employment are expected to grow steadily over the 20 year planning horizon. Population and employment forecasts are shown in Table IV.E-5.

Table IV.E-5: City of Mountain View Draft General Plan Population and Employment Projections

Year	Population	Employment	Service Population
2005 ^a	70,629	54,071	124,700
2020 ^b	81,395	70,965	152,359
Draft 2030 ^c	88,572	82,227	170,799

^a The baseline for the GHG analysis is 2005. The baseline for other analyses in this EIR is 2009.

^b Population and employment data developed by AECOM for use in the GGRP and identification estimate of growth between 2009 and 2030 in the year 2020.

^c Population and employment numbers are not rounded for purposes of this analysis and therefore differ slightly from those listed in the project description (Chapter 3) of this EIR.

Source: Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*, September 26.

Significance Determination. The GHG emission inventory projections are divided by the amount of future growth that would be accommodated in 2020. If this number is less than 6.6 metric tons CO₂e/SP from all emission sectors, then according to the BAAQMD, the General Plan’s impact related to GCC would be less than significant. Mountain View’s communitywide GHG efficiency level for the Draft General Plan and GGRP would meet the BAAQMD’s efficiency criterion of significance for GHGs emissions. The factors used in the calculation and the results are shown in Table IV.E-6.

Table IV.E-6: Draft General Plan Greenhouse Gas Emissions Analysis

Emission Source	Year	Emission (MT CO ₂ e /yr)
GHG Emissions Inventory	Base Year 2005	796,987
GHG Emissions Projections	2020	745,758
	Draft General Plan Build Out 2030	751,765
2020 Projected Service Population	152,359	
2020 GHG/SP	4.9 MT CO ₂ e /SP/yr	
BAAQMD GHG/SP Threshold	6.6 MT CO ₂ e/SP/yr	
Does the 2020 GHG/SP exceed 6.6?	No (Therefore Less Than Significant)	

Notes: CO₂e = carbon dioxide equivalent; MT = metric tons; yr = year; P = population; SP = service population
Source: Mountain View, City of, 2011. *Mountain View Greenhouse Gas Reduction Program*, September 26.

As outlined in the GGRP, the City of Mountain View has established emission reduction goals to improve communitywide per service population emissions efficiency by 15 to 20 percent over 2005 levels by 2020. The 2020 goal exceeds plan-level efficiency requirements by the BAAQMD *CEQA Air Quality Guidelines*. As noted in the GGRP, the Draft General Plan’s planning horizon extends only to 2030, which makes projecting 2050 activity and emission levels highly uncertain. As a result, the GGRP does not address the steps needed to achieve reduction goals beyond 2030. However, the City will regularly re-evaluate its long-term emissions reduction goals. Based on the projected build out emissions and the GHG emission reduction strategies included in the Draft General Plan and GGRP, adoption of these two plans would not preclude attainment of 2050 goals in any way.

As shown in Table IV.E-6, the Draft General Plan and GGRP’s GHG efficiency level would not be considered to have a significant impact with respect to GHG emissions or a cumulatively consider-

able contribution to substantial adverse physical effects on the environment related to global climate change, and mitigation would not be required.

(3) Conflict with Applicable Plans and Policies. Regional and State plans have been adopted for the purpose of preparing for sea level rise impacts and for reducing greenhouse gas emission.

Sea Level Rise. Local temperatures could increase in time as a result of global climate change, with or without development as envisioned by the Draft General Plan. This increase in temperature could lead to other climate effects including, but not limited to, shoreline flooding due to sea level rise, increased flooding due to increased precipitation and runoff, drought conditions, and a reduction in the Sierra snowpack.

The San Francisco Bay Conservation and Development Commission (BCDC), recently released a revised background report on climate change and sea level rise which updates the 2007 report *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on the Shoreline*.³⁶ This report provides extensive background information on the most current scientific research on climate change and sea level rise mapping. The following discussion is based on information from this report and is intended to provide additional background on the issue of sea level rise as the Mountain View shoreline will be impacted by this occurrence.

The San Francisco Bay is a distinct resource that helps sustain the economy of the western United States and provides recreational opportunities for California residents and habitat for fish and wildlife. The Bay Area shoreline is a vital system of public infrastructure, including freeways, seaports, railroads and airports, which knit the shoreline communities together and connect them to the rest of the region. The BCDC conducted a vulnerability assessment which included two sea level risk projections, the results of which are shown in Figure IV.E-1. The shoreline in Mountain View would be subject to flooding under the current sea level risk projections.

In the Bay Area, residents and businesses located on the shoreline will be at risk of flooding by the middle of the century, and probably earlier, if nothing is done to protect, elevate or relocate them. The BCDC indicates that a 16-inch rise (relative to sea level in 2000) would potentially expose 281 square miles of Bay shoreline to flooding, and a 55-inch rise would potentially expose 333 square miles to flooding. If no adaptation measures were taken, a 55-inch rise in sea level would place an estimated 270,000 people in the Bay Area at risk from flooding, 98 percent more than are currently at risk. In those areas where lives and property are not directly vulnerable, the secondary and cumulative impacts of sea level rise will affect public health, economic security and quality of life. Additionally, changes in climate may cause increased storm activity, which in combination with higher sea level, may cause even greater flooding. It is expected that extreme storm events will cause most of the shoreline damage from flooding.

Areas of the shoreline exposed to a 100-year high water event could potentially be exposed to regular tidal inundation by mid-century with over 128 square miles of residential development at risk of flooding by the end of the century. Where residents are not directly at risk of flooding, access to

³⁶ San Francisco Bay Conservation and Development Commission, 2011. *Climate Change Bay Plan Amendment*. October 6.

important services such as commercial centers, health care, and schools would likely be impeded by flooding of the service centers or the transportation infrastructure that links them. Risking sea levels could impact the delivery of petroleum products, electricity, and drinking water to Bay Area residents and business.

Populations may also suffer if wastewater treatment is compromised by inundation from rising sea levels, given that a number of treatment plants discharge to the Bay. Impaired water quality and higher temperatures can result in algal blooms and a higher potential for the spread of water-borne disease vectors.

According to the BCDC, adapting to climate change on the San Francisco Bay shoreline is critical to the region's economic stability, safety and public health. Scientific knowledge about the impacts of climate change needs to be integrated into adaptation planning for the Bay and shoreline. The BCDC has developed a framework for selecting adaptation strategies to address vulnerabilities and risks at various scales and timeframes. Effective adaptation will require strategies that integrate climate mitigation and adaptation efforts regionally.

Draft General Plan policies and actions LUD 18.1 and 18.2, as follows, would commit the City to collaboration with regional, State, and federal agencies to address impacts due to sea level rise and to support the development of flood retention areas. Specific actions under these policies include the preparation of a Vulnerability Risk Assessment and a Sea-level Rise Adaptation Strategy Report for the City. These measures will improve the efficacy of other flood control measures to address potential flooding related to sea level rise.

Sea Level Rise

POLICY LUD 18.1: Collaboration on sea-level rise impacts. Collaborate with regional, state and federal agencies to address potential sea level rise impacts through vulnerability assessments and adaptation strategies.

ACTION LUD 18.1.1: Vulnerability Risk Assessment. Prepare a Vulnerability Risk Assessment that identifies City facilities and infrastructure and areas with private properties that may be at risk.

ACTION LUD 18.1.2: Sea-Level Rise Adaptation Strategy Report. Prepare and update a Sea-Level Rise Adaptation Strategy Report.

POLICY LUD 18.2: Flood retention areas: Support the development of flood retention areas to address impacts from sea level rise.

ACTION 18.2.1: Transfer of Development Rights program. Develop a Transfer of Development Rights program to allow properties to transfer their development rights and convert to wetland or detention pond areas.

Implementation of these and other policies and actions related to flooding impacts would ensure that the City of Mountain View is consistent with plans to prepare for meeting the challenges of sea level rise and other climate change impacts and would reduce potential impacts related to sea level rise to a less-than-significant impact.

California's Greenhouse Gas Reduction Plan. The California Environmental Protection Agency Climate Action Team and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the 2006 "*Report to Governor*

Schwarzenegger and the Legislature,” ARB’s 2007 “Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,” and ARB’s “Climate Change Proposed Scoping Plan: a Framework for Change.”^{37,38,39}

The reports identify strategies to reduce California’s emissions to the levels proposed in Executive Order S-3-05 and AB 32. Table IV.E-7 summarizes those strategies that may be applicable to the Draft General Plan and GGRP and assesses how the Draft General Plan and GGRP efforts comply with those strategies.

The Draft General Plan and GGRP would implement appropriate GHG reduction strategies and would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor’s Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the State. Therefore, this impact would be less-than-significant and no additional mitigation would be required.

Table IV.E-7: Draft General Plan and GGRP Compliance with GHG Emission Reduction Strategies^a

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Energy Efficiency Measures</i>	
<p>Energy Efficiency Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).</p> <p>Renewables Portfolio Standard Achieve a 33 percent renewable energy mix statewide.</p> <p>Green Building Strategy Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.</p> <p>Million Solar Roofs Program Install 3,000 MW of solar-electric capacity under California’s existing solar programs.</p>	<p>Compliant. <i>The Draft General Plan and GGRP include a number of goals, policies, and actions that address energy efficiency, including measures to encourage energy conservation, efficiency, and green design in new construction and existing buildings</i></p> <p>Draft General Plan</p> <p>POLICY INC 13.1: Energy efficiency and conservation. Increase energy efficiency and conservation in public buildings and infrastructure.</p> <p>ACTION INC 13.1.1: Building energy conservation and efficiency. Develop and implement a plan to increase energy efficiency and conservation in public buildings and infrastructure.</p> <p>ACTION INC 13.1.2: Efficient city infrastructure. Find opportunities to install more energy efficient lighting and infrastructure in the public right-of-way and on City-owned properties.</p> <p>POLICY INC 14.1: Renewable energy. Promote the deployment of renewable energy technologies throughout the city.</p>

³⁷ California Climate Action Team, 2010. *2010 Climate Action Team Report to the Governor and Legislature*. December.

³⁸ ARB, 2007. *Expanded List of Early Action Measures*, October.

³⁹ ARB, 2008. *Climate Change Proposed Scoping Plan: A Framework for Change*. October.

Table IV.E-7 *Continued*

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Energy Efficiency Measures Continued</i>	
	<p>ACTION INC 14.1.1: Track new renewable energy installed. Institute a process to track the amount of new solar, wind, or other types of renewable energy generation permitted yearly.</p> <p>ACTION INC 14.1.2: Promoting renewables. Regularly investigate and publicize opportunities for community members or the City to utilize renewable energy technologies such as solar, co-generation, or wind.</p> <p>ACTION INC 14.1.3: Methane extraction. Extract methane gas from the sanitary landfill for energy production.</p> <p>ACTION INC 14.1.4: Renewables in development review. Use the development review process to inform developers of the advantages of renewable energy production, including wind and solar.</p> <p>ACTION INC 14.1.5: Large institutions. Promote co-generation and district heating and cooling systems for large companies and institutions.</p> <p>POLICY INC 14.2: Solar energy. Encourage active and passive solar energy use.</p> <p>ACTION INC 13.2.1: Solar design. Incorporate solar designs into new City facilities.</p> <p>POLICY INC 14.3: Regional renewable energy. Participate in regional initiatives to encourage and develop renewable energy sources.</p> <p>POLICY INC 14.4: Renewable energy advocacy. Support legislation to facilitate and increase renewable energy choices for community residents such as “green” utility power options or distributed generation.</p> <p>ACTION INC 14.4.1: Incentives for renewables. Develop a program of incentives, fee waivers, or other strategies to facilitate community members installing renewable energy technologies.</p> <p>POLICY LUD 10.5: Building energy efficiency. Incorporate energy efficient design features and materials into new and remodeled buildings.</p> <p>POLICY LUD 10.6: On-site energy technologies. Support on-site renewable energy technologies that help reduce community energy demand.</p> <p>ACTION LUD 10.6.1: Development standards. Update the City’s Zoning Ordinance to include development standards for installing on-site renewable energy technologies.</p> <p>ACTION LUD 10.6.2: Minimize permit fees and timelines. Minimize permit fees and process timelines for the installation of on-site renewable energy technologies.</p>

Table IV.E-7 Continued

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Energy Efficiency Measures Continued</i>	
	<p>GGRP</p> <p>E-1.1 Residential Energy Efficiency Retrofit</p> <p>E-1.2 Non-Residential Energy Efficiency Retrofit</p> <p>E-1.3 Non-Residential Lighting Retrofit</p> <p>E-1.4 Residential Energy Star Appliances</p> <p>E-1.5 Smart Grid</p> <p>E-1.6 Exceed State Energy Standards in New Residential Development</p> <p>E-1.7 Exceed State Energy Standards in New Non-Residential Development</p> <p>E-2.1 Residential Solar Water Heaters</p> <p>E-2.2 Non-Residential Solar Water Heaters</p> <p>E-2.3 Residential Solar Photovoltaic System</p> <p>E-2.4 Non-Residential Solar Photovoltaic System</p> <p>E-2.5 Landfill Gas to Energy</p> <p>E-3.1 Energy Efficiency in Municipal Buildings</p> <p>E-4.1 Energy Efficiency in Streetlights and Traffic Lights</p> <p>E-5-1 Solar Photovoltaic Systems on Municipal Building</p>
<i>Water Conservation and Efficiency Measures</i>	
<p>Water Use Efficiency Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.</p>	<p>Compliant. <i>Policies in the Draft General Plan and GGRP would reduce impacts associated with increased water demand as shown in the following policies:</i></p> <p>Draft General Plan</p> <p>POLICY INC 5.1: Community awareness. Raise community awareness about water use efficiency and water conservation.</p> <p>ACTION INC 5.1.1: Public education. Implement public education programs about water conservation and efficiency, including education at schools.</p> <p>ACTION INC 5.1.2: Large consumers. Target water use efficiency outreach towards larger water customers.</p> <p>POLICY INC 5.2: Citywide water conservation. Reduce water waste and implement water conservation and efficiency measures throughout the City.</p> <p>ACTION INC 5.2.1: Incentives and requirements. Create incentives and develop regulations that encourage water use efficiency, water conservation, and recycled water use.</p>

Table IV.E-7 Continued

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Water Conservation and Efficiency Measures Continued</i>	
	<p>POLICY INC 5.3: Water reuse. Remove barriers and provide guidance for the use of rainwater and graywater as alternative water supplies.</p> <p>POLICY INC 5.4: Automated meter reading. Encourage water meter technologies that provide water usage feedback to customers.</p> <p>POLICY INC 5.5: Landscape efficiency. Promote water-efficient landscaping, including drought tolerant and/or native plants and efficient irrigation techniques.</p> <p>ACTION INC 5.5.1: Landscape Water Conservation Ordinance. Update the City’s landscape water conservation ordinance as necessary.</p> <p>POLICY INC 5.6: Indoor efficiency. Promote the use of water-efficient fixtures and appliances.</p> <p>POLICY INC 5.7: Leadership in City facilities. Provide leadership by promoting water use efficiency, water conservation, and the use of recycled water at City-owned facilities.</p> <p>ACTION INC 5.7.1: City demonstration projects. Administer demonstration projects such as water-wise gardens and rain gardens.</p> <p>GGRP</p> <p>W-1.1 Urban Water management Plan Conservation</p>
<i>Industrial Sources</i>	
<p>Industrial Emissions Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.</p>	<p>Compliant. <i>The City of Mountain View will work with BAAQMD and ARB to encourage assessment of greenhouse gas emissions for any new or expanded industrial sources within the approval authority of ARB, BAAQMD, and the City of Mountain View government.</i></p>
<i>Open Space and Agriculture</i>	
<p>Sustainable Forests Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.</p>	<p>Compliant. <i>The GGRP includes strategies to related to sequestration.</i></p> <p>GGRP</p> <p>CS-1.1 Enhance the Urban Forest</p>

Table IV.E-7 Continued

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Solid Waste Reduction Measures</i>	
<p>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste</p> <p>Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have substantial GHG reduction benefits. In the long term, zero-waste policies that would require manufacturers to design products to be fully recyclable may be necessary.</p>	<p>Compliant. <i>The Draft General Plan and GGRP include policies, actions and strategies related to the reduction of solid waste.</i></p> <p>Draft General Plan</p> <p>POLICY INC 10.1: Zero waste. Pursue a citywide goal of zero waste.</p> <p>ACTION INC 10.1.1: Zero Waste Action Plan. Adopt and implement a Zero Waste Action Plan.</p> <p>ACTION INC 10.1.2: Public education. Provide comprehensive and ongoing public education and promotion programs to encourage residents and businesses to reduce waste and participate in recycling programs.</p> <p>ACTION INC 10.1.3: Large consumers. Target recycling and reuse outreach towards large commercial and industrial customers.</p> <p>POLICY INC 10.2: Producer responsibility. Support extended producer responsibility to reduce waste and toxicity at the manufacturing level.</p> <p>POLICY INC 10.3: Source reduction. Encourage and promote source reduction behavior such as utilizing reusable, returnable and repairable goods.</p> <p>ACTION INC 10.3.1: Source Reduction and Recycling Element. Implement the programs described in the Mountain View Source Reduction and Recycling Element (SRRE).</p> <p>POLICY INC 10.4: Construction waste reuse. Encourage building deconstruction and reuse, and construction waste recycling.</p> <p>ACTION INC 10.4.1: Adaptive building reuse. Encourage adaptive reuse of existing buildings.</p> <p>ACTION INC 10.4.2: Building deconstruction. Consider incentives to encourage building deconstruction instead of demolition.</p> <p>POLICY INC 10.5: Reuse. Encourage product reuse through venues such as garage sales, lending libraries, or internet-based sharing and reuse forums.</p> <p>POLICY INC 10.6: Recovered materials. Encourage uses for recovered materials that save energy, avoid releasing toxic substances, and extend the useful life of recovered materials.</p> <p>POLICY INC 10.7: Recycled material demand. Promote increased demand for recycled materials.</p>

Table IV.E-7 Continued

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Solid Waste Reduction Measures Continued</i>	
	<p>ACTION INC 10.7.1: Recycled content advocacy. Advocate for local, state and federal legislation that will increase use of recycled content products.</p> <p>ACTION INC 10.7.2: Recycled content promotion. Educate and encourage residents and businesses to use products with recycled content.</p> <p>GGRP</p> <p>SW1.1 Implementation of a Zero-Waste Program</p>
<i>Transportation and Motor Vehicle Measures</i>	
<p>Vehicle Climate Change Standards. AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles and light duty trucks. Regulations were adopted by the CARB in September 2004.</p> <p>Light-Duty Vehicle Efficiency Measures. Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency.</p> <p>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures. Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of and increased engine efficiency of vehicles.</p> <p>Low Carbon Fuel Standard. ARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.</p>	<p>Compliant. <i>The Draft General Plan does not involve the manufacture, sale, or purchase of vehicles. However, vehicles operating within the City would comply with any vehicle and fuel standards that the ARB adopts.</i></p>
<p>Goods Movement Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.</p>	<p>Compliant. <i>City of Mountain View is committed to improving efficiency of goods movement. Many of the policies related to transportation focus on improving efficiency of the roadways within the City and with efficiency of the State highway system.</i></p>

Table IV.E-7 Continued

Scoping Plan Strategies	Draft General Plan and GGRP Compliance
<i>Transportation and Motor Vehicle Measures Continued</i>	
<p>Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle greenhouse gas emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces greenhouse gases associated with vehicle travel.</p>	<p>Compliant. <i>The City of Mountain View is currently participating in planning efforts with MTC and ABAG in the development of a Sustainable Community Strategy to achieve the Bay Area’s regional transportation emission reduction targets per SB 375. The Draft General Plan includes policies and actions designed to reduce vehicle miles traveled, encourage and provide alternative modes of transportation, design complete streets, and reduce regional emissions.</i> <i>Additionally, the GGRP includes additional reduction measures and actions that will assist the State in meeting greenhouse gas emission reduction targets.</i></p>

^a Appendix A of this Draft EIR contains the full text of all Draft General Plan policies and actions and GGRP measures.
 Source: ARB, 2008, *Climate Change Proposed Scoping Plan: A Framework for Change*; City of Mountain View, 2011; LSA Associates, Inc., 2011.

The California Attorney General’s Office released a document titled *Sustainability and General Plans: Examples of Policies to Address Climate Change* in January, 2010, which includes resources and examples of innovative local planning efforts.⁴⁰ The Mountain View General Plan and GGRP are consistent with these recommended strategies as outlined in Table IV.8 Draft General Plan and GGRP Compliance with Attorney General Sustainability Strategies.

⁴⁰ California AGO, 2010. *Sustainability and General Plans: Examples of Policies to Address Climate Change* in January.

Table IV.E-8: Draft General Plan and GGRP Compliance with Attorney General Office’s Strategies^a

Attorney General Strategies	Draft General Plan and GGRP Compliance
<p>Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships.</p>	<p>Draft General Plan</p> <p>POLICY LUD 3.1: Land use and transportation. Focus higher land use intensities and densities within ½ mile of public transit service and along major commute corridors.</p> <p>ACTION LUD 3.1.1: Transit Zone Overlay requirements. Update the Transit Zone Overlay Zoning ordinance requirements and standards.</p> <p>POLICY LUD 3.2: Mix of land uses. Encourage a mix of land uses, housing types, retail and public amenities, and public neighborhood open spaces accessible to the community.</p> <p>ACTION LUD 3.2.1: Zoning Ordinance update. Update the allowed uses and development standards for each zoning district in the zoning ordinance to encourage village centers, transit-oriented development, and a flexible mix of land uses where appropriate.</p> <p>POLICY LUD 17.1: Connectivity. Explore opportunities to improve connectivity and integrate transportation systems between the North Bayshore area, Downtown, NASA/Ames, and other parts of the City.</p> <p>ACTION LUD 17.1.1: Partnerships. Pursue public-private partnership opportunities to improve connectivity and integrate transportation systems.</p> <p>POLICY LUD 19.1: Land use and transportation. Encourage greater land use intensity and transit-oriented developments within a ½ mile of area light rail transit stations.</p> <p>ACTION LUD 19.1.1: Transit Zone ordinance update. Update the Zoning Ordinance Transit Zone overlay process and requirements to allow greater land use intensity within ½ mile of area light rail transit stations.</p> <p>POLICY MOB 10.2: Reducing travel demand. Promote effective Transportation Demand Management programs for existing and new development.</p>

Table IV.E-8 *Continued*

Attorney General Strategies	Draft General Plan and GGRP Compliance
	<p>ACTION MOB 10.2.3: Local trip management. Facilitate the formation and foster the success of Transportation Management Associations (TMAs), Business Improvement Districts, or other public-private partnerships to help manage vehicle trips at a local level.</p> <p>ACTION MOB 9.2.1: Mixed use in higher densities. Seek to create higher-intensity mixed use districts along transit, bicycle and pedestrian corridors.</p>
<p>Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation; create disincentives for auto use.</p>	<p>Draft General Plan</p> <p>POLICY MOB-1.1: Multi-modal planning. Adopt and maintain master plans and street design standards to optimize mobility for all transportation modes.</p> <p>ACTION MOB 1.1.1: Mobility plans. Ensure mobility plans include or reference priority project lists intended to maintain and enhance the multi-modal transportation system.</p> <p>ACTION MOB-1.1.2 Multi-modal design. Update street design standards to address roadway function, adjacent land use, and accommodations for all modes.</p> <p>ACTION MOB 1.1.3: Existing resources. Consult existing resources for design guidance in developing street design standards.</p> <p>POLICY MOB 1.2: Accommodating all modes. Plan, design and construct new transportation improvement projects to safely accommodate the needs of pedestrians, bicyclists, transit riders, motorists and persons of all abilities.</p> <p>POLICY MOB-1.3: Pedestrian and bicycle placemaking. Promote pedestrian and bicycle improvements that improve connectivity between neighborhoods, provide opportunities for placemaking, and foster a greater sense of community.</p> <p>ACTION MOB 1.3.1: Pedestrian and bicycle connections. Ensure precise plans and zoning standards include guidelines for public greenways to create strong pedestrian and bicycle connections, particularly in locations where large blocks are prevalent and vehicular through-connections may not be feasible.</p> <p>ACTION MOB 1.3.2: Development review. Use the development review process to identify and implement pedestrian and bicycle improvements in private development projects and along adjacent street frontages.</p> <p>ACTION MOB 1.3.3: Grade separation policy. Develop grade separation policies for the Caltrain rail and Central Expressway corridor.</p>

Table IV.E-8 *Continued*

Attorney General Strategies	Draft General Plan and GGRP Compliance
	<p>ACTION MOB 1.3.4: Grade separations. Support plans for new grade-separated infrastructure (e.g. bridges, underpasses, etc.) and updates to existing infrastructure consistent with grade separation policies, to reduce conflicts between modes and improve accommodations for non-automotive travel.</p> <p>POLICY MOB 3.1: Pedestrian network. Provide a safe and comfortable pedestrian network.</p> <p>ACTION MOB 3.1.1: Pedestrian Master Plan. Regularly update and implement the goals, policies and actions of the Pedestrian Master Plan.</p> <p>ACTION MOB 3.1.2: Sidewalk database. Maintain a database of missing sidewalk segments, and ensure closure of gaps in the sidewalk network.</p> <p>ACTION MOB 3.1.3: Pedestrian paths. Include publicly-accessible pedestrian paths in major new developments and public facilities, and ensure that they are clearly identified and safe.</p> <p>POLICY MOB 3.2: Pedestrian connections. Increase connectivity through direct and safe pedestrian connections to public amenities, neighborhoods, village centers, and other destinations throughout the City.</p> <p>ACTION MOB 3.2.1: Connections through superblocks. Develop pedestrian improvement standards aimed at breaking down large blocks, where vehicular intersections are not feasible.</p> <p>POLICY MOB 3.3: Pedestrian and bicycle crossings. Enhance pedestrian and bicycle crossings at key locations across physical barriers.</p> <p>ACTION MOB 3.3.1: Key pedestrian crossings. Develop a priority list for enhanced pedestrian and bicycle crossings along key barriers, such as railroad tracks, El Camino Real, Highway 85, Highway 101, Highway 237, Shoreline Boulevard, Grant Road, Middlefield Road, and Central Expressway.</p> <p>ACTION MOB 3.3.2: Pedestrian connections. Identify and prioritize pedestrian access to connect neighborhood cul-de-sacs and connect neighborhoods to the citywide trail system.</p> <p>POLICY MOB 4.1: Bicycle network. Improve facilities and eliminate gaps along the bicycle network to connect destinations across the City.</p> <p>ACTION MOB 4.1.1: Bicycle Transportation Plan. Regularly update and implement a comprehensive Bicycle Transportation Plan, including identification of projects that extend and improve the on-street bike network, and consideration of bicycling mode share targets to achieve a well-utilized network.</p>

Table IV.E-8 *Continued*

Attorney General Strategies	Draft General Plan and GGRP Compliance
	<p>ACTION MOB 4.1.2: Funding. Seek funding and revenue sources to install bicycle network improvements and parking.</p> <p>POLICY MOB 4.2: Planning for bicycles. Use existing planning processes to identify or implement improved bicycle connections and bicycle parking facilities.</p> <p>ACTION MOB 4.2.1: Off-street trails. Maintain and extend the City’s off-street trail network to improve bicycle and pedestrian access, including Stevens Creek, Hetch Hetchy and Permanente Creek Trails.</p> <p>POLICY MOB 4.3: Public bicycle parking. Increase the amount of well-maintained, publicly accessible bicycle parking and storage throughout the City.</p> <p>ACTION MOB 4.3.1: Public bicycle parking. Enhance the availability of convenient and publicly accessible bicycle parking facilities at transit stations and ensure availability on public and private property at key commercial locations such as Downtown.</p> <p>POLICY MOB 4.4: Bicycle parking standards. Maintain bicycle parking standards and guidelines for well-sited bicycle parking and storage in private development to enhance the bicycle network.</p> <p>ACTION MOB 4.4.1: Update bicycle parking requirements. Update the bike parking requirements, including potential standards such as:</p> <ul style="list-style-type: none"> • New requirements based on number of dwelling units and commercial square footage, instead of percentage of car parking spaces. • Updated bike parking standards and guidelines that distinguish requirements for visitor, resident and employee facilities. • Updated standards and siting guidelines for shopping centers and other village centers to significantly improve and increase bicycle access, parking, and safety. <p>ACTION MOB 4.4.2: Bicycle parking innovations. Encourage new and innovative means for complying with bike parking and storage requirements.</p> <p>POLICY MOB 4.5: Promoting safety. Educate bicyclists and motorists on bicycle safety.</p> <p>ACTION MOB 4.5.1: Bicycle education. Provide bicycle education and promotion programs.</p> <p>POLICY MOB 5.1: Transit agencies. Coordinate with local and regional transit agencies, including MTC, VTA, JPB (Caltrain), SamTrans, and the California High-Speed Rail Authority, to improve transportation service, infrastructure and access in the city.</p>

Table IV.E-8 *Continued*

Attorney General Strategies	Draft General Plan and GGRP Compliance
<p>Energy- and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing prioritization, and other implementing tools.</p>	<p>GGRP</p> <p><i>Energy Efficiency</i></p> <ul style="list-style-type: none"> E-1.1 Residential Energy Efficiency Retrofit E-1.2 Non-Residential Energy Efficiency Retrofit E-1.3 Non-Residential Lighting Retrofit E-1.4 Residential Energy Star Appliances E-1.5 Smart Grid E-1.6 Exceed State Energy Standards in New Residential Development E-1.7 Exceed State Energy Standards in New Non-Residential Development E-1.8 Building Shade Trees in Residential Development <p><i>Renewable Energy</i></p> <ul style="list-style-type: none"> E-2.1 Residential Solar Water Heaters E-2.2 Non-Residential Solar Water Heaters E-2.3 Residential Solar Photovoltaic System E-2.4 Non-Residential Solar Photovoltaic System E-2.5 Landfill Gas to Energy <p><i>Municipal Building Energy</i></p> <ul style="list-style-type: none"> E-3.1 Energy Efficiency in Municipal Buildings W-1.1 Urban Water Management Plan Conservation Strategies
<p>Green procurement and alternative fuel vehicle use through municipal mandates and voluntary bid incentives</p>	<p>Draft General Plan</p> <p>POLICY MOB 9.3: Low-emission vehicles. Promote use of fuel-efficient, alternative fuel and low-emissions vehicles.</p> <p>ACTION MOB 9.3.1: Municipal vehicles. Minimize emissions from City-owned and operated vehicles through equipment retrofits, purchasing of more efficient models, changes in operation protocols, or other actions.</p> <p>ACTION MOB 9.3.2: Sustainable infrastructure. Support the installation of innovative, sustainable infrastructure for low-emission vehicles (e.g. electric charging stations, etc.).</p>

Table IV.E-8 *Continued*

Attorney General Strategies	Draft General Plan and GGRP Compliance
Alternative fuel facilities and infrastructure through land use designations, zoning, and public private partnerships.	<p>Draft General Plan</p> <p>POLICY MOB 7.2: Off-street parking. Ensure new off-street parking is efficiently utilized and properly designed.</p> <p>ACTION MOB 7.2.3: Sustainable parking innovation. Use the development review process to encourage building owners and developers of new development and significant rehabilitation or expansion projects to install innovative and sustainable parking amenities (e.g. parking lifts, electric vehicle charging stations, solar canopies, permeable pavement, etc.).</p> <p>POLICY MOB 9.3: Low-emission vehicles. Promote use of fuel-efficient, alternative fuel and low-emissions vehicles.</p> <p>ACTION MOB 9.3.2: Sustainable infrastructure. Support the installation of innovative, sustainable infrastructure for low-emission vehicles (e.g. electric charging stations, etc.).</p> <p>POLICY INC 13.2: Alternatives to gasoline. Promote and increase the use of new technologies as alternatives and supplements to gasoline in vehicles throughout the community.</p> <p>ACTION INC 13.2.1: Electric vehicle charging. Increase the availability of electrical vehicle charging, including the following actions:</p> <ul style="list-style-type: none"> • Install charging stations at City facilities as feasible • Work with local and regional groups to site charging stations at optimal locations • Develop requirements and standards for electric charging stations in new development.
Renewable energy generation (utility and residential) through feasibility evaluations, land use designations, zoning, permit streamlining, incentives and financing.	<p>GGRP</p> <p><i>Renewable Energy</i></p> <ul style="list-style-type: none"> E-2.1 Residential Solar Water Heaters E-2.2 Non-Residential Solar Water Heaters E-2.3 Residential Solar Photovoltaic System E-2.4 Non-Residential Solar Photovoltaic System E-2.5 Landfill Gas to Energy
Water diversion, recycling, water efficiency, energy efficiency and energy recovery in cooperation with public services districts and private entities.	<p>GGRP</p> <p><i>Water Strategy</i></p> <ul style="list-style-type: none"> W-1.1 Urban Water Management Plan Conservation Strategies
Urban and rural forestry through tree planting requirements and programs; preservation of agricultural land and resources that sequester carbon; heat island reduction programs.	<p>GGRP</p> <p><i>Carbon Sequestration Strategy</i></p> <ul style="list-style-type: none"> CS-1.1 Enhance the Urban Forest

Table IV.E-8 Continued

Attorney General Strategies	Draft General Plan and GGRP Compliance
Regional cooperation to find cross-regional efficiencies in GHG reduction investments and to plan for regional transit, energy generation, and waste recovery facilities.	<p>Draft General Plan</p> <p>POLICY INC 20.2: Collaboration. Participate in state and regional planning efforts to improve air quality.</p>
Community outreach and education to foster community involvement, input, and support for GHG reduction planning and implementation.	<p>Draft General Plan</p> <p>POLICY MOB 9.1: Greenhouse gas emissions. Develop cost-effective strategies for reducing greenhouse gas emissions, in coordination with the Greenhouse Gas Reduction Plan.</p> <p>ACTION MOB 9.1.1: Greenhouse Gas Inventory. Maintain and regularly update the City’s municipal and community Greenhouse Gas Inventory to track emissions.</p> <p>ACTION MOB 9.1.2: Greenhouse Gas Reduction Plan. Regularly update the Greenhouse Gas Reduction Plan to address transportation emissions reductions.</p>

^a Appendix A of this Draft EIR contains the full text of all Draft General Plan policies and actions and GGRP measures.

Source: AGO, 210, *Sustainability and General Plans: Examples of Policies to Address Climate Change*; City of Mountain View, 2011; LSA Associates, Inc., 2011.

c. Cumulative Impacts of the Draft General Plan and GGRP. Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. It is now widely recognized that anthropogenic (human-caused) emissions of greenhouse gases and aerosols are contributing to changes in the global climate, and that such changes (e.g., sea level rise, increase in the occurrence and intensity of wildfires, etc.) are having, and will have adverse effects on the environment, the economy, and public health. These are cumulative effects of past, present, and future actions worldwide. While worldwide contributions of greenhouse gases are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to greenhouse gases emitted from a particular source or location.

When considering a project’s contribution to impacts from climate change, it is possible to examine the quantity of greenhouse gases that would be emitted either directly from project sources or indirectly from other sources, such as production of electricity. However, that quantity cannot be tied to a particular adverse effect on the environment of California or elsewhere associated with climate change. Rather, climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in global GHGs and (b) global growth is continuing to contribute large amounts of GHGs across the world. As such, the above analysis section addresses climate change primarily as a cumulative impact. Because no significant project level impacts were identified for GHG emissions, the project would also not make a cumulatively considerable contribution to substantial adverse physical effects on the environment related to global climate change.

As discussed previously, the GGRP has been prepared as a qualified GHG Reduction Strategy under the standards established by the BAAQMD. The GGRP is consistent with the goals of AB 32 and

meets all of the standards consistent with the requirements of qualified GHG Reduction Strategies. Therefore, consistent with State CEQA Guidelines, all future projects that are consistent with the adopted GGRP and Draft General Plan, would be presumed to have a less than significant impact related to GHG emissions.

This page intentionally left blank.