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INTEGRATED FINAL
ENVIRONMENTAL IMPACT REPORT

CITY OF SANTA CLARA
DRAFT 2010-2035 GENERAL PLAN

VOLUME I EIR TEXT

City of Santa Clara

January 2011

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INTRODUCTION TO THE INTEGRATED FINAL EIR

This Integrated Final EIR document is a compilation of documents prepared individually and previously made available to the public. A First Amendment Final EIR, including text revisions and responses to comments, was prepared prior to the certification of the EIR. The First Amendment Final EIR, together with the Draft EIR, constitutes the Integrated Final EIR for the City of Santa Clara 2010-2035 General Plan project. This Integrated Final EIR document integrates these two documents, but changes neither of them (apart from minor formatting and page numbering).

This Integrated EIR consists of the text of the Draft EIR, the supporting technical report appendices, the Notice of Preparation (NOP) of the Draft EIR, responses to the NOP, and the First Amendment Final EIR. This Integrated Final EIR also includes comments received on the First Amendment Final EIR and correspondence leading up to the City Council resolution certifying the EIR.

On November 16, 2010 the City Council approved the 2010-2035 General Plan and adopted Resolution No. 10-7797 identifying the project's significant unavoidable impacts, pursuant to CEQA Guidelines Section 15091, and adopted a statement of overriding considerations, pursuant to CEQA Guidelines Section 15093, identifying how the project's benefits outweighed the identified significant impacts. Resolution No. 10-7797 is included in this Integrated Final EIR.

The Draft EIR was circulated to affected public agencies and interested parties for a 45-day review period. The First Amendment Final EIR (Appendix M) consists of comments received by the Lead Agency on the Draft EIR, responses to those comments, and revisions to the text of the Draft EIR. The text revisions identified in the First Amendment Final EIR have been incorporated into the text of this Integrated Final EIR.

All documents referenced in this Integrated Final EIR are available for public review in the office of the Department of Planning and Inspection, 1500 Warburton Avenue, Santa Clara, CA, on weekdays during normal business hours.

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RESOLUTION NO. 10-7797

**A RESOLUTION OF THE CITY OF SANTA CLARA,
CALIFORNIA, CERTIFYING THE FINAL
ENVIRONMENTAL IMPACT REPORT FOR THE 2010 –
2035 GENERAL PLAN OF THE CITY OF SANTA CLARA,
INCLUDING THE ADOPTION OF A STATEMENT OF
OVERRIDING CONSIDERATIONS IN ACCORDANCE
WITH THE CALIFORNIA ENVIRONMENTAL QUALITY
ACT.**

SCH# 2008092005
CEQ2008-01070 (EIR)
PLN2008-07267 (2010 – 2035 General Plan Update)

BE IT RESOLVED BY THE CITY OF SANTA CLARA AS FOLLOWS:

WHEREAS, the City of Santa Clara (the "City") has submitted to the City Council the proposed 2010 – 2035 General Plan (the "Plan"), which has a planning horizon through 2035 and includes goals and policies for land use, community design, circulation, housing, public facilities, open space, recreation, conservation, noise, seismic and safety, sustainability, and historic preservation. The "Project" includes the Plan, the 2009 – 2014 Housing Element, specific General Plan land use designation and map amendments to sites throughout the City, which modifies each site's General Plan land use designation to reflect the existing land use on that site, and amendments to the Bayshore North Redevelopment Area Plan and the University Project Area Redevelopment Plan which change the text from identifying property-by-property land uses to text that incorporates the adopted General Plan for those properties within the Redevelopment Project Area in order to maintain conformance with the City's General Plan, as amended;

WHEREAS, the Project approvals will include this California Environmental Quality Act ("CEQA") Resolution; Resolution No. 10-7798 ("Housing Element Resolution"); Resolution No. 10-7799 ("ALUC Override Resolution"); Resolution No. 10-7800 ("General Plan Amendment Resolution"); Resolution No. 10-17 (RA) ("Bayshore North Redevelopment Plan Amendment

Resolution”); and Resolution No. 10-18 (RA) (“University Project Area Redevelopment Plan Amendment Resolution”), collectively the “Approvals”;

WHEREAS, on August 26, 2008, the City distributed a Notice of Preparation of a Draft Environmental Impact Report (“DEIR”) and on August 26, 2008 posted the Notice at the Santa Clara County Clerk’s Office, soliciting guidance on the scope and content of the environmental information to be included in the DEIR;

WHEREAS, the City held an Environmental Impact Report (“EIR”) scoping meeting on September 17, 2008 to provide information about the Plan, the potential environmental impacts and the California Environmental Quality Act (“CEQA”) review process, as well as a schedule for the Plan adoption and implementation. Members of the public and other interested parties had the opportunity to ask questions and express their concerns and issues regarding the environmental issues surrounding the Project and the EIR process;

WHEREAS, the DEIR was prepared and the City circulated copies of the DEIR to public agencies which have jurisdiction by law with respect to the Project, as well as to other interested persons and agencies, and the City solicited comments of such persons and agencies for forty-five (45) days, beginning on July 12, 2010 and concluding on August 25, 2010 (“Comment Period”);

WHEREAS, the City prepared written responses to the eight comment letters received during the Comment Period and included these responses in a Final Environmental Impact Report (“FEIR”). The FEIR consists of a list of agencies and organizations to whom the DEIR was sent, a list of the comment letters received on the DEIR, revisions to the DEIR, responses to comments received on the DEIR, copies of comment letters, and the DEIR. The FEIR was

subsequently circulated for a 10-day review period, beginning on September 30, 2010 and concluding on October 12, 2010;

WHEREAS, the City Council has reviewed the FEIR prepared for the Project, the City Staff reports pertaining to the FEIR and all evidence received at a duly noticed public hearing on November 16, 2010. All of these documents and evidence are herein incorporated by reference into this Resolution;

WHEREAS, the FEIR identified certain significant adverse effects on the environment that would be caused by the Project as proposed;

WHEREAS, the FEIR outlined various mitigation measures that would substantially lessen or avoid the Project's significant effects on the environment, as well as alternatives to the Project as proposed that would provide some environmental advantages;

WHEREAS, the City is required whenever possible, pursuant to CEQA (Public Resources Code § 21000 et seq.), to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant environmental effects of the Project;

WHEREAS, Public Resources Code § 21081, subdivision (a) requires a lead agency, before approving a project for which an EIR has been prepared and certified, to adopt findings specifying whether mitigation measures and, in some instances, alternatives discussed in the EIR, have been adopted or rejected as infeasible;

WHEREAS, the Findings of Fact and Statement of Overriding Considerations (Exhibit "Findings-SOC") prepared in order to satisfy the requirements of Public Resources Code § 21081, subdivision (a) is attached and incorporated into this Resolution;

WHEREAS, the Findings of Fact and Statement of Overriding Considerations, in concert with the advice of City staff, Planning Commission, and input from various state and local agencies, provide the basis for the City Council's intention to approve the proposed Project;

WHEREAS, in taking this course, the City Council has acted consistent with the CEQA mandate to look at project mitigations and/or alternatives as a means of substantially lessening or avoiding the environmental effects of the project as proposed;

WHEREAS, many of the significant environmental effects associated with the Project, as recommended, can either be substantially lessened or avoided through the inclusion of mitigation measures proposed in the FEIR;

WHEREAS, the City Council, in reviewing the Project as proposed, intends to recommend the City Council adopt all feasible mitigation measures set forth in the FEIR;

WHEREAS, the significant effects that cannot be avoided or substantially lessened by the adoption of feasible mitigation measures will necessarily remain significant and unavoidable;

WHEREAS, the City Council has determined, for the reasons set forth in the Findings of Fact and Statement of Overriding Considerations, that as a result of specific economic, legal, and social considerations, none of the alternatives addressed in the FEIR would be both feasible and environmentally superior to the Project as proposed;

WHEREAS, Public Resources Code § 21081, subdivision (b) and CEQA Guidelines § 15093 require the City Council to adopt a Statement of Overriding Considerations before approving a project with significant unavoidable environmental effects;

WHEREAS, The City Council has determined that, despite the occurrence of significant unavoidable environmental effects associated with the Project, as mitigated, there exist certain

overriding economic, social and other considerations for approving the Project which justify the occurrence of those impacts and render them acceptable; and,

WHEREAS, Exhibit "Findings-SOC", attached hereto, contains CEQA Findings and a Statement of Overriding Considerations specifying the economic, social and other benefits that render acceptable the significant unavoidable environmental effect associated with the mitigated Project.

NOW THEREFORE, BE IT FURTHER RESOLVED BY THE CITY OF SANTA CLARA AS FOLLOWS:

1. That the City Council hereby finds that the above Recitals are true and correct and by this reference makes them a part hereof.
2. That the City Council hereby finds that the FEIR has been completed in compliance with CEQA.
3. That the City Council hereby finds that the Council has reviewed the FEIR, that the Council considered the information and analysis contained therein, and that the FEIR reflects the Council's independent judgment and analysis as required by CEQA Guidelines 15090(a)(3).
4. That the City Council finds, pursuant to Public Resources Code Section 21081 and Californian Code of Regulations, Title 14, Section 15091, that many of the proposed mitigation measures described in the EIR are feasible, and therefore will become binding upon the City and affected landowners and their assigns or successors in interest when the Project is approved.
5. That the City Council finds that none of the project alternatives set forth in the FEIR can feasibly substantially lessen or avoid those significant adverse environmental effects not otherwise lessened or avoided by the adoption of all feasible mitigation measures.


6. That pursuant to CEQA Guidelines § 15097 (b), the City will comply with its mitigation monitoring and reporting obligations through the issuance of an annual status report on the General Plan, as required by Government Code § 65400.
7. That the City Council finds that the FEIR sets forth project-level and cumulative environmental impacts that are significant and unavoidable that cannot be mitigated or avoided through the adoption of feasible mitigation measures or feasible alternatives. As to those impacts, the City Council will adopt the Finding of Fact and Statement of Overriding consideration in the attached Exhibit "Findings-SOC" which make the findings that there exist certain overriding economic, social and other considerations for approving the Project that the City Council believes justify the occurrence of those impacts.
8. Based on the findings set forth in this Resolution and the evidence in the City Staff Report, the City Council approves and certifies the FEIR, and adopts the Statement of Overriding Considerations, which include findings that there exist certain overriding economic, social and other considerations for approving the Project that justify the occurrence of those Project impacts, all in accordance with CEQA.
9. Constitutionality, severability. If any section, subsection, sentence, clause, phrase, or word of this resolution is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of the resolution. The City of Santa Clara, California, hereby declares that it would have passed this resolution and each section, subsection, sentence, clause, phrase, and word thereof, irrespective of the fact that any one or more section(s), subsection(s), sentence(s), clause(s), phrase(s), or word(s) be declared invalid.

10. Effective date. This resolution shall become effective immediately.

I HEREBY CERTIFY THE FOREGOING TO BE A TRUE COPY OF A RESOLUTION PASSED AND ADOPTED BY THE CITY OF SANTA CLARA, CALIFORNIA, AT A SPECIAL MEETING THEREOF HELD ON THE 16th DAY OF NOVEMBER, 2010, BY THE FOLLOWING VOTE:

AYES:	COUNCILORS:	Kennedy, Kornder, Matthews, McLeod and Moore and Mayor Mahan
NOES:	COUNCILORS:	None
ABSENT:	COUNCILORS:	Caserta
ABSTAINED:	COUNCILORS:	None

ATTEST:



ROD DIRIDON, JR.
CITY CLERK
CITY OF SANTA CLARA

Attachments incorporated by reference:
1. Exhibit "Findings-SOC"

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EXHIBIT “FINDINGS-SOC”

FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS

The California Environmental Quality Act (“CEQA”) requires the City to balance the benefits of the proposed 2010 – 2035 General Plan (“Project”) against its significant unavoidable environmental effects in determining whether to approve the Project. Since the Environmental Impact Report (“EIR”) identifies project-level and cumulative significant impacts of the Project that cannot feasibly be mitigated below a level of significance, the City must state in writing its specific reasons for approving the Project in a “statement of overriding considerations” pursuant to Sections 15043 and 15093 of the CEQA Guidelines.

In making the statement of overriding considerations, “CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered ‘acceptable’.” (CEQA Guidelines, Section 15093(a).)

Project Goals and Objectives

The stated objectives of the proposed 2010 – 2035 General Plan are provided below:

- Preserve the City’s small-town feel, particularly by maintaining the character and quality of the city’s residential neighborhoods;
- Add opportunities for a mix of residential and commercial uses throughout the City in places with access to existing and future transit;
- Revitalize a landmark Downtown;
- Improve the visual and physical character of the City’s commercial corridors;
- Enhance walkability and bicycle circulation throughout the City;
- Reduce traffic congestion and promote expansion of the public transportation system;
- Diversify industrial and business uses and intensify the employment base;
- Provide neighborhood commercial centers;
- Continue high quality public services and amenities, including open space and parks; and
- Encourage sustainability to project energy, water supplies, and air quality.

These objectives are in conformance with the 2010 – 2035 General Plan Major Strategies which are the overarching principles of the Project, which were defined during the community planning process. Each Major Strategy defines a distinct priority, such as economic vitality or sustainability, as summarized below:

1. Enhance the City’s High Quality of Life – Ensure that existing and new neighborhoods have access to a full complement of services and other amenities for everyday living.

2. Preserve and Cultivate Neighborhoods – Ensure that the character of existing neighborhoods is preserved and new development fits into each neighborhood’s scale and context through careful transition policies.
3. Promote Sustainability – conserve resources through use of sustainable land use and design policies and measures for new and existing development.
4. Enhance City Identity – Improve the identity and visual character of the City, emphasizing urban design to shape the character and appearance of major corridors and focus development areas.
5. Support Focus Areas and Community Vitality – Encourage improvements to the design and quality of development along El Camino Real, Stevens Creek Boulevard, San Tomas Expressway, Bowers Avenue and Santa Clara’s Downtown, with a greater mix of land uses at activity centers, in conjunction with improved commercial and streetscape design.
6. Maintain the City’s Fiscal Health and Quality Services – Encourage a mix of uses to ensure that sufficient revenues are generated to cover the cost of service needs.
7. Maximize Health and Safety Benefits – Emphasize public safety in urban design and transportation policies through improved visibility, pedestrian-oriented building design, and lighting and infrastructure in order to promote safe walking, bicycling, and driving.

Environmental Impact Analysis

The FEIR has identified the following significant effects on the environment to be caused by the Project:

I. Public Utilities

- I.A1. Impact: Future pumping by the City of Santa Clara, in combination with the multiple other users of the Santa Clara Sub-Basin, would not be expected to contribute to cumulative groundwater pumping impacts, i.e., withdrawals above the basin’s safe yield, given the Water District’s reasonably foreseeable recharge and groundwater management programs. However, should the District’s recharge program be affected by reduced availability of imported water, there is the potential for future cumulative groundwater basin demand to exceed the aquifer’s safe yield. (Significant Impact)
- I.A2. Mitigation: To prevent a cumulatively considerable contribution to a potential future overdraft of the Santa Clara Sub-Basin, the City shall update the forecast groundwater pumping supply quantities every five years with each Urban Water Management Plan (“UWMP”) to align water supply availability with the water demand associated with each General Plan Phase. Future Santa Clara UWMPs will be coordinated with the Water District and implement alternative sources (i.e. recycled water and increased conservation) if cumulative groundwater pumping, based on all water retailer UWMPs, would exceed the Santa Clara Sub-Basin safe yield. With implementation of this program mitigation measure, potential future impacts associated with

supplying future development envisioned by the General Plan would be reduced to a less than significant level. (Less than Significant Impact with Mitigation)

- I.A3. Finding: Consistency with the above mentioned mitigation measure will reduce potential cumulative impact on the groundwater supply to a less than significant level.
- I.B1. Impact: Development allowed under the proposed Draft 2010 – 2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs through 2024. The City has no specific plan for disposing of solid waste beyond 2024, but will undertake a process to identify a solution prior to 2024. (Significant Impact)
- I.B2. Mitigation: There are no feasible measures to reduce this impact, unless the City identifies a specific plan for disposing of its solid waste beyond 2024. An expansion of the Newby Island landfill is being evaluated. The City also owns property outside its jurisdiction that could potentially provide this service. In addition, Prerequisite Policy 5.1.1-P22 requires the re-evaluation of landfill capacity. This assessment could also examine the City's progress on attaining recycling goals in order to evaluate whether there is a continuing long-term need for solid waste capacity. (Significant and Unavoidable Impact)
- I.B3. Finding: Because there is no feasible mitigation measure to reduce this impact, this impact would be significant and unavoidable.

II. Biological Resources

- II.A1. Impact: Over the course of the General Plan's 25 year horizon, the Congdon's tarplant could become established at any time on a vacant parcel containing ruderal grasslands. Therefore, future development of vacant parcels containing ruderal grasslands has the potential to impact the Congdon's tarplant, should the tarplant be present at the time of development. (Significant Impact)
- II.A2. Mitigation: On parcels with ruderal grasslands, surveys will be conducted prior to future development to document the presence/absence of Congdon's tarplant. In the event the species is present, the project design will incorporate adequate buffers, as determined by a qualified biologist, to ensure the Congdon's tarplant is not threatened by development. (Less than Significant Impact with Mitigation)
- II.A3. Finding: The impact of future development on Congdon's tarplant will be reduced to a less than significant level by implementation of presence/absence surveys and review of project design with adequate buffers to protect the plant species.

II.B1. Impact: Although there are no known Western Burrowing Owl (“WBO”) nesting sites in the City that would be affected by future development under the 2010 – 2035 General Plan, WBOs have been found throughout the general area, i.e. Mission College and the Mineta International Airport. Over the course of the General Plan’s 25 year implementation horizon, the WBO could become established (i.e. forage and/or breed) at any time on a vacant parcel containing ruderal grasslands. Development of vacant parcels could result in impacts to individual burrowing owls if owls moved onto the site prior to project construction. If owls are using active nests when construction activity commences, grading of the site could result in destruction of nests and individual owls. (Significant Impact)

II.B2. Mitigation: Future development on parcels with ruderal grasslands will include the standard measures identified in DEIR Section 4.9 Biological Resources to reduce WBO impacts to a less than significant level. (Less than Significant Impact with Mitigation)

Policy 5.10.1-P1: Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.

Policy 5.10.1-P2: Work with Santa Clara Valley Water District and require that new development follow the “Guidelines and Standards for Lands Near Streams” to protect streams and riparian habitats.

Policy 5.10.1-P3: Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.

Policy 5.10.1-P4: Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way.

II.B3. Finding: Consistency with the above described mitigation measures will reduce significant biological impacts to less than a significant level.

III. Air Quality

III.A1. Impact: Implementation of the proposed Draft 2010 – 2035 General Plan may involve the placement of new residences and/or sensitive receptors near localized sources of Toxic Air Contaminants (“TACs”). The March 2010 Public Review Draft 2010 – 2035 General Plan did not provide adequate buffers between existing sources of TAC and new residences and/or sensitive receptors. (Significant Impact)

- III.A2. Mitigation: The following policies have been added to the Prerequisite Section of the July Public Hearing Draft 2010 – 2035 General Plan. (Less than Significant Impact with Mitigation)

Policy 5.1.1-P25: Prior to the implementation of Phase II, the City will include a Community Risk Reduction Plan (“CRRP”), for acceptable Toxic Air Contaminant (“TAC”) concentrations, consistent with the Bay Area Air Quality Management District (“BAAQMD”) CEQA Guidelines, including risk and exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participation process.

Policy 5.10.5-P34: Implement minimum setbacks of 500 feet from roadways with average daily trips of 100,000 or more and 100 feet from railroad tracks for new residential or other uses with sensitive receptors, unless a project-specific study identifies measures, such as site design, tiered landscaping, air filtration systems, and window design, to reduce exposure, demonstrating that the potential risks can be reduced to acceptable levels.

- III.A3. Finding: Consistency with the above described mitigation measures will reduce significant air quality impacts to less than a significant level.

- III.B1. Impact: Implementation of the proposed Draft 2010 – 2035 General Plan may involve the placement of new residential and other uses with sensitive receptors near localized sources of odors. The March 2010 Public Review Draft 2010 – 2035 General Plan did not provide adequate buffers between sources of odors and new residences or sensitive receptors. (Significant Impact)

- III.B2. Mitigation: The following policy has been added to the Safety Section of the July Public Hearing Draft 2010 – 2035 General Plan.

Policy 5.10.5-P35: Establish minimum buffers between odor sources and new residential or other uses with sensitive receptors, consistent with BAAQMD guidelines, unless a project-specific study demonstrates that these risks can be reduced to acceptable levels.

- III.B3. Finding: Consistency with the above described mitigation measure will reduce significant air quality impacts to less than a significant level.

IV. Transportation and Traffic

- IV.A1. Impact: Operating levels of City roadway segments degrade beyond the current City Level of Service standard with the addition of General Plan growth. (Significant Impact)

- IV.A2. Mitigation: Future development would generate substantial additional traffic volumes that would cause congestion along certain roadway segments within the City for which no feasible mitigation exists. Additional roadway widening projects are not being considered to mitigate roadway operational impacts due to the costs of acquiring additional right-of-way, the costs of the improvements, and physical constraints. (Significant and Unavoidable Impact)
- IV.A3. Finding: Implementation of the proposed 2010 – 2035 General Plan will result in the degrading of the operating levels of City roadway segments beyond the current City Level of Service standard, which is a significant unavoidable impact.
- IV.B1. Impact: Operating levels of County CMP roadway segments degrade beyond the current County CMP Levels of Service standard with the addition of General Plan growth under the 2010 – 2035 General Plan. (Significant Impact)
- IV.B2. Mitigation: Refer to IV.A2. (Significant and Unavoidable Impact)
- IV.B3. Finding: Implementation of the proposed 2010 – 2035 General Plan will result in the degrading of the operating levels of County CMP roadway segments beyond the current County CMP Levels of Service standard, which is a significant unavoidable impact.
- IV.C1. Impact: Operating levels of Caltrans roadway and freeway segments degrade beyond the current CMP Level of Service standard with the addition of General Plan growth under the proposed Draft 2010 – 2035 General Plan. (Significant Impact)
- IV.C2. Mitigation: Refer to IV.A2. (Significant and Unavoidable Impact)
- IV.C3. Finding: Implementation of the proposed 2010 – 2035 General Plan will result in the degrading of the operating levels of Caltrans roadway and freeway segments beyond the current CMP Level of Service standard, which is a significant unavoidable impact.
- IV.D1. Impact: Substantial increases in levels of traffic congestion, as measured by the percentage of congested lane miles, with the proposed Draft 2010 – 2035 General Plan will occur in one of the four geographic zones. (Significant Impact)
- IV.D2. Mitigation: To adopt the transportation-related proposed Draft 2010-2035 General Plan policies. Although these policies may improve vehicular operations, they would not improve levels of service sufficiently along the affected roadway segments. (Significant and Unavoidable Impact)

- IV.D3. Finding: Implementation of the proposed 2010 – 2035 General Plan will have substantial increases in levels of traffic congestion in one of the four geographic zones, which is a significant unavoidable impact.
- IV.E1. Impact: Increased motor vehicle traffic and increased congestion with the proposed Draft 2010 – 2035 General Plan would result in increased transit travel times on transit corridors. (Significant Impact)
- IV.E2. Mitigation: The following policy is in the Transit Network Section of the July Public Hearing Draft 2010 – 2035 General Plan.
- Policy 5.8.3-P3: Support transit priority for designated Bus Rapid Transit, or similar transit service, through traffic signal priority, bus queue jump lanes, exclusive transit lanes and other appropriate techniques.
- However, there are no feasible measures to reduce this impact. As discussed in the FEIR, because the feasibility of transit-only lanes would be evaluated in more detailed studies and the effect of these policies is not fully known, including potential secondary impacts, the impact is considered significant and unavoidable. (Significant and Unavoidable Impact)
- IV.E3. Finding: Implementation of the proposed 2010 – 2035 General Plan will result in increased motor vehicle traffic, congestion and transit travel times on transit corridors, which is a significant unavoidable impact.
- IV.F1. Impact: Motor vehicle traffic and congestion due to the proposed Draft 2010 – 2035 General Plan would increase on roadway segments in other jurisdictions. (Significant Impact)
- IV.F2. Mitigation: Improvements to roadway segments outside the City are not guaranteed and no vehicular capacity enhancing improvements on roadway segments outside of the City are part of the study. (Significant and Unavoidable Impact)
- IV.F3. Finding: Implementation of the proposed 2010 – 2035 General Plan will increase traffic and congestion in other jurisdictions, which is a significant and unavoidable impact.
- IV.G1. Impact: Increased motor vehicle traffic and increased congestion with the General Plan would result in increased emergency response times. (Significant Impact)
- IV.G2. Mitigation: Based on increased congestion and decreased travel speeds on the roadway segments identified above, measures to maintain emergency response times may include redistributing service station boundaries and implementing traffic signal pre-emption for emergency vehicles. Prior to the

implementation of Phase II and III of the 2010 – 2035 General Plan, General Plan Policy 5.1.1-P5 requires an evaluation of appropriate measures to maintain emergency response time standards. (Less than Significant Impact with Mitigation)

- IV.G3. Finding: Consistency with the above described mitigation measure will reduce significant emergency response impacts to less than a significant level.

V. Noise

- V.A1. Impact: New development and redevelopment under the proposed Draft 2010 – 2035 General Plan could expose people to excessive ground vibration levels exceeding Federal Transit Administration (“FTA”) guidelines. (Significant Impact)

- V.A2. Mitigation: Use the FTA vibration impact criteria, as described in the FEIR, to evaluate the land use compatibility of sensitive uses proposed along the railroad/light-rail corridor using the best available information (e.g., High Speed Rail Program EIR) or site-specific measurements and analyses (assuming active railroad operations). Developers of sensitive uses shall demonstrate that potential impacts of existing or potential vibration have been minimized to the maximum feasible extent. (Less than Significant Impact with Mitigation)

- V.A3. Finding: Consistency with the above described mitigation measure will reduce significant vibration impacts to less than a significant level.

- V.B1. Impact: New development and redevelopment under the proposed Draft 2010 – 2035 General Plan would result in increased traffic noise, and in some cases, the increases would be substantial. (Significant Impact)

- V.B2. Mitigation: Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along local roadways by 2 to 3 dBA CNEL. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions, and future traffic noise increases could be mitigated to a less than significant level by repaving roadways with “quieter pavements.” To be a permanent mitigation, subsequent repaving would also have to use “quieter” pavements.”

Existing private residential outdoor use areas located along Tasman Drive between Lafayette Street and the easternmost City limits, may be adjacent to the roadway and may not be shielded by fences or noise barriers. In situations where private outdoor use areas are located adjacent to the roadway, new or larger noise barriers could be constructed to provide the additional necessary noise attenuation in private use areas. Typically, increasing height for an

existing barrier results in approximately one dBA of attenuation per one foot of additional barrier height. The design of such noise barriers would require additional analysis. Traffic calming could also be implemented to reduce expected noise levels. Each five mph reduction in average speed provides approximately one dBA of noise reduction on an average basis (Leq/CNEL). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Residences could also be provided with sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA CNEL as a result of the projected increase in traffic noise. Treatments to homes may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.

Each of these mitigation measures involves other non-acoustical considerations that could affect the City's implementation ability. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. Therefore, implementation of these measures cannot be guaranteed and this impact is considered significant and unavoidable. (Significant and Unavoidable Impact)

- V.A3. Finding: Implementation of the proposed 2010 – 2035 General Plan will increase traffic noise, and in some cases for properties located along Tasman Drive between Lafayette Street and the easternmost City limits, the increases would be a significant unavoidable impact.
- V.B1. Impact: New development and redevelopment under the proposed Draft 2010 – 2035 General Plan would cause a temporary or periodic increase in construction noise exposure above ambient levels. (Significant Impact)
- V.B2. Mitigation: Develop construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:
- Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;
 - Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
 - Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;

- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Notify all adjacent land uses of the construction schedule in writing;
- Designate a ‘disturbance coordinator’ who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

The potential short-term noise impacts associated with construction facilitated by the proposed Draft 2010 – 2035 General Plan would be mitigated by the implementation of the above measures that require reasonable noise reduction measures be incorporated into the construction plan and implemented during all phases of construction activity to minimize the exposure of neighborhood properties. (Less than Significant Impact with Mitigation)

- V.B3. Finding: Consistency with the above described mitigation measure will reduce significant short-term noise impacts to less than a significant level.

VI. Climate Change

- VI.A1. Impact: The City’s projected 2020 Greenhouse Gas Emissions (“GHG”), without further reduction via a Climate Action Plan, would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to meet statewide 2020 goals as established by AB 32. (Significant Impact)
- VI.A2. Mitigation: Through its General Plan policies, the City is committed to the preparation, adoption and implementation of a comprehensive GHG emissions reduction strategy (Climate Action Plan or “CAP”) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32. The CAP will specify the strategies, measures, and actions to be taken for each inventory sector (transportation, electricity, solid waste, water, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met. Therefore, with implementation of the CAP mitigation strategy included in the General Plan, the City’s future contribution to climate change will be less than cumulatively considerable for 2020 GHG emissions. (Less than Significant Impact with Mitigation)
- VI.A3. Finding: Consistency with the above described mitigation measure will reduce significant GHG emissions impacts to less than a significant level.

- VI.B1. Impact: The City's projected 2035 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by EO S-3-05. (Significant Impact)
- VI.B2. Mitigation: The proposed Draft General Plan includes numerous policies that would serve to reduce future GHG emissions. (Significant and Unavoidable Impact)
- VI.B3. Finding: Implementation of the proposed 2010 – 2035 General Plan will result in GHG emissions in 2035 that are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 State climate change reduction goals, which is a significant unavoidable impact.

VII. Cumulative Impacts

VII.A. Cumulative Land Use, Population and Housing Impact

- VII.A.1. Impact: Build-out of the Draft General Plan in conjunction with other planned development would contribute cumulatively to population and housing impacts arising from a regional jobs-housing imbalance. (Significant Impact)
- VII.A.2. Mitigation: The City of Santa Clara would contribute to the cumulative imbalance in 2035 by adding 39,490 residents (yielding 23,694 employed residents) and 46,180 jobs, for a jobs per employed resident ratio of 1.95. This is a cumulatively considerable contribution to a significant cumulative impact. (Significant and Unavoidable Impact)
- VII.A.3. Finding: Implementation of the Draft General Plan in conjunction with other planned development would contribute cumulatively to population and housing impacts which is a significant unavoidable impact.

VII.B. Cumulative Transportation and Traffic Impact

- VII.B.1. Impact: Build-out of the Draft General Plan in conjunction with other planned development would contribute cumulatively to regional transportation impacts. (Significant Impact)
- VII.B.2. Mitigation: Regional roadways and highways would experience levels of service in excess of those identified by responsible agencies, for which no feasible mitigation exists. (Significant and Unavoidable Impact)
- VII.B.3. Finding: Implementation of the Draft General Plan in conjunction with other planned development would contribute cumulatively to traffic impacts, which is a significant unavoidable impact.

VIII. Findings Concerning Alternatives

CEQA also requires that an EIR identify alternatives to the project as proposed and that these alternatives feasibly attain most of the basic objectives of the project while avoiding or substantially lessening any of the significant effects of the project. The FEIR considered two alternatives focused on reducing or eliminating significant impacts:

- No Project Alternative – Existing General Plan (CEQA-mandated alternative);
- Reduced Development Alternative – Balanced General Plan Growth Jobs/Housing Alternative

The City has examined the alternatives to the Project, as more fully documented in the EIR. Based on this examination, the City has determined that (1) there are numerous tradeoffs in impacts associated with the various alternatives, (2) the alternatives would result in varying degrees of achieving the Project goals and objectives, (3) the No Project alternative is the environmentally superior alternative, and (4) because the No Project cannot be selected, the “Reduced Development Alternative - Balanced General Plan Growth Jobs/Housing” becomes the environmentally superior alternative; however, this alternative reduces job growth which could result in reduced revenue stream for public services and lead to fiscal challenges for the City and a reduction in the service levels identified in the 2010 – 2035 General Plan and stated as a community objective.

VIII.A. No Project Alternative

- VIII.A.1. Description: This alternative consists of the remaining development potential associated with the current 2000-2010 General Plan, all residential and non-residential development currently in the pipeline (identified in the proposed 2010 – 2035 General Plan Appendix 8.6, Table 5.2-1 Column B & C), and the draft 2009-2014 Housing Element (2010 – 2035 General Plan Appendix 8.12). The Future Focus Areas north of the Caltrain tracks would remain industrial and commercial and would not be developed for mixed use or transit-oriented development.
- VIII.A.2. Comparison to Project: As indicated in the FEIR, the “No Project Alternative” would accommodate less job and housing growth and is less efficient than the Project in terms of increased Vehicle Miles Traveled (“VMT”) and GHG emissions per service population.
- VIII.A.3. Finding: This alternative would not achieve the underlying objective and purpose of this proposed project, which is a comprehensive update of the City’s General Plan and would not accommodate Association of Bay Area Governments (“ABAG”) projected job and population growth for 2035.

VIII.B. Reduced Development Alternative – Balanced General Plan Growth Jobs/Housing

- VIII.B.1. Description: This alternative accommodates ABAG projected housing growth, but reduces net new jobs to equal the anticipated number of employed residents associated with the projected population increase (32,400 net new residents and 19,440 net new jobs). There is an overall reduction in the number of planned jobs (5,600 jobs), and therefore an incremental reduction in the intensity of proposed new non-residential development.
- VIII.B.2. Comparison to Project: While this alternative is environmentally superior to the proposed 2010 – 2035 General Plan, the VMT and GHG emissions per service population is no more efficient than the Project. The reduced job growth under this Alternative could result in reduced investment in the City and a reduced revenue stream for the City which would then negatively impact the City's ability to provide public services consistent with the community's stated objectives and the seven General Plan Major Strategies. Since local jurisdictions are constrained on raising revenues, prominently based on Proposition 13, the City is reliant on revenue generated from job growth, employment and new development. There are no changes in the foreseeable future to these fiscal constraints that would enable the City to better balance public resources, increase property taxes or share revenue with other local jurisdictions. In addition, the displacement of ABAG projected jobs for Santa Clara could result in those jobs locating in adjacent and neighboring jurisdictions, thereby increasing environmental impacts in relation to traffic, air quality, noise and climate change outside the City's boundaries.
- VIII.B.3. Finding: The new residential development and potential reduced revenue stream for public services could lead to fiscal challenges for the City and service delivery standards (i.e., schools, parks, libraries and community centers) below the stated objectives of the 2010 – 2035 General Plan.

Statement of Overriding Considerations

For those environmental impacts identified above as significant and unavoidable (I.B1, IV.A1 IV.B1, IV.C1, IV.D1, IV.E1, IV.F1, V.B1, VI.B1, VII.A1, and VII.B1), the City finds that each of the specific economic, legal, social, technological, environmental, and other considerations and the benefits of the Project listed below independently outweigh these significant, adverse impacts and constitute overriding considerations rendering these above impacts acceptable.

- (i) The Project will comply with State requirements and provide the City and its residents with a comprehensive, long-range policy guideline for future development for the planning horizon of 2010 through 2035.
- (ii) The Project will serve as the foundation in making land use decisions based on goals and policies in land use, focus areas, neighborhood compatibility, historic preservation, mobility and transportation, public facilities and services, environmental quality and sustainability factors.

- (iii) The Project will ensure that existing and new neighborhoods have access to a variety of services and amenities and enhance the neighborhood's high quality of life.
- (iv) The Project will ensure that existing neighborhoods character is preserved with the implementation of transition policies for new developments.
- (v) The Project will improve the visual and physical character of the City's commercial corridors.
- (vi) The Project will conserve resources through use of sustainable land use and design policies for new and existing development.
- (vii) The Project will promote economic development to provide jobs in concert with future population growth in the City of Santa Clara and region.
- (viii) The Project will add opportunities for a mix of residential and commercial uses throughout the City and especially in activity centers and transit corridors.
- (ix) The Project will emphasize public safety in urban design and transportation policies through improved visibility, pedestrian-oriented building design and infrastructure.
- (x) The Project will continue high quality of public services and amenities, including open space and parks.
- (xi) The Project will encourage sustainability to project energy, water supplies, and air quality.

For the foregoing reasons, the City finds that the Project's benefits would outweigh, and therefore override, any adverse environmental impact that could potentially remain after recommended mitigation measures are implemented. In making this determination, the City incorporates by reference the Findings of Fact and Statement of Overriding Considerations set forth above, as well as all of the supporting evidence cited therein and in the administrative record.

EXECUTIVE SUMMARY

This document has been prepared by the City of Santa Clara as the Lead Agency in conformance with the California Environmental Quality Act (CEQA). The purpose of this Environmental Impact Report (EIR) is to inform decision makers and the general public of environmental effects of the proposed Draft 2010-2035 General Plan. This section includes a summary of: significant impacts; mitigation measures; alternatives to the project; and areas of controversy, pursuant to the CEQA Section 15123.

PROJECT SUMMARY

This Draft EIR provides an assessment of the potential environmental consequences of adoption and foreseeable implementation of the proposed Draft 2010-2035 General Plan. The proposed Draft 2010-2035 General Plan is intended to serve as the principal policy document for guiding future conservation and development in the City of Santa Clara. The proposed Draft 2010-2035 General Plan includes objectives, goals, policies and actions which have been designed to implement the City's and community's vision for Santa Clara. The policies and actions would be used by the City to guide day-to-day decision-making so there would be continuing progress toward the attainment of the Plan's goals.

Major Strategies

The seven Major Strategies represent the overarching principles of the proposed Draft 2010-2035 General Plan. The Major Strategies are reflected throughout the proposed Draft 2010-2035 General Plan, and are the basis for the goals and policies. Each Major Strategy defines a distinct priority, such as economic vitality or sustainability, as summarized below.

- Enhance the City's High Quality of Life - Ensure that existing and new neighborhoods have access to a full complement of services and other amenities for everyday living.
- Preserve and Cultivate Neighborhoods - Ensure that the character of existing neighborhoods is preserved and new development fits into each neighborhood's scale and context through careful transition policies.
- Promote Sustainability - Conserve resources through use of sustainable land use and design policies and measures for new and existing development.
- Enhance City Identity - Improve the identity and visual character of the City, emphasizing urban design to shape the character and appearance of major corridors and focus development areas.
- Support Focus Areas and Community Vitality - Encourage improvements to the design and quality of development along El Camino Real, Stevens Creek Boulevard, San Tomas Expressway, Bowers Avenue and Santa Clara's Downtown, with a greater mix of land uses at activity centers, in conjunction with improved commercial and streetscape design.
- Maintain the City's Fiscal Health and Quality Services - Encourage a mix of uses to ensure that sufficient revenues are generated to cover the cost of service needs.
- Maximize Health and Safety Benefits - Emphasize public safety in urban design and transportation policies through improved visibility, pedestrian-oriented building design, and lighting and infrastructure in order to promote safe walking, bicycling, and driving.

Proposed Development Program

By the year 2035, the Draft 2010-2035 General Plan would allow for an additional 32,400 residents in 13,312 new housing units, and 25,040 new jobs in 24,253,600 square feet of new non-residential development. This development under the new General Plan would occur in addition to 'in process' development taking place under the current General Plan, for a total population of 154,990 and total employment base of 152,860 in 2035.

Potential development identified in the proposed Draft 2010-2035 General Plan includes both intensification of existing land uses and expansion of the allowed uses under the previous General Plan. Both the City's industrial and commercial areas are expected to change from lower to higher intensity development. North of the Caltrain corridor, the City's employment base is expected to expand through the intensification of office/research and development (R&D) uses. Specifically, the Bowers Avenue/Great America Parkway and San Tomas Expressway transportation corridors are targeted for higher-intensity employment centers. Intensification of commercial uses and expanded opportunities for mixed uses are planned for the areas along El Camino Real and Stevens Creek Boulevard. The designations included within the Downtown and Santa Clara Station Focus Areas combine new land uses with higher-intensity development in order to take advantage of proximity to transit.

In addition to the General Plan update, the project includes parcel-specific General Plan land use designation and map amendments to multiple sites throughout the City. The purpose of these individual amendments is to modify each site's General Plan land use designation to reflect the existing land use on that site.

Progressive Phasing

The proposed Draft 2010-2035 General Plan is organized into three phases, reflecting near (2010-2015), mid (2015-2025) and long-term (2025-2035) horizons. Each phase includes changes in land uses and development intensities for specific areas in the City. The phasing concept was in response to community input and steering committee direction in order to ensure that new development can be accommodated and supported by appropriate infrastructure and services. Phasing also provides a foundation for reevaluation of the development and service goals of the proposed Draft 2010-2035 General Plan, as well as the City's ability to support development anticipated by the proposed Draft 2010-2035 General Plan. Over time, new economic, technological and social conditions may emerge that alter assumptions about land use needs, compatibility, and overall planning. As the City faces a new cycle of needs and conditions, strategies and objectives in the proposed Draft 2010-2035 General Plan will be refined and reflected in subsequent phases.

Phasing Prerequisites

The proposed Draft 2010-2035 General Plan identifies intermediate steps, conditions and improvements as prerequisites for implementation of subsequent phases, in order to evaluate future growth and the associated increased demand for services. The intent of these prerequisites is to allow logical planning for responsible growth, ensuring that the City maintains quality services for existing and future residents and businesses. Prerequisites are intended to take into account the availability of public resources and infrastructure in order to enable the development identified in each phase of the proposed Draft 2010-2035 General Plan in the long-term, and not overburden existing community resources, such as schools, parks and utilities, in the short-term. At the time each phase comes into focus, changes in economic, social, legal and environmental conditions may warrant corresponding changes to policies or land use classifications. Phasing, and the associated prerequisites, helps to coordinate the timing of new development as well as to sustain environmental quality. Prerequisite goals and policies are included for all three phases of the proposed Draft 2010-2035 General Plan. The policies identify fundamental steps, or milestones, that must be completed prior to moving on to the next phase of the proposed Draft 2010-2035 General Plan. Each goal denotes an objective, with the policies indicating the steps that need to be taken to achieve those goals. For example, if the goal is to ensure that the City is fiscally stable, then a corresponding policy would require a fiscal study prior to each phase and prior to development under that phase.

Focus Areas

The proposed Draft 2010-2035 General Plan has nine Focus Areas, including four Focus Areas south of the Caltrain corridor and five Future Focus Areas north of the Caltrain facility. Focus Areas include major corridors and destinations, new centers of activity around transit stations, and new residential neighborhoods. Future Focus areas are only identified for Phases II and III of the proposed Draft 2010-2035 General Plan and require conformance with the applicable prerequisite policies, including approval of a comprehensive plan for each area, prior to development of that phase. The land for the Focus Areas will become available in Phase I, but buildout of the Focus Areas will occur over the life of the proposed Draft 2010-2035 General Plan. The development timing of the Focus Areas will depend on market demand and the availability of infrastructure.

Housing Element

The City of Santa Clara 2009-2014 Housing Element will be integrated into the City's proposed Draft 2010-2035 General Plan. The Housing Element covers the 2007 to 2014 planning period, focusing on ways to promote residential infill development, given land supply and cost constraints.

Implementation

Implementation of the General Plan involves the City Council, the Planning Commission, other City boards and commissions, and City staff. The Planning and Inspection Department staff has primary responsibility for implementing the Plan. The City also consults with Santa Clara County, adjacent cities, and other public agencies on proposals that affect their respective jurisdictions.

POTENTIAL AREAS OF CONTROVERSY

Pursuant to § 15123(b) (2) of the state CEQA Guidelines, an EIR shall identify areas of controversy known to the lead agency including issues raised by agencies and the public. The Notice of Preparation for the EIR was distributed in August 2008 for a 30-day public review and comment period. Public comments were received and reflect concern and/or controversy over several project-level and cumulative environmental issues. (Refer to Appendix A and B for the NOP and NOP comment letters.) In addition, a public scoping meeting was held on September 17, 2008. Major environmental issues and potential areas of controversy raised in the NOP comment letters as well as at the public scoping meeting are as follows:

- Increased traffic on regional and local roadways
- Redevelopment and land use designations
- Parking issues
- Provision of public services and facilities, including schools
- Transit services
- Transition of new development into existing neighborhoods
- Watershed and riparian corridor management
- Increased housing

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A summary of the impacts and mitigation measures identified in the EIR are included in Table ES-1. The sections are organized to correspond with the environmental issues discussed in *Chapter 4*. For a complete description of potential impacts, please refer to the resource specific sections in *Chapter 4*

TABLE ES-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact		Population and Housing (Section 4.2)	Mitigation Measure
The City's continued jobs/housing imbalance will contribute to air pollutant emissions (including greenhouse gas emissions) and congestion on area freeways, roadways and intersections, and constitutes a significant unavoidable impact.		These mitigation measures are discussed in detail in the Transportation, Air Quality, and Climate Change chapters, respectively.	
Future pumping by the City of Santa Clara, in combination with the multiple other users of the Santa Clara Sub-Basin, would not be expected to contribute to cumulative groundwater pumping impacts, i.e. withdrawals above the basin's safe yield, given the Water District's reasonably foreseeable recharge and groundwater management programs. However, should the District's recharge program be affected by reduced availability of imported water, there is the potential for future cumulative groundwater basin demand to exceed the aquifer's safe yield. (Potentially Significant Impact)		Public Utilities (Section 4.7) To prevent a cumulatively considerable contribution to a potential future overdraft of the Santa Clara Sub-Basin, the City shall update the forecast groundwater pumping supply quantities every five years with each UWMP to align water supply availability with the water demand associated with each General Plan Phase. Future Santa Clara UWMPs will be coordinated with the Water District and implement alternative sources (i.e. recycled water and increased conservation) if cumulative groundwater pumping, based on all water retailer UWMPs, would exceed the Santa Clara Sub-Basin safe yield. With implementation of this program mitigation measure, potential future impacts associated with supplying future development envisioned by the General Plan would be reduced to a less than significant level. (Less than significant impact with mitigation)	
Development allowed under the proposed Draft 2010-2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs through 2024. The City has no specific plan for disposing of solid waste beyond 2024, but will undertake a process to identify a solution prior to 2024. (Significant Impact)		There are no feasible measures to reduce this impact.	
Over the course of the General Plan's 25 year horizon, the Congdon's tarplant could become established at any time on a vacant parcel containing ruderal grasslands. Therefore, future development of vacant parcels containing ruderal grasslands has the potential to impact the Congdon's tarplant, should the tarplant be present at the time of development. (Significant Impact)		Biological Resources (Section 4.9) On parcels with ruderal grasslands, surveys will be conducted prior to future development to document the presence/absence of Congdon's tarplant. In the event the species is present, the project design will incorporate an adequate buffer, as determined by a qualified biologist, to ensure the Congdon's tarplant is not threatened by development. (Less than significant impact after mitigation)	
Although there are no known Western Burrowing Owl (WBO) nesting sites in the City that would be affected by future development under the General Plan, WBO have been found throughout the general area, i.e. Mission College and the Mineta International Airport. Over the course of the General Plan's 25		Future development on parcels with ruderal grasslands will include the standard measures identified in Section 4.9 Biological Resources to reduce potential WBO impacts to a less than significant level. (Less than significant impact after mitigation)	

Significant Impact	Mitigation Measure
<p>year implementation horizon, the WBO could become established (i.e. forage and/or breed) at any time on a vacant parcel containing ruderal grasslands. Development of vacant parcels could result in impacts to individual burrowing owls if owls moved onto the site prior to project construction. If owls are using active nests when construction activity commences, grading of the site could result in destruction of nests and individual owls. (Significant Impact)</p>	
<p>Implementation of the proposed Draft 2010-2035 General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of Toxic Air Contaminants (TACs). The proposed Draft 2010-2035 General Plan does not provide adequate buffers between existing sources of TAC and new residences or sensitive receptors. (Significant Impact)</p>	<p style="text-align: center;">Air Quality (Section 4.10)</p> <p>Policy 5.1.1-P25 should be added to the Prerequisite section as follows:</p> <p>Policy 5.1.1-P25: The BAAQMD CEQA Guidelines also recommend that communities adopt a Community Risk Reduction Plan (CRRP) to address TACs. Prior to 2015, develop and adopt a CRRP, to bring TAC and PM2.5 concentrations down to acceptable levels as identified by BAAQMD, including risk and exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participation process.</p> <p>Policy 5.10.5-P34 should be added to the Safety section as follows:</p> <p>Policy 5.10.5-P34: Include minimum setbacks of 500 feet for freeways (or busy arterial roadways with average daily trips of 100,000 or more) and 100 feet for railroad tracks. Exceptions may be made for projects that do not meet the distance requirements, but can be determined compatible with adjacent uses through a project-specific study that determines potential health risks. Complete modeling for health risks for individual projects located within the minimum setbacks for roadways and railroads. Mitigation measures such as (but not limited to); site redesign, tiered plantings of trees, air filtration systems, and location of air intakes and design windows to reduce exposure, shall be required to reduce these risks to acceptable levels.</p> <p>Policy 5.10.5-P35 should be added to the Safety section as follows:</p> <p>Policy 5.10.5-P35: Implement BAAQMD guidelines that establish minimum screening or buffer distances between odor sources and sensitive receptors. Exceptions may be made for projects that do not meet the distance requirements, but can be determined compatible with adjacent uses through a project-specific study that determines potential nuisance. Mitigation measures shall be required to reduce these risks to acceptable levels. The mitigation measures will vary depending on the source of the odor (i.e., wastewater treatment plant, landfill, food services, etc) and could include scrubbers, filters and covers.</p>
<p>Implementation of the proposed Draft 2010-2035 General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of odors. The proposed Draft 2010-2035 General Plan does not provide adequate buffers between sources of odors and new residences or sensitive receptors. (Significant Impact)</p>	<p>Policy 5.10.5-P35 should be added to the Safety section as follows:</p> <p>Policy 5.10.5-P35: Implement BAAQMD guidelines that establish minimum screening or buffer distances between odor sources and sensitive receptors. Exceptions may be made for projects that do not meet the distance requirements, but can be determined compatible with adjacent uses through a project-specific study that determines potential nuisance. Mitigation measures shall be required to reduce these risks to acceptable levels. The mitigation measures will vary depending on the source of the odor (i.e., wastewater treatment plant, landfill, food services, etc) and could include scrubbers, filters and covers.</p>
<p>Operating levels of City roadway segments degrade beyond the current City Level of Service standard with the addition of General Plan growth. (Significant and Unavoidable)</p>	<p>Transportation and Traffic (Section 4.12)</p> <p>There are no feasible measures to reduce this impact.</p>
<p>Operating levels of County CMP roadway segments degrade</p>	<p>There are no feasible measures to reduce this impact.</p>

Significant Impact	Mitigation Measure
beyond the current County CMP Level of Service standard with the addition of General Plan growth under the 2010-2035 General Plan. (Significant and Unavoidable)	
Operating levels of Caltrans roadway and freeway segments degrade beyond the current CMP Level of Service standard with the addition of General Plan growth under the proposed Draft 2010-2035 General Plan. (Significant and Unavoidable)	There are no feasible measures to reduce this impact.
Substantial increases in levels of traffic congestion, as measured by the percentage of congested lane miles, with the proposed Draft 2010-2035 General Plan will occur in one of the four geographic zones. (Significant and Unavoidable)	There are no feasible measures to reduce this impact.
Increased motor vehicle traffic and increased congestion with the proposed Draft 2010-2035 General Plan would result in increased transit travel times on transit corridors. (Significant and Unavoidable)	The proposed Draft 2010-2035 General Plan also includes policies to support transit and relieve congestion along transit routes – including a key policy to support Bus Rapid Transit or similar service on El Camino Real. However, because implementation feasibility of transit-only lanes would be evaluated in more detailed studies and the effect of these policies is not fully known, the impact is considered significant and unavoidable.
Motor vehicle traffic and congestion due to the proposed Draft 2010-2035 General Plan would increase on roadway segments in other jurisdictions. (Significant and Unavoidable)	There are no feasible measures to reduce this impact.
Increased motor vehicle traffic and increased congestion with the General Plan would result in increased emergency response times. (Significant and Unavoidable)	Based on increased congestion and decreased travel speeds on the roadway segments identified above, measures to maintain emergency response times may include redistributing service station boundaries and implementing traffic signal pre-emption for emergency vehicles. Prior to the implementation of Phase II and III of the 2010-2035 General Plan, evaluate appropriate measures to maintain emergency response time standards. With this policy, the impact is less-than-significant.
Noise (Section 4.14)	
New development and redevelopment under the proposed Draft 2010-2035 General Plan could expose people to excessive ground vibration levels exceeding FTA guidelines. (Significant Impact)	Use the Federal Transit Administration vibration impact criteria, as described above under the Regulatory Setting, to evaluate the land use compatibility of sensitive uses proposed along the railroad/light-rail corridor using the best available information (e.g., High Speed Rail Program EIR) or site-specific measurements and analyses (assuming active railroad operations). Developers of sensitive uses shall demonstrate that potential impacts of existing or potential vibration have been minimized to the maximum feasible extent.
New development and redevelopment under the proposed Draft 2010-2035 General Plan would result in increased traffic noise, and in some cases, the increases would be substantial. (Significant Unavoidable)	Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along local roadways by 2 to 3 dBA CNEL. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions, and future traffic noise increases could be mitigated to a less than significant level by repaving roadways with “quieter pavements.” To be a permanent mitigation, subsequent repaving would also have to use “quieter” pavements.
	Existing residential receivers located along Tasman Drive between Lafayette Street and the easternmost City limits either front the roadway (private outdoor use areas are located behind the homes) or have outdoor use

Significant Impact	Mitigation Measure
	<p>areas adjacent to the roadway that may or may not be shielded by fences or noise barriers. In situations where private outdoor use areas are located adjacent to the roadway, new or larger noise barriers could be constructed to provide the additional necessary noise attenuation in private use areas. Typically, increasing the height of an existing barrier results in approximately one dBA of attenuation per one foot of additional barrier height. The design of such noise barriers would require additional analysis. Traffic calming could also be implemented to reduce noise levels expected with the project. Each five mph reduction in average speed provides approximately one dBA of noise reduction on an average basis (Leq/CNEL). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.</p> <p>Residences could also be provided with sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA CNEL as a result of the projected increase in traffic noise. Treatments to the homes may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise to by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.</p> <p>Each of these mitigation measures involves other non-acoustical considerations that could affect the City's ability to implement them. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. Therefore, these measures may not ultimately be feasible. Given their implementation cannot be guaranteed, this impact is considered significant and unavoidable.</p>
<p>New development and redevelopment under the proposed Draft 2010-2035 General Plan would cause a temporary or periodic increase in construction noise exposure above ambient levels. (Significant Impact)</p>	<p>Develop construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:</p> <ul style="list-style-type: none"> • Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists; • Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment; • Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses; • Locate staging areas and construction material areas as far away as possible from adjacent land uses; • Prohibit all unnecessary idling of internal combustion engines; • Notify all adjacent land uses of the construction schedule in writing; • Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the

Significant Impact	Mitigation Measure
	<p>disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.</p> <p>The potential short-term noise impacts associated with construction facilitated by the proposed Draft 2010-2035 General Plan would be mitigated by the adoption and implementation of the above policy that requires reasonable noise reduction measures be incorporated into the construction plan and implemented during all phases of construction activity to minimize the exposure of neighboring properties.</p>
<p>The City's projected 2020 GHG emissions, without further reduction via a Climate Action Plan, would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to meet statewide 2020 goals as established by AB 32. (Significant Impact)</p>	<p>Climate Change (Section 4.16)</p> <p>Through its General Plan policies the City is committed to the preparation, adoption, and implementation of a comprehensive greenhouse gas emissions reduction strategy (Climate Action Plan) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32. The CAP will specify the strategies, measures, and actions to be taken for each inventory sector (transportation, electricity, solid waste, water, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met. Therefore, with implementation of the mitigation strategy included in the General Plan, the City's future contribution to climate change will be less than cumulatively considerable for 2020 emissions. (Less than significant impact with mitigation incorporated)</p>
<p>The City's projected 2035 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by EO S-3-05. (Significant Impact)</p>	<p>There are no feasible measures to reduce this impact.</p>

UNAVOIDABLE SIGNIFICANT IMPACTS

Traffic and Circulation

The Draft 2010-2035 General Plan would have significant and unavoidable freeway and roadway segment level of service impacts.

Future Roadway Noise

Future traffic volumes under the Draft 2010-2035 General Plan would result in increased roadway noise levels, and in some cases, the increases would be substantial. The mitigation measures necessary to reduce roadway noise levels may not ultimately be feasible. Given their implementation cannot be guaranteed, this impact is significant and unavoidable.

Climate Change

2035 GHG Emissions. Citywide 2035 GHG emissions are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 state climate change reduction goals. Achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Given the uncertainties about the feasibility of achieving the substantial 2035 emissions reductions, the City's contribution to climate change for the 2035 timeframe is conservatively determined to be cumulatively considerable.

Public Utilities

Development allowed under the proposed Draft 2010-2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs through 2024, however the City has no specific plan for disposing of solid waste beyond 2024, but will undertake a process to identify a solution prior to 2024.

SUMMARY OF PROJECT ALTERNATIVES

No Project/Existing General Plan

The purpose of this alternative is to identify what development and associated environmental impacts would occur if the City does not adopt a comprehensive update of its General Plan, i.e. how the city would continue to grow and evolve under the current General Plan's goals and policies. This alternative would consist of:

1. The remaining development potential associated with the current 2000-2010 General Plan,
2. All 'in process' residential and non-residential development identified in General Plan Appendix 8.6 and summarized in Columns 'B' and 'C' in Table 5.2-1 of the General Plan, and
3. The draft 2007-2014 Housing Element (General Plan Appendix 8.12).

The No Project/Existing General Plan Alternative assumes the new residential and non-residential development identified above would occur in equal increments per year through 2035 (i.e. straight line projection). The Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East) would remain employment lands (i.e. industrial and/or commercial) and would not be redeveloped with mixed use, transit-oriented development.

The service population (jobs+residents) under the No Project/Existing General Plan Alternative in 2035 would be approximately 265,000, consisting of 137,000 residents and 128,000 jobs. This represents substantial less new development occurring within the City than projected by ABAG through 2035. Forecast growth in population and employment, as projected by ABAG, is presumed, for purposes of this alternative, to be accommodated elsewhere in the South Bay region. Depending upon the location and form of that development, associated environmental impacts could be greater or reduced. This Alternative would not accommodate projected job or population growth; however the environmental effects of development occurring outside of Santa Clara can not be considered without speculation, i.e. where and in what form the development would occur in other jurisdictions. Therefore, the potential environmental effects of the development not accommodated under this alternative are not considered further because to do so would require speculation.

The No Project/Existing General Plan Alternative is, on balance, environmentally superior compared to the Draft 2010-2035 General Plan in that the magnitude of impacts associated with the overall level of development would be reduced. The environmental impacts that would result from an additional 18,000 residents and 25,000 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided, however on a per unit basis, the No Project/Existing General Plan Alternative is less efficient than the Draft 2010-2035 General Plan in terms of increased VMT and GHG emissions per service population. This Alternative would not achieve the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan. Furthermore, this alternative would not accommodate ABAG-projected job and population growth for 2035, and would not provide sufficient housing beyond the timeframe of the 2007-2014 Housing Element, which would presumably cause the City to be out of compliance with State housing requirements.

Balanced General Plan Growth Jobs/Housing Alternative

The purpose of this alternative is to evaluate the environmental impacts of continuing to accommodate ABAG projected housing growth, but reduce the General Plan's net new jobs to equal the anticipated number of employed residents associated with the projected population increase. This alternative would provide an equal number of jobs for the 19,440 future employed residents that would result from the proposed General Plan's 32,400 net new residents, assuming 0.6 employed residents per capita. Accordingly, this alternative consists of 32,400 net new residents and 19,440 net new jobs. This job and housing growth would occur in addition to the 7,090 residents and 21,140 jobs already 'in process' associated with implementation of the current 2000-2010 General Plan, as identified in Table 5.2-1 of the Santa Clara General Plan.

This alternative also serves as a 'reduced development' alternative in that it accommodates substantially fewer (5,600) future jobs while still achieving ABAG projected population growth. In 2035, under this Alternative, the City would have a service population (jobs+residents) of approximately 302,000, consisting of 155,000 residents and 147,000 jobs. Given this alternative would accommodate the same residential growth as the proposed 2035 General Plan, there would be no change in the distribution or intensity of proposed new residential development compared to the

2035 General Plan. What would change is an overall reduction in the number of planned jobs, and therefore changes in the intensity, but not location, of proposed new non-residential development to accommodate the reduced amount of jobs.

The Balanced General Plan Growth Jobs/Housing Alternative is, on balance, environmentally superior compared to the Draft 2010-2035 General Plan in that the magnitude of impacts associated with the overall level of development would be reduced. The environmental impacts that would result from an additional 5,600 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided, however on a per unit basis, the Balanced General Plan Growth Jobs/Housing Alternative is no more efficient than the Draft 2010-2035 General Plan in terms of VMT and GHG emissions per service population. The reduced job growth under this Alternative could result in a reduced revenue stream for public services, which could over time lead to fiscal challenges for implementing the City's seven Major Strategies, which form the foundation of the Draft 2010-2035 General Plan.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative is the No Project/Existing General Plan Alternative, because the project's significant environmental impacts would be reduced, although not to a less than significant level, by avoiding the impacts from an additional 18,000 residents and 25,000 jobs that would be accommodated by the Draft 2010-2035 General Plan. However, this alternative would not achieve the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan.

After the No Project/Existing General Plan Alternative, the environmentally superior alternative would be the Balanced General Plan Growth Jobs/Housing Alternative, because the environmental impacts that would result from an additional 5,600 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided. However, the reduced job growth under this Alternative could result in a reduced revenue stream for public services, which could over time lead to fiscal challenges for implementing the City's seven Major Strategies, which form the foundation of the Draft 2010-2035 General Plan.

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1 INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

This document has been prepared by the City of Santa Clara as the Lead Agency in conformance with the California Environmental Quality Act (CEQA). The purpose of this Environmental Impact Report (EIR) is to inform decision makers and the general public of environmental effects of a proposed project.

This document provides a program level environmental review for the City of Santa Clara 2010-2035 General Plan project, in accordance with CEQA Sections 15121, 15145, 15146, and 15151.

In accordance with CEQA, an EIR provides objective information regarding the environmental consequences of the proposed project, both to the decision makers who will be considering and reviewing the proposed project and to the general public.

The following guidelines are included in CEQA to clarify the role of an EIR:

§15121(a). Informational Document. An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR, along with other information which may be presented to the agency.

§15145. Speculation. If, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact.

§15146. Degree of Specificity. The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

(a) An EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.

(b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption, or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow.

§15151. Standards for Adequacy of an EIR. An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement

among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

In accordance with Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) was circulated to the public and responsible agencies for input regarding the analysis in this EIR. This EIR addresses those issues that were raised by the public and responsible agencies in response to the NOP. The NOP and public responses to the NOP are presented in Appendix A and Appendix B, respectively, of this EIR.

The EIR, and all documents referenced in it, are available for public review at the Planning Division in City Hall, located at 1500 Warburton Avenue, Santa Clara, California, on weekdays during normal business hours.

1.2 GENERAL PLAN BACKGROUND

The General Plan is a State-required legal document (Government Code Section 65300) that each planning agency in California prepares and the legislative body of each county and city adopts to provide a comprehensive, long-term plan for the physical development of the county or city. A General Plan must include the following seven mandatory elements specified in Government Code Section 65302: (a) land use, (b) circulation, (c) housing, (d) conservation, (e) open space, (f) noise, and (g) safety. The General Plan is the City's official policy for its future character, form, and quality of development. The General Plan describes the amount, type and phasing of development needed to achieve the City's social, economic, and environmental goals. It is the policy framework for decision making on both private development projects and City capital expenditures.

The current General Plan, City of Santa Clara 2000-2010 was adopted by the City Council in 2002. Amendments to the General Plan have been approved to accommodate changing economic conditions and development patterns, as summarized in Appendix C, but the General Plan has not been comprehensively revised since 2002.

1.2.1 Organization of General Plan

The proposed City of Santa Clara General Plan 2010-2035 (proposed Draft 2010-2035 General Plan) is included as Appendix D in this EIR and is organized into seven chapters and multiple appendices.

- Chapter 1 – A Community Guide to the General Plan 2010-2035
- Chapter 2 – General Plan Organization
- Chapter 3 – Treasuring the Past, Present and Future
- Chapter 4 – Major Strategies
- Chapter 5 – Goals and Policies
- Chapter 6 – Local and Regional Planning Context
- Chapter 7 – Turning the General Plan Into Action
- Chapter 8 – Appendices

8.1 – Index	8.9 – Historic Preservation and Resource Inventory
8.2 – Definitions and Acronyms	8.10 – Heritage Tree Inventory
8.3 – Matrix of Comparison of Land Use Designations	8.11 – School Facilities and Information
8.4 – Matrix of State Mandated Elements	8.12 – Housing Elements
8.5 – Matrix of Other Regulatory Requirements	8.13 – Sustainability Goals and Policies Matrix
8.6 – General Plan Land Use Assumptions	8.14 – Noise
8.7 – Transportation and Mobility Assumptions	8.15 – Acknowledgements
8.8 – Parks and Recreation Inventory	

1.3 EIR PROCESS

In accordance with CEQA regulations, a NOP was released in August 2008 for agency and public review (Appendix A). The NOP comment period closed on September 27, 2008. Public comments received on the NOP are included in Appendix B. A public scoping meeting was held on September 17, 2008. Responsible Agencies and members of the public were invited to attend and provide input on the scope of the EIR.

The Draft EIR will be circulated for public review and comment for a period of 45 days, in compliance with CEQA. During this period, the general public, organizations, and agencies can submit comments to the Lead Agency on the Draft EIR's accuracy and completeness.

The Draft EIR will be available in the Department of Planning and Inspection, 1500 Warburton Ave Santa Clara, California, on weekdays during normal business hours, and on the City's website. Written comments concerning the environmental review contained in the Draft EIR must be submitted to the Lead Agency, the City of Santa Clara, to the attention of Carol Anne Painter during the 45-day public review and comment period.

Upon completion of the public review period, a Final EIR will be prepared that will include all written comments on the Draft EIR received by the City during the public review period and the City's responses to those comments. The Final EIR will present any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will comprise the EIR for the proposed project.

Before the City can consider approval of the proposed project, it must first certify that the EIR has been completed in compliance with CEQA; that the City Council (decision making body) has reviewed and considered the information in the EIR; and that the EIR reflects the independent judgment of the City. The City Council also would be required to adopt Findings of Fact and a Statement of Overriding Considerations for any impacts associated with the project determined to be significant and unavoidable.

1.4 LEAD, RESPONSIBLE AND TRUSTEE CEQA AGENCIES

1.4.1 Lead Agency

The City of Santa Clara is the Lead Agency for preparation of the proposed Draft 2010-2035 General Plan environmental analysis. In conformance with sections 15050 and 15367 of the State CEQA Guidelines, the City of Santa Clara is the "Lead Agency," defined as the "public agency

which has the principal responsibility for carrying out or disapproving a project.” The City, as Lead Agency, is responsible for scoping the analysis, preparing the EIR and responding to comments received on the Draft EIR.

1.4.2 Responsible Agencies

Responsible Agencies are State and local public agencies other than the Lead Agency that have authority to carry out or approve a project or that are required to approve a portion of the project, or issue a permit as a regulatory agency, for which a Lead Agency is preparing or has prepared an EIR. Because the proposed project is a general plan, there are no agencies other than the City of Santa Clara that have approval or permitting authority for the plan’s adoption.

Implementation of the proposed Draft 2010-2035 General Plan would involve many additional Responsible Agencies depending upon the specifics of the nature of subsequent projects. The following are some of the agencies that could be required to act as Responsible Agencies for subsequent projects:

- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- California Department of Conservation
- California Natural Resources Agency
- California State Department of Parks and Recreation
- California Department of Water Resources
- State Office of Historic Preservation
- Native American Heritage Commission
- Department of Housing and Community Development
- California Department of Transportation
- California Air Resources Board
- State Water Resources Control Board
- Regional Water Quality Control Board
- California Department of Resources, Recycling and Recovery
- Bay Area Air Quality Management District
- Valley Transportation Authority
- Santa Clara Valley Water District

1.4.3 Trustee Agencies

Trustee Agencies under CEQA are public agencies with legal jurisdiction over natural resources that are held in trust for the people of California and that would be affected by a project, whether or not the agencies have authority to approve or implement the project. It is anticipated that development under the proposed Draft 2010-2035 General Plan would not directly affect any lands under the jurisdiction of a Trustee Agency; however, the Trustee Agencies with jurisdiction for resources that could be affected by subsequent projects consistent with the proposed Draft 2010-2035 General Plan could include the California Department of Fish and Game, the California State Department of Parks and Recreation, Caltrans, the Regional Water Quality Control Board, Native American Heritage Commission, and the State Office of Historic Preservation.

1.5 ORGANIZATION OF THIS EIR

This EIR includes 11 chapters, summarized below:

Chapter 1, *Introduction* includes a description of the EIR process, the uses of the EIR, a description of lead, responsible and trustee agencies, approvals, and a summary of the EIR contents.

Chapter 2, *Project Description* describes the location of the project, the project objectives, the major components associated with the project, overview of the general plan process, and proposed land use changes associated with the project.

Chapter 3, *Consistency with Adopted Plan* addresses the land use and planning implications of the project and discusses consistency and compatibility with adopted land use and specific and regional plan policies.

Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures* includes a description of the existing setting for each resource category analyzed in the EIR, an analysis of impacts resulting from the proposed project, and identifies any mitigation measures to reduce or eliminate identified impacts.

Chapter 5, *Alternatives* includes a description of the project alternatives, including the environmentally superior alternative. Also included is a description of the alternatives screening process and alternatives considered but eliminated from further analysis. The impacts of the alternatives are also qualitatively compared to those of the proposed project.

Chapter 6, *Cumulative Analysis* provides an analysis of cumulative impacts of the proposed project.

Chapter 7, *Other CEQA Required Sections* includes a discussion of other issues required by CEQA: growth-inducement, significant unavoidable impacts, and significant irreversible environmental changes.

Chapter 8, *References* includes a listing of the source documents used throughout the Draft EIR.

Chapter 9, *EIR Authors and Persons Consulted* includes a list of preparers and the persons consulted during the preparation of the Draft EIR.

Chapter 10, *List of Acronyms* includes a list of acronyms and definitions used through the Draft EIR.

Chapter 11, *List of Appendices* includes a list of the reference items providing support and documentation of the analyses performed for this report, which are included on CD in the back cover of this document. Copies of any of the appendices are available in print upon request.

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2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

The current *City of Santa Clara General Plan 2000-2010*, was adopted by the City Council in 2002. The Housing Element was adopted in 2004. Various amendments to the 2002 General Plan (refer to Appendix C for a list of the amendments), have been approved to accommodate changing development patterns, but the entirety of the General Plan has not been comprehensively revised since 2002 and much has changed in the City since that time. The City's population has increased 11 percent (15,439 people) between 2000 and 2010 and employment generation is on the rise. The Association of Bay Area Governments (ABAG) projects that population will increase by 26 percent to a projected 146,100 people from 2008 to 2035 and the City will add an additional 50,000 jobs (49 percent increase from 2005 base) over the next 25 years.

The proposed Draft 2010-2035 General Plan project includes:

- General Plan goals and policies;
- Land use designations;
- Identification of job and housing capacity to guide future growth;
- Identification of target areas to develop or redevelop to accommodate future growth;
- Setting policies for the provision of City services for development of all types; and
- Phasing to ensure that new development can be accommodated and supported by appropriate infrastructure and services.

The proposed Draft 2010-2035 General Plan (Appendix D) has a planning horizon through 2035 and includes goals and policies for land use, community design, circulation, housing, public facilities, open space, recreation, conservation, noise, seismic and safety, sustainability, and historic preservation. The Housing Element is being updated concurrently, with a planning horizon of 2014¹.

The development of the proposed Draft 2010-2035 General Plan has been a collaborative effort between the City and the community to create a shared vision and outline policies that will guide development through 2035. The proposed Draft 2010-2035 General Plan is the City's primary tool to implement the community's vision for the City. During the planning process, a variety of opportunities were offered to engage community participation, including: community workshops held in June 2008, August 2008, October 2008 and April 2009; stakeholder meetings; a City-wide survey distributed in September 2008, and neighborhood outreach meetings. More than 2,500 community members participated in the workshops, meetings and survey. The General Plan Steering Committee, which includes 19 members comprised of residents as well as representatives from businesses, schools, public agencies, City commissions and the City

¹ The Housing Element covers the 2007 to 2014 planning period, focusing on ways to promote residential infill development, given land supply and cost constraints. The intent of this Element is to plan for an adequate variety of safe, appropriate and well-built housing for all residents of Santa Clara. The format of this Element follows very specific State guidelines with respect to data, evaluation, and topics. The Element addresses the requirements of Title 7, Division 1, Chapter 3, Article 10.6 of the State Government Code.

Council, was appointed by the City Council to guide policy development and direction for the proposed Draft 2010-2035 General Plan. Information about public participation opportunities and information about work products were provided through newsletters, the City's quarterly newspaper, *Inside Santa Clara* (distributed to all residents and businesses), and the project website (<http://santaclaragp.com>). City Council and Planning Commission study sessions were also held during the process to present findings and obtain feedback.

2.2 PROJECT LOCATION AND SETTING

The City of Santa Clara is located at the center of the Santa Clara Valley, between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. Santa Clara is at the southern end of the San Francisco Bay, approximately 40 miles south of San Francisco. Three seasonal creeks run through the City and empty into the southern portion of the San Francisco Bay: the San Tomas Aquino, Saratoga and Calabazas Creeks. Additionally, the City is bordered by the Guadalupe River to the northeast.

The City is completely surrounded by neighboring jurisdictions: San José to the north, east and south, and Sunnyvale and Cupertino to the west. U.S. 101 traverses east-west through the center of the City, while State Route 237 is located to the north and InterStates 880 and 280 skirt the southeast and southwest corners of the City, respectively. Existing transit lines include Caltrain, Altamont Commuter Express (ACE), Capitol Corridor, and Valley Transportation Authority (VTA) bus and light rail. The City's regional location is shown on Figure 2-1.

The City is essentially built out and the existing land use pattern is predominantly characterized by single family neighborhoods, retail commercial corridors and industrial/office employment centers, as shown on Figure 2-2. These uses are largely separated by major transportation facilities located in the City. The City of Santa Clara covers approximately 18.4 square miles of land.

2.3 PROJECT OBJECTIVES

Pursuant to CEQA Guidelines Section 15124 the Lead Agency must identify the objectives, including the underlying purpose of the project. The underlying purpose of this proposed project is a comprehensive update of the City's General Plan. The proposed Draft 2010-2035 General Plan represents a significant modification of the City's goals and policies. The City's objectives for the proposed Draft 2010-2035 General Plan are provided below.

- Preserve the City's small-town feel, particularly by maintaining the character and quality of the City's residential neighborhoods;
- Add opportunities for a mix of residential and commercial uses throughout the City in places with access to existing and future transit;
- Revitalize a landmark Downtown;
- Improve the visual and physical character of the City's commercial corridors;
- Enhance walkability and bicycle circulation throughout the City;
- Reduce traffic congestion and promote expansion of the public transportation system;
- Diversify industrial and business uses and intensify the employment base;
- Provide neighborhood commercial centers;
- Continue high quality public services and amenities, including open space and parks; and

- Encourage sustainability to protect energy, water supplies, and air quality.

2.4 MAJOR STRATEGIES

The seven Major Strategies, defined during the community planning process, represent the overarching principles of the proposed Draft 2010-2035 General Plan. The Major Strategies are reflected throughout the proposed Draft 2010-2035 General Plan, and are the basis for the goals and policies. Each Major Strategy defines a distinct priority, such as economic vitality or sustainability, as summarized below.

- Enhance the City's High Quality of Life - Ensure that existing and new neighborhoods have access to a full complement of services and other amenities for everyday living.
- Preserve and Cultivate Neighborhoods - Ensure that the character of existing neighborhoods is preserved and new development fits into each neighborhood's scale and context through careful transition policies.
- Promote Sustainability - Conserve resources through use of sustainable land use and design policies and measures for new and existing development.
- Enhance City Identity - Improve the identity and visual character of the City, emphasizing urban design to shape the character and appearance of major corridors and focus development areas.
- Support Focus Areas and Community Vitality - Encourage improvements to the design and quality of development along El Camino Real, Stevens Creek Boulevard, San Tomas Expressway, Bowers Avenue and Santa Clara's Downtown, with a greater mix of land uses at activity centers, in conjunction with improved commercial and streetscape design.
- Maintain the City's Fiscal Health and Quality Services - Encourage a mix of uses to ensure that sufficient revenues are generated to cover the cost of service needs.
- Maximize Health and Safety Benefits - Emphasize public safety in urban design and transportation policies through improved visibility, pedestrian-oriented building design, and lighting and infrastructure in order to promote safe walking, bicycling, and driving.

2.5 PROJECT PHASES

The proposed Draft 2010-2035 General Plan is organized into three phases, reflecting near, mid and long-term horizons. Each phase includes changes in land uses and development intensities for specific areas in the City. Phasing was in response to community input and steering committee direction in order to ensure that new development can be accommodated and supported by appropriate infrastructure and services. Phasing also provides a foundation for reevaluation of the development and service goals of the proposed Draft 2010-2035 General Plan, as well as the City's ability to support development anticipated by the proposed Draft 2010-2035 General Plan. Over time, new economic, technological and social conditions may emerge that alter assumptions about land use needs, compatibility, and overall planning. As the City faces a new cycle of needs and conditions, strategies and objectives in the proposed Draft 2010-2035 General Plan will be refined and reflected in subsequent phases.

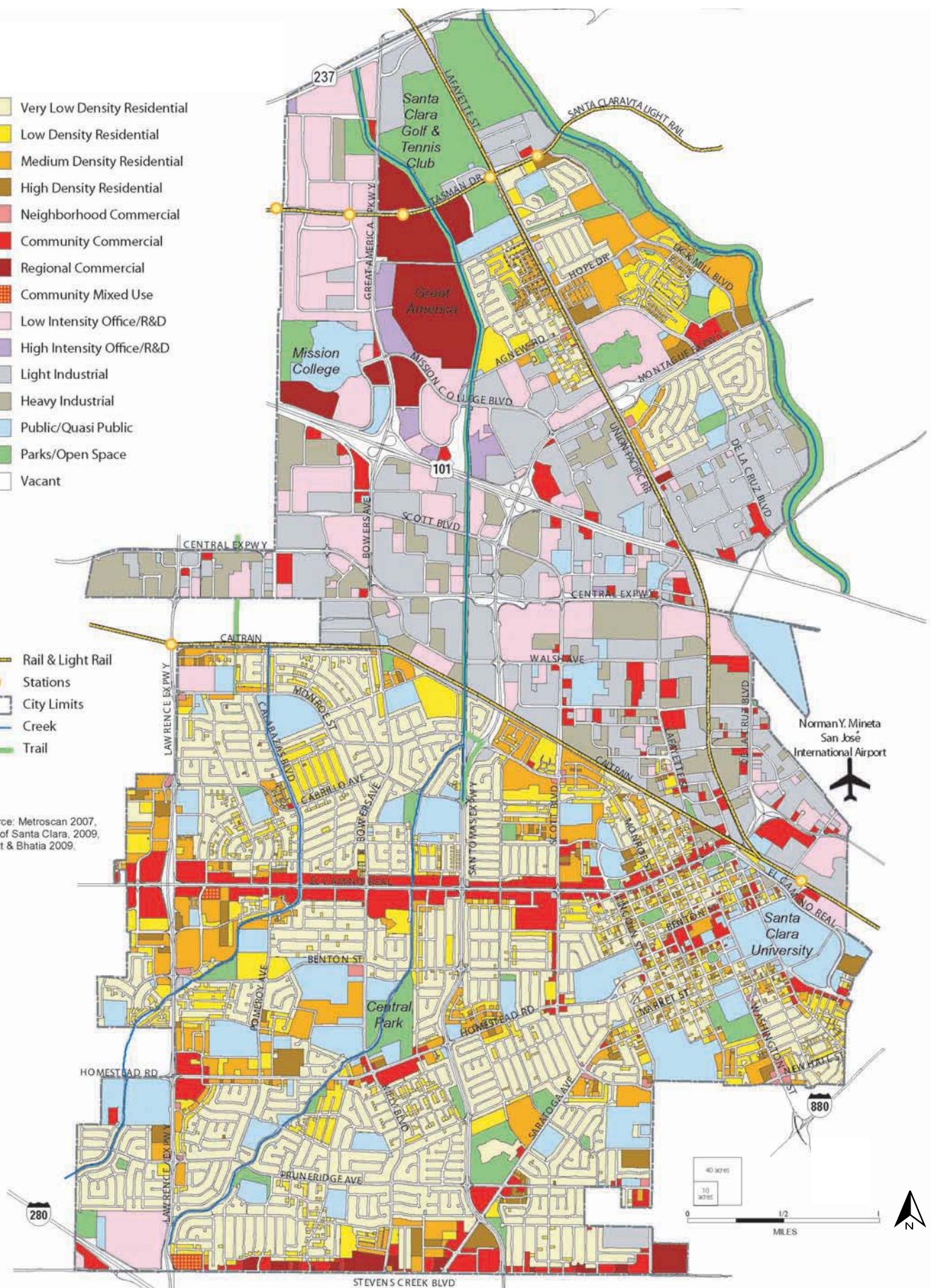
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- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Community Mixed Use
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Light Industrial
- Heavy Industrial
- Public/Quasi Public
- Parks/Open Space
- Vacant

- Rail & Light Rail
- Stations
- City Limits
- Creek
- Trail

Source: Metrosan 2007,
City of Santa Clara, 2009,
Dyett & Bhatia 2009.



EXISTING LAND USE (2008)

FIGURE 2-2

2.5.1 Phase I: 2010-2015

Phase I is the short-term strategy for growth of the City from 2010 to 2015, as illustrated on Figure 2-3. Phase I focuses on areas with new development opportunities, including new land use designations and implementation measures for 2010 to 2015. Phase I includes approximately 9,852,100 square feet (sf) of office/research & development/industrial development and 20,480 jobs. Phase I includes any commercial and residential development allowed under the 2000-2010 General Plan and also includes the 2009-2014 Housing Element. Phase I is concurrent with the State-mandated housing element adoption cycle and incorporates up to 10,138 housing units located near the Santa Clara Transit Station, Downtown, El Camino Real, and other residential and mixed use areas. The intent of Phase I is summarized below.

- Define opportunity sites for housing that are well-connected with existing residential neighborhoods, City services and public transit;
- Focus intensified employment centers north of the Caltrain corridor;
- Support infrastructure improvements;
- Develop mixed use residential and commercial nodes along El Camino Real, in Downtown, and in the Santa Clara Station Area;
- Preserve and expand commercial uses along Stevens Creek Boulevard; and
- Establish new neighborhood-oriented retail uses and services along Homestead Road at Lawrence Expressway and Kiely Boulevard, Monroe Street, and at Saratoga Avenue and Stevens Creek Boulevard.

2.5.2 Phase II: 2015-2025

Phase II is the intermediate strategy for growth of the City from 2015 to 2025 (Figure 2-4). Phase II continues many of the policies defined in Phase I, including the employment intensification north of the Caltrain corridor; mixed use development along El Camino Real and in Downtown; and commercial uses along Stevens Creek Boulevard. New initiatives in Phase II include:

- Develop new residential neighborhoods north of the Caltrain corridor to capitalize on existing transit near the Caltrain Station at Lawrence Expressway and adjacent to the Tasman light rail corridor at the City's eastern boundary; and
- Plan public facilities and services in tandem with new neighborhoods, including retail uses, parks and open space, utilities and other public facilities.

2.5.3 Phase III: 2025-2035

Phase III is the City's long-term strategy for growth between 2025 and 2035 (Figure 2-5). For this time period, some of the General Plan assumptions may need re-evaluations. An evaluation of General Plan land uses, policies and assumptions prior to implementing this phase may result in amendments in order to help better align growth and development with future conditions and changing needs.

Long-range initiatives in Phase III include:

- Develop new residential neighborhoods in conjunction with appropriate retail uses, parks and open space, and other public facilities along transit corridors, such as Great America Parkway, Central Expressway, and De la Cruz Boulevard; and

- Explore a civic presence, such as a City Hall, in Downtown and continue the intensification of residential and mixed uses along El Camino Real.

2.6 GENERAL PLAN PREREQUISITES

The proposed Draft 2010-2035 General Plan identifies intermediate steps, conditions and improvements as prerequisites for implementation of subsequent phases, in order to evaluate future growth and the associated increased demand for services. The intent of these prerequisites is to allow logical planning for responsible growth, ensuring that the City maintains quality services for existing and future residents and businesses. Prerequisites are intended to take into account the availability of public resources and infrastructure in order to enable the development identified in each phase of the proposed Draft 2010-2035 General Plan in the long-term, and not overburden existing community resources, such as schools, parks and utilities, in the short-term. At the time each phase comes into focus, changes in economic, social, legal and environmental conditions may warrant corresponding changes to policies or land use classifications. Phasing, and the associated prerequisites, helps to coordinate the timing of new development as well as to sustain environmental quality.

Assessment of the proposed Draft 2010-2035 General Plan utilizing the parameters included in the prerequisites will take place prior to implementing the next phase of development. This process will determine if there is adequate infrastructure, utilities and services, transportation facilities, access to transit, open space and recreation facilities, retail services, and sufficient public facilities, such as parks, schools, and libraries for new development. An analysis of fiscal implications for the City will also take place between each phase to identify any appropriate land use and policy changes.

Prerequisite goals and policies are included for all three phases of the proposed Draft 2010-2035 General Plan. The policies identify fundamental steps, or milestones, that must be completed prior to moving on to the next phase of the proposed Draft 2010-2035 General Plan. Each goal denotes an objective, with the policies indicating the steps that need to be taken to achieve those goals. For example, if the goal is to ensure that the City is fiscally stable, then a corresponding policy would require a fiscal study prior to each phase and prior to development under that phase.

Through this process, assumptions for future development and associated supporting infrastructure and services can be adjusted to meet changing conditions. Some of the prerequisites may require future General Plan amendment or adjustments to allowed growth, to ensure that the City continues to meet the infrastructure and service requirements of new development. Some policies that identify prerequisites are specific to a particular year or phase, while others apply to all phases.

2.7 PROPOSED GENERAL PLAN LAND USE CHANGES

Potential development identified in the proposed Draft 2010-2035 General Plan includes both intensification of existing land uses and expansion of the allowed uses under the previous General Plan. The land use classifications have been structured so that each designations “nests” within the designations in the prior General Plan (refer Appendix 8.3 of the proposed Draft 2010-2035 General Plan). Only the Downtown and Santa Clara Station Focus Areas and the new

residential neighborhoods in the Future Focus Areas, north of the Caltrain right-of-way, incorporate significant land use designation changes from the current 2000-2010 General Plan.

Both the City's industrial and commercial areas are expected to change from lower to higher intensity development. North of the Caltrain corridor, the City's employment base is expected to expand through the intensification of office/research and development (R&D) uses. Specifically, the Bowers Avenue/Great America Parkway and San Tomas Expressway transportation corridors are targeted for higher-intensity employment centers. More moderate employment centers surround these corridors. Intensification of commercial uses and expanded opportunities for mixed uses are planned for the areas along El Camino Real and Stevens Creek Boulevard. The designations included within the Downtown and Santa Clara Station Focus Areas combine new land uses with higher-intensity development in order to take advantage of proximity to transit. The projected development potential associated with the proposed Draft 2010-2035 General Plan is shown on Figures 2-6, Figure 2-7 and Figure 2-8 and is summarized in Table 2-2.

2.7.1 Land Use Designation and Map Amendments

In addition to the General Plan update, the project includes specific General Plan land use designation and map amendments to sites throughout the City, as shown on Figure 2-9. The purpose of these individual amendments is to modify each site's General Plan land use designation to reflect the existing land use on that site. The current land use designations and proposed General Plan amendment designations for these sites are shown in Table 2-1 below.

TABLE 2-1. LAND USE DESIGNATIONS AND MAP AMENDMENTS

Site Number	Current Land Use Designation	Proposed Amendment Designation
2-1	Moderate Density Residential	Community Commercial
2-2	Office	Medium Density Residential
3-1, 3-2	Moderate Density Residential	Neighborhood Commercial
4-1	Thoroughfare Commercial	Medium Density Residential
4-2 through 4-16	Single Family Detached	Medium Density Residential
4-17 through 4-24	Thoroughfare Commercial	Very Low Density Residential
4-25, 4-26	Single Family Detached	Medium Density Residential
5-1, 5-2	Moderate Density Residential	Neighborhood Commercial
6-1 through 6-3	Moderate Density Residential	Neighborhood Mixed Use
7-1	Moderate Density Residential	Neighborhood Commercial
8-1 through 8-21	Thoroughfare Commercial	Very Low Density Residential
9-1 through 9-3	Community & Regional Shopping	Very Low Density Residential
10-1 through 10-12	Thoroughfare Commercial	Medium Density Residential
11-1 through 11-8, 11-12, 11-13, 11-15 through 11-17	Moderate Density Residential	Neighborhood Mixed Use
11-9 through 11-11, 11-14	Single Family Detached	Neighborhood Mixed Use
12-1, 12-2, 12-4, 12-6, 12-8, 12-12 through 12-21, 12-24 through 12-32	Thoroughfare Commercial	Very Low Density Residential
12-3, 12-5, 12-7, 12-9, 12-22, 12-23	Single Family Detached/Thoroughfare Commercial	Very Low Density Residential
12-10, 12-11	Single Family Detached	Neighborhood Mixed Use
13-1 through 13-8	Parks & Recreation	Very Low Density Residential
14-1	Office	Low Density Residential
15-1, 15-2	Office/Single Family Detached	Very Low Density Residential
15-3 through 15-7	Office	Low Density Residential
16-1, 16-2	Single Family Detached	Neighborhood Commercial
16-3	Moderate Density Residential	Neighborhood Commercial

Site Number	Current Land Use Designation	Proposed Amendment Designation
17-1, 17-3	Parks & Recreation	Very Low Density Residential
17-2	Parks & Recreation	Medium Density Residential
18-1 through 18-51	Light Industrial	Medium Density Residential
19-1 through 19-9	Single Family Detached	Medium Density Residential
20-1	Light Industrial	Quasi Public
21-1, 21-2	Moderate Density Residential	Neighborhood Mixed Use
22-1	Single Family Detached	Medium Density Residential
23-1 through 23-5	Mixed Use	Very Low Density Residential

2.7.2 Bayshore North Redevelopment Plan Amendment

The Bayshore North Redevelopment Plan Amendment includes a change to the text requiring all land uses in the Redevelopment Area to conform to the proposed Draft 2010-2035 General Plan, as well as to any proposed individual land use amendments within the Redevelopment Project Area. There are two properties located within the Project Area proposed for individual General Plan Land Use Amendments shown as sites 1-1 and 1-2 on Figure 2-9. These properties (APN 10416114 and 10416113), owned by West Valley Mission Community College District, are proposed to be changed from a designation of Tourist Commercial to High Intensity Office/R&D.

2.7.3 University Redevelopment Plan

University Redevelopment Plan Amendment includes a change to the text requiring all land uses in the Redevelopment Area to conform to the proposed Draft 2010-2035 General Plan as well as to any proposed individual land use amendments within the Redevelopment Area.

TABLE 2-2: SUMMARY OF GENERAL PLAN DEVELOPMENT POTENTIAL 2008-2035

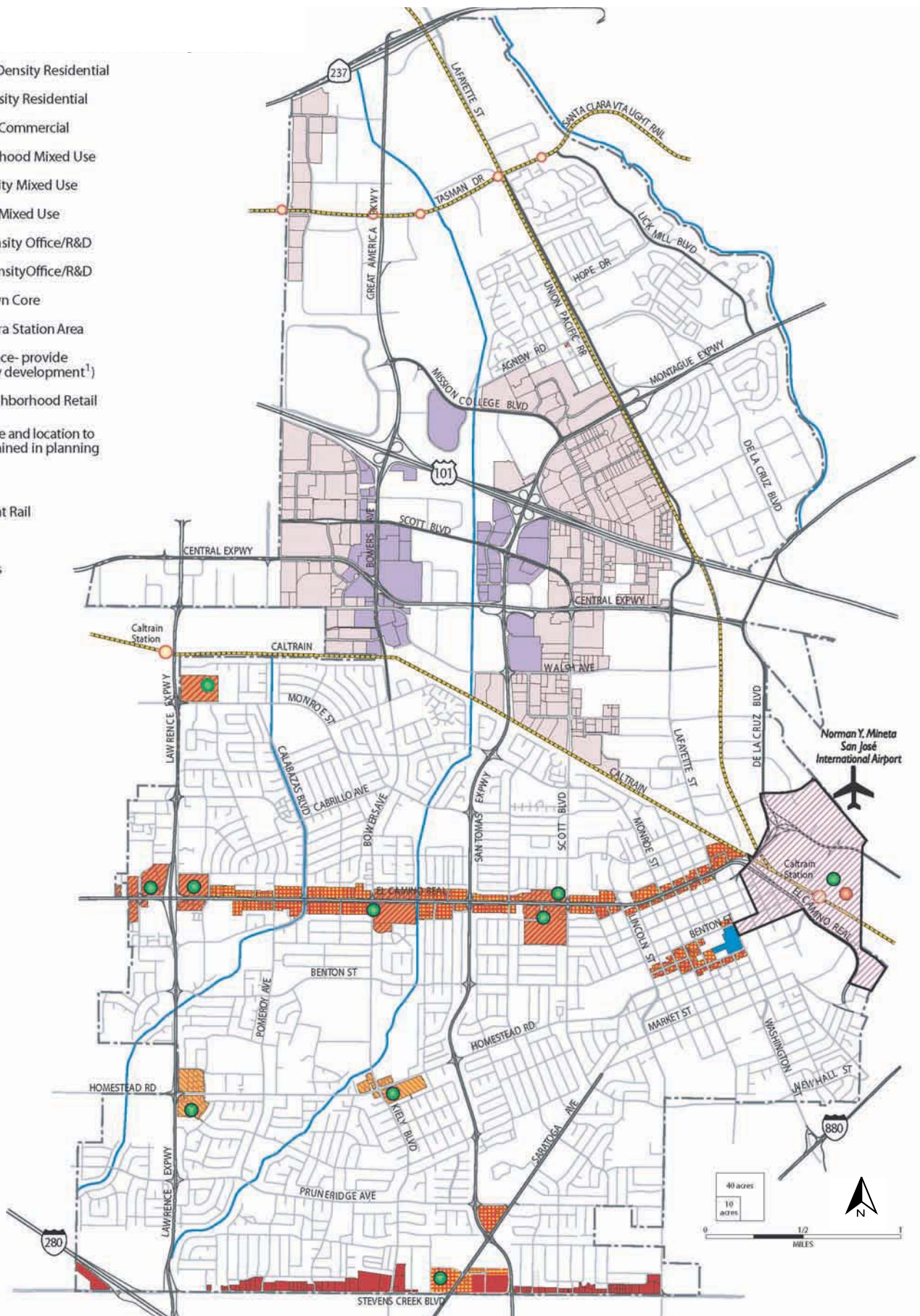
	2008 Existing Development ^A	2008-2010 Proposed (Net) ^B	2010-2015 Proposed (Net) ^C	2010-2035 Projected General Plan (Net) ^{1,D}	2008-2035 Total Proposed + Projected General Plan (Net) ^E	City at 2035 ^F
Population ²	115,500	7,190	0	32,135	39,325	154,825
Jobs ³	106,680	2,225	16,875	28,500	47,620	154,300
Detached Housing Units	18,617	0	0	0	0	18,617
Attached Housing Units	25,549	2,957	0	13,222	16,179	41,728
Total Residential Development	44,166	2,957	0	13,222	16,179	60,345
Commercial (sf) ⁴	10,323,600	523,600	0	1,857,100	2,380,700	12,704,300
Office/R&D/Industrial (sf)	48,522,400	417,300	9,012,100	11,708,400	21,137,800	68,660,200
Total Non-Residential Development ⁵	58,846,000	940,900	9,012,100	13,565,500	23,518,500	82,364,500
Park (acres) ⁶	272.5	9.1	0.0	89.5	69.8	371.1
<p>1. The net new development for the Santa Clara Station Area Plan and the Downtown Plan is included as part of this total. This includes: 1,663 attached housing units with a population of approximately 4,040; 1,490,000 square feet of commercial (retail/hotel) and 550,000 square feet of office space resulting in approximately 4,300 jobs; and 4.5 acres parkland, for the Santa Clara Station Area. This also includes 396 attached housing units, with a population of approximately 960, and 129,000 square feet of commercial (retail) resulting in approximately 270 jobs for the Downtown Core.</p> <p>2. Assumes a 2.78 percent vacancy rate and 2.5 persons per household for new residential units.</p> <p>3. Assumes a 6.5 percent vacancy rate for new non-residential square footage.</p> <p>4. Commercial development includes retail, hotel, professional offices, entertainment, and eating and drinking establishments, as well as approximately seven percent of Office/R&D square footage for supporting commercial uses.</p> <p>5. Includes data centers and Public/Quasi-Public uses such as schools, institutions, places of assembly, and other public/quasi public facilities.</p> <p>6. The total park acreage for the proposed General Plan (Net) includes one 25-acre park to be located north of the Caltrain corridor.</p> <p>A. This represents existing development on the ground as of the beginning of 2009.</p> <p>B. This includes the projects approved, on file or under construction expected to be implemented by the end of 2010.</p> <p>C. This column indicates projects on file or approved as of 2009, but not expected to be under construction until after January 1, 2010. New housing units anticipated in Phase I are included in the 2010-2035 Projected General Plan numbers.</p> <p>D. This represents the expected development for the three phases of the General Plan. Existing development lost to redevelopment was subtracted from gross new development.</p> <p>E. This total summarizes the total development assumed from both proposed (i.e., approved, on file, or under construction) development and projected development resulting from the General Plan between 2010 and 2035.</p> <p>F. Adding existing (A) to the total proposed + projected General Plan development (E) provides an overall picture of the City in 2035 (F).</p>						

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- Medium Density Residential
- High Density Residential
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Downtown Core
- Santa Clara Station Area
- Open Space- provide (with new development¹)
- New Neighborhood Retail

¹Actual size and location to be determined in planning process.

- Rail & Light Rail
- Stations
- City Limits
- Creek



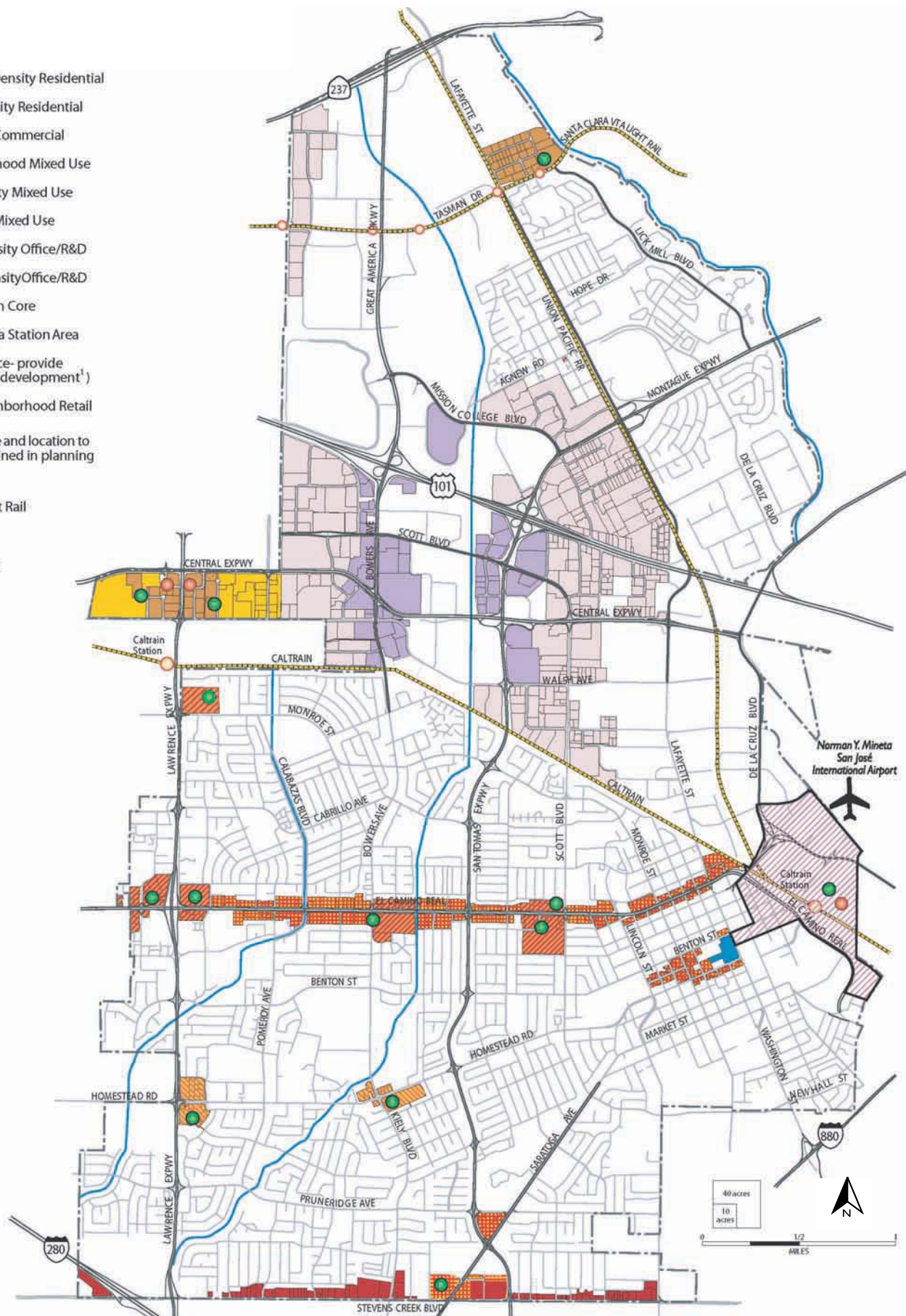
AREAS OF POTENTIAL DEVELOPMENT PHASE I : 2010 - 2015

FIGURE 2-3

- Medium Density Residential
- High Density Residential
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Downtown Core
- Santa Clara Station Area
- Open Space-provide (with new development¹)
- New Neighborhood Retail

¹Actual size and location to be determined in planning process.

- Rail & Light Rail
- Stations
- City Limits
- Creek



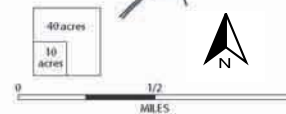
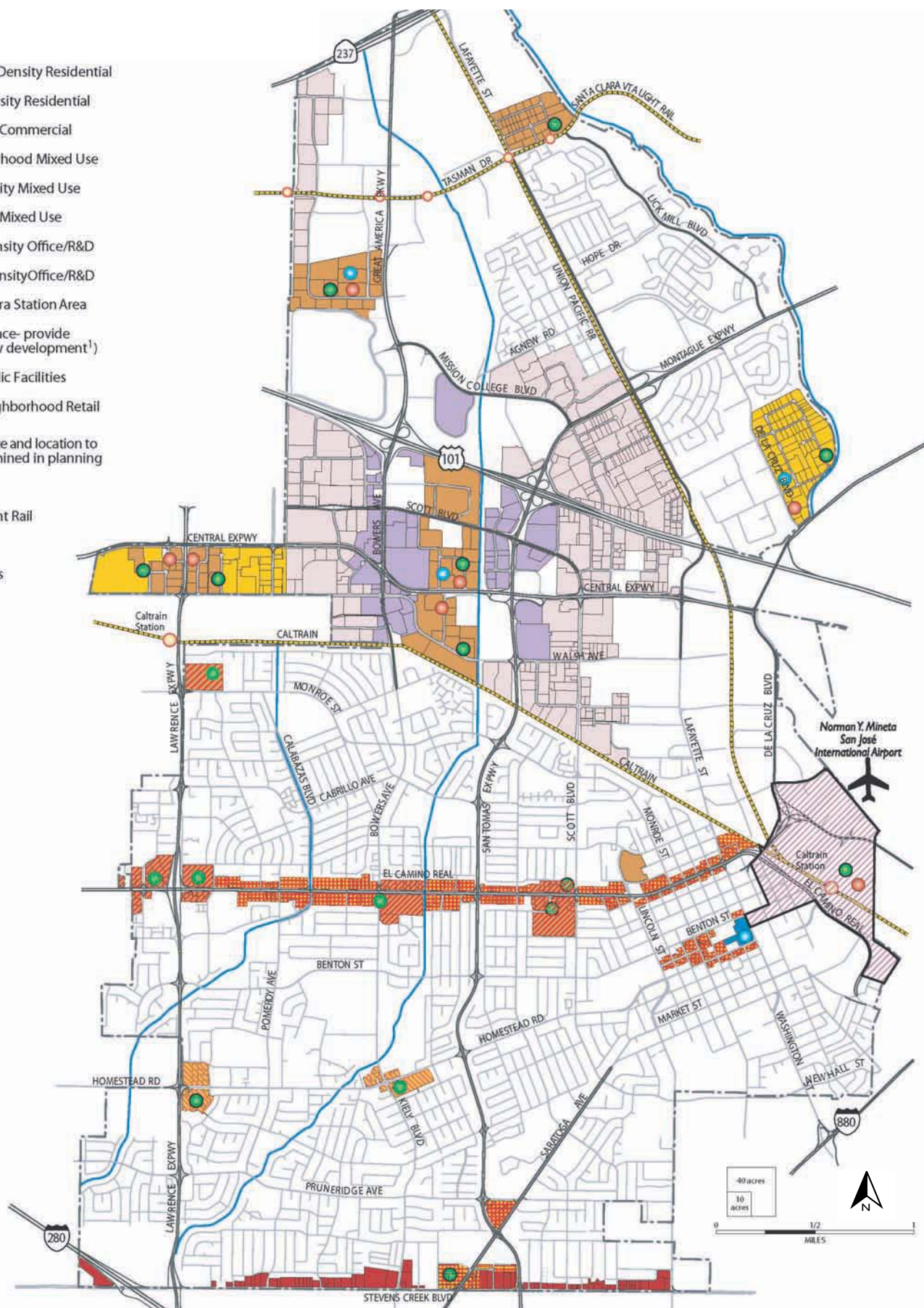
AREAS OF POTENTIAL DEVELOPMENT PHASE II : 2015 - 2025

FIGURE 2-4

- Medium Density Residential
- High Density Residential
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Santa Clara Station Area
- Open Space- provide (with new development¹)
- New Public Facilities
- New Neighborhood Retail

¹Actual size and location to be determined in planning process.

- Rail & Light Rail
- Stations
- City Limits
- Creek



AREAS OF POTENTIAL DEVELOPMENT PHASE III : 2025 - 2035

FIGURE 2-5

- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Public/Quasi Public
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Parks/Open Space
- Light Industrial
- Heavy Industrial
- Santa Clara Station Area
- Downtown Core

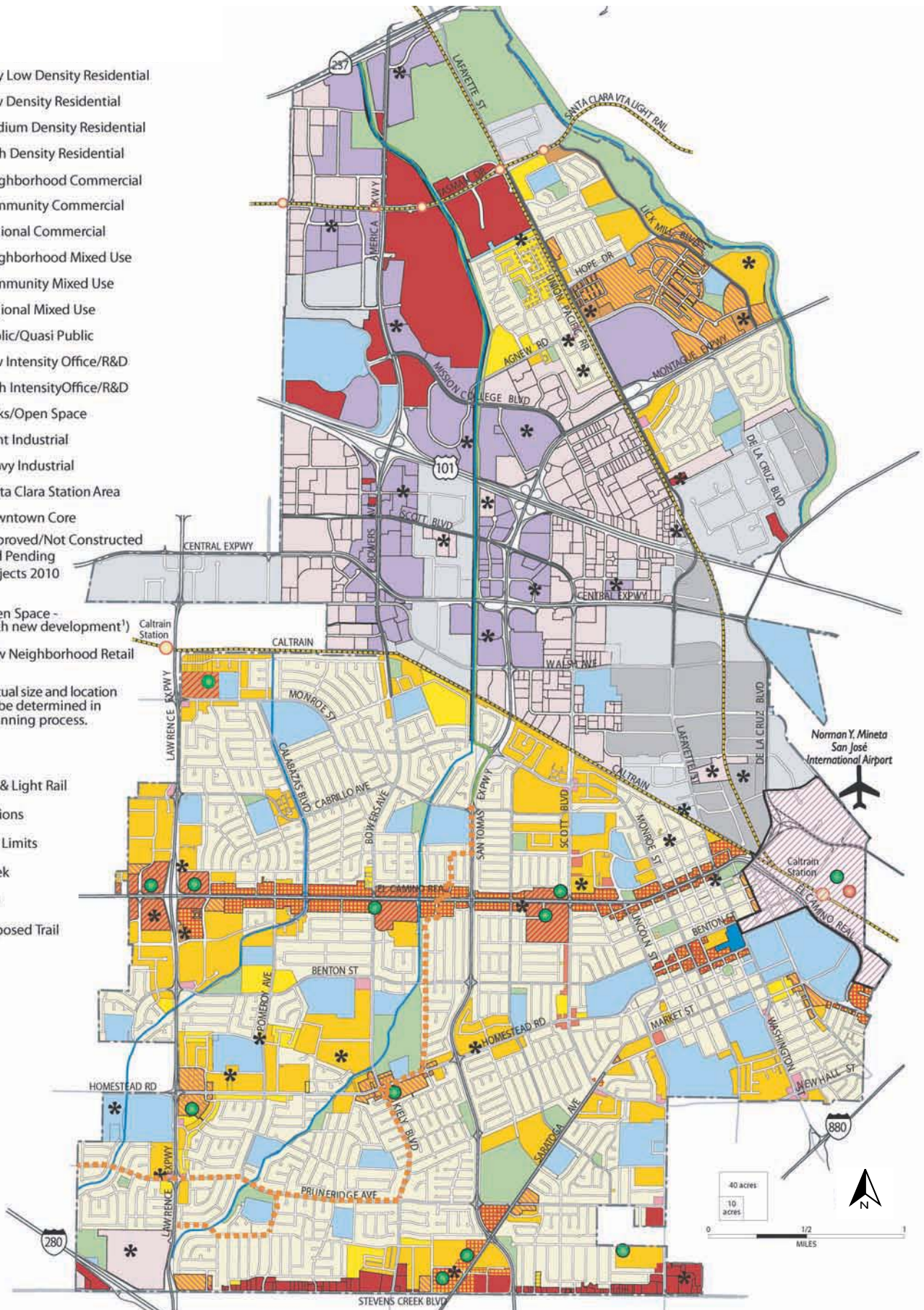
* Approved/Not Constructed and Pending Projects 2010

● Open Space - (with new development¹)

● New Neighborhood Retail

¹ Actual size and location to be determined in planning process.

- Rail & Light Rail
- Stations
- City Limits
- Creek
- Trail
- Proposed Trail



LAND USE DIAGRAM PHASE I : 2010-2015

FIGURE 2-6

- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Public/Quasi Public
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Parks/Open Space
- Light Industrial
- Heavy Industrial
- Santa Clara Station Area
- Downtown Core

* Approved/Not Constructed and Pending Projects 2010

● Open Space - (with new development¹)

● New Neighborhood Retail

¹ Actual size and location to be determined in planning process.

--- Rail & Light Rail

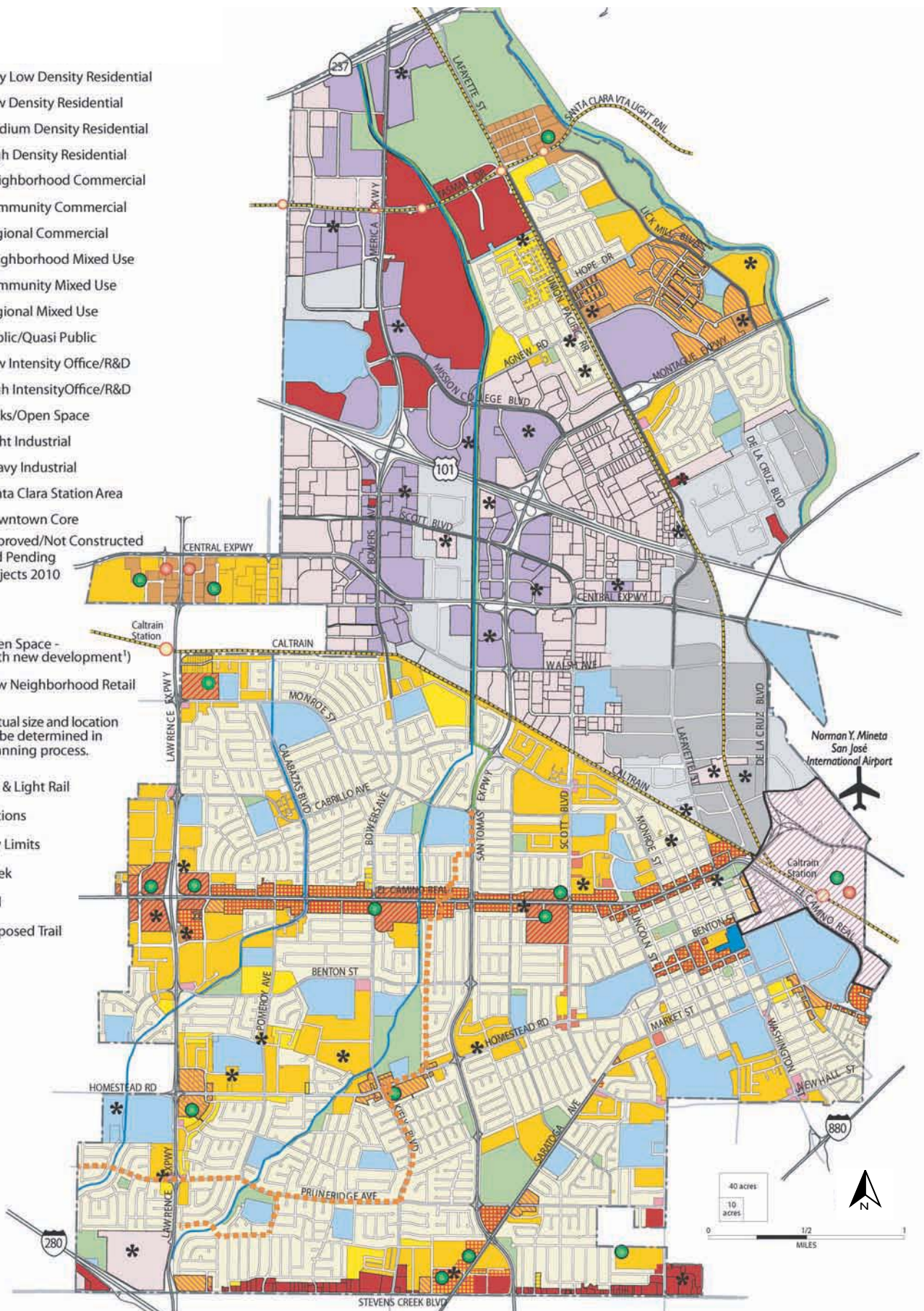
○ Stations

--- City Limits

--- Creek

--- Trail

--- Proposed Trail



LAND USE DIAGRAM PHASE II : 2015-2025

FIGURE 2-7

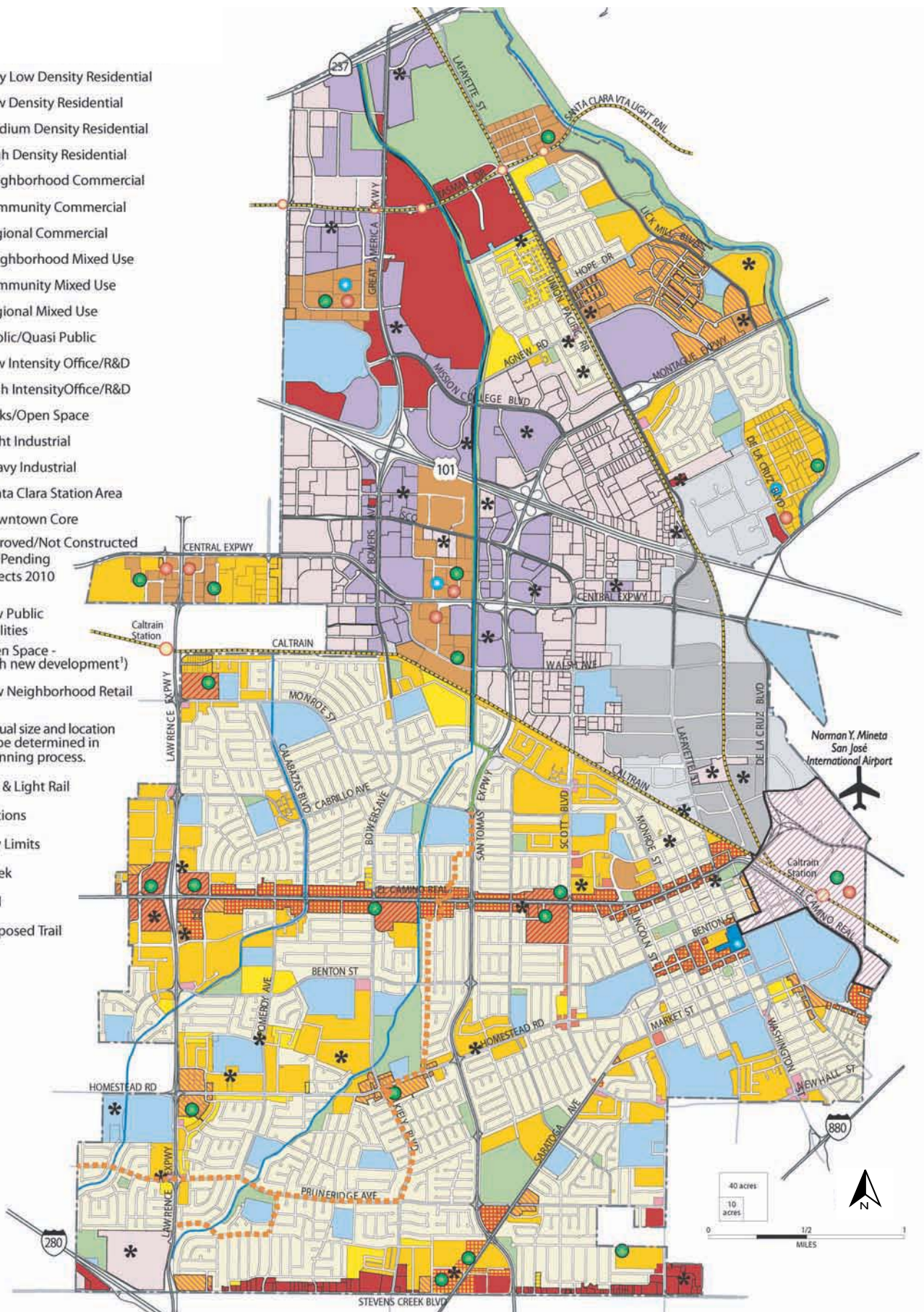
- Very Low Density Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Neighborhood Mixed Use
- Community Mixed Use
- Regional Mixed Use
- Public/Quasi Public
- Low Intensity Office/R&D
- High Intensity Office/R&D
- Parks/Open Space
- Light Industrial
- Heavy Industrial
- Santa Clara Station Area
- Downtown Core

* Approved/Not Constructed and Pending Projects 2010

- New Public Facilities
- Open Space - (with new development¹)
- New Neighborhood Retail

¹ Actual size and location to be determined in planning process.

- Rail & Light Rail
- Stations
- City Limits
- Creek
- Trail
- Proposed Trail



LAND USE DIAGRAM PHASE III : 2025-2035

FIGURE 2-8

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2.7.4 Land Use Classifications

The proposed Draft 2010-2035 General Plan defines the land use classifications applied to every parcel in the City. Each land use classification includes the allowed uses and the associated density and intensity standards. Typical categories are residential, commercial (including local-serving offices and retail), industrial (including office/Research and Development [R&D]), public/quasi public (including parks), and institutional uses. Mixed uses and special categories, such as the Downtown Core designation, are combinations of these categories.

Both density and intensity are calculated based on gross land area. Densities are specified as a range of housing units per gross acre, with required minimum and maximum limits, in residential and mixed use classifications. For non-residential and mixed use classifications, intensity is measured as floor area ratio (FAR). FAR is a broad measure of building mass that also controls building height. It is calculated as the ratio of total building square footage, excluding any building area devoted to parking, to the gross square footage of the site. Residential density and non-residential land use intensity are measured independently, but can be considered together in evaluating individual land use proposals, such as those for mixed use developments. Density and intensity bonuses, such as those for affordable housing in accordance with State law, are in addition to the maximum densities and intensities permitted.

The standards for land use classifications establish the range for density and intensity, but do not guarantee development approval at the maximum density or intensity specified for each classification. Site conditions may reduce development potential to less than the stated maximum. In addition, the application of General Plan policies may also result in consideration of an increase in that potential. In the event of differences between policies and the land use classifications illustrated on the Land Use Diagrams, the policies take precedence. For example, development on properties within Focus Areas and for historic properties is governed first by the policies. Finally, the policies also provide more development options and constraints in order to address neighborhood compatibility.

Discretionary Use Policies address unique cases in which uses and/or densities, other than those designated on the Land Use Diagram, may conform to the General Plan. Transition Policies focus on preserving neighborhood identity, ensuring continuity in design and providing an appropriate transition between existing lower-intensity development and new higher-intensity development.

The land use classifications, illustrated on the Phase I, II and III Land Use figures, are defined below.

2.7.4.1 Residential

Very Low Density Residential

This classification is intended for residential densities of up to ten units per gross acre. Development is typically single family in scale and character, with a prevailing building type of single family detached dwelling units. Development in this classification maintains a feeling of suburban living with setbacks between structures, large landscaped yards and tree lined streets.

Low Density Residential

This classification is intended for residential densities of eight to 18 units per gross acre. Building types may include detached or attached dwelling units. Low Density Residential comes in the form of single family dwelling units, townhomes, rowhouses and combinations of these development types.

Medium Density Residential

This classification is intended for residential development at densities ranging from 19 to 36 units per gross acre. This density range accommodates a variety of housing types. It is primarily intended for areas with access from collector or arterial streets or in close proximity to neighborhood centers and mixed uses. Building types can include a combination of low rise apartments, townhomes and rowhouses with garage or below-grade parking.

High Density Residential

This classification is intended for residential development at densities ranging from 37 to 50 units per gross acre. This density range is typically located in areas adjacent to major transportation corridors, transit, or mixed uses. High Density Residential development has an urban feel, with mid-rise buildings, structured or below-grade parking and shared open space.

2.7.4.2 Commercial

Neighborhood Commercial

This classification is intended for local-serving retail, personal service and office uses that meet neighborhood needs, excluding new gas stations. Permitted uses include supermarkets, stores, restaurants, cafes, hair salons/barber shops, and banks. The maximum FAR is 0.4.

Community Commercial

This classification is intended for retail and commercial uses that meet local and neighborhood demands. Permitted uses include community shopping centers and supermarkets, local professional offices and banks, restaurants, and neighborhood-type services as well as new gas stations. The maximum FAR is 0.5.

Regional Commercial

This classification is intended for retail and commercial uses that provide local and regional services. It is intended for commercial developments that serve both Santa Clara residents and the surrounding region. A broad range of retail uses is allowed, including regional shopping centers, local-serving offices, home improvement/durable goods sales and service, warehouse membership clubs, new auto sales and services, hotels, and travel-related services such as hotels, gas stations, restaurants, convention centers, amusement parks, and professional sports venues. The maximum FAR is 0.60.

2.7.4.3 Mixed Use

Neighborhood Mixed Use

This classification combines the Neighborhood Commercial and Medium Density Residential designations and is intended for pedestrian-oriented development, with a focus on ground-level neighborhood-serving retail along street frontages and residential development on upper floors. A minimum 0.10 FAR is required for neighborhood-serving retail, service commercial, and/or

local office uses. Auto-oriented uses, including gas stations, are not appropriate in this designation. For sites less than one acre, a minimum density of 10 units per acre is required, and for sites larger than one acre, a minimum residential density of 19 units per acre is required, in addition to the minimum commercial FAR. The maximum number of units per acre is 36.

Community Mixed Use

This classification is a combination of the Community Commercial and Medium Density Residential designations and is intended to encourage a mix of residential and commercial uses along major streets. Auto-oriented uses, including gas stations, are not appropriate in this designation. Parking should be behind buildings, below-grade or in structures, to ensure that active uses face public streets. Retail, commercial and neighborhood office uses, with a minimum FAR of 0.10, is required along with residential development between 19 and 36 units per acre.

Regional Mixed Use

This classification is a combination of the Regional Commercial and High Density Residential designations and is intended for high-intensity, mixed use development along major transportation corridors in the City. This designation permits all types of retail, hotel and service uses, except for auto-oriented uses (including gas stations) along with local-serving offices, to meet local and regional needs. A minimum FAR of 0.15 for commercial uses is required. Residential development of 37 to 50 units per gross acre is also required. Site frontage along major streets (arterials or collectors) is required to have active, commercial uses.

Downtown Core

This classification is exclusively for land so designated within the Downtown Focus Area. It covers the University Redevelopment Project Area (approximately seven acres), planned for high density residential and retail uses that will draw local and regional patrons and increase pedestrian activity in the City's center. Development under this classification will result in approximately 400 residential units and 130,000 square feet of non-residential development, excluding any space devoted to civic or public uses.

Santa Clara Station Area

This classification exclusively applies to the Santa Clara Station Focus Area. Allowed residential densities and non-residential FAR are defined, resulting in approximately 1,650 residential units and 2,000,000 square feet of non-residential building space, including hotels.

2.7.4.4 Office/Industrial

Low-Intensity Office/Research and Development (R&D)

This classification is intended for campus-like office development that includes office and R&D, as well as free standing data centers, with some manufacturing uses limited to a maximum of 20 percent of the building area. It is typically located in areas that provide a transition between light industrial and higher-intensity office/R&D uses and includes landscaped areas for employee activities. Parking may be surface, structured or below-grade. Accessory or secondary small scale supporting retail uses that serve local employees and visitors are also permitted. The maximum FAR is 1.00.

High-Intensity Office/Research and Development (R&D)

This classification is intended for high-rise or campus-like developments for corporate headquarters, R&D, and supporting uses, with landscaped areas for employee activities. Permitted uses include offices and prototype R&D. Data centers under this designation are limited to those that serve the use on-site. In addition, manufacturing uses are limited to less than ten percent of the building area. Accessory, or secondary, small-scale supporting retail uses that serve local employees and visitors are also permitted. Parking is typically structured or below-grade. The maximum FAR is 2.00, excluding any FAR devoted to supporting retail uses.

Light Industrial

This classification is intended to accommodate a range of light industrial uses, including general service, warehousing, storage and distribution, and manufacturing. It includes flexible space, such as buildings that allow combinations of single and multiple users, warehouses, mini-storage, wholesale, bulk retail, data centers, indoor auto-related use, and other uses that require large, warehouse-style buildings. Ancillary office uses are also permitted to a maximum of 20 percent of the building area. Because uses in the designation may be noxious or include hazardous materials, places of assembly, such as clubs, theaters, religious institutions and schools and uses catering to sensitive receptors, such as children and the elderly, are prohibited (see proposed Policy 5.3.5-P17 within the proposed Draft 2010-2035 General Plan). Parking is typically surface level. The maximum FAR is 0.60.

Heavy Industrial

This classification allows primary manufacturing, refining, and similar activities. It also accommodates warehousing and distribution, as well as data centers. Support ancillary office space or retail associated with the primary use, may be up to a maximum of 10 percent of the building area. No stand alone retail uses are allowed. Because uses in the designation may be noxious or include hazardous materials, places of assembly, such as clubs, theaters, religious institutions and schools and uses catering predominately to sensitive receptors, such as children and the elderly, are also prohibited (see proposed Policy 5.3.5-P17 in the proposed Draft 2010-2035 General Plan). The maximum FAR is 0.45.

2.7.4.5 Public Facilities

Parks/Open Space

This classification is intended for improved and unimproved public or private park and open space facilities, managed natural resource areas, and outdoor recreation areas. It includes neighborhood, community, and regional parks, public golf courses, recreational facilities, and nature preserves, such as Ulistac Natural Area, that provide visual open space and serve the outdoor recreational needs of the community.

Public/Quasi Public

This classification is intended for a variety of public and quasi public uses, including government offices, fire and police facilities, transit stations, commercial adult care and child care centers, religious institutions, schools, cemeteries, sports venues, hospitals, places of assembly and other facilities that have a unique public character.

New public and quasi-public uses, including places of assembly, may also be allowed in all other General Plan land use designations, except Heavy and Light Industrial, provided that they take access from a Collector, or larger street, that they are compatible with planned uses on neighboring properties and other applicable General Plan policies, and that they are on parcels of less than one-half acre in areas designated for High or Low Intensity Office/R&D.

2.8 AREAS OF POTENTIAL DEVELOPMENT UNDER THE GENERAL PLAN

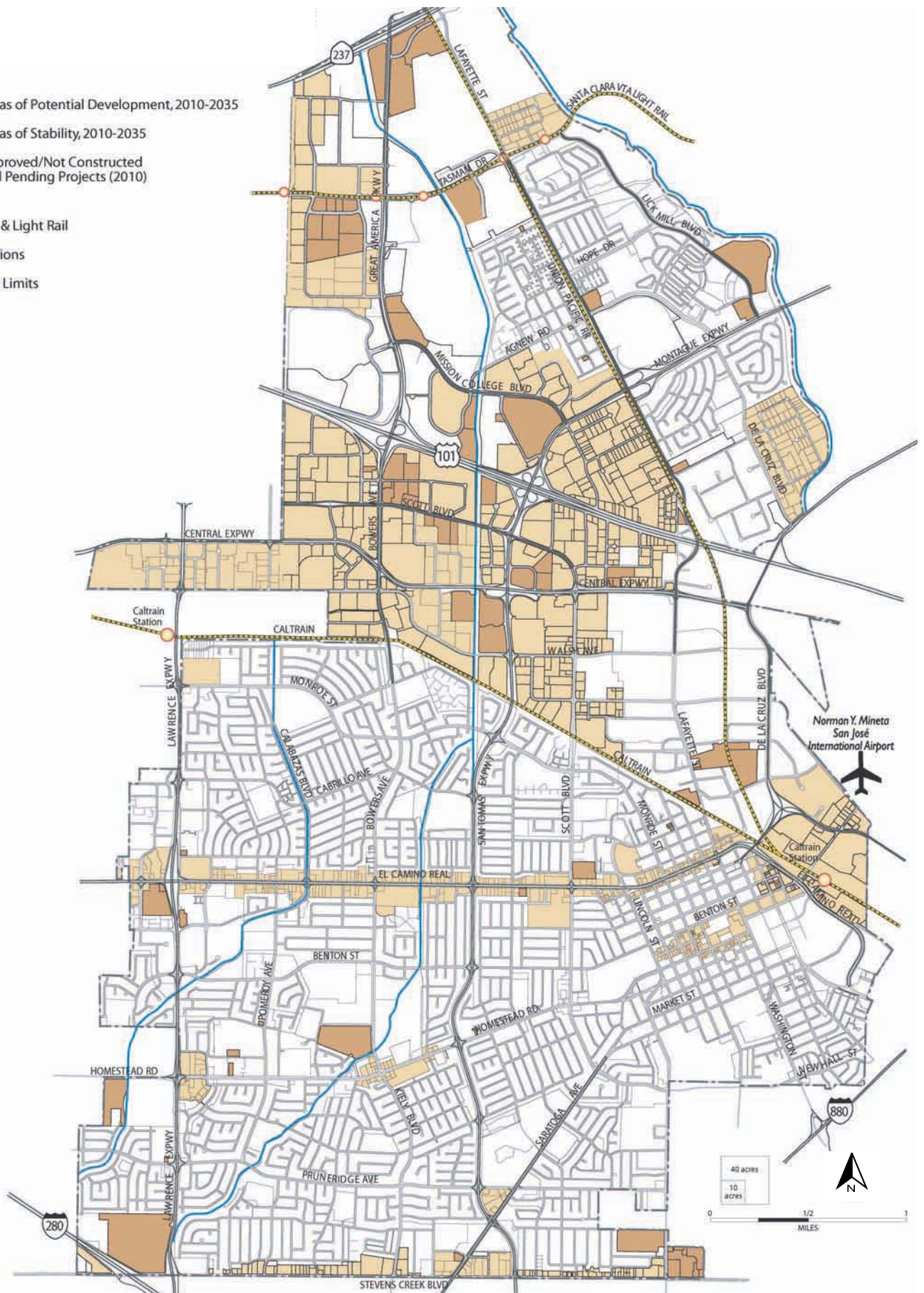
Much of the City is not expected to change substantially during the horizon of the proposed Draft 2010-2035 General Plan. The City's established residential neighborhoods are not proposed for land use changes. Given the built-out nature of the City and lack of vacant land, most new development will reuse existing underutilized properties for redevelopment. The areas of potential development by the proposed Draft 2010-2035 General Plan phases illustrated on Figure 2-10 were identified using a market analysis prepared as part of the background for the proposed Draft 2010-2035 General Plan, in conjunction with an analysis of the redevelopment potential for properties based on location and/or relatively low-intensity existing development. While not all of the sites identified for change will redevelop, the figure shows where new development is anticipated. It is possible that by 2035, other more recently-developed sites may also be ready for redevelopment or intensification, and would require General Plan amendment, rezoning and/or land use permits as appropriate, as well as the necessary environmental review prior to a City Council decision to allow the redevelopment or intensification.

Proposed projects or development that is approved, pending or under construction as of the end of 2009, are included in the General Plan update build-out (refer to Appendix 8.6 and Table 8.6-2² in the proposed Draft 2010-2035 General Plan). By the end of 2010, the City anticipates that all proposed residential, commercial, mixed use and public/quasi public projects will be completed (resulting in 523,600 square feet of commercial space, 130,000 square feet of quasi public space, and 2,957 dwelling units). For proposed Office/R&D projects, 287,300 square feet are anticipated to be complete by 2010 and the remaining 9,012,100 square feet is anticipated for completion between 2010 and 2015.

² Note that the proposed non-residential square-footage in Table 8.6-2 excludes the proposed San Francisco 49ers Stadium proposal because its unique development characteristics do not translate into equivalent square feet.

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- Areas of Potential Development, 2010-2035
- Areas of Stability, 2010-2035
- Approved/Not Constructed and Pending Projects (2010)
- Rail & Light Rail
- Stations
- City Limits



AREAS OF POTENTIAL DEVELOPMENT

FIGURE 2-10

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2.9 FOCUS AREAS

Focus Areas include major corridors and destinations, new centers of activity around transit stations, and new residential neighborhoods. Because of their integral location, changes in these areas offer an opportunity to implement the General Plan Major Strategies to enhance the City's quality of life and foster economic vitality. The proposed Draft 2010-2035 General Plan has nine Focus Areas, described below. These include four Focus Areas south of the Caltrain corridor and five Future Focus Areas north of the Caltrain facility, as shown on Figure 2-11. Future Focus areas are only identified for Phases II and III of the proposed Draft 2010-2035 General Plan and require conformance with the applicable prerequisite policies, including approval of a comprehensive plan for each area, prior to development of that phase. The land for the Focus Areas will become available in Phase I, but buildout of the Focus Areas will occur over the life of the proposed Draft 2010-2035 General Plan. The development timing of the Focus Areas will depend on market demand and the availability of infrastructure.

2.9.1 El Camino Real Focus Area

The El Camino Real Focus Area is the City's most visible and identifiable commercial corridor. As a primary east-west route and State highway, it is central to, and provides commercial services for many of the City's residential neighborhoods.

The proposed Draft 2010-2035 General Plan vision for El Camino Real is to transform this Focus Area from a series of automobile-oriented strip-malls to a tree-lined, pedestrian- and transit-oriented corridor with a mix of residential and retail uses, as shown on Figure 2-12. Larger properties, designated as Regional Mixed use and located at key intersections, will provide the primary catalyst for this transformation. These properties provide opportunities for commercial and transit destinations, with an emphasis on mixed use and higher-intensity development. Pedestrian-oriented retail at these locations can provide services for surrounding neighborhoods. Higher density residential at appropriate locations and enhanced streetscape design will encourage pedestrian activity and transit use. Pedestrian pathways will foster walkability and improve access to transit, stores, restaurants, and neighborhood schools. Connections to surrounding neighborhoods will also encourage neighborhood activities.

The Regional Mixed Use designation may be developed at an intensity of up to 1.5 FAR for combined retail and residential uses, with a minimum 0.20 FAR for commercial uses. Overall development heights would typically be between three and five stories. Transition goals and policies, in conjunction with the El Camino Real Focus Area policies require that this development respect the scale and character of adjacent residential uses to promote neighborhood compatibility. Design elements, like wide sidewalks, special paving materials, and signature landscaping, will help define these areas as pedestrian- and transit-friendly.

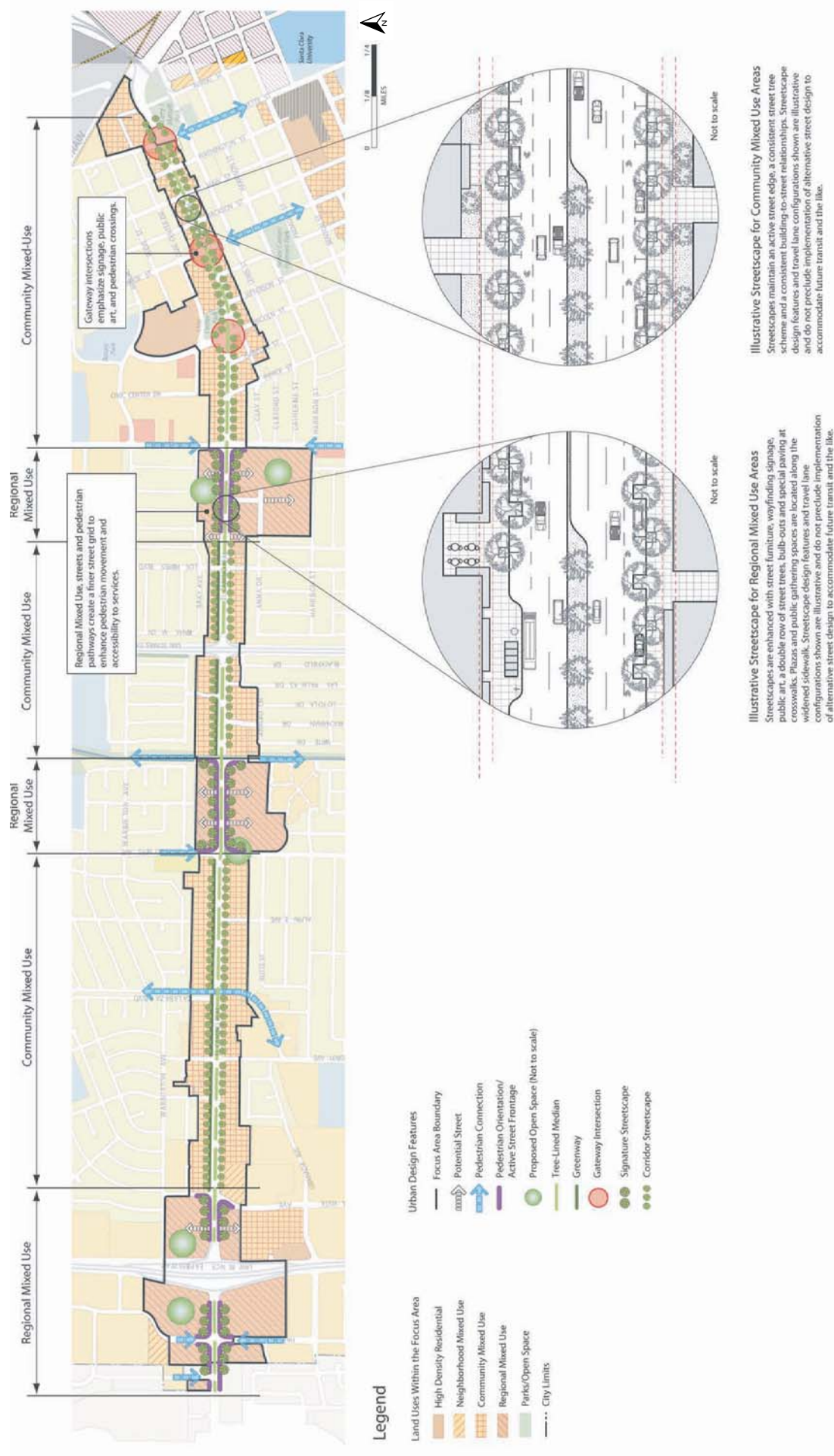
The predominate designation throughout the Focus Area, between the larger Regional Mixed Use designated properties, is Community Mixed Use. Future development in these areas would be characterized by lower intensity mixed, or single use, development with signature landscaping, streetscape design, signage, and public art, to contribute to the identity for this Focus Area. Building design and scale should represent the City's historic character, with two- and three-story buildings and with special attention to building articulation and proportion. This area in particular will serve as a gateway into the City and help define a boundary for the City's

historic core. Pedestrian connections to the Downtown and Old Quad should be emphasized. The maximum density for Community Mixed Use in this area is 36 residential units per gross acre. For properties under one-half acre, there is a maximum 0.75 FAR for combined residential and commercial uses. General Plan Transition Goals and Policies would apply throughout the El Camino Real Focus Area.

Transit, whether Bus Rapid Transit (BRT)³ or similar facility, is emphasized along the entire corridor and takes priority over single occupancy vehicles. For Regional Mixed use development, both transit and pedestrian circulation have priority. To support this emphasis, intersections in the El Camino Real Focus Area may be exempted from the City-wide level of service (LOS) standard for vehicles on a case-by-case basis until the City completes the prerequisite for an alternate LOS under General Plan policies, as further described below under Mobility and Transportation Classifications. This corridor should emphasize LOS for pedestrian and transit circulation rather than single-occupancy vehicles.

³ VTA is in the process of planning for BRT service on El Camino Real. In May 2009, the VTA Board adopted the VTA BRT Strategic Plan, which included three corridors for near term implementation: El Camino Real, Alum Rock Avenue and Stevens Creek Boulevard in Santa Clara County. In April 2010 VTA initiated Conceptual Engineering for the El Camino Real BRT project. The proposed schedule for the new BRT service between the Palo Alto Transit Center and Downtown San Jose is for service to begin in 2015, with East Valley service starting in 2013.





EL CAMINO REAL FOCUS AREA

FIGURE 2-12

2.9.2 Downtown Focus Area

Located in the historic Old Quad neighborhood and near both Santa Clara University and the Santa Clara Transit Station, revitalization of Santa Clara's Downtown will provide a focal point for the City. The Downtown Focus Area includes the two blocks of Franklin Square and eight former blocks, previously consolidated under the Federal Urban Renewal program in the 1960s. Properties adjacent to this core area also offer opportunities for a mix of commercial and residential uses that would support a compact and walkable district. A Downtown Plan for a portion of the area was endorsed by the City Council in 2007 to serve as a catalyst for revitalization. A unique Downtown destination will serve both local and regional interests. The vision includes boutique shopping, restaurants, public gathering places and civic venues, as well as a transit loop connection to the Santa Clara Station Area, in order to promote increased pedestrian activities as shown on Figure 2-13.

The Downtown Focus Area offers opportunities for place-making and for a unique destination in the City to serve both local and regional interests. Revitalization will support the Major Strategies for City identity and community vitality. Connecting streets and increasing access to transit will attract residents and visitors. This vision for Santa Clara's Downtown also includes approximately 130,000 square feet of retail and commercial uses along with almost 400 new residences in the seven-acre area, as shown in Figure 2-13. Development under this designation could be at intensities of approximately 2.0 FAR, with building heights between five and eight stories. Proposed building intensity and heights in the remainder of the Downtown Focus Area are relatively low, ranging from 0.75 FAR to a maximum combined 1.25 FAR with maximum heights of between three and five stories.

Policies related to Areas of Historic Sensitivity, and to transitions would also apply in order to respect the existing character and development patterns of the surrounding area.

Throughout the Downtown Focus Area, pedestrian and bicycle circulation would be promoted in lieu of increasing vehicular travel lanes. Streets in this Focus Area may be exempt from the City-wide LOS on a case-by-case basis until the City completes the Prerequisite for an alternate LOS. Connections to nearby destinations, such as Santa Clara Station, Santa Clara University, the Old Quad neighborhood, and City Hall, would be emphasized for pedestrian movement. The Downtown Focus Area includes a transit loop to connect the Downtown to these areas.

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Future transit loop to connect Downtown with the Santa Clara Station Area.

Pedestrian connections link Downtown to the Old Quad neighborhood, the El Camino Real corridor the Santa Clara Station Area, and the University.

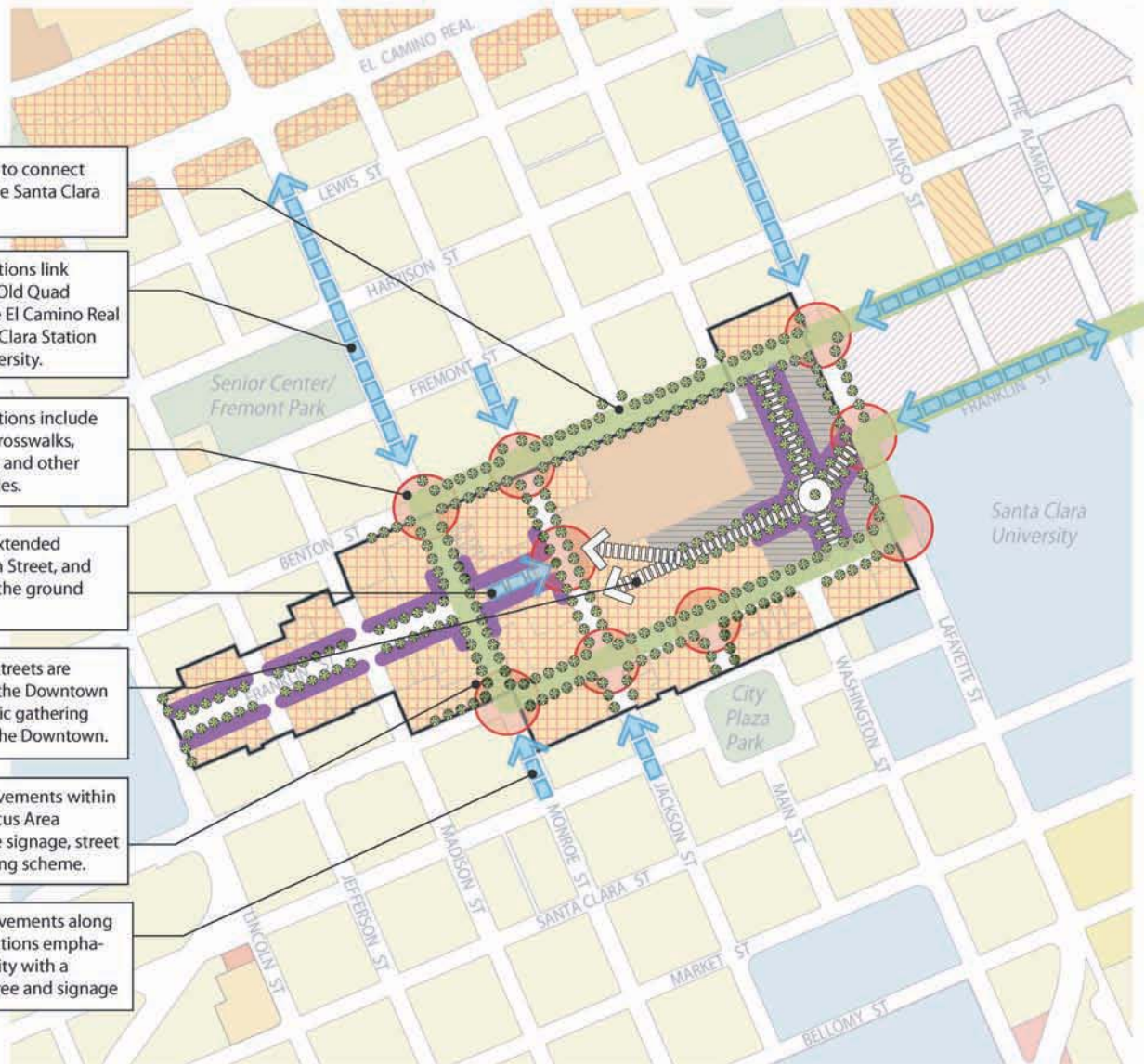
Enhanced intersections include special paving at crosswalks, bulb-outs, lighting and other pedestrian amenities.

Franklin Street is extended through to Jackson Street, and active uses are on the ground floor.

Vehicular through streets are established within the Downtown superblock. A public gathering space is central to the Downtown.

Streetscape improvements within the Downtown Focus Area include a signature signage, street tree and landscaping scheme.

Streetscape improvements along pedestrian connections emphasize visual continuity with a consistent street tree and signage



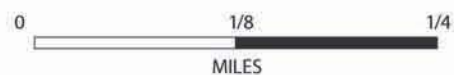
Legend

Land Uses Within the Focus Area

- High Density Residential
- Community Mixed Use
- Downtown Core

Urban Design Features

- Focus Area Boundary
- Potential Street
- Pedestrian Connection
- Pedestrian Orientation/Active Street Frontage
- Enhanced Intersection
- Transition Zone
- Signature Streetscape
- Downtown / BART Transit Loop



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2.9.3 Santa Clara Station Focus Area

The Santa Clara Station Focus Area is the 244-acre portion located within the City of Santa Clara of a larger, multi-jurisdictional planning area. The area is generally bounded by De la Cruz Boulevard, Reed Street, and Martin Avenue to the northeast, and Franklin Street and El Camino Real to the southwest. At the center of this area is the existing Santa Clara Transit Station, which is served by Caltrain, Altamont Commuter Express, and Valley Transportation Authority (VTA) bus service. The Station is planned to include the Bay Area Rapid Transit (BART) terminus of the planned Fremont, San José and Santa Clara extension, as well as a future Automated People Mover to the Norman Y. Mineta San Jose International Airport. The Station will be a major transit hub for the Bay Area and supports the Major Strategies to promote sustainability and economic vitality.

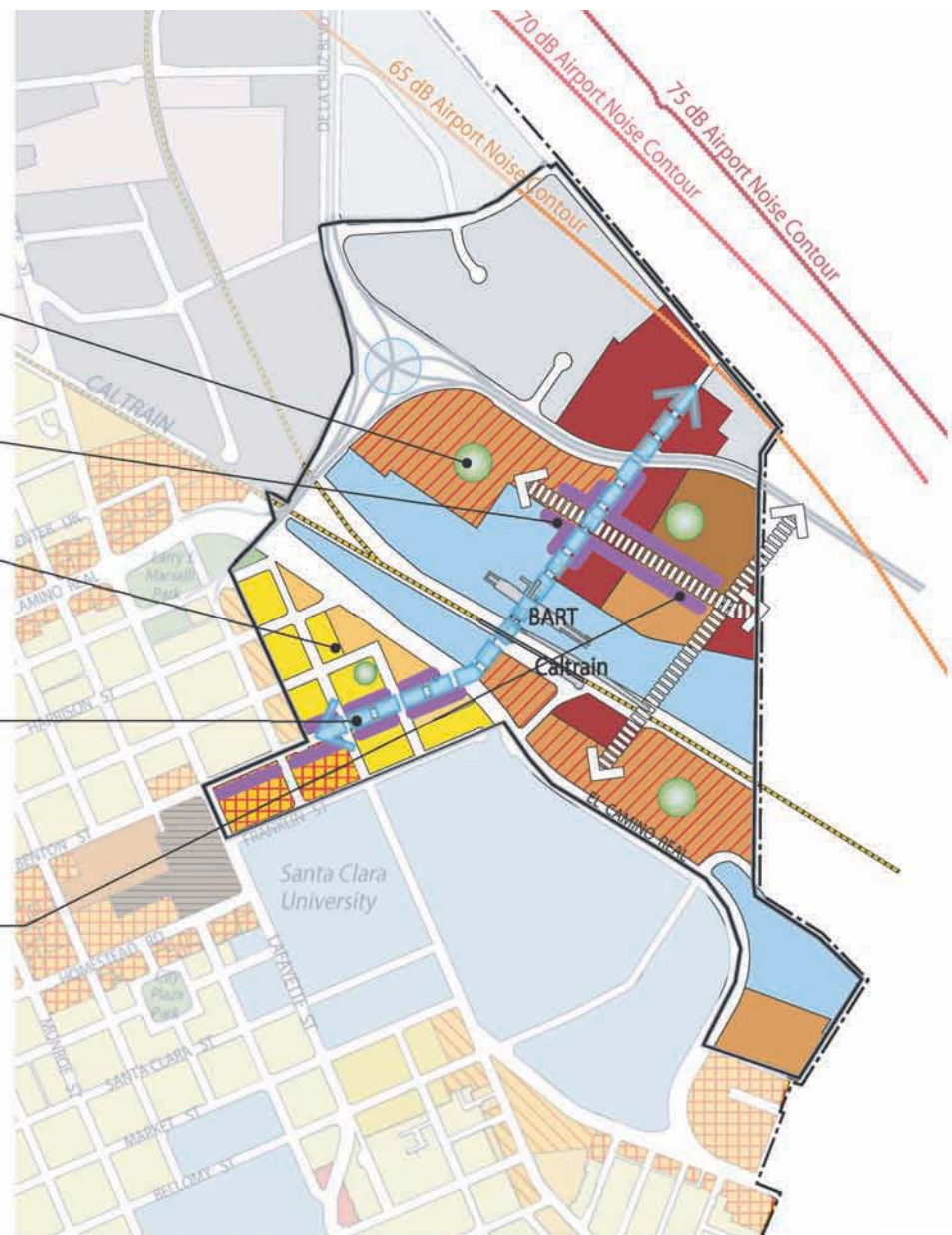
Existing development of low intensity retail, office, residential and light industrial uses along El Camino Real would generally be replaced by larger scale mixed use development. The Santa Clara Station Focus Area will serve as a gateway into the City, improve the City's economic base with expanded office, hotel, and retail uses, maximize opportunities for residential development, and provide improved pedestrian, bicycle and transit connections.

The vision for the Santa Clara Station Focus Area, as shown on Figure 2-14, offers an opportunity to establish a new gateway into the City, as well as to expand the City's economic base with new office, hotel, and retail uses and add high density residential development in order to maximize the use of existing and planned transit. The Santa Clara Station Focus Area is planned for mixed use, transit-oriented development, including a central roadway, or "main street" to provide connections within the area and link a series of public spaces. Higher-intensity mixed use development is adjacent to the Station. Smaller-scale residential uses are planned in proximity to the Old Quad neighborhood and Downtown Focus Area. Approximately 1,650 new residential units and 2,000,000 square feet of non-residential uses, including hotels, are expected. Discretionary Use and Transition policies also apply.

Within the Santa Clara Station Focus Area, pedestrian and bicycle circulation have priority and intersections may be exempt from the City-wide LOS for vehicles on a case-by-case basis until the City completes the Prerequisite for an alternate LOS. Roadways within this Focus Area, such as Coleman Avenue and De La Cruz Boulevard, that provide access to the Santa Clara Transit Station and associated parking facilities, however, would continue to be subject to the vehicle LOS standards.

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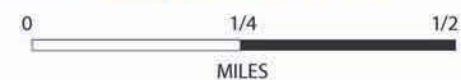
- Centrally located open spaces throughout new development.
- A high-intensity mixed-use core anchors new neighborhoods and supports walkability.
- West of El Camino Real, lower-intensity residential development provides a transition to existing low-density neighborhoods.
- Streetscape along Brokaw Road and Benton Street includes widened sidewalks, street trees, pedestrian-oriented lighting, enhanced intersections.
- A new mixed-use "main street" grid street pattern encourages visibility, accommodates multiple modes of travel.



Legend

Land Uses Within the Focus Area

- Santa Clara Station Low Density Residential (8-18 du/ac)
- Santa Clara Station Medium Density Residential (19-36 du/ac)
- Santa Clara Station High Density Residential (37-50 du/ac)
- Santa Clara Station Very High Density Residential (51-90 du/ac)
- Santa Clara Station Regional Commercial (up to 3.0 FAR)
(with an emphasis on office and hotel uses)
- Santa Clara Station Regional Mixed Use (Santa Clara Station Regional Commercial + Santa Clara Station High Density Residential)
(with an emphasis on residential and commercial uses)
- Santa Clara Station Community Mixed Use Commercial (up to 0.45 FAR + Santa Clara Station Medium Density Residential)
- Santa Clara Station Public/Quasi Public (Intensity based on policies 5.3.1, 5.5.1 and 5.9.2)
- Santa Clara Station Light Industrial (up to 0.6 FAR)
- City Limits



Urban Design Features

- Focus Area Boundary
- Potential Street
- Pedestrian Connection
- Pedestrian Orientation/Active Street Frontage
- Proposed Open Space (Not to scale)
- Interchange

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2.9.4 Stevens Creek Boulevard Focus Area

The Stevens Creek Boulevard Focus Area is located on the northern side of Stevens Creek Boulevard, at the southern border of the City between Winchester Boulevard and Lawrence Expressway. Like El Camino Real, Stevens Creek Boulevard is a major east-west arterial roadway, with local and regional-serving commercial uses. Sales of automobiles and durable goods like furniture and recreational vehicles, are the primary businesses in this area. The older building stock, extensive signage, lack of landscaping, and wide paved right-of-way detract from the visual quality. Additionally, most of the area has relatively shallow parcels that abut single family residential uses.

New development in the Focus Area will gradually replace existing development, as shown in Figure 2-15. New, non-residential development is expected with up to 0.50 FAR and higher intensity, two- to three-story showrooms to maximize the use of smaller parcels and minimize conflicts with surrounding neighborhoods. Professional offices could be a secondary use to the primary retail commercial uses. The application of Transition Policies will address appropriate development scale, particularly on smaller lots, in order to promote compatibility between new development and existing residences.

Vehicular access is a priority along Stevens Creek Boulevard to support the primary commercial uses, with transit access a priority for the mixed uses planned near Saratoga Avenue and Stevens Creek Boulevard. Parking, loading and bus rapid transit⁴, in conjunction with streetscape amenities, street trees and wider sidewalks should be incorporated into the street design along the corridor. While the City expects that the land uses along the corridor will generally retain their auto-oriented character, the streetscape is expected to be improved to better accommodate multimodal travel including transit, pedestrian, and bicycle facilities.

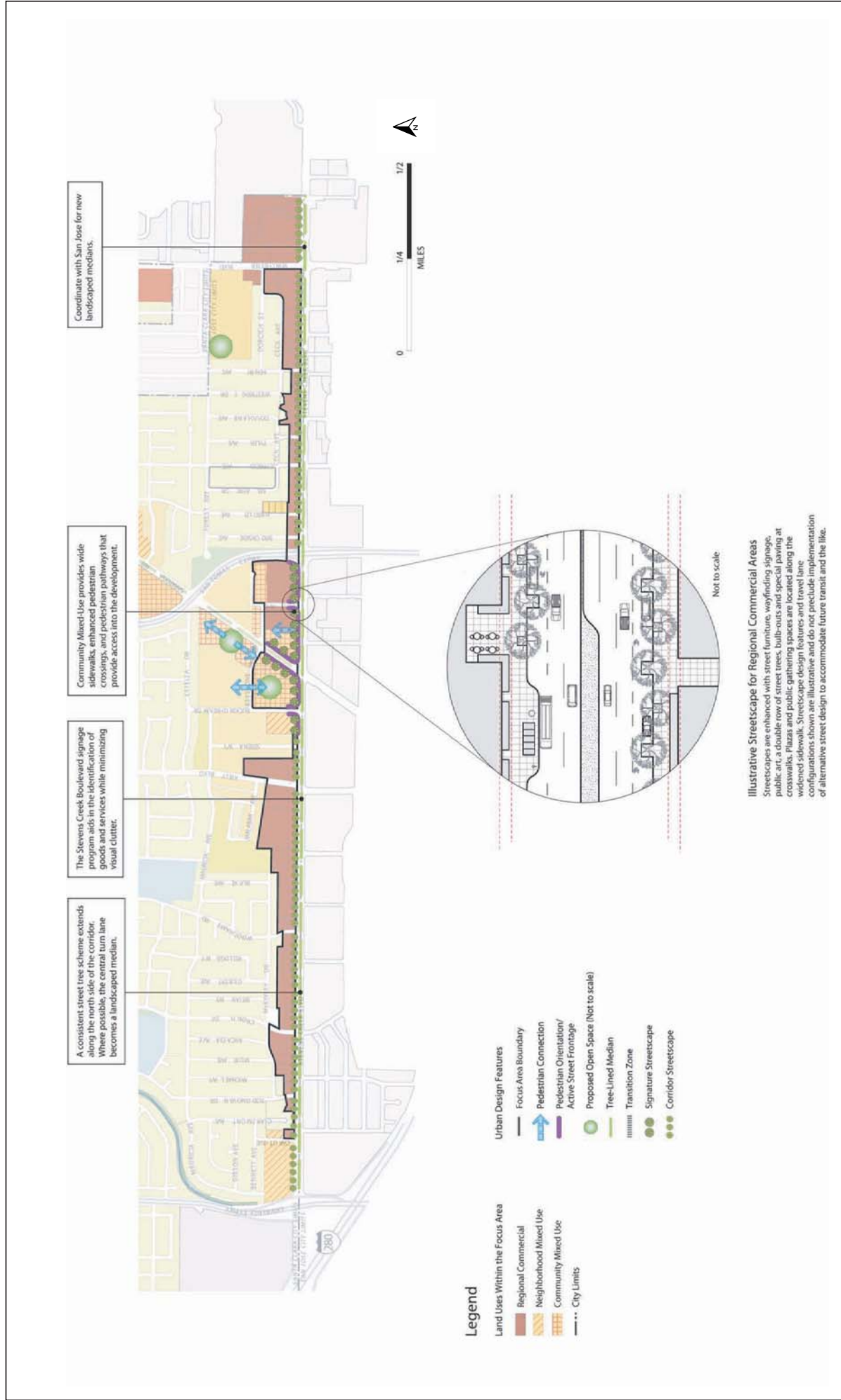
2.9.5 Future Focus Areas

Future Focus Areas are identified for Phases II and III of the proposed Draft 2010-2035 General Plan. Each of these areas requires additional planning, including a comprehensive plan for each area, as prerequisites for development. Future Focus Areas are located north of the Caltrain corridor, adjacent to existing transit hubs or along major transportation corridors. The Future Focus Areas represent a change from existing underutilized office and industrial uses to higher density residential and mixed use neighborhoods with a full complement of supportive services. Careful planning of each area is essential to ensure the provision of adequate infrastructure and services, appropriate interface with surrounding development and access to transit, open space and recreation. These Future Focus Areas are shown on Figure 2-11 and include:

- Tasman East
- Lawrence Station
- Central Expressway
- De la Cruz
- Great America Parkway

⁴ In May 2009, the VTA Board adopted the VTA BRT Strategic Plan, which included three corridors for near term implementation: El Camino Real, Alum Rock Avenue and Stevens Creek Boulevard in Santa Clara County. The Stevens Creek Boulevard corridor is next in priority after the Santa Clara/Alum Rock and El Camino Real corridors.

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STEVENS CREEK BOULEVARD FOCUS AREA

FIGURE 2-15

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The Land Use Diagrams for Phase II and Phase III designate future land uses and their location for each Future Focus Area. Confirmation and/or changes to these land use designations will occur in the context of the comprehensive planning process required as a pre-requisite for development in any of these areas. The existing land use designations for these Future Focus Areas remain in place until the sites become available for development. The proposed Draft 2010-2035 General Plan goals and policies for the Future Focus Areas provide a guide for these planning efforts.

2.10 MOBILITY AND TRANSPORTATION CLASSIFICATIONS

Mobility and Transportation in the General Plan is comprised of three components: the Roadway Network, the Transit Network, and the Pedestrian and Bicycle Network. These networks in conjunction with the Land Use Diagram provide the structure for the proposed Draft 2010-2035 General Plan land use and transportation elements. The three components of the transportation network are based on Santa Clara's existing facilities. Future infrastructure will expand these networks to establish an integrated, well-connected system to increase walking, bicycling, and transit opportunities. To maintain internal consistency for the General Plan, any plans, construction or funding of improvements that conflict with the Transportation and Mobility Diagram(s) or text, including those that would alter the classification of a transportation facility, shall require a General Plan Amendment in order to evaluate the broader implications of the proposal. Expanding alternative transportation modes support General Plan Major Strategies for high quality of life, a sustainable City, and health and safety benefits.

2.10.1 Roadway Network

The proposed Draft 2010-2035 General Plan Roadway Network includes five street types: freeways, expressways, arterials, collector streets, and local streets, as shown on Figure 2-16. The Roadway Network includes opportunities for alternate transportation modes, recognizing that transportation corridors serve multiple users having different abilities and preferences.

2.10.2 Transit Network

The proposed Draft 2010-2035 General Plan identifies a number of transit corridors where regular transit services are, or will be, provided, as shown on Figure 2-17. Bus rapid transit (BRT), or similar transit service, is anticipated along El Camino Real and Stevens Creek Boulevard. The proposed Draft 2010-2035 General Plan identifies additional north-south transit opportunities along Great America Parkway/Bowers Avenue, to access new and existing employment and residential centers north of the Caltrain corridor and along Lafayette Street, with Rivermark, El Camino Real, Downtown and Santa Clara University. Future transit in the City also includes BART and an elevated Automated People Mover from the Airport to the existing Santa Clara Transit Station. High Speed Rail is also planned along the Caltrain corridor. In order to achieve greater transit use, the *Land Use* and *Mobility and Transportation Diagram(s)* in the proposed Draft 2010-2035 General Plan co-locate higher intensity development with existing and future transit stops to maximize resident and employee accessibility.

2.10.3 Bicycle and Pedestrian Network

The purpose of the Bicycle and Pedestrian Network is to provide connections between residential neighborhoods, employment, recreation, education and transit centers, as shown on Figure 2-18. Improvements to the network will provide safe and convenient walking and biking facilities, reducing the need for driving and increasing recreation opportunities. The proposed Draft 2010-

2035 General Plan expands the City's network and support facilities, such as bicycle parking at employment, retail and other destinations.

The proposed Draft 2010-2035 General Plan also identifies opportunities to extend trails along the City's creeks and other north-south corridors within the City and includes policies to remove barriers, such as attached sidewalks with no landscaping/pedestrian paths, and improve accessibility for pedestrians and bicyclists. The Network includes bicycle classifications consistent with the three types of Caltrans designated bikeways. Sidewalks and crossings are provided throughout the City; however, some industrial areas between the Caltrain corridor and U.S. 101 lack sidewalk facilities. The pedestrian pathways and trails are specific designations for off-street pedestrian circulation.

2.11 PUBLIC FACILITIES AND SERVICES

Public facilities and services include: parks, recreation, and open space; schools, libraries, and cultural facilities; and public safety services. While several of these are optional for general plans under State law, they are integral to maintaining a high quality of life and livability in the City, a Major Strategy of the proposed Draft 2010-2035 General Plan. The goals and policies for these facilities and services promote the provision of adequate public services and parkland, as well as community and cultural facilities, along with trails that are linked to parks and open spaces.

2.11.1 Parks, Open Space, and Recreation

A combination of small and large parks is distributed throughout the City's residential neighborhoods. Included in this proposed Draft 2010-2035 General Plan are policies to maintain a standard of 2.4 acres of parkland per 1,000 residents as the City grows. In addition to providing adequate land, parks need to be appropriately sized to fulfill specific community purposes. Figure 2-19 illustrates potential future locations for new public open space. With the Future Focus Areas concentrated north of the Caltrain corridor, much of the new parkland is anticipated in this area. The general area north of the Caltrain corridor is the preferred location for new Community Park and recreation facilities of at least 20 acres to serve the demand generated by future residential and employment center development. Several mini parks are also anticipated along the El Camino Real corridor to meet the demand generated by development there. There are additional areas of potential development of neighborhood mixed uses in the southern part of the City (as illustrated on Figure 2-3), which will include parks to meet the demand generated by development there.

2.11.2 Schools and Community Facilities

The City has numerous schools, libraries, and arts, cultural, and community facilities, as shown on Figure 2-20. Additional facilities may be needed to meet the demand from the addition of approximately 33,000 new residents anticipated as a result of the proposed Draft 2010-2035 General Plan. Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, a comprehensive plan for each area will be completed that specifies land uses, including the location of schools. The City will also work with the school districts as part of the planning process for Future Focus Areas.

- Freeway
- Expressway
- Arterial
- Collector
- Local Street
- Freeway Connector Ramp
- Grade Separation
- At-grade Rail Crossing
- Interchange
- Rail & Light Rail
- Rail/Light Rail Station
- City Limits



ROADWAY NETWORK

FIGURE 2-16

- Proposed San José Airport People Mover (preferred alignment)
- Potential BRT or Similar Transit Service
- Proposed BART
- Potential High Speed Rail
- VTA Light Rail
- Caltrain
- Potential Transit Center
- ACE/Capitol Corridor
- ACE Shuttle Service (as of 2008)
- 2009 Bus Service
- Transit Opportunities
- City Limits

1/2 Mile Walking Distance



TRANSIT NETWORK

FIGURE 2-17

- Existing Class I Bike Path
- Proposed Class I Bike Path
- Existing Class II Bike Lane
- Proposed Class II Bike Lane
- Existing Class III Bike Route
- Proposed Class III Bike Route
- Potential Bicycle Corridors for Future Study
- Existing County Bike Facility
- Existing Bicycle or Pedestrian Bridge/Undercrossing
- Proposed Bicycle or Pedestrian Bridge/Undercrossing
- Rail & Light Rail
- City Limits
- Creek
- Trail



BICYCLE & PEDESTRIAN NETWORK

FIGURE 2-18

Future Open Space*

Existing Parks, Recreation and Open Space

Community Park

Neighborhood Park

Mini Park/Plaza

Open Space

Recreation Facility

Regional and/or Private Facilities

Preferred Location for New Community Park

Rail & Light Rail

Stations

City Limits

Creek

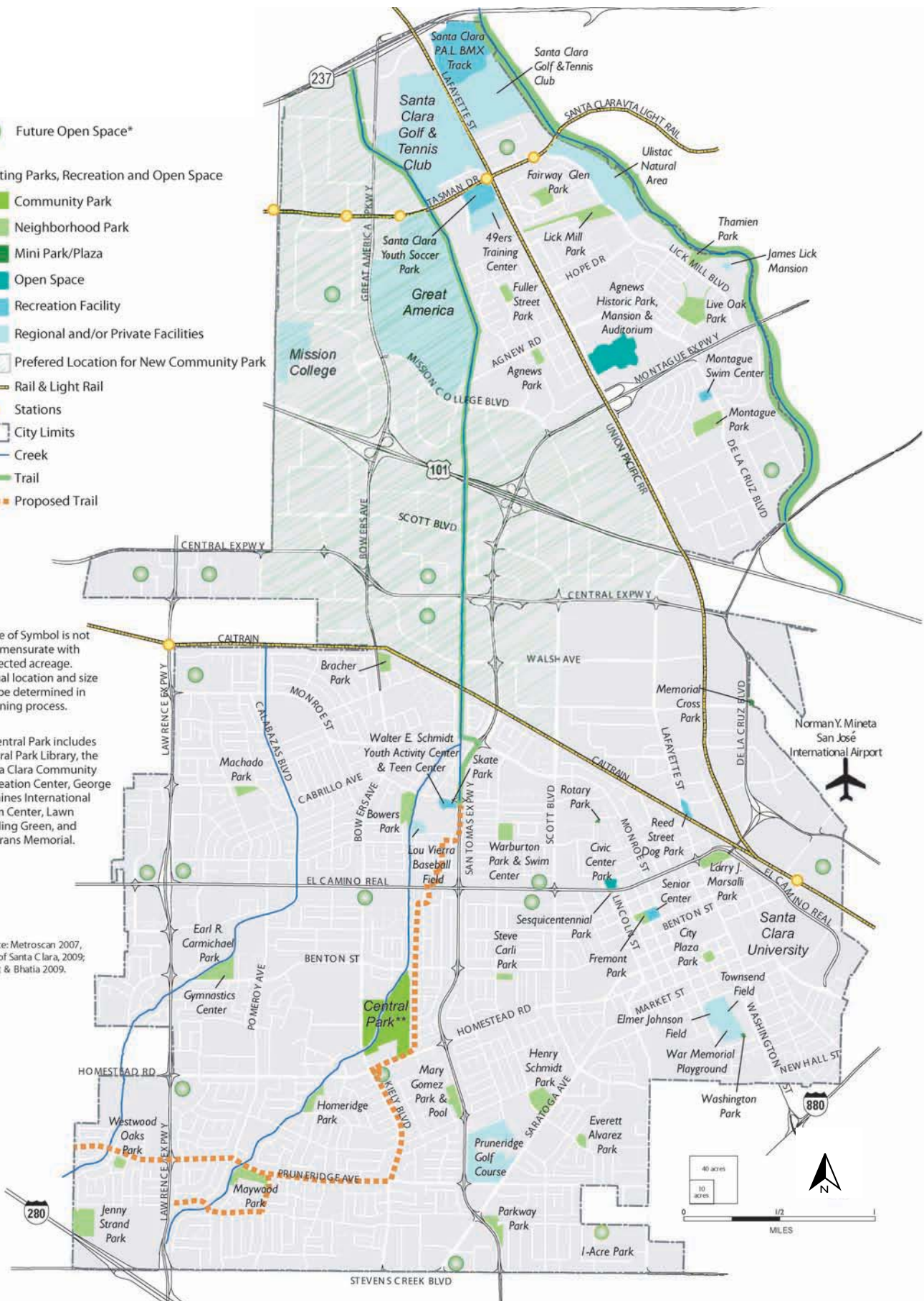
Trail

Proposed Trail

* Size of Symbol is not commensurate with projected acreage. Actual location and size will be determined in planning process.

** Central Park includes Central Park Library, the Santa Clara Community Recreation Center, George F. Haines International Swim Center, Lawn Bowling Green, and Veterans Memorial.

Source: Metrosan 2007, City of Santa Clara, 2009; Dyett & Bhatia 2009.



PARKS, RECREATION AND OPEN SPACE FACILITIES

FIGURE 2-19

2.11.3 Public Safety

Safety and security are essential and integral to quality of life in a community. Good public safety services play an important role in increasing quality of life. Crime and disorder in neighborhoods, parks and business districts can cause citizen frustration, uneasiness and fear. Community design elements, including lighting, separation between pedestrians and vehicles, and windows along street frontages, contribute to public safety. Active uses, as well as property maintenance, can help deter crime by providing surveillance and visible access. The City's current public safety facilities are shown on Figure 2-20.

2.12 ENVIRONMENTAL QUALITY

Environment affects quality of life, as well as physical, mental and emotional health. Environmental conditions and the patterns of urban and industrial development can pose risks to human health and property. The proposed Draft 2010-2035 General Plan Major Strategies emphasize the importance of health and safety, and provide direction for sustainable, environmentally sensitive development to accommodate the City's growth based on the implementation of the proposed Draft 2010-2035 General Plan. The goals and policies promote the protection of existing habitats, maximize solid waste disposal capacity through source reduction, recycling and composting, improve air quality and reduce greenhouse gases, conserve energy and water resources, and protect people and property from natural and man-made hazards.

2.13 NEIGHBORHOOD COMPATIBILITY

One of the Major Strategies of the proposed Draft 2010-2035 General Plan is to ensure that the City's existing neighborhoods and community character are maintained as the City grows. The proposed Draft 2010-2035 General Plan encourages new uses that are contextually appropriate, both in land use as well as in scale and design. This compatibility is supported through policies that allow flexibility to accommodate unique sites, development conditions, and the transition between existing and new development. These include the Discretionary Use and Transition policies.

Discretionary Use Policies address unique cases in which uses and/or densities, other than those designated on the Land Use Diagram, may conform to the proposed Draft 2010-2035 General Plan. These alternate uses would be permitted without a General Plan amendment and allowed where applicable as defined in each policy. Transition Policies focus on preserving neighborhood identity, ensuring continuity in design and providing an appropriate transition between existing lower-intensity development and new higher-intensity development.

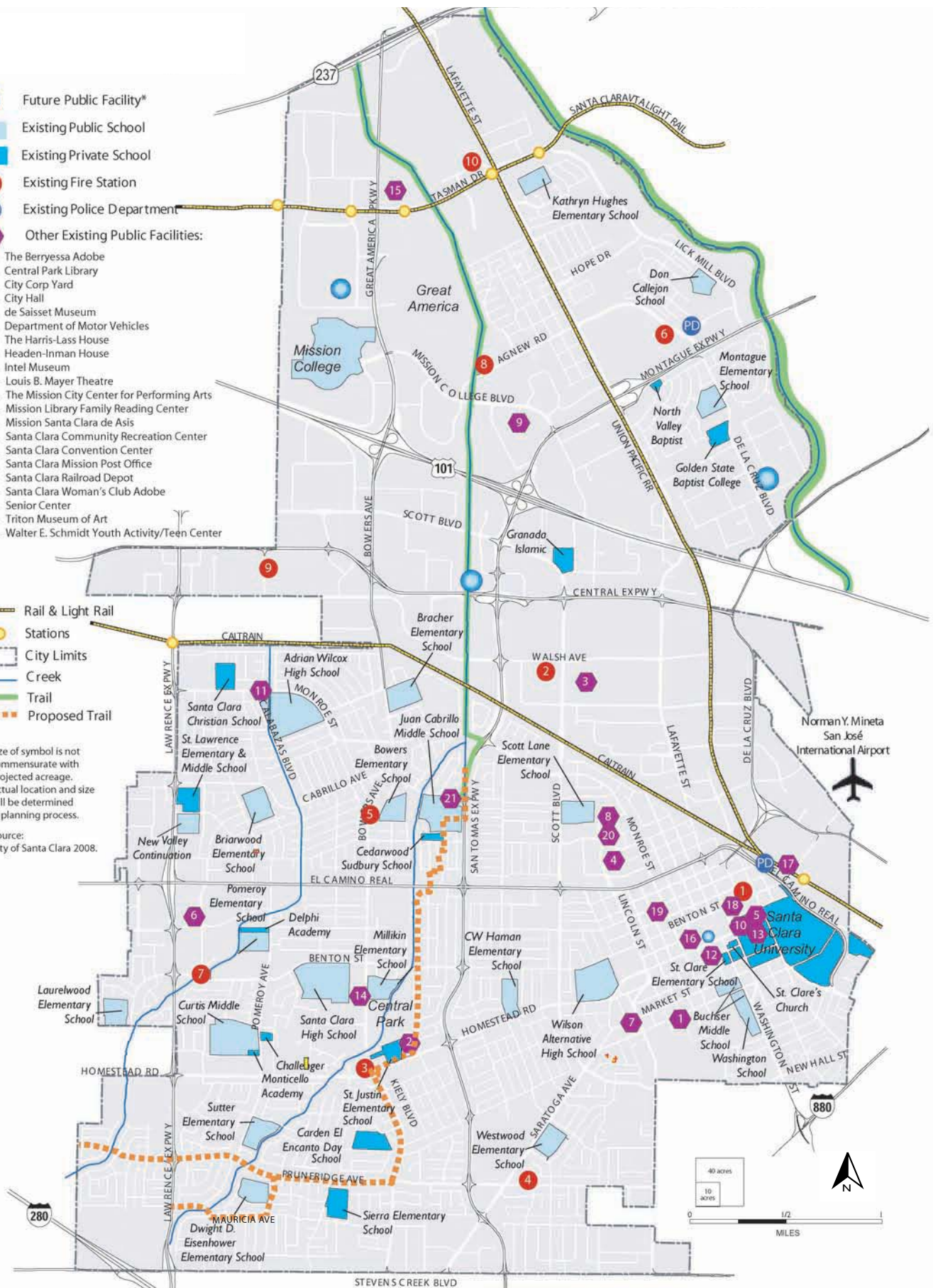
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- Future Public Facility*
 - Existing Public School
 - Existing Private School
 - # Existing Fire Station
 - PD Existing Police Department
 - # Other Existing Public Facilities:
1. The Berryessa Adobe
 2. Central Park Library
 3. City Corp Yard
 4. City Hall
 5. de Saisset Museum
 6. Department of Motor Vehicles
 7. The Harris-Lass House
 8. Headen-Inman House
 9. Intel Museum
 10. Louis B. Mayer Theatre
 11. The Mission City Center for Performing Arts
 12. Mission Library Family Reading Center
 13. Mission Santa Clara de Asis
 14. Santa Clara Community Recreation Center
 15. Santa Clara Convention Center
 16. Santa Clara Mission Post Office
 17. Santa Clara Railroad Depot
 18. Santa Clara Woman's Club Adobe
 19. Senior Center
 20. Triton Museum of Art
 21. Walter E. Schmidt Youth Activity/Teen Center

- Rail & Light Rail
- Stations
- City Limits
- Creek
- Trail
- - - Proposed Trail

* Size of symbol is not commensurate with projected acreage. Actual location and size will be determined in planning process.

Source:
City of Santa Clara 2008.



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2.14 HISTORIC PRESERVATION

Santa Clara's character and identity are largely products of its history as a Mission City. Cultural resources in the City, including Mission Santa Clara de Asis, numerous historic homes and relics found in local Native American burial sites, serve as a reminder of this rich history. The City's commitment to its architectural and archaeological history is reflected in proposed Draft 2010-2035 General Plan goals and policies that address the preservation and protection of resources with local, State and national significance. Policies not only focus on the historic properties themselves but also the immediate surrounding area that provides the context for these resources.

In order to support its historic preservation goals, the City established a Historical and Landmarks Commission and obtained recognition by the State Office of Historic Preservation of the City as a Certified Local Government (CLG). Historic preservation policies also support the two Major Strategies of the proposed Draft 2010-2035 General Plan to enhance the City's identity and to preserve existing neighborhoods. The City currently relies upon the following to evaluate historic resources:

- The Historical and Landmarks Commission advises the City Council on all matters related to historical sites and issues pertaining to historical landmarks, names, and renaming of streets, museums and the establishment thereof in the City, and in the marking and preservation of historical landmarks and places. As required by the State Certified Local Government CLG program, the City has established a list of Architecturally or Historically Significant Properties, which is one of the tools used for the Commission's recommendations.
- The Criteria for Local Significance, establishes evaluation measures, to ensure that the resource is at least 50 years old and that the property is associated with an important individual or event, an architectural innovation, and/or an archaeological contribution in order to be deemed significant. The City maintains a list of qualified historic consultants for these evaluations.

Architecturally or Historically Significant Properties refer to prehistoric and historic features, structures, sites or properties that represent important aspects of the City's heritage. Historic Preservation policies strengthen the City's Historic Preservation Goals, providing direction for changes to historic resources and new development proposed within 100 feet of historic properties in order to evaluate any potential effects on the historic context for the resource. A 100-foot radius, defined as the Area of Historic Sensitivity, is approximately equal to all properties abutting, across the street, and adjacent to abutting properties from a historic resource. This would comprise a little less than a typical City block. Preservation of Santa Clara's long history is also supported by policies that protect archaeological resources, such as relics found in burial sites.

2.15 SUSTAINABILITY

Sustainability is a primary focus in the Major Strategies and Environmental Goals and Policies of the proposed Draft 2010-2035 General Plan. Both provide support for sustainability through the conservation of local and regional resources, as well as through the maintenance of fiscal health and quality public services in the City. The diversity of land uses and phased approach to the

proposed Draft 2010-2035 General Plan are the foundation for the City's sustainability goals and primary implementation tools. As a required prerequisite for Phase II, a Climate Action Plan (CAP) will be prepared by the City following the adoption of the proposed Draft 2010-2035 General Plan.

2.16 HOUSING ELEMENT

The City of Santa Clara 2009-2014 Housing Element will be integrated into the City's proposed Draft 2010-2035 General Plan. The Housing Element covers the 2007 to 2014 planning period, focusing on ways to promote residential infill development, given land supply and cost constraints. The intent of the Housing Element is to plan for an adequate variety of safe, appropriate and well-built housing for all residents of Santa Clara. Since statutory requirements addressed in the Housing Element overlap with other General Plan elements, such as Land Use, Transportation, Environmental Quality, and Public Facilities and Services, it is necessary to look at the General Plan in its entirety for an understanding of the relationship between the Housing Element and these other elements. The Housing Element meets the minimum standards required by State law for a housing element. Related housing issues can be found elsewhere in the General Plan, including under the Mixed Use, Gateway Thoroughfare Mixed Use and Transit-Oriented Mixed Use designations.

2.17 GENERAL PLAN ASSUMPTIONS

The proposed Draft 2010-2035 General Plan identifies areas of growth and change however. It is not, however, expected that the full development potential of all areas will be reached in the 25-year planning horizon of the proposed Draft 2010-2035 General Plan. It is expected that over time, areas will develop according to demand and the availability of infrastructure. Thus, the phased progression of development in the proposed Draft 2010-2035 General Plan identifies specific areas and time frames in which development will occur. Therefore, some areas may be built out to their full potential within the proposed Draft 2010-2035 General Plan horizon, while others may begin to buildout but are not expected to reach their full development potential within the horizon of the proposed Draft 2010-2035 General Plan. The projected development potential calculated for the proposed Draft 2010-2035 General Plan horizon assumes this phased growth approach to be a reasonable expectation for development within the proposed Draft 2010-2035 General Plan horizon based upon the provision of infrastructure and services. Prior to the implementation of any net new industrial or commercial development, the City will establish a mechanism to meter development in order to maintain the City's jobs/housing balance and ensure adequate infrastructure and public services.

2.18 IMPLEMENTATION OF THE GENERAL PLAN

The City will use a variety of regulatory mechanisms and administrative procedures to implement the General Plan. These include the Zoning Ordinance, Subdivision Ordinance, building and housing codes, capital improvement programs, and an environmental review process consistent with CEQA.

The City's General Plan policies are designed as implementing actions. Collectively, these policies comprise the Plan's implementation program. Policies provide direction for public improvements, define appropriate land uses, identify standards for new development, and detail measures to protect the City's environmental quality.

Implementation of the General Plan involves the City Council, the Planning Commission, other City boards and commissions, and City staff. The Planning and Inspection Department staff has primary responsibility for implementing the Plan. The City also consults with Santa Clara County, adjacent cities, and other public agencies on proposals that affect their respective jurisdictions.

2.19 USES OF THIS EIR

This EIR may be used to provide the environmental review for actions which are consistent with the proposed Draft 2010-2035 General Plan goals and policies, as appropriate. These actions may include the following: adoption of ordinances and policies which implement the General Plan; zoning changes and General Plan amendments that are consistent with the General Plan; and special studies required by or related to implementation of the General Plan policies. Subsequent environmental review may still be required for any of the above actions depending on the nature of the approvals and their associated environmental impacts. This EIR may be used by other agencies reviewing subsequent actions consistent with the proposed Draft 2010-2035 General Plan; however, no public agency other than the City has any discretionary approval power over the General Plan.

This EIR provides the basis for tiering the review of later projects that are within its scope. Future private development and capital improvement projects that are consistent with this EIR may not require substantial additional environmental review. Proposed projects that would result in environmental impacts that are not addressed by this EIR would require the preparation of a Supplemental EIR or a project specific Initial Study or EIR.

This EIR will provide decision makers in the City of Santa Clara, responsible and trustee agencies, and the general public with relevant environmental information to use in considering the proposed project. It is proposed that this EIR will be used for appropriate project-specific discretionary approvals necessary to implement the project, as proposed.

Project approvals require the following actions by the City Council:

- Certification of this Program EIR
- Approval of General Plan Individual Site Amendments
- Approval of the 2009-2014 Housing Element
- Approval of the 2010-2035 General Plan Update
- Approval of Bayshore North Redevelopment Plan Amendments
- Approval of University Redevelopment Plan Amendments

Subsequent environmental review will be conducted for major development projects, public works and infrastructure improvements to evaluate site-specific issues. This EIR will be used to support subsequent actions including:

- 2009-2014 Housing Element
- Zoning Ordinance Update
- Property Rezones
- Climate Action Plan
- Subdivision Maps
- Community Plans
- Infrastructure and Public Facilities siting and project approvals
- Design Review Actions
- Transportation LOS Policy Update
- Specific Plans
- Green Building Policy Development
- Special Permits
- Special Planning Districts
- Santa Clara Station Focus Area Approval

3 CONSISTENCY WITH ADOPTED PLANS

In conformance with Section 15125(d) of the CEQA Guidelines, the following section discusses the consistency of the proposed project with relevant adopted plans and policies.

3.1 AIRPORT LAND USE COMMISSION – CURRENT AND DRAFT COMPREHENSIVE LAND USE PLANS

The Airport Land Use Commission (ALUC) develops comprehensive land use plans to provide for the orderly growth of the area surrounding each airport within the County. Although the ALUC has no jurisdiction over existing land uses, its role is to ensure that new land uses or other proposed actions are compatible with the Airport environment. The Santa Clara County ALUC has adopted a Land Use Plan for those areas in the vicinity of Norman Y. Mineta San José International, Reid-Hillview, Palo Alto, and South County airports. The current Land Use Plan was adopted in September 1992 and most recently amended in November 2008.⁵ The goal of the adopted Land Use Plan is to ensure that new land uses near the airports are such that the public's exposure to excessive noise and safety hazards are minimized. The adopted Land Use Plan includes policies that set forth maximum noise exposure levels. It also includes safety zones that limit the type and density of development and building heights near airports. The City's eastern border is adjacent to the Norman Y. Mineta San Jose International Airport. Portions of Santa Clara, including several of the Focus Areas, as further described in Section 4.1 *Land Use*, 4.13 *Hazards*, and 4.14 *Noise*, fall within the noise restriction area and height restriction area, as defined in the adopted Land Use Plan.

The final draft of the updated Comprehensive Land Use Plan (CLUP) for the Norman Y. Mineta San Jose International Airport was completed in February 2010 and is expected to be adopted by the ALUC in summer 2010⁶. This final draft CLUP includes updated land use compatibility policies and standards. Portions of Santa Clara, as further described below, fall within the Airport Influence Area (AIA), which is a composite of the areas surrounding the Airport that are affected by noise, height, and safety considerations. Portions of Santa Clara, including several of the Focus Areas, as further described in Sections 4.1 *Land Use*, 4.13 *Hazards*, and 4.14 *Noise*, fall within the noise restriction area, height restriction area, and safety restriction area, as defined in the final draft CLUP. This means that the ALUC is required to review the proposed project for consistency with its Land Use Plan. Recommendations made by the ALUC are advisory, not mandatory. Nevertheless, if the ALUC determined that the proposed project is inconsistent with the Land Use Plan, there must be a two-thirds vote by the Santa Clara City Council to override the ALUC's determination. Override votes must be accompanied by specific findings.

Consistency: As part of the prerequisites of the proposed Draft 2010-2035 General Plan and prior to approval of residential development in any Focus Area, a comprehensive land use plan will be completed for each Focus Area, which will specify the location of land uses within the

⁵ Land Use Plan for Areas Surrounding the San Jose International Airport. Adopted by Airport Land Use Commission September 1992, amended October 2007 and November 19, 2008. Accessed May 25, 2010. Available at: [http://www.sccgov.org/SCC/docs/Planning, percent20Office percent20of percent20\(DEP\)/attachments/ALUC/San percent20Jose percent20International percent20Airport/SJC percent20Adopted percent20Land percent20Use percent20Plan percent2011-19-08.pdf](http://www.sccgov.org/SCC/docs/Planning,percent20Officepercent20ofpercent20(DEP)/attachments/ALUC/Sanpercent20Josepercent20Internationalpercent20Airport/SJCpercent20Adoptedpercent20Landpercent20Usepercent20Planpercent2011-19-08.pdf)

⁶ Santa Clara County Airport Land Use Commission. 2010. Final Draft Comprehensive Land Use Plan Santa Clara County Norman Y. Mineta San Jose International Airport. February 17, 2010.

Focus Area. As part of the Safety Policies of the proposed Draft 2010-2035 General Plan, the land use plan will address the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the adopted Airport Land Use Plan and discourage schools, hospitals, sensitive uses, from locating within specified safety zones for the Airport as designated in the adopted Airport Land Use Plan. The proposed Draft 2010-2035 General Plan also includes Safety policies to address new development consistency with the Surfaces height restrictions. As part of the Noise Policies of the proposed Draft 2010-2035 General Plan, the land use plan will implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/Research and Development (R&D) uses compatible with the Airport land use restrictions. The City will also continue to encourage safe and compatible land uses within the Airport noise restriction area and work with the Airport to implement mitigation from aircraft noise to the fullest extent possible. The City will require that individual development projects undergo project-specific environmental review. If significant project-level aircraft noise impacts are identified, evaluation of specific mitigation measures will be required under CEQA.

The City will submit the proposed Draft 2010-2035 General Plan, prior to adoption, to the ALUC for a consistency determination as required by State law. The policies and criteria in the proposed Draft 2010-2035 General Plan are consistent with the portion of the Land Use Plan that affects land use within the City. The compatibility of the development and redevelopment under the proposed Draft 2010-2035 General Plan with the adopted Land Use Plan will be managed by the City consistent with City adopted regulations and policies, in combination with State regulations.

3.2 SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD BASIN PLAN

The San Francisco Bay Regional Water Quality Control Board (Water Board) regulates surface water and groundwater quality in the Region. The area under the Water Board's jurisdiction comprises all of the San Francisco Bay segments extending to the mouth of the Sacramento-San Joaquin Delta (Winter Island near Pittsburg). By law, the Water Board is required to develop, adopt (after public hearing), and implement a Basin Plan⁷ for the Region. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the Region. The first comprehensive Basin Plan for the Region was adopted by the Water Board and approved by the State Water Board in April 1975. Subsequently, major revisions were adopted in 1982, 1986, 1992, 1995, 2002, 2004, and 2007. The Basin Plan provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses in a manner that will result in maximum benefit to the people of California. The Basin Plan also:

- Provides a basis for establishing priorities as to how both State and federal grants are disbursed for constructing and upgrading wastewater treatment facilities;
- Fulfills the requirements of the Porter-Cologne Act that call for water quality control plans in California;
- Provides a basis for the Water Board to establish or revise waste discharge requirements and for the State Water Board to establish or revise water rights permits;
- Establishes conditions (discharge prohibitions) that must be met at all times;

⁷ San Francisco Bay Regional Water Quality Control Board. 2007. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). January 2007.

- Establishes or indicates water quality standards applicable to waters of the Region, as required by the federal Clean Water Act; and
- Establishes water quality attainment strategies, including total maximum daily loads (TMDLs) required by the Clean Water Act, for pollutants and water bodies where water quality standards are not currently met.

Consistency: New impervious surface from redevelopment and development under the proposed Draft 2010-2035 General Plan can increase the delivery of polluted runoff to area storm drains and ultimately to San Francisco Bay, as further described in Section 4.4 *Hydrology and Water Quality*. All construction will conform to the requirements of the Municipal Regional Storm water National Pollutant Discharge Elimination Systems (NPDES) Permit regarding erosion and sedimentation control during construction. In addition, individual projects will be required to manage discharge of storm water runoff under the Clean Water Act, through the preparation and implementation of a Storm water Pollution Prevention Program (SWPPP), which addresses appropriate measures for reducing construction and post construction impacts. The proposed Draft 2010-2035 General Plan also includes updated policies that address storm water runoff and water quality. With the regulatory programs currently in place, and the proposed Draft 2010-2035 General Plan polices, it is foreseeable that redevelopment could, in many cases, reduce potential impacts of accelerated runoff after construction is complete. Sites for redevelopment may not currently include features and improvements that address storm water runoff, and with the new proposed Draft 2010-2035 General Plan policies, the redevelopment of these sites will include the improvements and features to address storm water runoff, thus reducing the runoff on the site after construction is complete. Therefore, the proposed Draft 2010-2035 General Plan is consistent with the Basin Plan.

3.3 BAY AREA AIR QUALITY MANAGEMENT DISTRICT CLEAN AIR PLAN

3.3.1 Bay Area 2005 Ozone Strategy

The Bay Area Air Quality Management District (BAAQMD), in cooperation with the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), prepared the *Bay Area 2005 Ozone Strategy* (Ozone Strategy)⁸. The Ozone Strategy serves as a roadmap showing how the San Francisco Bay Area will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Ozone Strategy updates Vehicle Miles Traveled (VMT) and other assumptions in the 2000 Clean Air Plan (CAP) related to the reduction of ozone in the atmosphere and serves as the current CAP for the Bay Area.

3.3.2 Bay Area 2010 Clean Air Plan

The *Bay Area 2010 Clean Air Plan* (2010 CAP)⁹ provides an updated comprehensive plan to improve Bay Area air quality and protect public health, taking into account future growth projections to 2035. The legal impetus for the Bay Area 2010 CAP is to update the most recent ozone plan, the *Bay Area 2005 Ozone Strategy*, to comply with State air quality planning requirements as codified in the California Health & Safety Code. On March 11, 2010, the Air

⁸ Bay Area Air Quality Management District (BAAQMD). 2006. Bay Area 2005 Ozone Strategy, January 4, 2006.

⁹ Bay Area Air Quality Management District (BAAQMD). 2010. Draft Bay Area 2010 Clean Air Plan. March 2010.

District released the Draft 2010 CAP, as well as a Draft Programmatic Environmental Impact Report addressing the 2010 CAP. On September 15, 2010 the District's Board of Directors adopted the 2010 CAP.

Consistency: The consistency of the proposed project with the 2010 CAP is primarily a question of consistency with population/employment assumptions utilized in developing BAAQMD's plans. The Ozone Strategy projections were based on the most current ABAG growth projections at the time, *Projections 2002* and *Projections 2003*. The population projections used in the 2010 CAP were based on ABAG *Projections 2007*.

Population projections under the proposed General Plan are slightly above (approximately 5 percent) the *Bay Area 2005 Ozone Strategy* and the *Bay Area 2010 Clean Air Plan*, as further described in section 4.10 *Air Quality*. However, traffic modeling completed for the General Plan (see Section 4.12 *Transportation*, Table 4.12-11) indicates the proposed mix and distribution of land uses cause VMT to grow at slightly less than half the rate of population growth and VMT per service population decreases compared to existing levels. Consequently even if population growth exceeds BAAQMD projections by five percent, that increased growth, occurring in a VMT-efficient manner, would not cause emissions to exceed BAAQMD's projections. In addition, the policies under the proposed Draft 2010-2035 General Plan support and reasonably implement the applicable *Bay Area 2005 Ozone Strategy* and the *Bay Area 2010 Clean Air Plan* transportation control measures (TCMs). Therefore, the proposed Draft 2010-2035 General Plan would be consistent with the 2010 CAP.

3.4 SANTA CLARA COUNTY INTEGRATED WASTE MANAGEMENT PLAN

The existing California Integrated Waste Management Act of 1989, which is administered by the California Integrated Waste Management Board (CIWMB), establishes an integrated waste management program. The waste management agency of each county must develop adopt, in consultation with the state board, an integrated waste management plan (IWMP). The Santa Clara County IWMP was approved by the CIWMB in 1996. Since that time it has undergone two five-year reviews. The jurisdictions in the Santa Clara County IWMP include Campbell, Cupertino, Gilroy, Morgan Hill, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale and the Unincorporated Areas of Santa Clara County. Each jurisdiction in the county has a diversion requirement of 50 percent for 2000 and each year thereafter.

Consistency: The City's diversion rate is based on a daily generation rate in terms of lbs/person/day. The target rate is the equivalent of 50 percent diversion based on a jurisdiction's base year. A calculated generation rate lower than the target generation rate(s) (for Santa Clara, 8.2 lbs/person/day for population and 9.0 lbs/person/day for employment) means that the City has achieved its diversion goal. According to the CIWMB 2008 Annual Report Summary, the City of Santa Clara has exceeded the 50 percent diversion goal by achieving a generation rate of 6.9 lbs/person per day for the population calculation and 7.2 lbs/person per day for the employment calculation. Therefore, the City is in compliance with the County IWMP. The proposed General Plan includes policies to minimize waste generation and to continue to meet state diversion requirements, and therefore is consistent with the County IWMP. Solid waste generation and management associated with the proposed Draft 2010-2035 General Plan is further described in Section 4.7 *Public Utilities*.

3.5 SANTA CLARA COUNTY CONGESTION MANAGEMENT PROGRAM

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."

Consistency: The CMP addresses the management of countywide congestion primarily through peak hour traffic patterns. The CMP methodology for assessing traffic impacts is tied to peak hour congestion, and the likelihood of regular (daily) impacts and associated need for mitigations are expressed as relating to weekday peak hours. As described in Section 4.12 *Transportation and Traffic*, future development will generate substantial additional traffic volumes that will cause congestion along certain roadway segments, as identified in Table 4.12-12, covered within the CMP. The City, County, and VTA have identified roadway segment improvements that would improve operations on several of these segments. These improvements include:

- Reconfiguring the US 101/Montague Expressway-San Tomas Expressway interchange to a partial cloverleaf interchange (VTP 2035; Countywide Expressway Study, 2008)
- Providing at-grade intersection improvements at Montague Expressway/Mission College Boulevard (Countywide Expressway Study, 2008; Santa Clara Capital Improvement Project)
- US 101/Trimble Road/De La Cruz Boulevard/Central Expressway interchange improvements (VTP 2035)
- Widening Central Expressway from four (4) to six (6) lanes from Lawrence Expressway to San Tomas Expressway (Countywide Expressway Study, 2008)
- Trimble Road flyover ramp connection at Montague Expressway (VTP 2035)

Additional roadway widening projects are not being considered to mitigate roadway operational impacts due to the costs of acquiring additional right-of-way and the costs of the improvements, physical constraints that make additional widening infeasible, and the City of Santa Clara's lack of jurisdictional authority over most CMP facilities.

The proposed Draft 2010-2035 General Plan includes policies to encourage travel via alternative modes by improving the efficiency of the existing transportation system, while minimizing addition of new roadways and widening of existing streets and intersections, and specific alternative mode supportive policies. The proposed Draft 2010-2035 General Plan policies

excerpted below identify the need for Area Development Policies (an alternate term for a Deficiency Plan) and coordination with the VTA to address CMP impacts.

- 5.1.1-P12 Prior to 2015, implement an Area Development Policy, or similar mechanism, to provide options for alternate vehicular Level of Service standards, such as one that evaluates new development based on an average weighted vehicular transportation LOS D, as a City-wide criteria for streets under the City's jurisdiction, with exemptions for new development in Focus Areas for transit, pedestrian and/or bicycle priority.
- 5.1.1-P13 Prior to 2015, work with Valley Transportation Authority to adopt a City-wide vehicular level of service standard that meets appropriate regional requirements and implement any corresponding adjustments to the City's traffic fee programs that may be necessary.

Should the City identify an alternate methodology for assessing traffic impacts, implementation shall be in accordance with an approved Area Development Policy/Deficiency Plan prepared in cooperation with VTA. While these improvements and policies may improve vehicular operations, they would not improve levels of service sufficiently to meet the current LOS E standard for CMP facilities. Until the City and the CMA have reviewed and approved the Deficiency Plan, the proposed Draft 2010-2035 General Plan would be inconsistent with the CMP.

Once the City prepares and adopts an Area Development Policy/Deficiency Plan in accordance with the VTA standards, the Draft 2010-2035 General Plan would be consistent with the CMP. To comply with the VTA standards, the Deficiency Plan should include actions to (based on the VTA's *Requirements for Deficiency Plans* (1992)):

- Coordinate transportation infrastructure with appropriate land uses
- Build new transit facilities and increasing transit service
- Provide coordinated bicycle facilities
- Enhance transportation demand management (TDM) programs
- Encourage walking by providing safe, direct, and enjoyable walkways between major traffic generators

Many of these actions are included in the 2010-2035 Draft General Plan's transportation and land use policies, as highlighted above (policies 5.1.1-P12 and 5.1.1-P13). Additional selected supporting policies are detailed below:

- 5.8.2-P1 Require that new and retrofitted roadways implement "Full-Service Streets" standards, including minimal vehicular travel lane widths, pedestrian amenities, adequate sidewalks, street trees, bicycle facilities, transit facilities, lighting and signage, where feasible.
- 5.8.3-P3 Support transit priority for designated Bus Rapid Transit, or similar transit service, through traffic signal priority, bus queue jump lanes, exclusive transit lanes and other appropriate techniques
- 5.8.4-P4 Facilitate implementation of the pedestrian and bicycle classifications as illustrated on the Bicycle and Pedestrian Network Diagram in Figure 5.7-3

3.6 CALIFORNIA AIR RESOURCES BOARD'S CLIMATE CHANGE SCOPING PLAN

In December of 2008, CARB adopted its Climate Change Scoping Plan (Scoping Plan), which is the State's plan to achieve GHG reductions in California in 2020, per Assembly Bill 32 Global Warming Solutions Act. The Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system California will implement to achieve a reduction of 169 MMT CO₂e emissions, or approximately 28 percent from the State's projected 2020 emission level of 596 million gross metric tons (MMT) of CO₂e under a business-as-usual scenario, so that the State can return to 1990 emission levels, as required by AB 32.

Consistency: Section 4.16 *Climate Change* provides an analysis that places the proposed 2010-2035 General Plan's growth within the cumulative context for California's 2020 climate change goals. As discussed in Section 4.16 *Climate Change* of this EIR, forecast Citywide GHG emissions are projected to exceed efficiency standards necessary to meet mid-term 2020 state climate change reduction goals. However, through its proposed Draft 2010-2035 General Plan policies the City is committed to the preparation, adoption, and implementation of a comprehensive greenhouse gas emissions reduction strategy (Climate Action Plan) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with the AB 32 Scoping Plan. The CAP will specify the strategies, measures, and actions to be taken for each inventory sector (transportation, electricity, solid waste, water, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met. Therefore, with implementation of the mitigation strategy included in the General Plan, the City's future contribution to climate change will be consistent with the AB 32 Scoping Plan.

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4 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Each topical section in this EIR presents information in the following subsections:

Existing Conditions: This subsection provides a general overview of the existing conditions on a regional scale and within the City.

Regulatory Framework: This subsection identifies Federal, State, and local regulations relevant to the topical section and the City.

Thresholds of Significance: This subsection outlines the criteria used to evaluate whether an impact is considered significant based on standards identified in the CEQA Guidelines, and agency policies or regulations.

Impacts and Mitigation Measures: This subsection provides an impact discussion based on threshold criteria. Significant impacts are identified and analyzed and measures that would reduce significant impacts are identified.

4.1 LAND USE

4.1.1 Existing Conditions

4.1.1.1 *Existing Land Uses*

The City's 2010 land use pattern is predominantly characterized by individual uses segregated into distinct areas, including single family neighborhoods, retail commercial corridors, and industrial/office employment centers, as shown on Figure 2-2 in *Chapter 2 Project Description*. South of the Caltrain corridor are much of the City's residential development, neighborhood-serving retail uses, schools, and parks. The central portion of the City, north of the Caltrain corridor and south of U.S. 101, consists predominately of light and heavy industrial uses, although some of the area has transitioned into office/R&D and Data centers. The northernmost portion of the City has the most diverse mix of uses, including office/R&D, light industrial, regional commercial and recreational uses, including the Great America Theme Park, the Santa Clara Convention Center, the Santa Clara Golf & Tennis Club, as well as the 49ers Training Facility. Recent development in the City has been primarily focused in this northernmost area. As of 2010, the City has developed almost all of its vacant land and is essentially built out.

The existing mix of land uses in the City is shown in Table 4.1-1. Almost half of the developable land in the City (excluding roads, highways, and other rights of way) is residential (42 percent). Employment uses, including light and heavy industrial (18 percent), office/R&D (11 percent), and retail commercial (ten percent), constitute the next most prevalent uses. Less than one percent of the land is comprised of mixed use development. The remaining 20 percent is composed of public/quasi-public/institutional (11 percent), parks and open space (6 percent), vacant land (2 percent), and other uses.

TABLE 4.1-1: EXISTING CITY-WIDE ACRES BY LAND USE (2008)

Land Use Type	# of Acres	percent of Total ¹
Residential	3,890.3	42
Very Low Density (0 to 10 units/acre)	2,425.2	26
Low Density (8 to 18 units/acre)	702.1	8
Medium Density (18 to 25 units/acre)	613.2	7
High Density (25 to 50 units/acre)	149.9	2
Commercial	888.9	10
Neighborhood Commercial	21.9	<1
Community Commercial	543.6	6
Regional Commercial	323.5	4
Mixed Use	11.6	<1
Community Mixed Use	11.6	<1
Office/Research and Development	1,044.1	11
Low Intensity Office/R&D	901.0	10
High Intensity Office/R&D	143.2	2
Industrial	1,644.1	18
Light Industrial	1,140.7	12
Heavy Industrial	503.4	5
Public/Quasi Public	981.6	11
Parks, Open Space and Recreation	566.0	6
Parks	272.5	3
Open Space and Specialized Recreation Facilities	293.5	3
Vacant/Unassigned	158.3	2
SUBTOTAL (DEVELOPABLE LAND)	9,185.0	100
Roads and Other Rights of Way	2,591.0	
Total	11,776.0	

1 – Percent of total developable land, defined as land area exclusive of roads, highways, and other rights-of-way.
Source: City of Santa Clara.2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010

Amendment Sites Existing Land Uses

In addition to the General Plan update, the project includes specific General Plan land use designation and map amendments to sites throughout the City. The purpose of these individual amendments is to modify each site's General Plan land use designation to reflect the existing land use on that site. The existing land uses for the proposed Draft 2010-2035 General Plan Amendment sites are included in Table 4.1-2 below and shown on Figure 2-2 in *Chapter 2 Project Description*. The amendment site locations and numbers are shown on Figure 2-9 *Chapter 2 Project Description*.

TABLE 4.1-2: EXISTING AMENDMENT SITE LAND USE (2008)	
Amendment Site Number	Existing Land Use
2-1, 5-1, 6-3	Gasoline Station
2-2	Retirement Facility
3-1, 3-2, 5-2, 6-1, 6-2, 20-1	Commercial Retail
4-1, 4-17 through 4-23, 8-1 through 8-17, 9-1 through 9-3, 10-1 through 10-12, 11-1, 11-2, 11-3, 11-5 through 11-7, 11-12 through 11-32, 12-1 through 12-8, 14-1, 14-2, 16-1, 16-3, 22-1 through 22-5	Single family Residence
4-2 through 4-16, 4-25, 4-26, 13-1, 16-2, 18-1 through 18-9	Multi-Family Apartments/ Residences
4-24, 8-18 through 8-21, 14-4 through 14-7	Duplex
7-1, 15-3	Medical Office Building
11-4, 11-8 through 11-11, 15-2	Office Building
17-1 through 17-51, 21-1	Multi-Family Condos
19-1	Post Office
20-2	Jack in Box Restaurant

Bayshore North Redevelopment Area Amendment Sites Existing Land Uses

There are two properties located within the Bayshore North Redevelopment Area proposed for individual amendments in the Draft 2010-2035 General Plan shown as sites 1-1 and 1-2 on Figure 2-9 in *Chapter 2 Project Description*. The existing land uses for the two amendment sites are office buildings.

4.1.1.2 General Plan Land Use Designations

The current and proposed Draft 2010-2035 General Plan Land Use designations and summary definitions of each of those designations are included Table 4.1-3 below. The current General Plan Land Use designations are shown on Figure 4.1-1. The proposed land use designations are shown on Figure 2-6, Figure 2-7, and Figure 2-8 in *Chapter 2 Project Description*.

TABLE 4.1-3: GENERAL PLAN LAND USE DESIGNATIONS¹

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
Mixed Use	Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site. A "single site" may include contiguous properties.		
Mixed Use (19 to 25 DU/AC and 55 persons/AC)	This designation is intended to encourage residential development in conjunction with commercial development or redevelopment. Higher densities may be appropriate for locations that are well separated from single family neighborhoods and in close proximity (up to one-half mile) of transit nodes. For sites with approximately a one-acre or larger lot, this designation is intended to encourage high quality mixed use development which includes residential uses, accessible separately from adjacent commercial or office uses. For sites where adjacent properties are designated single family on this Plan, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.	Neighborhood Mixed Use (10 to 36 DU/AC)	This classification combines the Neighborhood Commercial and Medium Density Residential designations and is intended for pedestrian-oriented development, with a focus on ground-level neighborhood-serving retail along street frontages and residential development on upper floors. A minimum 0.10 FAR is required for neighborhood-serving retail, service commercial, and/or local office uses. Auto-oriented uses, including gas stations, are not appropriate in this designation. For sites less than one acre, a minimum residential density of 10 units per acre is required, and for sites larger than one acre, a minimum residential density of 19 units per acre is required, in addition to the minimum commercial FAR. The maximum number of residential units per acre is 36.
Transit-Oriented Mixed Use (26 to 45 DU/AC and 99 persons/AC)	This designation is intended to encourage higher density residential development both in close proximity to multiple transit lines and in conjunction with commercial development or redevelopment. For sites with approximately a one-acre or larger lot, this designation is intended to encourage high quality mixed use development which includes residential uses, accessible separately from adjacent commercial or office uses. For sites where adjacent properties are designated single family on this Plan, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.	Community Mixed Use (19 to 36 DU/AC)	This classification is a combination of the Community Commercial and Medium Density Residential designations and is intended to encourage a mix of residential and commercial uses along major streets. Auto-oriented uses, including gas stations, are not appropriate in this designation. Parking should be behind buildings, below-grade or in structures, to ensure that active uses face public streets. Retail, commercial and neighborhood office uses, at a minimum FAR of 0.10, are required, in conjunction with residential development between 19 and 36 units per acre.
Gateway Thoroughfare (19 to 25 DU/AC and 55 persons/AC)	Primarily a commercial designation or "District", this designation is designed to be neighborhood and pedestrian friendly, to protect existing suitable housing stock and to provide additional housing	Regional Mixed Use (37 to 50 DU/AC)	This classification is a combination of the Regional Commercial and High Density Residential designations and is intended for high-intensity, mixed use development along major transportation corridors in the City. This designation permits all types of retail, hotel and service uses, except for auto-oriented uses (such as gas stations) along with local-serving offices, to meet local and regional needs. A minimum FAR of 0.15 for commercial uses is required. Residential development of 37 to 50 units per gross acre is required. Site frontage along major streets (arterials or collectors) is required to have active, commercial uses.
2010-2035 General Plan City of Santa Clara		Downtown Core	This classification is exclusively for land so designated within the Downtown Focus Area. It covers the University Redevelopment Project Area (approximately seven acres), planned for high density

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
	opportunities in conjunction with high quality commercial uses. Specific design guidelines have been adopted for this District. The District is primarily limited to properties with frontage on the El Camino Real east of Scott Boulevard and north of the City Limit line on The Alameda. Any development on a site which contains or is immediately adjacent to identified historic structures should be designed to preserve those historic structures and be compatible with the predominant historic period and style of those structures. Developments on parcels east of The Alameda and north of Benton Street which substantially exceed the one acre minimum lot size shall be allowed to exceed height and density standards enforced in other parts of the District, due to proximity to the Caltrain Station.		residential and retail uses that will draw local and regional patrons and increase pedestrian activity in the City's center. Development under this classification will result in approximately 400 residential units and 130,000 square feet of non-residential development, excluding any space devoted to civic or public uses.
		Santa Clara Station Area	This classification exclusively applies to the Santa Clara Station Focus Area. Allowed residential densities and non-residential FAR are defined, resulting in approximately 1,650 residential units and 2,000,000 square feet of non-residential building space, including hotels.
Residential Single family Detached Residential (8 DU/AC and 30 persons/AC)	Land designated in the General Plan and zoning ordinance for buildings developments of one and two story single family homes.		units. May be improved, vacant, or unimproved.
Single family Attached Residential (9 to 18 DU/AC and 45 persons/AC)	This designation includes Santa Clara's existing tract heights should not exceed two stories, including below-building parking areas, and total building coverage should not exceed 35 percent, with a minimum of 40 percent of the lot area landscaped.	Very Low Density Residential (up to 10 DU/AC)	Development is typically single family in scale and character, with a prevailing building type of single family detached dwelling units. Development in this classification maintains a feeling of sub-urban living with setbacks between structures, parking, large landscaped yards and tree lined streets.
Moderate Density Residential (19 to 25 DU/AC and 55 persons/AC)	This designation is for single family homes in a high quality multi-unit configuration. Detached homes are encouraged. Building heights should not exceed two stories, including below-building parking areas, and total building coverage should not exceed 35 percent, with a minimum of 40 percent of the lot area landscaped.	Low Density Residential (8 to 18 DU/AC)	Building types may include detached or attached dwelling units. Low Density Residential comes in the form of single family dwelling units, townhomes, rowhouses and combinations of these development types.
Medium Density Residential (26 to 36 DU/AC and 80 persons/AC)	This designation is for two story garden apartment style multi-unit housing, with each unit having its own private usable open space either at grade or above street level. Living areas should not exceed two stories in height, but may be located above depressed parking areas. Total building coverage should not exceed 35 percent, with a minimum of 40 percent of the lot area landscaped.	Medium Density Residential (19 to 36 DU/AC)	This density range accommodates a variety of housing types. It is primarily intended for areas with access from collector or arterial streets or in close proximity to neighborhood centers and mixed uses. Building types can include a combination of low rise apartments, townhomes and rowhouses with garage or below-grade parking.
High Density Residential (37 to no maximum DU/AC)	For sites with a one-acre or larger lot, this designation permits a maximum density of 36 units per acre. Two and three stories over parking will be typical. Maximum building coverage is 45 percent, with a minimum of 40 percent of the lot landscaped.	High Density Residential (37 to 50 DU/AC)	This density range is typically located in areas adjacent to major transportation corridors, transit, or mixed uses. High Density Residential development has an urban feel, with mid-rise buildings, structured or below-grade parking and shared open space.

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
Commercial	A land use classification that permits facilities for buying and selling of commodities and services.		
Convenience Commercial	A limited commercial area, designed to serve the immediate residential neighborhood or employment area. Such areas include a grocery store and other uses not creating a nuisance due to noise, traffic or late-night operation. Convenience commercial uses should be located in multi-tenant shopping centers with a minimum of 5,000 square feet of retail commercial space on-site so as to provide a central destination for auto and pedestrian trips. Building height is limited to 35 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.	Neighborhood Commercial	This classification is intended for local-serving retail, personal service and office uses that meet neighborhood needs, excluding new gas stations. Permitted uses include supermarkets, stores, local serving offices, restaurants, cafes, hair salons/barber shops, and banks. The maximum FAR is 0.4.
Convenience Commercial (S)	(S) denotes convenience commercial service station locations. For sites designated with an (S), existing gasoline service shall remain, but may be supplemented with other retail uses on-site. For (S) designated sites with no functioning service station, new uses are required to include a service station, unless a service station site is provided within one mile. Building height is limited to 35 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.		
Thoroughfare Commercial	A commercial strip of auto-oriented uses, including intervening convenience commercial uses at street level in designated mixed use developments. Hotels, motels and restaurants are encouraged within this commercial designation, where such uses can be accommodated without creating adverse parking impacts on nearby retail uses. Building height is limited to 35 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.	Community Commercial	This classification is intended for retail and commercial uses that meet local and neighborhood demands. Permitted uses include community shopping centers and supermarkets, local professional offices and banks, restaurants, and neighborhood-type services as well as new gas stations. The maximum FAR is 0.5.
Office Commercial	This designation is intended to accommodate general businesses, medical and professional offices outside of industrial areas. Building height is limited to 35 feet. Building coverage shall not exceed 35 percent of the area of the lot.		
Community and Regional Shopping Commercial	This designation includes master planned larger shopping centers offering a variety and depth of goods and services not available in convenience or thoroughfare commercial shopping areas. Auto oriented uses such as drive-through restaurants or auto repair uses are generally not allowed. Building height is limited to 50 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.	Regional Commercial	This classification is intended for retail and commercial uses that provide local and regional services. It is intended for commercial developments that serve both Santa Clara residents and the surrounding region. A broad range of retail uses is allowed, including regional shopping centers, local-serving offices, home improvement/durable goods sales and service, warehouse membership clubs, new and used auto sales and services, and travel-

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
Tourist Commercial	Quality hotel, recreation and other tourist-oriented uses such as theatres, museums and specialty retail are encouraged within this designation. Centered on the Great America Amusement Park and the City's Convention Center, these areas are generally located north of the Bayshore Freeway (State Highway 101) near the Tasman Light Rail Line. Ground floor retail along the Light Rail line and at Transit Stations is encouraged. Tall structures should be located or designed so as to not cast shadows over the public right-of-way for most of the day. Building height is limited to 150 feet. Building coverage shall not exceed 25 percent of the area of the lot.		related services such as hotels, gas stations, restaurants, convention centers, amusement parks, and sports venues. The maximum FAR is 0.60.
Industrial Office/Research & Development Industrial	A land use classification that permits the manufacture, production, and processing of consumer goods. This designation is intended to accommodate the highest employment densities in the City, due to close proximity to the Tasman Light Rail Line and Capitol Corridor/ACE train station. A full range of office uses is encouraged. Prototype research and development uses are allowed along with limited manufacturing uses. Limited manufacturing uses are typically 50 percent or less of the building area. Building height is limited to 70 feet unless special designs or mixed uses are proposed and a rezoning to Planned Development is obtained. Building coverage shall not exceed 50 percent of the lot unless the property is rezoned to Planned Development.	Low-Intensity Office/Research and Development (R&D)	This classification is intended for campus-like office development that includes office and R&D, as well as free standing data centers, with some manufacturing uses limited to a maximum of 20 percent of the building area. It is typically located in areas that provide a transition between light industrial and higher-intensity office/R&D uses and includes landscaped areas for employee activities. Parking may be surface, structured or below-grade. Accessory or secondary small scale supporting retail uses that serve local employees and visitors are also permitted. The maximum FAR is 1.00.
Industrial Transition	This designation is intended to ensure that manufacturing or research and development uses do not adversely impact adjacent residential uses, through screening and landscaping. Outdoor storage of chemicals will not be permitted. Building height is limited to 35 feet. Building coverage shall not exceed 50 percent of the area of the lot.	High-Intensity Office/Research and Development (R&D)	This classification is intended for high-rise or campus-like developments for corporate headquarters, R&D, and supporting uses, with landscaped areas for employee activities. Permitted uses include offices and prototype R&D. Data centers under this designation are limited to those that serve the use on-site. In addition, manufacturing uses are limited to less than 10 percent of the building area. Accessory, or secondary, small-scale supporting retail uses that serve local employees and visitors are also permitted. Parking is typically structured or below-grade. The maximum FAR is 2.00, excluding any FAR devoted to supporting retail uses.
Light Industrial	This designation is applied to the great majority of the City's industrial acreage. These low density light industrial areas typically are used for electronics manufacturing, research and development, and administrative facilities. Building height is limited to an average of two stories, although maximum allowed	Light Industrial	This classification is intended to accommodate a range of light industrial uses, including general service, warehousing, storage and distribution, and manufacturing. It includes flexible space, such as buildings that allow combinations of single and multiple users, warehouses, mini-storage, wholesale, bulk retail, gas stations, data

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
	building height is 70 feet. Building coverage shall not exceed 50 percent of the area of the lot.		centers, indoor auto-related use, and other uses that require large, warehouse-style buildings. Ancillary office uses are also permitted to a maximum of 20 percent of the building area. Because uses in the designation may be noxious or include hazardous materials, places of assembly, such as clubs, theaters, religious institutions and schools and uses catering to sensitive receptors, such as children and the elderly, are prohibited. The maximum FAR is 0.60.
Heavy Industrial	This designation is intended to protect a minimum amount of land in the City for those uses that only are appropriate in a heavy industrial zoning district. Such uses might include auto wrecking, concrete batching plants, large warehouses, and hazardous chemical treatment or transfer points if potential adverse impacts are mitigated as part of conditional approval. Auto repair is an encouraged use within this designation. Building height is limited to 70 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.	Heavy Industrial	This classification allows primary manufacturing, refining, and similar activities. It also accommodates warehousing and distribution, as well as data centers. Support ancillary office space, or retail associated with the primary use, may be up to a maximum of ten percent of the building area. No stand alone retail uses are allowed. Because uses in the designation may be noxious or include hazardous materials, places of assembly, such as clubs, theaters, religious institutions and schools and uses catering predominately to sensitive receptors, such as children and the elderly, are also prohibited. The maximum FAR is 0.45.
Public Facilities	Institutional, academic, governmental and community service uses that are publicly or privately owned and operated.		
Institutional	This designation includes activities such as (1) hospitals, and museums; and (2) other activities of a welfare or philanthropic nature that can not be considered a residential, commercial, or industrial activity. Churches and other religious sites are embedded in the residential land uses.	Public/Quasi Public	This classification is intended for a variety of public and quasi public uses, including government offices, fire and police facilities, transit stations, commercial adult care and child care centers, religious institutions, schools, cemeteries, sports venues, hospitals and convalescent care facilities, places of assembly, and other facilities that have a unique public character.
Educational	This designation includes public and private schools, teaching subjects required by the education code of the State of California, and colleges. Building height and coverage shall not exceed that allowed in the most restrictive adjacent land use.		New public and quasi-public uses may be allowed in all General Plan land use designations, except Heavy and Light Industrial, provided that they take access from a Collector, or larger street, that they are compatible with planned uses on neighboring properties and other applicable General Plan policies, and that they are on parcels of less than one-half acre in areas designated for High or Low Intensity Office/Research and Development.
Fire, Police and Electric Stations and Substations	This designation is intended to include facilities owned and operated by the City that provide safety, emergency, and utility services. Building height and coverage shall not exceed that allowed in the most restrictive adjacent land use.		
Parks and Recreation	This designation applies to open space lands whose primary purpose is recreation. Building height and coverage shall not exceed that allowed in the most restrictive adjacent land use.	Parks/Open Space	This classification is intended for improved and unimproved public or private park and open space facilities, managed natural resource areas, and outdoor recreation areas. It includes neighborhood, community, and regional parks, public golf courses, recreational facilities, and nature preserves, such as Ulistac Natural Area, that provide active or visual open space and serve the outdoor recreational
Open Space	Open space is any parcel or area of land or water that is essentially unimproved and devoted to open space use. This designation identifies areas that are inappropriate for construction		

Current 2000-2010 General Plan Land Use Designation	Definition	Proposed 2010-2035 General Plan Land Use Designation	Definition
	of buildings and differentiates them from parks and recreation designated sites. Building height and coverage shall not exceed that allowed in the most restrictive adjacent land use.		needs of the community.
Historically Significant Resource (H)	Historically Significant Resource refers to prehistoric and historic features, structures, sites or properties that represent important aspects of the City's heritage.	N/A	N/A
Transit/Station/Airport	The designations for public street rights-of-way (Freeway, Expressway, Thoroughfare, Thoroughfare With Landscaped Median, and Collector). This designation includes transportation facilities located at the Airport, CalTrain rail line and El Camino, and the CalTrain station at Lawrence Expressway. Three existing Light Rail stations along the Tasman Light Rail line are also included in this designation. Transit Oriented Development is encouraged within 2,000 feet of Transit Transfer Points or CalTrain or Light Rail stations.	N/A	N/A
Other	These designations represent special instances where a combined designation has been adopted.	N/A	N/A
Medium Density Residential and/or Parks and Recreation and/or Institutional (26 to 36 DU/AC and 80 persons/AC)	This designation includes residential uses, possibly alongside parks and recreation areas and/or institutional facilities such as a community theatre. For sites with a one-acre or larger lot, this designation permits a maximum density of 36 units per acre. The building height limit is typically 120 feet.	N/A	N/A
1. See Chapter 2 of the City's currently adopted General Plan for more detailed definitions of these land use categories. Source: City of Santa Clara General Plan 2000-2010, adopted 2002 and City of Santa Clara.2010. City of Santa Clara 2010-2035 Draft General Plan, March 2010.			

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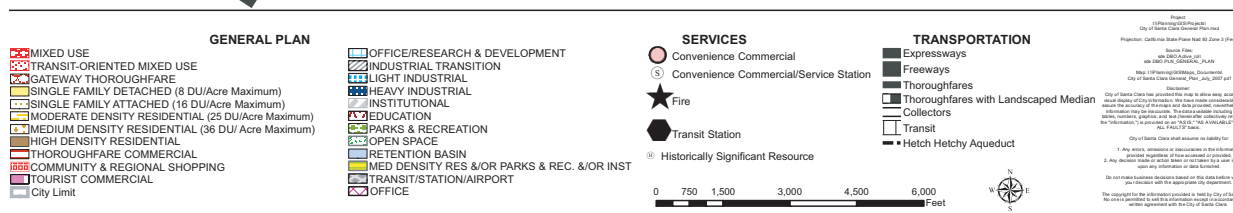


FIGURE 4.1-1

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Amendment Sites Land Use Designations

The current land use designations for the proposed Draft 2010-2035 General Plan Amendment sites are shown in Table 4.1-4 below. The amendment site locations and numbers are shown on Figure 2-9 in *Chapter 2 Project Description*.

TABLE 4.1-4: AMENDMENT SITE LAND USE DESIGNATIONS	
Site Number	Current Land Use Designation
2-1	Moderate Density Residential
2-2	Office
3-1, 3-2	Moderate Density Residential
4-1	Thoroughfare Commercial
4-2 through 4-16	Single Family Detached
4-17 through 4-24	Thoroughfare Commercial
4-25, 4-26	Single Family Detached
5-1, 5-2	Moderate Density Residential
6-1 through 6-3	Moderate Density Residential
7-1	Moderate Density Residential
8-1 through 8-21	Thoroughfare Commercial
9-1 through 9-3	Community & Regional Shopping
10-1 through 10-12	Thoroughfare Commercial
11-1 through 11-8, 11-12, 11-13, 11-15 through 11-17	Moderate Density Residential
11-9 through 11-11, 11-14	Single Family Detached
12-1, 12-2, 12-4, 12-6, 12-8, 12-12 through 12-21, 12-24 through 12-32	Thoroughfare Commercial
12-3, 12-5, 12-7, 12-9, 12-22, 12-23	Single Family Detached/Thoroughfare Commercial
12-10, 12-11	Single Family Detached
13-1 through 13-8	Parks & Recreation
14-1	Office
15-1, 15-2	Office/Single Family Detached
15-3 through 15-7	Office
16-1, 16-2	Single Family Detached
16-3	Moderate Density Residential
17-1, 17-3	Parks & Recreation
17-2	Parks & Recreation
18-1 through 18-51	Light Industrial
19-1 through 19-9	Single Family Detached
20-1	Light Industrial
21-1, 21-2	Moderate Density Residential
22-1	Single Family Detached

Bayshore North Redevelopment Area Amendment Sites Land Use Designations

The existing land use designations for the two amendment sites located within the Bayshore North Redevelopment Area are Tourist Commercial (hotel, recreation and other tourist-oriented uses such as theatres, museums and specialty retail are associated with this designation).

4.1.2 Regulatory Framework

The following section describes the planning framework and additional regulatory documents, plans, and policies relevant to land use for the proposed Draft 2010-2035 General Plan. The section describes applicable plans, policies, and regulations of regional, State or federal agencies with jurisdiction over the City.

4.1.2.1 Long Range Plans

City of Santa Clara's Currently Adopted General Plan 2000-2010

The current *City of Santa Clara General Plan 2000-2010*, was adopted by the City Council in 2002. The Housing Element was adopted in 2004. Various amendments to the 2002 General Plan (refer to Appendix C for a list of the amendments), have been approved to accommodate changing development patterns, but the entirety of the General Plan has not been comprehensively revised since 2002 and much has changed in the City since that time. The current General Plan includes policies and implementation measures for several major areas: land use (including existing Neighborhood Quality and Design Guidelines), housing, transportation, environmental quality, and public facilities and services. The Housing Element has a separate schedule and planning horizon (1999 to 2006) and was updated more recently in 2004.

Santa Clara Station Area Plan

The cities of San José and Santa Clara, and the Santa Clara Valley Transportation Authority (VTA) have cooperated in the development of a plan for 432 acres of land surrounding the Santa Clara Transit Center and future Bay Area Rapid Transit (BART) Station. Approximately 244 acres of the area is located in Santa Clara. The Santa Clara Transit Center is currently served by Caltrain, Altamont Commuter Express (ACE), and VTA bus lines. Amtrak's Capital Corridor train and the future high speed rail line pass through the area. The future BART extension will terminate in Santa Clara. An Automated People Mover is also proposed to connect the Airport with both the Santa Clara Transit Center and VTA's Airport light rail station. With direct rail service to virtually all parts of the San Francisco Bay Area and beyond, the expanded Santa Clara Transit Center is an important intermodal transit hub for the region.

The Santa Clara Station Area Plan has been incorporated into the proposed Draft 2010-2035 General Plan as the Santa Clara Station Focus Area with specific land uses and policies (refer to Chapter 5 of the proposed Draft 2010-2035 General Plan). It provides opportunities for the development of housing, offices, retail, hotels, restaurants, parks, and other amenities. Approximately two million net new square feet of commercial uses and 1,650 housing units are anticipated within the City of Santa Clara jurisdiction.

Santa Clara Downtown Plan

Revitalization of Santa Clara's historic Downtown is a priority for the City. In 2007, the City prepared and finalized a Downtown Plan for the City-owned 7.3 acres bounded by Homestead Road and Lafayette, Jackson, and Benton streets. This Plan was the subject of a Request for Proposals (RFP) to solicit developer interest. The RFP suggested an urban, mixed use center, including over 129,000 square feet of retail commercial space with 396 residential units above for the site. The Downtown includes the City-owned site as well as some surrounding properties. The project is currently on hold pending improvement in overall economic and real estate conditions.

Santa Clara County Airport Land Use Commission

The Airport Land-Use Commission (ALUC) was established to provide for appropriate development of areas surrounding public airports in Santa Clara County. It is intended to minimize the public's exposure to excessive noise and safety hazards, and to ensure that the

approaches to airports are kept clear of structures that could pose an aviation safety hazard. The ALUC develops the Comprehensive Land Use Plan (CLUP), which establishes a land use plan that provides the orderly growth of the area surrounding San Jose International Airport in Santa Clara County. In formulating this plan, the ALUC of Santa Clara County has established provisions for the regulation of land use, building height, safety, and noise insulation within areas adjacent to the airport. Portions of Santa Clara, as further described below, fall within the noise restriction area, height restriction area, and safety restriction area, as defined in the CLUP.

Santa Clara Valley Habitat Conservation Plan (Draft)

The City is adjacent to the area that will be covered by the Santa Clara Valley Habitat Conservation Plan (Valley HCP), which is a conservation program to promote the recovery of endangered species while accommodating planned development, infrastructure and maintenance activities. The Valley HCP is being developed through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, the Santa Clara Valley Water District, and the Valley Transportation Authority (collectively termed the ‘Local Partners’), the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the National Marine Fisheries Service. The Habitat Plan seeks to protect and enhance ecological diversity and function within more than 500,000 acres of southern Santa Clara County. The final Valley HCP, whose adoption is anticipated in 2011, will provide a framework for the Local Partners and landowners to complete projects while protecting at-risk species and their essential habitats, some of which only occur in Santa Clara County.

Mission College

Mission College is the only public community college in Santa Clara. Currently, the College is undergoing an update to their Master Plan, planning for future facilities. Mission College has spoken with the City about future housing on their property, as well as other future expansion opportunities.

Santa Clara Unified School District

Santa Clara Unified School District (SCUSD) covers approximately 90 percent of the City, enrolling 89 percent of the City’s student population (2009). Demographic trends indicate an increase in school age children, possibly requiring additional school facilities in the future. The City maintains an open relationship with the District, with members of staff sitting on the long range planning committee and District representatives sitting on the General Plan Steering Committee.

Santa Clara University

Santa Clara University (SCU) is one of the major universities in the region. SCU is an asset to the community, providing highly educated graduates to the workforce. The City works closely with the University regarding new buildings, both on and off campus, as well as regarding community relations and student activities.

4.1.2.2 Adjoining Jurisdictions

There are several planning initiatives and development projects moving forward in Santa Clara as well as in neighborhood cities that may affect Santa Clara residents and land use decisions near the City’s border. These efforts are shown on Figure 4.1-2 and described below.

City of Sunnyvale

The City of Sunnyvale is the second largest city in Santa Clara County and encompasses approximately 23 square miles¹⁰.

City of Sunnyvale General Plan and Upcoming Update

Santa Clara shares its western boundary with the City of Sunnyvale. Sunnyvale's 1997 General Plan designates the area bordering Santa Clara for industrial uses north of the Caltrain railroad tracks and residential uses south of the railroad tracks, with the exception of the existing residential and mobile home park between U.S. 101 and Tasman Drive. The Calabazas Creek provides a natural buffer between the Sunnyvale neighborhoods north of the Caltrain railroad tracks and the existing and planned employment centers in Santa Clara. The City of Sunnyvale is currently in the process of updating several elements of its General Plan.

Lawrence Station Area Plan

In cooperation with the City of Santa Clara, the City of Sunnyvale has initiated the drafting of a Station Area Plan for the Lawrence Station. This effort is expected to identify opportunities for higher-density residential and office development near the station; add neighborhood commercial services to serve existing and future residents; and improve access to the station, including enhanced signage and circulation for pedestrians, bicyclists and motorists.

Precise Plan for El Camino Real

The City of Sunnyvale has adopted a precise plan for its portion of El Camino Real (Precise Plan). The Precise Plan provides design guidelines and identifies opportunities for redevelopment at specific locations, including the "gateway" to Santa Clara at Lawrence Expressway. The design guidelines encourage landscaping and signage to signify arrival into Sunnyvale. The majority of properties along El Camino Real are zoned either C- 2/ECR (Highway Business with the El Camino Real Combining District) or R-4/ECR (High Density Residential with the El Camino Real Combining District). Sunnyvale allows residential densities of up to 45 units per acre for the R-4 zoning district and minimum density of 36 units per acre is assumed for mixed use proposals (C-2). For properties located in designated Node areas (as shown in the Precise Plan), the maximum building height is 75 feet (except when within 75 feet of a single-family residential district when the height limitation is 30 feet). For properties located outside designated Node areas, the maximum height is 55 feet (except when within 75 feet of a single-family residential district when the height limitation is 30 feet).

Lakeside Specific Plan

Just southeast of the U.S. 101 and Lawrence Expressway intersection, and west of the Calabazas Creek, the City of Sunnyvale approved the redevelopment of an existing hotel into a mixed hotel and residential development.

¹⁰ City of Sunnyvale. 2007. Sunnyvale Community Vision, A Guiding Framework for General Planning. Adopted May 8, 2007.

City of San José

San José is the largest City in Santa Clara County, both in terms of population and area. The City encompasses approximately 178 square miles, and includes a sphere of influence of approximately 280 square miles¹¹.

City of San José 2020 General Plan and Envision 2040 General Plan Update

Santa Clara shares its eastern, northern and southern boundaries with the City of San José. To the south along Stevens Creek Boulevard, San José's current General Plan supports auto sales and discourages residential development. To the east, adjacent to the San Jose Norman Y. Mineta International Airport, San José's General Plan promotes the redevelopment of the area under the Rincon South Planned Community which includes residential, hotels, retail, commercial, and industrial uses to take advantage of the light rail access and Airport proximity. The City of San José is currently updating its General Plan to 2040 to accommodate an additional 470,000 jobs and 120,000 dwelling units.

Alviso Specific Plan

The Specific Plan for the historic Alviso neighborhood in the City of San José, which borders Santa Clara to the north, projects modest growth to accommodate some retail, commercial and light industrial uses on a closed landfill site and on the vacant lands north of SR 237. Residential uses are currently allowed within the existing residential areas.

North San José Vision Plan

The City of San José has approved a Vision Plan for North San José. The area for this plan is located adjacent to Santa Clara's eastern boundary. The plan provides opportunities to increase office, industrial and R&D uses by over 26 million square feet to create up to 80,000 new jobs. The plan also proposes to convert 285 acres of existing industrial land to residential use and allow mixed use residential development within industrial areas. This could result in up to 32,000 new residential units adjacent to Santa Clara.

City of Cupertino

Cupertino is a suburban city in Santa Clara County and has a total area of 10.9 square miles¹².

City of Cupertino General Plan

Cupertino shares a small portion of Santa Clara's western boundary. For this area, Cupertino's General Plan identifies streetscape and other landscaping improvements along Stevens Creek Boulevard to support residential and office uses midblock, and neighborhood commercial uses at corners. The South Vallco Park area, just east of the shared boundary, is approved for 711 housing units. The Cupertino General Plan allows building heights of up to 60 feet in this area.

North Vallco Master Plan

The City of Cupertino has initiated planning for the North Vallco area, bounded by Homestead Road, Tantau Road, InterState 280 and Wolfe Road. Already a substantial employment and

¹¹ City of San Jose. 2008. San Jose 2020 General Plan Focus on the Future. May 20, 2008.

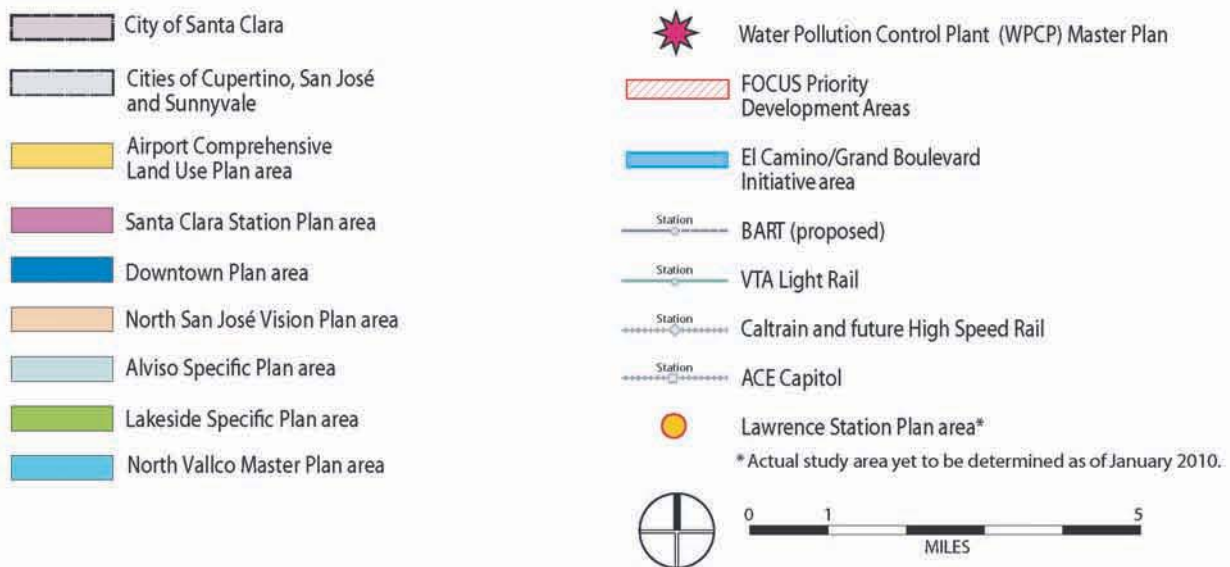
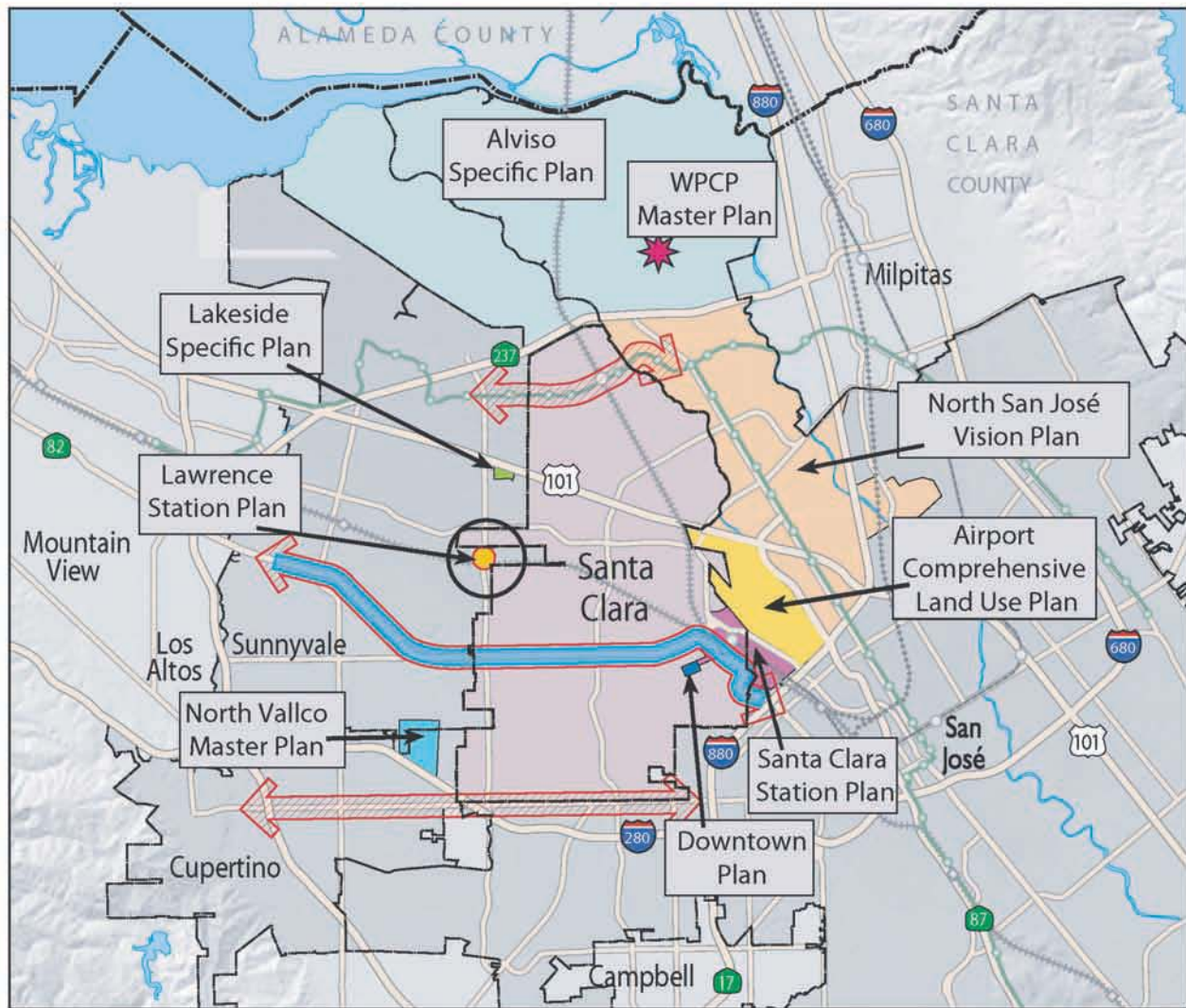
¹² City of Cupertino. 2010. City Website, About Cupertino. Accessed January 8, 2010. Available at: <http://www.cupertino.org/index.aspx?page=7>

education center, the intensification of commercial office and industrial uses as well as retail services is anticipated. Residential development is also under consideration in conjunction with currently allowed hotels.

4.1.2.3 Regional Planning Efforts

Regional initiatives may provide development and funding opportunities for the City. These efforts are summarized in Table 4.1-5.

TABLE 4.1-5. REGIONAL PLANNING EFFORTS	
Jurisdiction	Plan Name
Association of Bay Area Governments	Local Hazard Mitigation Plan: Taming Natural Disasters
Association of Bay Area Governments, Bay Area Air Quality Management District, San Francisco Bay Conservation and Development Commission, and Metropolitan Transportation Commission	Transportation 2035 Plan for the San Francisco Bay Area FOCUS Program – Priority Development Areas
California High Speed Rail Authority	California High Speed Rail
Caltrain	Caltrain Electrification Project
Joint Silicon Valley Network	El Camino Real Grand Boulevard Initiative
	Climate Protection
	Disaster Planning Initiative
	Silicon Valley Economic Development Alliance
Metropolitan Transportation Commission	Transportation 2035 Plan for the San Francisco Bay Area
Santa Clara County Airport Land Use Commission	San Jose International Airport Comprehensive Land Use Plan
San Jose/Santa Clara Water Pollution Control Plant	San Jose/Santa Clara Water Pollution Control Master Plan
	South Bay Water Recycling Project
Santa Clara Valley Transportation Authority	Bus Rapid Transit Facilities Design
	Valley Transportation Plan 2035
Source: City of Santa Clara 2010-2035 Draft General Plan. March 2010.	



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4.1.3 **Thresholds of Significance**

For the purposes of this EIR, a land use impact is considered significant if the project would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.1.4 **Impacts and Mitigation Measures**

4.1.4.1 ***Physically divide an established community?***

The changes in land use that would occur upon the implementation of the proposed Land Use Plan would not result in the physical division of an established community. In the El Camino, Santa Clara Station and Steven Creek Focus Areas, residential and mixed uses would be introduced. In the Lawrence Station, Central Expressway, De La Cruz, Tasman East and Great America Parkway Focus Areas, land uses would be changed from industrial to residential and/or mixed use. The development within the Focus Areas are currently industrial and do not include established communities, and as such the new development in this area would not divide established communities. The mixed use areas would also bring entertainment, activity, and diversity to housing, retail, and workplace land uses in the City, which would help create attractive communities for local citizens and visitors. The Land Use Element of the proposed Draft 2010-2035 General Plan contains policies and programs, as identified in the table below, that encourage the preservation or enhancement of the existing, primarily residential community through infill development, open space opportunities, and development of compatible uses that will enhance the existing character of Santa Clara. The Land Use Element has specific policies for compatibility that would reduce the amount of conflict between differing land uses. Consequentially, this impact would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated land use policies that address compatibility of new land uses with established communities. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation that will reduce or avoid impacts from land use incompatibility within the City are identified below.

Land Use Policies	
5.3.1-P1	Preserve the unique character and identity of neighborhoods through community-initiated neighborhood planning and design elements incorporated in new development.
5.3.1-P3	Support high quality design consistent with adopted design guidelines and the City's architectural review process.
5.3.1-P20	Encourage uses and development on City-owned and leased land that is consistent with the General Plan land use classification or applicable Focus Area, Neighborhood Compatibility or Historic Preservation Policies.
5.3.1-P29	Encourage design of new development to be compatible with, and sensitive to, nearby existing and planned development, consistent with other applicable General Plan policies.

Residential Land Use Policies	
5.3.2-P5	Allow development of second units in single family neighborhoods, provided that the development complies with the General Plan Transition policies and that it is compatible with surrounding neighborhoods.
5.3.2-P11	Maintain the existing character and integrity of established neighborhoods through infill development that is in keeping with the scale, mass and setbacks of existing or planned adjacent development.
Mixed Use Land Use Policies	
5.3.4-P7	Use design techniques, such as stepping down building heights, and siting incompatible activities, such as loading and unloading, away from residential uses.
El Camino Real Focus Area Policies	
5.4.1-P5	Provide appropriate transition between new development in the Focus Area and adjacent uses consistent with General Plan Transition Policies.
5.4.1-P6	Encourage lower profile development, in areas designated for Community Mixed Use in order to minimize land use conflicts with existing neighborhoods.
Downtown Focus Area Policies	
5.4.2-P6	Apply the General Plan Transition and Historic Preservation policies for new development at the edges of Downtown in order to respect the scale and character of the adjacent historic Old Quad neighborhood.
5.4.2-P7	Transition development west of El Camino Real with no more than two to three stories adjacent to existing residential development.
5.4.2-P8	Integrate established and new uses through pedestrian connections, streetscape, and complementary architecture and site design.
5.4.2-P13	Promote pedestrian-friendly streetscapes with trees, benches, outdoor seating, kiosks, amenities, banners and signature signage, and landscaping that reflect the historic neighborhood character.
Santa Clara Station Focus Area Policies	
5.4.3-P7	Provide appropriate transition between new development and adjacent uses consistent with General Plan Transition Policies.
Stevens Creek Boulevard Focus Area Policies	
5.4.4-P2	Provide appropriate transitions between new development and adjacent uses consistent with General Plan Transition Policies.
Future Focus Area Policies	
5.4.5-P2	Implement development in Future Focus Areas in conformance with applicable General Plan policies for Neighborhood Compatibility, Mobility and Transportation, Public Services, and Environmental Quality.
Transition Policies	
5.5.2-P1	Require that new development incorporate building articulation and architectural features, including front doors, windows, stoops, porches or bay windows along street frontages, to integrate new development into existing neighborhoods.
5.5.2-P2	Implement design review guidelines for setback, heights, materials, massing, articulation and other standards to support Transition Policies and promote neighborhood compatibility.
5.5.2-P3	Implement site design solutions, such as landscaping and increased building setbacks, to provide a buffer between non-residential and residential uses.
5.5.2-P4	Provide adequate separation between incompatible land uses in order to minimize negative effects on surrounding existing and planned development.
5.5.2-P5	Require that new development provide an appropriate transition to surrounding neighborhoods.
5.5.2-P6	Adjust new building height, scale and massing along the site perimeter abutting planned lower intensity uses.
5.5.2-P13	Offer opportunities for developed neighborhoods to initiate planning efforts to provide a vision for future streetscape design and neighborhood character.

Existing Regulations and Programs

Existing City policies that address land use compatibility include:

- Santa Clara City Code Title 18 (Zoning Ordinance) - The existing Zoning Ordinance regulates development in Santa Clara. Residential uses are permitted in ten zoning districts.
- Santa Clara City Code Chapter 18.76 (Architectural Review) - The Architectural Committee reviews plans and drawings submitted for architectural review for design, aesthetic considerations, and consistency with zoning standards, generally prior to submittal for Building Permits.
- Architectural Committee Community Design Guidelines

Impact 4.1-1: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to be incompatible with established neighborhoods within the City. Implementation of proposed policies and existing programs would minimize adverse effects on the existing neighborhoods. (**Less Than Significant Impact**)

4.1.4.2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The proposed Draft 2010-2035 General Plan provides a citywide growth strategy and guidance for future development in the City. With limited developable vacant land, the proposed Draft 2010-2035 General Plan focuses future growth into mixed use activity centers that are linked to the regional transit system. Implementation of the proposed Draft 2010-2035 General Plan would result in infill and redevelopment occurring in selected built areas. The City has many programs, permit processes, and regulations in place to guide development, as described in the Regulatory Framework section above.

An inconsistency with an adopted plan is not by itself a significant impact. The inconsistency must relate to a physical environmental impact to be considered significant under CEQA. Future actions and developments are anticipated that could result in conflicts with other adopted plans in the following areas:

Environmental Policies

The proposed 2010-2035 Draft General Plan includes a broad range of policies that involve or emphasize environmental goals to varying degrees, depending on the community's natural setting and resources, and the need to address community-specific issues. The proposed Draft 2010-2035 General Plan addresses these topics including: open space, water resources, urban runoff, air quality, biological resources, geology and soils, hazards, and energy independence. The proposed Draft 2010-2035 General Plan contains the most comprehensive and up-to-date environmental policies of the City and in most cases would be consistent with, and enhance community environmental goals. However, as development occurs throughout the phases of the proposed Draft 2010-2035 General Plan, amendments/updates may be needed to consider any new environmental issues or any refinement and application of citywide environmental goals. As proposed, however, the Draft 2010-2035 General Plan does not conflict with any existing plans, policies or regulations.

Land Use Designations

The project includes specific General Plan land use designation and map amendments to sites throughout the City, as shown on Figure 2-9 in Chapter 2 Project Description. The purpose of these individual amendments is to modify each site's General Plan land use designation to reflect the existing land use on that site. The proposed Bayshore North Redevelopment Plan Amendment includes a change to the text requiring all land use in the Redevelopment Area to conform to the proposed Draft 2010-2035 General Plan as well as to any proposed individual land use amendments within the Redevelopment Area. The map amendments will change the designation of the sites to reflect existing uses, and does not specifically provide for any new development potential.

The proposed Draft 2010-2035 General Plan includes proposed new Land Use designations that include higher densities and intensities, compared to existing land use designations, as shown in Table 4.1-3 above. The change in density and intensity associated with the planned development for the Focus Areas is discussed below.

El Camino Real Focus Area – The El Camino Real Focus Area is the City's most visible and identifiable commercial corridor. The area includes older building stock, extensive signage, lack of landscaping, a wide right-of-way, and relatively shallow parcels that abut single family residential uses. The current designations and requirements for properties along El Camino Real are included below:

Current General Plan 2000-2010 Land Use Designation	Requirements
Thoroughfare Commercial	Maximum building height 35 feet; no maximum building coverage requirement
Mixed Use	19 to 25 DU/AC and 55 persons/AC; For sites where adjacent properties are designated single family, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.
Transit-Oriented Mixed Use	26 to 45 DU/AC and 99 persons/AC; For sites where adjacent properties are designated single family on this Plan, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.
Community and Regional Shopping	Building height is limited to 50 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.
Gateway Thoroughfare	19 to 25 DU/AC and 55 persons/AC; Developments on parcels east of The Alameda and north of Benton Street which substantially exceed the one acre minimum lot size shall be allowed to exceed height and density standards enforced in other parts of the District, due to proximity to the Caltrain Station.

The vision for El Camino Real is to transform this Focus Area from a series of automobile-oriented strip-malls to a pedestrian- and transit-oriented corridor with a mix of residential and retail uses. Future development in these areas would be characterized by lower-intensity mixed-, or single-use development (as compared to the existing uses and land use identified in the current 2000-2010 General Plan) with signature landscaping, streetscape design, signage and public art, to contribute to the area's identity of this Focus Area. The Regional Mixed Use designation should be developed with a minimum of 0.15 FAR for commercial uses. Overall development heights would typically be between three and five stories. The predominate designation on properties located between the larger Regional Mixed Use designated properties, is Community Mixed Use. Within the El Camino Real Focus Area, this designation may be implemented consistent with either Community Commercial, or Medium Density Residential, or a

combination of both. Retail, commercial, and neighborhood offices uses, at a minimum FAR of 0.10 are required in conjunction with residential development between 19 and 36 units per acre in the Community Mixed Use designation. The resulting development is proposed to allow a mix of residential and retail uses, which is a change from the existing automobile-oriented strip malls.

The proposed development intensity and density within the El Camino Real Focus Area is consistent with the existing land use designations along El Camino Real. The maximum residential density in the Community Mixed Use Area (36 DU/AC) would fall between the current Mixed Use and Transit-Oriented Mixed Use densities, as noted above. Development heights would also remain consistent with those allowed under existing land use designations and range between three and five stories. Some existing sites along El Camino Real are designated just for retail and do not include residential and are intended for low density development; new designations are for mixed uses (i.e., retail and residential) and high density development, which would change the appearance of the El Camino Real corridor, as further described in section 4.3, *Aesthetics*.

Downtown Focus Area – The Downtown Focus Area, located in the historic Old Quad neighborhood and near both Santa Clara University and the Santa Clara Transit Station, and is currently designated as mixed use, which includes 19 to 25 dwelling units per acre and 55 persons per acre. For sites where adjacent properties are designated single family, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.

The vision for the Downtown Focus Area includes boutique shopping, restaurants, public gathering places and civic venues, as well as a transit loop connection to the Santa Clara Station Area. This vision for Santa Clara's Downtown also includes approximately 130,000 square feet of retail and commercial uses along with almost 400 new residences on the seven-acre Focus Area property that will be designated Community Mixed Use and High-Density residential. Development under this designation could be at intensities of approximately 2.0 FAR, with building heights between five and eight stories. Allowed building intensity and heights in the remainder of the Downtown Focus Area are typically lower, with maximum heights of between three and five stories. The buildout of the Downtown Focus Area will differ from existing mixed uses by including higher density residential and retail development and a transit loop connection.

The change in development intensity and density associated with the Downtown Focus Area is similar to that previously reviewed by the City as part of the development of a Request for Proposals (RFP) for development in the Downtown. The maximum building intensity and residential density in the Community Mixed Use designation would be greater than the current Mixed Use designation density, but would fall in between the current Mixed Use and High-Density Residential designations densities. The Downtown Focus Area is proposing Mixed Use and High-Density Residential development; buildout would be similar to what is allowed by existing land use designations. Some existing sites in the Downtown Focus Area are intended for low-density development; new designations are for mixed uses (i.e., retail and residential) and high-density development, which could change the appearance of the Downtown Focus Area from existing conditions, as further described in Section 4.3, *Aesthetics*. Future development

intensity and densities would ultimately increase in the Downtown Focus Area under the proposed Draft 2010-2035 General Plan.

Santa Clara Station Focus Area – The Santa Clara Station Focus Area is the 244-acre portion located within the City of Santa Clara of a larger, multi-jurisdictional planning area. Existing development consists of low intensity retail, office, residential and light and heavy industrial uses located along El Camino Real. Higher-intensity mixed use development is adjacent to the Station. Smaller-scale residential uses are located near the Old Quad neighborhood and Downtown Focus Area. The current land use designations and requirements for the properties within the Santa Clara Station Area are included below:

Current General Plan 2000-2010 Land Use Designation	Requirements
Mixed Use	19 to 25 DU/AC and 55 persons/AC; For sites where adjacent properties are designated single family, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.
Gateway Thoroughfare	19 to 25 DU/AC and 55 persons/AC; Developments on parcels east of The Alameda and north of Benton Street which substantially exceed the one acre minimum lot size shall be allowed to exceed height and density standards enforced in other parts of the District, due to proximity to the Caltrain Station.
Light Industrial	Building height is limited to an average of two stories, although maximum allowed building height is 70 feet. Building coverage shall not exceed 50 percent of the area of the lot.
Heavy Industrial	Building height is limited to 70 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.

The vision for the Santa Clara Station Focus Area includes new office, hotel, and retail uses and high-density residential development. The Santa Clara Station Focus Area is planned for mixed use, transit-oriented development. Approximately 1,650 new residential units and 2,000,000 square feet of non-residential uses, including hotels, are expected.

Land uses within this Focus Area under the Draft General Plan will include Residential (low, medium, high, and very high density), Regional Commercial, Regional Mixed Use, Community Mixed Use, Public/Quasi-Public and Light Industrial. The proposed land uses designations in the Santa Clara Station Focus Area would fall within the classifications of the existing Mixed Use (office, commercial, institutional, and residential), Gateway Thoroughfare (this designation is designed to be neighborhood and pedestrian friendly), and Industrial land use designations. The buildout of the Santa Clara Station Focus Area will differ from existing mixed uses by including higher density residential and retail development and transit-oriented development. Some existing sites in the Santa Clara Station Focus Area are intended for low-density development; new designations are for high-density development, which could change the appearance of the Focus Area from existing conditions, as further described in Section 4.3, *Aesthetic*, as a result of future land use changes in the Santa Clara Station Focus Area under the proposed Draft 2010-2035 General Plan.

Stevens Creek Boulevard Focus Area – Like El Camino Real, Stevens Creek Boulevard is a major east-west arterial roadway, with local and regional-serving commercial uses. Sales of automobiles and durable goods, like furniture and recreational vehicles, are the primary businesses in this area. The area includes older building stock, extensive signage, lack of

landscaping, a wide right-of-way, and relatively shallow parcels that abut single family residential uses. The current designations of properties along Stevens Creek Boulevard are included below:

Current General Plan 2000-2010 Land Use Designation	Requirements
Thoroughfare Commercial	Maximum building height 35 feet; no maximum building coverage requirement
Mixed Use	19 to 25 DU/AC and 55 persons/AC; For sites where adjacent properties are designated single family, total building height should not exceed three stories including parking, within fifty feet of an adjacent single family property.
Community and Regional Shopping	Building height is limited to 50 feet with no maximum building coverage requirement; subject to required parking, landscaping, and setbacks.

New development in the Stevens Creek Boulevard Focus Area will gradually replace existing development. New, non-residential development is expected with up to 0.50 FAR and higher intensity, two- to three-story showrooms to maximize the use of smaller parcels and minimize conflicts with surrounding neighborhoods. Professional offices could be a secondary use to the primary retail commercial uses.

Land uses within this Focus Area proposed by the Draft General Plan will include Regional Commercial, Neighborhood Mixed Use, and Community Mixed Use. The new proposed land use in the Stevens Creek Boulevard Focus Area overlap the existing land use classifications, Thoroughfare Commercial (auto-oriented uses, convenience commercial, hotels, motels, and restaurants), Mixed Use (office, commercial, institutional, and residential), and Community and Regional Shopping land use designations. The new, non-residential development is intended to fully utilize the smaller existing parcels. The land use intensities in the Stevens Creek Boulevard Focus Area under the proposed Draft 2010-2035 General Plan would increase, however, the new land uses would be compatible with current land uses on Stevens Creek Boulevard.

Future Focus Areas – The Future Focus Areas will change from existing underutilized office and industrial uses to higher density residential and mixed use neighborhoods with a full complement of supportive services. New development in the Lawrence Expressway Future Focus Area will consist of medium- and high-density residential, open space, and neighborhood retail. The Central Expressway Future Focus Area will include high-density residential, open space, public facilities, and neighborhood retail. The De La Cruz Future Focus Area will include medium-density residential, open space, public facilities, and neighborhood retail. The Great America Parkway Future Focus Area will include high-density residential, open space, public facilities, and neighborhood retail. The Tasman East Future Focus Area will include high-density residential, open space, and neighborhood retail. The proposed Draft 2010-2035 General Plan policies and the implementation of existing regulations and programs would help to avoid and mitigate any potential impacts that could result from the introduction of new residential uses.

Conclusion

The proposed Draft 2010-2035 General Plan and the implementation of existing regulations and programs would help to avoid and mitigate the potential impacts associated with higher intensity and density development within the Focus Areas. For example, the City's Environmental Quality policies are designed to help ensure that development occurs in a manner that protects the overall quality of the resources, encourages a sensitive form of development, retains biodiversity and

interconnected habitats, maximizes physical and visual public access to and along the public trails and open spaces, and reduces hazards due to flooding. Transition Policies focus on preserving neighborhood identity, ensuring continuity in design and providing an appropriate transition between existing lower-intensity development and new higher-intensity development. In general, the development review process helps minimize potential conflicts between environmental and land use goals that could occur at the site-specific project level by providing a means for addressing and correcting conflicts. The site-specific impacts associated with aesthetics, biological resources, etc., are addressed in the remaining sections of Chapter 4.0 of this EIR.

Impact 4.1-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to conflict with a responsible agency's applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Implementation of proposed policies and existing programs would minimize this effect. (**Less Than Significant Impact**)

4.1.4.3 Result in land uses that are not compatible with any applicable Airport Land Use Compatibility Plans?

For the General Plan to be considered consistent with an Airport Land Use Compatibility Plan (ALUCP), it must do both of the following: 1) it must not have any direct conflicts with the Compatibility Plan; and, 2) it must contain criteria and/or provisions for evaluation of proposed land use development situated within the boundaries of the Compatibility Plan. Conflicts occur with respect to General Plan land use designations, intensities or densities, which have been determined by the ALUC as incompatible to an airport. If conflicts exist, the elimination of these conflicts may require reducing or shifting allowable residential densities or non-residential intensities to different locations around the airport or other areas of the City to ensure consistency with the Compatibility Plan policies and criteria. Recommendations made by the ALUC are advisory, not mandatory. Nevertheless, if the ALUC determined that the proposed development is inconsistent with the Land Use Plan, there must be a two-thirds vote by the Santa Clara City Council to override the ALUC's decision. Override votes must be accompanied by specific findings. Only future proposed land uses are affected; the ALUC has no authority over existing land uses even if those uses do not conform to the adopted compatibility policies and criteria. The second requirement addresses criteria for evaluating other compatibility factors such as noise insulation, notification, and aviation easement requirements.

Adopted Land Use Plan

The Santa Clara ALUC has adopted a Land Use Plan for those areas in the vicinity of Norman Y. Mineta San José International, Reid-Hillview, Palo Alto, and South County airports. The current plan was adopted in September 1992 and most recently amended in November 2008. The City's eastern border is adjacent to the Norman Y. Mineta San Jose International Airport. Portions of Santa Clara, including several of the Focus Areas, as further described below, fall within the noise restriction area and height restriction area, as defined in the adopted Land Use Plan.

Height Restrictions

Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions to air navigation. Each surface is defined as a slope ratio or at a certain altitude above the airport

elevation. The Santa Clara Station, Downtown, Central Expressway, eastern portion of the El Camino Real, and De La Cruz Future Focus Areas fall within the FAR Part 77 Surfaces 212 feet (above mean sea level [MSL]) height restriction zone. The Great American Parkway and Lawrence Station Future Focus Areas fall within the FAR Part 77 Surfaces 300 and 350 feet (above MSL) height restriction zones. The Tasman East Future Focus Area falls within the FAR Part 77 Surfaces 400 feet (above MSL) height restriction zones. The restrictions associated with these zones are further described in Section 4.13, *Hazards*. The proposed Draft 2010-2035 General Plan includes Safety policies to address new development consistency with the FAR Part 77 Surfaces height restrictions.

Noise Contours

Noise contours indicate general areas of likely community response to noise generated by aircraft activity and serve as the basis for land use compatibility determinations. The portion of a proposed high density residential development area located northwest of the Great America Parkway/Tasman Drive intersection and the extreme southern portion of the De La Cruz Future Focus Area, near the intersection of De La Cruz Boulevard and Trimble Road falls within the 2010 65 dB community noise equivalent level (CNEL) aircraft noise contour. Some of these uses within the extreme southern portion of the De La Cruz Future Focus Area may be incompatible with the ALUC noise policy for land uses in the 65 db CNEL noise contour. There will be additional development in the city outside of the Focus Areas, some of which will fall within the 65 db CNEL noise contour. The restrictions associated with these zones are further described in Section 4.14, *Noise*.

As part of the Noise Policies of the proposed Draft 2010-2035 General Plan, future development will implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/Research and Development uses compatible with the Airport land use restrictions. Through the planning process for development of the Focus Area, the City will evaluate the options for location of outdoor uses to minimize any noise effects with the proximity of the airport. The City will also continue to encourage safe and compatible land uses within the Airport noise restriction area and work with the City of San José Airport to implement mitigation from aircraft noise to the fullest extent possible. Therefore, the development will be consistent with the adopted Land Use Plan noise contour restrictions.

Final Draft Comprehensive Land Use Plan

The final draft of the updated CLUP for the Norman Y. Mineta San José International Airport was completed in February 2010 and is expected to be adopted summer 2010. This final draft CLUP includes land use compatibility policies and standards. These policies and compatibility criteria form the basis for evaluating proposed land use compatibility and provide the foundation for the Santa Clara County ALUC policies. These standards focus on the three areas of ALUC responsibility including aircraft noise, the control of objects in navigable airspace, and the safety of persons on the ground and in aircraft. Portions of Santa Clara, as further described below, fall within the Airport Influence Area (AIA), which is a composite of the areas surrounding the Airport that are affected by noise, height, and safety considerations. The AIA is defined as a feature-based boundary around the Airport within which all actions, regulations and permits must be evaluated by local agencies to determine how the final draft CLUP policies may impact the proposed development. Portions of Santa Clara, including several of the Focus Areas, as

further described below, fall within the noise restriction area, height restriction area, and safety restriction area, as defined in the final draft CLUP.

Height Restrictions

The Santa Clara Station, Downtown, Central Expressway, eastern portion of the El Camino Real, and De La Cruz Future Focus Areas fall within the FAR Part 77 Surfaces 212 feet (above MSL) height restriction zone. The Tasman East, Great American Parkway and eastern portion of Lawrence Station Future Focus Areas fall within the FAR Part 77 Surfaces 362 and 412 feet (above MSL) height restriction zones (refer to Figure 4.13-2 San Jose International Airport FAR Part 77 Surfaces in Section 4.13, *Hazards*). The restrictions associated with these zones are further described in Section 4.13, *Hazards*. The proposed Draft 2010-2035 General Plan includes Safety policies to address new development consistency with the FAR Part 77 Surfaces height restrictions.

Safety Zones

Safety zones have been identified around airports in conformance with federal and State regulations. Airport safety zones are established to minimize the number of people exposed to potential aircraft accidents in the vicinity of an airport by imposing density and use limitations within these zones. The Santa Clara Station, Downtown and eastern portion of the El Camino Real Focus Areas fall within the Traffic Pattern Safety Zone. The extreme southwest portion of the De La Cruz Future Focus Area at the intersection of De La Cruz Boulevard and Trimble Road falls within the Turning Safety Zone (refer to Figure 4.13-3 San Jose International Airport Safety Zones in Section 4.13, *Hazards*). New Development in the De La Cruz Future Focus Area will include medium-density residential, open space, public facilities, and neighborhood retail. Without appropriate planning some of these uses could be incompatible with the Turning Safety Zone restrictions on land uses. The restrictions associated with these zones are further described in Section 4.13, *Hazards*.

As part of the prerequisites of the proposed Draft 2010-2035 General Plan and prior to approval of residential development in any Future Focus Area, a comprehensive land use plan will be completed for each Focus Area, which will include specification of location of land uses within the Focus Area. As part of the Safety Policies of the proposed Draft 2010-2035 General Plan, the land use plan will address the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the Airport Land Use Plan and discourage schools, hospitals, and other sensitive uses (as defined in the Draft 2010-2035 General Plan) from locating within specified safety zones for the Airport as designated in the Airport Land Use Plan. As such the City will adjust the development pattern with the extreme southern portion of the De La Cruz Future Focus Area to account for the land use restrictions within the Turning Safety Zone. With such adjustments, development in the vicinity of the Safety Zones will be consistent with the final draft Comprehensive Land Use Plan safety zone restrictions.

Noise Contours

The portion of a proposed high density residential development area located at the extreme southern portion of the De La Cruz Future Focus Area, near the intersection of De La Cruz Boulevard and Trimble Road falls within the 2022 65 dB CNEL aircraft noise contour (refer to Figure 4.14-3 2022 Aircraft Noise Contours in Section 4.14 *Noise*). New Development in the De La Cruz Future Focus Area will include medium-density residential, open space, public facilities,

and neighborhood retail. Without appropriate planning, some of these uses within the extreme southern portion of the De La Cruz Future Focus Area could be incompatible with the ALUC noise policy for land uses in the 65 db CNEL noise contour. Restrictions associated with these zones are further described in Section 4.14, *Noise*.

As part of the Noise Policies of the Draft General Plan, the land use plan will implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/R&D uses compatible with the Airport land use restrictions. Through the planning process for development of the Focus Area, the City will evaluate the options for location of outdoor uses to minimize any noise effects with the proximity of the airport. The City will also continue to encourage safe and compatible land uses within the Airport noise restriction area and work with the City of San José Airport to implement mitigation from aircraft noise to the fullest extent possible. With such policies, development falling within the noise contours will be consistent with the final draft Comprehensive Land Use Plan noise contour restrictions.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure high quality design that supports the compatibility between land use plans and the ALUCP. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for consistency with the ALUCP are identified below.

Safety Policies	
5.10.5-P29	Continue to refer proposed projects located within the Airport Influence Area to the Airport Land Use Commission.
5.10.5-P30	Review the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the Airport Land Use Compatibility Plan.
5.10.5-P31	Discourage schools, hospitals, sensitive uses and critical infrastructure, such as power plants, electric substations and communications facilities, from locating within specified safety zones for the Airport as designated in the Airport Comprehensive Land Use Plan.
5.10.5-P32	Encourage all new projects within the Airport Influence Area to dedicate an aviation easement.
5.10.5-P33	Limit the height of structures in accordance with the Federal Aviation Administration Federal Aviation Regulations, FAR Part 77 criteria.
Noise Policies	
5.10.6-P7	Implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/Research and Development uses compatible with the Norman Y. Mineta International Airport land use restrictions.
5.10.6-P8	Continue to encourage safe and compatible land uses within the Norman Y. Mineta International Airport Noise Restriction Area.
5.10.6-P9	Work with the City of San José Norman Y. Mineta International Airport to implement mitigation from aircraft noise to the fullest extent possible.

Existing Regulations and Programs

Existing policies to address the compatibility of land uses within the CLUP include:

- City of Santa Clara Zoning Code
- Airport Comprehensive Land Use Plan

The City will submit the proposed Draft 2010-2035 General Plan, prior to adoption, to the ALUC for a consistency determination as required by State law. The policies and criteria in the proposed Draft 2010-2035 General Plan are consistent with the final draft CLUP that affect land use within the City. The City's compatibility with the CLUP will be managed consistent with City adopted regulations and policies, in combination with State regulations.

Impact 4.1-3: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to result in land uses that are not compatible with the applicable Airport Land Use Compatibility Plans. Areas of potential development proposed under the proposed Draft 2010-2035 General Plan are located within the ALUC Land Use Referral Boundary for the nearby San Jose Airport. This means that the ALUC is required to review the proposed Draft 2010-2035 General Plan for consistency with its Land Use Plan. Recommendations made by the ALUC are advisory, not mandatory. Nevertheless, if the ALUC determined that the proposed development is inconsistent with the Land Use Plan, there must be a two-thirds vote by the Santa Clara City Council to override the ALUC's decision. Override votes must be accompanied by specific findings. Implementation of proposed policies and existing programs would minimize this effect. (**Less Than Significant Impact**)

4.1.4.4 Conflict with any applicable habitat conservation plan or natural community conservation plan?

The City is outside the boundary of and is not participating in the draft Valley HCP/NCCP, but may be able to benefit from its findings, as it will include a conservation program designed to avoid and minimize impacts of development activities where possible, and mitigation measures for any impacts that cannot be avoided. These could provide useful guidance for future City conservation and mitigation efforts. Please refer to Section 4.9 *Biological Resources*, for a detailed discussion of the proposed Draft 2010-2035 General Plan's relationship to the draft Valley HCP/NCCP.

Impact 4.1-4: New development and redevelopment under the proposed Draft 2010-2035 General Plan would not conflict with any applicable habitat conservation plan or natural community conservation plan. (**No Impact**)

4.1.5 Land Use Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.1.6 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant land use impacts and no mitigation measures are required.

4.2 POPULATION AND HOUSING

Sources for the information included in this Section include the Working Paper 1 Population, Demographics, Employment and the Real Estate Market, prepared as a background report for the Draft 2010-2035 General Plan, the Draft City of Santa Clara 2009-2014 Housing Element, the U.S. Census Bureau, the American Community Survey (ACS), the California Department of Finance (DOF), the California Employment Development Department, and the Association of Bay Area Governments (ABAG).

4.2.1 Introduction

This Section describes existing levels of and trends in population, employment, and housing in the City and Santa Clara County, including jobs-housing balance. It identifies growth assumptions and analyzes projected population, employment, and housing growth in relation to near-term regional housing goals and planned build-out of the City under the proposed Draft 2010-2035 General Plan.

Changes in population, housing, and employment in and of themselves are generally characterized as social and economic effects, not physical effects on the environment. CEQA provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic effects are connected to physical environmental effects. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (CEQA Guidelines section 15382). The direction for treatment of economic and social effects is Stated in section 15131(a) of the CEQA Guidelines:

Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on physical changes.

While increased population and changes to demographics resulting from new development do not necessarily cause direct adverse physical environmental effects, indirect physical environmental effects such as increased vehicle trips and associated increases in air pollutant emissions could occur. The information in this Section is used as a basis for analysis of project and cumulative impacts in the technical sections of this EIR. Physical environmental effects associated with the increase in population and employment are discussed in the remaining sections included in Chapter 4.

4.2.2 Existing Conditions

4.2.2.1 *Population*

Santa Clara County is the fifth most populous County in the State, with a population of 1.8 million persons. The City has a population of approximately 115,500 residents, representing 6.3 percent of the total population in Santa Clara County (DOF 2008). ABAG's *Projections 2007* indicates that the population in both the County and the City has continued to grow over the past

five years, though at a slower rate than in the previous decade after the ‘dot-com’ bust/recession that occurred early in the decade.

Santa Clara County had an average household size of 2.9 persons in 2000, while households in the City of Santa Clara were smaller with 2.6 people. There was a gradual increase in household size in the City from 1990 to 2000. The median age of the County population in 2000 (34.0) was slightly higher than that for the City of Santa Clara (33.4). As with household size, the median age of the population increased from 32.4 in 1990 to 33.4 in 2000, reflecting the aging trend that is taking place throughout the Bay Area and the country overall (US Census 2007).

Population Growth Rates

According to the U.S. Census, Santa Clara's population grew 49 percent between 1960 and 1980. Since that time, constraints on available land for residential development have limited new housing development and population growth. During the 20-year period between 1980 and 2000, the City's population grew only 17 percent, from 87,700 to 102,361. More recently, the City has experienced an increase in the rate of population growth (U.S. Census 2000). In the year 2006, the ACS reported a population of 112,098, an increase of ten percent since 2000 (U.S. Census 2007).

Rapid population growth is expected to continue for Santa Clara County and for the City into the future. ABAG projects Santa Clara County's population to increase to 2.4 million by 2035, representing growth of 35 percent over the 2005 base. This will be significantly faster than the Bay region's projected growth of 27 percent for the same period. The City of Santa Clara will grow at a pace similar to the County according to ABAG, for a 34 percent increase in 2035 over the 2005 base, for a total population of 154,990. Milpitas and San José are the only cities in the County expected to grow faster than Santa Clara, with 48 percent and 43 percent, respectively, projected increases in residents by 2035.

4.2.2.2 Housing

Santa Clara includes a range of housing types and densities to serve its diverse population. Between 2000 and 2008, the number of housing units in Santa Clara increased from 39,521 to over 44,166 (12 percent) (DOF 2008). Single family detached units constituted 42 percent of the housing stock. However, housing developments with five or more units have been the fastest growing housing type in recent years, adding over 3,000 units (an increase of 24 percent) since 2000. This suggests an increase in higher-density, smaller, more affordable (though not necessarily subsidized) units. The most prevalent housing types that make up the City's 44,166 housing units are shown in Table 4.2-1.

According to ABAG, households are expected to grow at a similar rate as population, suggesting consistency in household size (about 2.6). There were approximately 41,510 households in 2005; an additional 18,920 households are anticipated by 2035, for a total of approximately 60,430 households (ABAG 2009).

TABLE 4.2-1. HOUSING UNITS BY TYPE (2008)

	# of Units	percent of Total
Single family Detached	18,617	42
Single family Attached	3,759	8
Multifamily 2 to 4 Units	3,929	9
Multifamily 5 or More Units	17,861	40
Total	44,166	100

Source: California Department of Finance, 2008.

4.2.2.3 Employment

Santa Clara County is one of the Bay Area region's major job generators. Santa Clara County provided 28 percent of the Bay region's employment in 2000, or 1.0 million jobs, according to ABAG (ABAG 2007). The City added about 24,000 jobs between 1990 and 2000, growing from approximately 108,000 to nearly 132,000 jobs (a 22 percent increase). Following the 'dot-com' collapse, ABAG estimates show reductions in jobs across all sectors in 2005, with employment in the City decreasing to about 105,000. Approximately 30 percent of employed residents worked in the City, while the remaining 70 percent commuted to other cities (primarily within the County).

Despite the downturn in employment experienced throughout the County as a result of the 'dot-com' collapse, ABAG expects County jobs to recover their 2000 levels by 2010–2015 and resume their upward climb, reaching 1.4 million jobs by 2035; an increase of 56 percent over the 2005 base. ABAG projects that the number of jobs in the City of Santa Clara is expected to increase by 49 percent, or approximately 52,000 jobs, over the same period. With these projections, the City will account for a slightly smaller share of County jobs in 2035 than in 2005: 11 percent in 2035 as compared to 12 percent in 2005 (ABAG 2007).

Employed residents are expected to increase steadily in the County, growing from 734,000 to 1,327,000 between 2005 and 2035 (an increase of 81 percent). The City of Santa Clara is projected by ABAG to follow a similar trend, with the number of employed residents growing from 49,000 in 2005 to 88,000 in 2035, for an increase of 65 percent. The City's share of employed residents is expected to remain unchanged, or about 6.7 percent, of the County's total between 2005 and 2035 (ABAG 2007).

4.2.2.4 Jobs/Housing Balance

The concept of jobs/housing balance refers to the relationship of residences to jobs in a given community or area. Assuming a reasonable match between the affordability of housing and the incomes of jobs in the local market, if the number and proximity of residences is proportionate to the number and proximity of jobs, the majority of employees would have the opportunity to work and reside in the same community. The primary functions of an analysis of the relationship between jobs and housing are: 1) to provide a generalized measure of employment or housing need in areas where the relationship between these two characteristics is out of balance; and 2) to indicate the potential severity and trending direction of such a condition on traffic flows, air quality, and housing affordability.

A well-balanced ratio of jobs and housing can contribute to reductions in the number of vehicle miles traveled (VMT) resulting from commuting. Such a reduction in VMT could result in lower levels of air pollutant emissions (including lower greenhouse gas emissions) and less congestion on area roadways and intersections. An important consideration in evaluating the jobs/housing balance is whether housing in the community is affordable to local employees. A community can also have a balance between jobs and housing, but with a housing stock that is not affordable to its workers.

Even if a community has a statistical balance between jobs and housing, sizeable levels of in-commuting and out-commuting are still possible especially where employment opportunities do not match the skills and educational characteristics of the local labor force. Jobs/housing analyses are often more useful for examining the potential for “self-containment” than they are for determining whether this self-sufficiency actually exists in a given community. The availability of an adequate housing supply, at price levels that are reasonably available to those holding jobs in the community, can reduce the length of commutes between residences and work sites.

Although the term “jobs/housing balance” is typically used to refer to a relationship between jobs and housing units within any given community, the key relationship is between jobs and the number of employed residents within a community, because some households have no workers. Of the City’s 115,500 residents, an estimated 57,600 are employed, representing 6.4 percent of the County’s overall labor force. The City of Santa Clara has an estimated 106,700 jobs, comprising 11.7 percent of total jobs in the County (ABAG Projections 2009). The resulting ratio of jobs to employed residents in the City is 1.85 to 1.

4.2.3 Regulatory Framework

4.2.3.1 *State Housing Element Law*

As Stated in a recent court opinion¹³ addressing the City of Pleasanton’s obligation to plan for adequate housing within its borders, local governments have authority over land-use and planning decisions within their jurisdiction, but also “have a responsibility to use the powers vested in them to facilitate” new housing construction that “make(s) adequate provision for the housing needs of all economic segments of the community.” (Govt. Code 65580, subd.(d)). The scope of that responsibility is spelled out in detail in the Housing Element Law. (Govt. Code 65580-65589.8). The intent of the Housing Element Law is to ensure that cities and counties to recognize their responsibilities to help attain the State housing goal and prepare and implement housing elements that, in combination with federal and State programs, will move toward attainment of that State housing goal. (Govt. Code 65581).

Cities, in order to attain State housing goals, must make sufficient suitable land available for residential development, as documented in an inventory, to accommodate their share of regional housing needs. Projected regional housing needs are allocated to each city and county within the Bay Area by ABAG. A City is required under the Housing Element Law to zone adequate lands to accommodate its Regional Housing Needs Allocation (RHNA), and must adopt a housing

¹³ *Urban Habitat Program v. City of Pleasanton*, No RG06-293831 (Cal. Super. Mar. 12, 2010). Available at <http://www.publicadvocates.org/ourwork/housing/index.html#urban>. Accessed April 2010.

element, to be updated on a regular recurring basis, with an inventory of sites which can accommodate its share of the regional housing need. As discussed below, the City of Santa Clara is in the process of updating its Housing Element to comply with State law, including the identification of sufficient suitable land to accommodate its RHNA as set by ABAG.

Since statutory requirements addressed in the Housing Element overlap with other General Plan components, such as Land Use, Transportation, Environmental Quality, and Public Facilities and Services, it is necessary to look at the General Plan in its entirety for an understanding of the relationship between the Housing Element and these other components. This Element meets the minimum standards required by State law for a housing element. Related housing issues can be found elsewhere in the General Plan.

4.2.4 Thresholds of Significance

For the purposes of this EIR, a population and housing impact is considered significant if the project would:

- Fail to accommodate the RHNA
- Exacerbate the existing jobs/housing imbalance;
- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

4.2.5 Impacts and Mitigation Measures

4.2.5.1 *Regional Housing Needs Allocation*

As detailed in *Chapter 2 Project Description*, the proposed Draft 2010-2035 General Plan includes the City's draft 2009-2014 Housing Element, which identifies the City's implementation strategies to meet the State-mandated RHNA, as determined by ABAG. From 2007-2014, the City of Santa Clara has a RHNA of 5,783 units, of which 2,207 are designated for lower-income households. As discussed in the draft Housing Element (Appendix 8.12 of the proposed Draft 2010-2035 General Plan), the City last updated its Housing Element in 2002, covering the period 1999-2006 in which its RHNA was 6,339 units, and 4,163 units (65 percent) were actually built. Although housing developers did not actually build the entire allocation, the City made available a sufficient number of suitable, appropriate housing sites to meet its statutory obligation.

As identified in Table 5.2-1 of the proposed Draft 2010-2035 General Plan, the 2009-2014 Housing Element includes 2,917 units expected to be constructed before the end of 2010, roughly 50 percent of the 5,873 units needed in the current RHNA. The remaining 2,956 units would be accommodated as part of the proposed Draft 2010-2035 General Plan's Phase I development (2010-2015), which is concurrent with the State-mandated housing element adoption cycle and incorporates additional housing opportunity sites located near the Santa Clara Transit Station, Downtown, and El Camino Real Focus Areas, and other residential and mixed use areas. The combined housing potential within these Focus Areas and elsewhere as part of

Phase I is approximately 10,000. Therefore, the proposed Draft 2010-2035 General Plan provides adequate housing capacity through appropriate, suitable housing sites as identified in the 2009 Housing Element to meet its obligation. The City's actual construction of units from 2007-2014 will be documented as part of the next Housing Element. Looking beyond 2014, the City will update its Housing Element as part of the Phase II Prerequisite process to identify the implementation strategies necessary to meet the next RHNA as determined by ABAG for the 2015-2022 period.

4.2.5.2 Jobs/Housing Balance

The proposed Draft 2010-2035 General Plan proposes to accommodate 32,400 net new residents in 13,312 additional dwelling units, and 25,040 new jobs, in addition to 'in process' development that would accommodate 7,090 residents (2,917 new dwelling units) and 21,140 jobs (see Columns 'B' and 'C' from Table 5.2-1, in the proposed Draft 2010-2035 General Plan). ABAG projects approximately 0.6 employed residents per capita in 2035, meaning the proposed Draft 2010-2035 General Plan's 32,400 new residents equates to approximately 19,440 future employed Santa Clara residents. See Table 4.2-2 below. Therefore, the proposed net new General Plan growth (32,400 residents, 25,040 jobs) translates to a job per employed resident ratio of 1.29, or 25,040 jobs divided by 19,440 employed residents.

The cumulative total of new development anticipated within the proposed Draft 2010-2035 General Plan horizon ('in process' development + General Plan growth) is 39,490 residents (yielding 23,694 employed residents) and 47,500 jobs. Therefore, the cumulative new growth jobs/employed resident ratio is 2.0, or 47,500 jobs divided by 23,694 employed residents. The resulting citywide jobs/employed resident ratio as envisioned by the General Plan in 2035, taking into account existing (as of 2008) and planned jobs and population anticipated in 2035, is projected to be 1.77. This decrease from 1.85 jobs/employed resident is primarily attributable to regional demographic trends where more workers are assumed per household, reflecting a return to historic levels of roughly 0.6 employed residents per capita as the regional economy recovers from the recession.¹⁴

TABLE 4.2-2. JOBS/HOUSING				
	Jobs	Population	employed residents	jobs per employed resident
Existing 2008	106,700	115,500	57,600	1.85
Net New GP	25,040	32,400	19,440	1.29
Combined	47,500	39,490	23,694	2.0
Citywide 2035	154,000	154,990	86,800	1.77
Source: ABAG 2007, 2010-2035 General Plan.				
Note: Combined equals 'in process' development plus net new General Plan growth.				

4.2.5.3 Induce substantial population growth

Locating a large new employment use or adopting plans for a substantial new quantity of employment-intensive land uses beyond the needs of the local workforce can have the secondary effect of inducing population growth as new out-of-area workers are attracted to the job

¹⁴ Hing Wong, Senior Regional Planner, Association of Bay Area Governments. Personal Communication. March 16, 2010.

opportunities and seek to move closer to the new jobs, creating additional demand for new housing. While over the long-term (2035) the proposed Draft 2010-2035 General Plan accommodates the population growth forecast by ABAG Projections 2007, and accommodates in the near-term (2014) the RHNA goal set by ABAG, the General Plan is nonetheless ‘job-rich’. This means that it provides for more employment than housing and will lead to insufficient housing opportunities for all future Santa Clara workers. This is reflected in the jobs per employed resident ratio discussed above.

Therefore, the proposed Draft 2010-2035 General Plan job growth (25,040 new jobs), will require substantial residential development elsewhere in the region to provide adequate housing opportunities for future workers. Based on planned job growth, roughly 3,500 housing units would need to be built elsewhere in the region to house Santa Clara workers who would have to reside outside of the City due to inadequate housing opportunities within the City. This is a significant impact due to the secondary effects related to increased VMT resulting from commuting due to a shortage of residential opportunities in closer proximity to Santa Clara employment areas. These secondary effects are discussed in detail in the *Transportation*, *Air Quality*, and *Climate Change* sections, respectively, of this EIR.

4.2.5.4 Displace Housing Units or People

The proposed Draft 2010-2035 General Plan would retain all existing housing units and could accommodate the population growth as forecast in ABAG’s Projections 2007. The proposed Draft 2010-2035 General Plan would accommodate employment growth in ways (i.e. intensification of currently planned employment lands) that would not displace existing housing or people, nor would the construction of planned infrastructure or public facilities necessary to serve future growth require the displacement of existing housing units or people. Therefore, the proposed Draft 2010-2035 General Plan would have no impact in terms of housing or population displacement.

4.2.5.5 Summary

The proposed Draft 2010-2035 General Plan has been prepared to accommodate forecast population growth, both near-term RHNA goals and long-term ABAG population forecasts. Additionally, there would be no housing displacement associated with the proposed Draft 2010-2035 General Plan’s implementation. However, the level of job growth will continue to out-pace housing development within the City, continuing the City’s long-standing jobs/housing imbalance. The project will create substantial new job opportunities, relative to the total supply of proposed new housing, within the City. The proposed Draft 2010-2035 General Plan job growth, in addition to ‘in process’ job growth, will require substantial residential development elsewhere in the region to provide adequate housing opportunities for future workers. As discussed in detail in the *Transportation*, *Air Quality*, and *Climate Change* sections of this EIR, the City’s continued jobs/housing imbalance will contribute to air pollutant emissions (including greenhouse gas emissions) and congestion on area freeways, roadways and intersections, and constitutes a significant unavoidable impact. An alternative that would balance new job growth with residential development is discussed in *Chapter 5 Alternatives*.

4.2.6 Significance Conclusion

Since the proposed project will induce substantial population growth at other locations, the impact is significant. As discussed in detail in the Transportation, Air Quality, and Climate Change sections of this EIR, the City's continued jobs/housing imbalance will contribute to air pollutant emissions (including greenhouse gas emissions) and congestion on area freeways, roadways and intersections, and constitutes a significant unavoidable impact.

4.3 AESTHETICS AND VISUAL RESOURCES

This Section describes the City's existing aesthetic character and evaluates the potential effects to the visual character of the City associated with implementation of the proposed Draft 2010-2035 General Plan.

4.3.1 Existing Conditions

4.3.1.1 *Visual Character*

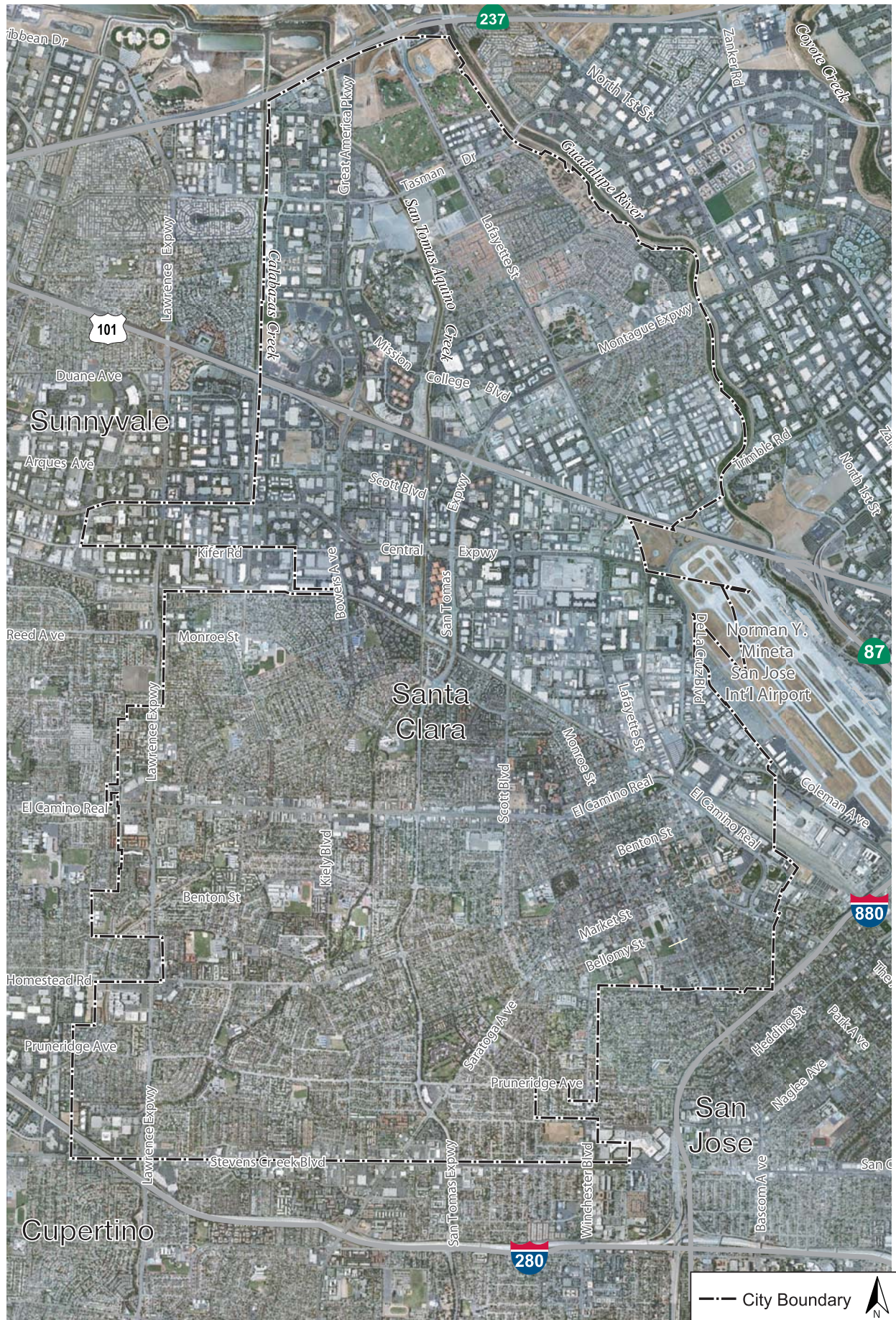
The dominant visual resources in the City of Santa Clara include the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast, which create the context of the Santa Clara Valley. Other visual resources are the three seasonal creeks that run through the City (San Tomas Aquino, Saratoga and Calabazas Creeks). Additionally, the City is bordered by the Guadalupe River to the northeast. From a regional perspective, the City is located in a highly developed urban/suburban area (Figure 4.3-1). The visual character is typical of surrounding cities and contains developed land uses (residential, commercial, industrial, recreational, public, institutional, airport, utility and transportation) located throughout the City. Existing neighborhoods are primarily single family residential, often separated by major regional roadways and/or commercial strips. Along commercial corridors, existing shopping centers are focused on streets with minimal connections to the neighborhoods they serve. Most of the industrial/office employment centers are in the northern half of the City. These uses are largely separated by major transportation facilities located in the City. U.S. 101 and the Caltrain Corridor traverse east-west through the center of the City, while State Route 237 is located to the north and Interstates 880 and 280 skirt the southeast and southwest corners of the City, respectively. The development areas around these transportation facilities are characterized by visually predominant buildings and important cultural centers.

South of Caltrain Corridor

South of the Caltrain corridor are much of the City's residential neighborhoods, neighborhood-serving retail uses, schools, and parks. These neighborhoods comprise a quarter of the land area of the City and are a significant factor in the City's character and identity. Residential areas include historic neighborhoods, like the Old Quad.

Retail commercial uses and professional offices in the City are primarily located south of the Caltrain Corridor along El Camino Real and Stevens Creek Boulevard. El Camino Real is characterized by uses consisting of auto-oriented businesses, such as auto repair, service stations and auto sales. Stevens Creek Boulevard is a major east-west arterial roadway, with local and regional-serving commercial uses. Sales of automobiles and durable goods, like furniture and recreational vehicles, are the primary businesses in this area. The older one- and two-story building stock, extensive signage, lack of landscaping, and wide right-of-way detract from the visual quality of both El Camino Real and Stevens Creek Boulevard. Additionally, most of the area has relatively shallow parcels that abut single family residential uses. Larger properties along both El Camino Real and Stevens Creek Boulevard include community and regional commercial retail uses characterized by grocery stores, personal services, small offices and banks, as well as tourist and entertainment uses and professional or medical offices, interspersed with residences and historic buildings.

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AERIAL PHOTOGRAPH

FIGURE 4.3-1

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The downtown area of the City is also located south of the Caltrain corridor, characterized by civic facilities, such as City Hall, police and fire stations, libraries, as well as public and private educational institutions, such as Santa Clara Unified School District facilities, and Santa Clara University properties, places of assembly, religious institutions, and medical facilities.

The Santa Clara Station Focus Area is located south of the Caltrain Corridor, and includes the existing Santa Clara Transit Station. This area is characterized by community and regional commercial retail centers along El Camino Boulevard and south of the Caltrain tracks, which include grocery stores, personal services, and small office and banks. One- and two-story industrial/office employment buildings and the transit station characterize the remainder of the Focus Area, north of the Caltrain tracks.

Between Caltrain Corridor and U.S. 101

The central portion of the City, north of the Caltrain corridor and south of U.S. 101, consists of predominately light and heavy industrial uses and public/quasi public uses, although some of the area has transitioned into office/Research and Development (R&D) and data centers. The City's heavy and light industrial businesses are characterized by manufacturing, warehousing and wholesaling activities occupying low intensity one and two story buildings. The Central Expressway and Lawrence Station Future Focus Areas are located between the Caltrain Corridor and U.S. 101. These areas are currently characterized by light and heavy industrial uses and office/R&D and data centers.

North of U.S. 101

The most visually prominent feature in the northern half of the City is the Great America Amusement Park. The park has large, highly visible rides that are the tallest features in the area, and is brightly lit at night. There are also several mid-rise office buildings and hotels that give a much more urban appearance to properties along Great America Parkway and Tasman Drive.

East of the amusement park is the historic village of Agnews, consisting primarily of one- and two-story single family houses and apartments, and several 20- to 30-year old subdivisions and townhouse projects. East of Agnews Village is the former Agnews Hospital, a historic site, now occupied by Oracle (formerly Sun Microsystems); a regional commercial center; various public/quasi-public facilities and approximately 3,600 residents of varying densities. Other older subdivisions and high-density housing in one- to three-story structures are located generally east of Lafayette Street and west of the Guadalupe River.

4.3.1.2 Visual Resources

Landforms

The City of Santa Clara is located in the center of the Santa Clara Valley. The Santa Clara Valley consists of a large structural basin containing alluvial deposits derived from the Diablo Range to the east and the Santa Cruz Mountains to the west. Elevation ranges from sea level at the south end of San Francisco Bay to elevations of more than 2,000 feet to the east at the Diablo Range. The City itself however has a low elevation of near sea level in the north, to 175 feet above mean sea level at the southern boundary of the City.

Most of the City occupies gently sloping valley floor topography in the north-central portion of the Santa Clara Valley. The City is situated on alluvial fan deposits of the Santa Clara Valley,

consisting of gravel, sand and finer sediments. Along the City's major streams are natural levee deposits consisting of silt and clay over which man-made engineered levees have been constructed for flood control.

Natural Features

The City of Santa Clara is in a highly developed, urban/suburban area. Most of Santa Clara is developed with few open spaces and very little remaining native habitat. Native habitats have largely been replaced with urban hardscape accompanied by ornamental landscaping. Remnants of native habitats and vegetation communities are virtually absent. Turf, weeds, nonnative grasses, and nonnative trees and plants are present throughout developed areas of the City. One important exception is the Ulistac Natural Area, 40 acres of open space located along the Guadalupe River in the northern portion of the City. Ulistac contains restored native grassland, riparian woodland, emergent wetland and other habitats. Four major waterways flow through the City: Calabazas Creek, Guadalupe River, San Tomas Aquino Creek, and its largest tributary, Saratoga Creek. All of these creeks have been modified for flood control purposes and contain very little natural habitat. Most have development close to the banks, have concrete bottoms and modified banks, and/or have stretches in underground pipes.

Scenic Vistas

A scenic vista is the view of an area that is visually or aesthetically pleasing. One example is the area encompassing a lake or a park-land water amenity and the view-shed extending from the lake to the highest visible point surrounding the lake. Aesthetic components of a scenic vista include; 1) scenic quality, 2) sensitivity level, and 3) view access. The City of Santa Clara's physical setting lends opportunities for many views of the community and surrounding natural features, including panoramic views of the Santa Cruz Mountains and the Diablo Range and stretches of open space and undeveloped land in the Ulistac Natural Area. Scenic vistas can be viewed intermittently from the system of formal and informal trails that afford recreational and scenic opportunities for the community.

Scenic Corridors

The City of Santa Clara is served by four freeways: U.S. 101 traverses east-west through the center of the City, while State Route 237 is located to the north and InterStates 880 and 280 skirt the southeast and southwest corners of the City, respectively. These segments have not been officially designated as scenic highways by the California Department of Transportation.¹⁵

Unique Scenic Resources

The City of Santa Clara is primarily suburban in character, with nodes of higher density, urban development. The southern portion of the City is highly developed, with a wide array of residential neighborhoods and the Santa Clara University. The northern portion of the City contains industrial, recreational, and tourist commercial development. The City's character and identity are largely products of its history as a Mission City. The City's historic past is reflected through its historic resources, including Mission Santa Clara and numerous historic homes. Mission Santa Clara is the restored church of Mission Santa Clara de Asís. The Mission Church is open to the public and serves as the University chapel.

¹⁵ California Department of Transportation. 2007. Santa Clara County Scenic Highways Map. Accessed: April 9, 2010. Available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

Light and Glare

Light pollution includes all forms of unwanted light in the night sky, including glare, light trespass, sky glow and over-lighting. The City may be adversely affected not only by light pollution from development within the City's own borders, but also from sky glow associated with the development of surrounding cities.

Views of the night sky are an important part of the natural environment and excessive light and glare can be visually disruptive to people and nocturnal animal species. Lick Observatory, approximately 30 miles east of Santa Clara, is a major research facility serving astronomers from throughout the University of California system. As cities in the Santa Clara Valley plan for future expansion and development, lighting will be an ongoing issue of concern for their citizens and for Lick Observatory. The effect of a city's lights on sky brightness at a nearby observatory depends strongly on the total amount of light the city emits, related directly to population, and to the city's distance from the observing site. According to the astronomers at Lick Observatory, the City San Jose has a greater effect on the sky brightness at Mt. Hamilton than all other cities in the Santa Clara Valley combined. About 70 percent of the man-made sky brightness at Mt. Hamilton is due to San Jose lights.¹⁶

4.3.2 Regulatory Environment

4.3.2.1 Federal

There are no federal regulations associated with aesthetics and visual resources that apply to this project.

4.3.2.2 State

Government Code 65560-70

According to Government Code Sections 65560-65570, the preservation of open space land is necessary for numerous reasons, including the enjoyment of scenic beauty, recreation, and the use of natural resources. Consequently, the legislature directed cities (including charter cities), counties, and the State to make definite plans for the preservation of valuable open space land and take positive action to carry out such plans by the adoption and strict administration of laws, ordinances, rules and regulations, such as an open space plan. These statutes have broader application in rural parts of California with significant forest lands, rangeland, and agricultural lands. In a built-out City like Santa Clara, open space policies apply primarily to recreation areas and open space necessary for public safety.

Through its policies, the City can discourage the premature and unnecessary conversion of open space land to urban uses. No building permit may be issued, no subdivision map approved, and no open space zoning ordinance adopted, if the proposed construction, subdivision or ordinance would be inconsistent with a local open space plan or policy.

¹⁶ University of California Observatories/Lick Observatory. Santa Clara Valley Lighting and Lick Observatory. Accessed April 26, 2010. Available at: <http://mthamilton.ucolick.org/public/lighting/Summary2.html>

4.3.2.3 Local

City of Santa Clara General Plan 2000-2010

The City's current General Plan includes policies and programs associated with maintaining the City's aesthetic character and neighborhood compatibility, including:

- Continue to implement appropriate design standards through Architectural Review prior to issuance of Building Permits.
- Enhance the gateway treatment of signs and landscaping at major entrances to Santa Clara.

Additions or redevelopment in single family neighborhoods are not permitted if they would be significantly inconsistent with the nature of existing development (specifically bulk, height, and setback), Zoning Ordinance regulations, and/or adopted Design Guidelines. The City has adopted Design Guidelines, which aim to establish minimum standards for project design without discouraging quality innovation in individual project improvements. These Guidelines are reviewed for possible revision, from time to time, based on Architectural Review Committee, Planning Commission and City Council direction. Through Architectural Review prior to issuance of Building Permits, the City ensures both a distinctive character and a high quality standard of development for structures and outdoor uses in all zoning districts in the City.

Santa Clara City Code

The City's City Code includes regulations associated with protection of the City's visual character. The City has included regulations for the maintenance of property or premises (Chapter 8.30 Public Nuisances), to promote a sound and attractive community appearance and in keeping with the character of the City. The City Code also includes regulations for lighting at public parks and recreation areas, in which lighting, if provided, shall be directed away from residential areas and public streets (Section 18.52.130). The City Code also includes an Architectural Review process, as outlined in the Zoning Ordinance, Chapter 18.76. The Architectural Review process is intended to serve the following purposes:

- Encourage the orderly and harmonious appearance of structures and properties;
- Maintain the public health, safety and welfare;
- Maintain property and improvement values throughout the City;
- Encourage the physical development of the City that is consistent with the General Plan and other City Regulations; and,
- Enhance the aesthetic appearance, functional relationships, neighborhood compatibility and excellent design quality.

No building permit shall be issued, and no structure, building, or sign shall be constructed or undergo exterior alterations until such plans and drawings have been approved by the Architectural Committee.

Architectural Committee Policies - Community Design Guidelines

The Architectural Committee reviews plans and drawings submitted for architectural review for design, aesthetic considerations, and consistency with zoning standards, generally prior to

submittal for Building Permits. The Architectural Committee established the Community Design Guidelines, approved by the City Council on October 18, 1988.¹⁷ The intent of these guidelines for architectural review is to provide a manual of consistent development standards in the interest of continued maintenance and enhancement of the high-quality living and working environment in the City.

4.3.3 Methodology

Aesthetics and visual resources are subjective by nature, and therefore the level of a project's visual impact is difficult to quantify. In addition, it is difficult to estimate the impact development would have on countywide scenic landscapes or resources, since some individual projects can enhance the aesthetic quality of an area. Therefore, this analysis was conducted qualitatively, assessing potential growth implications of the proposed Draft 2010-2035 General Plan. The proposed Draft 2010-2035 General Plan policies were also evaluated to determine the extent to which they would protect existing scenic landscapes or resources and minimize the degradation of the City's visual quality.

4.3.4 Thresholds of Significance

For the purposes of this EIR, an aesthetic or visual impact is considered significant if the project would:

- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.3.5 Impacts and Mitigation Measures

4.3.5.1 Substantially degrade the existing visual character or quality of the site and its surroundings.

Almost all development that would occur under the proposed Draft 2010-2035 General Plan would be redevelopment of parcels in areas of the City that are already developed. New development has the potential to alter the visual character and qualities of those places and potentially to alter the City's aesthetic character. The change in visual character associated with the planned development for the Focus Areas¹⁸ is discussed below.

El Camino Real Focus Area - The vision for El Camino Real is to transform this Focus Area from a series of automobile-oriented strip-malls to a tree-lined, pedestrian- and transit-oriented corridor with a mix of residential and retail uses. Future development in these areas would be characterized by clusters of larger scale commercial and higher density housing at major intersections connected by lower intensity mixed, or single uses development with signature landscaping, streetscape design, signage, and public art, to contribute to the identity for this Focus Area. Building design and scale within the Regional Mixed Use and Community Mixed

¹⁷ City of Santa Clara. 1988. Architectural Committee Policies - Community Design Guidelines. October 18, 1988.

¹⁸ City of Santa Clara. 2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010.

Use areas will represent the City's historic character, with two- and three-story buildings and with special attention to building articulation and proportion. This area in particular will serve as a gateway into the City and help define the boundary of the City's historic core. Transition goals and policies, in conjunction with the El Camino Real Focus Area policies require that this development respect the scale and character of adjacent residential uses to promote neighborhood compatibility. Discretionary Use policies also apply.

Downtown Focus Area - The vision for the seven-acre Downtown Focus Area includes boutique shopping, restaurants, public gathering places and civic venues, as well as a transit loop connection to the Santa Clara Station Area. This vision for Santa Clara's Downtown also includes approximately 130,000 square feet of retail and commercial uses along with almost 400 new residences on the seven-acre property, with building heights between five and eight stories. Policies related to Areas of Historic Sensitivity, and to transitions would also apply in order to respect the existing character and development patterns of the surrounding area.

Santa Clara Station Focus Area - The vision for the Santa Clara Station Focus Area includes new office, hotel, and retail uses and high-density residential development. The Santa Clara Station Focus Area is planned for mixed use, transit-oriented development, including a central roadway, or "main street" to provide connections within the area and link a series of public spaces. Higher-intensity mixed use development is adjacent to the Station. Smaller-scale residential uses will be located in and near to the Old Quad neighborhood and Downtown Focus Area. Discretionary Use and Transition policies apply in order to respect the existing character and development patterns of the surrounding area.

Stevens Creek Boulevard Focus Area - New development in the Stevens Creek Boulevard Focus Area will gradually replace existing development. New, non-residential development is expected to be higher intensity, two- to three-story showrooms to maximize the use of smaller parcels and minimize conflicts with surrounding neighborhoods. Professional offices could be a secondary use to the primary retail commercial uses. The application of Transition Policies will address appropriate development scale, particularly on smaller lots, in order to promote compatibility between new development and existing residences.

Future Focus Areas - Development in the Future Focus Areas represent a change from existing underutilized office and industrial uses to higher density residential and mixed use neighborhoods with a full complement of supportive services. New development in the Lawrence Expressway Future Focus Areas will consist of medium- and high-density residential, open space, and neighborhood retail. The Central Expressway Future Focus Area will include high-density residential, open space, public facilities, and neighborhood retail. The De La Cruz Future Focus Area will include medium-density residential, open space, public facilities, and neighborhood retail. The Great America Parkway Future Focus Area will include high-density residential, open space, public facilities, and neighborhood retail. The Tasman East Future Focus Area will include high-density residential, open space, and neighborhood retail. The development of these Future Focus Areas will result in a higher-intensity development, resulting in smaller building footprints and allow for more open space. Due to the distance, the development in these areas will not block views of the hillsides or other scenic features from the near-by neighborhoods. Careful planning of each area is essential to ensure the appropriate interface with surrounding development and access to open space. Prior to approval of residential

development for Phase II and for Phase III in any Future Focus Area, a comprehensive plan for each area must be completed that specifies:

- Land Uses, with the location of residential, retail, mixed uses, public facilities, schools and parks.
- Community Design, with appropriate design guidelines for private development, public facilities, streetscapes and transitions to adjacent land uses.
- Public Participation, with opportunities for community input at each stage of the planning process.

The proposed Draft 2010-2035 General Plan goals and policies for the Future Focus Areas provide a guide for these planning efforts.

Most development will go through the City's Architectural Committee prior to issuance of building permits, and will be reviewed for consistency with the City's Design Guidelines. The City's visual character will be maintained consistent with City adopted regulations and policies, in combination with State regulations.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure high quality design that supports and enhances the aesthetic qualities and character of the City. Proposed Draft 2010-2035 General Plan Policies that provide guidance for high quality design within the City are identified in Table 4.3-1 below.

Existing Regulations and Programs

Existing policies to address alteration of the visual character of the City include:

- Government Code Sections 65560-65570
- Santa Clara City Code Chapter 18.76
- Architectural Committee Community Design Guidelines

Impact 4.3-1: New development and redevelopment under the proposed Draft 2010-2035 General Plan will be substantial enough, and will occur at key locations throughout the City, such that it could have the potential to degrade the visual character of the City without appropriate planning and oversight. The proposed Focus Areas within which much of the changes are proposed are strategically designed to protect the integrity of residential neighborhoods. Changes to public spaces, including roadways, will be designed to upgrade the aesthetic environment and implementation of proposed policies and existing programs would minimize or avoid adverse effects on the existing visual character. **(Less Than Significant Impact)**

TABLE 4.3-1 GENERAL PLAN POLICIES TO ADDRESS AESTHETIC AND VISUAL RESOURCES					
Policy No.	Policy Language	Visual Character	Scenic Vistas	Scenic Resources	Light and Glare
Land Use Policies • = policy addresses this impact area					
5.3.1-P1	Preserve the unique character and identity of neighborhoods through community-initiated neighborhood planning and design elements incorporated in new development.	•	•	•	
5.3.1-P2	Encourage advance notification and neighborhood meetings to provide an opportunity for early community review of new development proposals.	•			
5.3.1-P3	Support high quality design consistent with adopted design guidelines and the City's architectural review process.	•		•	•
5.3.1-P20	Encourage uses and development on City-owned and leased land that is consistent with the General Plan land use classification or applicable Focus Area, Neighborhood Compatibility or Historic Preservation Policies.	•		•	
5.3.1-P27	Encourage screening of above-ground utility equipment to minimize visual impacts.	•			
5.3.1-P28	Encourage under grounding of new utility lines and utility equipment throughout the City.	•			
5.3.1-P29	Encourage design of new development to be compatible with, and sensitive to, nearby existing and planned development, consistent with other applicable General Plan policies.	•	•	•	•
Residential Land Use Policies					
5.3.2-P5	Allow development of second units in single family neighborhoods, provided that the development complies with the General Plan Transition policies and that it is compatible with surrounding neighborhoods.	•		•	•
5.3.2-P11	Maintain the existing character and integrity of established neighborhoods through infill development that is in keeping with the scale, mass and setbacks of existing or planned adjacent development.	•	•	•	
Mixed Use Land Use Policies					
5.3.4-P7	Use design techniques, such as stepping down building heights, and siting incompatible activities, such as loading and unloading, away from residential uses.	•	•	•	•
El Camino Real Focus Area Policies					
5.4.1-P5	Provide appropriate transition between new development in the Focus Area and adjacent uses consistent with General Plan Transition Policies.	•			•
5.4.1-P6	Encourage lower profile development, in areas designated for Community	•			•

TABLE 4.3-1 GENERAL PLAN POLICIES TO ADDRESS AESTHETIC AND VISUAL RESOURCES					
Policy No.	Policy Language	Visual Character	Scenic Vistas	Scenic Resources	Light and Glare
	Mixed Use in order to minimize land use conflicts with existing neighborhoods.				
Downtown Focus Area Policies					
5.4.2-P6	Apply the General Plan Transition and Historic Preservation policies for new development at the edges of Downtown in order to respect the scale and character of the adjacent historic Old Quad neighborhood.	•		•	•
5.4.2-P7	Transition development west of El Camino Real with no more than two to three stories adjacent to existing residential development.	•	•	•	
5.4.2-P8	Integrate established and new uses through pedestrian connections, streetscape, and complementary architecture and site design.	•		•	
5.4.2-P13	Promote pedestrian-friendly streetscapes with trees, benches, outdoor seating, kiosks, amenities, banners and signature signage, and landscaping that reflect the historic neighborhood character.	•		•	
Santa Clara Station Focus Area Policies					
5.4.3-P7	Provide appropriate transition between new development and adjacent uses consistent with General Plan Transition Policies.	•	•		•
Stevens Creek Boulevard Focus Area Policies					
5.4.4-P2	Provide appropriate transitions between new development and adjacent uses consistent with General Plan Transition Policies.	•	•		•
Future Focus Area Policies					
5.4.5-P2	Implement development in Future Focus Areas in conformance with applicable General Plan policies for Neighborhood Compatibility, Mobility and Transportation, Public Services, and Environmental Quality.	•	•	•	•
5.4.5-P7	Implement appropriate measures for new residential development to reduce any land use conflicts with surrounding non-residential uses.	•	•	•	•
Transition Policies					
5.5.2-P1	Require that new development incorporate building articulation and architectural features, including front doors, windows, stoops, porches or bay windows along street frontages, to integrate new development into existing neighborhoods.	•		•	•
5.5.2-P2	Implement design review guidelines for setback, heights, materials, massing, articulation and other standards to support Transition Policies and promote neighborhood compatibility.	•	•	•	•
5.5.2-P3	Implement site design solutions, such as landscaping and increased building setbacks, to provide a buffer between non-residential and residential uses.	•		•	•
5.5.2-P4	Provide adequate separation between incompatible land uses in order to	•	•	•	•

TABLE 4.3-1 GENERAL PLAN POLICIES TO ADDRESS AESTHETIC AND VISUAL RESOURCES					
Policy No.	Policy Language	Visual Character	Scenic Vistas	Scenic Resources	Light and Glare
	minimize negative effects on surrounding existing and planned development.				
5.5.2-P5	Require that new development provide an appropriate transition to surrounding neighborhoods.	•		•	•
5.5.2-P6	Adjust new building height, scale and massing along the site perimeter abutting planned lower intensity uses.	•			•
5.5.2-P7	For buildings of three stories or greater, increase the setback of upper stories where they abut lower intensity residential uses.	•			•
5.5.2-P8	Encourage enhanced streetscape design and reduced building mass for non-residential uses located across the street from lower-intensity residential neighborhoods.	•	•	•	•
5.5.2-P9	Improve pedestrian amenities, including sidewalks and bicycle paths, to promote neighborhood compatibility.	•			
5.5.2-P10	Encourage below-grade parking to accommodate parking demand in order to reduce overall building height and massing in transition areas.	•			
5.5.2-P12	Screen loading and trash areas to preclude visibility from off -site and public streets.	•			
5.5.2-P13	Offer opportunities for developed neighborhoods to initiate planning efforts to provide a vision for future streetscape design and neighborhood character.	•		•	•
Parks, Open Space and Recreation Policies					
5.9.1-P5	Encourage public visibility for all parks, trails and open spaces.	•	•	•	
5.9.1-P17	Foster site design for new development so that building height and massing do not overshadow new parks and plazas.	•	•	•	

4.3.5.2 Scenic Vista

There are no scenic vistas within the City, but the City of Santa Clara offers many views of the community and surrounding natural features, including panoramic views of the Santa Cruz Mountains and the Diablo Range and stretches of open space and undeveloped land in the Ulistac Natural Area. These scenic vistas can be viewed from the system of roadways and formal and informal public trails throughout the City. Private views of these resources from residential neighborhoods are currently obstructed by adjacent development. Development and redevelopment under the proposed Draft 2010-2035 General Plan could obstruct views of these scenic vistas from the system of roadways and formal and informal public trails throughout the City.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure high quality design that maintains the quality of these scenic vistas and ensures their importance in the City's future. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for effects to the scenic vistas are identified above in Table 4.3-1.

Existing Regulations and Programs

Existing policies to address the maintenance of scenic vistas in the vicinity of the City include:

- Government Code Sections 65560-65570
- Santa Clara City Code Chapter 18.76
- Architectural Committee Community Design Guidelines

Impact 4.3-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to affect the scenic vistas visible from within the City. Implementation of proposed policies and existing programs would minimize effects to the existing scenic vistas. (**Less Than Significant Impact**)

4.3.5.3 Scenic Resources

The development under the proposed Draft 2010-2035 General Plan has the potential to alter the City's scenic resources.

The El Camino Real Focus Area will serve as a gateway into the City and help define the boundary of the City's historic core. Building design and scale should represent the City's historic character, with two- and three-story buildings and with special attention to building articulation and proportion. Transition goals and policies, in conjunction with the El Camino Real Focus Area policies require that this development respect the existing historic character and development patterns of the surrounding area.

The Downtown Focus Area offers opportunities for place-making and for a unique destination in the City to serve both local and regional interests. Revitalization will support the Major Strategies for City identity and community vitality. Policies related to Areas of Historic Sensitivity, and to transitions would also apply in order to respect the existing character and development patterns of the surrounding area.

Most development will go through the City's Architectural Committee prior to issuance of building permits, and will be reviewed for consistency with the City's Design Guidelines. The City's scenic resources will be managed consistent with City adopted regulations and policies, in combination with State regulations.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure high quality design that maintains the quality of these scenic resources and ensures their importance in the City's future. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for effects to the scenic resources are identified above in Table 4.3-1.

Existing Regulations and Programs

Existing policies to address alteration of the visual character of the City include:

- Government Code Sections 65560-65570
- Santa Clara Code Chapter 18.76
- Architectural Committee Community Design Guidelines

Impact 4.3-3: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to alter the scenic resources of the City without appropriate planning and oversight. Implementation of proposed policies and existing programs would minimize effects to the existing scenic resources. (**Less Than Significant Impact**)

4.3.5.4 Light and Glare

New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to create additional light or glare in the City. Sources of light and glare will include external housing lights, street-lights, parking lot lights, security lights, vehicular headlights, internal building lights, and reflective building surfaces and windows. Most development will go through the City's Architectural Committee prior to issuance of building permits, and will be reviewed for consistency with the City's Design Guidelines. The City's light and glare will be reduced and managed consistent with City adopted regulations and policies, in combination with State regulations.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure high quality design that maintains the quality of existing neighborhoods and reduces light and glare. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for effects to the neighborhoods from new light and glare resources are identified above in Table 4.3-1.

Existing Regulations and Programs

Existing policies to address additional light and glare in the City include:

- Santa Clara City Code Chapter 18.76
- Architectural Committee Community Design Guidelines

Impact 4.3-4: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to create additional light or glare without appropriate planning and oversight. Implementation of proposed policies and existing programs would minimize effects of light and glare. **(Less Than Significant Impact)**

4.3.6 Aesthetics Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.3.7 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant aesthetic and visual character impacts and no mitigation measures are required.

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4.4 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology, drainage, flooding, water quality, and groundwater, within the City and evaluates impacts anticipated to occur from implementation of the proposed Draft 2010-2035 General Plan.

4.4.1 Existing Conditions

The City of Santa Clara is situated on an alluvial plain within the Santa Clara Valley, which extends southward from the southern end of San Francisco Bay. Ground surface elevations within City limits range from near sea level in the north, to 175 feet above mean sea level at the southern boundary of the City. The climate is semi-arid, with warm, dry weather from late spring to early fall. Yearly precipitation averages 14.8 inches per year, most of which falls between November and April. Average monthly rainfall from May to October is less than 1 inch per month, and drops to essentially zero in July and August.¹⁹

4.4.1.1 Surface Water Drainage

The principal surface water drainages in the City are the San Tomas Aquino, Saratoga and Calabazas Creeks. Additionally, the City is bordered by the Guadalupe River to the northeast (Figure 4.4-1). All of these drainages originate in the largely undeveloped Santa Cruz Mountains and drain northward across the urbanized Santa Clara Valley floor to discharge into San Francisco Bay. All of these have been channelized and substantially modified to reduce flood hazards. Flood protection and other aspects of creek management, such as vegetation and sediment maintenance, are the purview of the Santa Clara Valley Water District (SCVWD).²⁰












The San Tomas Aquino Creek watershed drains approximately 45 square miles. San Tomas Aquino Creek originates in the forested foothills of the Santa Cruz Mountains and flows approximately 17 miles in a northern direction through the center of the City of Santa Clara, discharging into the Guadalupe Slough at the northwestern corner of the City, which flows to the lower South San Francisco Bay. The major tributaries to San Tomas Aquino Creek include Saratoga, Wildcat, Smith and Vasona Creeks. Most of the remaining San Tomas Aquino Creek channel has been modified and lined with concrete (from the Smith Creek confluence in the upper reaches downstream to Highway 101).²¹

¹⁹ City of Santa Clara. 2005. *Urban Water Management Plan*. Santa Clara, CA: City of Santa Clara Water and Sewer Utility.

²⁰ Santa Clara Basin Watershed Management Initiative (SCBWMI). 2001. *Watershed Characteristics Report (Watershed Management Plan, Volume One)* (unabridged). (February.) San José, CA: Santa Clara Basin Watershed Management Initiative.

²¹ Santa Clara Valley Urban Runoff Pollution Prevention Program. San Tomas Aquino Watershed. Accessed April 20, 2010. Available at: http://www.scvurppp-w2k.com/ws_sta.shtml

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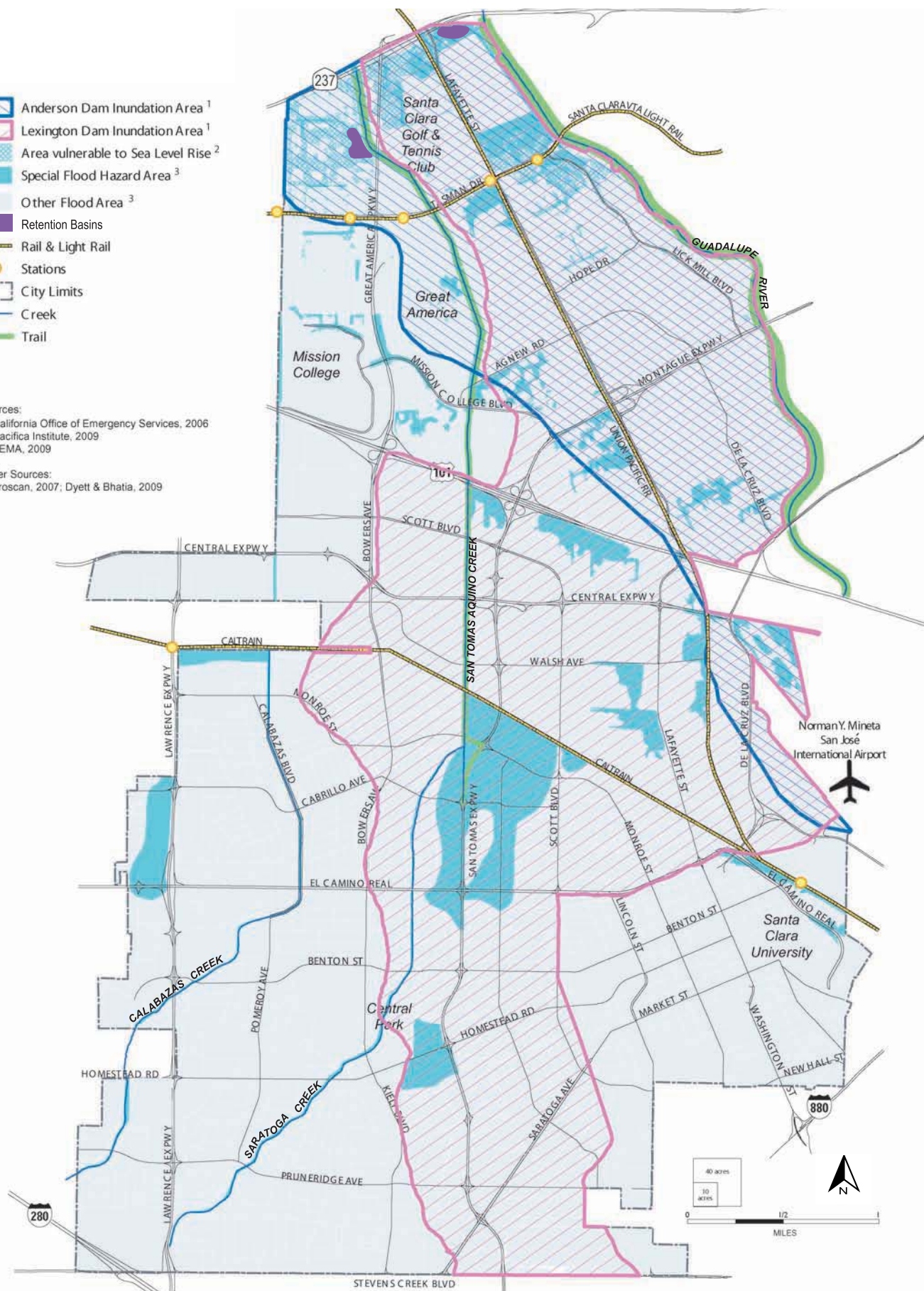
-  Anderson Dam Inundation Area ¹
-  Lexington Dam Inundation Area ¹
-  Area vulnerable to Sea Level Rise ²
-  Special Flood Hazard Area ³
-  Other Flood Area ³
-  Retention Basins
-  Rail & Light Rail
-  Stations
-  City Limits
-  Creek
-  Trail

Sources:

1. California Office of Emergency Services, 2006
2. Pacifica Institute, 2009
3. FEMA, 2009

Other Sources:

Metroscan, 2007; Dyett & Bhatia, 2009



WATER COURSES AND FLOOD ZONES

FIGURE 4.4-1

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Saratoga Creek joins San Tomas Aquino Creek 1.5 miles upstream of Highway 101. Saratoga Creek originates on the northeastern slopes of the Santa Cruz Mountains. The mainstem flows for approximately 4.5 miles in an eastern direction largely contained within Sanborn County Park. Most of the creek contains natural channel with some modifications (e.g., gabion walls) and a few sections of hardened channel.²² The creek continues for about 1.5 miles through the low-density residential foothill region of the Town of Saratoga and then for another 8 miles along the alluvial plain of the Santa Clara Valley, through the cities of San Jose and Santa Clara.

Calabazas Creek, about 13 miles long in total and draining a 21 square-mile watershed, originates in the Santa Cruz Mountains and flows along the western side of the City of Santa Clara, discharging into the Guadalupe Slough, which flows to the lower South San Francisco Bay. Calabazas Creek has riparian zones and channels that have been extensively modified for flood protection. Thirty-two percent of its length, approximately 4.2 miles, is classified as “hard bottom”.²³ From Guadalupe Slough to Highway 101, Calabazas Creek is an enlarged earthen channel with levees. The reach between Highway 101 and Lawrence Expressway is a trapezoidal, concrete-lined channel.²⁴

The Guadalupe River drains a watershed of about 171 square miles. The mainstem Guadalupe River consists of approximately 20 miles of channel that flows through the City of San José and forms the City of Santa Clara’s northeastern limit before entering Alviso Slough, which in turn drains to the lower South San Francisco Bay. Modification of the Guadalupe River and its tributaries is recorded as early as 1866, when a canal was dug to alleviate flooding and improve conditions for the rapidly expanding orchards near the river. Other improvements have continued through the present. The most significant recent improvements to the Guadalupe River system, are part of the Guadalupe Park and Gardens projects. Trails, parks, gardens, and flood control enhancements were constructed over 12 years between InterStates 280 and 880.

4.4.1.2 Storm water and Urban Runoff

The City’s storm drain system consists of curb inlets that collect and channel surface water, from rainfall and other sources, into a series of pipelines beneath City roadways. Storm water is conveyed through these underground pipelines to the channelized creeks within the City, which then direct flow into San Francisco Bay. The SCVWD operates as the flood control agency for the County. Their stewardship also includes creek restoration, pollution prevention efforts and groundwater recharge.

Urban runoff is classified as either wet weather (rainwater) or dry weather (water waste) flows from urban landscapes into storm drain systems that lead to the San Francisco Bay. Santa Clara is committed to improving water quality in the San Francisco Bay and streams by reducing urban runoff pollution through the implementation of the City’s Urban Runoff Management Plan (URMP). The City of Santa Clara participates in the regional program for the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), whose members include twelve

²² Ibid

²³ City of Santa Clara. 2005. *Urban Water Management Plan*. Santa Clara, CA: City of Santa Clara Water and Sewer Utility.

²⁴ Santa Clara Valley Urban Runoff Pollution Prevention Program. Calabazas Watershed. Accessed April 20, 2010. Available at: http://www.scvurppp-w2k.com/ws_calabazas.shtml

other cities and towns, the County of Santa Clara, and the SCVWD that collectively discharge storm water to San Francisco Bay.

The City's URMP, along with other local Urban Runoff Management Plans, collectively constitute the regional plan that conforms to the federal requirements of the National Pollution Discharge Elimination System (NPDES) program. This regional plan is the basis for the NPDES permit issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB). This permit requires all members, including the City of Santa Clara, to implement programs that reduce urban runoff pollution by targeting pollutant reduction and surface flow prevention from urban activities and development. Implementation of the City's UWMP also includes promoting public awareness and clean up efforts as well as monitoring local streams and storm drains to determine the effectiveness of the program.

4.4.1.3 Surface Water Quality

A wide range of point and non-point source pollutants affect existing surface water quality in the City. Point sources of water pollutants are defined as sources from which wastewater is transmitted in some type of conveyance (pipe and channel) to a water body, and are classified as municipal or industrial sources. Municipal point sources consist primarily of domestic treated sewage and processed water. Industrial point sources are primarily from such operations as: trailer park, recreational park, and camp development; and electrical power generation.

Nonpoint sources are diffuse sources of water pollutants, which do not discharge to a watercourse from a pipe. This pollution arises from many everyday activities that take place in residential, commercial, and rural areas and is carried by storm water runoff to streams. Nonpoint sources, however, have been suspected of causing significant water quality problems. In urban areas, the storm water runoff from streets likely carries considerable quantities of harmful materials, such as oil, rubber, metals (including lead), pathogens, trash, and other solids. In addition, increased peak flows from roadway runoff can also alter the hydraulics of an area by scouring and transporting and depositing sediments in areas lower than the runoff source.

Section 303(d) of the Federal Clean Water Act requires that States develop a list of water bodies that do not meet water quality standards, establish priority rankings for waters on the list, and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. The list of impaired water bodies is revised periodically (typically every two years). Table 4.4-1 summarizes the City's streams, designated beneficial uses and known water quality impairments. According to the 303(d) list, the TMDL for mercury in the Guadalupe River will be developed as part of the Santa Clara Basin Watershed Management Initiative; additional monitoring and assessment is needed. Saratoga Creek and Calabazas Creek are included on the 2006 Clean Water Act Section 303(d) list for water quality limited surface water. The listing for diazinon²⁵ in the Guadalupe River, Saratoga Creek, and Calabazas Creek was made by U.S. Environmental

²⁵ Diazinon, a colorless to dark brown liquid, formerly used as an insecticide to control cockroaches, silverfish, ants, and fleas in residential, non-food buildings. Diazinon was heavily used during the 1970s and early 1980s for general-purpose gardening use and indoor pest control. A bait form was used to control scavenger wasps in the western U.S. Residential uses of diazinon were outlawed in the U.S. in 2004 but it is still approved for agricultural uses.

Protection Agency (USEPA) for the 1998 303(d) list. Per the 2006 303(d) list, USEPA has completed an approved TMDL for diazinon.

TABLE 4.4-1: SANTA CLARA STREAMS—BENEFICIAL USES AND KNOWN IMPAIRMENTS

Stream	Beneficial Uses ¹	Water Quality Impairments ²	
		Substance	Source
Guadalupe River	None identified	Diazinon	Urban runoff, storm sewers
		Mercury	Mine tailings
		Trash	Illegal dumping, Urban Runoff/Storm Sewers
San Tomás Aquino Creek	None identified	Trash	Illegal dumping, Urban Runoff/Storm Sewers
Saratoga Creek	Agricultural supply	Diazinon	Urban runoff, storm sewers
	Freshwater replenishment		
	Groundwater recharge	Trash	Illegal dumping, Urban Runoff/Storm Sewers
	Cold freshwater habitat		
	Warm freshwater habitat		
	Wildlife habitat		
	Water contact recreation		
Calabazas Creek	Noncontact recreation		
	Agricultural supply	Diazinon	Urban runoff, storm sewers
	Groundwater recharge		
	Cold freshwater habitat		
	Warm freshwater habitat		
	Wildlife habitat		
	Water contact recreation		
	Noncontact recreation		

Source:

1. San Francisco Bay Regional Water Quality Control Board. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). January 2007.
2. State Water Resources Control Board. 2006 CWA Section 303(d) List of Water Quality Limited Segments. Approved by US EPA June 28, 2007.
3. State Water Resources Control Board. 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report Approved June 15, 2010.

4.4.1.4 Groundwater Occurrence and Quality

The City is located in the Santa Clara sub-basin of the San Francisco Bay Hydrologic Region. The subbasin is 22 miles long and 15 miles wide, with a surface area of 225 square miles.²⁶ The dominant geohydrologic feature is a large inland valley. The valley is drained to the north by tributaries to San Francisco Bay including Coyote Creek, the Guadalupe River, and Los Gatos

²⁶ City of Santa Clara. 2005. *Urban Water Management Plan. Santa Clara, CA: City of Santa Clara Water and Sewer Utility.*

Creek.²⁷ SCVWD staff estimates the operational storage capacity of the subbasin to be 350,000 acre-feet (af). The groundwater aquifer is further described in section 4.7 *Public Utilities*.

Groundwater quality in the South Bay region varies greatly. In general, quality is adequate for designated beneficial uses, including municipal and domestic supply, industrial process supply, and industrial service supply.²⁸ The SCVWD monitors groundwater quality in the Santa Clara Subbasin in support of the Board Water Supply Objective 2.2.1: “*Protect groundwater basins from contamination and the threat of contamination.*” Groundwater quality in Santa Clara County is generally very good. Public water supply wells throughout the County deliver high quality water to consumers, almost always without the need for treatment. Cleanup is ongoing at a number of contamination sites and elevated concentrations of nitrate and perchlorate have been observed in some areas. The 2009 Groundwater Quality Report is the most recent water quality monitoring completed by the SCVWD and includes a general evaluation of water quality conditions. The Santa Clara Subbasin has significant confining layers, so data for this subbasin is analyzed for both the principal and shallow aquifer zones. The 2009 median concentrations for common inorganic constituents are generally well below California Department of Public Health (CDPH) drinking water standards and the RWQCB agricultural water quality objectives for each subbasin and aquifer zone, with the exception of those listed in Table 4.4-2 below.

TABLE 4.4-2. CONSTITUENTS EXCEEDING PRIMARY DRINKING WATER STANDARDS

Subbasin and Zone	Constituent	Notes
Santa Clara Shallow Zone	Arsenic	Arsenic was detected above the MCL in one monitoring well.
Santa Clara Principal Zone	Aluminum	Aluminum was detected above the MCL at one public water supply well in Santa Clara. Subsequent testing did not confirm the elevated level.

Source: Santa Clara Valley Water District. 2010. 2009 Groundwater Quality Report. March 2010

4.4.1.5 Ground Subsidence Due to Groundwater Removal

Groundwater removal from the aquifers beneath Santa Clara Valley has caused historic subsidence of the ground surface over broad areas. Subsidence results from the compaction of dewatered sediments in underlying aquifers. Subsidence can have a number of effects including: changes in the slope of streams, canals, or drains; damage to structures, roads, railroads, levees, and pipelines; fissuring at the ground surface; and failure of well casings. Groundwater subsidence is further described in Section 4.7 *Public Utilities*.

4.4.1.6 Flooding

Flooding within Santa Clara can occur in localized areas along streams running through the City during brief extensive storms. The Guadalupe River has flooded 15 times since the early 1940s. The worst flood along the Guadalupe River in recorded history occurred in 1955. More recent floods occurred in 1982, 1983, 1986, and 1995. Beginning in 2003, SCVWD, the local agency responsible for flood protection, upgraded the lower reaches of the Guadalupe River to handle

²⁷ Santa Clara Valley Water District. 2001. Santa Clara Valley Water District Groundwater Management Plan. July 2001.

²⁸ San Francisco Bay Regional Water Quality Control Board. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). January 2007.

water levels in the event of a 100-year flood, by the construction of floodwalls and levees, and installation of an overflow weir to divert particularly high flows into one of the salt ponds in Alviso.²⁹

Recent floods along Calabazas Creek have occurred in 1955, 1978, 1980, 1983, 1986, 1998, and 2002. To address flooding issues, SCVWD has initiated extensive improvement work on Calabazas Creek, including channel stabilization, to achieve protection from a 100-year flood for the reach of the Creek that extends from Miller Avenue, south of the City to San Francisco Bay.³⁰ The District is also undertaking a flood protection project along Calabazas Creek, upstream of the City of Santa Clara, from Miller Avenue to Wardell Street in the City of Saratoga. Flood protection activities along this reach of Calabazas Creek are expected to be completed by 2013.³¹ San Tomás Aquino Creek has undergone bank stabilization and sediment reduction activities upstream to help increase flood protection.³² All three of these creeks have 100-year levees along all or a portion of the reach that runs through the City.³³

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) categorize and rank areas that are susceptible to flooding. According to FEMA mapping, only a portion of the City is located in the Special Flood Hazard Area (SFHA), as shown on Figure 4.4-1. The SFHA is defined as the area subject to inundation during a flood event that has a one percent chance of occurring in any given year. Development is allowed within this floodplain area as long as it complies with local flood management ordinances. Much of the SFHA area within the City is located in low-lying areas between creek levees, north of US 101. The City has adopted the Flood Damage Prevention Code, 1987 ed., to address requirements for flood protection. The remainder of the City is located outside the SFHA but within Other Flood Areas (OFHA), which include the 0.2 percent (500-year) floodplain; areas where the one percent flood event would result in flooding to an average depth of less than one foot, or where flooding would occur on a watercourse with a drainage area smaller than one square mile; and lands protected by levees from the one percent flood.

4.4.1.7 Dam Failure and Inundation

A dam inundation zone is an area in which flooding could occur due to failure of an upstream dam as a result of an earthquake or other catastrophe. According to dam failure inundation maps provided by the Association of Bay Area Governments (ABAG), much of the City is located within the zone that could be affected by flooding in the event of a failure of Lexington Dam and/or Anderson Dam, as shown on Figure 4.4-1.³⁴ The inundation area assumes complete failure of the dams with full reservoirs that are completely emptied. The actual extent and depth of inundation in the event of a failure would depend on the volume of storage in the reservoir at the time of failure.

²⁹ Santa Clara Valley Water District. 2002. Flood Protection Project, Lower Guadalupe River.

³⁰ Santa Clara Valley Water District. 2006. Calabazas Creek Capacity Improvement Project.

³¹ Santa Clara Valley Water District. 2009. Clean Safe Creeks & Natural Flood Protection Plan.

³² Santa Clara Valley Water District. 2007. San Tomas Aquino Creek Bank Repair Project and Santa Clara Valley Water District. 2009. San Tomas Creek Sediment Removal Project.

³³ Federal Emergency Management Agency (FEMA). 2009. Flood Insurance Rate Map, City of Santa Clara, California, Santa Clara County. May 18, 2009.

³⁴ Association of Bay Area Governments. 2003. Dam Failure Inundation Hazard Map for NW San Jose/Milpitas/Santa Clara. October 2003.

Lexington Dam is located on Los Gatos Creek, approximately nine miles from the City of Santa Clara, and has a total capacity of 19,044 acre-feet with a surface area of 412 acres. In 1996, Lexington Dam was renamed for James J. Lenihan.³⁵ In recent months, to reduce hazards, the reservoir has not been operated at full capacity; as of September 1, 2009, storage was 6,130 acre-feet (32.2 percent of capacity, or 88 percent of the reservoir's seasonal average to date).³⁶ SCVWD recently completed the Lenihan Dam Outlet Modification project. This project replaced an aging outlet pipe under Lenihan Dam to improve dam safety.

Anderson Dam and Reservoir were built in 1950, on a 500-acre dairy and cattle ranch along Coyote Creek. The 7.8-miles-long Anderson Reservoir is the largest man-made lake in Santa Clara County, and is located approximately 30 miles from Santa Clara. The reservoir can store 90,373 acre-feet of water and has a surface area of 1,271 acres.³⁷

4.4.1.8 Mudflows

A mudflow is a large rapid (up to 50 miles per hour) mass of mud formed by loose earth and water. Hillsides and slopes of unconsolidated material could be at risk if these areas become saturated. Because the City is located on gently sloping and nearly flat valley floor topography, it is not subject to risk of mudflows.

4.4.1.9 Climate Change

Increasing atmospheric temperatures due to climate change could impact both water supply and flood control operations in California. Higher atmospheric temperatures leading to higher snow lines will cause increased direct runoff after storms. The reduced snowpack will lead to less spring runoff from snowmelt.

Global climate change presents a potential additional flooding hazard to the City, through sea level rise and changes in precipitation timing and amount. Estimates of future sea level rise as a result of climate change vary. Inundation levels mapped by the San Francisco Bay Conservation Development Commission show that a 16-inch rise in sea level by mid-century would inundate only a small area in the northern portion of the City. A 55-inch rise in sea level by 2100 would extend the inundation zone as far south as Mission College Boulevard, one mile north of US-101, with further inundation extending south along the low-lying San Tomás Aquino Creek corridor³⁸ (refer to Figure 4.4-2 Areas Inundated by Sea Level Rise). A primary concern with sea level rise in the South Bay is the likely increased pressure on existing levees and potential for breaches, causing more widespread inundation.

Climate change could also impact precipitation patterns in California. According to the California Climate Change Center (a "virtual" research and information website operated by the

³⁵ Santa Clara Valley Water District. 2010. Lexington Reservoir and Lenihan Dam. Accessed April 20, 2010. Available at: <http://www.valleywater.org/Services/LexingtonReservoirAndLenihanDam.aspx>

³⁶ Santa Clara Valley Water District. 2009. Rainfall and Reservoir Status Report.

³⁷ Santa Clara Valley Water District. 2010. Anderson Dam and Reservoir. Accessed April 20, 2010. Available at: <http://www.valleywater.org/Services/AndersonDamAndReservoir.aspx>

³⁸ San Francisco Bay Conservation Development Commission. 2008. Shoreline Areas Vulnerable to Seas Level Rise: South Bay Map. Accessed April 20, 2010. Available at: http://www.bcdc.ca.gov/planning/climate_change/maps/16_55/south_bay.pdf

California Energy Commission through its Public Interest Energy Research (PIER) Program)³⁹, most climate change projections show little change in total annual precipitation in California. One climate model projects slightly wetter winters, while another projects slightly drier winters. However, even small changes in precipitation could have a significant impact on water storage, flooding, and associated water issues.⁴⁰

4.4.2 Regulatory Environment

4.4.2.1 Federal

National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. As part of the NFIP, FEMA publishes FIRMs that identify flood hazard zones within a community.

Federal Clean Water Act

The major federal legislation governing water quality is the Clean Water Act, as amended by the Water Quality Act of 1987 (Act). Three key regulatory programs are outlined in the Clean Water Act. Sections 303 and 304 of the Act call for the establishment of water quality standards, criteria, and guidelines, including for wastewater effluent. Activities that may result in discharges to Waters of the United States and that require a federal permit are regulated under Section 401 of the Act. Water Quality Certification by the State is required for activities such as placement of fill in wetlands or bodies of water.

Section 404 of the Federal Clean Water Act

The U.S. Army Corps of Engineers (Corps) is involved with the permitting process associated with all projects that have the potential to impact wetlands or other Corps jurisdictional waters, riparian areas, or endangered species through fill, development in or alteration of wetlands or jurisdictional waters.




Under the Section 404 permit process, the U.S. Fish and Wildlife Service (FWS) acts as a consultant for the Corps. Their primary responsibility is to enforce the Endangered Species Act.

The National Oceanic and Atmospheric Administration (NOAA) also acts as a consultant for the Corps. NOAA is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 miles offshore).

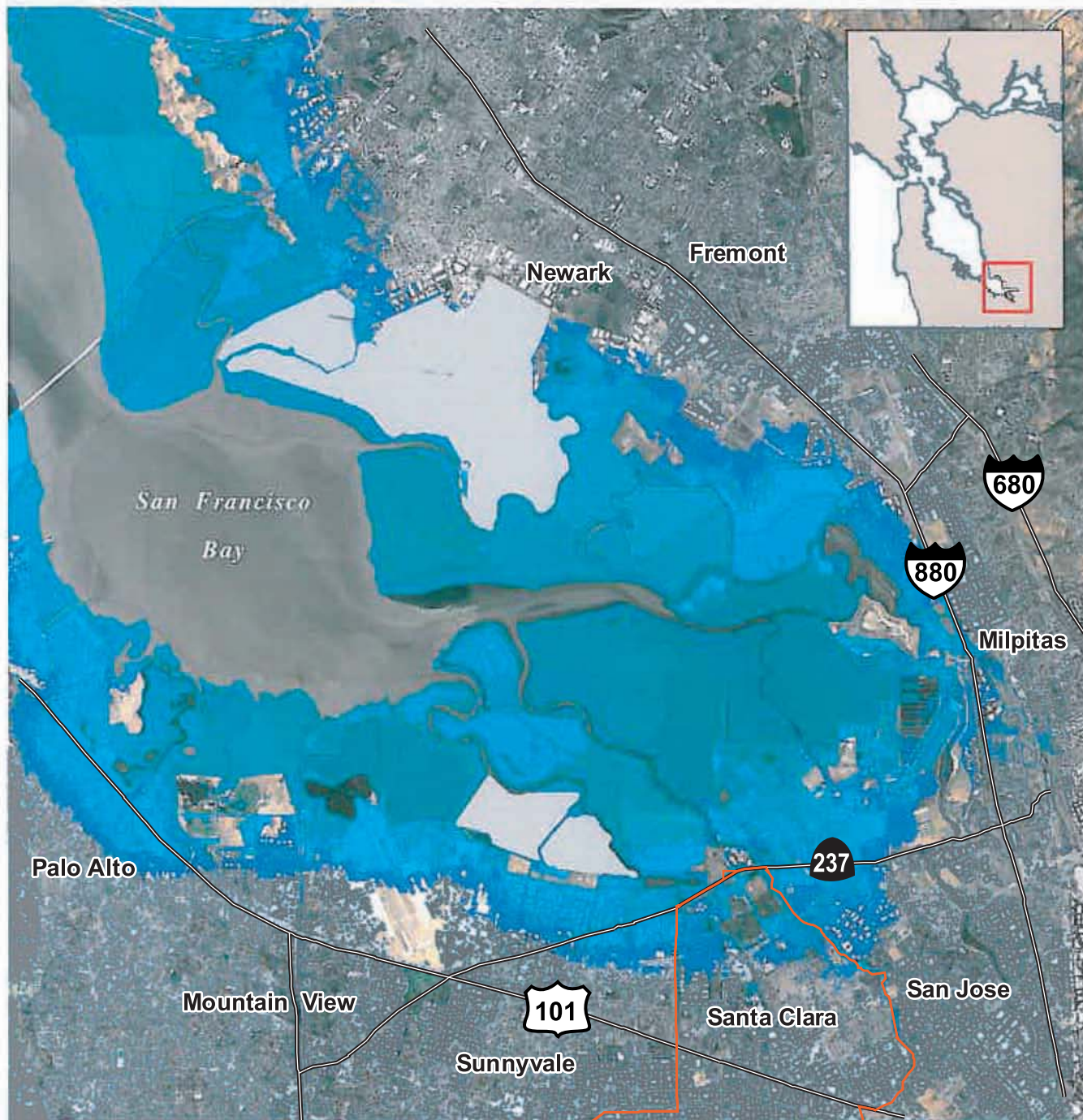
³⁹ California Climate Change Portal. Accessed June 20, 2010. Available at: <http://www.climatechange.ca.gov/about.html>

⁴⁰ California Climate Change Center. 2006. *Our Changing Climate, Assessing the Risks to California*. Accessed April 21, 2010. Available at: http://meteora.ucsd.edu/cap/pdf/CA_climate_Scenarios.pdf

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

0 15 3 MILES



SOURCE: Inundation data from Knowles, 2008. Additional salt pond elevation data by Siegel and Bachand, 2002. Aerial imagery is NAIP 2005 data.

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).

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National Pollutant Discharge Elimination System Permit

The EPA's regulations, as called for under Section 402 of the Clean Water Act, also include the NPDES permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). The NPDES Permit, though a federal program, is administered at the local level and will therefore be discussed in the Local Regulations sections, depending on the particular permit type and administration.

4.4.2.2 State

Porter-Cologne Water Quality Control Act

The State of California's Porter-Cologne Water Quality Control Act provides the basis for water quality regulation within California and the Act assigns primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (SWRCB) and the nine RWQCBs.

The San Francisco Bay office of the RWQCB (Region 2) regulates water quality in the Bay Area in accordance with the Water Quality Control Plan or 'Basin Plan'.⁴¹ The Basin Plan presents the beneficial uses, which the Regional Board has specifically designated for local aquifers, streams, marshes, rivers, and the Bay, as well as the water quality objectives, and criteria that must be met to protect these uses. The RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to control water quality and protect beneficial uses. The RWQCB's latest Basin Plan was approved in January 2007.⁴²

NPDES General Permit for Discharges of Storm water Associated with Construction Activity

The NPDES Construction General Permit is administered on the State level. For any proposed project that would disturb more than one acre of land, the project applicant is required to submit a Notice of Intent to the State Board and apply for coverage under the NPDES Construction General Permit. Once grading begins, the SWPPP must be kept on-site and updated as needed while construction progresses. The SWPPP details the site-specific Best Management Practices (BMPs) to control erosion and sedimentation and maintain water quality during the construction phase. The SWPPP also contains a summary of the structural and non-structural BMPs to be implemented during the post-construction period.

NPDES Industrial Discharge Permit(s)

To minimize the impact of storm water discharges from industrial facilities, the NPDES program includes an industrial storm water permitting component that covers 29 industrial sectors that require authorization under an NPDES industrial storm water permit for storm water discharges.

California Fish and Game Code - Lake and Streambed Alteration

The California Department of Fish and Game (CDFG) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility,

⁴¹ Ibid

⁴² San Francisco Bay Regional Water Quality Control Board. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). January 2007.

the Fish and Game Code (Section 1602) requires an entity to notify CDFG of any proposed activity that may substantially modify a river, stream, or lake. If CDFG determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared that includes reasonable conditions necessary to protect those resources.

Dam Safety

Also part of the DWR, the Division of Safety of Dams is responsible for regular inspection of the dams in the area. It is the responsibility of DWR and other local agencies to minimize the risk of dam failure. The types of dams regulated by DWR are described in California Water Code Sections 6002, 6003, and 6004 and regulations for dams and reservoirs are included in the California Code of Regulations.⁴³

4.4.2.3 Local

NPDES Municipal Storm water Permit

The EPA has delegated management of California's NPDES Municipal Storm water Permit program to the State Water Resources Control Board and the nine RWQCB offices.

Thirteen cities and towns in the Santa Clara Valley, together with Santa Clara County and the SCVWD came together to form the SCVURPPP. SCVURPPP was established to apply for and administer the regional NPDES permit for Santa Clara County and its cities and towns. As part of the NPDES permit requirements, the NPDES Municipal Storm water Permit program produced an Urban Runoff Management Plan and submits annual work plans and reports to the Regional Board. Included in this is the Hydromodification Management Plan (HMP). The goal of an HMP is to manage increased peak runoff flows and volumes (hydromodification) to avoid erosion of stream channels and degradation of water quality both on and off project sites.

The current NPDES permit that the City is operating under expired on February 21, 2006, but was administratively extended by the San Francisco Water Board. On October 14, 2009, the San Francisco Bay RWQCB adopted the Municipal Regional Storm water NPDES Permit (Permit Number CAS612008⁴⁴) for the San Francisco Bay Region. In an effort to standardize storm water management requirements throughout the region, this permit replaces the formerly separate countywide municipal storm water permits with a regional permit for 76 Bay Area municipalities, including the City of Santa Clara.

Storm Water Management Plan

The Storm Water Management Plan (SWMP) was prepared to supplement the joint NPDES Phase I Municipal Storm Water permit. The SWMP seeks to control post-development storm water runoff through source control and treatment control BMP's.

⁴³ California Department of Water Resources, Division of Safety of Dams, Statutes and Regulations Pertaining to Supervision of Dams and Reservoirs.

⁴⁴ The California Regional Water Quality Control Board San Francisco Regional Municipal Regional Storm water NPDES Permit (Permit Number CAS612008), Final Order Number R2-2009-0074 is available online at: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/storm_water/mrp.shtml

Santa Clara Valley Water District

The SCVWD operates as the flood control agency for the County. Their stewardship also includes creek restoration, pollution prevention efforts and groundwater recharge. The SCVWD requires permits for all well construction and destruction work, most exploratory boring for groundwater exploration, and projects occurring on any District property or easement. Permits are required under the Water Resources Protection Ordinance (06-1) and the District Well Ordinance (90-1). The District's role and responsibility in water supply and resources management is explored in detail in the Section 4.7 *Public Utilities* of this EIR.

San Francisco Bay Conservation and Development Commission Permit Program

The San Francisco Bay Conservation and Development District (BCDC) is a State agency created in 1965 to regulate development in the Bay and along its shoreline for the purpose of limiting and controlling the amount of fill placed in the Bay. In response to climate change and the challenges that it will present to the Bay Area, BCDC developed a Climate Change Planning Program to focus on developing strategies to reduce the region's vulnerability to the impacts of climate change. The goals of BCDC's Climate Change Planning Program are to: (1) identify and report on the impacts of climate change on San Francisco Bay; (2) identify strategies for adapting to climate change; (3) develop a regional task force to inform and coordinate local governments, stakeholders, and land use planning bodies in the Bay area regarding the potential Bay-related impacts of and approaches for adapting to global climate change; and (4) identify the findings and policies in the San Francisco Bay Plan pertaining to climate change, such as the findings and policies on sea level rise, and update other relevant Bay Plan policies to incorporate new information about the impacts of climate change. It is necessary to obtain a BCDC permit prior to undertaking most work in the Bay or within 100 feet of the shoreline, including filling, dredging, shoreline development and other work. There are several different types of permit applications, depending on the size, location, and impacts of a project. No portion of the City falls within the Bay or 100 feet of the Bay.

Flood Damage Prevention Code

The City has adopted the Flood Damage Prevention Code, 1987 Edition to ensure the minimization of loss of life and property in the event of flooding. This code pertains to all development, including new construction and substantial improvements to buildings within SFHA as identified on a FIRM map and includes provisions for anchoring, construction with flood resistant materials, and flood minimization practices. The code also includes requirements for the elevation of the lowest floor of all construction within SFHA, and stipulates that this elevation must be certified by a registered professional engineer, surveyor, or building inspector. Additionally, the lowest floors of buildings must be designed to equalize hydrostatic flood forces on exterior walls, and utility systems must be designed to minimize infiltration of flood waters into the system and discharge from systems into flood waters. The Flood Damage Prevention Code also prohibits construction within floodways. The City's adopted building code (International Building Code [IBC]) also identifies flood hazard areas and includes provisions regulating construction in these areas.

City of Santa Clara General Plan 2000-2010

Existing policies in the City of Santa Clara General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the

City. Relevant General Plan Policies that directly address reducing and avoiding increased runoff, water quality and flooding hazards include the following:

- Require expansion of storm drainage facilities where needed to serve new development.
- Implement the Santa Clara Valley Nonpoint Source Pollution Control Program.
- Support flood control improvements that will reduce serious flood hazards in the City, through coordination with the Santa Clara Valley Water District.
- Regulate the type, location and intensity of land uses within flood-prone areas.
- Identify and construct specific local storm drain facilities needed to accommodate a storm flow having a 10-year frequency.
- Participate on a regional basis in a Non-Point-Source Control Program in order to reduce pollutants in storm water runoff.
- Maximize water retention and reduce the quantity of water runoff.
- Encourage programs to improve the quality of storm water runoff.

Santa Clara City Code

Chapter 13.20, Storms Drains and Discharges, of the Santa Clara City Code is enacted for the protection of health, life, resources, and property through prevention and control of unauthorized discharges into watercourses. The primary goal of this chapter is the cleanup of storm water pollution from urban runoff that flows to creeks and channels, eventually discharging into the South San Francisco Bay (Ord. 1655 § 1, 4-26-94. Formerly § 24-1). The City has adopted the Flood Damage Prevention Code, 1987 through Chapter 15.45, Prevention of Flood Damage Code, in the CityCity Code. Requirements for grading and excavation permits and erosion control are included in Chapter 15.15 (Building Code).

4.4.2.4 Current Status of Regulations Pertaining to Climate Change

The current status of potential regulations pertaining to climate change and hydrology is explored below. Research and regulations regarding climate change are regularly, and sometimes rapidly, updated and modified; thus this section should be considered representative, and may not represent a complete list of current or pending regulations.

Federal

At a Federal level there are currently very few recommendations or guidelines for incorporating the risks of sea level rise into project planning, and virtually no required measures. It should be noted, however, that with the administration change of 2009, based on President Obama's Statements that global warming is a priority of the new administration, relatively rapid changes in the Federal government's involvement in global warming analyses and impacts may be forthcoming. Thus far, it appears that those changes will be focused on emission standards as opposed to impact mitigation.

State

California has been on the leading edge of creating legislation to mitigate both greenhouse gas emissions and the impacts of climate change. At this time, several concrete steps have been taken to reduce greenhouse gas emissions (GHG) in the State, while specific impact mitigation strategies have been recommended but not fully developed.

California Adaptation Strategy

In November, 2008, Governor Schwarzenegger signed Executive Order S-13-08 (EO), which calls for the development of California's first Statewide climate change adaptation strategy, which will assess the State's expected climate change impacts, vulnerabilities, and recommend climate adaptation policies, completed in 2009. In the interim, all State agencies planning construction projects were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise.⁴⁵

San Francisco Bay Conservation and Development District

In 2006 BCDC released a series of maps depicting the lands most vulnerable to sea level rise (refer to Figure 4.4-2 Areas Inundated by Sea Level Rise). Inundation levels mapped by the San Francisco Bay Conservation Development Commission show that sea level rise in the City would inundate only a small area in the northern portion of the City.

4.4.3 Thresholds of Significance

For the purposes of this EIR, a hydrology or water quality impact is significant if implementation of the proposed Draft 2010-2035 General Plan would:

- Substantially alter the existing drainage pattern of an area in a manner that would result in substantial erosion or siltation;
- Substantially alter the existing drainage pattern of an area, including the alteration of the course of a stream or river, or substantially increase the rate or volume of surface runoff in a manner that would increase flooding;
- Interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Expose people or structures to increased risk of loss, injury, or death related to flooding (including flooding as the result of failure of a dam), mudflow, debris flow, or sea level rise;
- Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place structures within a 100-year flood hazard area such that flood flows would be redirected or impeded;
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems; or
- Substantially degrade water quality and/or lead to violation of an applicable water quality standard or waste discharge requirement.

4.4.4 Impacts and Mitigation Measures

Possible hydrologic, flooding and runoff conditions that could adversely effect future development and redevelopment within Santa Clara are identified for the planned development areas. These conditions and relevant proposed Draft 2010-2035 General Plan policies are described below.

⁴⁵ California Office of the Governor, November 14, 2008: Press Release; "...Executive Order Directing State Agencies to Plan for Sea Level Rise and Climate Impacts".

4.4.4.1 *Alter the existing drainage pattern of an area in a manner that would result in substantial erosion or siltation.*

Development often requires grading that alters natural drainage patterns. In the City, as in other densely developed Bay Area communities, natural drainage patterns have already been substantially modified to accommodate existing development. Additional infill and redevelopment under the proposed Draft 2010-2035 General Plan could entail further modification.

Both the City's industrial and commercial areas are expected to change from lower to higher intensity development. The Bowers Avenue and San Tomas Expressway transportation corridors are targeted for higher-intensity employment centers. More moderate employment centers surround these corridors. Intensification of commercial uses and expanded opportunities for mixed uses are targeted for Focus Areas of development along El Camino Real and Stevens Creek Boulevard. The areas included within the Downtown and Santa Clara Station Focus Areas combine new land uses with higher-intensity development in order to take advantage of proximity to transit. Future Focus Areas, located north of the Caltrain corridor, represent a change from existing underutilized office and industrial uses to higher density residential and mixed use neighborhoods. The development within these areas would result in some potential for increased erosion and siltation both on- and off-site.

Grading and ground disturbance associated with development in these areas could increase the potential for accelerated erosion by changing natural drainage patterns. For all future development and redevelopment on sites that are one acre or greater in size, erosion hazards would be minimized through implementation of site-specific erosion measures in SWPPPs under the NPDES General Construction Permit and grading and excavation requirements in the CityCity Code. Future development projects on properties of less than one acre are subject to requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the City Code. The primary means of enforcing erosion control measures are through the grading and building permit process. The City also implements the "Guidelines and Standards for Lands Near Streams" in the City's entitlement and permitting functions, where applicable. With the regulatory programs currently in place, the possible impacts of accelerated erosion during construction associated with development and redevelopment would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address drainage, erosion and siltation. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for drainage, erosion and siltation hazards within the City are identified below.

Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P11	Require that new development meet storm water and water management requirements in conformance with State and regional regulations.
5.10.5-P15	Require new development to minimize paved and impervious surfaces and promote on-site Best Management Practices for infiltration and retention, including grassy swales, pervious pavement, covered retention areas, bioswales, and cisterns, to reduce urban water runoff.
5.10.5-P16	Require new development to implement erosion and sedimentation control measures to maintain an

	operational drainage system, preserve drainage capacity and protect water quality.
5.10.5-P17	Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Storm water Quality Association (CASQA), Storm water Best Management Practice Handbook for Construction.
5.10.5-P18	Implement the Santa Clara Valley Nonpoint Source Pollution Control Program, Santa Clara Valley Urban Runoff Pollution Prevention Program and the Urban Runoff Management Plan.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible erosion or siltation impacts include:

- NPDES General Construction Permit
- NPDES Municipal Permit
- Santa Clara City Code, Chapter 15.15

Impact 4.4-1: New development and redevelopment under the proposed Draft 2010-2035 General Plan would increase the potential for accelerated erosion by changing natural drainage patterns. Implementation of proposed policies and existing programs would minimize erosion hazards. **(Less Than Significant Impact)**

4.4.4.2 Alter the existing drainage pattern of an area, including the alteration of the course of a stream or river, or substantially increase the rate or volume of surface runoff in a manner that would increase flooding.

As identified in Impact 4.13-1 above, development often requires grading that alters existing drainage patterns. In the City, as in other densely developed Bay Area communities, drainage has already been substantially modified as a result of existing development; additional infill and redevelopment under the proposed Draft 2010-2035 General Plan would likely entail further modification. Development proposed under the proposed Draft 2010-2035 General Plan would occur adjacent to water courses throughout the City, which has the potential to alter the course of the drainage pattern near the stream or river and increase flooding.

Development of the El Camino Real Focus Areas would occur along both Calabazas Creek and San Tomas Aquino Creek. Development of the Central Expressway Future Focus Area would occur along San Tomas Aquino Creek. Development of the De La Cruz and Tasman East Future Focus Areas would occur along the Guadalupe River. Extensive site modifications would have some potential to increase local site runoff and/or contribute to localized flooding, particularly where high density and mixed uses generally increases the percentage of impermeable surfaces. However, as identified above, hazards would be minimized through implementation of site-specific measures in SWPPPs under the NPDES General Construction Permit and by grading and excavation requirements in the City's City Code. Given that many future development projects would be on properties less than one acre, requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the City Code would be the primary means of enforcing control measures through the grading and building permit process. With the regulatory protections in place, impacts related to increases in surface runoff are expected to be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address drainage associated with watercourses and flooding. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for drainage hazards within the City are identified below.

Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P11	Require that new development meet storm water and water management requirements in conformance with State and regional regulations.
5.10.5-P12	Continue to participate in the National Flood Insurance Program and encourage all property owners within flood hazard areas to carry flood insurance.
5.10.5-P13	Require that development complies with the Flood Damage Protection Code.
5.10.5-P14	Coordinate with the Federal Emergency Management Agency to ensure appropriate designation and mapping of floodplains.
5.10.5-P16	Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.
5.10.5-P19	Limit development activities within riparian corridors to those necessary for improvement or maintenance of stream flow.
Conservation Policies	
5.10.1-P2	Work with Santa Clara Valley Water District and require that new development follow the "Guidelines and Standards for Lands Near Streams" to protect streams and riparian habitats.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible drainage or runoff impacts include:

- CWA Section 404
- California Fish and Game Code Section 1602
- NPDES General Construction Permit
- NPDES Municipal Permit
- Santa Clara City Code, Chapter 15.15, Chapter 15.45, and Chapter 13.20

Impact 4.4-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan would increase the potential for alteration of a stream and increase flooding potential by changing natural drainage patterns. Implementation of proposed policies and existing programs would minimize hazards. **(Less Than Significant Impact)**

4.4.4.3 Interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

Additional development and redevelopment under the proposed Draft 2010-2035 General Plan would have the potential to add new areas of impervious (paved or hardscaped) surface to the City, potentially decreasing infiltration and local recharge of shallow groundwater. However, only a very small portion of the City (about 26 acres at the City's southwest corner) is within the recharge area for the potable water aquifer. This area is currently developed as residential. Some regional commercial development is planned for this area, but it would be infill and redevelopment in areas that have previously been developed; the net addition of impervious

surface area is expected to be small, and would be further reduced by the minimization of paved and impervious surfaces and the promotion of measures to facilitate infiltration in conformance with the requirements under section C.3 of the NPDES Permit. In addition, the SCVWD uses 200,000 af per year limit in determining the amount of supply that can be obtained from the basin, and monitors to ensure that the limit is not exceeded to avoid subsidence. As identified in Table 4.7.4 in Section 4.7 *Public Utilities*, the City draws 23,048 af per year. Given the City's existing developed and extensively hardscaped character, limited overall influence on potable aquifer recharge, and the proposed Draft 2010-2035 General Plan commitment to minimize hardscape and promote infiltration, impacts related to interference with groundwater recharge are expected to be less than significant.

For an additional discussion of the affects of the proposed Draft 2010-2035 General Plan on the existing groundwater supply and groundwater recharge, please refer to Section 4.7, *Public Utilities*.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address water use and subsidence associated with the development under the proposed Draft 2010-2035 General Plan. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation within the City are identified below.

Water Policies	
5.10.4-P10	Work with Santa Clara Valley Water District to minimize undesirable compaction of aquifers and subsidence of soils.
Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P10	Support efforts by the Santa Clara Valley Water District to reduce subsidence.
5.10.5-P15	Require new development to minimize paved and impervious surfaces and promote on-site Best Management Practices for infiltration and retention, including grassy swales, pervious pavement, covered retention areas, bioswales, and cisterns, to reduce urban water runoff.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible hydrology impacts include:

- Santa Clara Valley Water District Groundwater Recharge Program

Impact 4.4-3: New development and redevelopment under the proposed Draft 2010-2035 General Plan would have the potential to add new areas of impervious (paved or hardscaped) surface to the City, potentially decreasing infiltration and local recharge of shallow groundwater. Implementation of proposed policies and existing programs would minimize this effect. (**Less Than Significant Impact**)

4.4.4.4 Expose people or structures to increased risk of loss, injury, or death related to flooding (including flooding as the result of failure of a dam), mudflow, debris flow, or sea level rise.

Major waterways that flow through the City are; Calabazas Creek, the Guadalupe River, Saratoga Creek, and San Tomás Aquino Creek. New development under the proposed Draft 2010-2035 General Plan is expected near all these creeks, as described in Impact 4.4.4.2. However, all of these creeks have been substantially modified (channelized and levee'd) and are extensively managed for flood protection by the SCVWD. As a result, only a small portion of the City remains within the FEMA 100-year floodplain (Figure 4.4-1). According to dam failure inundation maps provided by ABAG, much of the City is located within the zone that could be affected by flooding in the event of a failure of Lexington Dam and/or Anderson Dam. The inundation area assumes complete failure of the dams with a full reservoir that is completely emptied. The actual extent and depth of inundation in the event of a failure would depend on the volume of storage in the reservoir at the time of failure. However, since the reservoir is now typically operated at less than 50 percent capacity, the realistic hazard presented by a dam failure is less than the area presented on the flood inundation maps. The City, along with a number of other Bay Area jurisdictions, adopted a Regional Hazard Mitigation Plan titled *Taming Natural Disasters*⁴⁶ that seeks to reduce loss due to large-scale disaster events by increasing preparedness, response efficiency, and loss mitigation. With existing codes flood hazards would be managed consistent with the existing standard of care, and impacts related to increased exposure to flood hazards are expected to be less than significant.

Mudflows and debris flows typically affect mountainous and rangefront areas. The City is located in the heart of the Santa Clara Valley, at some distance from the Santa Cruz Mountains rangefront, and is not considered to be at risk of mudflows or debris flows. No impact associated with these hazards is anticipated.

The proposed Draft 2010-2035 General Plan would add a limited number of developments in the area vulnerable to sea level rise, according to inundation levels mapped by the San Francisco BCDC. These maps show that a 16-inch rise in sea level by mid-century would inundate only a small area in the northern portion of the City. A 55-inch rise in sea level by 2100 would extend the inundation zone as far south as Mission College Boulevard, one mile north of US-101, with further inundation extending south along the low-lying San Tomás Aquino Creek corridor. Under either scenario, additional development under the proposed Draft 2010-2035 General Plan would increase the number of people and businesses in the City exposed to the various risks related to sea level rise. Planning for the future as regards sea level rise is difficult, given the rapidly evolving nature of climate change research. As part of the Prerequisites, the City would evaluate the potential effects of climate change trends and identify any available mechanisms to address sea level rise, if any. Because any sea level rise that occurs as a result of global climate change will be gradual, impacts can be addressed to some extent by long-term adaptive planning. With existing codes flood hazards would be managed consistent with the existing policies, and impacts related to increased exposure to flood hazards from sea level rise are expected to be less than significant.

⁴⁶ Association of Bay Area Governments (ABAG). 2005. *Taming Natural Disasters: Multi-Jurisdictional Local Government Hazard Mitigation Plan for the San Francisco Bay Area*.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address exposure of people or structures to increased risk of loss, injury, or death related to flooding, mudflow, debris flow, sea level rise, tsunami, or seiche. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for hazards within the City are identified below.

Prerequisite Policies	
5.1.1-P19	Prior to 2025, evaluate the potential effects of climate change trends and identify any available mechanisms to address sea level rise, if any.
Safety Policies	
5.10.5-P4	Identify appropriate evacuation routes so people can be efficiently evacuated in the event of a natural disaster.
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P12	Continue to participate in the National Flood Insurance Program and encourage all property owners within flood hazard areas to carry flood insurance.
5.10.5-P13	Require that development complies with the Flood Damage Protection Code.
5.10.5-P14	Coordinate with the Federal Emergency Management Agency to ensure appropriate designation and mapping of floodplains.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible hydrology impacts include:

- National Flood Insurance Program
- Flood Damage Prevention Code
- Santa Clara City Code, Chapter 15.45

Impact 4.4-4: New development and redevelopment under the proposed Draft 2010-2035 General Plan would have the potential to expose people or structures to increased risk of loss, injury, or death related to flooding, mudflow, debris flow, or sea level rise. Implementation of proposed policies and existing programs would minimize this effect. **(Less Than Significant Impact)**

4.4.4.5 Place housing or structures within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map such that flood flows would be redirected or impeded.

Flood hazard mapping by FEMA indicates that despite extensive flood protection activities on area creeks, a portion of the City is still located within the 100-year floodplain and SFHAs and the proposed Draft 2010-2035 General Plan proposes development, including residential uses, within this zone. The Tasman East Future Focus Area is located within a SFHA. The Future Focus Areas will include transformation of the existing underutilized office and industrial uses to higher density residential and mixed use neighborhoods. Portions of the El Camino Real Focus Area are also located within the SFHA. The proposed Draft 2010-2035 General Plan vision for El Camino Real is to transform this Focus Area from a series of automobile-oriented strip-malls to a pedestrian-and transit-oriented corridor with a mix of residential and retail uses.

Development is allowed within this floodplain area as long as it complies with local flood management ordinances. The City has also adopted the Flood Damage Prevention Code, 1987

ed., through Chapter 15.45, Prevention of Flood Damage Code, in the CityCity Code, to address requirements for flood protection. The Flood Damage Prevention Code, 1987 ed. includes methods and provisions for requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction. These can include such measures as: (1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure; (2) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage; (3) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage; (4) New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation; and (5) New construction and substantial improvement of any commercial, industrial or other non-residential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation, or shall be flood proofed.

As discussed above, the City's creekways are managed for flood protection by the SCVWD, including construction of existing levees designed to protect against the 100-year flood event. Also, both the Flood Damage Prevention Code and the Building Code regulate development within areas subject to flood hazard. Any development that occurs in the City must abide by these regulations. Flood hazards cannot be entirely eliminated, but with existing flood protection works and implementation of the City's adopted building code, the Flood Damage Prevention Code, and drainage planning, risks would be addressed consistent with the current standard of care, and residual impacts related to construction of housing within the 100-year floodplain, if any, will be less than significant. Structures associated with the development in these areas would impede or redirect flood flows, and impacts would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address placing housing within a 100-year flood hazard area. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for flood hazards within the City are identified below.

Safety Policies	
5.10.5-P4	Identify appropriate evacuation routes so people can be efficiently evacuated in the event of a natural disaster.
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P12	Continue to participate in the National Flood Insurance Program and encourage all property owners within flood hazard areas to carry flood insurance.
5.10.5-P13	Require that development complies with the Flood Damage Protection Code.
5.10.5-P14	Coordinate with the Federal Emergency Management Agency to ensure appropriate designation and mapping of floodplains.
Water Policies	
5.10.4-P12	Encourage diversion of run-off from downspouts, and replacement of hardscapes to landscaped areas and permeable surfaces.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible hydrology impacts include:

- National Flood Insurance Program
- Flood Damage Prevention Code
- Santa Clara City Code, Chapter 15.45

Impact 4.4-5: New development and redevelopment under the proposed Draft 2010-2035 General Plan would place housing and other structures within the 100-year flood hazard area. Implementation of proposed policies and existing programs would minimize or avoid significant property damage and risks to human health and safety. (**Less Than Significant Impact**)

4.4.4.6 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems.

Although the City is largely built out, development under the proposed Draft 2010-2035 General Plan will add quantities of impervious surface (including both buildings and pavement), potentially decreasing infiltration and increasing runoff. However, as discussed in Impact 4.4-1 and Impact 4.4-2, for future development over one acre in size, storm water runoff would be minimized through implementation of site-specific measures in SWPPPs under the NPDES General Construction Permit and grading and excavation requirements in the City City Code. Given that many future development projects would be on properties less than one acre, requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the City Code would be the primary means of enforcing control measures through the grading and building permit process. The City Code and building code also include provisions for post-construction effective management of storm water runoff. With the regulatory programs currently in place, the possible impacts of additional runoff to the storm water drainage system associated with development and redevelopment would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address storm water runoff and drainage. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for storm water runoff hazards within the City are identified below.

Safety Policies	
5.10.5-P11	Require that new development meet storm water and water management requirements in conformance with State and regional regulations.
5.10.5-P15	Require new development to minimize paved and impervious surfaces and promote on-site Best Management Practices for infiltration and retention, including grassy swales, pervious pavement, covered retention areas, bioswales, and cisterns, to reduce urban water runoff.
5.10.5-P16	Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.
5.10.5-P17	Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Storm water Quality Association (CASQA), Storm water Best Management Practice Handbook for Construction.
5.10.5-P18	Implement the Santa Clara Valley Nonpoint Source Pollution Control Program, Santa Clara Valley Urban Runoff Pollution Prevention Program and the Urban Runoff Management Plan.
5.10.5-P20	Maintain, upgrade and replace storm drains throughout the City to reduce potential flooding.

5.10.5-P21	Require that storm drain infrastructure is adequate to serve all new development and is in place prior to occupancy.
------------	--

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible hydrology impacts include:

- NPDES General Construction Permit
- NPDES Municipal Permit
- Santa Clara City Code, Chapter 13.20 and Chapter 15.15

Impact 4.4-6: New development and redevelopment under the proposed Draft 2010-2035 General Plan would increase runoff associated with the additional impervious surfaces. Implementation of proposed policies and existing programs would minimize effects to storm drain systems. **(Less Than Significant Impact)**

4.4.4.7 Substantially degrade water quality and/or lead to violation of an applicable water quality standard or waste discharge requirement.

Ground-disturbing activities related to construction under the proposed Draft 2010-2035 General Plan can result in accelerated erosion on work sites including increased input of fine sediments into the City's storm drains and ultimately into area creeks and the Bay. Construction would also use various hazardous substances such as vehicle fuels and lubricants, paving media, paints, solvents, etc.; accidental release or discharge of any of these substances could adversely affect water quality, endanger aquatic life, and/or result in violation of water quality standards.

All construction on sites of one acre or larger is required to manage discharge of storm water runoff under the Clean Water Act, through the preparation and implementation of a SWPPP. For future development over one acre in size, erosion hazards would be minimized through implementation of site-specific erosion measures in SWPPPs under the NPDES General Construction Permit and grading and excavation requirements in the CityCity Code. Given that many future development projects would be on properties less than one acre in size, requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the City Code would be the primary means of enforcing erosion control measures through the grading and building permit process. Additionally, the City is committed to ensuring that construction-related grading complies with the erosion and sediment control BMPs set forth in the California Storm Water Quality Association's (CASQA) Storm Water Best Management Practice Handbook for Construction and with the erosion and sediment control plan recommendations of the ABAG Manual of Standards for Erosion and Sediment Control Measures. With the regulatory programs currently in place, the possible impacts of accelerated erosion during construction associated with development and redevelopment would be less than significant.

New impervious surface can increase the delivery of polluted runoff to area storm drains and ultimately to San Francisco Bay. This is especially true during the "first flush" at the beginning of the storm season, when urban pollutants that have accumulated during the dry season are washed from paved surfaces. However, the City adheres to the terms of the NPDES permitting, which requires all developments that create one acre or more of impervious surface to

incorporate design measures to reduce pollutant discharge to the maximum extent practicable, including site design measures, source controls, and storm water treatment measures that municipalities are to require of developments to ensure water quality. Given that many future development projects would be on properties less than one acre, requirements under the City's NPDES Municipal Permit, urban runoff policies, and the City Code would be the primary means of enforcing control measures after development is complete. With the regulatory programs currently in place, the possible impacts of accelerated runoff and decrease in water quality after construction is complete for the development and redevelopment would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address storm water runoff and water quality. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for water quality hazards within the City are identified below.

Water Policies	
5.10.4-P5	Prohibit new development that would reduce water quality below acceptable State and local standards.
5.10.4-P12	Encourage diversion of run-off from downspouts, and replacement of hardscapes to landscaped areas and permeable surfaces.
Safety Policies	
5.10.5-P11	Require that new development meet storm water and water management requirements in conformance with State and regional regulations.
5.10.5-P16	Require new development to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity and protect water quality.
5.10.5-P17	Require that grading and other construction activities comply with the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control Measures and with the California Storm water Quality Association (CASQA), Storm water Best Management Practice Handbook for Construction.
5.10.5-P18	Implement the Santa Clara Valley Nonpoint Source Pollution Control Program, Santa Clara Valley Urban Runoff Pollution Prevention Program and the Urban Runoff Management Plan.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible hydrology impacts include:

- NPDES General Construction Permit
- NPDES Municipal Permit
- Santa Clara City Code, Chapter 13.20 and Chapter 15.15

Impact 4.4-7: New development and redevelopment under the proposed Draft 2010-2035 General Plan would increase the potential for degradation of water quality due to runoff during construction and operational activities. Implementation of proposed policies and existing programs would minimize water quality hazards. **(Less Than Significant Impact)**

4.4.5 Hydrology and Water Quality Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.4.6 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant hydrology and water quality impacts and no mitigation measures are required.

4.5 GEOLOGY AND SOILS

The following Section evaluates geologic, soils and seismic conditions and the environmental effects of implementation of the proposed Draft 2010-2035 General Plan.

4.5.1 Existing Conditions

4.5.1.1 *Geologic Setting and Soils*

The City of Santa Clara is located in the Santa Clara Valley, a relatively flat alluvial basin, bounded by the Santa Cruz Mountains to the southwest and west, the Diablo Mountain Range to the east, and San Francisco Bay to the north. The topography of the Santa Clara Valley rises from sea level at the south end of San Francisco Bay to elevations of more than 2,000 feet to the east. The average grade of the valley floor ranges from nearly horizontal to about two percent generally down to the northwest. Grades are steeper on the surrounding hillsides.

The Santa Clara Valley is located within the Coast Ranges geomorphic province of California; an area characterized by northwest-trending ridges and valleys, underlain by strongly deformed sedimentary and metamorphic rocks of the Franciscan Complex. Overlying these rocks are sediments deposited during recent geologic times. The Santa Clara Valley consists of a large structural basin containing alluvial deposits derived from the Diablo Range to the east and the Santa Cruz Mountains to the west. Alluvial deposits are interbedded with bay and lacustrine (lake) deposits in the north-central region. The valley sediments were deposited as a series of coalescing alluvial fans by streams that drain the adjacent mountains. These alluvial sediments make up the groundwater aquifers of the area. Soil types in the area include clay in the low-lying central areas, loam and gravelly loam in the upper portions of the valley, and eroded rocky clay loam in the foothills.

The Diablo Range of mountains extends along the eastern boundary of the Santa Clara Valley. This range consists of northwest-trending subparallel ridges with slopes varying between 20-60 percent, and small intervening valleys. The Santa Cruz Mountains extend along the southwest portion of the Santa Clara Valley. This mountain range consists of similar northwest-trending ridges with intervening valleys, and slopes ranging from 40 to 60 percent or greater.

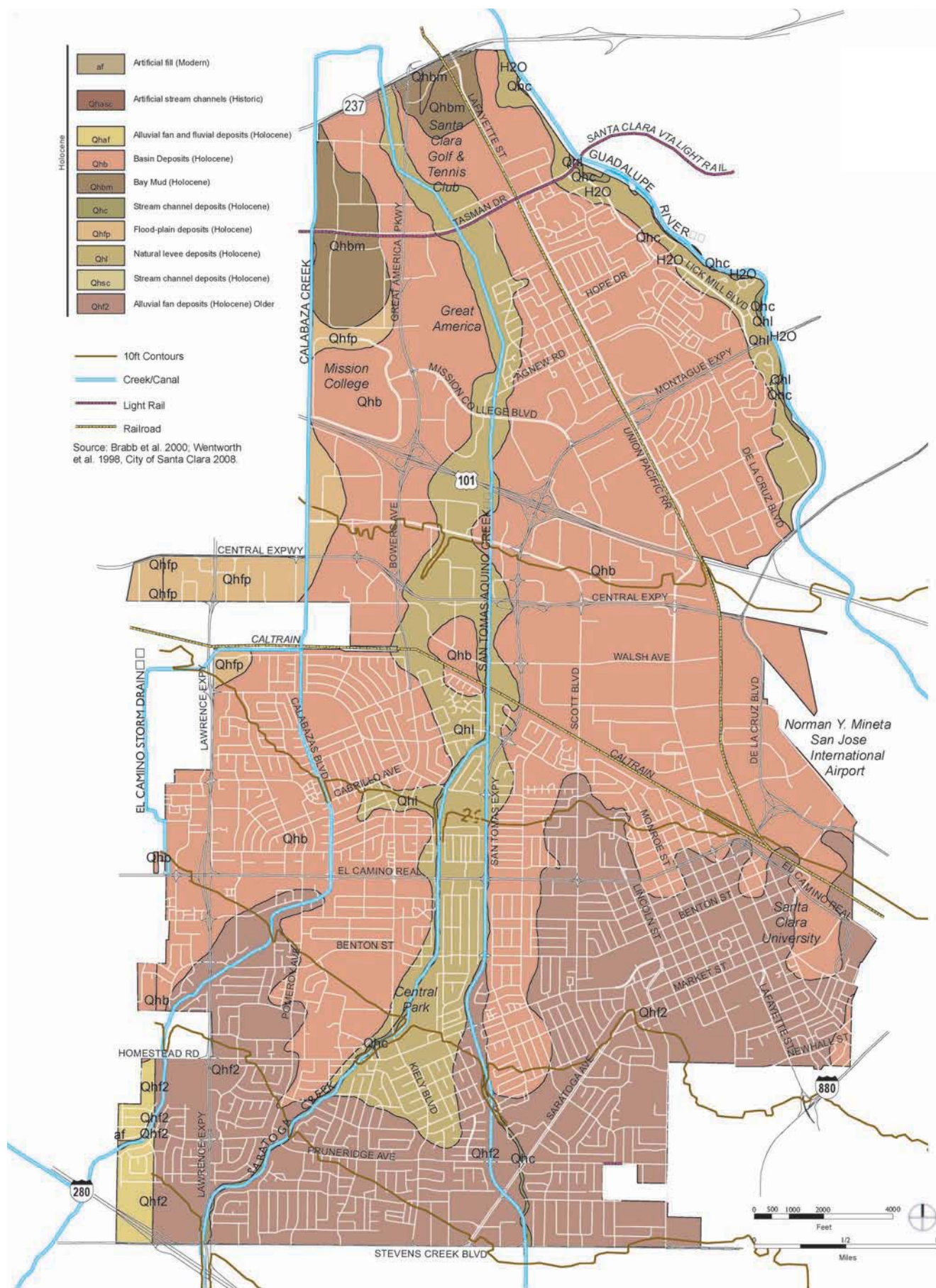
Most of the City occupies gently sloping valley floor topography in the north-central portion of the Santa Clara Valley. The City is situated on alluvial fan deposits of the Santa Clara Valley, consisting of gravel, sand and finer sediments. Along the City's major streams are natural levee deposits consisting of silt and clay over which man-made engineered levees have been constructed for flood control. Figure 4.5-1 shows the geology of the City.

Soils and geologic conditions which can effect development and other activities within the City are discussed below.

Landslides

Landslides occur when the stability of a slope changes from a stable to an unstable condition. The stability of a slope is affected by the following primary factors: inclination, material type, moisture content, orientation of layering, and vegetative cover. In general, steeper slopes are less stable than more gently inclined ones.

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CITY GEOLOGY

FIGURE 4.5-1

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Slopes underlain by deeply weathered bedrock, unconsolidated deposits, or soils with a high content of expansive clay also have a greater tendency to fail. Increased moisture content decreases a slope's stability so landslides are more common in the winter months. Activities that can increase landslide potential include poorly designed cuts or fills, inappropriate blockage or diversion of streams, and removal of protective vegetation. Active landslides are usually obvious and easily identified; however, recent or old landslides, or large-scale landslides that encompass entire hillslopes may require the perspective of aerial photographs or subsurface exploration to be identified.

Because the City is located on gently sloping and nearly flat valley floor topography, it is not subject to risk of landslides; landslide hazard mapping compiled by the County of Santa Clara shows the City is outside the landslide hazard zone.⁴⁷

Expansive and Weak Soils

Expansive soils have a high shrink-swell potential and occur where a sufficient percentage of certain clay materials are present in the soil. These soil conditions can impact the structural integrity of buildings and other structures. Expansion (shrink-swell) potential is generally moderate in the southern City's alluvial fan and plain soils and high in the alluvial plain/valley floor soils of the northern City. The soils within the City are shown on Figure 4.5-2.

Weak soils can compress, collapse, or spread laterally under the weight of buildings and fill, causing settlement relative to the thickness of the weak soil. Usually the thickness of weak soil will vary and differential settlement will occur. Weak soils also tend to amplify shaking during an earthquake, and can be susceptible to liquefaction, as discussed further in sections below. Bay margin soils at the City's northernmost edge are identified as compressible by the County of Santa Clara.

Permeability is a measure of the ability of a material (such as rocks) to transmit fluids. Permeability (infiltration rate) is generally very slow in soils of the northern portion of the City.⁴⁸ Permeability ranges from slow in the upper floodplain and terrace areas along the south edge of the City to moderate in much of the southern and central portion of the City, and very slow in the fine-textured soils alluvial plain/valley floor soils of the northern portion of the City.

⁴⁷ Source: County of Santa Clara. 2006. Santa Clara County Geologic Hazard Zones Combined Hazard Zones Map Accessed: March 11, 2010. Available at: [http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20\(DEP\)/attachments/58267311.pdf](http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20(DEP)/attachments/58267311.pdf)

⁴⁸ Natural Resources Conservation Service. 1958. Soil Survey, Santa Clara Area.

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Soil Groups

- Areas dominated by fine textured soils and land types influenced by tidal water
 1. Alviso association
- Areas dominated by very deep level, somewhat poor to poorly drained soils
 3. Clear Lake - Cambell association, drained
 4. Sunnyvale - Castro - Clearlake association
 5. Orestimbo - Willows association
- Areas dominated by moderately well to somewhat excessively drained, medium to fine textured soils of the alluvial plains and fans
 6. Yolo association
 7. Zamora - Pleasanton association
 8. Arbuckle - Pleasanton association, 0-9 percent slopes

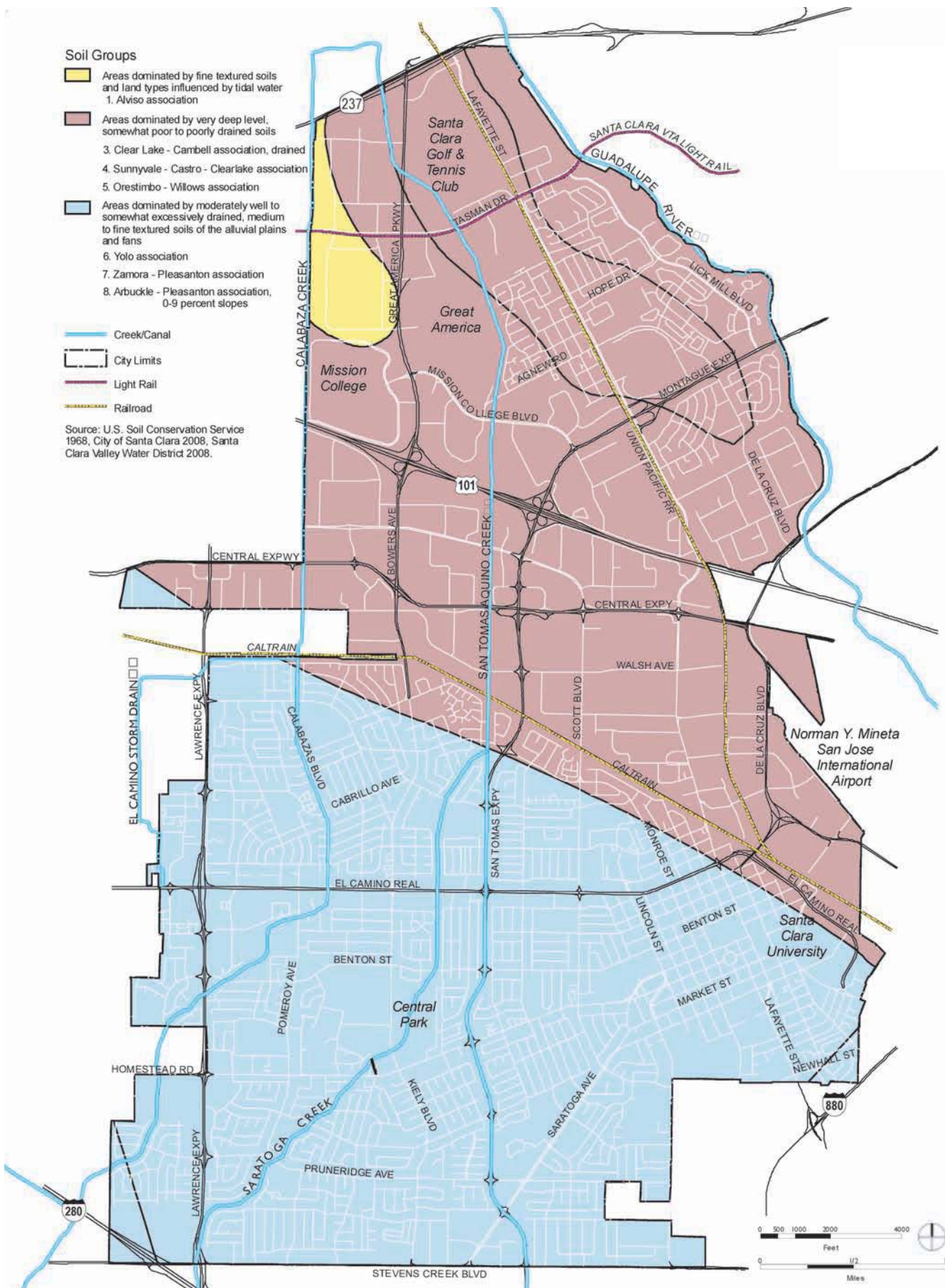
Creek/Canal

City Limits

Light Rail

Railroad

Source: U.S. Soil Conservation Service 1968, City of Santa Clara 2008, Santa Clara Valley Water District 2008.



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Artificial Fill

Artificial fill, often referred to as undocumented or man-made fill, has been placed throughout the City of Santa Clara. The fills include materials that were placed to fill in naturally low areas, materials to create building pads and roadways, and landfills. In some cases, older, non-engineered fills have been placed without standards for fill materials or compaction. Building on non-engineered fills can result in excessive settlement of structures, pavements, and utilities. Artificial fills placed using current engineering practices, however, are likely to avoid impacts from excessive or differential settlement.

Naturally-Occurring Asbestos

Chrysotile and amphibole asbestos are minerals that occur naturally in certain geologic settings, most commonly in ultramafic rocks. The most common type of asbestos is chrysotile, which is commonly found in the Santa Clara Valley area in serpentinite rock formations. When disturbed by construction, grading, quarrying, or mining operations, asbestos-containing dust can be generated. Exposure to asbestos dust can result in adverse health effects, including lung cancer, mesothelioma, and asbestosis. In the Santa Clara Valley, naturally-occurring asbestos may be found in mountainous areas or areas of shallow bedrock. The City does not have any areas that contain naturally-occurring asbestos.

Erosion

Erosion typically occurs when bare soils are exposed to water or wind. Erosion can occur as a result of rainfall in areas where construction activities have exposed soils and bedrock. Erosion can result in various impacts, including the loss of topsoil, sedimentation of creeks and drainages, undercutting of stream banks, degradation of natural habitats, and possible decrease of slope stability. Accelerated erosion can be caused by removal of vegetative cover, increases in runoff, poor grading practices, and excessive irrigation. According to the Natural Resources Conservation Service, soil erosion hazard is low throughout the City.⁴⁹

Mineral Resources

Non-Fuel Mineral Resources

The City is located in an area zoned MRZ-1 for aggregate materials by the State of California.⁵⁰ MRZ-1 zones are areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. The area is not known to support significant resources of any other type. No mineral resources are currently being extracted in the City. The State Office of Mine Reclamation's list of mines (the AB 3098 List) regulated under the Surface Mining and Reclamation Act (SMARA) does not include any mines within the City.⁵¹

⁴⁹ Natural Resources Conservation Service. 1958. Soil Survey, Santa Clara Area.

⁵⁰ Kohler-Antablin, S. 1996. Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. (Open-File Report 96-03.) Sacramento, CA: California Department of Mines and Geology.

⁵¹ State Office of Mine Reclamation. January 2010. AB 3098 List. Accessed March 12, 2010. Available at: http://www.conservation.ca.gov/omr/ab_3098_list/Documents/AB3098_percent20List_percent20for_percent20January_percent2012-2010.pdf

Petroleum Resources

A recent study by the U.S. Geological Survey reviewed information related to historic oil exploratory wells drilled in the Santa Clara Valley between 1891 and 1929, as well as data from more recent deep borings conducted for other reasons. None of the wells were within the City, and no known evidence suggests the presence of exploitable oil or gas resources within the City of Santa Clara.⁵² Records of the State's Division of Oil, Gas & Geothermal Resources show no historic or active oil, gas or geothermal wells within the City of Santa Clara.⁵³

4.5.1.2 Seismicity and Seismic Hazards

The San Francisco Bay Area is classified as Zone 4 for seismic activity, the most seismically active region in the United States. Significant earthquakes occurring in the Bay Area are generally associated with crustal movement along well-defined, active fault zones of the San Andreas Fault system, which spans the Coast Ranges from the Pacific Ocean to the San Joaquin Valley. The San Andreas Fault generated the great San Francisco earthquake of 1906 and the Loma Prieta earthquake of 1989 and passes through the Santa Cruz Mountains southwest of Santa Clara. The City is located seven miles from both the San Andreas and Calaveras Faults and five miles from the Hayward Fault. The Monta-Vista Shannon Fault is also located to the west of the City.

Fault Rupture

Fault rupture occurs when fault displacement extends upward to the ground surface creating a visible offset. Fault rupture may occur abruptly during an earthquake or slowly due to fault creep. Ground rupture due to fault movement typically results in a relatively small percentage of total damage in an earthquake, however, displacements from surface rupture along fault traces can result in extensive damage to structures.

Alquist-Priolo Earthquake Fault Zone maps (originally called "Special Studies Zones") by the California Geological Survey show Holocene-active faults (movement within the last 11,000 years) with bordering zones within which construction for human occupancy is not permitted until studies have been conducted showing there are no signs of recent fault activity crossing a project site. The investigations usually involve trenching. The City does not contain any faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act.⁵⁴ The risk of surface fault rupture in the City is considered low.

⁵² Stanley, R. G., R. C. Jachens, P. G. Lillis, R. J. McLaughlin, K. A. Kvenvolden, F. D. Hostettler, K. A. McDougall, and L. B. Magoon. 2002. *Subsurface and petroleum geology of the southwestern Santa Clara Valley ("Silicon Valley"), California*. (Professional Paper 1663) Washington, DC: U. S. Government Printing Office.

⁵³ Division of Oil, Gas, and Geothermal Resources. Oil, Gas, and Geothermal District 3 Maps. Accessed March 12, 2010. Available at: <ftp://ftp.consrv.ca.gov/pub/oil/maps/dist3/w3-10/Mapw3-10.pdf>

⁵⁴ Hart, E.W., and W.A. Bryant. 2007. *Fault-rupture hazard zones in California: Alquist-Priolo Earthquake Fault Zoning Act with index to earthquake fault zone maps*. (Special Publication 42, Interim Revision 2007.) Accessed: June 2008. Available at: <ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf> and County of Santa Clara. 2002. County of Santa Clara Geologic Hazard Zones- Fault Rupture Hazard Zones Map. Accessed: March 12, 2010. Available at: [http://www.sccgov.org/SCC/docs/Planning_percent20Office_percent20of_percent20\(DEP\)/attachments/58248011.pdf](http://www.sccgov.org/SCC/docs/Planning_percent20Office_percent20of_percent20(DEP)/attachments/58248011.pdf)

Ground Shaking

Ground shaking is the most widespread hazardous phenomenon associated with seismic activity. Ground shaking will impact developments constructed on the valley floor and hillsides. Earthquake damage resulting from ground shaking is determined by several factors: the magnitude of an earthquake, depth of focus, distance from the fault, intensity and duration of shaking, local ground water and soil conditions, presence of hillsides, structural design and the quality of workmanship and materials used in construction. The City is located in a region characterized by a moderate to high groundshaking hazard.

Ground Failure

Seismic activity can also result in hazards from several forms of ground failure. Ground failure refers to seismically-induced ground movements which are significant enough to cause severe distress or infrastructure failure. Ground failure includes surface rupture along fault traces, vertical and lateral failures due to soil liquefaction, seismically-induced landslides, earth lurches, lateral spreading, differential settlement, and levee or dam failure. Discussions of each of these ground failure mechanisms are presented below; surface rupture along fault traces is discussed under the Fault Rupture section above.

Liquefaction, Lateral Spreading and Related Ground Failure

Liquefaction is the transformation of water-saturated soil from a solid to a liquid State during ground shaking. Soils most susceptible to liquefaction are loose to moderately dense, saturated granular soils with poor drainage, such as silty sands or sands and gravels capped by or containing seams of impermeable sediment. As shown in Figure 4.5-3, the City is almost entirely within the zone of liquefaction hazard identified by the County of Santa Clara pursuant to the Seismic Hazards Mapping Act.⁵⁵ Ground failure caused by liquefaction is thus a substantial concern for much of the City's development. Based on County hazards mapping, the City's southern edge, approaching Stevens Creek Boulevard and Highway 280, is likely at less risk of liquefaction due to the underlying soil types.

Lateral spreading occurs when a continuous layer of soil liquefies at depth and the soil layers above move toward an unsupported face, such as a shoreline slope of creek channel, or in the direction of a regional slope or gradient. Lateral spreading is commonly associated with liquefaction.

Other manifestations of seismically induced ground failure include sand boils, ground fissuring or ground cracking (also referred to as lurching), and are a result of fracturing, distortion, and displacement of near surface soils from seismic shaking. The occurrence of this type of ground failure is often related to moisture content of the soils and it is most commonly seen in previous or current marshy areas or valley bottom lands.

⁵⁵ County of Santa Clara. 2006. County of Santa Clara Geologic Hazard Zones-Liquefaction Hazard Zones. Accessed March 10, 2010. Available at: [http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20\(DEP\)/attachments/58259611.pdf](http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20(DEP)/attachments/58259611.pdf)

Differential Compaction

Differential compaction occurs when earthquake vibrations cause non-saturated sand (i.e., sandy soil above the groundwater table) to settle or compact. In Santa Clara, sandy soils are present along creeks, areas adjacent to creeks, and other low-lying areas where sandy sediments were deposited during past flooding events. Differential compaction during seismic shaking can be a hazard to buildings, roadways, trails, and hardscape improvements.

Levee or Dam Failure

The potential for levee or dam failure during or following a seismic event and areas of possible inundation are discussed under flooding impacts in Section 4.4 *Hydrology and Water Quality*.

Earthquake-Induced Landslides

Landslides triggered by seismic shaking are termed “Earthquake-Induced landslides”. In hillside areas and along creeks, earthquakes can trigger landslides. Because the City is located on gently sloping and nearly flat valley floor topography, it is not subject to risk of landslides; landslide hazard mapping compiled by the County of Santa Clara⁵⁶ shows the City is outside the landslide hazard zone.

Seismically-Induced Waves

Earthquakes can generate waves in bodies of water that can cause damage on land. In the ocean, seismically-induced waves are caused by displacement of the sea floor by a submarine earthquake and are called tsunamis. Seiches are waves produced in a confined body of water such as a lake or reservoir by earthquake ground shaking or landsliding. The City is not located within a tsunami inundation area.⁵⁷ Seiches are possible at reservoir, lake or pond sites within Santa Clara and the surrounding area of the City. There are no lakes or reservoirs within the City, but there are several ponds, including the City’s two retention basins, (located near State Route 237 and the Union Pacific Railroad Line, and the Great America Parkway and San Tomas Aquino Creek). Lexington Reservoir is located approximately nine miles from the City. However, the potential for loss of life from this hazard is low.

⁵⁶ Source: County of Santa Clara. 2006. Santa Clara County Geologic Hazard Zones Combined Hazard Zones Map Accessed: March 11, 2010. Available at:

[http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20\(DEP\)/attachments/58267311.pdf](http://www.sccvote.org/SCC/docs/Planning_percent20Office_percent20of_percent20(DEP)/attachments/58267311.pdf)

⁵⁷ California Emergency Management Agency, California Geological Survey, and University of Southern California. July 2009. Tsunami Inundation Map for Emergency Planning, State of California, County of Santa Clara, Mountain View Quadrangle. Accessed March 11, 2010. Available at:

http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/SantaClara/Documents/Tsunami_Inundation_Milpitas_Quad_SantaClara.pdf

Liquefaction Hazard Area

Rail & Light Rail

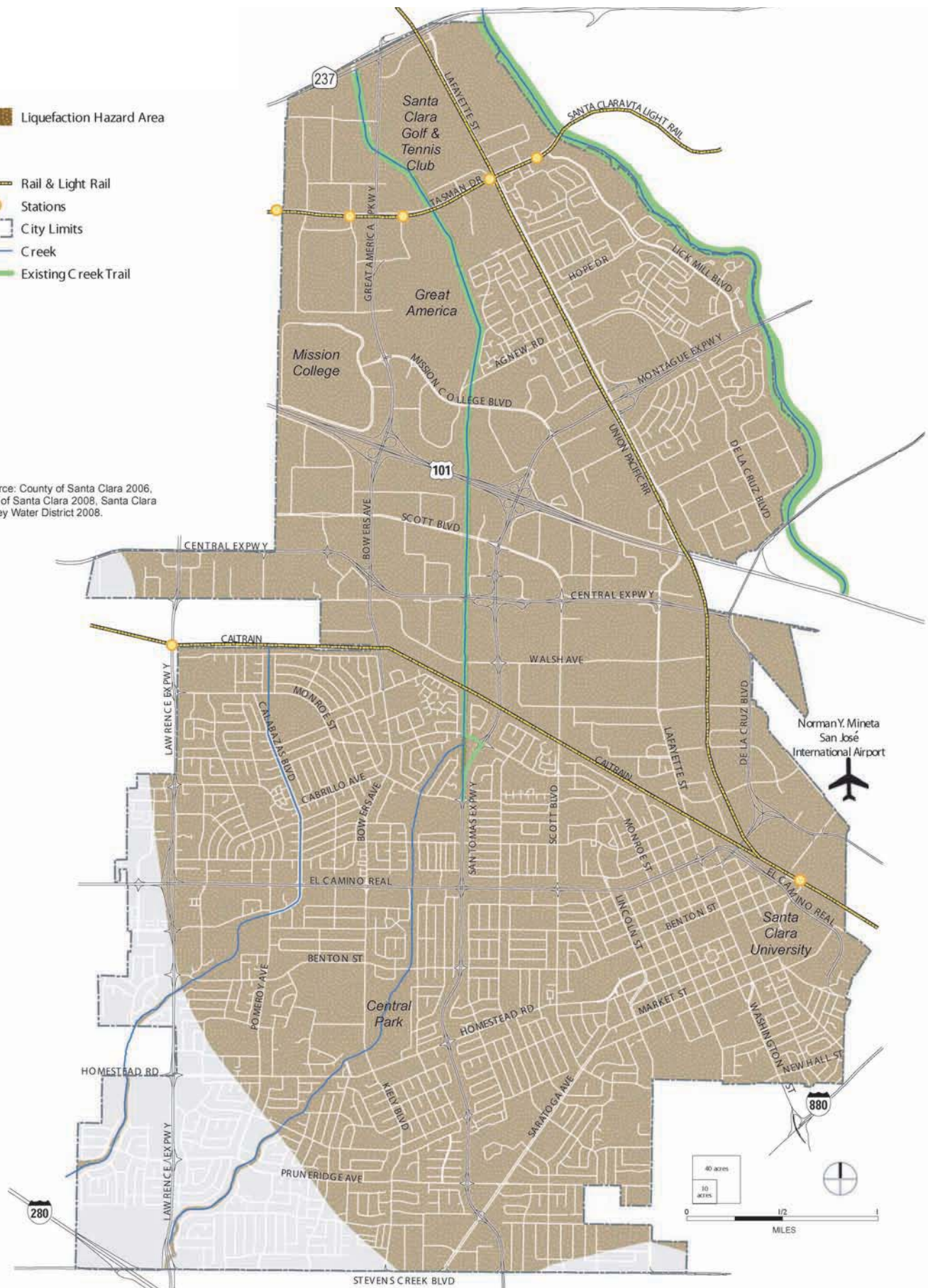
Stations

City Limits

Creek

Existing Creek Trail

Source: County of Santa Clara 2006,
City of Santa Clara 2008, Santa Clara
Valley Water District 2008.



LIQUEFACTION HAZARD AREAS

FIGURE 4.5-3

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4.5.2 Regulatory Framework

Development within the City of Santa Clara is regulated by various State and local agencies to reduce the potential impacts of geologic and seismic hazards to people, property and the environment, as well as how planned activities will affect adjacent properties. Erosion control is also required under the federal Clean Water Act and the State of California Porter-Cologne Water Quality Act. Relevant laws, regulations and programs are described below.

4.14.1.1 Federal

Clean Water Act – NPDES Permit Program

The federal Clean Water Act regulates storm water discharges under the National Pollutant Discharge Elimination System (NPDES) permit program. In California regulations set forth by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board have been developed to fulfill NPDES program requirements. As described below, under the NPDES General Construction Permit in California, best management practices, including erosion and sediment control, need to be in place to avoid adverse effects on water quality during construction activities. Additional information on federal Clean Water Act requirements is provided in Section 4.4, *Hydrology and Water Quality*.

4.14.1.2 State

Alquist-Priolo Earthquake Fault Zoning Act

The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and State agencies for their use in planning and controlling construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. Single family wood-frame and steel-frame dwellings up to two stories not part of a development of four units or more are exempt. However, local agencies can be more restrictive than State law requires. Pursuant to this act, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally at least 50 feet).

Seismic Hazards Mapping Act and Natural Hazards Disclosure Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction (failure of water-saturated soil) and earthquake-induced landslides. The California Geological Survey prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, earthquake induced landslide and liquefaction hazards and other ground failures. Under the Act, a subdivision, construction or redevelopment project within an identified seismic hazard zone shall be approved only when the nature and severity of the seismic hazards at the site have been evaluated in a geotechnical report and appropriate mitigation measures have been proposed. If a developed property lies within a mapped seismic hazard zone, under the Natural Hazards Disclosure Act, that fact must be disclosed by the seller to prospective buyers.

California Building Standards Code

The Building Standards Commission is authorized by California Building Standards Law (1953) (Health and Safety Code sections 18901 through 18949.6) to administer the process related to the adoption, approval, publication, and implementation of California's building codes. These building codes serve as the basis for the design and construction of buildings in California including within the City of Santa Clara.

The State of California establishes and updates building standards and every local agency enforcing building regulations, must adopt the provisions of the California Building Code (in Title 24, California Code of Regulations) within 180 days of its publication. Currently, the 2007 California Building Code contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, the strength of the ground, and distance to seismic sources.

Regulations for Schools and Hospitals

The geologic and seismic safety of schools is reviewed and approved at the State of California level by the Division of the State Architect under The Field Act (1933). The geologic and seismic safety of acute care hospitals is reviewed and approved at the State of California level by the Office of Statewide Health Planning and Development (OSHPD) under the Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983, also known as the Seismic Safety Act.

Unreinforced Masonry Act

The Unreinforced Masonry Building (URM) Law was enacted in 1986 and is recognized by local governments including the City of Santa Clara to: 1) create an inventory of URM Buildings, 2) establish an earthquake loss reduction program for these buildings, and 3) report all information about these efforts to the Seismic Safety Commission. Since the passage of the State's URM Law in 1986, no lives were lost in fully retrofitted buildings in recent earthquakes.⁵⁸

NPDES General Construction Permit

Per the federal Clean Water Act and State of California Porter-Cologne Water Quality Control Act, the State Water Resources Control Board has implemented a NPDES General Construction Permit for the State of California. Construction activity subject to this permit includes clearing, grading, and ground disturbances such as stockpiling or excavation. For projects disturbing one acre or more of soil, a Storm Water Pollution Prevention Plan (SWPPP) that includes site-specific BMPs to control erosion and sedimentation and maintain water quality during the construction is required. The SWPPP also contains a summary of the structural and non-structural BMPs to be implemented during the post-construction period, pursuant to the nonpoint source control practices and procedures of the City of Santa Clara and the Regional Water Quality Control Board (RWQCB). This permit program and other erosion control requirements in the City of Santa Clara are discussed in Section 4.4 *Hydrology and Water Quality*.

⁵⁸ Source: State of California, Seismic Safety Commission Annual Report for 2005. Accessed February 19, 2010. Available at: http://www.seismic.ca.gov/pub/2005_percent20Annual_percent20Report.pdf

4.5.2.1 Local

City of Santa Clara General Plan 2000-2010

Existing policies in the City of Santa Clara General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding geology and soils hazards include the following:

Soils and Geology Policies

- Review the City's Building Code regularly and make amendments as necessary to ensure that it contains the most current earthquake design standards.
- Require soil reports where warranted to evaluate specific designs.
- Regulate the type, location, and intensity of development to mitigate potential adverse impacts.

Santa Clara City Code

Title 15 of the Santa Clara City Code includes the City of Santa Clara adopted Building and Construction Code. These regulations are based on the 2007 California Building Code and include requirements for building foundations, walls, and seismic resistant design. Requirements for building safety and earthquake reduction hazard are addressed in Chapter 15.44 (Dangerous Building Code) and Chapter 15.55 (Seismic Hazard Identification) of the City Code. Requirements for grading and excavation permits and erosion control are included in Chapter 15.15 (Building Code).

The purpose of the seismic hazard regulations within Chapter 15.55 is to comply with State law and to promote public safety and welfare by identifying those buildings that exhibit structural deficiencies in their capacities for earthquake resistance and determining the severity and extent of those deficiencies in relation to their potential for causing injury or loss of life. This applies to apply to all existing Unreinforced Masonry (URM) buildings in the City of Santa Clara, except as exempted in section 15.55.040.

4.5.3 Thresholds of Significance

For the purposes of this EIR, a geologic or seismic impact is significant if implementation of the proposed Draft 2010-2035 General Plan would:

- Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), landslides, or expansive soils; or
- Cause substantial soil erosion or loss of topsoil, or
- Expose people or property to major geologic hazards that cannot be mitigated through the use of standard engineering design and seismic safety techniques; or
- Result in the loss of availability of a locally-important mineral resource delineated on a local general plan, specific plan or other land use plan.

4.5.4 Impacts and Mitigation Measures

Possible soil, geologic and seismic conditions that could adversely effect future development and redevelopment within Santa Clara are identified for the planned development areas. These conditions and relevant proposed Draft 2010-2035 General Plan policies are described below.

4.5.4.1 Soil Hazards

Soil and geologic hazards of concern in the City of Santa Clara are primarily related to expansive soils, weak soils, and artificial fill.

The City primarily consists of well-drained loamy soils formed on alluvial sediments. They include loam and clay loam at the surface and in the very shallow subsurface, overlying gravelly sandy clay loam and fine sandy clay loam present at depth. Such units are typically moderate to very highly expansive. In general, alluvial fan sediments become increasingly finer grained with greater distance from the mountains. Expansion potential is generally moderate in the southern City's alluvial fan and plain soils and high in the alluvial plain/valley floor soils of the northern City. Where expansive soils are present, foundations and pavements can be damaged when solids go through cycles of wetting and drying.

Weak compressible soils are located at the City's northernmost edge. Weak soils can compress, collapse, or spread laterally under the weight of buildings and fill. Artificial fill has been placed under buildings throughout the City. Non-engineered fill can result in excessive settlement of structures, pavement, and utilities.

Because the City is located on gently sloping and nearly flat valley floor topography, it is not subject to risk of landslides; landslide hazard mapping compiled by the County of Santa Clara shows the City is outside the landslide hazard zone. Therefore, there are no areas within the City susceptible to landslides.

New development under the proposed Draft 2010-2035 General Plan would occur primarily as intensification of previously developed areas throughout the City. Hazards associated with expansive soils, weak soils, and artificial fill will be reduced and managed consistent with City adopted regulations and policies, in combination with State building regulations.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated hazards policies that address geologic and seismic hazards. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for geologic, soil and landslide hazards within the City are identified below.

Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P6	Require that new development is designed to meet current safety standards and implement appropriate building codes to reduce risks associated with geologic conditions.
5.10.5-P7	Implement all recommendations and design solutions identified in project soils reports to reduce potential adverse affects associated with unstable soils or seismic hazards.
5.10.5-P9	Encourage all hospitals, schools and other public buildings to adequately retrofit for seismic shaking in accordance with State regulations.

5.10.5-P10	Support efforts by the Santa Clara Valley Water District to reduce subsidence.
5.10.5-P8	Encourage property owners to retrofit potentially hazardous structures, such as unreinforced masonry buildings, and to abate or remove structural hazards.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible geologic impacts include:

- California Building Code, as amended [safety standards for the design and construction of buildings on expansive soils and under static and dynamic (seismic) conditions]
- Santa Clara City Code Chapter 15.44, 15.55 and 15.15

Impact 4.5-1: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could occur in areas with identified soil hazards. Implementation of proposed policies and existing regulations and programs would substantially reduce hazards to people and property. **(Less Than Significant Impact)**

4.5.4.2 Erosion Impacts

Grading and ground disturbance increases the potential for accelerated erosion by removing protective vegetation or cover and changing natural drainage patterns. For future development over one acre in size, erosion hazards would be minimized through implementation of site-specific erosion measures in SWPPPs under the NPDES General Construction Permit and grading and excavation requirements in the City's City Code. Given that many future development projects would be on properties less than one acre, requirements for BMPs under the City's NPDES Municipal Permit, urban runoff policies, and the City Code would be the primary means of enforcing erosion control measures through the grading and building permit process. With the regulatory programs currently in place, the possible impacts of accelerated erosion during construction associated with development and redevelopment would be less than significant.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated hazards policies that address geologic and seismic hazards, including erosion. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for erosion hazards within the City are identified below.

Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P11	Require that new development meet storm water and water management requirements in conformance with State and regional regulations.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible geologic impacts include:

- NPDES General Construction Permit

- NPDES Municipal Permit
- Santa Clara City Code, Chapter 15.15

Impact 4.5-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan would expose disturbed areas to wind and storm water during construction and post-construction periods. Implementation of proposed policies and existing programs would minimize erosion and sedimentation hazards. **(Less Than Significant Impact)**

4.5.4.3 Impacts to Mineral Resources

There are no significant mineral resources present in the City boundaries. In addition, there are no exploitable oil or gas resources within the City.

Impact 4.5-3: New development and redevelopment under the proposed Draft 2010-2035 General Plan would not affect locally important mineral resources as there are none present in the City. **(No Impact)**

4.5.4.4 Seismic Hazards

Fault Rupture

As previously described, fault rupture refers to fissuring and offset of the ground surface along a rupturing fault during an earthquake. Ground rupture typically results in a relatively small percentage of the total damage in an earthquake, but being too close to a rupturing fault can cause severe damage to structures.

The City does not contain any faults mapped as Alquist-Priolo Earthquake Fault zones. There are also no other faults that extend through the City. Because there are no known active earthquake faults within the limits of the City of Santa Clara, the risk for surface fault rupture is considered low within the City.

Ground Shaking

The City of Santa Clara and the entire South Bay is within one of the most seismically active areas in the United States. For the period 2002 to 2031, the probability of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay region is 62 percent. Development and redevelopment allowed within the City under the proposed Draft 2010-2035 General Plan, therefore, is likely to be exposed to strong groundshaking within the useful lifetime of new development.

Because the city is in relatively close proximity to several major fault zones, the California Building Code, as adopted by the City of Santa Clara, requires that seismic design features be incorporated in construction and redevelopment projects in Santa Clara. The primary purpose of the seismic design requirements of the building code is to avoid loss of life.

Liquefaction and Other Related Ground Failure

As previously discussed above, liquefaction is a process that causes various types of ground failure. It typically occurs in loose, saturated sediments primarily of sandy composition associated with seismic events. Recent studies have shown that low plasticity silts and clays may also be susceptible to liquefaction and/or cyclic mobility. Liquefaction can cause structural

distress or failure due to ground settlement, a loss of bearing capacity in the foundation soils, and the buoyant rise of buried structures. The excess hydrostatic pressure generated by ground shaking can result in the formation of sand boils or mud spouts, and/or seepage of water through ground cracks. Liquefaction-induced lateral spreading can also occur on slopes, such as creeks.

Under the County of Santa Clara Hazard Mapping, most of Santa Clara is considered susceptible to liquefaction hazards (refer to Figure 4.5-3). Development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would occur within these areas. In addition, there are areas near creeks, such as along the Guadalupe River, where lateral spreading could occur. Future projects approved under the proposed Draft 2010-2035 General Plan within the liquefaction hazard area are required under the Seismic Hazard Mapping Program and building code and City Code requirements to evaluate site-specific liquefaction and ground failure hazards and mitigate those hazards to an acceptable level.

Seismically-Induced Settlement

Seismically induced settlement typically occurs in loose granular, cohesionless soils, and can occur in either wet or dry conditions. Unconsolidated young alluvial deposits and artificial fills may also experience seismically induced settlement.

Development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could be subject to structural damage from seismically induced settlement. Future projects approved under the General Plan are required under the California Building Code to evaluate site-specific soil conditions, including those that could result in seismically-induced settlement. Over-excavation and re-compaction is a commonly used method to mitigate soil conditions susceptible to settlement.

Earthquake-Induced Landslides

Because the City is located on gently sloping and nearly flat valley floor topography, it is not subject to risk of landslides; landslide hazard mapping compiled by the County of Santa Clara shows the City is outside the landslide hazard zone. Therefore, there are no areas within the City susceptible to landslides.

Seismically-Induced Waves

Because the City is not located within a tsunami inundation area, development and redevelopment anticipated under the proposed General Plan would not be exposed to substantial risks associated with tsunamis.

Locally, seiches due to seismic shaking could occur in shallow lakes, reservoirs, or percolation ponds in Santa Clara and the surrounding area. Sloshing of water out of a lake or basin onto the surrounding area could result in water damage, erosion and some slope failure. There are no lakes or reservoirs within the City, but several ponds, including the City's two retention basins, (located near State Route 237 and the Union Pacific Railroad Line, and the Great America Parkway and San Tomas Aquino Creek). Lexington Reservoir is located approximately nine miles from the City. However, the potential for loss of life from this hazard is low.

Development and redevelopment allowed under the proposed Draft 2010-2035 General Plan generally would not occur close enough to enclosed water bodies for seiches to have substantial effects. The potential for loss of life from this hazard is low.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated hazards policies that address geologic and seismic hazards. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for seismicity hazards within the City are identified below.

Safety Policies	
5.10.5-P5	Regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards, including flooding, seismic, erosion, liquefaction and subsidence dangers.
5.10.5-P6	Require that new development is designed to meet current safety standards and implement appropriate building codes to reduce risks associated with geologic conditions.
5.10.5-P7	Implement all recommendations and design solutions identified in project soils reports to reduce potential adverse affects associated with unstable soils or seismic hazards.
5.10.5-P9	Encourage all hospitals, schools and other public buildings to adequately retrofit for seismic shaking in accordance with State regulations.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible seismic impacts include:

- Alquist-Priolo [Fault Rupture Zones]
- Seismic Hazard Mapping Act [Seismic Hazard Zones]
- California Building Code, as amended [safety standards for the design and construction of buildings on expansive soils and under static and dynamic (seismic) conditions]
- Santa Clara City Code Chapters 15.44, 15.55 and 15.15

Impact 4.5-4: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would occur in areas subject to seismic hazards including strong groundshaking, liquefaction and other seismically-induced ground failure. Localized areas also are subject to fault rupture, earthquake-induced landslides or seismically-induced waves. Implementation of proposed policies and existing State and local regulations and programs would substantially reduce seismic hazards to residents, workers, and visitors and structures. **(Less Than Significant Impact)**

4.5.5 Geologic and Seismic Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.5.6 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant soils, geology and seismicity impacts and no mitigation measures are required.

4.6 PUBLIC SERVICES

The following Section describes the existing fire, police, schools, and community facilities within the City and the environmental effects of implementation of the proposed Draft 2010-2035 General Plan.

4.6.1 Existing Setting

4.6.1.1 *Fire and Life Safety Services*

The Santa Clara Fire Department (SCFD) headquarters is located at Benton and Alviso streets, as shown in Figure 4.6-1. In 2008, the Department had ten fire stations throughout the City, with 179.5 paid personnel and 65 reserve employees serving a population of approximately 115,500 residents, resulting in 1.5 paid fire personnel per 1,000 residents.⁵⁹ Each station is equipped with at least one three-person engine or ladder truck-company. Three stations also have a two-person ambulance that provides paramedic services. A Rescue Response vehicle and a Hazardous Materials Response vehicle are housed at two other stations. An increase in the City's senior citizen population could result in additional demands on the Department's Emergency Medical Services.

The current SCFD response time standard is a three minute average for all areas of the City. This response time has resulted in a Class 2 ISO rating⁶⁰ for the City which helps to reduce property insurance premiums for homeowners and businesses. Neither current traffic flow nor building standards in the City have impeded SCFD's service delivery. The City also participates in the Santa Clara County Fire and Rescue Mutual Aid Response Plan to further ensure that fires and other emergencies are handled efficiently.

4.6.1.2 *Police Services*

The Santa Clara Police Department (SCPD) has maintained a relatively low crime rate since the mid-1980s. Most common concerns expressed by residents and business representatives are graffiti, vandalism and drug activity. The Department currently has two police stations: the headquarters located on El Camino Real at Benton Street/Railroad Avenue and a substation in Rivermark, near Agnew Road and Montague Expressway (shown in Figure 4.6-1). The SCPD also operates the Firearms Training Center, Tech Service Center, and 911 Dispatch.

In 2008, the City had 160 sworn police officers and 76 non-sworn personnel serving a population of approximately 115,500 residents, resulting in 1.4 sworn officers per 1,000 residents. The police services are divided into three divisions: Field Operations Division, Investigations Division, and Administrative Services. The SCPD's response time standard is three minutes or less for high priority calls. In 2006, the SCPD received 37,600 emergency 911 calls, and met this standard.⁶¹

⁵⁹ City of Santa Clara. 2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010.

⁶⁰ Insurance Services Office, Inc (ISO) collects information on municipal fire protection efforts in communities and analyzes the data using a Fire Suppression Rating Schedule (FSRS). ISO will then assign a Public Protection Classification (PPC) ranging from 1 to 10, with 1 being the best and 10 the worst. With a Class 2 ISO rate property owners are estimated to realize a 10 to 15 percent decrease in property insurance premiums.

⁶¹ City of Santa Clara. 2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010.

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4.6.1.3 Schools

Schools that serve children in grades K-12 who reside in the City of Santa Clara are operated by six school districts: Santa Clara Unified School District (SCUSD), San José Unified School District, Cupertino Union School District, Fremont Union High School District, Campbell Union School District, and Campbell Union High School District, as shown on Figure 4.6-2 School District Boundaries. In addition, the City of Santa Clara houses a number of private and charter schools serving these same grades.

SCUSD serves children in the cities of Santa Clara, Sunnyvale and San José, and is responsible for 16 elementary, three middle, two high, one K-8, and two continuation high schools, as well as one adult education school. The majority of students residing in the City of Santa Clara attend SCUSD schools. Three of the District's schools are located within the City of Sunnyvale and one is in San José. Cupertino Union also operates one school within the City of Santa Clara's boundaries. The remaining districts listed above accommodate Santa Clara residents within their respective boundaries, but do not operate schools within Santa Clara. See Appendix 8.11 in the Draft General Plan for more detailed information about current school facilities, enrollment and capacity, for each district.

4.6.1.4 Library Services

Existing libraries in Santa Clara are the Central Park Library, the Main Library, located on Homestead Road, and the Mission Library Family Reading Center, located in the historic core of the City (shown on Figure 4.6-1). The Central Park Library is 84,000 square feet and was reconstructed and expanded in 2004. With more than 1.4 million visitors per year, and over 3,000 people per day using the library, the facility is able to handle the existing volume of people and activities; features include: group study and large community rooms, a computer training classroom, genealogy and local history collection, and an extensive collection of materials for educational and recreational uses. The Mission Library Family Reading Center, located on Lexington Street at Main Street, is a full service library facility including Read Santa Clara, and the adult and family literacy program of the Santa Clara library.

In addition to existing facilities, a 15,700-square-foot Northside Branch Library was approved for development in Rivermark. The design phase is scheduled to begin in 2010. Land has been set aside for this purpose.

4.6.1.5 Arts, Cultural and Community Facilities

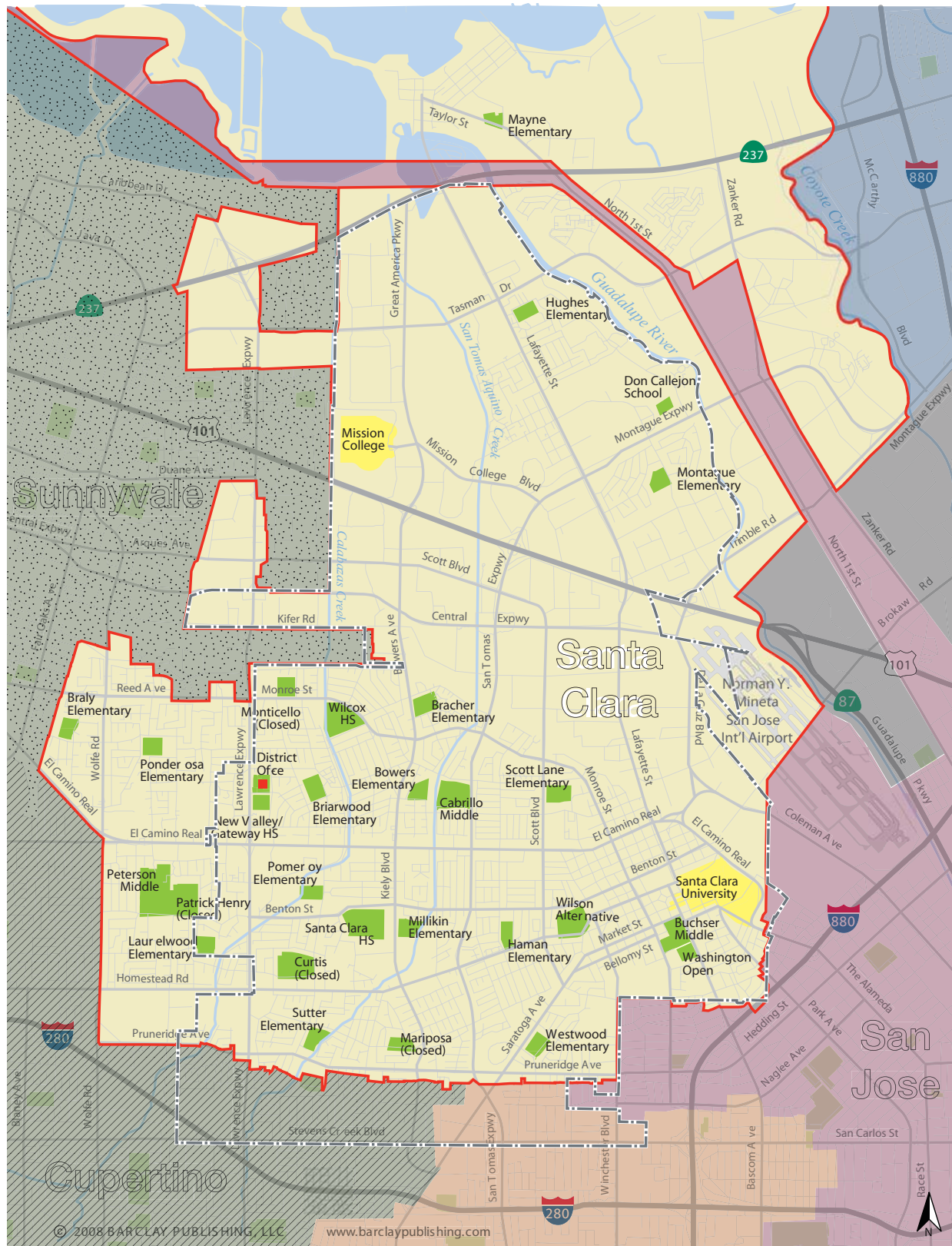
The City benefits from the following arts and cultural facilities, as shown on Figure 4.6-1:

- The Triton Museum of Art collects and exhibits contemporary and historical works of art with an emphasis on artists from the Greater Bay Area. The Triton building is owned by the City, which is a major sponsor of the museum.
- The de Saisset Museum, part of Santa Clara University (SCU), is open and free to the public with art and California's native history exhibits.
- The Mission City Center for Performing Arts, located adjacent to Wilcox High School, is a joint venture between the Santa Clara Unified School District and the City of Santa Clara providing performance art facilities for school and community productions.
- The Santa Clara Convention Center, a City owned facility, is located on Great America Parkway at Tasman Drive, has fully-equipped facilities that accommodate meetings, trade shows, conventions, association gatherings, banquets and special events.










- The Harris-Lass Historic Preserve was purchased and restored by the City and the Historic Preservation Society of Santa Clara to provide a community resource that demonstrates the City's history as a farming community.
- Headen – Inman House was originally part of the Headen Estate and moved to its current location in the Civic Center in 1985. The Craftsman Bungalow museum house features the City's historical collection and other local artifacts safeguarded by the Santa Clara Arts and Historical Consortium.
- The Intel Museum, located within Intel Corporations headquarters, is an interactive showcase of the company's history and semiconductor technology that is open to the public year round.
- The Louis B. Mayer Theatre at the Santa Clara University has two professional quality theaters to house University and community productions.
- The Lick Mill Mansion and grounds are located at 4101 Lick Mill Boulevard, on the grounds of the Mansion Grove Apartment complex. Lick, who was a local entrepreneur and philanthropist as well as the richest man in California at the time of his death in 1876, built this Italianate mansion between 1858 and 1860. The grounds are open to the public during daylight hours, and visits to the mansion can be arranged. The eState is also listed on the National Register of Historic Places.
- Santa Clara Railroad Depot, located at the Santa Clara Transit Center, was built in 1863. The Depot now incorporates the Edward Peterman Museum of Railroad History and is located on Railroad Avenue at the Santa Clara Caltrain Station.
- Santa Clara Woman's Club Adobe was one of several continuous rows of homes built in 1792-1800 as dwellings for the Native American families of Mission Santa Clara and is among the oldest adobes in Santa Clara Valley.
- The Berryessa Adobe is the City's oldest adobe structure which features documents, objects, and other artifacts from the era before California's Statehood in 1850. It was purchased and restored by the City, and is open to tours as a historic resource for the community.
- Mission Santa Clara de Asis, also located on the Santa Clara University campus, dates back to 1777 and was the first outpost of Spanish civilization in the Santa Clara Valley. Today it serves as the University chapel and is open to the public.

The City of Santa Clara provides the following recreation facilities:

- *The Community Recreation Center*, located in Central Park is the hub of recreation activities and programs for the City. The City distributes a Recreation Activities Guide with class listings, events and programs by mail three times per year to all residents. The Guide is also available online.
- *The Senior Center*, located on Fremont Street at Monroe Street, offers a variety of ongoing recreational activities to Santa Clara residents aged 50 and older. Services on-site include adult education classes, specialized workshops, notary, health insurance/Medicare representative, legal assistance and a nutrition program.
- *The Teen Center*, located on SCUSD property on Cabrillo Avenue near San Tomas Expressway, offers a variety of activities and services to the teen community which consists of an after school program, recreation classes, Teen Breakaway (summer only) and special events, and operates the City's Skate Park.
- *The Walter E. Schmidt Youth Activity Center (YAC)*, also located on SCUSD property at the corner of Cabrillo Avenue and San Tomas Expressway, offers active recreation programs for babies, toddlers, preschool, elementary school age, middle school and high school students.



Legend

	Fremont Union High School District		Campbell Union High School District & Campbell School District		Milpitas Unified School District
	Cupertino School District		San Jose Unified School District		Santa Clara Unified School District
	Sunnyvale School District		East Side High School District & Orchard School District		Santa Clara City Limits

SCHOOL DISTRICT BOUNDARIES

FIGURE 4.6-2

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4.6.2 Regulatory Environment

4.6.2.1 *Federal*

There are no federal regulations associated with public services that apply to this project.

4.6.2.2 *State*

Schools

Relevant State regulations and laws in regards to schools are listed below. The regulatory framework for schools is determined at the school district and State level.

Senate Bill 50 (1998)

Senate Bill 50 (SB 50), which is funded by Proposition 1A, limits the power of Cities and Counties to require fiscal mitigation on home developers as a condition of approving new development and provides a standardized developer fee. SB 50 generally provides a 50/50 State and local school facilities funding match, with a \$9.2 billion bond authorized to fund the State portion.⁶² SB 50 also provides three levels of statutory impact fees. The application level depends on whether State funding is available, the school district is eligible for State funding and the school district meets certain additional criteria involving bonding capacity, year-round school and the percentage of moveable classrooms in use. Payment of the statutory school impact fee is considered adequate mitigation for housing projects under CEQA.

California Government Code, Section 65995 (b)

In January, 2006, the State Allocation Board (SAB) approved an increase in developer fee rates per Government Code Section 65995 (b) to \$2.63 per square foot for residential construction of 500 square feet or more and \$0.42 per square foot for new commercial development.⁶³ It is expected that this fee will continue to increase in response to inflation.

4.6.2.3 *Local*

City of Santa Clara General Plan 2000-2010

Relevant General Plan Policies that directly address reducing and avoiding impacts to public facilities include the following:

Administrative, Educational, Cultural and Recreational

- Continue to develop and encourage educational, cultural and recreational opportunities for residents as demand and financial resources warrant.
- Continue to maintain precise plans for City functions such as (1) Streets and Highways, (2) Water, (3) Sanitary Sewers, (4) Storm Drainage, (5) Electrical, (6) Street Lighting, (7) Fire Protection, and (8) Parks and Recreation.

⁶² SB 50 (1998). Accessed on April 27, 2010. Available at: <http://www.sen.ca.gov/>

⁶³ California Government Code Section 65995. Accessed April 27, 2010. Available at: <http://law.onecle.com/california/government/65995.html>

- Develop Capital Improvements Program and Budget for public buildings, grounds, and activities to conform with the General Plan.
- Provide library services that are accessible and of adequate size to serve community residents including provision of library services for citizens of the North of Bayshore neighborhood.
- Monitor and evaluate library services annually in order to respond to the changing needs of the community.
- Support the provision of adequate and effective public and private education facilities within the community.
- Cooperate with local school districts in collecting development impact fees prior to Building Permit issuance for individual projects.

Public Safety

- Attempt to respond to all emergency calls for police and fire within three minutes.
- Maintain an up-to-date communications system for support of public safety forces.
- Maintain an up-to-date computer system for support of public safety forces.
- Provide an adequate number of highly trained and equipped personnel to respond to fire, flood, chemical release, and medical emergencies with the established response time.
- Maintain fire and hazardous materials mutual aid agreements with surrounding jurisdictions.
- Consider upgrades to the radio system to provide more flexibility in meeting public safety communications needs.
- Examine the feasibility of upgrading the public safety communications computer system to a fully automated Computer Aided Dispatch (CAD) system.
- Examine the feasibility of installing Mobile Data Terminals in certain public safety emergency vehicles to provide field access to the public safety computer system.
- Conduct an annual review of Police Department staffing, equipment, and facilities with respect to trends in crime, police response time, historical and forecast population growth, recent development approvals, proposed development, and financial resources.
- Conduct an annual review of Fire Department staffing, equipment, and facilities with respect to trends in response time, historical and forecast population growth, recent development approvals, proposed development, and financial resources.

Emergency Preparedness

- Maintain an emergency preparedness plan with an emphasis on providing contingent City services in the event of a disaster.
- Recruit and train citizen volunteers to assist City personnel during extreme and widespread emergencies (such as major earthquakes).

Santa Clara City Code

The Santa Clara City Code includes the Santa Clara Municipal Fire and Environmental Code, which adopts by reference the International Fire Code (2006 Edition) , including the State of California Amendments, and various portions of the Health and Safety Code of the State of California, enforced and administered by the City of Santa Clara (Chapter 15.60). The City Code also establishes the Board of Library Trustees, the Cultural Advisory Commission, and the Historical and Landmarks Commission, respectively, to help establish cultural enrichment within

the City (Sections 2.120.080, 2.120.090, and 2.120.100). In accordance with the City Code, public or private general educational facilities such as elementary, intermediate or high schools, junior colleges, and universities are conditional uses allowed under the quasi-public, and public park or recreation zoning district, only by first securing a use permit (Chapter 18.52).

4.6.3 Methodology

Unlike utility services, public facility services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the services, including the physical service delivery mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery agency can be a city, county, service or other special district. Typically, new development will create an incremental increase in the demand for these services; the amount of demand will vary widely, depending on both the nature of the development (residential vs. commercial, for instance) and the type of services, as well as on the specific characteristics of the development (such as senior housing vs. family housing).

The impact of a particular project on public facilities services is generally a fiscal impact. By increasing the demand for a type of service, a project could cause an eventual increase in the cost of providing the service (more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc.). That is a fiscal impact, however, not an environmental one.

CEQA does not require an analysis of fiscal impacts. CEQA analysis is required if the increased demand is of sufficient size to trigger the need for a new facility (such as a school or fire station), since construction of the new facility would have a physical impact on the environment.

4.6.4 Thresholds of Significance

For the purposes of the EIR, a public facilities and services impact is considered significant if the project would:

- Result in substantial adverse physical impacts associated with the provision or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public service:
 - Fire protection,
 - Police protection,
 - Schools, or
 - Other public facilities.

4.6.5 Impacts and Mitigation Measures

4.6.5.1 Fire and Police Protection

Fire and Life Safety Services

New growth under the proposed Draft 2010-2035 General Plan would result in new population and residential and commercial development in Santa Clara, which would increase demand for fire and emergency medical protection services. Existing facilities would have the capacity to absorb additional fire personnel without expanding the existing stations. Therefore, there would

be no construction activities associated with the provision of new fire and life safety services and no associated construction-related effects.

Police

Implementation of the proposed Draft 2010-2035 General Plan would allow for a total of 32,400 residents by 2035, which would increase the need for police services. The City will continue to provide law enforcement for property within the City limit. The additional officers would be housed in the existing facilities. Refurbishment of the facilities would consist of reconfiguration of space and regular upgrade of furniture and equipment, but there would be no need for expansion of the facilities. Therefore, there would be no construction activities associated with the provision of new police services and no associated construction-related effects.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address fire and police protection and public safety. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for the additional of these services within the City are identified below.

Prerequisite Policies	
5.1.1-P5	Prior to the implementation of Phase II and of Phase III of the General Plan, evaluate appropriate measures to maintain emergency response time standards.
5.1.1-P8	Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, complete a comprehensive plan for each area that specifies Land Uses, with the location of residential, retail, mixed uses, public facilities, schools and parks.
General Land Use Policies	
5.3.1-P9	Require that new development provide adequate public services and facilities, infrastructure, and amenities to serve the new employment or residential growth.
5.3.1-P17	Promote economic vitality by maintaining the City's level of service for public facilities and infrastructure, including affordable utilities and high quality telecommunications.
5.3.1-P19	Maximize opportunities for the use and development of publicly-owned land to achieve the City's economic development objectives and to provide public services and amenities.
5.3.1-P21	Allow Public/Quasi Public uses, including places of assembly such as places of worship, schools, emergency shelters and convalescent homes, in all General Plan designations, except in areas designated Light Industrial and Heavy Industrial, provided that access is from a Collector or larger roadway, and provided that parcels designated High or Low Intensity Office/Research and Development are less than one-half acre, unless more than one such use is co-locating on the site.
Future Focus Area Policies	
5.4.5-P6	Encourage new comprehensive plans for Future Focus Areas to provide a full complement of uses, including neighborhood-oriented retail and commercial activities, open space, and public facilities.
Public Service Policies	
5.9.3-P1	Encourage design techniques that promote public and property safety in new development and public spaces.
5.9.3-P2	Provide police and fire services that respond to community goals for a safe and secure environment for people and property.
5.9.3-P3	Maintain a City-wide average three minute response time for 90 percent of police emergency service calls.
5.9.3-P4	Maintain a City-wide average three minute response time for fire emergency service calls.
5.9.3-P5	Maintain emergency traffic preemption controls for traffic signals.
5.9.3-P6	Maintain the fire and hazardous materials mutual aid agreements with surrounding jurisdictions.
5.9.3-P7	Encourage property maintenance and pursue appropriate code enforcement to reduce crime

	associated with blight.
Safety Policies	
5.10.5-P1	Use the City's Local Hazard Mitigation Plan as the guide for emergency preparedness in Santa Clara.
5.10.5-P2	Work with school districts and other public/quasi public building owners to use facilities as shelters in the event of emergencies.
5.10.5-P3	Require that special occupancy buildings, and other structures that support protection of community health and safety, remain operative during emergencies.
5.10.5-P28	Continue to require all new development and subdivisions to meet or exceed the City's adopted Fire Code provisions.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible impacts include:

- Santa Clara City Code Chapter 15.60, Section 1.05.070, and Chapters 2.80 and 2.85.

Impact 4.6-1: Increase in the population associated with new development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would increase the demand for fire, life safety and police services. The additional fire personnel and police officers would be housed in the existing facilities; however there would be no need for expansion of the facilities. Therefore, there would be no construction activities associated with the provision of new fire and police services and no associated construction-related effects. (**Less Than Significant Impact**)

4.6.5.2 Schools and Community Facilities

The City has numerous schools, libraries, arts, cultural, and community facilities, as shown on Figure 4.6-1. Additional facilities may be needed to meet the demand from the addition of 32,400 new residents anticipated as a result of this General Plan.

Schools

New development projected under the proposed Draft 2010-2035 General Plan will fall primarily within the jurisdiction of SCUSD. Approximately 12,500 households are expected to be added to the SCUSD area, which would result in approximately 2,000 additional students.⁶⁴ SCUSD currently has four closed school sites that could be used to serve new development. Alternatively, SCUSD may choose to modify school catchment areas or add modular classrooms to accommodate new students. SCUSD is also anticipating the construction of new school facilities in north San José as a result of an agreement with that city and future housing developers; environmental review for the facilities is pending. These new facilities in San José will add more capacity for new students and can reduce the number of students now in Santa Clara facilities.

The Campbell Union (K-8) and Campbell Union High (9-12) school districts, which overlap, will realize approximately 500 additional households as a result of implementation of the proposed Draft 2010-2035 General Plan, generating approximately 38 new K-8 and 42 new 9-12

⁶⁴ This assumes that new housing is all multi-family, and the student generation rate is 0.16. City of Santa Clara. 2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010.

grade students.⁶⁵ The Campbell K-8 and Campbell 9-12 districts are anticipated to be able to accommodate the relatively modest gain in students from the City by modifying school catchment areas, busing and adding modular classrooms.

Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, a comprehensive plan for each area will be completed that specifies land uses, including the location of schools, if necessary. The City will also work with the school districts as part of the planning process for Future Focus Areas. Each school district will also conduct its own CEQA review prior to locating the schools.

Library and Community Facilities

Additional library facilities may be needed to meet the demand from the addition of approximately 33,000 new residents anticipated as a result of the proposed Draft 2010-2035 General Plan. Given that the large Central Park Library facility is located in the southern portion of the City, it is relatively close to, and could serve, anticipated new development along El Camino Real, Homestead Road, Kiely Boulevard and Stevens Creek Boulevard. New library facilities may, however, be needed to serve the anticipated development in the northern portion of the City. This will need to be evaluated as part of the comprehensive planning process for new residential development in the Future Focus Areas. These facilities would occur in the Future Focus Areas; impacts from development would be similar to what is described in other sections of this EIR.

New growth as a result of the implementation of the proposed Draft 2010-2035 General Plan is expected to increase the demand for arts, cultural and community facilities. This future demand does not, however, appear to exceed the existing service capacity or generate the need for additional facilities particularly when the City can optimize the use of streets or other existing neighborhood amenities for community events.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that address schools and community facilities. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for the additional of these services within the City are identified below.

Prerequisite Policies	
5.1.1-P8	Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, complete a comprehensive plan for each area that specifies Land Uses, with the location of residential, retail, mixed uses, public facilities, schools and parks.
General Land Use Policies	
5.3.1-P9	Require that new development provide adequate public services and facilities, infrastructure, and amenities to serve the new employment or residential growth.
5.3.1-P17	Promote economic development by maintaining the City's level of service for public facilities and infrastructure, including affordable utilities and high quality telecommunications.
5.3.1-P19	Maximize opportunities for the use and development of publicly-owned land to achieve the City's economic development objectives and to provide public services and amenities.

⁶⁵ Ibid. The proportion of K-8 and 9-12 grade students was calculated for the districts currently (0.473 to 0.527) and assumed to be the same for new development.

5.3.1-P21	Allow Public/Quasi Public uses, including places of assembly such as places of worship, schools, emergency shelters and convalescent homes, in all General Plan designations, except in areas designated Light Industrial and Heavy Industrial, provided that access is from a Collector or larger roadway, and provided that parcels designated High or Low Intensity Office/Research and Development are less than one-half acre, unless more than one such use is co-locating on the site.
Future Focus Area Policies	
5.4.5-P6	Encourage new comprehensive plans for Future Focus Areas to provide a full complement of uses, including neighborhood-oriented retail and commercial activities, open space, and public facilities.
School and Community Policies	
5.9.2-P1	Provide a diverse range of community, art, cultural and recreational facilities to meet the varying needs of residents in the City, including youth and seniors.
5.9.2-P2	Periodically evaluate library services and facilities in order to respond to changing community demands.
5.9.2-P3	Provide library services that are accessible and of adequate size to serve community residents, particularly for Future Focus Areas, north of the Caltrain corridor.
5.9.2-P4	Work with the school districts as part of the planning process for Future Focus Areas.
5.9.2-P5	Coordinate with Santa Clara Unified School District, Santa Clara University and Mission College to develop mutually supportive long range plans for school facilities.
5.9.2-P6	Coordinate with local school districts to share school district-owned facilities during non-school hours.
5.9.2-P7	Support efforts by school districts to maintain, improve and expand educational facilities and services, to meet the demands of new development.
5.9.2-P8	Cooperate with local school districts in collecting fees for development projects as required by State regulations.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible impacts include:

- Senate Bill 50 (1998)
- California Government Code, Section 65995 (b)
- Santa Clara City Code Chapter 2.90 and Sections 2.120.080, 2.120.090, and 2.120.100.

The specific environmental impact of constructing new schools and community facilities would be evaluated at the time that such facilities are proposed. Development of these facilities may result in potentially significant impacts that are addressed by various plans, policies and mitigation measures identified in other sections of this EIR. As facility expansion projects are identified, additional project-specific, environmental analysis will be completed.

Impact 4.6-2: Increase in the population associated with new development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would increase the demand for school and community facilities services. The proposed policies and existing regulations and programs are designed to ensure that future development of new facilities within the City would not have an adverse physical effect on the existing environment. **(Less Than Significant Impact)**

4.6.6 Public Services Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.6.7 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant impacts related to the provision of new public services and no mitigation measures are required.

4.7 PUBLIC UTILITIES

This Section describes the environmental impacts associated with forecast increases in water demand, wastewater conveyance and treatment, and solid waste disposal associated with the City's implementation of the proposed Draft 2010-2035 General Plan and outlines applicable plans and policies related to the future provision of these public utilities.

4.7.1 Existing Setting

4.7.1.1 *Water Supply*

Water Supply Overview For Santa Clara Valley

The Santa Clara Valley Water District (SCVWD) manages water resources and wholesales treated water to 13 retailers in Santa Clara County, including the City of Santa Clara. Every five years the SCVWD regularly evaluates and plans its wholesale water supplies by preparing and updating an Urban Water Management Plan (UWMP)⁶⁶ addressing the County's comprehensive water needs. The most current UWMP is from 2005, and SCVWD is in the process of preparing the next UWMP, to be completed in late 2010.⁶⁷ In order to maintain maximum efficiency and flexibility, a mix of four primary sources supply the Valley's water:

Local Runoff. The SCVWD operates eight local reservoirs with a combined capacity of 155,000 acre-feet. One acre-foot equals approximately 326,000 gallons, the average amount of water used by two families of five in one year. An acre-foot of water would cover one acre one foot deep. These reservoirs collect local run-off during the winter storms for later release to percolation ponds. From these ponds, water percolates and recharges the underground aquifers.

Imported Water. Roughly 50 percent percent of the Valley's water supply is imported water via the Sacramento-San Joaquin Delta, delivered by the California Department of Water Resources' State Water Project (SWP) and by the U.S. Bureau of Reclamation's Central Valley Project (CVP). The SCVWD has a contract for 100,000 acre-feet per year (afy) from the SWP. The SCVWD's contract for CVP supply is 152,500 afy, of which 130,000 acre-feet is for municipal and industrial needs and 22,500 acre-feet is for agricultural needs. The ability of the SWP and the CVP to meet contract deliveries varies from year to year and is dependent on hydrology and environmental regulations. The San Francisco Public Utilities Commission (SFPUC) also provides imported water from the Tuolumne River watershed directly to several Valley retailers, including the City of Santa Clara, as discussed in more detail below.

Groundwater. The Water District manages the County's groundwater sub-basins to support pumping from aquifers which accounts for about half of the County's water supply. The Water District operates water supply reservoirs and groundwater recharge facilities in the County watersheds and imports Sierra runoff from the Central Valley and State Water Projects to replenish the aquifers. Local runoff stored in reservoirs and imported water is released into creeks and recharge ponds located throughout the County to augment natural percolation and

⁶⁶ Santa Clara Valley Water District, *2005 Urban Water Management Plan*, available at <http://www.scvwd.dst.ca.us/Services/WaterSupplyPlanning.aspx>. Accessed April 2010.

⁶⁷ Santa Clara Valley Water District website, <http://www.scvwd.dst.ca.us/Services/UWMP2010.aspx>. Accessed April 2010.

maintain groundwater levels for a reliable water supply. The percolation process naturally cleans the groundwater.

Recycled Water. Tertiary treated (or ‘recycled’) water serves as the fourth source of Valley water supply and comprises approximately 10 percent of the City’s overall water supply. It is supplied from the San José/Santa Clara Water Pollution Control Plant (WPCP), which is an advanced tertiary treatment facility. Its primary use is irrigation of large turf areas at golf courses, parks and schools. Several City industries also use recycled water as industrial process water, in cooling towers, or for toilet flushing in dual-plumbed buildings. In addition, the City’s electric utility operates a 147-MW power plant that uses recycled water exclusively for cooling and steam for power production.⁶⁸

Use of recycled water in the City is well-established through the recycled water program. In 2009, the program delivered more than one billion gallons of recycled water throughout the City for parks, landscaping, public services, and businesses, including Intel, Sun Microsystems/Oracle, California Paperboard, Municipal Golf & Tennis Club, and the San Francisco 49ers training facility.

Santa Clara Groundwater Sub-Basin

The groundwater basin over which the City is located comprises the largest of three interconnected groundwater basins in Santa Clara County. The Santa Clara Sub-Basin is comparable to a large underground reservoir and is separated into two hydrologic zones: the "forebay" and "pressure" zones. The City of Santa Clara lies almost entirely within the pressure zone. The groundwater aquifers in the pressure zone are the most productive in the Valley and the source of the most groundwater extraction.⁶⁹

Unlike surface water, groundwater use has never been regulated by the State. Legislation allows local governments to voluntarily manage groundwater supplies, including through use of a groundwater management plan. Local governments may adopt groundwater ordinances to regulate use. Courts may adjudicate the rights of groundwater users in a basin, but that has not happened in the Santa Clara Sub-Basin.

Local rainfall is not enough to meet all of the County’s demands without resulting in over-pumping and land subsidence, as happened between 1920 and the 1960s when over-pumping caused parts of San Jose to sink up to 13 feet. Subsidence is a gradual lowering of an area of ground which in turn may create flooding problems in the resulting low lying areas. As a result of urban development and the corresponding increase in water demand, a long-term overdraft of the groundwater occurred. A groundwater basin is in ‘overdraft’ when “the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions.” “Overdraft can be characterized by groundwater levels that decline over a period of years and never fully

⁶⁸ City of Santa Clara Water Utility. “2005 Urban Water Management Plan”. 2005. Accessed April 20, 2010. < <ftp://ftp.water.ca.gov/uwmp/completed-plans/>>

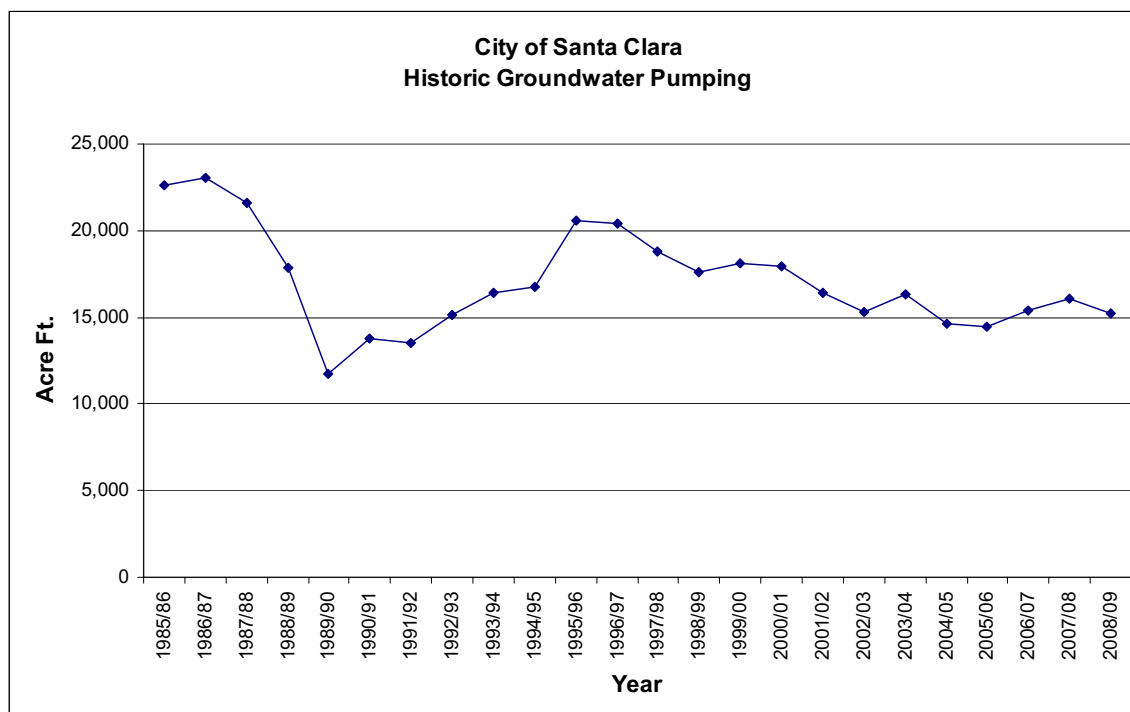
⁶⁹ Santa Clara Valley Water District, 2005 Urban Water Management Plan, available at <http://www.scvwd.dst.ca.us/Services/WaterSupplyPlanning.aspx>. Accessed April 2010.

recover, even in wet years.”⁷⁰ This long-term overdraft has resulted in the lowering of the groundwater table and compaction of certain aquifers. This condition cannot be reversed.

The most recent information from the California Department of Water Resources (DWR) indicates that neither the Santa Clara Valley Basin, nor the Santa Clara Sub Basin, is currently listed as over-drafted.⁷¹ The amount of groundwater that can be withdrawn without causing a recurrence of land surface subsidence is called the "safe yield", and is dependent upon many factors, including the quantity of water available for recharge and the efficiency of the recharge program. The SCVWD prepares an annual survey of Santa Clara County groundwater basin conditions. Based on the District's groundwater reports, it appears the annual safe yield of the Santa Clara Valley groundwater basin is approximately 200,000 afy.⁷² In recent years, records indicate that groundwater levels have improved due to importation of water and groundwater recharge, and are currently in equilibrium.

The amount of groundwater pumped by the City of Santa Clara over the period from FY1985/86 to FY2008/09 is shown in Figure 4.7-1⁷³ below.

Figure 4.7-1 City of Santa Clara Historic Groundwater Pumping



⁷⁰ Department of Water Resources, California's Groundwater Update 2003, DWR Bulletin 118 www.groundwater.water.ca.gov/bulletin118/update2003/

⁷¹ Department of Water Resources, California's Groundwater Update 2003, DWR Bulletin 118 www.groundwater.water.ca.gov/bulletin118/update2003/

⁷² Santa Clara Valley Water District, 2005 Urban Water Management Plan, available at <http://www.scvwd.dst.ca.us/Services/WaterSupplyPlanning.aspx>. Accessed April 2010.

⁷³ City of Santa Clara Water Utility, Technical Memorandum "Water Supply Forecast for General Plan Update 2035" April 27, 2010 (Appendix E)

San Francisco Public Utilities Commission's Hetch-Hetchy System

The SFPUC obtains water from the Tuolumne River watershed in the Sierra Nevada mountains, Calaveras Reservoir in Alameda and Santa Clara Counties, and from Crystal Springs Reservoir on the San Francisco Peninsula. Water from the Sierras and from Calaveras Reservoir is delivered by the Hetch-Hetchy Aqueduct. A branch of this aqueduct traverses the northern portion of the City of Santa Clara.

The City's current water supply contract with the SFPUC is 4.5 million gallons per day (mgd) or roughly 5,040 afy. Under the contract, the City's customer status is temporary and interruptible. The SFPUC contract indicates that if certain conditions are met, the City may be required to reduce or eliminate its take from SFPUC. In a worse case scenario, the City of Santa Clara could lose its supply from SFPUC, reducing the total water supply projections by 5,040 acre-ft/yr from 2018 through 2035. If an interruption of water supply to the City is required, the SFPUC will provide two years advance notice.⁷⁴

City of Santa Clara as Water Retailer

The City serves as the water retailer for all urban water users in the City. The City relies on four diverse supply sources: 1) groundwater, 2) SFPUC surface deliveries, 3) Water District surface deliveries, and 4) recycled water from the San Jose/Santa Clara Water Pollution Control Plant (WPCP), and also relies on conservation to meet overall demand. In addition to providing water directly through a surface treated water contract, the Water District also indirectly supplies a portion of the City's groundwater by recharging the large Santa Clara Sub-Basin (of which the City is one of multiple users) with imported Delta water. The City regularly evaluates and plans its retail water supplies by preparing and updating an UWMP every five years. The most current UWMP is from 2005⁷⁵, and the City will ensure proper coordination of long-term land use planning and water supply planning by preparing the next UWMP in early 2011 based on the water demand associated with growth accommodated in the 2035 General Plan.

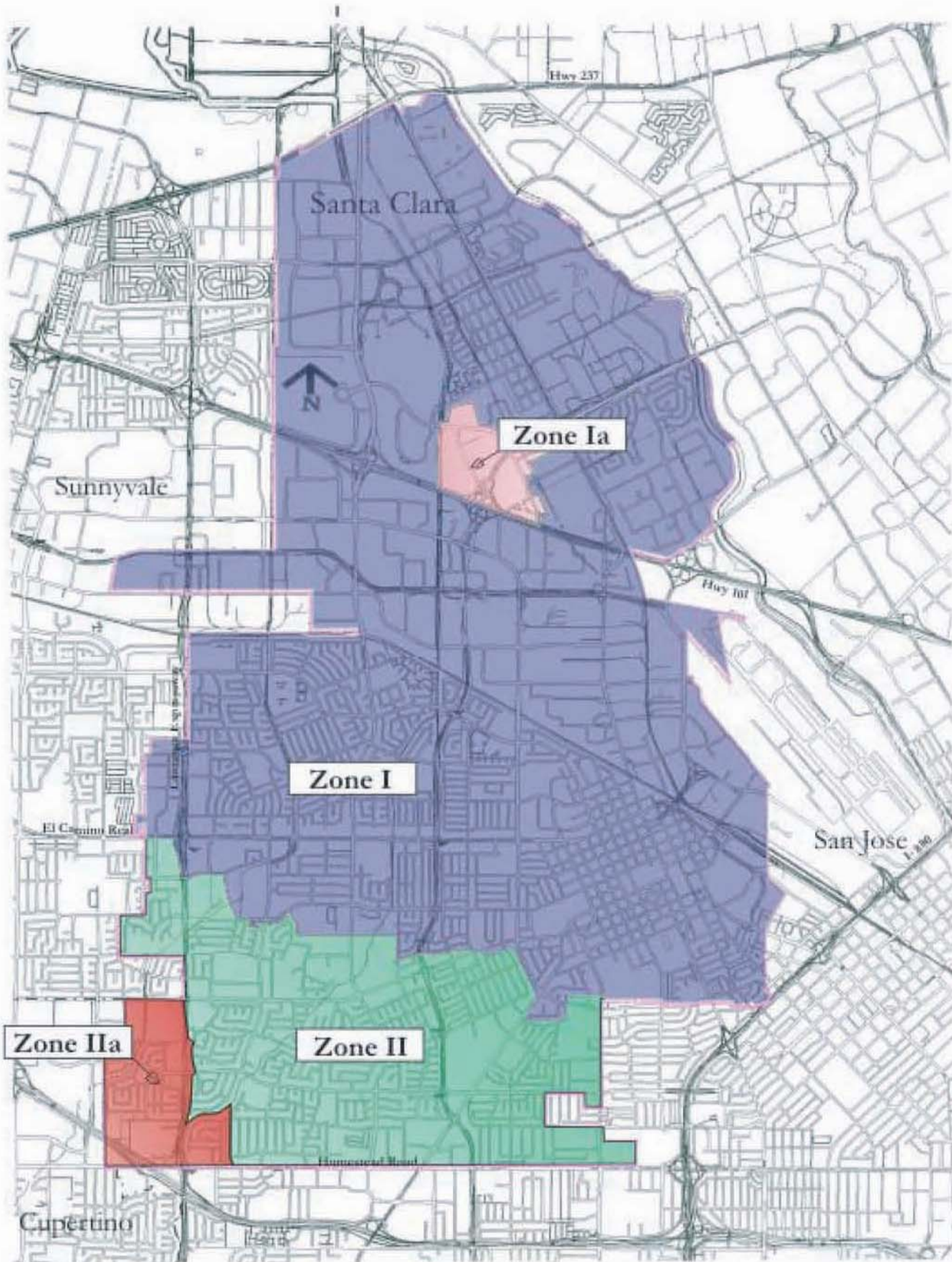
Potable Water Distribution System

The Santa Clara potable water system is separated into four interconnected pressure zones in order to provide optimum pressures throughout the City. The four pressure zones in the City are shown in Figure 4.7-2. Figure 4.7-3 shows the water sources by area. As shown in Figure 4.7-3, water purchased from SFPUC is used to supply water north of Highway 101. Treated surface water purchased from the SCVWD is used in conjunction with groundwater to supply water to the southern portion of the City.⁷⁶ Conjunctive use means actively managing the aquifer systems as an underground reservoir. During wet years, when more surface water is available, surface water is stored underground by recharging the aquifers with surplus surface water. During dry years, the stored water is available in the aquifer system to supplement or replace diminished surface water supplies.

⁷⁴ City of Santa Clara Water Utility, Technical Memorandum "Water Supply Forecast for General Plan Update 2035" April 27, 2010

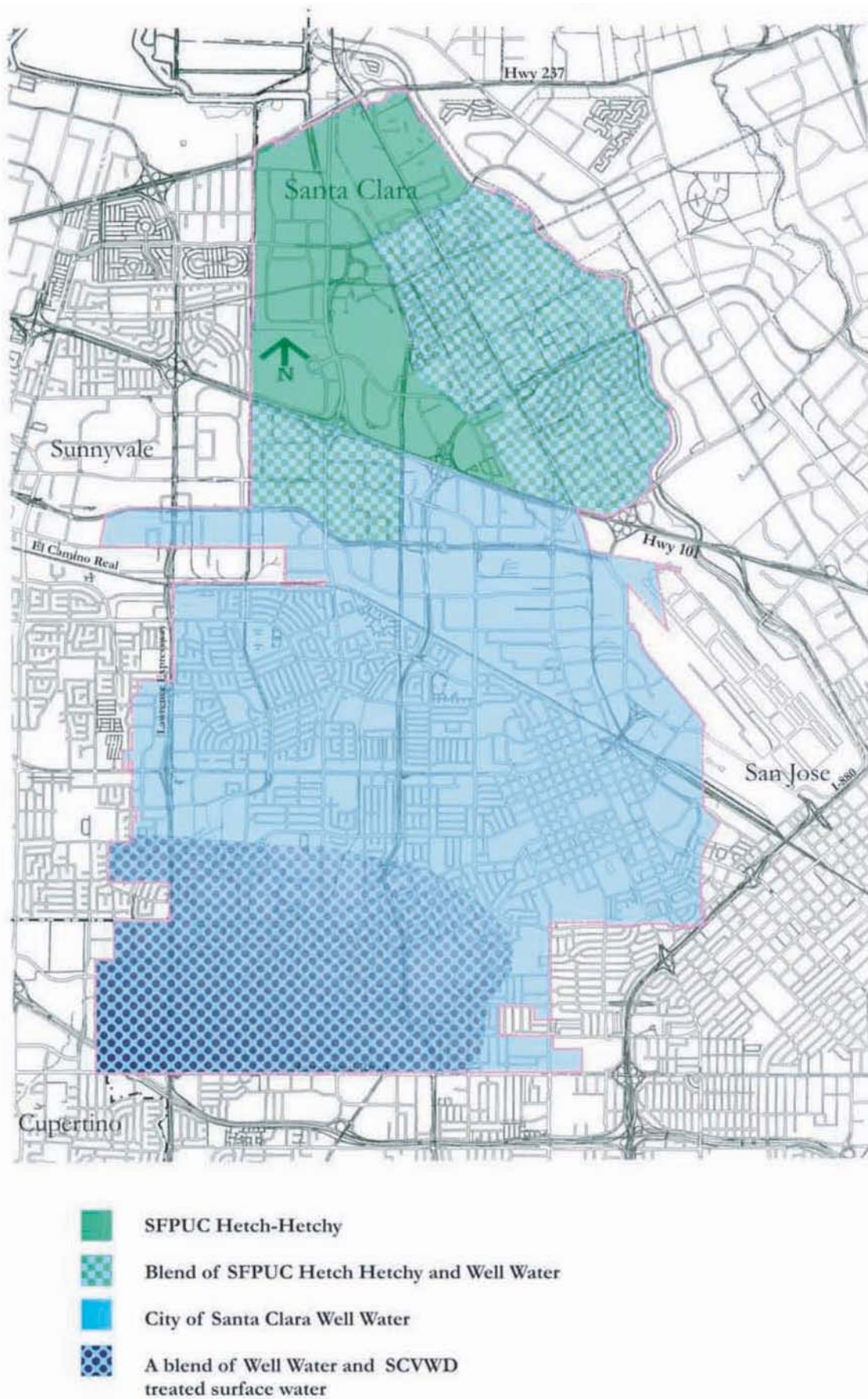
⁷⁵ City of Santa Clara Water Utility. "2005 Urban Water Management Plan". 2005. Accessed April 20, 2010. <<ftp://ftp.water.ca.gov/uwmp/completed-plans/>>

⁷⁶ City of Santa Clara Water Utility, Technical Memorandum "General Plan Update, Potable Water Distribution system" August 31, 2009 (Appendix F)



PRESSURE ZONES

FIGURE 4.7-2



SOURCES OF WATER BY AREA

FIGURE 4.7-3

4.7.1.2 Wastewater

The City's wastewater collection system includes approximately 270 miles of sewer pipelines ranging from 4 to 48 inches in diameter, and six sewage pump stations. In addition to conveying the City's wastewater flows to the WPCP, the City must provide conveyance capacity for the City of Cupertino, based upon a contractual agreement entered into when the City of Santa Clara purchased an existing sewer trunk line from the Cupertino Sanitation District several years ago. The contractual maximum flow from the Cupertino Sanitation District is 13.8 mgd. Flow from Cupertino Sanitary District enters the City's sewer system at Homestead Road. Based on hydraulic modeling of the system, several sewer mains and collector lines are at or near capacity.⁷⁷ The collection system conveys wastewater to the WPCP, located north of Highway 237 in San Jose.

The WPCP is a regional wastewater treatment facility serving eight tributary sewage collection agencies and is administered and operated by the City of San José's Department of Environmental Services. The WPCP provides primary, secondary, and tertiary treatment of wastewater and has the capacity to treat 167 million gallons of wastewater a day (mgd) average dry weather influent flow (ADWIF). ADWIF is defined in the current NPDES permit as the maximum of the average daily flow over any five-weekday period between the months of June and October. The design peak hour wet weather flow (PHWWF), according to the NPDES permit, is 271 mgd. The City's current average dry weather flow is 13.3 mgd based on 2009 data⁷⁸, while the City's allocation of treatment capacity is 22.585 mgd.

The WPCP is currently operating under a 120 million gallon per day dry weather effluent flow constraint. This requirement is based upon the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) concerns over the effects of additional freshwater discharges from the WPCP on the saltwater marsh habitat, and pollutant loading to the Bay from the WPCP. Approximately ten percent of the plant's effluent is recycled for non-potable uses and the remainder flows into San Francisco Bay.⁷⁹

4.7.1.3 Solid Waste

Solid waste collection in the City of Santa Clara is provided by Mission Trail Waste System through a contract with the City. Mission Trail Waste Systems also has a contract to implement the Clean Green portion of the City's recycling plan by collecting yard waste. The City has an arrangement with the owners of the Newby Island Landfill, located in San Jose, to provide disposal capacity for the City of Santa Clara through 2024. Recycling services are provided through Stevens Creek Disposal and Recycling.

⁷⁷ City of Santa Clara Water, Technical Memorandum "Sanitary Sewer Capacity Assessment for General Plan Update" September 1, 2009 (Appendix G)

⁷⁸ Christopher De Groot. Assistant Director, Santa Clara Water and Sewer Utilities. Personal communication. April 27, 2010.

⁷⁹ City of San Jose, Environmental Services Department website, <http://www.sanjoseca.gov/esd/wastewater/water-pollution-control-plant.asp>. Accessed April 2010.

4.7.2 **Regulatory Environment**

4.7.2.1 **Imported Water Supply Constraints**

As discussed previously, the City relies on imported water from the Water District and the SFPUC, and the City's contract with the SFPUC is temporary and interruptible, and may be unavailable after 2018. The Water District's long-term ability to import water from the Delta will be affected by two primary constraints: 1) SWP and CVP pumping restrictions, and 2) altered hydrologic conditions due to climate change. A reduction in the Valley's imported water supply would, in turn, have implications for Santa Clara's surface water contract with the District and the District's groundwater recharge program for the Santa Clara Sub-Basin, of which the City is one of many users.

Delta Pumping Restrictions

Restrictions imposed by the biological opinions issued by the US Fish and Wildlife Service (December 2008) and the National Marine Fisheries Service (June 2009) to protect the Delta Smelt and other endangered fish affect the ability of the SWP and CVP to deliver imported water to multiple parts of the State, including Santa Clara Valley.⁸⁰

To address the biological impacts of continued Delta pumping by the SWP and CVP, the Bay Delta Conservation Plan (BDCP) is being prepared by State, federal and local agencies. A final Plan is not currently available for public review. The BDCP's purpose is to provide for the conservation of at-risk species in the Delta and improve the reliability of the State's water supply system. The BDCP is being developed under the Federal Endangered Species Act (ESA) and the California Natural Community Conservation Planning Act (NCCPA) and will:

- Identify conservation strategies to improve the overall ecological health of the Delta;
- Identify ecologically friendly ways to move fresh water through and/or around the Delta;
- Address toxic pollutants, invasive species, and impairments to water quality; and
- Provide a framework and funding to implement the plan over time.

The DWR is the lead agency for an EIR/EIS that is being prepared to evaluate the potential effects of the BDCP. The BDCP is scheduled to be delivered early in 2011 and draft EIR/EIS is expected to be ready for public review and comment by mid-2012.⁸¹

Effects of Climate Change on Water Supply Reliability

The most important parameter in determining runoff and therefore water supply is precipitation. Climate change can affect the amount, timing, and form of precipitation, whether rain or snow.⁸²

As a general rule, a warmer world would mean more evaporation, hence more precipitation overall. But where and when the precipitation falls is all important. Some researchers think that climate warming might push the winter storm track on the West Coast further north, which

⁸⁰ CA Dept. of Water Resources, Bay-Delta Office *Draft State Water Project Delivery Reliability Report, 2009*. Available at <http://baydeltaoffice.water.ca.gov/swpreliability/>.

⁸¹ CA Dept. of Water Resources Bay-Delta Conservation Plan website, <http://baydeltaconservationplan.com/BDCPPages/aboutBDCP.aspx>.

⁸² Maurice Roos, CA Dept. of Water Resources. *Accounting for Climate Change*. California Water Plan Update 2005, available at <http://www.waterplan.water.ca.gov/previous/cwpu2005/index.cfm>.

would mean a drier California. On the other hand, some of the new climate models forecast increased average California precipitation. Regional precipitation predictions in the atmospheric circulation models have not been reliable, and vary greatly among the different models, with significant uncertainty in projected California precipitation creating large uncertainty in surface water supply, ranging from a decrease of 26 percent percent to an increase of 14 percent percent in 2080-2099.⁸³ The information currently available on the potential effects of climate change indicates a potential increase in variability of supply that may require adaptation at the State level. However, the potential effects of climate change over the 25-year planning period covered by this General Plan are not quantified in the literature to a degree of specificity that allows for the adjustment of the water demand or supply calculations.⁸⁴

If warming occurs, one impact is considered relatively certain. On average, snow levels in the mountains will rise and the average amount of snow covered area and the snowpack will decrease. Less spring snowmelt could make it more difficult to refill winter reservoir flood control space during late spring and early summer of many years, thus potentially reducing the amount of surface water available during the dry season, which would translate to reduced deliveries.

Future Imported Water Deliveries

The DWR has estimated potential SWP deliveries under future conditions in 2029 based on Delta pumping restrictions and climate change scenarios.⁸⁵ Future water deliveries are estimated using probabilities, i.e. the probability that deliveries will exceed a certain quantity of water in a given year. For instance, under current conditions, DWR estimates there is a 75 percent percent chance that SWP deliveries will be above 2,397,000 afy, or alternatively that there is a 25 percent percent chance that deliveries will be below this amount. Under future conditions accounting for pumping restrictions and climate change in 2029, DWR estimates there is a 75 percent percent chance that SWP deliveries will be above 2,137,000 afy, or 25 percent percent chance that deliveries will be below this amount. Comparing current and future (2029) conditions under the 75 percent percent probability scenario, DWR estimates a 260,000 afy reduction in SWP deliveries (i.e. the difference between 2,397,000 and 2,137,000 afy), or slightly more than 10 percent percent decrease in deliveries. Both the State and federal systems' watersheds are expected to experience similar hydrological changes due to climate change, and both face similar Delta pumping restrictions, therefore it is reasonable to assume similar future reductions to CVP deliveries.

4.7.2.2 Wastewater Treatment

As discussed in Section 4.4, *Hydrology and Water Quality*, to discharge wastewater, a NPDES wastewater permit is required. Wastewater is water containing wastes from residential, commercial, and industrial processes. Municipal wastewater contains sewage, gray water (e.g., water from sinks and showers), and sometimes industrial wastewater. The WPCP's NPDES

⁸³ Schoups, G., E.P. Maurer, and J.W. Hopmans, 2010, Climate change impacts on water demand and salinity in California's irrigated agriculture. Available at http://www.engr.scu.edu/~emaurer/pub_pres.shtml.

⁸⁴ City of Santa Clara Water Utility, Technical Memorandum "Water Supply Forecast for General Plan Update 2035" April 27, 2010

⁸⁵ CA Dept. of Water Resources, Bay-Delta Office *Draft State Water Project Delivery Reliability Report, 2009*. Available at <http://baydeltaoffice.water.ca.gov/swpreliability/>.

permit (No. CA0037842) sets limits for two types of pollutants contained in wastewater – conventional and toxic. Conventional pollutants are represented by biological oxygen demand (BOD), nutrients, and solids. Toxic pollutants are represented by heavy metals, organics, pesticides and solvents. Treated wastewater effluent from the WPCP is discharged into Artesian Slough, which is a tributary to Coyote Creek and South San Francisco Bay.

The WPCP NPDES permit limits the amount of treated wastewater that can be discharged to 120 mgd average dry weather effluent flow. This is due to potential impacts of additional freshwater discharges to saltwater marsh habitat, as well as pollutant loading to the San Francisco Bay.

4.7.2.3 Solid Waste

Santa Clara County Integrated Waste Management Plan

The existing California Integrated Waste Management Act of 1989, which is administered by the California Integrated Waste Management Board (CIWMB), establishes an integrated waste management program. Each State agency must develop adopt, in consultation with the board, an integrated waste management plan (IWMP). The Santa Clara County IWMP was approved by the CIWMB in 1996. Since that time it has undergone two 5-year reviews. The jurisdictions in the Santa Clara County IWMP include Campbell, Cupertino, Gilroy, Morgan Hill, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale and the Unincorporated Areas of Santa Clara County. Each jurisdiction in the county has a diversion requirement of 50 percent for 2000 and each year thereafter.

The City's diversion rate is based on a daily generation rate in terms of lbs/person/day. The target rate is the equivalent of 50 percent diversion based on a jurisdiction's base year. A calculated generation rate lower than the target generation rate(s) (for Santa Clara, 8.2 lbs/person/day for population and 9.0 lbs/person/day for employment) means that the City has achieved its diversion goal. According to the CIWMB 2008 Annual Report Summary, the City of Santa Clara has exceeded the 50 percent diversion goal by achieving a generation rate of 6.9 lbs/person per day for the population calculation and 7.2 lbs/person per day for the employment calculation. Therefore, the City is in compliance with the County IWMP.

4.7.3 Methodology

4.7.3.1 Analysis of Water Supply in a General Plan EIR

The California Supreme Court's 2007 *Vineyard* decision⁸⁶ provides that an EIR addressing a large land use project needs to disclose and consider the impacts of supplying water to the project, which in this case means addressing the water needs of the entire City of Santa Clara as it develops according to the new 2035 General Plan. Per *Vineyard*, the question is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project. The EIR must identify current and future sources of supply, disclose any uncertainty about the reliability of future supplies, and if needed, where additional water is likely to come from, and what environmental impacts would occur

⁸⁶ *Vineyard Area Citizens for Responsible Growth, et al. v. City of Rancho Cordova* (February 1, 2007) 53 Cal.Rptr.3d 821. Available at <http://ceres.ca.gov/ceqa/cases/2007/>.

from developing the additional water sources and delivering the water. The EIR need not demonstrate that the project is definitely assured water through signed, enforceable agreements with a provider and already built or approved treatment and delivery facilities. But, the EIR must show at least an approximate long-term sufficiency in supply, including the foreseeable cumulative demands on the planned water supply from other water users.

4.7.4 Thresholds of Significance

For the purposes of this EIR, a public utilities impact is considered significant if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, and the construction and/or operation of the new or expanded entitlements to supply water involve a new impact or substantial increase in the severity of an existing environmental impact;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Fail to comply with federal, State, and local statutes and regulations related to solid waste.

4.7.5 Impacts and Mitigation Measures

4.7.5.1 Water Supply Impacts and Mitigation Measures

Projected Santa Clara County Regional Water Demand

The SCVWD's baseline projection calls for Countywide water demand to grow from approximately 382,000 acre-feet per year to approximately 475,000 acre-feet per year in year 2040, an increase of about 24 percent. Over this same period, Countywide population is expected to grow by 54 percent, from 1.7 million people to 2.6 million. Santa Clara's growth in population and associated water demand, as represented by the proposed Draft 2010-2035 General Plan, are included in these projections. Although the SCVWD forecasts that supplies will be adequate to meet needs in wet and average years, there are expected to be dry-year shortages that grow over time from approximately 50,000 acre-feet in 2010 to 75,000 acre-feet by 2040.⁸⁷

Projected City of Santa Clara Water Demand and Supply

As described earlier, Santa Clara has four existing water sources (groundwater, SFPUC surface deliveries, SCVWD surface deliveries, and recycled water) and also relies on conservation to

⁸⁷ Santa Clara Valley Water District, *Integrated Water Resources Planning Study 2003*. Available at <http://www.scvwd.dst.ca.us/Services/WaterSupplyPlanning.aspx>.

meet overall demand. The SCVWD provides water directly through a surface treated water contract, but also indirectly supplies a portion of the City's groundwater by recharging the large aquifer (of which the City is only one of multiple users) with imported Delta water. The City anticipates that future water demand associated with the proposed Draft 2010-2035 General Plan growth would be met by the continued use of the four identified supply sources, with the assumption that groundwater and recycled water use and conservation would increase over time to meet future demand, as indicated in Table 4.7-1 below.

TABLE 4.7-1: WATER SUPPLY PROJECTIONS BY WATER SOURCE (AFY)⁸⁸

Source	2010	2015	2020	2025	2030	2035
Groundwater	23,048	23,048	23,048	23,048	23,048	23,048
SFPUC	5,040	5,040	5,040	5,040	5,040	5,040
SCVWD	4,570	4,570	4,570	4,570	4,570	4,570
Recycled Water	3,700	4,000	4,300	4,500	4,500	4,500
Conservation	918	1,232	1,288	1,344	1,380	1,380
Total	37,276	37,890	38,246	38,502	38,538	38,538

Table 4.7-2 below compares the Total Water Supply found in Table 4.7-1 with the projected water demand through 2035. This analysis assumes a normal water year and that water from SFPUC is available in 2018 and beyond. The table shows adequate water supplies under normal conditions to meet the projected demands in the 2010 to 2035 planning period.

TABLE 4.7-2: PROJECTED SUPPLY VERSUS DEMAND COMPARISON – NORMAL YEAR (AFY)

Year	2010	2015	2020	2025	2030	2035
Supply Totals	37,276	37,890	38,246	38,502	38,538	38,538
Demand Totals	25,118	26,551	27,948	29,358	30,880	32,266
Difference as percent of Supply	32.6 percent	29.9 percent	26.9 percent	23.7 percent	19.9 percent	16.3 percent
Difference as percent of Demand	50.4 percent	42.7 percent	36.8 percent	31.1 percent	24.8 percent	19.4 percent

Taking into account the combined effects of Delta pumping restrictions and decreased water supplies due to climate change, the City anticipates the Water District may, during a multiple dry year scenario, deliver 30 percent less treated water to the City, a reduction of roughly 1,425 afy from the contracted 4,570 afy. Further, as discussed earlier, there is a possibility the current SFPUC water contract allotment of 4,050 afy may no longer be available after 2018. The combined effect under this 'worst-case' scenario, as depicted in Table 4.7-3 below, would be 5,475 afy of lost imported surface water.

TABLE 4.7-3: PROJECTED SUPPLY VS. DEMAND COMPARISON – MULTIPLE DRY YEAR WITHOUT SFPUC SUPPLY (AFY)

Year	2015	2020	2025	2030	2035
Supply Totals	33,797	31,781	32,037	32,073	32,073
Demand Totals	26,551	27,948	29,358	30,880	32,266
Difference as percent of	21.4	12.1	8.4	3.7	-0.6

⁸⁸ City of Santa Clara Water Utility, Technical Memorandum "Water Supply Forecast for General Plan Update 2035" April 27, 2010

Supply	percent	percent	percent	percent	percent
Difference as percent of Demand	27.3 percent	13.7 percent	9.1 percent	3.9 percent	-0.6 percent

Table 4.7-3 above indicates that the water supplies would still be sufficient to meet demands during a multiple dry year event in each five year UWMP planning period with the exception of 2035 in the event of the total loss of water purchased from SFPUC. However, the noted shortfall in supply is only 0.6 percent percent or 193 acre-ft. This amount is well within the margin of error related to the projections and therefore is negligible. The tables above assume no increase in conservation or recycled water use. These assumptions also yield a conservative estimate since during a critical multiple dry year event, mandatory conservation measures and increased recycled water usage would be expected to reduce potable water demand.

With the uncertainties inherent in future imported water supplies, the City plans to meet future demand growth by pumping additional groundwater, relying on more recycled water, and increased conservation. Therefore, given the potential for decreased SCVWD and/or SFPUC imported surface deliveries, CEQA requires disclosure of the environmental impacts, if any, of meeting future demand growth with increased supplies coming from pumping more groundwater. There are not anticipated to be any reasonably foreseeable impacts associated with increased use of recycled water and conservation, which is anticipated to occur through replacement of more water-efficient appliances, i.e. clothes washers, dishwashers, toilets, etc., and programs to encourage drought-tolerant landscaping on private property and on City properties. Mandatory conservation during a multiple year drought may also require prohibitions on outdoor use (irrigation, car washing, washing down pavement, etc.) and water rationing.

Impacts of Increased Groundwater Pumping

The City of Santa Clara, in considering its future water supply planning, is not required by CEQA to conduct a basin-wide study of past and future groundwater pumping by all users, rather the City relies upon long-term water supply planning by the Water District, the public agency responsible for managing the groundwater basin. As discussed previously, the District's assumed Santa Clara Sub-Basin safe yield is approximately 200,000 afy. However, there is not a detailed groundwater budget for the Santa Clara Sub-Basin, nor have groundwater rights in the basin been adjudicated by a court.

The respective UWMPs prepared by the multiple water retailers that withdraw groundwater from the Santa Clara Sub-Basin forecast cumulative groundwater withdrawals out to 2030. As identified in Table 4.7-4 future cumulative demand is anticipated to be roughly 155,515 afy in 2030, approximately 22.25 percent or 44,500 afy below the basin safe yield of 200,000 afy. Each water retailer will be updating its respective UWMP in 2011, including a projection for that retailer's groundwater usage in 2035. In the absence of retailer projections for 2035, a rough projection can be made using the average five-year incremental increase in cumulative groundwater demand, approximately 10,890 afy according to Table 4.7-4. Accordingly, using this basic methodology, cumulative groundwater basin demand would be expected to increase from 155,515 afy in 2030 to approximately 166,400 afy in 2035, still roughly 17 percent percent or 33,600 afy below the 200,000 afy safe yield.

A groundwater basin is a complex natural resource and can not be equated to a bathtub in which water drained from the bathtub affects all water levels equally. Given the large geographic scope

of the Santa Clara Sub-Basin and the multiple users drawing from the aquifer, conditions vary across the sub-basin based on elevation, recharge conditions, and pumping activity. It should not be assumed that groundwater pumping from a specific location will necessarily have a uniform effect on groundwater conditions and levels throughout the sub-basin. Therefore, in such a large and complex groundwater basin, pumping at one end of the groundwater basin will not necessarily affect groundwater levels at the other end.

TABLE 4.7-4 PROJECTED ANNUAL SANTA CLARA SUB-BASIN GROUNDWATER PUMPING

Retailer	City(s) Served by Retailer	Projected Ground Water Use AF/Year					
		2010	2015	2020	2025	2030	2035
City of Santa Clara Water Department ⁸⁹	Santa Clara	23,048	23,048	23,048	23,048	23,048	23,048
San José Water Company ⁹⁰	Campbell	60,911	64,433	67,956	71,478	75,000	78,522
	Cupertino						
	San José						
	Saratoga						
	Los Gatos	Surface Water					
	Monte Sereno	Surface Water					
San José Municipal Water System ⁹¹	San José	4,160	8,850	12,900	17,700	20,900	25,085
Great Oaks Water Company ⁹²	San José	16,751	20,180	23,279	26,125	29,201	32,314
California Water Service Company Los Altos District ⁹³	Cupertino	4,138	4,197	4,258	4,320	4,385	4,447
	Los Altos						
	Los Altos Hills						
	Mountain View						
	Sunnyvale						
City of Mountain View Public Works ⁹⁴	Mountain View	134	202	157	112	69	45
City of Sunnyvale Public Works Department ⁹⁵	Sunnyvale	2,800	2,800	2,800	2,800	2,912	2,940

⁸⁹ City of Santa Clara Water Utility, Technical Memorandum “*Water Supply Forecast for General Plan Update 2035*” April 27, 2010

⁹⁰ San José Water Company. “*2005 Urban Water Management Plan*”. 2005.

⁹¹ San José Environmental Services Department. “*2005 Urban Water Management Plan for City of San José Municipal Water System*”. 2005. Accessed April 20, 2010. <<http://www.sjuniwater.com/PDFs/2005-UWMP.pdf>>

⁹² Great Oaks Water Company. Water Supply Assessment for the City of San José Draft Environmental Impact Report Coyote Valley Specific Plan Project, Appendix B: “*2005 Urban Water Management Plan*”. 2005. Accessed April 19, 2010. <http://www.sanjoseca.gov/coyotevalley/EIR/docs/Water_Supply_Assesment/Appednix_percent20B_GO_WSA.pdf>

⁹³ California Water Service Company. “*2007 Urban Water Management Plan Los Altos Suburban District*”. 2007. Accessed April 20, 2010. <<ftp://ftp.water.ca.gov/uwmp/completed-plans/>>

⁹⁴ City of Mountain View Department of Public Works. “*2005 Urban Water Management Plan*”. 2005. Accessed April 19, 2010. <http://www.ci.mtnview.ca.us/city_hall/public_works/urban_water_management_plan.asp>

⁹⁵ City of Sunnyvale Department of Public Works Field Services Division. “*2005 Urban Water Management Plan*”. 2005. Accessed April 20, 2010.

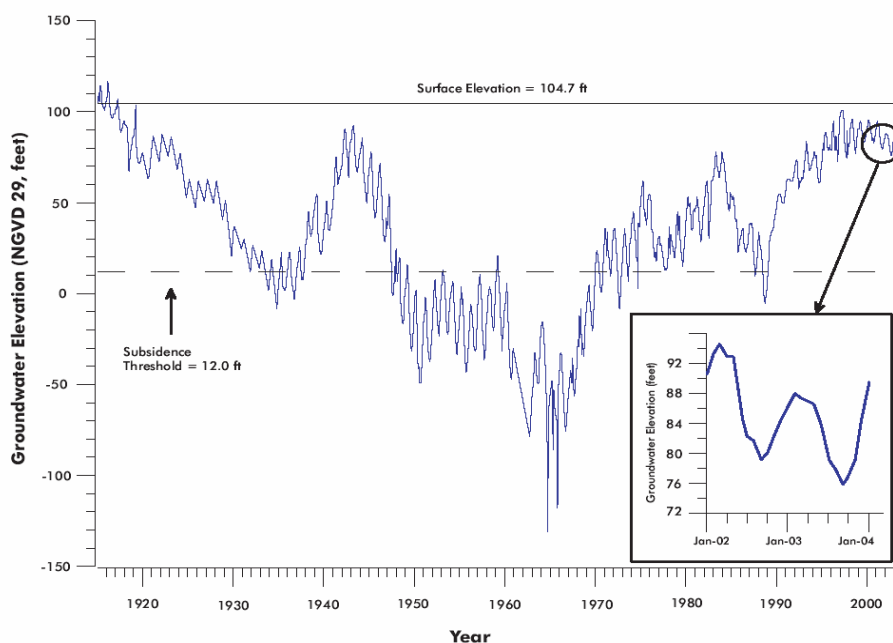
Retailer	City(s) Served by Retailer	Projected Ground Water Use AF/Year					
		2010	2015	2020	2025	2030	2035
TOTALS		111,942	123,710	134,398	145,583	155,515	166,400

If portions of the Santa Clara Sub-Basin were to go back into overdraft conditions, the likely environmental consequences, based on past observations, would be land subsidence, unproductive wells, water loss (negative balance) from rivers/creeks as the groundwater table drops, which in the worst-case would lead to de-watering, and associated riparian impacts as the vegetation loses access to sufficient water. However, as discussed previously, a primary responsibility of the Water District is to recharge groundwater basins to prevent overdraft, and as projected in Table 4.7-4, future cumulative demand on the Santa Clara Sub-Basin is expected to be well below the safe yield of 200,000 afy. As shown in Figure 4.7-4, even when the City was at the historic peak for groundwater production FY1986/87, the basin was not approaching overdraft. Therefore, the City's projected pumping falls within the range of historically sustainable pumping, given the Water District's reasonably foreseeable recharge and groundwater management programs.

There is an inherent level of uncertainty in predicting water supply availability decades into the future. Providing absolute supply certainty is only possible in the near-term and at a much later point in the land use planning and approval process than at the comprehensive General Plan stage. However, Santa Clara's progressively phased Draft 2010-2035 General Plan will allow reconsideration of available water supplies concurrent with each phase of planned development, coordinated with each successive five-year City UWMP, which in turn would be based on the Water District's regional wholesale UWMP, updated every five years, including adjusted imported water quantities to account for pumping restrictions and climate change. Therefore, the City's land use planning processes will serve to prevent potential future overdraft conditions by specifically addressing Santa Clara's contribution to cumulative pumping demands on the aquifer.

Future pumping by the City of Santa Clara, in combination with the multiple other users of the Santa Clara Sub-Basin, would not be expected to contribute to cumulative groundwater pumping impacts, i.e. withdrawals above the basin's safe yield, given the Water District's reasonably foreseeable recharge and groundwater management programs. However, should the District's recharge program be affected by reduced availability of imported water, there is the potential for future cumulative groundwater basin demand to exceed the aquifer's safe yield. **(Potentially Significant Impact)**

<<http://sunnyvale.ca.gov/Departments/Public+Works/Water+Supply/Current+Urban+Water+Management+Plan.htm>>

Figure 4.7-4 Hydrograph for Santa Clara Valley Sub Basin Index Well (07S01E07R013)⁹⁶

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure a reliable, safe supply of potable water adequate to meet present and future needs through promotion of water conservation, expansion of the use of recycled water, and appropriate coordination with the Water District. Proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation to ensure adequate water supply within the City are identified below.

Water Policies	
5.10.4-P1	Promote water conservation through development standards, building requirements, landscape design guidelines, education, compliance with the State water conservation landscaping ordinance, and other applicable City-wide policies and programs.
5.10.4-P2	Expand water conservation and reuse efforts throughout the City.
5.10.4-P3	Promote water conservation, recycled water use and sufficient water importation to ensure an adequate water supply.
5.10.4-P4	Require an adequate water supply and water Quality for all new development.
5.10.4-P5	Prohibit new development that would reduce water quality below acceptable State and local standards.
5.10.4-P6	Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.
5.10.4-P7	Require installation of native and low-water consumption plant species when landscaping new development and public spaces to reduce water usage.
5.10.4-P8	Require all new development within a reasonable distance of existing or proposed recycled water distribution systems to connect to the system for landscape irrigation.
5.10.4-P9	Work with Santa Clara Valley Water District to improve the Santa Clara Distributary.
5.10.4-P10	Work with Santa Clara Valley Water District to minimize undesirable compaction of aquifers and subsidence of soils.

⁹⁶ Santa Clara Valley Water District, *Groundwater Conditions 2002/2003*, January 2005.

5.10.4-P11	Require that any unused wells be abandoned properly.
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4.7.5.2 Wastewater Treatment

As stated previously, the City's current average dry weather flow is 13.3 mgd based on 2009 data. As new development occurs according to the General Plan, wastewater flows are projected to increase as shown in Table 4.7-5 below.⁹⁷ Average dry weather flows (ADWF) are projected to remain within the City's allocation of WPCP treatment capacity.

TABLE 4.7-5 SANTA CLARA WASTEWATER TREATMENT ESTIMATES (MGD)

	Existing	Phase I	Phase 2	Phase 3
ADWF	13.3	16.5	18.3	20.1
Allocation	22.585	22.585	22.585	22.585
Remaining Capacity	9.285	6.085	4.285	2.485

4.7.5.3 Wastewater Conveyance

Capacity requirements in the sanitary sewer system are based on the ability to convey the peak wet weather flow (PWWF) that would be expected in the system under a 10-year design storm event. According to the 2009 sanitary sewer capacity assessment completed for the General Plan Update, future development would exceed the conveyance capacity of the existing system. These capacity deficiencies are based on the estimated increases in sanitary sewer flows resulting from the cumulative development and redevelopment projects (which will increase densities in mixed use and transit-oriented areas). Most of the capacity issues are projected to occur on the western side of the City along the trunk line in Great America Parkway and Bowers Avenue and extending upstream into the smaller trunk lines in Chromite Drive, Machado Avenue, Calabazas Boulevard, and El Camino Real. The deficiencies are also attributable to the City's commitment to convey Cupertino wastewater. Capacity deficiencies have also been predicted in the southeast portion of the City in Scott Boulevard and Park Avenue.

New development projects that result in a net increase in wastewater flow to the capacity-deficient areas of the sanitary sewer system will be required to contribute to improvements to the system. The hydraulic modeling study completed by the City in 2009 includes recommended solutions for the identified capacity issues.⁹⁸ These solutions have been used to estimate capital improvement costs, which can be factored into the City's Capital Improvement Program and associated fee structure.

The evaluation of impacts upon the smaller collector mains will continue to depend on the location and type of development. Sewer mains near or adjacent to other large undeveloped or

⁹⁷ City of Santa Clara Water, Technical Memorandum "Sanitary Sewer Capacity Assessment for General Plan Update" September 1, 2009

⁹⁸ City of Santa Clara Water, Technical Memorandum "Sanitary Sewer Capacity Assessment for General Plan Update" September 1, 2009.

re-developable parcels may have adequate capacity to accommodate most types of development on those sites; however, the type of development can substantially impact reserve capacity within the conveyance system. It is a City requirement that new industrial, commercial, and major residential development be reviewed to determine projected wastewater load and available sewer capacity before zoning approval or permits are approved. To the extent that additional sewer collection system improvements may be identified as necessary to serve the development, such improvements will become the responsibility of the project applicants.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

5.10.1-P5 Require adequate wastewater treatment and sewer conveyance capacity for all new development.

Based on the foregoing discussion, future development under the proposed Draft 2010-2035 General Plan would not result in significant impacts as a result of inadequate capacity in the City's wastewater conveyance or the regional WPCP treatment. **(Less than significant impact)**

4.7.5.4 Solid Waste Impacts

According to the National League of Cities Institute, office and industrial uses generate approximately 1.0 and 1.2 pounds of solid waste per 100 square feet per day, respectively. For the additional net new square footage of non-residential development proposed by the General Plan (13.46 million square feet), the potential increase in solid waste generation ranges from 134,600 to 161,529 pounds per day. Residential solid waste generation from the proposed General Plan's net new residential development (13,312 multi-family units) would be approximately 476,570 pounds per week.⁹⁹ The total increase in solid waste (residential + non-residential) associated with net new General Plan growth in 2035 would be approximately 37,000-42,000 tons per year.

The City currently has a contract with the owners of the Newby Island Landfill, located in San Jose, to provide disposal capacity through 2024. There is sufficient capacity in the existing solid waste disposal facilities serving Santa Clara to accommodate waste generated by the proposed General Plan through the current contract in 2024.

The planning horizon of the General Plan is 2035, and therefore extends beyond the City's current landfill contract. It is unknown at this time what landfill will accept the City's solid waste beyond 2024. Newby Island Landfill is currently in the process of seeking authorization from the City of San Jose to expand its permitted capacity to accept an additional 15 million cubic yards. The reasonably foreseeable environmental effects of the proposed expansion of the Newby Island Landfill have been disclosed in a project-level EIR prepared by the City of San Jose.¹⁰⁰ The project is anticipated to undergo public hearings and receive a decision in 2010.

The proposed additional capacity would allow the landfill to continue receiving waste at existing levels at least until the estimated closure date of 2025. The landfill owner anticipates accepting

⁹⁹ Assuming 35.8 pounds per multi-family unit per week.

¹⁰⁰ City of San Jose, *Newby Island Sanitary Landfill/The Recyclery Planned Development Rezoning Draft EIR*. Available at <http://www.sanjoseca.gov/planning/eir/EIR.asp>.

waste quantities such that the landfill, even if granted the additional requested capacity, will reach capacity by 2025. However, depending upon the annual tonnages accepted by the landfill operator going forward, it is possible that the landfill, if granted additional capacity, could close at a later date, in which case the City of Santa Clara might continue to dispose of solid waste at Newby Island beyond 2024.

If Newby Island is not available to accept solid waste from Santa Clara after 2024, the City would need to contract with the operator of another existing landfill such as Kirby Canyon, Guadalupe Mines, or other, more distant landfills such as Forward Landfill in Stockton, California (approximately 147 miles from Newby Island), which would entail longer truck trips and likely substantial increases in environmental impacts associated with increased vehicular miles traveled, i.e. pollutant emissions, noise, etc. The City's decision to enter into a contract to dispose of solid waste beyond 2024 will itself be subject to environmental review, and the specific impacts of that future decision will be analyzed, disclosed, avoided, and mitigated to the extent feasible in accordance with the requirements of CEQA. In considering the proposed General Plan, the anticipated future solid waste quantities can be estimated, but the City is not ready to make, nor is it predisposing, a future decision related to where the waste would be landfilled. At this time, the City is not able to predict, short of speculation, where it will send its solid waste for disposal beyond 2024. Given the uncertainties concerning the location of solid waste disposal beyond 2024, the General Plan includes prerequisite policies which require an updated assessment of solid waste capacity prior to allowing development under Phase II (2015) and again prior to Phase III (2025).

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies to ensure adequate solid waste disposal capacity through source reduction, promotion of recycling, and waste diversion. Proposed General Plan Policies that provide program-level mitigation to ensure adequate solid waste disposal capacity are identified below.

Solid Waste Policies	
5.1.1-P3	Prior to the implementation of Phase II and of Phase III of the General Plan, undertake a comprehensive assessment of water, sanitary sewer conveyance, wastewater treatment, solid waste disposal, storm drain, natural gas, and energy demand and facilities in order to ensure adequate capacity and funding to implement the necessary improvements to support development in the next phase.
5.1.1-P8	Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, complete a comprehensive plan for each area that specifies: Infrastructure and Utilities, with provisions for sufficient storm drain, sanitary sewer conveyance, wastewater treatment, water, solid waste disposal and energy capacity.
5.1.1-P22	Prior to 2025, identify and secure adequate solid waste disposal facilities to serve development in Phase III.

Based on the foregoing discussion, development allowed under the proposed Draft 2010-2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs through 2024, however the City has no specific plan for disposing of solid waste beyond 2024, but will undertake a process to identify a solution prior to 2024. **(Significant Impact)**

4.7.5.5 Conclusion

Water Supply

New development under the Draft 2010-2035 General Plan is projected to increase water demand within the City. However, the City's Water Utility has determined that there are sufficient water supplies to provide service to the City for the General Plan Update 2035 under normal and single critical dry year scenarios. In the event of a multiple dry year event and the loss of supply from SFPUC, there is a projected shortfall of 0.6 percent or 193 afy in the year 2035. The City plans to meet future demand growth by pumping additional groundwater, relying on more recycled water, and increased conservation. Future Santa Clara UWMPs will be coordinated with the Water District and implement alternative sources (i.e. recycled water and increased conservation) if cumulative groundwater pumping, taking into account the combined pumping of all water retailers, would exceed the Santa Clara Sub-Basin safe yield. **(Less than significant impact with mitigation)**

Wastewater

Future projected wastewater flows would increase but remain within the City's allocation of WPCP treatment capacity. Sanitary sewer conveyance capacity would need to be increased at select locations throughout the City to serve the increased wastewater flows from new development. **(Less than significant impact)**

Solid Waste

The new development allowed under the proposed General Plan would generate solid waste that can be accommodated under the existing landfill disposal contract through 2024. However the City has no specific plan for disposing of solid waste beyond 2024, including waste generated by existing uses, but will undertake a process to identify a solution prior to 2024. **(Significant Impact)**

4.7.6 Public Utilities Mitigation and Avoidance Measures for General Plan Impacts

Mitigation: To prevent a cumulatively considerable contribution to a potential future overdraft of the Santa Clara Sub-Basin, the City shall update the forecast groundwater pumping supply quantities every five years with each UWMP to align water supply availability with the water demand associated with each General Plan Phase. Future Santa Clara UWMPs will be coordinated with the Water District and implement alternative sources (i.e. recycled water and increased conservation) if cumulative groundwater pumping, based on all water retailers UWMPs, would exceed the Santa Clara Sub-Basin safe yield. With implementation of this program mitigation measure, potential future impacts associated with supplying future development envisioned by the General Plan would be reduced to a less than significant level. **(Less than significant impact with mitigation)**

4.7.7 Significance Conclusion

Implementation of the above mitigation measures and proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant public utilities impacts, with the exception of solid waste impacts beyond the year 2024, which will be significant unless and until the City identifies a specific plan for disposing of its waste beyond 2024.

4.8 OPEN SPACE, PARKS, TRAILS, AND RECREATION

This section evaluates the potential effects of implementation of the proposed Draft 2010-2035 General Plan on parks and open space. This section describes the City's existing parkland, recreational facilities, and recreational services, and outlines applicable plans and policies related to parks and recreation.

4.8.1 Existing Conditions

Parks, open space and recreation facilities are critical in satisfying the diverse outdoor needs of Santa Clara residents and visitors, improving the physical health of the community and providing opportunities for social interaction. Open spaces should offer options for all types of activities, from passive rest areas and trails for walking or jogging, to fields and recreational facilities for organized sports. Parks and recreation facilities and programs within the City are described in detail below.

4.8.1.1 Parks and Recreation Facilities

Combinations of small and large parks are distributed throughout the City's residential neighborhoods, as shown on Figure 4.8-1 and listed on Table 4.8-1. In general, each one-square mile of residential area in the City contains a Neighborhood or Community Park located close to the center, ensuring that almost all residents live within a half-mile walk of a park. The centerpiece of the City's park system is Central Park, which contains active and passive recreation areas, and sports facilities. The City's industrial and business corridor north of Caltrain contains limited open spaces with the exception of the Municipal Santa Clara Golf and Tennis Club and the Ulistac Natural Area, which serve the entire community.

The City's parks and recreation facilities are organized into categories based on typical size, programming and intended use, as listed below. In 2008, the City's Neighborhood and Community Parks served a population of approximately 115,500 residents, resulting in 2.4 acres of local serving parkland per 1,000 residents. The ratio includes parks that primarily serve Santa Clara residents and businesses, and excludes regional serving facilities such as Ulistac Natural Area, the Municipal Santa Clara Golf & Tennis Club and the Pruneridge Golf Course.

Community Parks

Community parks draw visitors from a larger radius due to their larger size (over fifteen acres) or unique recreation amenities. Central Park is the City's only community park. This 52-acre park has open space, picnic areas and a playground, as well as recreation facilities that include the George F. Haines International Swim Center, Santa Clara Tennis Center, playing fields, lawn bowling and an exercise course.

Mini Parks

Mini parks are defined as no more than one acre in size. These parks typically have small service areas, dedicated to smaller-scale, more specific activities. For example, the 0.2 acre Rotary Park, located behind the Triton Museum of Art, offers a playground, picnic tables and sitting area. Overall, the 1.6 acres of mini-parks comprise only a minor proportion (less than one percent) of the City's parkland space.

TABLE 4.8-1. EXISTING PARKS AND RECREATION

Existing Parks	Acres	Activities									
		Auditorium	Activity Room	Picnic/BBQ	Restroom/PT	Swimming Pool	Basketball Courts	Playing Field	Tennis Courts	Playground	Parking Lot
Community Parks											
Central Park	52.0			2	3		1	2	10	3	3
Subtotal	52.0	0	0	2	3	0	1	2	10	3	3
Mini Parks											
Memorial Cross Park	0.4										
Rotary Park	0.2									1	
Geof Goodfellow Sesquicentennial Park	0.1										
War Memorial Playground (Washington Park)	0.9			1	1					1	1
Subtotal	1.6	0	0	1	1	0	0	0	0	2	1
Neighborhood Parks											
Agnew Park	2.0		1	1	1		1			1	
Bowers Park	7.4		1	1	1					1	1
Bracher Park	3.5			1	1					1	
City Plaza Park	1.6			1	1		1			1	
Earl R. Carmichael Park	10.5			1	1		1	1	1	1	
Everett Alvarez Park	1.7			1	1		1			1	
Fairway Glen Park	4.1				1				1	1	
Fremont Park	4.6									1	
Fuller Street Park	2.4			1	1					1	
Henry Schmidt Park	7.7		1	1	1		1	1	1	1	1
Homeridge Park	6.0			1	1		1			1	1
Jenny Strand Park	9.7			1	1		1		1	1	1
Larry J. Marsalli Park	7.0			1	1			1		1	1
Lick Mill Park	10.5		1	1			1		2	1	1
Live Oak Park	11.0			1						1	1
Machado Park	3.5		1	1			1			1	
Mary Gomez Park	8.0			1			1		2	1	1
Maywood Park	9.5		1	1					4	1	1
Montague Park	5.5		1	1	1		1		2	1	
Parkway Park	4.1			1	1					1	
Steve Carli Park	3.0				1		1			1	
Thamien Park	3.5			1	1		1			1	1
Warburton Park	6.0			1	1	1	1			1	1
Westwood Oaks Park	1.7		1	1	1		1			1	
Subtotal	134.5	0	8	22	16	1	15	3	14	23	12
Public Open Space											
Agnews Historic Park, Mansion & Auditorium	14.5		1								1
Civic Center Park	3.0										
Ulistac Natural Area	40										
Subtotal	57.5	0	1	0	0	0	0	0	0	0	1
Recreation Facility											
Community Recreation Center (Central Park)	0.0	1	4		1					1	1
Gymnastics Center (Earl R. Carmichael Park)	0.0		1		1						
George F. Haines International Swim	0.0		1			3					

Existing Parks	Acres	Activities									
		Auditorium	Activity Room	Picnic/BBQ	Restroom/PT	Swimming Pool	Basketball Courts	Playing Field	Tennis Courts	Playground	Parking Lot
Center (Central Park)											
Lawn Bowling Green (Central Park)	0.0		1								
Mary Gomez Pool (Mary Gomez Park)	0.0					1					
Montague Swim Center	2.5					1					
Reed Street Dog Park	1.7				1						1
P.A.L. BMX Track	45.7				1						
Senior Center	2.4	1	8		1	3					
Youth Soccer Park	11.2		1		1						
Skate Park	0.9										
Teen Center	1.0		4								
Veterans Memorial (Central Park)	0.0										
Warburton Swim Center (Warburton Park)	0.0					1					
Walter E. Schmidt Youth Activity Center	1.5		3				2				
Santa Clara Gold & Tennis Club	185		1		1				7		1
Subtotal	251.9	2	24	0	7	9	2	0	7	1	3
Existing Parks Total	497.5	2	33	25	27	10	18	5	31	29	21
Source: City of Santa Clara, Parks and Recreation Divisions, October 2009											

Neighborhood Parks

Neighborhood parks are defined as generally between one and fifteen acres in size and offer both open space and amenities for individual neighborhoods. They provide facilities for various activities, including passive uses (trails and paths), children's playgrounds and sports fields. For example, the 2.4-acre Fuller Street Park, near Fuller Street and Esperanca Avenue, serves the surrounding neighborhood with open space, a play area and picnic facilities. This is the most common type of park within the City, accounting for 134.5 acres, or almost 50 percent of the City's total parkland.

Public Open Space

Several of the City's prominent civic and community buildings are located within parks, offering open space focused on civic activities. For example, the Agnews Historic Park, on Sun Microsystems/Oracle's Santa Clara campus, provides a peaceful open space that also houses four historic buildings, preserved through a historic easement (Figure 4.8-1). The park is open to the public and provides restrooms, picnic areas, benches, beautiful trees and grass areas. Use of these parks is primarily passive; however, they provide an open, landscaped setting for historic resources in the City. Ulistac Natural Area, 40 acres of open space located along the Guadalupe River on Lick Mill Boulevard, between Tasman Drive and Montague Expressway, showcases seven distinct natural California and wildlife habitats. Only a few parks are classified as public open space, making up a little more than six percent of the City's total park acreage.

Recreation Facilities

The City has an array of recreation facilities, including sports fields, Santa Clara Golf & Tennis Club, a skate park, swimming pools/centers, a senior center and a youth center (Figure 4.8-1). Many of these facilities are located within larger park sites, creating a variety of options at a

single location. Recreational facilities account for almost a quarter of the City's total park acreage.

Regional Trails, Open Space, and Facilities

In addition to the City parks and recreation facilities, Santa Clara County operates a system of regional parks and trails that are open to local residents. There are no County parks in the City of Santa Clara. The County, with City assistance, however, is nearing completion of the San Tomas Aquino/Saratoga Creek Trail, which runs through Santa Clara neighborhoods and connects to the Guadalupe River Trail that runs along the Guadalupe River to Guadalupe River Park. Guadalupe River Park is located just to the east of the City in San José and extends three miles from Hwy 101 to the south, culminating in over 150 acres of parkland near to the Santa Clara City limits.

The San Tomas Aquino/Saratoga Creek Trail and the Guadalupe River Trail connect with the regional Bay Trail, which links perimeter open space areas along San Francisco and San Pablo Bays. The San Tomas Aquino/Saratoga Creek Trail is comprised of approximately four miles of existing creek trail and bicycle lanes. Extension of this trail south of El Camino Real could provide potential connections to Central Park and future bicycle routes in the City.

Located on the Bay, just to the north of Santa Clara (and connected to Guadalupe River Park through bicycle and pedestrian trails), the San Francisco Bay National Wildlife Refuge provides 30,000 acres of a habitat and conservation area for wildlife, migratory birds, and threatened and endangered species. Within Santa Clara, the 40-acre Ulistac Natural Area, located in Santa Clara along Lick Mill Boulevard south of Tasman Drive, is home to several natural Bay Area habitats.

Opportunities for additional regional open space within the City are limited as most of the City is built-out. Enhancement of existing non-park open space, such as the Hetch-Hetchy Aquaduct right-of-way, east of Lafayette Street, and the City's two retention basins, located near the Baylands, have some potential as open space resources.

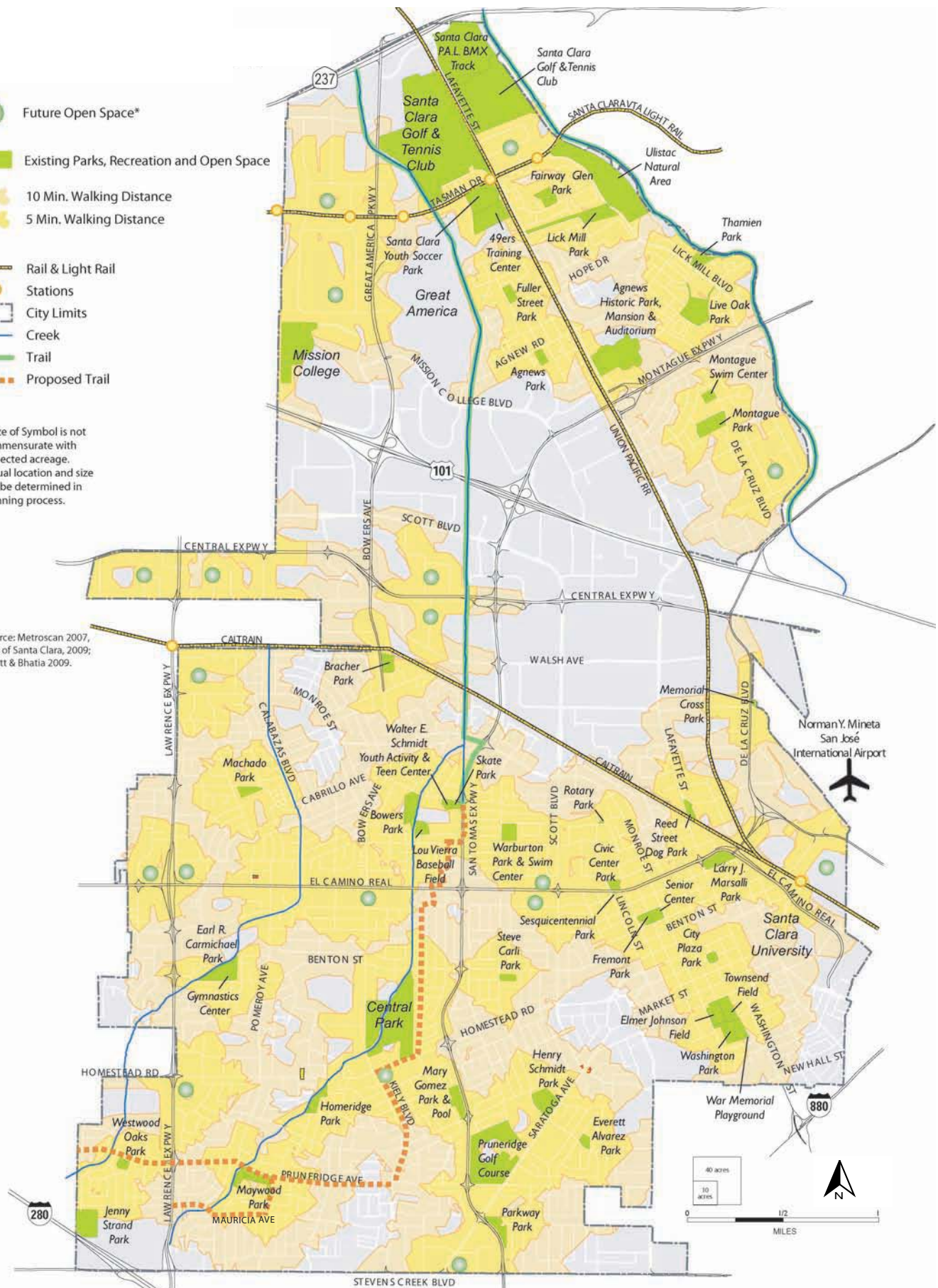
Private and SCUSD School Facilities

In addition to City parks and regional open space and trails, there are several private and Santa Clara Unified School District (SCUSD) facilities that serve the community. The privately owned Pruneridge Golf Course offers sports recreation opportunities in the community. Sports fields used by the City in cooperation with the School District include: Townsend Field, Wilson Adult Education Fields, Cabrillo Middle School Fields, Lawrence Curtis School Field, Pomeroy School Field, and Washington Ball park, as shown on Figure 4.8-1. The City also uses by agreement three softball fields on the Mission College Campus.

-  Future Open Space*
-  Existing Parks, Recreation and Open Space
-  10 Min. Walking Distance
-  5 Min. Walking Distance
-  Rail & Light Rail
-  Stations
-  City Limits
-  Creek
-  Trail
-  Proposed Trail

* Size of Symbol is not commensurate with projected acreage. Actual location and size will be determined in planning process.

Source: Metrosan 2007, City of Santa Clara, 2009; Dyett & Bhatia 2009.



PARKS, RECREATION, AND OPEN SPACE AND PEDESTRIAN ACCESSIBILITY

FIGURE 4.8-1

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4.8.2 Regulatory Environment

4.8.2.1 *Federal*

There are no federal regulations associated with parks, open space and recreation that apply to this project.

4.8.2.2 *State*

State Public Park Preservation Act

The primary instrument for protecting and preserving parkland is the State Public Park Preservation Act. Under the Public Resources Code, no city, city and county, county, public district, or agency of the State, shall acquire (by purchase, exchange, condemnation, or otherwise) any property which is in use as a public park at the time of the acquisition, for the purpose of utilizing the property for any non-park purpose, unless the acquiring entity pays or transfers to the legislative body of the entity operating the park sufficient compensation or land, or both, to enable the operating entity to replace the park land and associated facilities. "Public park" includes only a park operated by a public agency.

Quimby Act

California Government Code Section 66477, referred to as the Quimby Act, a component of the Subdivision Map Act, permits local jurisdictions to require the dedication of land and/or payment of in-lieu fees for park and recreational purposes as a condition of approval of a tentative map or parcel map. The required dedication and/or fees are based upon the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreation facilities or the development of public school grounds.

Government Code 65560-70

According to Government Code Sections 65560-65570, the preservation of open space land is necessary for numerous reasons, including the enjoyment of scenic beauty, recreation, and natural resources. Cities, including charter cities, counties, and the State at the earliest possible date should make definite plans for the preservation of valuable open space land and to take positive action to carry out such plans by the adoption and strict administration of laws, ordinances, rules and regulations. These statutes have broader application in rural parts of California with significant forest lands, rangelands, and agricultural lands. In a built-out City like Santa Clara, open space policies apply primarily to recreational areas and open space necessary for public safety.

Through its policies, the City discourages the premature and unnecessary conversion of open space land to urban uses. No building permit may be issued, no subdivision map approved, and no open space zoning ordinance adopted, if the proposed construction, subdivision or ordinance would be inconsistent with a local open space plan or policy (65567).

4.8.2.3 Local

City of Santa Clara General Plan 2000 – 2010

The existing City of San Santa Clara General Plan (2002) was adopted as a Statement of policy for the physical development of the City of Santa Clara. In relation to open space and recreation, the current General Plan has policies and programs in place, including:

- Continue to develop and encourage educational, cultural and recreational opportunities for residents as demand and financial resources warrant.
- Continue to maintain precise plans for City functions such as Parks and Recreation.
- Help to maintain the recreation areas of closed school sites for continued public use.
- Provide a well balanced municipal recreation program that serves all segments of the population.
- Maintain accessible park facilities within residential areas.
- Require housing developers to provide park and recreation facilities where existing facilities are not adequate. Develop standards and criteria for the amount, type and location of public park and recreation facilities to adequately serve the City's residents.

Santa Clara City Code

The City's Code includes regulations associated with park use and recreation facilities. Park use regulations include a requirement of a permit for organized activities that include groups of 50 or more people for longer than 30 minutes (Section 9.35.010). Permitted uses for commercial recreational zoning districts must be located, constructed, and operated so they are not offensive or objectionable because of dust, gas, smoke, noise, fumes, odors, vibrations, glare, or other public nuisances (Section 18.44.030). The City Code provides public, quasi-public and public park facilities as specific land use developments. Section 18.52.030 specifies the permitted land uses for these categories to include: (1) landscaped public utility facilities without a substantial structure where activity would be limited to occasional maintenance and servicing; (2) public parks without recreational facilities where there will be no evening activity or concentration of people; and (3) additions to existing public or quasi-public facilities not exceeding 15 percent of the existing development within a single calendar year and not substantially changing the nature of the operation.

The City also observes California Health and Safety Code Section 104495, which restricts smoking at public playgrounds, which includes any park or recreational area specifically designed to be used by children that has play equipment installed, or any similar facility located on public or private school grounds, or on city, county, or State park grounds.

4.8.3 Thresholds of Significance

For the purposes of this EIR, an impact is considered significant if the project would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

4.8.4 Impacts and Mitigation

Future development and redevelopment for the planned development areas within Santa Clara could adversely affect existing park, open space, and recreation resources. These conditions and relevant proposed General Plan policies are described below.

4.8.4.1 Existing Recreation Facilities

An increase in population resulting from implementation of the proposed Draft 2010-2035 General Plan may place a higher demand on area parks, open space or recreation facilities. Table 4.8-2 provides a breakdown of parks, open space and recreation facilities that are planned with proposed (approved, not constructed, and pending) development as of February 2009. These parks will most likely be constructed prior to any new development under the proposed Draft 2010-2035 General Plan, and as such may experience an increase in use associated with the increase in population resulting from implementation of the General Plan.

An additional 32,400 people are anticipated with the buildout of the proposed Draft 2010-2035 General Plan. The proposed Draft 2010-2035 General Plan includes policies to ensure that adequate parks and recreation facilities are provided to accommodate the increase in new residents, as further described in Section 4.8.4.2 below, thus decreasing the demand on existing parks, open space and recreation facilities in the City. The proposed Draft 2010-2035 General Plan would not include converting any public park to a non-park use, nor is it anticipating that the school play fields would no longer be available for use. Physical deterioration of existing park and recreation facilities will be reduced and managed consistent with City adopted regulations and policies, in combination with State regulations.

TABLE 4.8-2 NEW PARKS AND RECREATION FACILITIES APPROVED NOT CONSTRUCTED AND PENDING DEVELOPMENT AS OF FEBRUARY 2009

Pipeline Parks	Acres
<u>Mini-Parks</u>	
90 N Winchester Blvd (BAREC)	1.0
Subtotal	1.0
<u>Neighborhood Parks</u>	
900 Kieley Blvd (former Kaiser Hospital site)	2.3
Subtotal	2.3
New Parks Total	3.3
Source: City of Santa Clara Planning Department, October 2009.	

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated parks, open space and recreation policies that address deterioration of existing facilities. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for deterioration of existing parks, open space and recreation facilities within the City are identified below.

Parks, Open Space, and Recreation Policies	
5.9.1-P2	Develop new parks to serve the needs of the surrounding community.
5.9.1-P8.	Encourage the extension of the San Tomas Aquino Creek Trail with new development, where feasible. If it is not physically or environmentally feasible to extend the trail along the creek, utilize adjacent or near-by City right of way to accommodate an extension
5.9.1-P11	Encourage the shared use of open space resources, such as school grounds, for neighborhood recreation to maximize public accessibility.

5.9.1-P12	Promote the preservation of open space and recreational areas on existing and closed school sites.
5.9.1-P15	Provide opportunities for private maintenance of publicly accessible open space and trails.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible impacts include:

- State Public Park Preservation Act
- Quimby Act
- Santa Clara City Code Chapter 18.44.030 and Chapter 18.52.030

Impact 4.8-1: Increase in the population associated with new development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would increase the demand on existing parks, open space and recreation facilities. The proposed policies and existing regulations and programs are designed to ensure that increased demand associated with an increase in population would not significantly accelerate the deterioration of existing facilities. **(Less Than Significant Impact)**

4.8.4.2 Future Recreation Facilities

As new development occurs, parks will increasingly become the primary form of open space within the City. In addition to providing adequate land, parks need to be appropriately sized to fulfill specific community purposes. Table 4.8-3 describes these park size standards. Maintaining these standards will ensure that current and new residents will continue to enjoy these facilities throughout the City.

TABLE 4.8-3. PARK SIZE STANDARDS FOR NEW FACILITIES

	Mini	Neighborhood	Community
Locations	Appropriate in all areas, including residential and commercial, especially in high-intensity areas because of high demand.	Medium- and high-density residential areas serving individual neighborhoods. Typically contain both passive and active uses, with one or more sports facilities.	Medium- and high-density residential areas serving not just surrounding neighborhoods, but the City as a whole; contain more specialized recreation/sports facilities.
Size	Less than 1 acre	1 to 15 acres	Over 15 acres

Source: City of Santa Clara Draft General Plan 2010-2035. March 2010.

Figure 4.8-1 illustrates potential future locations for new parkland. In accordance with maintaining 2.4 acres of parkland per 1,000 residents, the City anticipates approximately 78 acres of new parkland to serve the 32,400 people anticipated with the buildout of the proposed Draft 2010-2035 General Plan. In addition, increasing the standard to 3.0 acres of parkland per 1,000 residents will be explored in the context of the Parks and Recreation Needs Assessment (Parks Master Plan), which would result in approximately 97 acres of new parkland. Strategies to meet this higher standard could include increasing the building intensity (i.e., taller structures) on planned residential sites, which would reduce the overall building footprint and free up more land for parks. The City could also devote more land for residential development overall, with the extra land used for the increased parkland. This latter strategy would reduce the supply of

land for non-residential uses, meaning less land available for job growth or retail tax generating commercial uses.

With the Future Focus Areas concentrated north of the Caltrain corridor, much of the new parkland is anticipated in this area. Figure 4.8-1 also identifies the general area north of the Caltrain corridor as the preferred location for a new Community Park and recreation facilities of at least 20 acres to serve the demand generated by future residential and employment center development. Finally, several mini-parks are anticipated along the El Camino Real corridor to meet the demand generated by development there.

All areas proposed for new parkland are located within a liquefaction zone. In addition, there are areas near creeks, such as along the Guadalupe River, where lateral spreading could occur. The Seismic Hazards Mapping Act and the City Code will require future projects within the liquefaction hazard area to evaluate site-specific liquefaction and ground failure hazards and mitigate those hazards to an acceptable level. Impacts associated with liquefaction and lateral spreading are further discussed in Section 4.5 *Geology and Soils*.

Parkland proposed within the El Camino Focus Area and the Tasman East Future Focus Area would be located within a Special Flood Hazard Area (SFHA). Development is allowed within this floodplain area as long as it complies with local flood management ordinances. The City has adopted the Flood Damage Prevention Code, 1987 ed., to address requirements for flood protection. Impacts associated with flooding are further discussed in Section 4.4 *Hydrology and Water Quality*.

Parkland proposed within the Central Expressway Future Focus Area could be placed near localized sources of toxic air contaminant (TAC) emissions (e.g. near Caltrain or Union Pacific Railroad), which could expose sensitive populations to Diesel Particulate Matter (DPM), as further described in Section 4.10 *Air Quality*. Proposed projects that would emit TACs would require review under the BAAQMD rules and regulations or CEQA review. The BAAQMD recommends that buffers to avoid the exposure of sensitive receptors to TAC sources be reflected in local plan policies (e.g. General Plans), land use maps, and implementing ordinances. Impacts associated with TAC exposure are further discussed in Section 4.10 *Air Quality*.

Parkland proposed within the Central Expressway Future Focus Area could be placed in an area where known vibration sources exist or are currently planned, primarily along the existing active railroad corridors and the Valley Transit Authority (VTA) light rail. Policies in the proposed Draft 2010-2035 General Plan provide that the City will encourage transit agencies to develop and apply technologies to reduce vibration impacts from railroads and the light rail. The proposed Draft 2010-2035 General Plan also includes vibration standards to ensure compatible developments along these corridors with respect to potential vibration levels generated by railroad trains, light rail, and the future High Speed Rail system. Impacts associated with vibration sources are further discussed in Section 4.14 *Noise*.

Ideally, parks should be located within a ten-minute walking distance from residential areas and be provided near employment centers. Additionally, while parks should be generally spread evenly throughout the City, in order to ensure equitable distribution, parks may need to be closer together in areas with higher-intensity and higher-density development to better serve the

demand. Future park and recreation facilities will be managed consistent with City adopted regulations and policies, in combination with State regulations.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated parks, open space and recreation policies that address additional facilities. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for additional parks, open space and recreation facilities within the City are identified below.

Prerequisite Policies	
5.1.1-P1	Prior to the implementation of Phase II and of Phase III of the General Plan, evaluate appropriate measures to maintain a parkland ratio of 2.4 acres per 1,000 residents.
5.1.1-P8	Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, complete a comprehensive plan for each area that specifies Land Uses with the location of parks.
5.1.1-P21	Prior to 2025, identify the location for new parkland and/or recreational facilities to serve employment centers and pursue funding to develop these facilities by 2035.
5.1.1-P24	Prior to 2025, complete a Parks and Open Space Needs Assessment (Parks Master Plan), or similar planning effort, to implement General Plan park and recreation policies, including potential adjustments to the parks per population ration from 2.4 to 3.0 as well as identification of potential funding opportunities for new parkland and/or recreational facilities and an assessment of potential parkland dedication fees under the Quimby Act.
Parks, Open Space, and Recreation Policies	
5.9.1-P1	Develop additional parkland in the City so that it is integrated into neighborhoods and meets the standards for size, amenities and location to serve residents and employees.
Mixed Use land Use Policies	
5.3.4-P15	Maximize opportunities to connect streets, bicycle facilities and pedestrian pathways to improve accessibility between mixed use development and surrounding neighborhoods, parks, open spaces, transit and public amenities. Provide clear signage, high visibility, adequate lighting and special paving to enhance pedestrian and bicycle facilities.
Industrial Land Use Policies	
5.3.5-P3	Encourage industrial development to participate in the identification and funding of 20 acres for park and recreational facilities to serve employment centers north of the Caltrain railroad tracks.
El Camino Real Focus Area Policies	
5.4.1-P1	Require that the mix of uses is consistent with the Regional Mixed Use land use classification and that development is pedestrian-oriented, with enhanced streetscapes, publicly accessible open space and plazas, and connections to surrounding neighborhoods.
Santa Clara Station Focus Area Policies	
5.4.3-P3	Provide pedestrian-oriented ground floor uses and a network of parks and public spaces to serve both residential and non-residential development.
5.4.3-P4	Encourage the development of centrally located public open space of approximately 1.5 acres to serve Santa Clara Station Focus Area residents and employees.
5.4.3-P5	Provide approximately of 7.0 acres of publicly accessible open space within the area designated for residential and/or commercial uses.
Stevens Creek Boulevard Focus Area Policies	
5.4.4-P8	Provide private and common open space with all new residential development.
Future Focus Area Policies	
5.4.5-P6	Encourage new comprehensive plans for Future Focus Areas to provide a full complement of uses, including neighborhood-oriented retail and commercial activities, open space, and public facilities.
5.4.5-P8	Require development of public amenities, including parks and open space, in the first phase of development for all Future Focus Areas.
Discretionary Use Policies	
5.5.1-P11	Allow a new public/quasi public and parks/open space uses under any General Plan Land Use

	classification, except in areas designated as Light Industrial or Heavy Industrial, provided that the use is compatible with planned uses on neighboring properties, consistent with other applicable General Plan policies, has primary access from a Collector or larger roadway and is on a parcel of less than one-half acre in areas designated for High or Low Intensity Office/Research and Development.
Residential Land Use Policies	
5.3.2-P4	Encourage private and common open space as part of all new residential development, including clustering of units to maximize open space opportunities where appropriate.
Parks, Open Space, and Recreation Policies	
5.9.1-P20	Promote the continuation of a parks per population ratio of 2.4 acres per 1,000 residents and explore the potential to increase the ratio to 3.0, based on the Parks and Recreation Needs Assessment (Parks Master Plan), referenced in Plan Prerequisite 5.1.1-P24.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible impacts include:

- Quimby Act
- Santa Clara City Code Chapter 18.44.030 and Chapter 18.52.030

Impact 4.8-1: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would require additional parkland and recreation facilities in the City. The proposed policies and existing regulations and programs are designed to ensure that future development of parkland within the City would not have an adverse physical effect on the existing environment. **(Less Than Significant Impact)**

4.8.5 Open Space, Parks, Trails, and Recreation Mitigation and Avoidance Measures for General Plan Impacts

No mitigation is required.

4.8.6 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant parks, recreation facility and open space impacts and no mitigation measures are required.

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4.9 BIOLOGICAL RESOURCES

This section describes the City's biological setting and analyzes the impacts of the proposed Draft 2010-2035 General Plan related to biological resources.

4.9.1 Methodology and Assumptions

Impacts related to biological resources were evaluated qualitatively, based on available information. Impact analysis relied on published biological resources information; no new field studies or other research were conducted for the preparation of this EIR.

4.9.2 Introduction and Regulatory Framework

As it relates to land use decisions, "biological resources" generally include plant and animal species and the habitats that support such species. Due to the importance of California's native ecological systems from a biological, heritage, and economic standpoint, impacts on such resources - especially those that are rare or those with high ecological values - are considered an adverse environmental impact under CEQA.

Individual plant and animal species listed as rare, threatened or endangered under State and federal Endangered Species Acts, and the natural communities or habitats that support them, are of particular concern. Other sensitive, natural communities (such as wetlands, riparian woodlands, and oak woodland) that are critical to wildlife or ecosystem function are also key biological resources. In urban areas, planted and native trees that comprise the "urban forest" also provide a range of values. From a biological perspective, urban trees provide habitat for urban-adapted wildlife.

The avoidance and mitigation of significant impacts to biological resources under CEQA is consistent with - and complementary to - various federal, State, and local laws/regulations that are designed to protect such resources. These regulations often mandate that project sponsors obtain permits prior to the commencement of development activities, with measures to avoid and/or mitigate impacts required as permit conditions. The laws and regulations pertaining to the City of Santa Clara 2010-2035 General Plan Update are summarized below.

4.9.2.1 Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects listed wildlife species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury to a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA if they occur on federal lands or if the Project requires a federal action, such as a Clean Water Act Section 404 fill permit from the US Army Corps of Engineers (USACE).

4.9.2.2 California Endangered Species Act

The California Endangered Species Act (CESA, Fish and Game Code of California, Chapter 1.5, Sections 2050-2115.5) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the California Department of Fish and Game (CDFG) has jurisdiction over State-listed species. The CDFG regulates activities that may result in "take" of species listed under the Act (*i.e.*, "hunt, pursue,

catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the Fish and Game Code.

The CDFG, however, has interpreted “take” to include the “killing of a member of a species which is the proximate result of habitat modification.” The California Native Plant Protection Act (CNPPA) preserves, protects, and enhances endangered and rare plants in California. It specifically prohibits the importation, take, possession, or sale of any native plant designated by the California Fish and Game Commission as rare or endangered, except under specific circumstances identified in the Act.

4.9.2.3 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the US Fish and Wildlife Service (USFWS). Migratory birds protected under this law include all native birds and certain game birds (e.g., turkeys and pheasants; Federal Register 70(2):372-377). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the Department of the Interior in its 15 April 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

4.9.2.4 Clean Water Act Sections 404 and 401

Areas meeting the regulatory definition of “Waters of the U.S.” (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the 1972 Clean Water Act and Section 10 of the 1899 Rivers and Harbors Act. Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must be in compliance with permit requirements of the USACE. No USACE permit will be effective in the absence of State water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the State agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

4.9.2.5 Porter-Cologne Water Quality Control Act

The RWQCB is responsible for protecting surface, ground, and coastal waters within its boundaries, pursuant to the Porter-Cologne Water Quality Control Act of the California Water Code. Many wetlands fall into RWQCB jurisdiction, including some wetlands that are not subject to USACE jurisdiction. RWQCB jurisdiction of other waters, such as streams and lakes, extends to all areas below the ordinary high water mark.

4.9.2.6 California Environmental Quality Act

CEQA and the CEQA Guidelines provide guidance in evaluating impacts of projects to biological resources and determining which impacts will be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Under CEQA Guidelines section 15065, a project's effects on biotic resources are deemed significant where the project would:

- “substantially reduce the habitat of a fish or wildlife species”
- “cause a fish or wildlife population to drop below self-sustaining levels”
- “threaten to eliminate a plant or animal community”
- “reduce the number or restrict the range of a rare or endangered plant or animal”

Section 15380(b) of the CEQA Guidelines provides that a species not listed on the federal or State lists of protected species may be considered rare if the species can be shown to meet certain specified criteria.

The CDFG has produced three lists (amphibians and reptiles, birds, and mammals) of “species of special concern” that serve as “watch lists”. Species on these lists either are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA § 15380(b).

4.9.2.7 California Native Plant Society – Plant Species of Concern

The California Native Plant Society (CNPS), a non-governmental conservation organization, has developed lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

List 1A	Plants considered extinct.
List 1B	Plants rare, threatened, or endangered in California and elsewhere.
List 2	Plants rare, threatened, or endangered in California but more common elsewhere.
List 3	Plants about which more information is needed - review list.
List 4	Plants of limited distribution-watch list.

These CNPS listings are further described by the following threat code extensions:

- 1—seriously endangered in California;
- 2—fairly endangered in California;
- 3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing on List 1B or List 2 are, in general, considered to meet CEQA’s Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts to plants that are listed by the CNPS on List 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those on List 1B or List, impacts to them are less frequently considered significant.

4.9.2.8 California Fish and Game Code

The California Fish and Game Code includes regulations governing the use of, or impacts to, many of the State’s fish, wildlife, and sensitive habitats. The CDFG exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of §§1601 - 1603 of the Fish and Game Code. The Fish and Game Code requires a Streambed Alteration Agreement for the

fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation.

4.9.2.9 Santa Clara Valley Water District

The SCVWD requires permits for all well construction and destruction work, most exploratory boring for groundwater exploration, and projects occurring on any District property or easement. Permits are required under the Water Resources Protection Ordinance (06-1) and the District Well Ordinance (90-1).

4.9.2.10 City of Santa Clara General Plan 2000-2010

The existing City of San Santa Clara General Plan was adopted in 2002 as a Statement of policy for the physical development of the City of Santa Clara. In relation to biological resources, the current General Plan has policies and programs in place to protect biological resources, including:

- Restrict development in areas that contain rare or endangered species of plants or animals or in special status species habitat areas unless suitable mitigation can be provided.
- Preclude construction in riparian corridors of structures or improvements, except certain trails, flood control projects, and culverts, fences, pipelines and bridges, and evaluate and mitigate where feasible, biological effects of any such construction.
- Establish a creekside setback to protect riparian vegetation, subject to not precluding reasonable development of a parcel.
- Cooperate with the Santa Clara Valley Water District and other permitting agencies to limit development or flood control measures within riparian corridors to activities necessary for improvement or maintenance of stream flow, or creekside public trails, and to evaluate, for their effects on riparian resources, all actions that could potentially alter stream flow.

4.9.2.11 Santa Clara City Code – Trees and Shrubs

The Santa Clara City Code, Sections 12.35.020 and 12.35.030 serve to protect all trees planted or growing in the streets or public places of the City from removal without a permit from the City and prohibits the attaching of anything to a tree in the City, unless it is necessary and proper to the growth and care of the tree. The ordinance protects both native and non-native tree species.¹⁰¹

4.9.2.12 Santa Clara Valley Water Resources Protection Collaborative Guidelines.

The Santa Clara Valley Water Resources Protection Collaborative (Water Collaborative) was established in 2002, bringing together the County of Santa Clara, the SCVWD, 15 cities (including the City of Santa Clara), and various other governmental and non-governmental entities to promote stream protection, and to develop a consensus-based, more unified approach to land use and development near streams.

¹⁰¹ Santa Clara City Code, accessed April 2010. Available at <http://www.codepublishing.com/ca/santaclara/frameless/index.pl?path=../html/SantaClara12/SantaClara1235.html#12.35>.

The Water Collaborative concluded the most significant of its efforts in 2006 with the adoption of the [*"GUIDELINES & STANDARDS FOR LAND USE NEAR STREAMS: A Manual of Tools, Standards, and Procedures to Protect Streams and Streamside Resource in Santa Clara County."*](#) The City Council adopted Resolution 07-7391 on February 20, 2007 adopting the Water Resources Protection Collaborative Guidelines Manual "Guidelines and Standards for Lands Near Streams." This resolution directed the City Manager to immediately implement use of these guidelines and standards in the City's entitlement and permitting functions, where applicable.

Most recently, the projects at 900 Kiely Boulevard (Kaiser), 2800 San Tomas Expressway (NVIDIA), 2350 Mission College Boulevard and 3300 Olcott St. were required to meet the standards and were all reviewed by the SCVWD.¹⁰²

4.9.2.13 Santa Clara Valley Habitat Conservation Plan (Draft)

The City is adjacent to the area that will be covered by the Santa Clara Valley Habitat Conservation Plan (Valley HCP), which is a conservation program to promote the recovery of endangered species while accommodating planned development, infrastructure and maintenance activities. The Valley HCP is being developed through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, the SCVWD, and the Valley Transportation Authority (collectively termed the 'Local Partners'), the U.S. Fish and Wildlife Service, the CDFG, and the National Marine Fisheries Service. The Habitat Plan seeks to protect and enhance ecological diversity and function within more than 500,000 acres of southern Santa Clara County. The final Valley HCP, whose adoption is anticipated in 2011, will provide a framework for the Local Partners and landowners to complete projects while protecting at-risk species and their essential habitats, some of which only occur in Santa Clara County.

The City is not participating in the Habitat Plan, but as an adjacent jurisdiction, may be able to benefit from its findings, as it will include a conservation program designed to avoid and minimize impacts of development activities where possible, and mitigation measures for any impacts that cannot be avoided. These could provide useful guidance for future City conservation and mitigation efforts.

4.9.2.14 Three Creeks Habitat Conservation Plan (Draft)

As discussed in Section 4.4, *Hydrology and Water Quality*, three major waterways flow through the City (refer to Figure 4.4-1 in Section 4.4, *Hydrology and Water Quality*). Calabazas Creek runs along the west boundary of the City and the Guadalupe River defines its northeast boundary. San Tomás Aquino Creek and its largest tributary, Saratoga Creek, also pass through the City.

The Water District is developing the Three Creeks HCP to protect and enhance habitats for a suite of aquatic species and provide for the conservation of species impacted by its on-going water supply operations in the northern Santa Clara Valley. The Three Creeks HCP addresses water supply operations and facilities in the Coyote Creek, Guadalupe River, and Stevens Creek watersheds; this HCP incorporates a stream habitat restoration program called the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE).

¹⁰² Julie Moloney, Associate Planner. City of Santa Clara. Personal Communication. April 14, 2010.

The Three Creeks HCP remains in draft form, and currently proposes no substantive relationship to the portions of the creeks that flow through Santa Clara. Proposed Three Creeks HCP improvements to Calabazas Creek and San Thomas Aquino Creek would occur higher in the watershed, miles from the City of Santa Clara. In the Guadalupe River, the focus is on removing fish passage barriers higher in the watershed, and not affect the reach of the Guadalupe River that forms the City's northeastern boundary.

4.9.3 Existing Conditions

4.9.3.1 Vegetative Communities

The City is located at the south end of San Francisco Bay, where temperate climate and diverse landscape combine to support one of the most biologically diverse regions in the world. However, there are few natural areas within Santa Clara; native habitats have largely been replaced with urban hardscape accompanied by ornamental landscaping. Landscaped areas can provide some habitat value to common native species, particularly birds and insects. Although some of these areas support native flora and fauna, habitats in the City are generally not representative of the unique environs found throughout the Bay Area. In summary, the biological resources in the City of Santa Clara are limited and constrained by the urbanized character of the planning area.

One important exception is the Ulistac Natural Area, a 40-acre open space parcel located along the Guadalupe River and owned and maintained by the City. Restoration at this site has focused on returning the site to a natural condition by planting native species and removing invasive non-native vegetation, and the Ulistac Natural Area now supports multiple natural communities, including grassland, oak savannah, oak woodland, sycamore woodland, riparian woodland, coastal scrub, and emergent wetlands. Because of its location adjacent to one of the South Bay's main riverine systems, this natural area provides a buffer against the impact of urbanization on the river system as well as offering important movement and foraging habitats for wildlife moving along the river corridor. It supports many native species of songbirds, insects, amphibians, and small mammals. These species and the overall regeneration of the vegetation on the site following restoration have been the focus of research by Santa Clara University's Environmental Studies Institute¹⁰³.

4.9.3.2 Non-Native Annual Grassland

Non-native annual grassland is the most common "natural community" or undeveloped habitat type in Santa Clara. In urban areas, this habitat type is often called *ruderal*, or disturbed. This community is composed almost entirely of annual grasses and other herbaceous species. Plants typical of this community include several species of brome (*Bromus* spp.), wild oats (*Avena* spp.), filarees (*Erodium* spp.), schismus (*Schismus* spp.), fescues (*Vulpia* spp.), and a variety of native wildflowers such as California poppy (*Eschscholtzia californica*) and phacelia (*Phacelia* spp.), along with other non-native species.

Ruderal grassland areas can be found in freeway cloverleaves, along roadways, and in vacant, undeveloped urban lots. Although they do not support many native species, they can be a refuge for common species such as raccoon (*Procyon lotor*), dark-eyed junco (*Junco hyemalis*), lesser

¹⁰³ Dyett & Bhatia et al. 2008

goldfinch (*Carduelis psaltria*), and many others. Within the City, special-status species that may occur in ruderal areas include western burrowing owl (*Athene cunicularia*) and Congdon's tarplant (*Centromadia parryi* spp. *congdonii*). These species are discussed further in the *Special-Status Species* section below.

4.9.3.3 Riparian/Riverine

As identified in section 4.4, *Hydrology and Water Quality*, all of the creeks that flow through the City have been modified for flood control purposes. As a result, there is limited native riparian vegetation along the creek corridors, providing the City an opportunity to restore habitat in these areas. For the majority of their span, Calabazas, Saratoga, and San Tomás Aquino creeks are concrete-lined trapezoidal flood control channels with little native riparian vegetation, while the Guadalupe River is a large, mostly earthen channel, portions of which support some in-channel emergent vegetation and remnant riparian corridor.

4.9.3.4 Special Status Plant Species

Table 4.9-1 is a current list of plant species that have been recorded in or near the City of Santa Clara, based on a review of the California Native Plant Society (CNPS) and California Natural Diversity Database (CNDDB) sources performed for the General Plan update.

TABLE 4.9-1: SPECIAL-STATUS PLANT SPECIES RECORDED IN SAN JOSÉ WEST AND MILPITAS 7.5-MINUTE QUADRANGLES

Scientific and Common Name	Federal Status	State Status	CNPS Status	Habitat	Potential to Occur in General Plan Area
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk vetch	—	—	1B.2	Alkali playa, valley and foothill grassland	Very low; no alkali playa in the City.
<i>Atriplex suppressa</i> Brittescale	—	—	1B.2	Valley and foothill grasslands, usually in alkali scalds or playas	Very low; no alkali scalds in the City.
<i>Atriplex joaquiniana</i> San Joaquin spearscale	—	—	1B.2	Seasonal alkali wetlands or alkali sink scrub	Very low; no alkali wetlands or alkali sinks in the City.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	—	—	1B.2	Valley and foothill grasslands, sometimes found in ruderal grasslands in urban areas	Moderate to high; available habitat in ruderal grasslands throughout the City.
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	FE	—	1B.1	Cismontane woodland, coastal dunes	Very low; no coastal dunes in the City.
<i>Cordylanthus maritimus</i> ssp. <i>Palustris</i> Point Reyes bird's beak	—	—	1B.2	Coastal salt marsh	Very low; no coastal salt marsh in the City.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	—	—	1B.1	Alkali wetlands and vernal pools	Very low; no alkali wetland or vernal pools in the City.
<i>Hoita strobilina</i> Loma Prieta hoita	—	—	1B.1	Chaparral and cismontane habitat, sometimes in serpentine areas	Very low; no chaparral habitat in the City.

Scientific and Common Name	Federal Status	State Status	CNPS Status	Habitat	Potential to Occur in General Plan Area
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE	—	1B.1	Vernal pools, swales and low depressions in grasslands	Very low; no vernal pools in the City.
<i>Malacothamnus arcuatus</i> Arcuate bush-mallow	—	—	1B.2	Chaparral scrub	Very low; no chaparral scrub in the City.
<i>Malacothamnus hallii</i> Hall's bush-mallow	—	—	1B.2	Chaparral scrub	Very low; no chaparral scrub in the City.
<i>Navarretia prostrata</i> Prostrate vernal pool navarretia	—	—	1B.1	Alkali soils in grassland or vernal pools	Very low; no vernal pools in the City.
<i>Plagiobothrys glaber</i> Hairless popcorn flower	—	—	1A	Coastal salt marsh and alkali meadows	Very low; no coastal salt marsh or alkali meadows in the City.
<i>Suaeda californica</i> California seablite	FE	—	1B.1	Margins of coastal salt marsh	Very low; no coastal salt marsh in the City.
<i>Tropidocarpum capparideum</i> Caper-fruited tropidocarpum	—	—	1B.1	Alkali clay in valley and foothill grassland	Very low; no alkali clay habitats in the City.
Status Definitions:					
<u>U.S. Fish and Wildlife Service</u>					
FE: Species designated as endangered under the federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."					
<u>California Native Plant Society</u>					
1A Plants presumed extinct in California					
1B Plants Rare, Threatened, or Endangered in California and Elsewhere					
<u>CNPS Threat Ranking</u>					
0.1 Seriously threatened in California (high degree/immediacy of threat)					
0.2 Fairly threatened in California (moderate degree/immediacy of threat)					
Sources: CNDDB 2008, CNPS 2008, USFWS 2008					

Most of these species are unlikely to occur in the City because of the narrow range of habitats available in this largely developed area. However, the City's scattered ruderal grasslands offer suitable habitat for Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), and this species should be considered moderately to highly likely to occur where suitable habitat is present.

Congdon's Tarplant

Congdon's tarplant is an annual herb in the composite family (Asteraceae) that has a variable blooming period extending from June through November. It occurs in valley and foothill grasslands, particularly those with alkaline substrates, and in slumps or disturbed areas where water collects in lower elevation wetlands below approximately 760 feet. The subspecies tolerates disturbance and often occurs in disked fields with non-native, California annual grassland habitat with Harding grass (*Phalaris paradoxa*) and alkali mallow (*Malvella leprosa*).

Congdon's tarplant occurs in Alameda, Contra Costa, San Mateo, Monterey, San Luis Obispo, and Santa Clara counties, and it is presumed extirpated from its historical range in Solano and Santa Cruz counties (CNPS 2009). There are seven records of Congdon's tarplant listed in the CNDDB (2009) as occurring near the City of Santa Clara. One population is located in the

Warm Springs District of Fremont; another record is from Alviso located north of State Route 237 and east of North 1st Street in a field bounded by Grand Avenue, Wilson Way, Nortech Parkway, and Disk Drive. There is one historical reference from eastern San José observed in 1908, but the habitat in that location no longer exists. Within the City of Santa Clara, the species has recently been detected at Mission College in Santa Clara (West Valley – Mission Community College District 2009). The Congdon's tarplant is not a covered species under the draft Valley HCP.

4.9.3.5 Wildlife Communities

Special Status Wildlife Species

The following table is a current list of wildlife species that have been recorded in or near the City of Santa Clara, based on USFWS and CNDDDB sources. As summarized in the table, most are unlikely to be present because of the narrow range of natural habitats available in this largely developed area.

TABLE 4.9-2: SPECIAL-STATUS WILDLIFE SPECIES RECORDED IN THE SAN JOSÉ WEST AND MILPITAS 7.5-MINUTE QUADRANGLES

Scientific and Common Name	Federal Status	State Status	Habitat	Potential to Occur in General Plan Area
Invertebrates				
Euphydryas editha bayensis Bay checkerspot butterfly	FT	—	Native grasslands on outcrops of serpentine soil; California plantain and owl's clover are host plants	Very low; no serpentine grassland habitat in the City.
Tryonia imitator California brackishwater snail	—	—	Coastal lagoons, estuaries and salt marshes from Sonoma to San Diego county	Very low; no estuarine habitat in the City.
Branchinecta conservation Conservancy fairy shrimp	FE	—	Large, deep vernal pools in annual grasslands	Very low; no vernal pools in the City.
Lepidurus packardii Vernal pool tadpole shrimp	FE	—	Vernal pools and ephemeral stock ponds from Shasta to Merced County	Very low; no vernal pools in the City.
Reptiles and Amphibians				
Masticophis lateralis euryxanthus Alameda whipsnake	FT	ST	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	Very low; outside of species' range.
Rana aurora draytonii California red-legged frog	FT	SC	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation	Low; some low-quality habitat could occur in riverine areas, although modified nature of channels and lack of adjacent upland habitat makes species' presence unlikely.
Ambystoma californiense California tiger salamander	FT	SC	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or	Low; some low-quality habitat could occur in riverine areas, although modified nature of channels and lack of adjacent

Scientific and Common Name	Federal Status	State Status	Habitat	Potential to Occur in General Plan Area
			fallen logs for cover for adults and for summer dormancy	upland habitat makes species' presence unlikely.
<i>Actinemys marmorata</i> Western pond turtle	—	SC	Permanent or nearly permanent bodies of water in many habitat types	Moderate; modified stream systems limit available habitat for this species in the City.
Fish				
<i>Hypomesus transpacificus</i> Delta smelt	FT	ST	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand. Primarily in the Sacramento–San Joaquin Estuary	Very low; no estuarine habitat in the City.
<i>Oncorhynchus mykiss</i> Central California coast steelhead	FT	—	Russian River to Soquel Creek, Santa Cruz Co. Cold, clear water with clean gravel of appropriate size for spawning. Steelhead migrate to the ocean to feed and grow until sexually mature	Low – Calabazas Creek ¹ and San Tomas Aquino Creek ² ; Moderate – Guadalupe River ³ . See Steelhead Occurrence Details in Notes below.
<i>Oncorhynchus mykiss</i> Central Valley steelhead	FT	—	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C in Sacramento River and tributary Central Valley rivers	Very low; outside species' range.
<i>Oncorhynchus tshawytscha</i> Sacramento River winter-run Chinook salmon	FE	SE	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C in mainstem Sacramento River below Keswick Dam	Very low; outside species' range.
<i>Oncorhynchus tshawytscha</i> Central Valley spring-run Chinook salmon	FT	ST	Has the same general habitat requirements as winter-run Chinook salmon but only occurs in upper Sacramento and Feather River	Very low; outside species' range.
Birds				
<i>Melospiza melodia pusillula</i> Alameda song sparrow	—	SC	Brackish marshes associated with pickleweed along fringe of South San Francisco Bay	Very low; no brackish marsh habitat in the City.
<i>Falco peregrinus anatum</i> American peregrine falcon	FD	SE, FP	Near wetlands, lakes, rivers, or other water, on cliffs, banks, dunes, mounds and man-made structures	Moderate; nests in urban areas with tall buildings or elevated bridges. Nesting records in San José.
<i>Rallus longirostris obsoletus</i> California clapper rail	FE	SE, FP	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the	Very low; no tidal marsh habitat in the City.

Scientific and Common Name	Federal Status	State Status	Habitat	Potential to Occur in General Plan Area
			mud in sloughs	
<i>Accipiter cooperii</i> Cooper's hawk	—	—	Nests in a wide variety of habitat types, from riparian woodlands and digger pine-oak woodlands through mixed conifer forests	Moderate; known to nest along riparian corridors in urban areas.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	—	SC	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover. Found only in 9-counties surrounding San Francisco Bay	Moderate; habitat is available along Guadalupe River but it is unknown whether subspecies' range extends into the City.
<i>Agelaius tricolor</i> Tricolored blackbird	—	SC	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields	Low; limited habitat occurs along Guadalupe River, though breeding colonies typically do not occur in brackish areas and there are no recorded nesting occurrences within the City.
<i>Athene cunicularia</i> Western burrowing owl	—	SC	Open, dry annual or perennial grasslands, scrublands, characterized by low-growing vegetation	High; known occurrences in ruderal areas in the northern part of the study area and in nearby developed areas.
Western snowy plover	FT	SC	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	Very low; no coastal beaches or abandoned salt pans in the City.
<i>Elanus leucurus</i> White-tailed kite	—	FP	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Low, but species is known to nest along riparian corridors in urban areas.
Mammals				
<i>Antrozous pallidus</i> Pallid bat	—	SC	Grassland, shrublands, Woodlands and forests; dry Habitats	Low; there is some potential for all bat species to forage along the riverine areas in the City of Santa Clara. There is very limited roosting habitat within the City.
<i>Reithrodontomys raviventris</i> Salt-marsh harvest mouse	FE	SE,FP	Salt marshes with a dense plant cover of pickle-weed and fat hen; adjacent to an upland site	Very low; no tidal marsh habitat in the City.
<i>Sorex vagrans halicoetes</i> Salt-marsh wandering shrew	—	SC	Mid-elevation salt marsh habitats with dense growths of pickleweed	Very low; no tidal marsh habitat in the City.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FT	SE	Grassland and oak woodlands; principally occurs in the San Joaquin Valley and	Very low; outside species' range.

Scientific and Common Name	Federal Status	State Status	Habitat	Potential to Occur in General Plan Area
			adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	

Note: Steelhead Occurrence Details

According to Leidy et al. (2005) multiple barriers exist in the stream. Fish distribution surveys conducted in the mid-1980's found no steelhead in the creek (Leidy et al. 2005). Updated surveys of the creek have not been completed but habitat value for steelhead in the creek is low.

- 1 Fish survey efforts are summarized by Leidy et al. (2005), but generally concluded that steelhead use of San Thomas Aquino Creek is possible but unlikely. There is a permanent barrier at the confluence of San Thomas Aquino Creek and Saratoga Creek, preventing passage into the upper watershed. Based on informal surveys of the creek, it is believed not to support use by steelhead currently (J. Abel pers. comm. as cited in Leidy et al. 2005). This includes the reach of San Tomas Aquino Creek that passes through the City of Santa Clara.
- 2 The long history of steelhead occurrence in the Guadalupe Watershed is discussed by Leidy et al. (2005). Steelhead have been documented in the Guadalupe River system as recently as 2002 (Leidy et al. 2005). It is assumed that the reaches of the Guadalupe River that pass through the City have potential to support steelhead migration.

Status Definitions:

U.S. Fish and Wildlife Service

- FE: Species designated as endangered under the federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."
- FT: Species designated as threatened under the Federal Endangered Species Act. Threatened = "species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
- FD: Delisted under the federal Endangered Species Act.

California Department of Fish and Game

- SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."
- ST: Threatened = "a species that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act" (California Endangered Species Act).
- SC: Species of Special Concern.
- FP: Fully Protected by the State of California.

Sources: CNDDB 2008, USFWS 2008

Among the special status species covered in Table 4.9-2, two are of particular note for the Santa Clara General Plan due to their treatment in the adjacent draft Valley HCP.

Western Burrowing Owl

As identified in Table 4.9-2, the special status animal species with the highest potential to occur in the City is the Western Burrowing Owl (WBO). The City's ruderal grasslands, located on a limited number of vacant parcels primarily in the northern portion of the City, north of US 101, provide foraging and potential nesting habitat for the WBO. Santa Clara Valley WBO populations have declined substantially as the Valley floor has developed, and the WBO is a covered species under the draft Valley HCP.¹⁰⁴ Within the City of Santa Clara, the species has

¹⁰⁴ 2nd Admin Draft Valley HCP, available at <http://www.scv-habitatplan.org/www/default.aspx>.

recently been detected at Mission College in Santa Clara (West Valley – Mission Community College District 2009).

Bay Checkerspot Butterfly and Serpentine Grassland Communities

While the potential for Bay Checkerspot butterflies (BCB) to occur in Santa Clara is considered very low due to a lack of serpentine grassland habitat, and therefore future development in Santa Clara would not cause direct impacts to BCB, the draft Valley HCP is addressing the indirect effects of nitrogen deposition to serpentine grassland habitat and dependant species, including BCB. Nitrogen deposition is a regional issue. Serpentine land-covers in the draft Valley HCP area are particularly sensitive to deposition of airborne nitrogen compounds generated by vehicle emissions and other sources from throughout Santa Clara County and the greater Bay Area region. These nitrogen compounds enter ecosystems as nitrogen fertilizer. This increased soil fertility can favor non-native annual grasses over native plant species found in serpentine soils. NOx emissions associated with the City's electrical utility, Silicon Valley Power, are being mitigated on an ongoing basis through management of serpentine habitat on Coyote Ridge in San Jose.¹⁰⁵

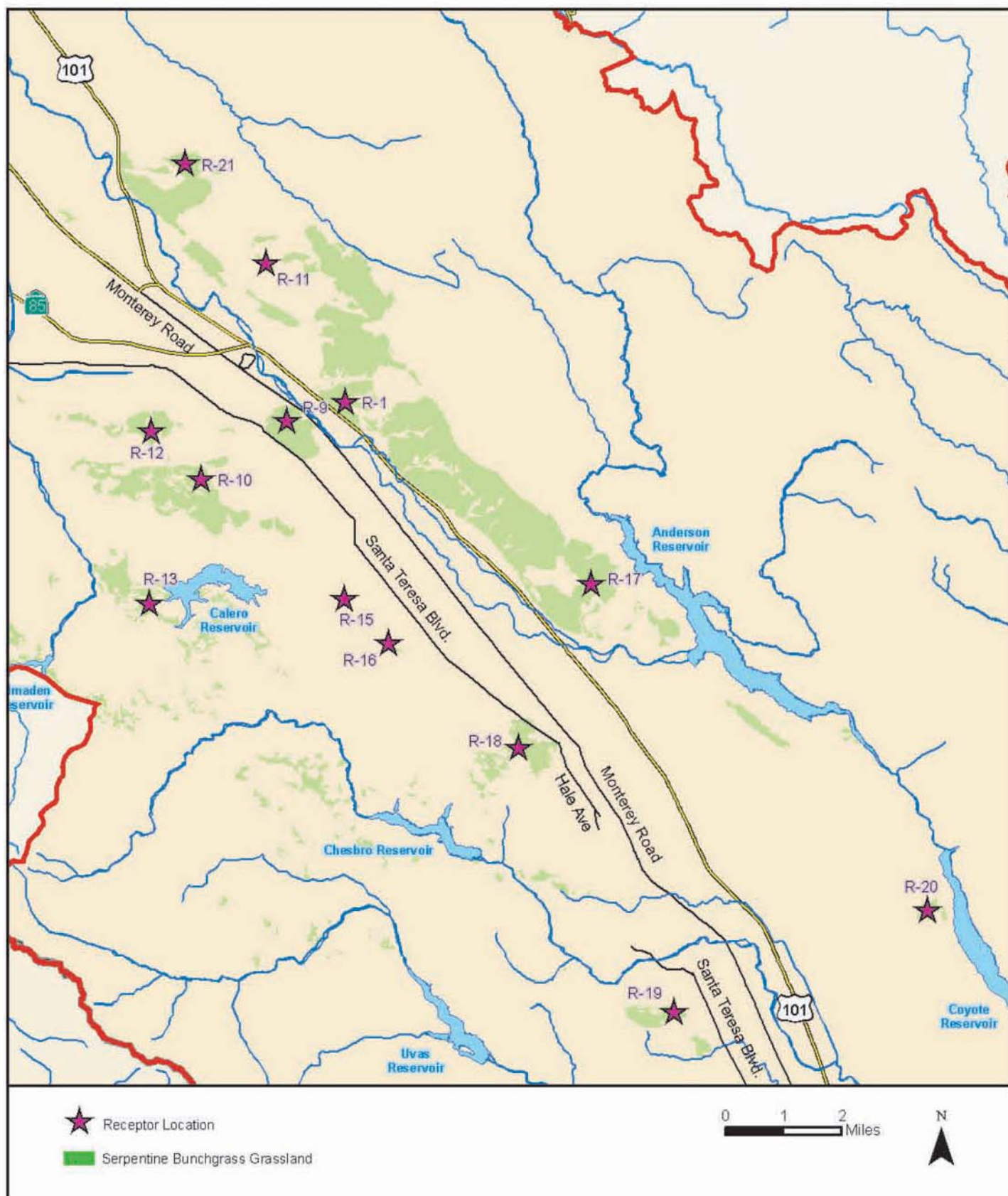
One native serpentine plant species, the dwarf plantain (*Plantago erecta*) is the host plant for the BCB, a key covered species in the draft Valley HCP (Figure 4.9-1). Additional native plants found in serpentine soils would be covered by the Habitat Plan (e.g., Metcalf Canyon jewelflower [*Streptanthus albidus* ssp. *albidus*], most beautiful jewelflower [*Streptanthus albidus* subsp. *peramoenus*], and fragrant fittillary [*Fritillaria liliacea*]).

Wildlife Movement Corridors

Despite their disturbed condition due to flood control improvements, the several streams and their associated riparian corridors provide the primary wildlife movement corridors in Santa Clara. The river corridors offer important movement and foraging habitats for wildlife and support many native species of songbirds, insects, amphibians, and small mammals.

¹⁰⁵ Stuart B. Weiss, James Quenelle. *Monitoring Report on Mitigation Lands for Donald Von Raesfeld Power Plant, Silicon Valley Power*. November 11, 2009.

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VALLEY HCP SERPENTINE GRASSLAND HABITAT

FIGURE 4.9-1

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4.9.4 Thresholds of Significance

For the purposes of this EIR, a biological resources impact is considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan; or
- Have the potential to degrade the quality of the environment to cause a fish or wildlife population to drop below self-sustaining levels, substantially reduce habitat areas, or threaten to eliminate or restrict a rare or endangered plant or animal community.

4.9.5 Impacts and Mitigation Measures

Future development under the proposed Draft 2010-2035 General Plan is anticipated to result in minimal direct impacts due to habitat loss since there are very few vacant, undeveloped parcels left in the City proposed for urban development that provide habitat value. The vast majority of new development anticipated under the proposed Draft 2010-2035 General Plan would occur on parcels already developed with an urban use. Most impacts to wildlife will be indirect impacts, whether through construction impacts or the operation of new urban uses, in proximity to wildlife habitat, such as the creek corridors that cut through the City.

4.9.5.1 *Foreseeable Impacts in Focus Areas*

There is very little undeveloped land within Santa Clara as a whole, and none within the following Focus Areas: Stevens Creek Boulevard, Downtown, De La Cruz Boulevard, Great America Parkway, Central Expressway, and Lawrence Expressway. The remaining Focus Areas (El Camino, Santa Clara Station Area, and Tasman East) have small, isolated vacant parcels that provide marginal habitat for wildlife due to their current undeveloped condition (Figure 4.9-2). Future development of these vacant parcels has the potential to impact wildlife species if those species are present in the future.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated biological policies that address impacts to species and their habitats. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for biologic impacts within the City are identified below.

Conservation Policies	
5.10.1.-P1	Require environmental review prior to approval of any development with the potential to degrade the habitat of any threatened or endangered species.
5.10.1-P2	Work with Santa Clara Valley Water District and require that new development follow the "Guidelines and Standards for Lands Near Streams" to protect streams and riparian habitats.
5.10.1-P3	Require preservation of all City-designated heritage trees listed in the Heritage Tree Appendix 8.10 of the General Plan.
5.10.1-P4	Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference measured from 48 inches above-grade on private and public property as well as in the public right-of-way.
5.10.1-P11	Require use of native plants and wildlife compatible non-native plants, when feasible, for landscaping of City property.
5.10.1-P12	Encourage property owners and landscapers to use native plants and wildlife-compatible nonnative plants, when feasible.

4.9.5.2 New development under the proposed General Plan would adversely affect special-status species (Significant Impact)

Given the built-up nature of the City, most development would occur in areas surrounded by the existing urban landscape, precluding impacts to many special-status species. However, there are several special-status species with a moderate to high potential to occur in the City, in its current built-up status (see Tables 4.9-1 and 4.9.2 above). The species with the highest potential to occur in the City include Congdon's tarplant and western burrowing owl.

Congdon's Tarplant

Over the course of the General Plan's 25 year horizon, the tarplant could become established at any time on a vacant parcel containing ruderal grasslands. Therefore, future development of vacant parcels containing ruderal grasslands has the potential to impact the Congdon's tarplant, should the tarplant be present at the time of development. **(Significant Impact)**

Western Borrowing Owl

Although there are no known Western Burrowing Owl (WBO) nesting sites in the City that would be affected by future development under the General Plan, WBO have been found throughout the general area, i.e. Mission College and the Mineta International Airport. Over the course of the General Plan's 25 year implementation horizon, the WBO could become established (i.e. forage and/or breed) at any time on a vacant parcel containing ruderal grasslands. Development of vacant parcels could result in impacts to individual burrowing owls

if owls moved onto the site prior to project construction. If owls are using active nests when construction activity commences, grading of the site could result in destruction of nests and individual owls. (**Significant Impact**)

4.9.5.3 New development under the proposed General Plan could adversely affect riparian habitat and/or other sensitive natural communities in the City. (Less than Significant Impact)

Riparian habitat is the principal sensitive natural community present in the City. The City contains four major waterways; Calabazas Creek, Guadalupe River, San Tomás Aquino Creek, and Saratoga Creek. All of these creeks have been modified for flood control purposes and, as a result, much of the riparian native vegetation has been lost. However, some sections of the Guadalupe River and San Tomas Aquino Creek in particular support in-channel emergent vegetation and remnant riparian corridor. Thus, depending on where development is located, it could impact riparian habitat. The greatest potential for significant impacts would relate to areas of proposed development along the Guadalupe River corridor and San Tomas Aquino Creek.

Redevelopment of urban parcels adjacent to riparian corridors along Calabazas Creek, San Tomas Aquino Creek, and Guadalupe River has the potential to indirectly affect the habitat value of the riparian corridor. The De La Cruz and Tasman East Focus Areas are each immediately west of the Guadalupe River riparian corridor, separated by an earthen levee, and future redevelopment of each Focus Area, in particular, could affect wildlife movement along the Guadalupe River.

The east bank of the Guadalupe River adjacent to Santa Clara is under the jurisdiction of the City of San Jose and is included within the draft Valley HCP boundary. The Valley HCP's conservation strategy to ensure urban development on the east side of the Guadalupe River doesn't further degrade the riparian corridor's habitat value is to apply the City of San Jose's Riparian Corridor Policy. As described earlier, the City of Santa Clara has adopted the Water Collaborative's Guidelines and Standards for Land Uses Near Streams.

The two riparian protection policies are functionally equivalent and will ensure that new and redevelopment on either bank of the Guadalupe River doesn't significantly impact wildlife movement along the Guadalupe River. In addition, the proposed Draft 2010-2035 General Plan includes updated biological policies that address impacts to riparian habitats, listed below. There are no other sensitive natural communities present in the City. (**Less Than Significant Impact**)

Conservation Policies	
5.10.1-P2	Work with Santa Clara Valley Water District and require that new development follow the "Guidelines and Standards for Lands Near Streams" to protect streams and riparian habitats.
5.10.1-P5	Encourage enhancement of land adjacent to creeks in order to foster the reinstatement of natural riparian corridors when possible,

4.9.5.4 Impacts to Wildlife Movement Corridors

As discussed above in section 4.9.5.3, the creeks that flow through the City provide the primary wildlife movement corridors, and therefore future development near the creeks has the potential to disrupt or disturb wildlife movements along the creek corridors. However, as discussed

previously, the City's implementation of the Water Collaborative's Guidelines and Standards for Land Uses Near Streams will minimize the potential for impacts to wildlife movement to a less than significant level. **(Less Than Significant Impact)**

Future Open Space*

Existing Parks, Recreation, and Open Space

Community Park

Neighborhood Park

Mini Park / Plaza

Open Space

Recreation Facility

Regional and/or Private Facilities

Preferred Location for New Community Park

Rail & Light Rail

Stations

City Limits

Creek

Trail

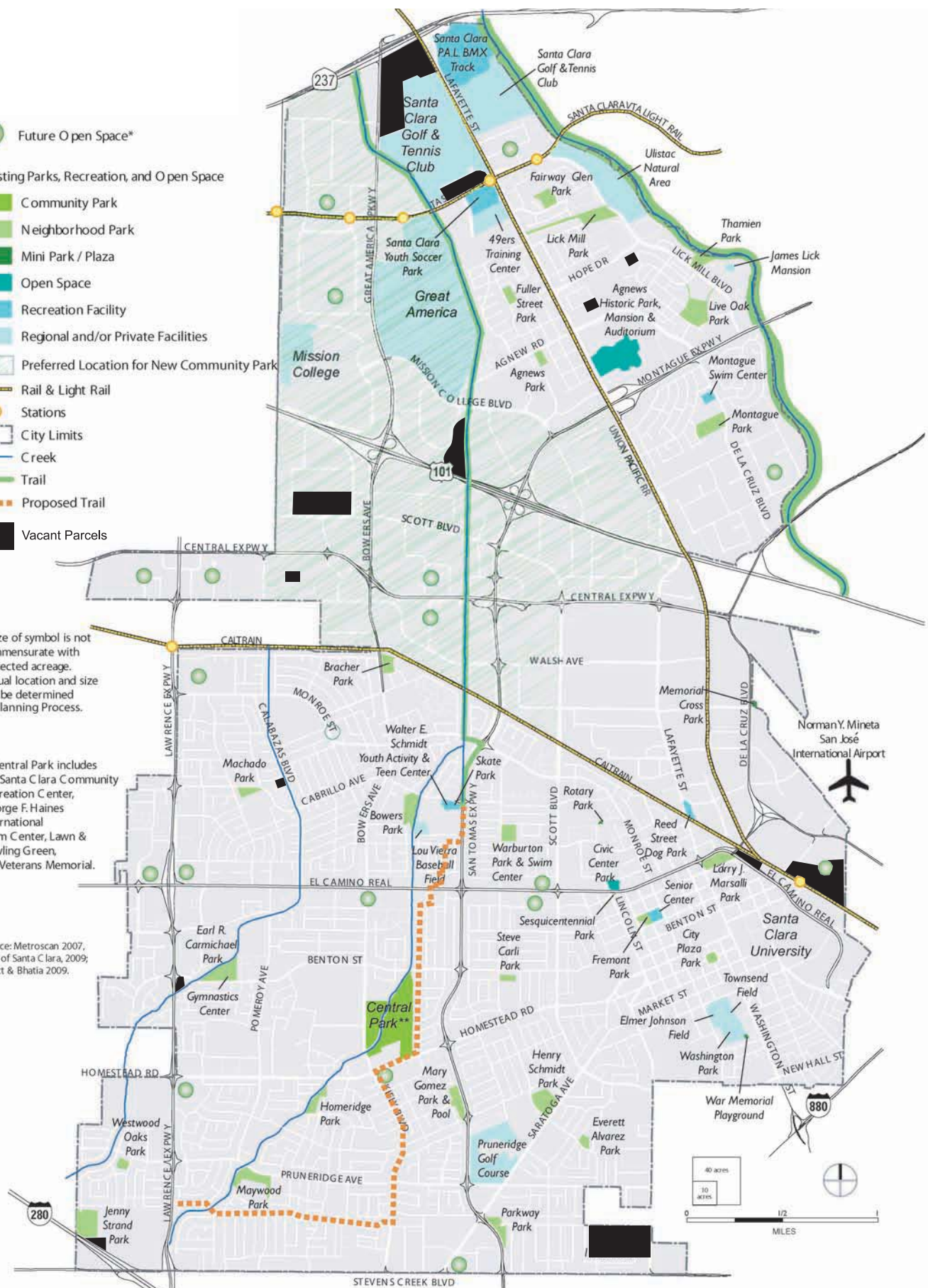
Proposed Trail

Vacant Parcels

* Size of symbol is not commensurate with projected acreage. Actual location and size will be determined in Planning Process.

**Central Park includes the Santa Clara Community Recreation Center, George F. Haines International Swim Center, Lawn & Bowling Green, and Veterans Memorial.

Source: Metrosan 2007, City of Santa Clara, 2009; Dyett & Bhatia 2009.



VACANT PARCELS

FIGURE 4.9-2

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4.9.5.5 New development under the Proposed General Plan could adversely affect protected wetlands and other waters. (Less than Significant Impact)

Wetlands and other waters are protected under the federal Clean Water Act and the State's Porter-Cologne Water Quality Control Act, and are under the jurisdiction of the U.S. Army Corps of Engineers and the San Francisco Bay Regional Water Quality Control Board. Federal and State regulations require avoidance of impacts to the extent feasible, and compensation for unavoidable losses of jurisdictional wetlands and waters. Development along the City's watercourses would have some potential to affect jurisdictional waters and wetlands, but compliance with existing regulations and proposed General Plan policies is expected to render impacts less than significant. **(Less Than Significant Impact)**

4.9.5.6 New development under the proposed General Plan could have the potential to conflict with the provisions of an adopted conservation plan. (Less Than Significant Impact)

Indirect Effects of Nitrogen Deposition to Serpentine Grasslands

The City is not located within the study area, but rather adjacent to, the draft Valley HCP. As described above, the draft Valley HCP seeks to mitigate for the indirect effects of nitrogen deposition to serpentine grassland communities, including impacts to BCB and the suite of serpentine-related special status plant species. The draft Valley HCP would acquire and actively manage serpentine-related habitat to mitigate the effects of increased nitrogen deposition from growth occurring within the Plan area.

The draft Valley HCP includes modeling to forecast cumulative nitrogen deposition emissions through the 50-year Permit term, to the year 2060. The Valley HCP also forecasts future emissions in 2035, the same planning horizon year as the Draft 2010-2035 Santa Clara General Plan.

In 2035, nitrogen deposition sources will be as follows:¹⁰⁶

38 percent	San Jose
16 percent	Rest of HCP study area (incl. Morgan Hill, Gilroy, unincorporated County)
<u>27 percent</u>	Rest of County outside HCP study area (incl. Santa Clara)
81 percent	Total Santa Clara County sources
+	
<u>19 percent</u>	Sources outside of Santa Clara County (incl. Alameda Co. 6 percent, San Mateo Co. 2 percent, San Francisco 1 percent, Contra Costa Co. 1 percent, remaining Bay Area counties 1 percent)
100 percent	All sources

The draft Valley HCP nitrogen modeling did not specifically isolate Santa Clara emissions (since the City is outside the HCP study area). Santa Clara's population in 2035 is projected to

¹⁰⁶ 2nd Admin Draft Valley HCP Appendix F (*Nitrogen Deposition Contribution*), available at <http://www.scv-habitatplan.org/www/default.aspx>.

represent between 6 percent to 6.5 percent of total County population.¹⁰⁷ On a strictly proportional basis, if the County as a whole is 81 percent of total nitrogen emissions, Santa Clara should be roughly 5 percent of emissions. So a rough estimate would be that Santa Clara, with implementation of its proposed General Plan in 2035, will, on a citywide basis, contribute roughly 5 percent of the nitrogen deposition that will affect serpentine grassland species covered in the draft Valley HCP.

As discussed in more detail in the Section 4.16 *Climate Change*, Santa Clara's current service population (jobs+residents) is approximately 222,000, and would grow by 86,000 with implementation of the General Plan's development program to 308,000 in 2035. Therefore, new development anticipated by the General Plan represents 28 percent of the City's future 2035 service population. Put another way, the existing service population comprises 72 percent of the expected 2035 service population, meaning the large majority of the City's forecast 2035 nitrogen emissions will be derived from sources (homes, businesses) present in the City today that will continue to emit nitrogen into the future. These emissions from the City's current service population reflect the existing environmental condition. As discussed in Section 4.12 *Transportation*, the General Plan will have beneficial impacts in terms of reducing VMT per service population as a result of the proposed land use mix and distribution.

Assuming the City's total emissions in 2035 will represent roughly 5 percent of the HCP's total modeled emissions in 2035, the emissions from new development (28 percent of the City's 2035 service population) in Santa Clara in 2035 would account for roughly 1.5 percent of the HCP's total modeled nitrogen emissions. Therefore, it is the City's determination that the future nitrogen emissions attributable to the General Plan's net new development in 2035 would constitute approximately 1.5 percent of total emissions and would represent a less than cumulatively considerable contribution to nitrogen deposition impacts to the serpentine grassland special status flora and fauna being addressed in the Valley HCP. **(Less Than Significant Impact)**

4.9.5.7 New development under the Proposed General Plan could have the potential to conflict with local policies or ordinances protecting biological resources. (No Impact)

The City currently has an ordinance (City Code, Sections 12.35.020 and 12.35.030) that protects trees in the public right-of-way. In addition, proposed General Plan policy 5.10.1-P4 would protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches measured from 48 inches above-grade on private and public property as well as in the public right-of-way. The proposed General Plan would strengthen existing City tree protections by extending protection to specified trees on private property, therefore, there would be no impact related to conflict with existing ordinances. **(No Impact)**

¹⁰⁷ ABAG 2009 Projections.

4.9.5.8 New development under the proposed General Plan could have the potential to degrade the quality of the environment, causing a fish or wildlife population to drop below self-sustaining levels, substantially reducing habitat areas, or threatening to eliminate or restrict a rare or endangered plant or animal community. (Less than Significant Impact)

Since the City is largely built out, most development under the proposed General Plan would occur in areas surrounded by the existing urban landscape. Given this scenario, it is highly unlikely that development under the proposed General Plan would degrade the quality of the environment to such an extent as to cause a significant drop in a wildlife population, a significant drop in habitat area, or the elimination or restriction of an endangered plant or animal community. To the contrary, the proposed General Plan lays out plans to preserve and increase open space within the City, potentially increasing habitat for many common species and some special-status wildlife species. The City's open spaces and rights of way contain many trees that provide roosting and nesting habitat for common bird species such as goldfinches and yellow-rumped warblers as well as special-status raptors such as cooper's hawks and sharp-shinned hawks. The General Plan proposes a number of goals and policies that seek to protect fish, wildlife, and their habitat, including municipal and private trees. With these policies and the regulatory mechanisms discussed in preceding impacts in place, impacts are expected to be less than significant. (*Less than Significant*)

4.9.6 Biological Resources Mitigation and Avoidance Measures for General Plan Impacts

Congdon's Tarplant Program Mitigation: On parcels with ruderal grasslands, surveys will be conducted prior to future development to document the presence/absence of Congdon's tarplant. In the event the species is present, the project design will incorporate an adequate buffer, as determined by a qualified biologist, to ensure the Congdon's tarplant is not threatened by development. (**Less than significant impact after mitigation**)

Burrowing Owl Program Mitigation: Future development on parcels with ruderal grasslands will include the following standard measures to reduce potential WBO impacts to a less than significant level. (**Less than significant impact after mitigation**)

1. Determine Burrowing Owl Presence

a. Breeding Season Surveys

Standardized surveys are necessary to determine presence (or presumed absence) of burrowing owls for the purposes of inventory, monitoring, avoidance of take, and determining appropriate mitigation. In California the breeding season begins as early as February 1 and continues through August 31.

The California Burrowing Owl Consortium (Consortium) survey protocol specifies a multi-phase approach, which is recommended in order to adequately evaluate burrowing owl use of an area and to inform the CEQA process. The Department recommends that the Consortium survey protocol for breeding season surveys be adhered to (4 survey visits spread evenly (roughly every 3 weeks) during the peak of the breeding season, from April 15-July 15) The habitat assessment,

intensive burrow surveys and burrowing owl surveys should include the area within 150 meters of the project boundaries (approximately 500 feet).

b. Non-Breeding Season Surveys (including Winter)

Surveys during the non-breeding season (September 1- January 31) are recommended by the Department but are not generally required because burrowing owls are much more difficult to detect during the non-breeding season, and the number or type of surveys that would be needed to detect presence then has not been studied or quantified. Negative results during any non-breeding season surveys are not conclusive proof that owls do not use the site. Because of this complication, the DFG recommends breeding season surveys as the first step, but project applicants should consult with the Department if burrowing owls have been documented on the project site during the non-breeding season.

2. Avoid Impacts (destruction, disturbance) to Individual Owls

a. Pre-Construction Surveys for Owl Presence

Pre-construction surveys (usually initiated during the non-breeding season) are necessary for assessing owl presence at a site within a short time period before site modification is scheduled to begin. Pre-construction surveys are supplemental to the existing breeding season survey protocol (4 survey visits spread evenly during the peak of the breeding season, from April 15-July 15).

Initial pre-construction surveys should be conducted no more than 30 days prior to ground-disturbing activities (for example, disking, clearing, grubbing, grading). Generally, at a minimum, 4 survey visits on at least 4 separate days will be necessary. The time lapse between surveys and site disturbance should be as short as possible and will be determined by DFG based on specific project conditions but generally should not exceed 7 days. Additional surveys are necessary when the initial disturbance is followed by periods of inactivity or the development is phased spatially and/or temporally over the project area.

Biologists conducting pre-construction surveys should expend enough effort, based on the above criteria, to assure with a high degree of certainty that take of owls will not occur once site modification and grading activities begin. The report should be submitted to the DFG for review.

b. Buffer Zones Around Occupied Burrows (Year-Round)

Buffer zones to protect burrowing owls from direct disturbance should be implemented pursuant to the Consortium Guidelines and the Department's Staff Report (1995). Generally, the buffers recommended in these reports for protecting burrowing owls from disturbance is 75 meters (250 feet) from occupied burrows during the breeding season and 50 meters (160 feet) from occupied burrows during the non-breeding season. Consultation with the Department may result in site-specific buffer specifications, on a case-by-case basis.

c. Passive Relocation.

If construction will directly impact occupied burrows, eviction of owls should occur outside the nesting season to prevent injury or mortality of individual owls. No burrowing owls will be evicted from burrows during the nesting season (1 February through 31 August) unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season). Relocation of owls during the non-breeding season will be performed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors will then be removed and the burrows backfilled immediately prior to the initiation of grading.

Furthermore, should the Valley HCP, once adopted, include a regional WBO mitigation program that would be available to future projects in Santa Clara, future projects may have a feasible option to mitigate for their individual impacts to loss of WBO foraging and/or nesting habitat by participating in the Valley HCP's program.

4.9.7 Significance Conclusion

Special Status Species

Development under the proposed Draft 2010-2035 General Plan will be required to comply with State and federal regulations regarding special-status species. The City has proposed the General Plan policies identified in **4.9.5.1** above to reduce the potential for impacts on the special-status species considered most likely to use habitat in the City. With full implementation of these new General Plan policies, as well as the program mitigation measures identified in **4.9.6**, through the CEQA and building permit processes, impacts on Congdon's tarplant and western burrowing owl are expected to be less than significant. **(Less than significant impact after mitigation)**

Riparian Habitat

The proposed Draft 2010-2035 General Plan envisions development in three areas near the Guadalupe River, which supports riparian habitat. However, riparian habitat is protected under the Fish and Game Code and would be further protected by new proposed Draft 2010-2035 General Plan policies. Significant adverse effects on riparian habitat are not expected. **(Less than significant impact)**

Wildlife Movement Corridors

The proposed Draft 2010-2035 General Plan includes provisions to increase the amount of open space in the City and to link these open spaces as much as possible. All of these actions will support increased wildlife movement within the City despite existing development and additional development under the proposed Draft 2010-2035 General Plan. Significant adverse effects on wildlife movement are not expected. **(Less than significant impact)**

Wetlands and Other Jurisdictional Waters

Wetlands and other jurisdictional waters are protected under federal and State law, with additional protection afforded by new proposed Draft 2010-2035 General Plan policies. Significant adverse effects on wetlands and jurisdictional waters are not expected. **(Less than significant impact)**

Conflicts with Conservation Plan

The City is committed to supporting local, regional, and State conservation plans, as expressed in the new General Plan. New development under the proposed Draft 2010-2035 General Plan is not expected to conflict with any such conservation plan. **(Less than significant impact)**

Conflicts with Tree Ordinance

There is a City ordinance currently in effect to protect trees on public property, and the General Plan proposes a new policy that would afford protection to specified trees on private property. Development under the proposed Draft 2010-2035 General Plan would not conflict with the existing tree ordinance. **(Less than significant impact)**

Effects on Wildlife

Given the currently built-out nature of the City, new development is unlikely to extensively degrade the quality of the environment to a level that negatively impacts fish, wildlife, or plant communities. The City intends to protect natural communities from effects of development, as laid out in several new General Plan policies. Significant adverse effects on wildlife are not expected. **(Less than significant impact)**

4.10 AIR QUALITY

This section summarizes information on air quality within the City of Santa Clara and provides an evaluation of the effects the proposed Draft 2010-2035 General Plan would have on air quality.

4.10.1 Introduction

Air quality is determined by the concentration of various pollutants in the atmosphere. Units of concentration are expressed in parts per million (ppm) or micrograms per kilograms ($\mu\text{g}/\text{m}^3$). The amount of a given pollutant in the atmosphere is determined by the amount of pollutants released within an area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, and the surrounding topography of the air basin. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sun light.

4.10.2 Regulatory Framework

The significance of a pollutant concentration is determined by comparing the pollutant levels to an appropriate ambient air quality standard. The standards set the level of pollutant concentrations allowable while protecting general public health and welfare.

4.10.2.1 *Federal*

The Federal Clean Air Act (CAA) establishes pollutant thresholds for air quality in the United States. The U.S. EPA is responsible for establishing the National Ambient Air Quality Standards (NAAQS) which are required under the CAA. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency also established various emission standards for vehicles sold in States other than California. Automobiles sold in California must meet the stricter emission standards established by the California Air Resources Board (CARB).

4.10.2.2 *State*

California Air Resources Board

As Stated above, CARB (which is part of the California EPA) is responsible for meeting the State requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA requires all air districts in the State to achieve and maintain CAAQS. CARB regulates mobile air pollution sources such as motor vehicles. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

Bay Area Air Quality Management District

The BAAQMD is primarily responsible for assuring that the National and State ambient air quality standards are attained and maintained in the Bay Area. The ambient air quality standards cover what are called “criteria” pollutants because the health and other effects of each pollutant are described in criteria documents.

BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutant, inspecting stationary

sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other associated activities. BAAQMD has jurisdiction over much of the nine county Bay Area counties including Santa Clara County.

Air Pollutants and Ambient Air Quality Standards¹⁰⁸

The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from the surrounding area, local and regional meteorological conditions, and the surrounding topography of the air basin. The significance of the pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population.

As required by the Federal CAA, the NAAQS have been established for seven major air pollutants; carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), sulfur oxides, and lead. The characteristics of these pollutants are discussed in section 4.10.3.3. Pursuant to the California CAA, the State of California has also established ambient air quality standards. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for pollutants such as sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Both State and Federal standards are summarized in Table 4.10-1. The “primary” standards have been established to protect the public health. The “secondary” standards are intended to protect the nation’s welfare and account for adverse air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare. Because CAAQS are more stringent than NAAQS, CAAQS are used as the comparative standard in this analysis.

Regional Clean Air Plans

The BAAQMD and other agencies prepare clean air plans in response to the State and Federal CAA. The City of Santa Clara also has General Plan policies that encourage development that reduces air quality impacts. In addition, BAAQMD has developed CEQA Guidelines to assist local agencies in evaluating and mitigating air quality impacts. Regional clean air plans include the 2001 Ozone Attainment Plan, the 1991 Clean Air Plan (updated in 2006 as the Bay Area 2005 Ozone Strategy), the Draft Bay Area 2010 Clean Air Plan, and the PM₁₀ & PM_{2.5} Adopted Plans. A detailed description of each of these plans is provided in *Chapter 3.0, Consistency with Plans and Policies*.

¹⁰⁸ U.S. Environmental Protection Agency. National Ambient Air Quality Standards. Accessed April 14, 2010. Available at: <http://www.epa.gov/air/criteria.html>

TABLE 4.10-1. CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	National Standards ^(a)	
			Primary ^(b,c)	Secondary ^(b,d)
Ozone	8-hour	0.070 ppm (154 µg/m ³)	0.075 ppm (176 µg/m ³)	—
	1-hour	0.09 ppm (180 µg/m ³)	--(e)	Same as primary
Carbon monoxide	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	—
Nitrogen dioxide	Annual	—	0.053 ppm (100 µg/m ³)	Same as primary
	1-hour	0.25 ppm (470 µg/m ³)	—	—
Sulfur dioxide	Annual	—	0.03 ppm (80 µg/m ³)	—
	24-hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	—	—
PM ₁₀	Annual	20 µg/m ³	50 µg/m ³	Same as primary
	24-hour	50 µg/m ³	150 µg/m ³	Same as primary
PM _{2.5}	Annual	12 µg/m ³	15 µg/m ³	
	24-hour	—	35 µg/m ³	
Lead	Calendar quarter	—	1.5 µg/m ³	Same as primary
	30-day average	1.5 µg/m ³	—	—

Notes: (a) Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year.

(e) The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

(b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

(c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each State must attain the primary standards no later than three years after that State's implementation plan is approved by the EPA.

(d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

San Francisco Bay Area's Air Toxics Program

The San Francisco Bay Area's Air Toxics Program integrates federal and State air toxics mandates with local goals that have been established by the BAAQMD's Board of Directors. The Program consists of several elements that are designed to identify and reduce public exposure to toxic air contaminants (TACs).

BAAQMD CEQA Guidelines

The BAAQMD CEQA Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The Guidelines include information on legal requirements, BAAQMD rules, plans and procedures, methods of analyzing air quality impacts, thresholds of significance, mitigation measures, and background air quality information. The BAAQMD CEQA Guidelines were initially adopted in

December 1999.¹⁰⁹ The Air District adopted updated CEQA Guidelines in June 2010.¹¹⁰ The CEQA Guidelines Update review, revise, and develop significance thresholds, assessment methodologies, and mitigation strategies for criteria pollutants, air toxics, odors, and greenhouse gas emissions. .

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. One of the highlights of the CARE program is the development of the Mitigation Action Plan where risk reduction activities are focused on the most at-risk communities. Based on maps of toxic air emissions and sensitive populations, six priority communities have been identified that would benefit from immediate mitigation action. Portions of Santa Clara fall within the priority community boundary (Figure 4.10-1 Priority Community Boundaries).

4.10.2.3 Local

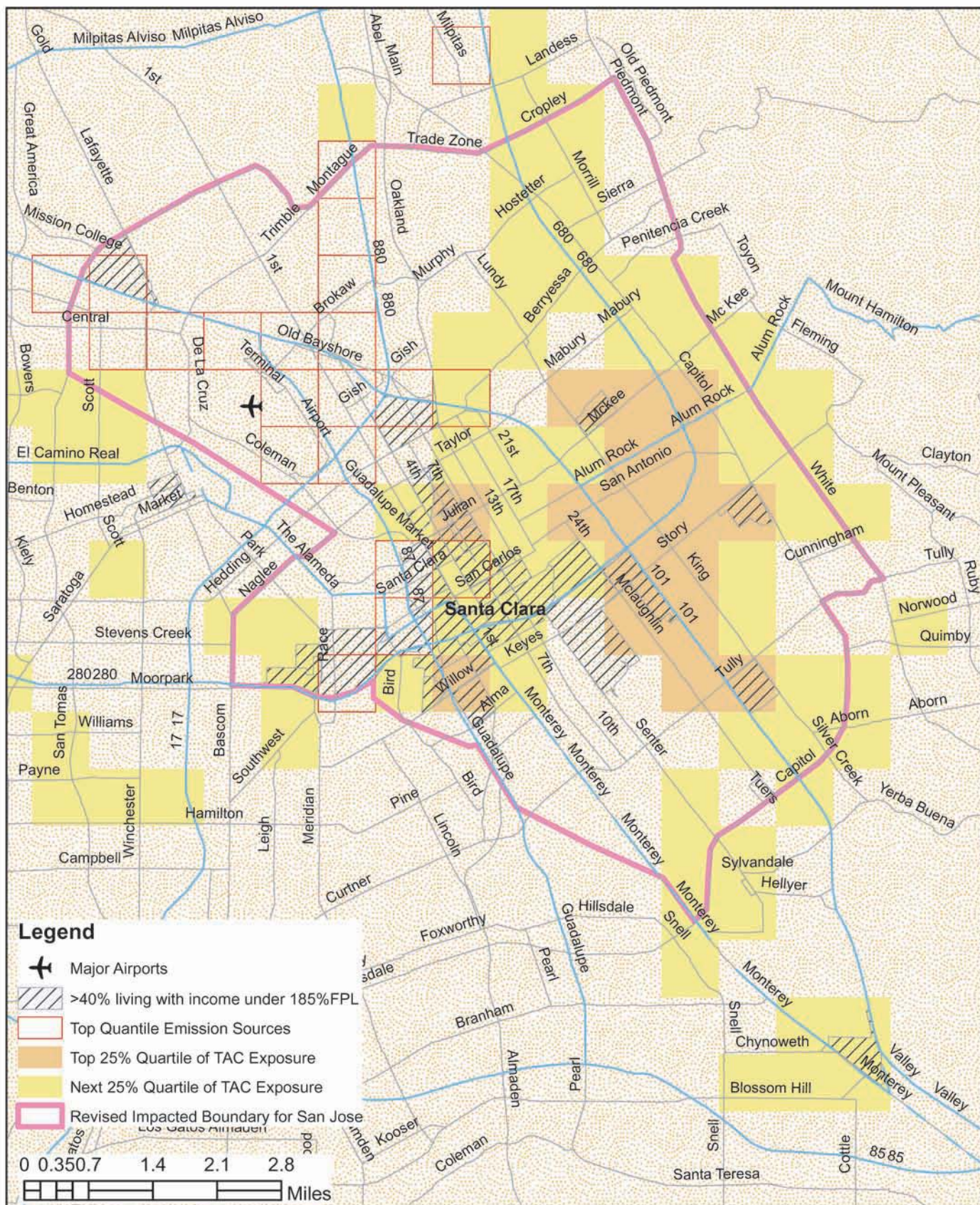
City of Santa Clara General Plan 2000-2010

Existing policies in the City of Santa Clara General Plan have been adopted for the purpose of avoiding or mitigating environmental effects related to air quality. Relevant General Plan Policies that directly address reducing and avoiding air quality impacts include the following Air Quality Programs:

- Support reasonable and practical Federal and State air quality standards for local pollutants of concern, including standards for new cars and requirements for inspecting all vehicles.
- Evaluate potential air quality impacts of and on proposed development.
- Support specific local construction and operating standards for the electronics industry.
- Require construction contractors to implement dust abatement programs.

¹⁰⁹ Bay Area Air Quality Management District. 1999. BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans. December 1999.

¹¹⁰ Bay Area Air Quality Management District. 2009. Draft California Environmental Quality Act Air Quality Guidelines. December 2009.



PRIORITY COMMUNITY BOUNDARY
FOR BAAQMD CARE PROGRAM

FIGURE 4.10-1

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Santa Clara City Code

The City Code includes regulations associated with protection of the City's air quality. The City includes a wood burning ordinance, which includes provisions associated with wood burning appliances in residential and commercial installations, and prohibitions associated with appliance types and fuel (Chapter 16.65).

4.10.3 Existing Conditions

4.10.3.1 Topography and Climate

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 south, carrying pollution from the northern Peninsula toward San José.

The proximity of Santa Clara to both the Pacific Ocean and San Francisco Bay has a moderating influence on the climate. Meteorological factors and physical topography make air pollution potential in the Santa Clara Valley quite high. Northwest winds and northerly winds are most common in the project area, 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 Peninsula toward Santa Clara, particularly during the summer months. Winds are lightest on average in fall and winter. Prevailing winds during the summer and fall can transport and trap ozone precursors from the more urbanized portions of the Bay Area. Every year in fall and winter there are periods of several days when winds are very light and local pollutants can accumulate.

The major large-scale weather feature controlling the area's climate is a large high pressure system located in the eastern Pacific Ocean, known as the Pacific High. The strength and position of the Pacific High varies seasonally. It is strongest during summer and located off the west coast of the United States. Large-scale atmospheric subsidence associated with the Pacific High produces an elevated temperature inversion along the West Coast. The base of this inversion is usually located from 1,000 to 3,000 feet above sea level, depending on the intensity of subsidence and the prevailing weather condition. Vertical mixing is often limited to the base of the inversion, trapping air pollutants in the lower atmosphere. Marine air trapped below the base of the inversion is often condensed into fog or stratus clouds by the cool Pacific Ocean. This condition is typical of the warmer months of the year from roughly May through October. Stratus-type clouds usually form offshore and move into the Bay Area during the evening hours. Stratus also forms over the San Francisco Bay during the evening hours. Typically, stratus covers the Peninsula and moves into the Santa Clara Valley during late night and early morning hours. As the land warms the following morning, the clouds often dissipate. The stratus then redevelops and moves inland late in the day along with an increase in winds. Otherwise, clear skies and dry conditions prevail during summer.

The combined effects of moderate ventilation, frequent inversions that restrict vertical dilution and terrain that restricts horizontal dilution give Santa Clara a relatively high atmospheric potential for pollution compared to other parts of the San Francisco Bay Air Basin and provide a high potential for transport of pollutants to the east and south.

4.10.3.2 Specific Air Pollutants

Air quality studies generally focus on five pollutants that are most commonly measured and regulated: carbon monoxide (CO), ground level ozone, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and suspended particulate matter (PM₁₀ and PM_{2.5}). In Santa Clara County, ozone and particulate matter are the pollutants of greatest concern since measured air pollutant levels exceed these concentrations at times. Table 4.10-2 identifies the major criteria pollutants, characteristics, health effects, and typical sources.

Lead

Lead (Pb) occurs in the atmosphere as particulate matter. It was primarily emitted by gasoline-powered motor vehicles, although the use of lead in fuel has been virtually eliminated. Because of lead being eliminated from fuels, levels in the Bay Area have dropped dramatically. Lead concentrations in the Bay Area are well below the ambient standards. Lead-based paint is a major source of lead poisoning for children and can also affect adults. Lead was used as a pigment and drying agent in “alkyd” oil based paint. About two-thirds of the homes built before 1940 and one-half of the homes built from 1940 to 1960 contain heavily-lead-painted. Some homes built after 1960 also contain heavily-lead-painted. It may be on any interior or exterior surface, particularly on woodwork, doors, and windows. Lead can be released into the air during demolition of older buildings.

TABLE 4.10-2. MAJOR CRITERIA POLLUTANTS			
Pollutant	Characteristics	Health Effects	Major Sources
Ozone (O ₃)	A highly reactive photochemical pollutant created by the action of sun light on ozone precursors. Often called photochemical smog.	<ul style="list-style-type: none"> - Eye Irritation - Respiratory and function impairment 	Combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide (CO)	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	<ul style="list-style-type: none"> - Impairment of oxygen transport in the bloodstream - Aggravation of cardiovascular disease - Fatigue, headache, confusion, dizziness - Can be fatal in the case of very high concentrations 	Automobile exhaust, combustion of fuels, combustion of wood in wood stoves and fireplaces.
Nitrogen Dioxide (NO ₂)	Reddish-brown gas that discolors the air, formed during combustion.	<ul style="list-style-type: none"> - Increased risk of acute and chronic respiratory disease 	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide (SO ₂)	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	<ul style="list-style-type: none"> - Aggravation of chronic obstruction lung disease - Increased risk of acute and chronic respiratory disease 	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM _{2.5} and PM ₁₀)	Solid and liquid particles of dust, soot, aerosols and other matters that are small enough to remain suspended in the air for a long period of time.	<ul style="list-style-type: none"> - Aggravation of chronic disease and heart/lung disease symptoms. 	Combustion automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

Suspended Particulate Matter (PM₁₀ and PM_{2.5})

Respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) consist of particulate matter that is ten microns or less in diameter and 2.5 microns or less in diameter, respectively. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled and cause adverse health effects. Most stations in the Bay Area reported exceedances of the State standard on the same fall/winter days as reported in the South Bay. This indicates a regional air quality problem. The primary sources of these pollutants are wood smoke and local traffic. Meteorological conditions that are common during this time of the year result in calm winds and strong surface-based inversions that trap pollutants near the surface. The buildup of these pollutants is greatest during the evenings and early morning periods. The high levels of PM₁₀ result in not only health effects, but also reduced visibility.

Toxic Air Contaminants (TAC)

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal CAA and TACs under the California CAA. These contaminants tend to be localized and are found in relatively low concentrations. They can, however, result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, State, and federal level. HAPs are the air contaminants identified by the U.S. EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 identified HAPS. While vehicle miles traveled in the United States are expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).¹¹¹

TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Chronic exposure to TACs can result in adverse health effects. Like criteria air pollutants, TACs are regulated at the regional, State, and federal level. Particulate matter from diesel exhaust is the predominant TAC in urban air and was estimated to represent about two-thirds of the cancer risk from TACs (based on the Statewide average in 2000). The vast majority of diesel exhaust particles (over 90 percent) consist of PM_{2.5}, which are particles that can be inhaled deep into the lungs.

California has adopted a comprehensive diesel risk reduction program to reduce diesel particulate matter (DPM) emissions 85 percent by 2020. The U.S. EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially. Smoke from residential wood combustion can also be a source of TACs. Wood smoke also contains a significant amount of PM₁₀ and PM_{2.5}. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

¹¹¹ US EPA. About Air Toxics. Accessed May 3, 2010. Available at: <http://www.epa.gov/ttn/atw/allabout.html#effects>

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. Examples of land uses that have the potential to generate considerable odors include, but are not limited to: wastewater treatment plants; landfills; confined animal facilities; composting stations; food manufacturing plants; refineries; and chemical plants.

4.10.3.3 Air Monitoring Data

BAAQMD monitors air quality conditions at over 30 locations throughout the Bay Area. The nearest BAAQMD monitoring station to Santa Clara is in San José. Air pollutant concentrations measured at the San Jose station are shown in Table 4.10-3.

The pollutant of most concern in the Santa Clara area is ozone, since prevailing summertime wind conditions tend to cause a buildup of ozone in the Santa Clara Valley. Air quality standards for ozone are typically exceeded when relatively stagnant conditions occur for periods of several days during the warmer months of the year. Key components of ground level ozone formation are sunlight and heat. Significant ozone formation, therefore, only occurs during the months from late spring through early fall. Ozone levels measured in San Jose exceeded the State ozone standard from 0 to 5 times in 2003-2007. In the last five years, the 8-hour national ozone standard was exceeded only once in 2006 during an extended heat wave. The new State 8-hour ozone standard was exceeded once in 2005, five times in 2006 and was not exceeded in 2007.

Measured exceedances of the State PM₁₀ standard have occurred between two and three measurement days each year in San Jose (estimated at 12 to 18 days per year). PM₁₀ and PM_{2.5} are measured every sixth day. Exceedances of the Federal PM_{2.5} standard of 65µg/m³ were not measured in San José; however, the new standard of 35µg/m³ was exceeded on six measurement days during 2006 (estimated 36 days per year). The entire Bay Area, including San Jose, did not experience any exceedances of other criteria air pollutants (CO, NO₂, Lead, SO₂). Table 4.10-4 reports the number of days that an ambient air quality standard was exceeded at any of the stations in San José near the project and in the entire Bay Area.

4.10.3.4 Attainment Status

Areas that do not violate ambient air quality standards are considered to be in attainment. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level ozone and State standards for PM₁₀ and PM_{2.5}.

Under the Federal CAA, the U.S. EPA has classified the region as marginally nonattainment for the 1997 8-hour ozone standard. The U.S. EPA required the region to attain the standard by 2007. As previously mentioned, the U.S. EPA has determined that the Bay Area has met this standard, but a formal redesignation request and maintenance plan would have to be submitted before redesignation could occur. The Bay Area has met the CO standards for over a decade and is classified as in attainment by the U.S. EPA. The U.S. EPA grades the region unclassified (insufficient data to classify) for all other air pollutants, which includes PM₁₀.

At the State level, the region is considered in serious non-attainment for ground level ozone and nonattainment for PM₁₀. The region is required to adopt plans on a triennial basis that show progress towards meeting the State ozone standard. The area is considered in attainment or unclassified for all other pollutants.

4.10.3.5 Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases as people most likely to be affected by air pollution. These groups are classified as sensitive receptors. Locations that may contain a high concentration of sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, parks and places of assembly.

TABLE 4.10-3. HIGHEST MEASURED AIR POLLUTANT CONCENTRATIONS						
Pollutant	Average Time	Measured Air Pollutant Levels				
		2004	2005	2006	2007	2008
San Jose						
Ozone (O ₃)	1-hour	0.09 ppm	0.11 ppm	0.12 ppm	0.08 ppm	0.02 ppm
	8-hour	0.07 ppm	0.08 ppm	0.09 ppm	0.07 ppm	0.08 ppm
Carbon Monoxide (CO)	8-hour	3.0 ppm	3.1 ppm	2.9 ppm	2.7 ppm	2.5 ppm
Nitrogen Dioxide (NO ₂)	1-hour	0.07 ppm	0.07 ppm	0.07 ppm	0.07 ppm	0.08 ppm
	Annual	0.2 ppm	0.02 ppm	0.02 ppm	0.02 ppm	0.02 ppm
Respirable PM ₁₀	24-hour	58 µg/m ³	54 µg/m ³	73 µg/m ³	69 µg/m ³	57 µg/m ³
	Annual	23 µg/m ³	22 µg/m ³	21 µg/m ³	22 µg/m ³	23 µg/m ³
Fine PM _{2.5}	24-hour	52 µg/m ³	55 µg/m ³	64 µg/m ³	58 µg/m ³	42 µg/m ³
	Annual	12 µg/m ³	12 µg/m ³	11 µg/m ³	11 µg/m ³	12 µg/m ³
Source: BAAQMD Air Quality Summaries for 2004, 2005, 2006, 2007, and 2008						

TABLE 4.10-4. ANNUAL NUMBER OF DAYS EXCEEDING AMBIENT AIR QUALITY STANDARDS

Pollutant	Standard	Monitoring Station	Days Exceeding Standard				
			2004	2005	2006 ¹	2007	2008 ^{2,A}
Ozone (O ₃)	NAAQS 1-hour	San Jose Bay Area	0	--	--	--	--
			0	--	--	--	--
	NAAQS 8-hour	San Jose Bay Area	0	0	1	0	
			0	1	12	1	12
	CAAQS 1-hour	San Jose Bay Area	0	1	5	0	
			7	9	18	4	9
	CAAQS 8-hour	San Jose Bay Area	--	1	5	0	
			--	9	18	4	20
Respirable PM ₁₀	NAAQS 24-hour	San Jose Bay Area	0	0	0	0	
			0	0	0	0	0
	CAAQS 24-hour	San Jose Bay Area	3	2	2	3	
			7	6	15	4	5
Fine PM _{2.5}	NAAQS 24-hour	San Jose Bay Area	--	--	6	9	
			--	--	10	14	12
All other (CO, NO ₂ , Lead, SO ₂)	All Other	San Jose Bay Area	0	0	0	0	
			0	0	0	0	0

Source: BAAQMD Air Quality Summaries for 2004, 2005, 2006, 2007, and 2008
 1 – On Dec. 17, 2006, the U.S. EPA implemented a more stringent national 24-hour PM_{2.5} standard—revising it from 65 µg/m³ to 35 µg/m³. Starting in 2006, PM_{2.5} exceedance days reflect the new standard.
 2 - On May. 17, 2008, the U.S. EPA implemented a more stringent national 8-hour ozone standard, revising it from 0.08 ppm to 0.075 ppm. Ozone exceedance days for 2008 reflect the new standard.
 A- The 2008 number of days exceeding standard is for the entire Bay Area, and not just the San Jose Central monitoring station.

4.10.4 Thresholds of Significance

Based on the most recently adopted BAAQMD guidelines (June 2010), an amendment to a General Plan would be inconsistent with the most current Clean Air Plan (CAP), and therefore, have a significant air quality impact, if the plan change would:

- Result in population growth that would exceed the values included in the current CAP for the City;
- Fail to incorporate current Air Quality Plan Transportation Control Measures (TCM) as appropriate to the plan area; or
- Cause the rate of increase in vehicle miles traveled (VMT) to be greater than the rate of increase in population.

For local plans to have a less than significant impact with respect to potential odors and/or toxic air contaminants, buffer zones should be established around existing and proposed land uses that would emit these air pollutants.

In addition to the above BAAQMD thresholds, for the purposes of this EIR, an air quality impact is considered significant if the project would:

- Violate an ambient air quality standard or contribute substantially to an existing or project air quality violation;
- Result in substantial emissions or deterioration of ambient air quality; or

- Create objectionable odors;
- Expose sensitive receptors or expose the general public to substantial levels of toxic air contaminants; or
- Alter air movement, moisture, or temperature, or result in any change in climate either locally or regionally.

For the purposes of the plan level analysis, the above thresholds were evaluated on a qualitative basis.

4.10.5 Impacts and Mitigation Measures

4.10.5.1 Consistency with Clean Air Plan Projections

A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions.

Bay Area 2005 Ozone Strategy

Future changes in development patterns that affect regional air quality are accounted for in the *Bay Area 2005 Ozone Strategy*¹¹², which serves as the most recent adopted clean air plan (CAP) for the Bay Area. The emissions projections were based on the most current ABAG growth projections at the time, *Projections 2002* and *Projections 2003*. Therefore, development in excess of population forecasts assumed by BAAQMD in developing the CAP could lead to greater vehicle use, and associated pollutant emissions, than assumed in the CAP.

The *Bay Area 2005 Ozone Strategy* was based on projected population growth from ABAG 2003 Projections for future emissions from on-road motor vehicle and ABAG 2002 Projections for the remainder of the planning inventory. Santa Clara's population was projected out to a planning horizon of 2025 in 2002 Projections (134,000 residents) and to 2030 in 2003 Projections (138,700 residents), respectively.

Bay Area 2010 Clean Air Plan

The *Bay Area 2010 Clean Air Plan* (2010 CAP)¹¹³ provides an updated comprehensive plan to improve Bay Area air quality and protect public health, taking into account future growth projections to 2035. The legal impetus for the Bay Area 2010 CAP is to update the most recent ozone plan, the *Bay Area 2005 Ozone Strategy*, to comply with State air quality planning requirements as codified in the California Health & Safety Code. On March 11, 2010, the Air District released the Draft 2010 CAP, as well as a Draft Programmatic Environmental Impact Report addressing the 2010 CAP. On September 15, 2010, the District's Board of Directors adopted the 2010 CAP. The population projections used in the 2010 CAP were based on ABAG 2007 Projections.

Table 4.10-5 compares the forecast Santa Clara population BAAQMD used in preparing the *2005 Ozone Strategy* and 2010 CAP with the population accommodated by the 2035 General Plan.

¹¹² Bay Area Air Quality Management District (BAAQMD). *Bay Area 2005 Ozone Strategy*, January 4, 2006.

¹¹³ Bay Area Air Quality Management District (BAAQMD). 2010. Draft Bay Area 2010 Clean Air Plan. March 2010.

TABLE 4.10-5 SANTA CLARA FORECAST POPULATION

Projection Source	Population Projection Year		
	2025	2030	2035
ABAG 2002	134,000	--	--
ABAG 2003	133,100	138,700	--
ABAG 2007	135,900	140,800	146,100
Proposed Draft 2010-2035 General Plan	139,000	147,000	154,990

The proposed Draft 2010-2035 General Plan population projections are based on ABAG 2007 Projections with slight variances due to additional localized growth within the City of Santa Clara. ABAG's Projections 2007 forecasts Santa Clara's population to be 146,100 residents in 2035, which is approximately six percent less population growth than envisioned by the proposed Draft 2010-2035 General Plan projected build-out population of 154,990.

The additional population accommodated under the General Plan, beyond what has been assumed by BAAQMD in the *2005 Ozone Strategy* and the 2010 CAP, could lead to increased emissions of ozone precursor pollutants and particulate matter (PM_{2.5} and PM₁₀). In 2025 and 2030, Santa Clara's population could be approximately four to six percent greater than assumed by BAAQMD in preparing the 2005 Ozone strategy. At build-out in 2035, Santa Clara's population could be as much as six percent greater (approximately 9,000 more residents) than assumed by BAAQMD in developing the 2010 CAP.

The General Plan is forecast to accommodate roughly five percent more population growth than BAAQMD assumed in either the 2005 Ozone Strategy or the 2010 CAP. This is a potentially significant impact because, depending upon that nature of that additional growth, it could lead to emissions beyond what BAAQMD has assumed in its regional air quality plans. However, as discussed below, the traffic modeling (see Section 4.12 *Transportation* Table 4.12-11) completed for the General Plan indicates the proposed mix and distribution of land uses cause VMT to grow at slightly less than half the rate of population growth, so therefore, even if population growth is roughly five percent more than BAAQMD assumed in its plans, that increased growth, occurring in this VMT-efficient manner, would not lead to emissions exceeding BAAQMD's plans.

VMT Growth Compared to Population Growth

Traffic modeling conducted for the proposed Draft 2010-2035 General Plan shows the rate of VMT growth would increase by 16 percent (from 2008 to 2035) and the rate of population growth would increase by 34 percent. The rate of VMT growth would be less than population growth because the land mix under the proposed Draft 2010-2035 General Plan will result in shorter trips for residents within the City due to the closer proximity of jobs and services to housing as well as the increased availability and accessibility to other modes of travel, such as bicycling and walking. Despite the increased population, this would not be inconsistent with the CAP (or a significant impact), as the rate of VMT growth is substantially less than the rate of population growth over the planning horizon of the proposed Draft 2010-2035 General Plan.

Impact 4.10-1: Population projections under the proposed General Plan are slightly above the *Bay Area 2005 Ozone Strategy* and the *Bay Area 2010 Clean Air Plan*, but the rate of VMT

growth is less than half the rate of population growth. Therefore, the proposed Draft 2010-2035 General Plan would be consistent with the CAP. **(Less Than Significant Impact)**

4.10.5.2 Consistency with Clean Air Plan Transportation Control Measures

The Air District has a long history of implementing control measures to reduce ozone precursor emissions from stationary, area, mobile and transportation sources. The transportation control measures (TCMs) were designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled. TCMs may also reduce vehicle use, vehicle idling or traffic congestion. The TCMs address State ozone planning requirements for the Bay Area.

Impact 4.10-2: The policies under the proposed Draft 2010-2035 General Plan support and reasonably implement the applicable *Bay Area 2005 Ozone Strategy* and the *Bay Area 2010 Clean Air Plan* TCMs. Therefore, the proposed Draft 2010-2035 General Plan would be consistent with the TCMs. **(Less Than Significant Impact)**

Table 4.10-6 below lists the proposed Draft 2010-2035 General Plan policies that are supportive of the *Bay Area 2005 Ozone Strategy* and the *Draft Bay Area 2010 Clean Air Plan TCMs*. A description of each applicable TCM is provided along with a listing of relevant proposed Draft 2010-2035 General Plan policies that would implement each measure.

TABLE 4.10-6 TRANSPORTATION CONTROL MEASURES AND RELEVANT GENERAL PLAN POLICIES

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
<p>TCM #1 Support Voluntary Employer-Based Trip Reduction Programs:</p> <p>TCM 1 will support and encourage voluntary efforts by Bay Area employers to promote the use of commute alternatives by their employees.</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>	<ul style="list-style-type: none"> 5.8.1-P5 Work with local, regional, State and private agencies, as well as employers and residents, to encourage programs and services that reduce vehicle miles traveled. 5.8.3-P10 Require new development to participate in public/private partnerships to provide new transit options between Santa Clara residences and businesses. 5.8.5-P6 Encourage transportation demand management programs that include shared bicycle and autos for part-time use by employees and residents to reduce the need for personal vehicles. 5.8.5-P7 Promote programs that reduce peak hour trips, such as flexible work hours, telecommuting, homebased businesses and off -site business centers, and encourage businesses to provide alternate, off - peak hours for operations. 5.8.5-P9 Promote transportation demand management programs that provide education, information and coordination to connect residents and employees with alternate transportation opportunities.
<p>TCM #3 Improve Local and Areawide Bus Service:</p> <p>This TCM will help to reduce motor vehicle trips, vehicle miles traveled, and mobile source emissions by maintaining and improving the Bay Area's extensive bus system, and by funding replacement of diesel buses with clean fuel buses and retrofits of diesel buses with emission control devices.</p>	<p>TCM A-1 – Local and Areawide Bus Service Improvements</p> <p>TCM A-1will 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>	<ul style="list-style-type: none"> 5.4.1-P16 Work with Valley Transportation Authority to improve transit access, information and frequency along El Camino Real, including the implementation of a Bus Rapid Transit or similar transit service near Regional Mixed use areas. 5.4.4-P11 Work with Valley Transportation Authority to implement a Bus Rapid Transit or similar transit service along Stevens Creek Boulevard, retaining on-street parking and median islands for landscaping. 5.8.3-P3 Support transit priority for designated Bus Rapid Transit, or similar transit service, through traffic signal priority, bus queue jump lanes, exclusive transit lanes and other appropriate techniques.

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
<p>TCM #4 Upgrade and Expand Local and Regional Rail Service:</p> <p>This TCM will reduce motor vehicle trips, vehicle miles traveled and mobile source emissions by upgrading and expanding existing rail systems (BART, MUNI, VTA and Caltrain) and developing new rail service in the North Bay. This TCM will be most effective if implemented in conjunction with transit-oriented development near new and existing rail stations that provides high density and mixed use development and with transit access improvements.</p>	<p>TCM A-2 Local and Regional Rail Service Improvements</p> <p>TCM A-2 will improve rail service by sustaining and expanding existing services and by providing funds to maintain rail cars, 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>	<ul style="list-style-type: none"> 5.1.1-P17 Prior to 2025, work with Valley Transportation Authority to implement a transit loop for Downtown from the Santa Clara Transit Station. 5.4.3-P17 Work with appropriate transportation agencies and surrounding cities to maximize rail and bus transit to and from the Station. 5.8.3-P1 Support a coordinated regional transit system that circles the South Bay and the Peninsula, including existing and planned BART, Amtrak, Altamont Commuter Express, Caltrain, VTA and High Speed Rail facilities. 5.8.3-P2 Support continued and upgraded Caltrain, VTA, Altamont Commuter Express, and Capitol Corridor transit facilities and services. 5.8.7-P3 Work with the Public Utilities Commission to upgrade at-grade rail crossing equipment.
<p>TMC #6 Improve Interregional Rail Service:</p> <p>TCM 6 will reduce motor vehicle travel and emissions for longer distance interregional trips by upgrading and expanding rail service in the Capitol Corridor (Sacramento- Oakland-San Jose) and the Altamont Corridor (Altamont Commuter Express between Stockton/Tracy and San Jose). It also includes initiation of new services as funding becomes available (e.g., potential High Speed Rail service between Los Angeles and the Bay Area).</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>	<ul style="list-style-type: none"> 5.1.1-P6 Prior to the implementation of Phase II and of Phase III of the General Plan, identify bicycle, pedestrian and transit improvements that could off-set at least ten percent of anticipated vehicle miles traveled from development assumed in that phase. 5.1.1-P14 Prior to 2015, implement level of service standards for transit, bicycle and pedestrian facilities that support the vehicular level of service standard. 5.1.1-P18 Prior to 2025, identify measures and funding opportunities for transportation services that connect transit stations to major attractions, hotels, commercial services, employment centers and residential neighborhoods within the City of Santa Clara. 5.3.1-P13 Support high intensity development within a quarter-mile of transit hubs and stations and along transit corridors. 5.3.5-P11 Construct sidewalks in industrial areas, with priority along streets served by existing or planned transit services. 5.4.1-P4 Allow a ten percent increase in the maximum residential density if access to regularly scheduled transit to the Santa Clara Station, Lawrence Station and employment centers north of the Caltrain corridor is within one-quarter mile. 5.4.1-P13 Provide publicly accessible open space and transit

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
<p>TCM #9 Improve Bicycle Access and Facilities:</p> <p>TCM 9 will reduce mobile source emissions by expanding bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements would include bike lanes, routes, paths, and bicycle parking facilities. Accessibility of transit to bike riders is also part of this TCM.</p>	<p>TCM D-1 Bicycle Access and Facilities Improvements</p> <p>TCM D-1 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>	<ul style="list-style-type: none"> stops in each Regional Mixed use area. 5.4.2-P16 Work with Valley Transportation Authority to implement a Downtown loop for transit access to Santa Clara Station. 5.4.4-P10 Promote multimodal transit accessibility at Stevens Creek Boulevard and Saratoga Avenue. 5.8.3-P6 Encourage additional multimodal transit centers and stops in order to provide convenient access to commuter rail, buses, shuttle and taxi services. 5.8.3-P9 Require new development to incorporate reduced onsite parking and provide enhanced amenities, such as pedestrian links, benches and lighting, in order to encourage transit use and increase access to transit services. 5.8.3-P11 Encourage feeder services to carry commuters to transit stations, including shuttle connections from businesses, residences, and attractions to bus and rail services. 5.8.3-P12 Improve the existing public transit system and support expanded services to increase ridership. 5.8.3-P13 Advocate for frequent, direct transit service to all points in Santa Clara, particularly between residential and employment centers, as well as along the El Camino Real and Stevens Creek corridors. 5.8.5-P4 Encourage new development to participate in shuttle programs to access local transit services within the City, including buses, light rail, Bay Area Rapid Transit, Caltrain, Altamont Commuter Express Yellow Shuttle and Lawrence Caltrain Bowers/Walsh Shuttle services.
<p>TCM #9 Improve Bicycle Access and Facilities:</p> <p>TCM 9 will reduce mobile source emissions by expanding bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements would include bike lanes, routes, paths, and bicycle parking facilities. Accessibility of transit to bike riders is also part of this TCM.</p>	<p>TCM D-1 Bicycle Access and Facilities Improvements</p> <p>TCM D-1 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>	<ul style="list-style-type: none"> 5.1.1-P6 Prior to the implementation of Phase II and of Phase III of the General Plan, identify bicycle, pedestrian and transit improvements that could off-set at least ten percent of anticipated vehicle miles traveled from development assumed in that phase. 5.1.1-P14 Prior to 2015, implement level of service standards for transit, bicycle and pedestrian facilities that support the vehicular level of service standard. 5.1.1-P16 Prior to 2025, update the Bicycle and Pedestrian Master Plan to support the City's vision for improving walkability and pedestrian safety, including identification of potential funding

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
		<p>opportunities for implementation.</p> <ul style="list-style-type: none"> 5.3.1-P14 Encourage Transportation Demand Management strategies and the provision of bicycle and pedestrian amenities in all new development in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled. 5.3.4-P15 Maximize opportunities to connect streets, bicycle facilities and pedestrian pathways to improve accessibility between mixed use development and surrounding neighborhoods, parks, open spaces, transit and public amenities. Provide clear signage, high visibility, adequate lighting and special paving to enhance pedestrian and bicycle facilities. 5.4.3-P13 Provide new street, bicycle and pedestrian networks that encourage visibility, accommodate multiple modes of travel and maximize connections, particularly through large sites and to the Downtown and Santa Clara University. 5.8.4-P8 Require new development and public facilities to provide improvements, such as sidewalks, landscaping, bicycle parking, bicycle lockers and bicycle racks, to promote pedestrian and bicycle use. 5.8.4-P10 Encourage safe, secure and convenient bicycle parking and end-of-trip, or bicycle "stop", facilities, such as bicycle racks, showers or bicycle repair near destinations for all users, including commuters, residents, shoppers, students and other bicycle travelers.
<p>TCM #12 Arterial Management Measures:</p> <p>Arterial traffic controls include signals, stop signs, and yield signs. Coordination of signals on major arterial routes can reduce vehicle idling and acceleration by dedicating extra "green" time to the major traffic direction and thereby reducing vehicle emissions.</p>	<p>TCM B-1 Freeway and Arterial Operations Strategies</p> <p>TCM B-1 will improve the performance and efficiency of freeway and arterial systems through operational improvements.</p>	<ul style="list-style-type: none"> 5.8.2-P1 Require that new and retrofitted roadways implement "Full-Service Streets" standards, including minimal vehicular travel lane widths, pedestrian amenities, adequate sidewalks, street trees, bicycle facilities, transit facilities, lighting and signage, where feasible. 5.8.2-P2 Discourage widening of existing roadway or intersection rights-of-way without first considering operational improvements, such as traffic signal modifications, turn-pocket extensions and intelligent transportation systems. 5.8.2-P6 Interconnect and coordinate traffic signals to maximize vehicle flow on the City's roadway network to reduce the need for

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
<p>TCM #15 Local Land Use Planning and Development Strategies:</p> <p>TCM 15 seeks to reduce motor vehicle use and emissions by promoting land use patterns and development projects that facilitate walking, bicycling and transit use for a higher percentage of personal trips.</p>	<p>TCM D-3 Local Land Use Strategies</p> <p>TCM D-3 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>roadway widening.</p> <ul style="list-style-type: none"> 5.3.1-P15 Require new developments and major public infrastructure projects to include adequate rights-of way to accommodate all modes of transportation. 5.3.2-P2 Encourage higher-density residential development in transit and mixed use areas and in other locations throughout the City where appropriate. 5.3.3-P6 Encourage neighborhood retail uses within a ten minute walk of residential uses throughout the City. 5.3.4-P2 Encourage mixed use development in proximity to employment centers and residential neighborhoods throughout the City. 5.3.5-P9 Allow additional square footage of up to ten percent, but not less than 2,500 square feet, of a proposed Office/R&D Development for commercial uses provided that such commercial uses have the potential to reduce daytime vehicle trips. 5.4.3-P11 Encourage parking consolidation, alternate parking arrangements or reduced parking ratio within the Santa Clara Station Focus Area to promote the use of alternate transportation modes. 5.4.3-P15 Prioritize vehicular and transit transportation modes on roadways, such as Coleman Avenue and De La Cruz Boulevard, that provide access to the Station and prioritize pedestrian and bicycle transportation modes on internal streets within the Santa Clara Station Focus Area. 5.4.5-P9 Emphasize walkability and access to transit and existing roadways in Future Focus Area comprehensive plans. 5.8.1-P2 Link all City transportation networks, including pedestrian and bicycle circulation, to existing and planned regional networks. 5.8.1-P3 Identify opportunities to connect people to supportive services, public amenities and transit. 5.8.3-P7 Provide transit stops at safe, efficient and convenient locations to maximize ridership, including near employment centers, higher-density residential developments and Downtown. 5.8.3-P8 Require new development to include transit stop amenities, such as pedestrian pathways to stops, benches,

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
		<p>traveler information and shelters.</p> <ul style="list-style-type: none"> 5.8.4-P2 Provide a system of pedestrian and bicycle friendly facilities that supports the use of alternative travel modes and connects to activity centers as well as residential, office and mixed use developments. 5.8.4-P3 Link City pedestrian and bicycle circulation to existing and planned regional networks. 5.8.4-P6 Require new development to connect individual sites with existing and planned bicycle and pedestrian facilities, as well as with on-site and neighborhood amenities/services, to promote alternate modes of transportation. 5.8.4-P9 Encourage pedestrian- and bicycle-oriented amenities, such as bicycle racks, benches, signalized crosswalks, and bus benches or enclosures. 5.8.4-P13 Promote pedestrian and bicycle safety through "best practices" or design guidelines for sidewalks, bicycle facilities, landscape strips and other buffers, as well as crosswalk design and placement. 5.8.5-P1 Require new development to include transportation demand management site- design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.
<p>TCM #19 Improve Pedestrian Access and Facilities:</p> <p>Implementing measures to make pedestrian travel safer, more convenient and more attractive will promote walking, reduce the need to use autos, and therefore reduce mobile source emissions.</p>	<p>TCM D-2 Pedestrian Access and Facilities Improvements</p> <p>TCM D-2 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>	<ul style="list-style-type: none"> 5.1.1-P6 Prior to the implementation of Phase II and of Phase III of the General Plan, identify bicycle, pedestrian and transit improvements that could off-set at least ten percent of anticipated vehicle miles traveled from development assumed in that phase. 5.1.1-P14 Prior to 2015, implement level of service standards for transit, bicycle and pedestrian facilities that support the vehicular level of service standard. 5.1.1-P16 Prior to 2025, update the Bicycle and Pedestrian Master Plan to support the City's vision for improving walkability and pedestrian safety, including identification of potential funding opportunities for implementation. 5.3.1-P12 Encourage convenient pedestrian connections within new and existing developments. 5.3.1-P14 Encourage Transportation Demand Management

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
		<p>strategies and the provision of bicycle and pedestrian amenities in all new development in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled.</p> <ul style="list-style-type: none"> 5.3.1-P16 Consolidate curb cuts with new development on arterial roadways to minimize pedestrian/vehicle conflicts at driveway locations and improve traffic flow. 5.3.4-P11 Foster active, pedestrian-oriented uses at the ground level, such as retail shops, offices, restaurants with outdoor seating, public plazas or residential uses. 5.3.4-P12 Prioritize pedestrian-oriented streetscape and building design in mixed use development, including features such as wider sidewalks, street furniture, specialty planters, signage, public art, street trees, special paving materials, decorative awnings, enhanced entrances, colors, variety of materials and textures and distinctive building massing and articulation. 5.3.4-P13 Encourage pedestrian linkages in mixed use areas through measures such as enhanced lighting, curb bulb-outs, mid-block pedestrian crossings, pedestrian "refuge" areas in planted medians and pedestrian oriented building frontages. 5.3.4-P14 Provide a network of streets and pedestrian connections in large mixed use developments. 5.3.4-P15 Maximize opportunities to connect streets, bicycle facilities and pedestrian pathways to improve accessibility between mixed use development and surrounding neighborhoods, parks, open spaces, transit and public amenities. Provide clear signage, high visibility, adequate lighting and special paving to enhance pedestrian and bicycle facilities. 5.4.1-P1 Require that the mix of uses is consistent with the Regional Mixed Use land use classification and that development is pedestrian-oriented, with enhanced streetscapes, publicly accessible open space and plazas, and connections to surrounding neighborhoods. 5.4.1-P17 Work with Valley Transportation Authority and Caltrans toward a roadway design for El Camino Real that includes narrower and/or reduced travel lanes, enhanced pedestrian facilities, wider sidewalks, street trees, planted medians, and enhanced signage and lighting, as well as transit and bicycle

Bay Area 2005 Ozone Strategy Transportation Control Measures	Bay Area 2010 Clean Air Plan Transportation Control Measures	Relevant General Plan Policies
		<p>lanes without increasing overall right-of-way requirements.</p> <ul style="list-style-type: none"> • 5.4.2-P5 Encourage public spaces and art throughout Downtown to support pedestrian activity and gathering places. • 5.4.2-P8 Integrate established and new uses through pedestrian connections, streetscape, and complementary architecture and site design. • 5.4.2-P13 Promote pedestrian-friendly streetscapes with trees, benches, outdoor seating, kiosks, amenities, banners and signature signage, and landscaping that reflect the historic neighborhood character. • 5.4.3-P3 Provide pedestrian-oriented ground floor uses and a network of parks and public spaces to serve both residential and non-residential development. • 5.4.3-P6 Provide pedestrian-oriented retail uses to serve new residential development, Station visitors and area employees. • 5.4.3-P9 Encourage streetscape design with street trees, wider sidewalks, pedestrian-oriented lighting, curb bulb-outs and special paving and/or striping within the Focus Area to emphasize accessibility. • 5.4.3-P13 Provide new street, bicycle and pedestrian networks that encourage visibility, accommodate multiple modes of travel and maximize connections, particularly through large sites and to the Downtown and Santa Clara University. • 5.4.4-P9 Provide internal pedestrian connections to surrounding neighborhoods and across Saratoga Avenue for new mixed use development. • 5.8.4-P5 Design streets to include detached sidewalks with planting strips or wider, attached sidewalks with tree-wells to encourage pedestrian use and safety, as well as to remove barriers and increase accessibility. • 5.8.4-P11 Provide pedestrian and bicycle crossings that are well-marked using measures, such as audio/ visual warnings, bulb-outs and median refuges, to improve safety.

4.10.5.3 Expose Sensitive Receptors to Substantial Pollutant Concentrations

According to the BAAQMD Guidelines, for a general plan to have a less than significant impact with respect to toxic air contaminants (TACs), buffer zones should be established in existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid exposure to substantial levels of air pollution (in the form of TACs) should be reflected in local plan policies, land use maps, and implementing ordinances.

The De La Cruz and Santa Clara Station Focus Areas fall within the BAAQMD CARE boundary (Figure 4.10-1). The De La Cruz Future Focus Area will include medium-density residential, open space, public facilities, and neighborhood retail. The vision for the Santa Clara Station Focus Area includes new office, hotel, and retail uses and high-density residential development.

The primary source of TAC emissions in Santa Clara is Highway 101 and major roadways traffic, industrial uses (including their truck traffic generation), and the San José Airport. BAAQMD recommends a 1,000-foot radius for assessing community risks and hazards from TAC stationary sources. TAC stationary sources located in and within 1,000 feet of the Santa Clara Focus Areas are shown on Figure 4.10-2 and include: eight TAC facilities in the De La Cruz Focus Area, and four facilities within 1,000 feet; five TAC facilities in the Central Expressway Focus Area, and seven facilities within 1,000 feet; the northern portion of the Central Expressway Focus Area is also adjacent to US 101; four TAC facilities in the Lawrence Station Focus Area, and ten within 1,000 feet; one TAC facility in the Great America Parkway Focus Area; three TAC facilities in the Tasman East Focus Area, and two facilities within 1,000 feet; 12 TAC facilities in the El Camino Real Focus Area, and four facilities within 1,000 feet; one TAC facility in the Santa Clara Station Focus Area, and five within 1,000 feet; and one TAC facility within 1,000 feet of the Downtown Focus Area. See Appendix H for a detailed list of these TAC facilities. The TAC sources located within the Focus Areas will be removed in conjunction with the timing of the redevelopment within the Focus Area under the proposed Draft 2010-2035 General Plan.

CARB is responsible for meeting the State requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards. The BAAQMD is primarily responsible for assuring that the California Ambient Air Quality Standards, as established by CARB, are attained and maintained in the Bay Area. CARB recommends that lead agencies provide minimum setbacks of: 500 feet for freeways (or busy arterial roadways with average daily trips of 100,000 or more, or rural roads with 50,000 vehicles per day); 300 feet for dry cleaners (500 feet with two or more machines); and 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater) – a 50 foot radius is recommended for typical gas dispensing facilities. CARB also recommends minimum setbacks for other uses that do not apply to Santa Clara. These include large truck distribution centers, rail yards, refineries, chrome platers, and seaports.¹¹⁴

Neither CARB nor BAAQMD provide recommendations for minimum setbacks from railroad lines. Caltrain includes about 100 daily train passbys on weekdays. Modeling studies of Deisel

¹¹⁴ California Air Resources Board. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. May 2005.

Particulate Matter (DPM) exposure from these train passbys have not been conducted; however, the emissions associated with the Caltrain line would be much less than the emissions from traffic on major roadways, so the necessary buffer would be considerably less. In addition, Caltrain proposes to be electrified in the future, eliminating DPM emissions. The eastern end of the El Camino Real focus area is adjacent to Caltrain. The southern end of the Central Expressway Future Focus Area is also adjacent to Caltrain. The Santa Clara Station Focus Area includes the existing Santa Clara Transit Station, which is served by Caltrain. The Tasman East Future Focus Area is located adjacent to the Union Pacific Railroad line, which includes approximately 14 daily train passbys¹¹⁵. All of these focus areas will include new residences. DPM emitted from railroad trains passing through Santa Clara could expose new residences to DPM. Significant exposures of DPM are not expected at locations beyond 100 feet to the railroad. This is similar to the screening distance used for avoiding significant vibration impacts.¹¹⁶

Proposed projects that would emit TACs would require review under the BAAQMD rules and regulations or CEQA review. However, projects with sensitive receptors may be placed near localized sources of TAC emissions (e.g. residences near Caltrain or Union Pacific Railroad), which could expose sensitive populations to DPM. Exposure to DPM contributes to elevated health risks. The BAAQMD recommends that buffers to avoid the exposure of sensitive receptors to TAC sources be reflected in local plan policies (e.g. General Plans), land use maps, and implementing ordinances.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that would help reduce exposure of sensitive receptors to TACs. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for exposure to TACs within the City are identified below.

General Land Use Policies	
5.3.1-P21	Allow Public/Quasi Public uses, including places of assembly such as places of worship, schools, emergency shelters and convalescent homes, in all General Plan designations, except in areas designated Light Industrial and Heavy Industrial, provided that access is from a Collector or larger roadway, and provided that parcels designated High or Low Intensity Office/Research and Development are less than one-half acre, unless more than one such use is co-locating on the site.
Mixed Use Land Use Policies	
5.3.4-P16	Discourage auto-oriented uses, such as drive-through retail establishments, auto repair, and service stations in mixed use designations.
Industrial Land Use Policies	
5.3.5-P17	Prohibit places of assembly, such as clubs, theaters, religious institutions and schools and uses catering predominately to sensitive receptors, such as children and the elderly, from sites designated as Light or Heavy Industrial, on parcels of one-half acre or larger in areas designated for High or Low Intensity Office/Research and Development, and on parcels without access from a collector or larger street.
5.3.5-P19	Restrict the use and storage of hazardous materials for industrial uses within 500 feet of existing

¹¹⁵ Capitol Corridor Joint Powers Authority. 2009. Capitol Corridor Intercity Passenger Rail Service Business Plan Update FY 2009-10 – FY 2010-11- Final March 2009. Accessed May 7, 2010. Available at: http://www.capitolcorridor.org/included/docs/business_plans/09_11_Business_Plan.pdf

¹¹⁶ Department of Transportation and Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. May 2006

	residential uses.
Air Quality Policies	
5.10.2-P3	Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
Rail and Freight Policies	
5.8.7-P5	Require new development to implement appropriate measures to reduce the negative effects, such as noise and vibration, of rail and freight services.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2005 Ozone Strategy
- Bay Area 2010 Clean Air Plan
- BAAQMD CEQA Guidelines
- Santa Clara City Code Chapter 16.65

Impact 4.10-3: Implementation of the proposed Draft 2010-2035 General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of TACs. The proposed Draft 2010-2035 General Plan does not provide adequate buffers between existing sources of TAC and new residences or sensitive receptors. (**Significant Impact**)

As discussed in the Mitigation Measures section below, the addition of Policy 5.1.1-P25 to the Prerequisite section and Policy 5.10.5-P34 to the Safety section would require minimum screening or buffer distances between emissions sources and sensitive receptors.

Level of Significance after Mitigation

Less Than Significant Impact

4.10.5.4 Expose Sensitive Receptors to Objectionable Odors

Odor impacts could result from siting a new odor source near existing sensitive receptors or siting a new sensitive receptor near an existing odor source. Implementation of the Draft General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of odors that could include painting/coating operations or coffee roasters.

The BAAQMD CEQA Guidelines provide project screening trigger levels for potential odor sources. BAAQMD has developed a list of recommended odor screening distances for specific odor generating facilities¹¹⁷. Projects that would locate sensitive receptor(s) to odor source(s) closer than the screening distances would be considered to result in a potentially significant impact. If the proposed project would include the operation of an odor source, the screening distances should also be used to evaluate the potential impact to existing sensitive receptors.

¹¹⁷ Bay Area Air Quality Management District. Draft California Environmental Quality Act Air Quality Guidelines Table 3-3 Odor Screening Distances. December 2009.

Projects that would locate sensitive receptor(s) near odor source(s) farther than the screening distances, or vice versa, would be considered to have a sufficient buffer. To avoid significant impacts, the BAAMQD CEQA Guidelines recommend that buffer zones to avoid adverse impacts from odors should be reflected in local plan policies, land use maps, and implementing ordinances.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that would help reduce exposure of sensitive receptors to odors. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for exposure to odors within the City are identified below.

General Land Use Policies	
5.3.1-P21	Allow Public/Quasi Public uses, including places of assembly such as places of worship, schools, emergency shelters and convalescent homes, in all General Plan designations, except in areas designated Light Industrial and Heavy Industrial, provided that access is from a Collector or larger roadway, and provided that parcels designated High or Low Intensity Office/Research and Development are less than one-half acre, unless more than one such use is co-locating on the site.
Mixed Use Land Use Policies	
5.3.4-P16	Discourage auto-oriented uses, such as drive-through retail establishments, auto repair, and service stations in mixed use designations.
Industrial Land Use Policies	
5.3.5-P17	Prohibit places of assembly, such as clubs, theaters, religious institutions and schools and uses catering predominately to sensitive receptors, such as children and the elderly, from sites designated as Light or Heavy Industrial, on parcels of one-half acre or larger in areas designated for High or Low Intensity Office/Research and Development, and on parcels without access from a collector or larger street.
5.3.5-P19	Restrict the use and storage of hazardous materials for industrial uses within 500 feet of existing residential uses.
Air Quality Policies	
5.10.2-P3	Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2005 Ozone Strategy
- Bay Area 2010 Clean Air Plan
- BAAQMD CEQA Guidelines

Impact 4.10-4: Implementation of the proposed Draft 2010-2035 General Plan may involve the placement of sensitive receptors (e.g. new residences) near localized sources of odors. The proposed Draft 2010-2035 General Plan does not provide adequate buffers between sources of odors and new residences or sensitive receptors. **(Significant Impact)**











As discussed in the Mitigation Measures section below, the addition of Policy 5.1.1-P25 to the Prerequisite section and Policy 5.10.5-P34 to the Safety section would require minimum screening or buffer distances between emissions sources and sensitive receptors.

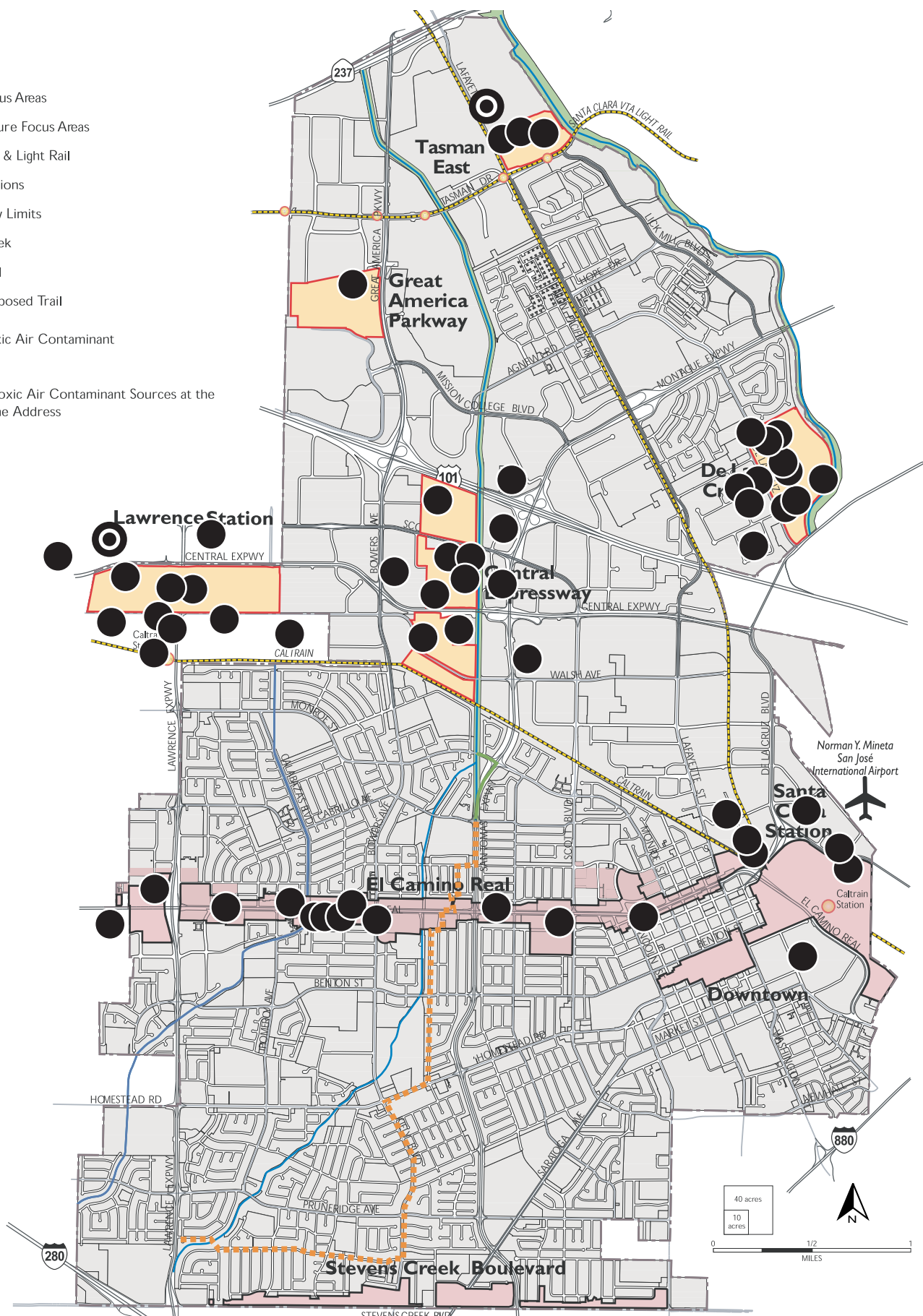
Level of Significance after Mitigation

Less Than Significant Impact

4.10.5.5 Construction Dust and Exhaust Emissions

Development allowed under the proposed Draft 2010-2035 General Plan would generate dust that could affect local and regional air quality. Dust is generated from a variety of project construction activities including grading, import/export of fill material, and vehicle travel on unpaved surfaces. Soil can also be tracked out onto paved roads where it is entrained in the air by passing cars and trucks. The rate of dust emissions is related to the type and size of the disturbance, meteorological conditions, and soil conditions. Similar to construction dust, exhaust emissions are difficult to predict. Exhaust from diesel powered construction equipment affects regional ozone levels as well as localized particulate levels.

-  Focus Areas
-  Future Focus Areas
-  Rail & Light Rail
-  Stations
-  City Limits
-  Creek
-  Trail
-  Proposed Trail
-  Toxic Air Contaminant
-  2 Toxic Air Contaminant Sources at the Same Address



APPROXIMATE LOCATIONS OF TOXIC AIR CONTAMINANT SOURCES
IN OR WITHIN 1,000 FEET OF SANTA CLARA FOCUS AREAS

FIGURE 4.10-2

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Diesel particulate matter is considered a toxic air contaminant. Construction equipment will be replaced or retrofitted over time, per the State or Air District guidelines, leading to an overall decrease in emissions of exhaust particulate matter and ozone precursor emissions.

The BAAQMD CEQA Guidelines suggest that the significance of construction period emissions should be based on the application of control measures. The BAAQMD recommends a set of feasible control measures to reduce $PM_{2.5}$ and PM_{10} near construction sites. The BAAQMD also recommends that control measures for equipment exhaust emissions also be included. The BAAQMD qualitative approach requires all construction projects to implement some level of control measures to reduce impacts. The City has consistently required compliance with these measures in newer developments.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that would help reduce construction dust emissions added by future development. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for construction dust emission within the City are identified below.

Air Quality Policies	
5.10.2-P3	Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
5.10.2-P6	Require "Best Management Practices" for construction dust abatement.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2005 Ozone Strategy
- Bay Area 2010 Clean Air Plan

Impact 4.10-5: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could result in construction dust emissions. Implementation of proposed policies and existing regulations and programs would substantially reduce construction dust emissions. **(Less Than Significant Impact)**

4.10.5.6 Violate an ambient air quality standard or contribute substantially to an existing or project air quality violation

The Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level ozone and State standards for PM_{10} and $PM_{2.5}$. The pollutant of most concern in the Santa Clara valley is ozone, as discussed previously. New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could increase the concentration of air pollutants. Population projections under the proposed Draft 2010-2035 General Plan are slightly above the *Bay Area 2005 Ozone Strategy* and the *Draft Bay Area 2010 Clean Air Plan*, but the

rate of VMT growth is less than half the rate of population growth. Therefore, the proposed Draft 2010-2035 General Plan is consistent with the clean air plan for the Bay Area and the associated thresholds for population projections and air pollutants. As such, the proposed Draft 2010-2035 General Plan would not violate an ambient air quality standard or contribute substantially to an existing or project air quality violation.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated policies that would help reduce air pollution added by future development. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for air quality pollution within the City are identified below.

General Mobility and Transportation Policies	
5.8.1-P6	Implement Level of Service standards that support increased transit ridership, biking and walking, in order to decrease vehicle miles traveled and reduce air pollution, energy consumption and greenhouse gas emissions.
Air Quality Policies	
5.10.2-P1	Support alternative transportation modes and efficient parking mechanisms to improve air quality.
5.10.2-P2	Encourage development patterns that reduce vehicle miles traveled and air pollution.
5.10.2-P3	Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.
5.10.2-P5	Promote regional air pollution prevention plans for local industry and businesses.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible air quality pollutants include:

- Clean Air Act
- Bay Area 2005 Ozone Strategy
- Bay Area 2010 Clean Air Plan
- Santa Clara City Code Chapter 16.65

Impact 4.10-6: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could increase the concentration of air pollutants. Implementation of proposed policies and existing regulations and programs would substantially reduce air pollutants. **(Less Than Significant Impact)**

4.10.5.7 Climate Change

Concentrations of several of the key air pollutants, such as ozone and PM, depend strongly upon the vertical gradient of temperature in the lower atmosphere. The persistence of California's ozone problem is associated with inversions, warm sunny days with stagnant atmospheric conditions that trap emissions close to the surface where they have ample opportunity to accumulate and to form smog. Climate variables, such as higher temperatures and increased natural biogenic emissions, would produce higher ozone concentrations.¹¹⁸ Future redevelopment

¹¹⁸ California Climate Action Team. 2009. Climate Action Team Draft Biennial Report. March 2009.

and development within Santa Clara would contribute to GHG emissions, as discussed in detail in Section 4.16 *Climate Change*, of this EIR.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan has Goals and Policies to address sustainability (see Appendix 8.13: Sustainability Goals and Policies Matrix in the proposed Draft 2010-2035 General Plan) aimed at reducing the City's contribution to GHG emissions. Policies within the Land Use and Mobility and Transportation sections also reduce air pollutants, by encouraging alternative transportation modes, sustainable building practices and other energy efficiency measures. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for greenhouse gases within the City are identified below.

Prerequisite Policies	
5.1.1-P10	Prior to 2015, adopt a Climate Action Plan to implement the City's sustainability and environmental quality Goals and Policies, including any necessary health impact assessments..
5.1.1-P15	Prior to 2015, work with Valley Transportation Authority and other responsible agencies to develop a Regional Transportation Plan to address the Sustainable Community Strategy goals of AB32 (2006) and SB375 (2008).
General Mobility and Transportation Policies	
5.8.1-P4	Expand transportation options and improve alternate modes that reduce greenhouse gas emissions.
5.8.1-P6	Implement Level of Service standards that support increased transit ridership, biking and walking, in order to decrease vehicle miles traveled and reduce air pollution, energy consumption and greenhouse gas emissions.
Air Quality Policies	
5.10.2-P4	Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible air quality pollutants include:

- California Global Warming Solutions Act of 2006 (AB 32)
- Bay Area 2010 Clean Air Plan

Impact 4.10-7: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan would contribute to GHG emissions. The City's projected 2020 GHG emissions, without further reduction via a Climate Action Plan, would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to meet statewide 2020 goals as established by AB 32. Through its General Plan policies the City is committed to the preparation, adoption, and implementation of a comprehensive greenhouse gas emissions reduction strategy (Climate Action Plan) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32. The CAP will specify the strategies, measures, and actions to be taken for each inventory sector (transportation, electricity, solid waste, water, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met. Therefore, with implementation of the mitigation strategy included in the General Plan, the City's future contribution to climate change will be less than

cumulatively considerable for 2020 emissions. (Less than significant impact with mitigation incorporated)

The City's projected 2035 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by Executive Order S-3-05. There are no feasible measures to reduce this impact. (Significant Impact)

4.10.6 Air Quality Mitigation and Avoidance Measures for General Plan Impacts

Mitigation Measures 4.10-1

Policy 5.1.1-P25 should be added to the Prerequisite section as follows:

Policy 5.1.1-P25: Prior to the implementation of Phase II, the City will include a Community Risk Reduction Plan (CRRP) for acceptable TAC concentrations consistent with the BAAQMD CEQA Guidelines, including risk and exposure reduction targets, measures to reduce emissions, monitoring procedures, and a public participation process.

Policy 5.10.5-P34 should be added to the Safety section as follows:

Policy 5.10.5-P34: Include minimum setbacks of 500 feet for roadways with average daily trips of 100,000 or more and 100 feet for railroad tracks for new residential or other uses with sensitive receptors, unless a project-specific study identifies measures such as, site design, tiered landscaping, air filtration systems, windows design to reduce exposure, demonstrating that the potential risks can be reduced to acceptable levels.

Mitigation Measures 4.10-2

Policy 5.10.5-P35 should be added to the Safety section as follows:

Policy 5.10.5-P35: Establish minimum buffers between odor sources and new residential or other uses with sensitive receptors, consistent with the BAAQMD guidelines, unless a project-specific study demonstrates that these risks can be reduced to acceptable levels.

4.10.7 Significance Conclusion

Implementation of the above mitigation measures and proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant air quality impacts.

4.11 CULTURAL AND HISTORIC RESOURCES

The following section is based on the City of Santa Clara General Plan, the City's Historic Resources Inventory, and a Cultural Resources Report by Albion Environmental, Inc., prepared in May 2010.

4.11.1 Introduction

The City of Santa Clara has a rich cultural and historical heritage. The City of Santa Clara contains a large number of prehistoric archaeological sites that reflect many thousands of years of Native American land use and residency. The City developed in the context of the major historical periods that have shaped the region of California: Spanish explorations and colonization beginning in the year 1769, subsequent Mexican rule after 1822, and later annexation to the United States and Statehood in 1850. The City of Santa Clara figured prominently in these historic and cultural periods.

One of the largest concentrations of Native American people in North America existed within the Santa Clara Valley. The potential for uncovering evidence of their occupation (spanning over ten thousand years) is consequently very high. The establishment of Mission Santa Clara in 1777 in the midst of this population ushered in a long period of Euro-American occupation of the region. Santa Clara Mission served as a colonial center and attracted a great deal of associated activity including agriculture, livestock management, building and residential and industrial development. Santa Clara continued to figure prominently throughout the various historical periods culminating into the City as it is today (the "Mission City").

4.11.2 Regulatory Framework

Federal, State and City policies and programs govern the treatment of cultural resources.

4.11.2.1 *Federal*

National Historic Preservation Act

The National Historic Preservation Act established the National Register of Historic Places (NRHP) to recognize resources associated with local, State, and national history and heritage. Structures and features must usually be at least 50 years old to be considered for listing on the NRHP, barring exceptional circumstances. However, the California Office of Historic Preservation has established criteria that call for the recordation of resources 45 years or older to account for the time lag in listing the resource.

Criteria for listing on the NRHP (see 36 CFR Part 63), are significance in American history, architecture, archaeology, engineering, and culture as present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that are:

- (A) associated with events that have made a significant contribution to the broad patterns of our history;
- (B) associated with the lives of persons significant in our past;

- (C) embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, represent a significant and distinguishable entity whose components may lack individual distinction; or,
- (D) have yielded, or may be likely to yield, information important in prehistory or history. Criterion D is usually reserved for archaeological and paleontological resources.

Section 106

Federal regulations for cultural resources are primarily governed by Section 106 of the NHPA which applies to actions taken by federal agencies. Compliance with Section 106 requires that prior to the approval of the expenditure of any federal funds or the issuance of any license, the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking and the head of any federal department or independent agency having authority to license any undertaking shall take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The criteria for determining NRHP eligibility are found in 36 CFR Part 60. The head of any such federal agency shall afford the Federal Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to such undertaking. Both archaeological resources and historic buildings in the City of Santa Clara are subject to review if federal funds or a federal permit/license is involved.

Historic Rehabilitation Tax Credits Program

The National Park Service and the Internal Revenue Service, in partnership with the various State Historic Preservation Officers, administers the Historic Rehabilitation Tax Credits program which rewards private investment in rehabilitating historic buildings listed on the National Register of Historic Places. Properties must be income-producing and must be rehabilitated according to rehabilitation standards set by the Secretary of the Interior.

Americans with Disabilities Act (ADA)

The ADA requires that new buildings and facilities and altered portions of existing buildings and facilities be readily accessible for persons with disabilities. In the case of historic properties, the ADA provides for the application of certain alternative minimum accessibility standards if making a "qualified historic building" accessible would threaten or destroy the historic significance of that building or facility. Consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation is required.

Secretary of the Interior's Standard for the Treatment of Historic Properties

The U.S. Secretary of the Interior has established standards for the treatment of historic properties. The 1995 Secretary of the Interior's Standard for the Treatment of Historic Properties outlines specific standards and guidelines for the preservation, rehabilitation, restoration, and reconstruction of historic properties. Preservation standards and guidelines apply to those buildings that require ongoing maintenance to sustain their historical authenticity. Rehabilitation standards and guidelines involve the reuse of a historic structure or property while retaining features that maintain historic value. Restoration standards and guidelines are applicable to projects that remove portions of a building from another historic period in order to restore a property to its period of significance. Reconstruction standards and guidelines apply to new developments that replicate a historic period or setting based on documented evidence. Each set of standards provides specific recommendations for the proper treatment of specific building

materials, as well as parts of building construction. The California Environmental Quality Act (CEQA) references these Standards relative to consideration of the significance of project impacts, or lack thereof, on historic resources.

4.11.2.2 State

California Public Resources Code

Archaeological, paleontological, and historical sites are protected by a wide variety of State policies and regulations under the California Public Resources Code. In addition, cultural and paleontological resources are recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA.

- California Public Resources Code 5020–5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The Commission oversees the administration of the California Register of Historical Resources, and is responsible for the designation of State Historical Landmarks and Historical Points of Interest.
- California Public Resources Code 5079–5079.65 defines the functions and duties of the Office of Historic Preservation (OHP). The OHP is responsible for the administration of federally and State mandated historical preservation programs in California and the California Heritage Fund.
- California Public Resources Code 5097.9–5097.991 provides protection to Native American historical and cultural resources and sacred sites, and identifies the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods.
- California Public Resources Code 5097.98 provides that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation until the coroner has determined that the remains are not subject to provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.
- California Public Resources Code 5097.5 prohibits “knowing and willfull” excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under State, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted permission.
- California Public Resources Code 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both “historical resources” and “unique archaeological resources” - a “. . . project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment” (Public Resources Code, Section 21084.1). The CEQA Guidelines define a significant resource as any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (see Public Resources Code, Section 21084.1 and CEQA Guidelines Section 15064.5 (a) and (b)). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

The CRHR was created to identify resources deemed worthy of preservation on a State level and was modeled closely after the NRHP. The criteria are nearly identical to those of the NRHP which includes resources of local, State, and region or national levels of significance. The CRHR automatically includes resources listed on the NRHP. These listings are updated as resources are determined eligible and/or are officially listed. Current listings are maintained by the California Historical Resources Information System, Northwest Information Center, California State University Sonoma (CHRIS/NWIC) for Santa Clara County.

In addition to assessing whether historical resources potentially affected by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project’s impacts on historical resources (Public Resources Code, Section 21084.1; CEQA Guidelines, Section 15064.5(a)(3)). In general, a historical resource is defined as any object, building, structure, site, area, place, record, or manuscript that:

- Is historically or archaeologically significant; or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and

Meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be “historical resources” for the purposes of CEQA unless a preponderance of evidence indicates otherwise (Public Resources Code, Section 5024.1; California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a

preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicates that following the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), mitigates impacts to a less than significant level. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

CEQA also requires lead agencies to consider whether projects will affect "unique archaeological resources" (Public Resources Code, Section 21083.2(g)) which are defined as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Treatment options for unique archaeological resources include preservation in place in an undisturbed State; excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a "unique archaeological resource").

Native American Burials

California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains (Section 7050.5(b) of the California Health and Safety code). CEQA Guidelines section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner or medical examiner be contacted to assess the remains. If the county coroner or medical examiner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. The property owner is required to consult with the appropriate Native Americans identified by the NAHC as a "most likely descendant" to develop an agreement for the treatment and disposition of the remains.

Senate Bill (SB) 18, 2004 - Local and Tribal Intergovernmental Consultation

SB 18 is a process separate from CEQA that requires local governments to consult with federally and non-federally recognized Native American tribes prior to approving certain land use plans that include traditional tribal cultural places on both public and private lands. A cultural place is

a landscape feature, site, or cultural resource that has some relationship to particular tribal religious heritage or is a historic or archaeological site of significance or potential significance.

SB 18 places the responsibility of initiating consultation on local governments. The purpose of SB 18 is to provide time for tribal input early in the planning process. Besides City staff and tribal representatives, the process may also include applicants and consultants. SB 18 consultation applies to the adoption and amendment of both General and Specific Plans proposed on or after March 1, 2005 and consultation is a “government to government” interaction between tribal representatives and representatives of the local jurisdiction. The NAHC maintains lists of Native Americans individual/groups organized by county for SB 18 Tribal Consultation.

Tribal consultation concerning the proposed General Plan pursuant to SB 18 was initiated by the City in 2008 with applicable Santa Clara County tribal representatives identified by the NAHC.

California Historical Building Code

The California Historical Building Code (CHBC) provides regulations for the preservation, restoration, rehabilitation, relocation, or reconstruction of buildings or structures designated as qualified historical buildings or properties by a local, State or federal jurisdiction. The CHBC intends to provide alternative solutions for the preservation of qualified historical buildings or properties, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of the occupants or users (California Code of Regulations, Title 24 Part 8).

The CHBC defines “qualified historical building” as “any building, site, structure, object, district or collection of structures, and their associated sites, deemed of importance to the history, architecture or culture of an area by an appropriate local, State or federal governmental jurisdiction. This includes designated buildings or properties on, or determined eligible for, national, State or local historical registers or official inventories including the NRHP, the CRHR, State Historical Landmarks, State Points of Historical Interest, and officially adopted City or county registers, inventories, or surveys of historical or architecturally significant sites, places or landmarks.”

4.11.2.3 Local

City of Santa Clara’s General Plan 2000 – 2010

The City of Santa Clara’s current General Plan provides information to the community to define acceptable development. It is a guide for decisions by the City Council, Planning Commission and other governmental agencies on specific development applications. The current General Plan reports existing conditions, policies and implementation measures for archaeological resources including:

- Continue to require archeological investigations of all proposed construction sites in sensitive area, such as within 500 feet of a natural watercourse. An archaeological survey shall be prepared by the project applicant to the City's satisfaction, including limited subsurface excavation, and possibly to include a detailed subsurface investigation when important resources cannot be avoided. (Ongoing, Planning Div., Bldg. Div.)

- Continue to require prior to development, whenever archeological remains are found, a plan for preserving, removing, and recording the find, to be prepared to the City's satisfaction by a professional archeologist. (Ongoing, Planning Div., Bldg. Div.)

City of Santa Clara Historical and Landmarks Commission

In order to support its historic preservation goals, the City established a Historical and Landmarks Commission and obtained recognition by the State Office of Historic Preservation of the City as a Certified Local Government (CLG). The City currently uses the following tools to evaluate historic resources:

- The Historical and Landmarks Commission advises the City Council on all matters pertaining to historical landmarks, names, and renaming of streets, museums and the establishment thereof in the City, and in the marking and preservation of historical landmarks and places. As required by the State CLG program, the City has established a list of Architecturally or Historically Significant Properties, which is the foundation for the Commission's recommendations.
- The Criteria for Local Significance, establishes evaluation measures, to ensure that the resource is at least 50 years old and that the property is associated with an important individual or event, an architectural innovation, and/or an archaeological contribution in order to be deemed significant. The City maintains a list of qualified historic consultants for these evaluations.

Architecturally or Historically Significant Properties refer to prehistoric and historic features, structures, sites or properties that represent important aspects of the City's heritage. Historic Preservation policies strengthen the City's Historic Preservation Goals, providing direction for changes to historic resources and new development proposed within 100 feet of historic properties in order to evaluate any potential effects on the historic context for the resource. A 100-foot radius, defined as the Area of Historic Sensitivity, is approximately equal to all properties abutting, across the street, and adjacent to abutting properties from a historic resource. This would comprise a little less than a typical City block. Preservation of Santa Clara's long history is also supported by policies that protect archaeological resources, such as relics found in burial sites.

City of Santa Clara Criteria for Local Significance

The Criteria for Local Significance were adopted on April 8, 2004, by the City of Santa Clara City Council. These criteria establish evaluation measures that help to determine significance for properties not yet included on the historic list. Any building, site, or property in the City that is 50 years old or older and meets certain criteria of architectural, cultural, historical, geographical or archeological significance is potentially eligible. As buildings and other resources age, additional properties will be added to the inventory. In order to accomplish this, a property owner can apply to have their property listed as a historic resource, or the City can nominate properties. The Historical and Landmarks Commission evaluates these applications and forwards a recommendation to the City council. Updates to the Historic Preservation and Resource Inventory are considered an amendment to the General Plan.

Criteria for Historical or Cultural Significance

To be historically or culturally significant, a property must meet at least one of the following criteria:

- The site, building or property has character, interest, integrity and reflects the heritage and cultural development of the city, region, State, or nation.
- The property is associated with a historical event.
- The property is associated with an important individual or group who contributed in a significant way to the political, social and/or cultural life of the community.
- The property is associated with a significant industrial, institutional, commercial, agricultural, or transportation activity.
- A building's direct association with broad patterns of local area history, including development and settlement patterns, early or important transportation routes or social, political, or economic trends and activities. Included is the recognition of urban street pattern and infrastructure.
- A notable historical relationship between a site, building, or property's site and its immediate environment, including original native trees, topographical features, outbuildings or agricultural setting.

Criteria for Architectural Significance

To be architecturally significant, a property must meet at least one of the following criteria:

1. The property characterizes an architectural style associated with a particular era and/or ethnic group.
2. The property is identified with a particular architect, master builder or craftsman.
3. The property is architecturally unique or innovative.
4. The property has a strong or unique relationship to other areas potentially eligible for preservation because of architectural significance.
5. The property has a visual symbolic meaning or appeal for the community.
6. A building's unique or uncommon building materials, or its historically early or innovative method of construction or assembly.
7. A building's notable or special attributes of an aesthetic or functional nature. These may include massing, proportion, materials, details, fenestration, ornamentation, artwork or functional layout.

Criteria for Geographic Significance

To be geographically significant, a property must meet at least one of the following criteria:

1. A neighborhood, group or unique area directly associated with broad patterns of local area history.
2. A building's continuity and compatibility with adjacent buildings and/or visual contribution to a group of similar buildings.
3. An intact, historical landscape or landscape features associated with an existing building.
4. A notable use of landscaping design in conjunction with an existing building.

Criteria for Archaeological Significance

For the purposes of CEQA, an "important archaeological resource" is one which:

1. Is associated with an event or person of:
 - A. Recognized significance in California or American history, or
 - B. Recognized scientific importance in prehistory.
2. Can provide information, which is both of demonstrable public interest, and useful in addressing scientifically consequential and reasonable or archaeological research questions;
3. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
4. Is at least 100 years old and possesses substantial stratigraphic integrity; or
5. Involves important research questions that historical research has shown can be answered only with archaeological methods.

City of Santa Clara Zoning – Historic Combining Districts

The historic combining zoning district is intended to preserve historic landmarks that represent important elements of the City's past and contribute to the community's identity and educational resources. The conversion of residential structures to commercial use should only be considered when continued residential use is no longer feasible or desirable and when the commercial use will not be detrimental to the surrounding neighborhood (Santa Clara City Code Chapter 18.58, Sections 18.58.010 through 18.58.090).

4.11.3 Existing Setting

Santa Clara's character and identity are largely products of its history as a Mission City. Historic resources in the City, including Mission Santa Clara, numerous historic homes and relics found in local Native American burial sites, serve as a reminder of this rich history.

4.11.3.1 Cultural Setting for the City of Santa Clara¹¹⁹

Based on the most current evidence, Native Americans have occupied the southern San Francisco Bay Area (including the Santa Clara Valley) for nearly 10,000 years. The area's mild Mediterranean climate, abundance of wild food resources, and varied habitats sustained relatively large populations and permitted the development, especially during the Late Holocene, of at least semi-permanent villages and complex, hierarchical social organization. At the time of initial European contact (AD 1602 to 1770), many of the groups in this area lived in relatively large settlements, had complex social, political, and economic systems, and practiced a diversified subsistence.

In 1769, Jose Francisco Ortega, became the first European to visit the fertile valley that later became known as the Santa Clara Valley. The area was inhabited by Indians who were named Los Costanos (the coast people) by the Spanish, and later were called the Ohlone. The Franciscan padres (priests) selected the fertile valley discovered by Ortega to establish the eighth mission, Mission Santa Clara, named for Saint Clare. The mission was founded January 12, 1777. In 1836 the mission was changed to a parish church and much of its land reverted to the public domain. About this time, the Mexican governor began issuing land grants. The land was

¹¹⁹ City of Santa Clara website - A Brief History of Santa Clara. Accessed May 26, 2010. Available at: <http://santaclaraca.gov/index.aspx?page=506>

used for vast ranchos (ranches); large numbers of cattle were raised. Hides and tallow from the livestock eventually comprised the first commercial export product and industry in the area.

In 1848, gold was discovered in Coloma and thousands rushed to California in search of riches. Santa Clara's population decreased dramatically as residents joined the Gold Rush. When promises of great wealth failed to materialize during the Gold Rush of 1849, many of the gold seekers turned to the "gold" that was the fertile land of the Santa Clara Valley and began to settle in Santa Clara. In the 1850's the hamlet of Santa Clara began to take shape as a recognizable small town. In 1851, Santa Clara College was established on the old mission site and became a prominent feature of the developing town. Santa Clara incorporated as a town on July 5, 1852, and became a State-chartered City in 1862. By this time the City encompassed an area two miles long and one and a half miles wide. Outside City limits, small family farms and orchards developed and thrived in the area's fertile soil and mild climate. As the town grew, it was supported by a variety of manufacturing, seed, and fruit industries.

As the 19th century came to a close, more and more people arrived seeking the mild climate and job opportunities of the Santa Clara area. By 1906, the population of the City had grown to nearly 5,000. The population remained fairly stable and did not increase greatly until after World War II when the City outgrew its 19th century boundaries and expanded to open lands north and west of the original City limits. The farms and orchards began to accommodate the burgeoning population.

A new product, the semiconductor chip, was developed in the 1950's. The resulting electronics industry, based on the silicon chip, occupied the remaining orchard land and forever changed the agricultural nature of Santa Clara and Santa Clara Valley. By 1990, the City covered 19.3 square miles and had a population of more than 93,000. Few remnants of Santa Clara's agricultural past remain as it today sits in the heart of what is known world-wide as Silicon Valley.

4.11.3.2 Historic Resources

Previous research on the post-European history of Santa Clara has noted a complex history of land use including residential, agricultural, industrial, culminating in the modern landscape. The long and varied history that has left its mark on the local landscape; land uses in the area often overlap, and represent the Native American, Spanish, Mexican, and Euroamerican presence, as well as leaving behind features that represent rural and later urban Santa Clara. Three overall contexts have been identified, representing the types of historic era cultural resources in Santa Clara: Early California Context (1769-1856); Residential and Industrial Land Use (1841-present); and the history of Santa Clara University (1851-present). In addition to built environment resources, associated property types expected to be found in the City include refuse features, architectural features, agricultural features, infrastructure features, and industrial process features.

Historical resources are buildings, structures, objects, sites, and districts of significance in history, archaeology, architecture, and culture. These resources include intact structures of any type that are 50 years or more of age. They are sometimes called the built environment and can include, in addition to houses, structures such as irrigation works and engineering features. Historical resources are preserved because they provide a link to a region's past and a frame of reference for a community. Often these sites are a source of pride for a City. The City's list of

historic resources includes properties that appear eligible for local, State, and/or national listing and properties that have been designated local, State, and/or national landmarks. Properties that have been surveyed; catalogued; determined to meet local, State, or national significance criteria; and have been designated as local landmarks as of May 2010 are included in Appendix 8.9 of the proposed Draft 2010-2035 General Plan and Appendix I of this EIR and shown on Figure 4.11-1.

A review of the Historic Property Data File for Santa Clara County managed by the State Office of Historic Preservation which includes the California Register, California Historical Landmarks, and California Points of Historical Interest, reveals 211 historic properties located within the City. An additional 75 properties are listed in the draft 2010 City of Santa Clara General Plan. Historic properties cluster tightly in the vicinity of Santa Clara University and the Santa Clara Mission sites. A smaller locus is located in the northern part of the City, near Agnews State Hospital. The following is a brief discussion of noteworthy Santa Clara historic resources.

National Register of Historic Places

The National Register recognizes resources of local, State, and national significance. Resources in the City of Santa Clara listed on the NRHP include the Charles Copeland Morse House/Morse; built in 1892. Other resources within Santa Clara that have been determined eligible for the NRHP include:

- Harris-Lass House, located at 1889 Market Street; and
- Two properties at 741 Franklin Street, built in 1890.

California Register of Historical Resources

The CRHR automatically includes resources listed on the NRHP. Within the City, historic resources from major eras of California history have been found: Spanish, Mexican, and American. The Spanish era in Santa Clara is considered to be from 1769-1822. The first three sites of Mission Santa Clara de Asis, the route of The Alameda, and the Women's Club Adobe (The Pena Adobe) were developed during this period. The Mexican period lasted from 1822 to 1848 and related sites from this period include the fourth compound and fifth church of Mission Santa Clara and the Berryessa Adobe. Most of the remaining historical structures date from the American era, beginning in 1849. For example, the Johnson house (1159 Main Street) is a pre-fab brought "around the Horn" circa 1850 and the Santa Clara Railroad Depot was constructed as a way station for the San Francisco and San Jose Railroad in 1863-64.

Local Historic Landmarks

The Harris-Lass Historic Preserve, a nineteenth century farmhouse and related buildings, is a representative City Historical Landmark¹²⁰. It is open to the public and school children and is operated by the Historic Preservation Society of Santa Clara.

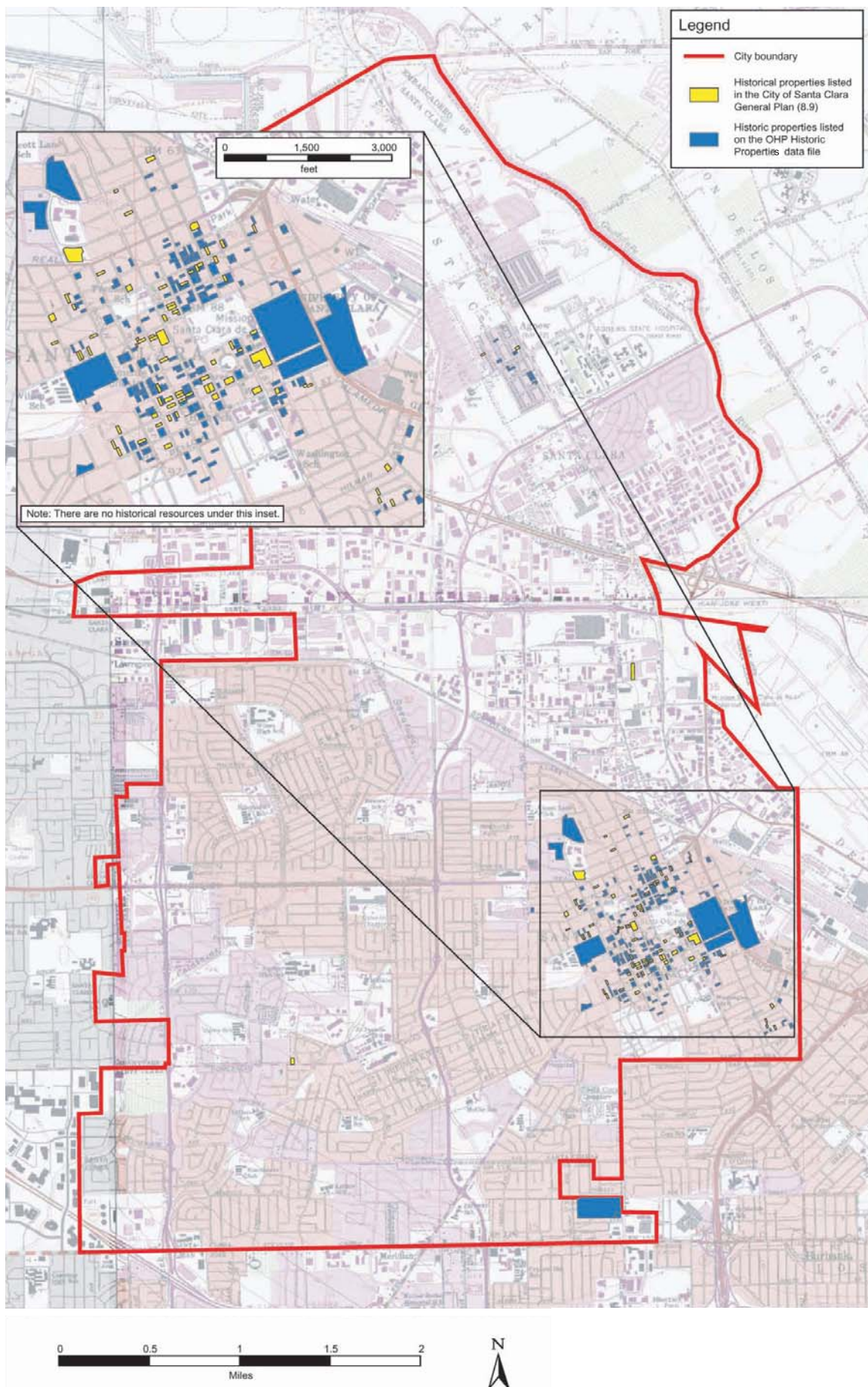
Historic Neighborhoods

The Old Quad is the area bounded by Newhall Street, Scott Boulevard, Southern Pacific Railroad and the City limit line. This area of the City has examples of most architectural styles of the late nineteenth and early twentieth centuries: Greek Revival, Gothic Revival, National Italianate,

¹²⁰ Historic Preservation Society of Santa Clara. Harris-Lass House Museum. Accessed May 26, 2010. Available at: <http://www.harrislass.org/>

Stick, Eastlake, Queen Anne, Colonial Revival, Spanish Colonial Revival, Tudor, Mission Revival, Vernacular, Craftsman, and French Eclectic. Individually, there are many fine examples of these styles, but the primary significance of the area rests in the concept of the Old Quad as a neighborhood. The Old Quad is a strong visual reminder of the City, which was formally surveyed in a grid pattern in 1866; as such, it stands in contrast to the modern tract and commercial development of most of the Santa Clara Valley. Older buildings are now recognized for their historical and architectural significance as well as their contributions to the identity, diversity, and economic welfare of communities. Santa Clara's heritage is represented by the City's historic buildings and these visual links with the past enable residents to better understand and appreciate their City's unique history¹²¹.

¹²¹ City of Santa Clara. City of Santa Clara 2000-2010 General Plan. July 23, 2002.



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Historic Road

What historians believe was the "first true road" in California, The Alameda between Santa Clara and San Jose, was designated by the White House Millennium Council as one of the 50 Community Millennium Trails in California. The Millennium Trails project is a public/private partnership with the goal of connecting every urban and rural community in America through a network of Millennium Trails. The program also seeks to help residents understand and celebrate the history and culture of the region. The City of Santa Clara was selected as one of the Millennium Communities in the U.S. in 2000.¹²² The recognition of The Alameda as a Millennium Trail continues the City's interest in supporting the Millennium theme of "honoring the past . . . imaging the future."

The four-mile-long Alameda corridor was considered a superior road to travel and is also historically significant. The Alameda was originally built in 1799 by Father Magin Catala and the Indians of the Mission Santa Clara de Asis. During the Gold Rush, stagecoaches ran on The Alameda between San Jose and Santa Clara, and in 1862 it became one of the first toll roads. When horse-drawn cars were introduced on a narrow-gauge railroad line in 1868, The Alameda became the West's first interurban horse car line. Another innovation occurred on The Alameda in 1888 when the first electric trolley line in California was added to that stretch of road.

The portion of The Alameda that bisected the Santa Clara University campus was closed to traffic in the 1980s and turned into a pedestrian mall. The roadway was rerouted eastward to connect the Alameda to El Camino Real. The remaining portion of The Alameda is still a highly-traveled thoroughfare between Santa Clara and San Jose.

4.11.3.3 *Archaeological Resources*

Archaeological resources are the physical remains of past human activities and can be either prehistoric or historic. Archaeological sites contain significant evidence of human activity. Generally a site is defined by a significant accumulation or presence of: food remains, waste from the manufacturing of tools, tools, pottery, concentrations or alignments of stones, modification of rock surfaces, unusual discoloration or accumulation of soil, and/or human skeletal remains.

The current records search has identified 13 prehistoric sites within the City of Santa Clara. Nearly two-thirds of the sites are located within a half mile of the current Guadalupe River stream channel. Several of the sites in the lower reaches of the Guadalupe are extensive shell middens containing an array of stone and bone tools, faunal remains, fire cracked rock, and human bone. The Alameda Native American Burial Site at Santa Clara University contains more than 29 human burials. Four additional sites are mapped, including one northwest of Santa Clara University and three along the City's western boundary near Sunnyvale. As the Ohlone Indians did not construct permanent dwellings, the remains from this era are usually burials, artifacts, and trash deposits containing shells and bones, usually located in the close vicinity to water

¹²² City of Santa Clara website - Historic Santa Clara Road is Community Millennium Trail. Accessed May 26, 2010. Available at: <http://santaclaraca.gov/index.aspx?page=511>

sources. Within the City boundary, flood basin deposits and natural levee deposits that flank Saratoga Creek and Guadalupe River contain the highest number of sites.

4.11.3.4 Paleontological Resources

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. These are valued for the information they yield about the history of the earth and its past ecological settings. There are two types of resources: vertebrate and invertebrate. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are those areas that show evidence of prehuman activity. Often they are simply small outcroppings visible on the surface or sites encountered during grading. While the sites are important indications, it is the geologic formations that are the most important, since they may contain important fossils. Potentially sensitive areas for the presence of paleontological resources are based on the underlying geologic formation. As shown on Figure 4.5-1 in section 4.5 *Geology and Soils*, the City is situated on alluvial fan deposits of the Holocene age, consisting of gravel, sand and finer sediments. Along the City's major streams are natural levee deposits consisting of silt and clay, also of the Holocene age. In the subsurface, alluvial strata of the Pleistocene age underlie the surface-exposed Holocene strata. Pleistocene alluvial deposits in turn overlie the Santa Clara Formation¹²³. The geology of the City is further described in section 4.5 *Geology and Soils*. Table 4.11-1 summarizes the paleontological sensitivity of the geologic units underlying the City of Santa Clara.

TABLE 4.11-1 PALEONTOLOGICAL SENSITIVITY OF CITY'S GEOLOGIC UNITS	
Geologic Unit	Paleontological Sensitivity
Holocene alluvial fan, fluvial, basin deposits, and Bay mud deposits	Undetermined; potentially sensitive
Pleistocene alluvial fan and fluvial deposits	High
Santa Clara Formation	High
Source: Stanley et al. 2002 ¹²⁴ .	

Geologic units of Holocene age are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils. However, remains of a Rancholabrean Columbian mammoth (*Mammuthus columbi*) were recently found along the Guadalupe River in San Jose¹²⁵, in a strata identified as Holocene by published geologic maps¹²⁶. Either the mammoth remains were reworked from older deposits, or some strata identified as Holocene in the Santa Clara Valley are actually of Pleistocene age; in either case, Holocene materials in the Santa Clara Valley may have some level of sensitivity for

¹²³ Stanley, R.G., R.C. Jachens, P.G. Iillis, R. J. McLaughlin, K.A. Kvenvolden, F.D. Hostettler, K.A. McDougall, and L.B. Magoon. 2002. Subsurface and petroleum geology of the southwestern Santa Clara Valley ("Silicon Valley"), California. (Professional Paper 1663.) Washington, DC: U.S. Government Printing Office.

¹²⁴ Ibid

¹²⁵ University of California Museum of Paleontology. 2008a. *Mammoth Discovery in San Jose—bones found near Guadalupe River levee, north of airport – June 9, 2005*. Accessed May 26, 2010. Available at: <http://www.ucmp.berkeley.edu/mammal/mammoth/index.html>

¹²⁶ Wentworth, C.M., M.C. Blake, Jr., R.J. McLaughlin, and R.W. Graymer, compilers. 1999. Preliminary geologic map of the San Jose 30x60-minute quadrangle. (Open-file report 98-795).

paleontological resources. The level of sensitivity is difficult to determine, and likely varies from place to place.

Pleistocene alluvial and fluvial strata in the Santa Clara Valley contain vertebrate materials, including remains of peccary and mammoth, as well as freshwater molluscan fossils¹²⁷. The underlying Plio-Pleistocene Santa Clara formation is also known to contain vertebrate fossil materials³. It also contains plant fossils⁴. Because of their vertebrate content, Pleistocene alluvial strata and the Santa Clara Formation are considered highly sensitive for paleontological resources.

4.11.4 4.11.4 Methodology

Impacts related to cultural resources were evaluated qualitatively, based on available published and unpublished cultural resources information. No new field studies or other primary research were conducted for the preparation of this EIR.

4.11.5 4.11.5 Thresholds of Significance

For the purpose of this EIR, a cultural resource impact is considered significant if the project would:

- Cause a substantial adverse change in the significance of a historic resource as defined in § 15064.5 of the CEQA Guidelines;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 of the CEQA Guidelines;
- Directly or indirectly destroy a unique paleontological resource on site or unique geologic feature; or
- Disturb any human remains, including those interred outside formal cemeteries.

4.11.6 4.11.6 Impacts and Mitigation Measures

4.11.6.1 Historic Resources

Identified historic structures and sites may be vulnerable to redevelopment and development activities associated with the proposed Draft 2010-2035 General Plan. In addition, other structures that are not currently designated as historic, but could meet the criteria for listing on a historic register upon reaching 50 years of age might be impacted by development activity. At the time a development project is proposed, further studies would be required to determine the level of significance of this impact.

The majority of the historic structures are located in the vicinity of the Santa Clara's downtown area, as shown on Figure 4.11-1. There are historic properties located within the identified areas for development in the El Camino Real, Downtown, and Santa Clara Stations Focus Areas. With the exception of these three focus areas, there are no other areas of potential development under the proposed Draft 2010-2035 General Plan that currently include identified historic properties.

A primary strategy of the proposed General Plan is to redevelop certain non-residential areas of the City to accommodate new uses and/or intensification of existing uses. In most cases, it is

¹²⁷ Brabb, E.E., R.W. Graymer, and D.L. Jones. 2000. Geologic map and map database of the Palo Alto 30' x 60' quadrangle, California. (Miscellaneous Field Studies Map MF-2332, Version 1.0).

assumed that existing non-residential buildings would not be suitable for conversion to new planned uses. This is due to the size, configuration or structural integrity of the existing buildings. For properties designated for residential and/or mixed use in the proposed Draft 2010-2035 General Plan, it is anticipated existing one-story industrial buildings would not typically be suitable for conversion to residential and/or mixed use. For properties designated for high intensity non-residential uses, it is anticipated the existing buildings could not accommodate the planned increased employment densities, and to achieve the planned employment densities will require multiple story buildings, perhaps with below-grade parking that could not be accommodated within the structural systems and footprints of existing buildings. Therefore, it is reasonably foreseeable that in most cases, existing buildings on sites proposed for development will be removed to accommodate the new or intensified uses.

Another primary strategy of the proposed General Plan involves phasing, which means certain areas of the City won't be available for redevelopment with new land uses until 2015 (Phase II) or 2025 (Phase III). This means with the additional passage of time, particularly for sites that will become available for redevelopment in Phase III nearly 15 years in the future, properties that today are not considered historic may achieve historic significance as their contribution to the City's history can be better understood in proper context.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes a range of policies, identified below, to ensure the protection of historic resources.

Prerequisite Policies	
5.1.1-P23	Prior to 2025, comprehensively update the City's list of Architecturally or Historically Significant Properties, including evaluation of historic significance and Statement of historic context for historic resources.
General Land Use Policies	
5.3.1-P4	Encourage new development that meets the minimum intensities and densities specified in the land use classifications or as defined through applicable Focus Area, Neighborhood Compatibility or Historic Preservation policies of the General Plan.
5.3.1-P20	Encourage uses and development on City-owned and leased land that is consistent with the General Plan land use classification or applicable Focus Area, Neighborhood Compatibility or Historic Preservation Policies.
Downtown Focus Area Policies	
5.4.2-P6	Apply the General Plan Transition and Historic Preservation policies for new development at the edges of Downtown in order to respect the scale and character of the adjacent historic Old Quad neighborhood.
Discretionary Policies	
5.5.1-P12	For City historically or architecturally significant properties, listed in Appendix 8.9, allow alternate uses from those on the General Plan Land Use Diagram in order to encourage preservation of the resource, provided that the alternate use is compatible with planned uses on neighboring properties and consistent with other applicable General Plan policies.
Historic Preservation Policies	
5.6.1-P1	Discourage the demolition or inappropriate alterations of historic buildings and ensure the protection of historic resources through the continued enforcement of codes and design guidelines.
5.6.1-P2	Protect the historic integrity of designated historic properties and encourage adaptive reuse when necessary to promote preservation.
5.6.1-P3	Protect historic resources from demolition, inappropriate alterations and incompatible development.
5.6.1-P4	Use the City's Criteria for Local Significance as the basis for designating historic resources

	and review proposed changes to these resources for consistency with the Secretary of Interior Standards and California Historic Building Code.
5.6.1-P5	Promote the use of the preservation standards outlined in the current Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings, for properties listed, or eligible for listing, on the City's list of Architecturally or Historically Significant Properties.
5.6.1-P6	Promote an active program to identify, interpret and designate the City's historic properties, including the evaluation of resources over 50 years old to determine eligibility for the City's list of Architecturally or Historically Significant Properties.
5.6.1-P7	Encourage programs that provide incentives and leverage public and private resources, to promote historic preservation, maintenance and adaptive reuse by property owners, such as Mills Act Contracts for tax benefits, tax credits and zero or low-interest loans for income-qualified residents.
5.6.1-P8	Coordinate historic preservation efforts with other agencies and organizations, including the Chamber of Commerce, Santa Clara County Historical and Genealogical Society, and other historical organizations.
5.6.1-P9	Update and maintain the City's list of Architecturally or Historically Significant Properties, and associated State Department of Parks and Recreation forms, as an Appendix to the General Plan.
Areas of Historic Sensitivity Policies	
5.6.2-P1	Evaluate any proposed changes to properties within 100 feet of historic resources on the City's list of Architecturally or Historically Significant Properties for potential negative effects on the historic integrity of the resource or its historic context.
5.6.2-P2	Require that changes to properties that contribute to the context of a historic resource are compatible in scale, materials, design, height, mass and use with the historic resource or its context.
5.6.2-P3	Strengthen the character and historic context of the Old Quad historic neighborhood through streetscape design, amenities and street tree plantings.
5.6.2-P4	Work with Santa Clara University to improve compatibility between University-owned properties and nearby historic resources.
5.6.2-P5	Work with off-campus housing providers to ensure that maintenance and operational provisions that protect nearby historic resources are implemented.
5.6.2-P6	Provide notification and information to owners and developers of properties near historic resources in order to increase awareness of potential constraints on new development and/or uses.

Existing Regulations and Programs

Existing policies to address the protection of historic resources include:

- National Historic Preservation Act
- Historic Rehabilitation Tax Credits Program
- Secretary of Interior 's Standards for the Treatment of Historic Properties
- California Public Resources Code sections 5020-5029.5 and 5079-5079.65
- CEQA
- California Historic Building Code
- City Criteria for Local Significance
- City of Santa Clara Historical and Landmarks Commission
- Santa Clara City Code 18.58 – Historic Combining Districts

Impact 4.11-1: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to cause substantial adverse change in the significance of a

historic resource. Implementation of proposed policies and existing programs would minimize this effect. **(Less Than Significant Impact)**

4.11.6.2 Archaeological and Paleontological Resources

Archaeological Resources

Future development, redevelopment and construction activities proposed under the proposed Draft 2010-2035 General Plan may result in direct or indirect impacts to both prehistoric and historic archaeological resources. Construction activities such as grading and excavation may result in the accidental destruction or disturbance of archaeological sites. Additionally, development may draw the public to gather in areas with visible archaeological resources, resulting in destruction, illicit collection or prospecting by unauthorized persons.

Known prehistoric and historic resources are located within Focus Areas proposed for redevelopment, as well as in other areas of potential development throughout the City. The areas of development are shown on Figure 2-10 in *Chapter 2 Project Description*. The known resources and the general area in which the resources are located are identified in Table 4.11-2 below. Future development in the general vicinity of these known resources will need to be reviewed by a qualified archaeologist to confirm the development would not pose a risk to the resource(s).

TABLE 4.11-2 KNOWN ARCHAEOLOGICAL RESOURCES IN AREAS OF DEVELOPMENT

Resource Name	Resource Type/Description	Focus/Development Area
P-43-001238	Prehistoric	El Camino Real Focus Area
P-43-000474	Historic - house	Downtown Focus Area
P-43-000050	Historic - Third Mission Santa Clara location	Santa Clara Station Focus Area
SCL-ISO-2	Prehistoric – Isolate mortar	Lawrence Station Future Focus Area
P-43-000019	Prehistoric – Mission College site	Lawrence Station Future Focus Area
P-43-000026	Prehistoric	Tasman East Future Focus Area
P-43-000900	Historic Railroad Right-of-Way	General vicinity of Caltrain and Scott Boulevard
P-43-000901	Historic Railroad Right-of-Way	General vicinity of Caltrain and Lawrence Expressway
P-43-000433	Prehistoric/Historic	General vicinity of Caltrain station and Airport

Based on available data and analyses, all areas of the City hold potential for the presence of prehistoric archaeological resources, with the exception of current and former stream channels and areas with artificial fill. All other native soils types present in the City, flood basin, levee deposits on the west side of the Guadalupe River, and alluvial flood plains, all have a high potential for the presence of buried prehistoric deposits. The alluvial fan in the southern portion of the City, and the levee deposits at Saratoga Creek are of unknown sensitivity since they have not been investigated.

Human Remains

There are known Native American gravesites and cemeteries within the City. Implementation of the proposed Draft 2010-2035 General Plan would allow development and redevelopment, including grading, of sensitive areas, possibly disturbing human remains, including those outside of formal cemeteries. Existing regulations, including the California Public Resources Code

Section 5097.98, would afford protection for human remains discovered during development activities. In addition, review and protection are afforded by CEQA for those projects subject to discretionary action, particularly for activities that could potentially disturb human remains. SB 18 requires consultation regarding Native American sites and artifacts, but the potential for project-level impacts to unidentified and unrecorded tribal cultural places remains moderate to high. Future excavation and grading activities could result in impacts to human remains. However, Public Resources Code Section 5097.98, mandates the process to be followed in the event of a discovery of any human remains, and would mitigate all potential impacts.

Paleontological Resources

Future development and redevelopment proposed under the proposed Draft 2010-2035 General Plan has the potential to impact undiscovered paleontological resources. The City is situated on alluvial fan deposits of the Holocene age. These sediments have low potential to yield fossil resources or to contain significant nonrenewable paleontological resources. However, these recent sediments overlie sediments of older Pleistocene sediments with high potential to contain paleontological resources. These older sediments, often found at depths of 10 feet or more below the ground surface, have yielded the fossil remains of plants and extinct terrestrial Pleistocene vertebrates. Ground disturbing activities of 10 feet or more associated with the development and redevelopment of sites under the proposed Draft 2010-2035 General Plan has the potential to impact undiscovered paleontological resources in older Pleistocene sediments.

Conclusion

Implementation of the proposed Draft 2010-2035 General Plan has the potential to impact archeological and paleontological resources. Existing federal, State, and local regulations address the provision of studies to identify archaeological and paleontological resources; application review for projects that would potentially involve land disturbance; provide a project-level standard condition of approval that addresses unanticipated archaeological and or paleontological discoveries; and requirements to develop specific mitigation measures if resources are encountered during any development activity. The proposed Draft 2010-2035 General Plan also includes a range of policies, identified below, to ensure the protection of archaeological resources.

Review and protection of archaeological and paleontological resources is also afforded by CEQA for individual projects subject to public agency discretionary actions. Per section 21083.2 of CEQA, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental document shall address the issue of those resources. The potential to uncover undiscovered archeological and paleontological resources is high. In the event of an unanticipated discovery of archaeological resources during grading and excavation of the site, a qualified archaeologist would assess the find and develop a course of action to preserve the find.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for effects to archaeological and paleontological resources are identified below.

5.6.3-P1	Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.
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5.6.3-P2	Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.
5.6.3-P3	Consult with California Native American tribes prior to considering amendments to the City's General Plan.
5.6.3-P4	Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.
5.6.3-P5	In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.
5.6.3-P6	In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.

Existing Regulations and Programs

Existing policies to address the protection of archaeological and paleontological resources include:

- National Historic Preservation Act
- California Public Resources Code sections 5097.9-5097.991, 5097.98, 5097.5, and 30244
- California Code of Regulations, Title 14, sections 4307-4309
- CEQA
- SB 18 (2004)
- City Criteria for Local Significance

Impact 4.11-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan has the potential to cause substantial adverse change in the significance of an archaeological resource or the potential to directly or indirectly destroy a unique paleontological resource on site or unique geologic feature. Implementation of proposed policies and existing programs would minimize this effect. (**Less Than Significant Impact**)

4.11.7 Cultural Resources Mitigation and Avoidance Measures

Historic Resources

Future development under the proposed General Plan has the potential to impact, either directly or indirectly, historic resources, both those that are currently listed, and those that have yet to be identified and evaluated. The General Plan's Phase III prerequisite policy to conduct a citywide survey prior to Phase III (2025) will encompass buildings constructed prior to 1975 (i.e. buildings constructed prior to 1975 would be at least 50 years of age in 2025), and will identify whether additional buildings have achieved historic significance over time. In the meantime as development occurs, until the citywide survey is complete, buildings over 50 years of age will be evaluated prior to demolition or substantial alteration on a case-by-case basis. Implementation of proposed policies and programs, including application of the California Historic Building Code and the City's Combining Historic Districts, the City's design review process, and referral of projects involving historic resources to the Historical and Landmarks Commission, will serve to reduce historic resources impacts to less than significant level.

Archaeological Resources

Future development and redevelopment and construction activities proposed under the Draft 2010-2035 General Plan may result in direct or indirect impacts to both prehistoric and historic archaeological resources. Construction activities such as grading and excavation may result in the accidental destruction or disturbance of archaeological sites. All areas of the City hold potential for the presence of prehistoric archaeological resources, with the exception of current and former stream channels and areas with artificial fill. The proposed Draft 2010-2035 General Plan also includes a range of policies to ensure the protection of archaeological resources. Existing federal, State, and local regulations address the provision of studies to identify archaeological and paleontological resources; application review for projects that would potentially involve land disturbance; provide a project-level standard condition of approval that addresses unanticipated archaeological and or paleontological discoveries; and requirements to develop specific mitigation measures if resources are encountered during any development activity.

Paleontological Resources

No mitigation is required beyond implementation of proposed policies and existing programs.

4.11.8 Significance Conclusion

Implementation of the above mitigation measures and proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant cultural resource impacts.

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4.12 TRANSPORTATION AND TRAFFIC

This section of the EIR evaluates potential transportation impacts resulting from implementation of the proposed Draft 2010-2035 General Plan. Impacts are evaluated based upon a comparison between existing conditions and future conditions (year 2035) with the proposed Draft 2010-2035 General Plan. A comparison of the travel characteristics and transportation impacts of the proposed Draft 2010-2035 General Plan against 1) the current 2000-2010 General Plan and 2) a Jobs/Housing Balanced General Plan Alternative is provided in *Chapter 5 Alternatives*.

4.12.1 Environmental Setting

The circulation network serving the City of Santa Clara consists of roadways, transit, bicycle and pedestrian facilities. A description of travel characteristics, major transportation facilities and existing travel conditions is provided in the *City of Santa Clara General Plan Update: Existing Conditions, Opportunities and Challenges Report*; a summary of those key travel characteristics is included in this section.

4.12.1.1 *Travel Characteristics*

Journey to work data gathered by the U.S. Census Bureau provides a means of estimating the prevalence of particular transportation modes, or mode split, in a given community. While the journey to work is only one aspect of travel patterns, it is important to understand because commute trips make up the bulk of the traffic during the busiest time of day, the “p.m. peak hour” (rush hour), which largely determines the types of transportation changes that are typically proposed.

Table 4.12-1 summarizes the journey to work data from the U.S. Census. Based on the 2000 U.S. Census, the majority of Santa Clara’s employed residents commute to work outside of the City.¹²⁸ Of the residents that commute to work outside of the City, about 84 percent drive alone, compared to the Santa Clara County average of 77 percent. About 81 percent of the in-commuters to the City drive alone.

In- and out-commuters of the City take transit less frequently than in the County as a whole. This is likely due to a lack of transit options at key residential and employment centers in the City, trip linkage needs (to run errands), and the availability of free parking by many employers in Santa Clara.

Walking and biking to work was substantially higher for those who both live and work in Santa Clara than those that live or work outside the City and the Countywide average (11 percent for those who live and work in Santa Clara versus two percent for residents that leave the City to work, one percent for those that commute into the City, and three percent in the County). This is influenced by Santa Clara’s generally flat terrain, which make walking and bicycling relatively easy for those who live close to their workplace. In addition, the City has a higher rate of workers who work at home or telecommute: eight percent within in Santa Clara, compared with just three percent in the County.

¹ Thirty (30) percent of Santa Clara’s working residents were employed in Santa Clara, of the 70 percent who worked elsewhere, San Jose, Sunnyvale, and Mountain View were top destinations.

TABLE 4.12-1: JOURNEY TO WORK BY MODE OF TRAVEL

Santa Clara Residents Mode	Work in Santa Clara	Out-Commuters	In-Commuters	Santa Clara County Average
Work at Home	8 percent	n/a	n/a	3 percent
Drive Alone	66 percent	84 percent	81 percent	77 percent
Transit	2 percent	3 percent	3 percent	4 percent
Carpool/Other	12 percent	11 percent	13 percent	13 percent
Walk	8 percent	1 percent	1 percent	2 percent
Bicycle	3 percent	1 percent	0 percent	1 percent

Source: U.S. Census, 2000

4.12.1.2 Motor Vehicle Circulation

Santa Clara is located in the South Bay region of the Bay Area, in the center of Silicon Valley. Many of the region's major transportation corridors, primarily US 101, I-280, SR 237, and I-880, run through or adjacent to Santa Clara. The City of Santa Clara has barriers to north-south circulation due to the I-280, US 101, and SR 237 freeways and the railroad tracks; east-west circulation is limited by I-880 and the Norman Y. Mineta International Airport, located just east of the City's boundaries. Streets with the highest average daily traffic (ADT) are those that provide north/south and east/west connections across the freeways and railroad or serve as parallel routes to the freeways. Figure 4.12-1 presents the City's street network.

Major north/south roadways connect residential uses in the south to key employment centers in the central and north areas of Santa Clara:

- Lawrence Expressway
- San Tomas Expressway
- Montague Expressway
- Great America Parkway/Bowers Avenue/Kiely Boulevard
- De La Cruz Boulevard
- Lafayette Street

Montague and San Tomas Expressways are considered two separate expressways (San Tomas is a north-south expressway and Montague is an east-west expressway), that connect at their interchange with US 101.

Major east/west corridors generally carry less traffic volume than the north/south roadways. East/west connections provide access to many shopping destinations and employment centers and serve as a travel routes parallel to the major freeways of US 101, SR 237, and I-280:

- Central Expressway
- El Camino Real
- Stevens Creek Boulevard

- Freeway
- Expressway
- Arterial
- Collector
- Local Street
- Freeway Connector Ramp
- Grade Separation
- At-grade Rail Crossing
- Interchange
- Rail & Light Rail
- Rail/Light Rail Station
- City Limits



CITY AND ROADWAY NETWORK

FIGURE 4.12-1

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4.12.1.3 Motor Vehicle Level of Service

Level of Service (LOS) is a qualitative assessment of perceived traffic conditions by motorists. LOS generally reflects driving conditions such as travel time and speed, freedom to maneuver, and traffic interruptions. LOS uses quantifiable traffic measures such as average speed, intersection delay, and volume-to-capacity ratio to determine driver satisfaction. LOS is reported for individual intersections and is designated by a range of letters – “A” represents the most favorable conditions (free flow) and “F” represents the least favorable conditions (jammed with excessive delays). Table 4.12-2 describes the characteristics of each LOS designation for motor vehicle traffic.

For purposes of this EIR, intersection and freeway segment LOS was analyzed per the procedures in the *Highway Capacity Manual* (Transportation Research Board, 2000). Since automobile travel has been the dominant form of transportation, level of service has traditionally been measured for vehicles, with minimal regard to bicycle, pedestrian, and transit conditions. This bias unintentionally but inherently ignores overall mobility and conditions for non-auto road users and perpetuates a system that focuses on expanding auto capacity. The 2000-2010 General Plan utilized LOS D as the desired standard for travel during the peak hours for all intersections and roadway segments, with the exception of CMP intersections and roadway segments at a standard of LOS E.

A key goal of the proposed Draft 2010-2035 General Plan is to ensure the accommodation of all users and multiple travel modes, while maintaining a system that provides for the safe and efficient movement of people and goods. In order to accomplish this goal, it may be necessary for the City to resist implementing vehicle capacity expansions in key areas, as discussed in more detail later in this chapter in *Impacts and Mitigation Measures*, where pedestrian and/or bicyclist conditions would suffer from additional traffic lanes.

TABLE 4.12-2 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

Level of Service	Driver's Perception
	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)

4.12.1.4 Travel Demand Forecasting

The City of Santa Clara Travel Demand Model (Model) was prepared as part of the proposed Draft 2010-2035 General Plan. The Model was developed to provide improved citywide travel demand forecasting as part of continued planning efforts to address transportation infrastructure needs and to assist in the update of the City's General Plan. The Model was developed from the Valley Transportation Authority (VTA) Countywide Travel Demand Model, which was validated to existing (2008) traffic conditions. The Model uses a 4-step model to forecast person trips. The process begins with the trip generation step, which involves estimating the number of trips that would occur with the proposed Draft 2010-2035 General Plan land uses. The Model includes person trip generation that is based on the regional Metropolitan Transportation Commission (MTC) Travel Demand Model. Trip generation is estimated based on the type and amount of land use (for example, the number of households) within each traffic analysis zone (TAZ). Trip generation rates are cross-classified by income quartile to provide a more realistic estimate of trip-making patterns.

During the trip generation phase, the Model produces trip estimates in person trips (as compared to vehicle trips, which are often quoted in transportation analyses). These person trips are input into the next steps of the Model.

The second step in the Model involves distributing the trips to various internal and external gateways, or trip distribution. The Model pairs trip origins and trip destinations (starting and ending points) for each person trip based on the type of trip (from home-to-work, home-to-school, etc.) and the distance a person is willing to travel for that purpose.

Mode choice is the third step of the Model, which determines which transport mode a person will chose for each trip, based on the availability of a vehicle, the trip distance, and the purpose of the trip.

The final step involves determining which route to take to travel between the trip origin and destination. The Model assigns the trips to the roadway network in order to minimize travel time between the start and end points of the trip.

Subsequent trip distribution, assignment, and mode choice iterations are completed by the Model to account for roadway congestion until acceptable convergence of the assignment occurs.

4.12.1.5 Roadway Segments

For planning purposes, roadway mainline segments are typically evaluated using a volume-to-capacity comparison. The theoretical capacity (per lane) of the roadway that corresponds to each level of service designation (A through F) was calculated using the methods developed in the Highway Capacity Manual (HCM, Transportation Research Board, 2000). The projected roadway volumes are then compared to the theoretical capacity to determine the level of service letter-grade designation.

Table 4.12-3 summarizes the relationship between the per lane capacity and LOS for roadway segment by classification. To determine the LOS of a given roadway segment, the total capacity is determined by multiplying the number of lanes on the segment by the daily per lane capacity shown in Table 4.12-3 below. The daily traffic volume on the segment is then compared to the capacity thresholds to determine the segments level of service.

TABLE 4.12-3: ROADWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

Level of Service	Traffic Conditions	Daily Per Lane Roadway Capacity ¹			
		Collector	Arterial	Expressway	Freeway
A	Little or no congestion	n/a	n/a	n/a	5,550
B	Small amount of traffic congestion	n/a	n/a	n/a	10,050
C	Average traffic congestion	3,400	4,500	5,400	14,400
D	High traffic congestion	6,600	8,850	10,600	17,850
E	Very high traffic congestion	7,700	9,300	11,200	20,050
F	Oversaturated, stop-and-go conditions	>7,700	>9,300	>11,200	>20,050

Source: Fehr & Peers, 2010.

¹ Capacities defined based on ten times the calculated peak-hour capacity from the Highway Capacity Manual (HCM), 2000.

4.12.1.6 Existing Roadway Segment Operations

Existing roadway segment volumes were calculated based on field measurements as well as from the Santa Clara General Plan Travel Demand Model. Using average daily traffic (ADT) volumes and theoretical roadway segment capacities, the level of service designation was identified. The results are shown in Table 4.12-4 and are graphically depicted in Figure 4.12-2. Locations currently operating at deficient levels based on theoretical roadway capacity include:

- De La Cruz Boulevard between Trimble Road and US 101
- De La Cruz Boulevard between US 101 and Central Expressway
- El Camino Real between Calabazas Boulevard and Kiely Boulevard
- US 101 between De La Cruz Boulevard and Lawrence Expressway
- SR 237 between N. 1st Street and Lawrence Expressway
- I-880 between Bascom Avenue and Coleman Avenue
- I-280 between Saratoga Avenue and Lawrence Expressway

TABLE 4.12-4: ROADWAY DAILY VOLUME AND LOS SUMMARY EXISTING CONDITIONS

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Lawrence Expressway between US 101 and Central Expressway*	79,010	D

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Lawrence Expressway between Central Expressway and Kifer Road	63,970	D
Lawrence Expressway between Kifer Road and Monroe Street*	67,960	D
Lawrence Expressway between Monroe Street and Cabrillo Avenue	52,890	C
Lawrence Expressway between Cabrillo Avenue and El Camino Real*	63,490	D
Lawrence Expressway between El Camino Real and Benton Street	58,230	D
Lawrence Expressway between Benton Street and Homestead Road	65,410	D
Lawrence Expressway between Homestead Road and Pruneridge Avenue	66,600	D
Lawrence Expressway between Pruneridge Avenue and Stevens Creek Boulevard*	62,890	D
Great America Parkway between SR 237 and Tasman Drive*	23,800	C
Great America Parkway between Tasman Drive and Mission College Boulevard*	36,590	D
Great America Parkway between Mission College Boulevard and US 101	39,600	D
Bowers Avenue between US 101 and Scott Boulevard*	38,370	D
Bowers Avenue between Scott Boulevard and Central Expressway	16,410	C
Bowers Avenue between Central Expressway and Monroe Street*	18,170	D
Bowers Avenue between Monroe Street and El Camino Real*	13,460	C
Kiely Boulevard between El Camino Real and Benton Street	12,640	C
Kiely Boulevard between Benton Street and Homestead Road	8,970	C
Kiely Boulevard between Homestead Road and Pruneridge Avenue	12,050	C
Kiely Boulevard between Pruneridge Avenue and Stevens Creek*	14,220	C
Lafayette Street between SR 237 and Tasman Drive	5,560	C
Lafayette Street between Tasman Drive and Montague Expressway*	18,370	D
Lafayette Street between Montague Expressway and US 101	11,600	C
Lafayette Street between US 101 and Central Expressway*	18,190	D
Lafayette Street between Central Expressway and Walsh Avenue	18,060	D
Lafayette Street between Walsh Avenue and Reed Street	15,140	C
Lafayette Street between Reed Street and El Camino Real*	21,580	D

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Lafayette Street between El Camino Real and Benton Street ¹²⁹	15,660	D
Lafayette Street between Benton Street and Market Street ²	16,500	D
Washington Street between Market Street and Newhall Street	15,720	C
Bascom Avenue between Newhall Street and I-880*	26,860	C
Scott Boulevard between City Limit and Bowers Avenue*	12,090	C
Scott Boulevard between Bowers Avenue and San Tomas Expressway	13,120	C
Scott Boulevard between San Tomas Expressway and Central Expressway	16,160	C
Scott Boulevard between Central Expressway and Walsh Avenue	8,980	C
Scott Boulevard between Walsh Avenue and Monroe Street	8,540	C
Scott Boulevard between Monroe Street and El Camino Real*	8,610	C
Scott Boulevard between El Camino Real and Benton Street	9,390	C
Scott Boulevard between Benton Street and Homestead Road	11,530	C
Scott Boulevard between Homestead Road and Saratoga Avenue	14,070	C
Newhall Street between Saratoga Avenue and Winchester Boulevard	13,190	C
Montague Expressway between N 1st Street and De La Cruz Boulevard*	52,670	D
Montague Expressway between De La Cruz Boulevard and Lafayette Street	60,570	D
Montague Expressway between Lafayette Street and Mission College Boulevard*	58,070	D
Montague Expressway between Mission College Boulevard and US 101	83,210	D
San Tomas Expressway between US 101 and Scott Boulevard*	66,510	D
San Tomas Expressway between Scott Boulevard and Central Expressway	64,450	D
San Tomas Expressway between Central Expressway and Walsh Avenue	70,620	D
San Tomas Expressway between Walsh Avenue and Monroe Street	72,800	D
San Tomas Expressway between Monroe Street and Cabrillo Avenue	56,910	D
San Tomas Expressway between Cabrillo Avenue and El Camino Real*	46,950	C
San Tomas Expressway between El Camino Real and Benton	49,940	D

¹²⁹ Lafayette Street between El Camino Real and Market Street includes a two-way left-turn lane. During the morning and evening peak commute hours, this lane operates as a 'reversible' lane, providing additional vehicle capacity for vehicles in the peak commute direction. To present a conservative analysis, this section of Lafayette Street was analyzed as a two-lane segment (one lane in each direction).

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Street		
San Tomas Expressway between Benton Street and Homestead Road	52,160	D
San Tomas Expressway between Homestead Road and Pruneridge Avenue	43,490	C
San Tomas Expressway between Pruneridge Avenue and Saratoga Avenue	46,160	D
San Tomas Expressway between Saratoga Avenue and Stevens Creek Boulevard*	36,100	C
Calabazas Boulevard between Monroe Street and Cabrillo Avenue	7,160	C
Calabazas Boulevard between Cabrillo Avenue and El Camino Real	7,360	C
Calabazas Boulevard between El Camino Real and Pomeroy Avenue	5,000	C
Pomeroy Avenue between Calabazas Boulevard and Benton Street	4,100	C
Pomeroy Avenue between Benton Street and Homestead Road	7,300	C
Pomeroy Avenue between Homestead Road and Pruneridge Avenue	6,800	C
Lick Mill Boulevard between Tasman Drive and Montague Expressway	6,610	D
Tasman Drive between City Limit and Great America Parkway*	12,790	C
Tasman Drive between Great America Parkway and Lafayette Street*	16,290	C
Tasman Drive between Lafayette Street and City Limits*	17,590	C
Wildwood Avenue between City Limits and Mercado Driveway*	7,770	D
Mission College Boulevard between Mercado Driveway and Great America Parkway	16,000	D
Mission College Boulevard between Great America Parkway and Agnew Road	10,180	C
Mission College Boulevard between Agnew Road and Montague Expressway	28,530	D
Agnew Road between Lafayette Street and Montague Expressway	14,820	D
Trimble Road between City Limits and De La Cruz Boulevard*	31,070	D
De La Cruz Boulevard between Montague Expressway and Trimble Road*	11,910	C
De La Cruz Boulevard between Trimble Road and US 101	57,670	F
De La Cruz Boulevard between US 101 and Central Expressway*	55,990	F
De La Cruz Boulevard between Central Expressway and Coleman Avenue	20,170	C

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Coleman Avenue between De La Cruz Boulevard and City Limits*	31,230	D
Central Expressway between Lawrence Expressway and Bowers Avenue*	39,960	D
Central Expressway between Bowers Avenue and San Tomas Expressway	37,330	D
Central Expressway between San Tomas Expressway and Scott Boulevard	40,250	C
Central Expressway between Scott Boulevard and Lafayette Street	47,550	D
Central Expressway between Lafayette Street and De La Cruz Boulevard	59,700	D
Kifer Road between Lawrence Expressway and Bowers Avenue*	11,180	C
Walsh Avenue between Bowers Avenue and San Tomas Expressway	14,680	D
Walsh Avenue between San Tomas Expressway and Scott Boulevard	12,580	C
Walsh Avenue between Scott Boulevard and Lafayette Street	5,530	C
Monroe Street between Lawrence Expressway and Calabazas Boulevard*	13,190	C
Monroe Street between Calabazas Boulevard and Bowers Avenue	11,400	C
Monroe Street between Bowers Avenue and San Tomas Expressway	15,780	D
Monroe Street between San Tomas Expressway and Scott Boulevard	15,260	D
Monroe Street between Scott Boulevard and El Camino Real*	17,740	D
El Camino Real between Lawrence Expressway and Calabazas Boulevard*	32,800	D
El Camino Real between Calabazas Boulevard and Kiely Boulevard	36,530	E
El Camino Real between Kiely Boulevard and San Tomas Expressway	32,040	D
El Camino Real between San Tomas Expressway and Scott Boulevard	25,690	D
El Camino Real between Scott Boulevard and Lincoln Street*	26,260	D
El Camino Real between Lincoln Street and Monroe Street	25,190	D
El Camino Real between Monroe Street and Lafayette Street	23,640	D
El Camino Real between Lafayette Street and De La Cruz Boulevard/Coleman Avenue	25,450	D
El Camino Real between De La Cruz Boulevard/Coleman Avenue and Benton Street	28,820	D
El Camino Real between Benton Street and The Alameda	30,800	D
Benton Street between Lawrence Expressway and Pomeroy Avenue	9,750	C

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Benton Street between Pomeroy Avenue and Kiely Boulevard*	9,240	C
Benton Street between Kiely Boulevard and San Tomas Expressway	10,260	C
Benton Street between San Tomas Expressway and Scott Boulevard	10,540	D
Benton Street between Scott Boulevard and Lincoln Street	8,430	D
Benton Street between Lincoln Street and Monroe Street	8,800	D
Benton Street between Monroe Street and Lafayette Street	8,750	D
Benton Street between Lafayette Street and El Camino Real	8,220	D
Homestead Road between Lawrence Expressway and Pomeroy Avenue	14,370	C
Homestead Road between Pomeroy Avenue and Kiely Boulevard*	20,610	D
Homestead Road between Kiely Boulevard and San Tomas Expressway	14,330	C
Homestead Road between San Tomas Expressway and Scott Boulevard	9,170	C
Pruneridge Avenue between City Limit and Lawrence Expressway	13,600	C
Pruneridge Avenue between Lawrence Expressway and Pomeroy Avenue	11,560	C
Pruneridge Avenue between Pomeroy Avenue and Kiely Boulevard*	11,140	C
Pruneridge Avenue between Kiely Boulevard and San Tomas Expressway	13,830	C
Pruneridge Avenue between San Tomas Expressway and Saratoga Avenue	9,110	C
Pruneridge Avenue between Saratoga Avenue and Winchester Boulevard	10,830	C
Stevens Creek Boulevard between Lawrence Expressway and Kiely Boulevard*	24,940	C
Stevens Creek Boulevard between Kiely Boulevard and Saratoga Avenue	24,990	C
Stevens Creek Boulevard between Saratoga Avenue and San Tomas Expressway	33,540	D
Stevens Creek Boulevard between San Tomas Expressway and Winchester Boulevard	38,910	D
Saratoga Avenue between Stevens Creek Boulevard and San Tomas Expressway*	22,460	D
Saratoga Avenue between San Tomas Expressway and Pruneridge Avenue	13,300	C
Saratoga Avenue between Pruneridge Avenue and Scott Boulevard	11,120	C
Saratoga Avenue between Scott Boulevard and Winchester	9,810	C

Roadway Segment	Existing Average Daily Traffic (ADT) Volume	Existing LOS
Boulevard		
The Alameda between Market Street and El Camino Real	11,890	D
The Alameda between El Camino Real and I-880*	31,170	D
Park Avenue between Bellomy Street and I-880*	6,500	C
Winchester Boulevard between Newhall Street and Pruneridge Avenue*	11,260	C
Winchester Boulevard between Pruneridge Avenue and Stevens Creek Boulevard*	20,550	D
US 101 between De La Cruz Boulevard and Montague Expressway	240,100	F
US 101 between Montague Expressway and Great America Parkway	241,800	F
US 101 between Great America Parkway and Lawrence Expressway	216,600	F
SR 237 between N. 1st Street and Great America Parkway	166,500	F
SR 237 between Great America Parkway and Lawrence Expressway	162,200	F
I-880 between Bascom Avenue and The Alameda	195,400	F
I-880 between The Alameda and Coleman Avenue	205,600	F
I-280 between Saratoga Avenue and Lawrence Expressway	251,200	F

Note: Bold indicates unacceptable operations (LOS E or worse for City roadways, LOS F or worse for CMP roadways).

* Based on traffic counts completed April and May 2008. Remainder of locations estimated based on the City of Santa Clara General Plan Travel Demand Model, which was validated to reflect existing conditions.



4.12.1.7 Congested Lane Miles

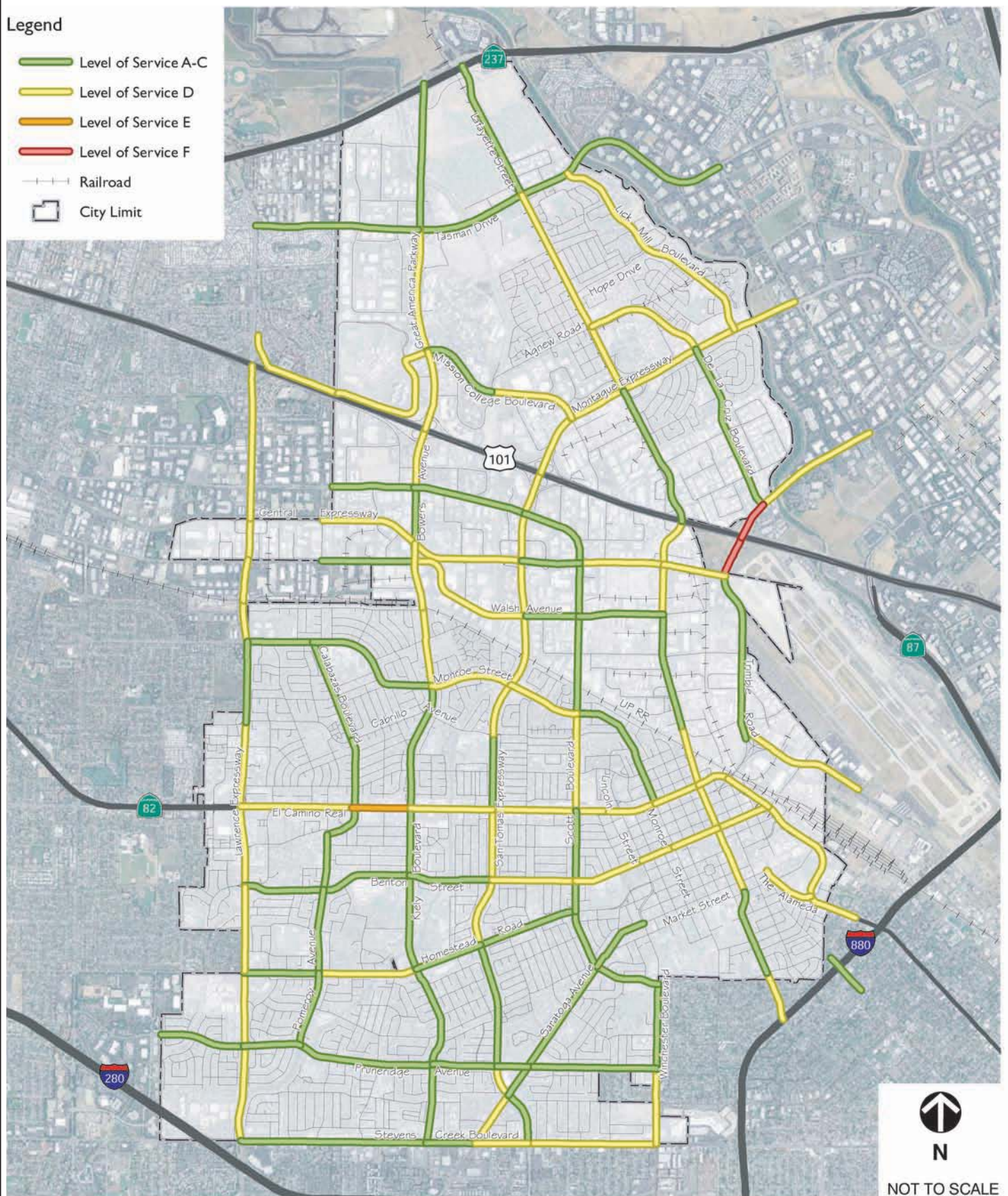
Deficient roadway segment levels of service, as shown in Table 4.12-4, present localized operational constraints within the City's roadway network. Area-wide reviews of roadway operations were evaluated as part of the proposed Draft 2010-2035 General Plan using 'lane miles' in four areas or zones. The quantity of lane miles is often used by transportation planners to define the total length of roadway network and includes both the length of the roadway and number of lanes – for example, a street that is one mile long with four lanes represents four lane-miles. The analysis completed for the proposed Draft 2010-2035 General Plan summarized lane miles for four geographic zones of the City differing in characteristics and primary land uses:

- North of US 101
- Between US 101 and the Caltrain right-of-way
- Between the Caltrain right-of-way and El Camino Real
- South of El Camino Real

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Legend

- Level of Service A-C
- Level of Service D
- Level of Service E
- Level of Service F
-  Railroad
-  City Limit

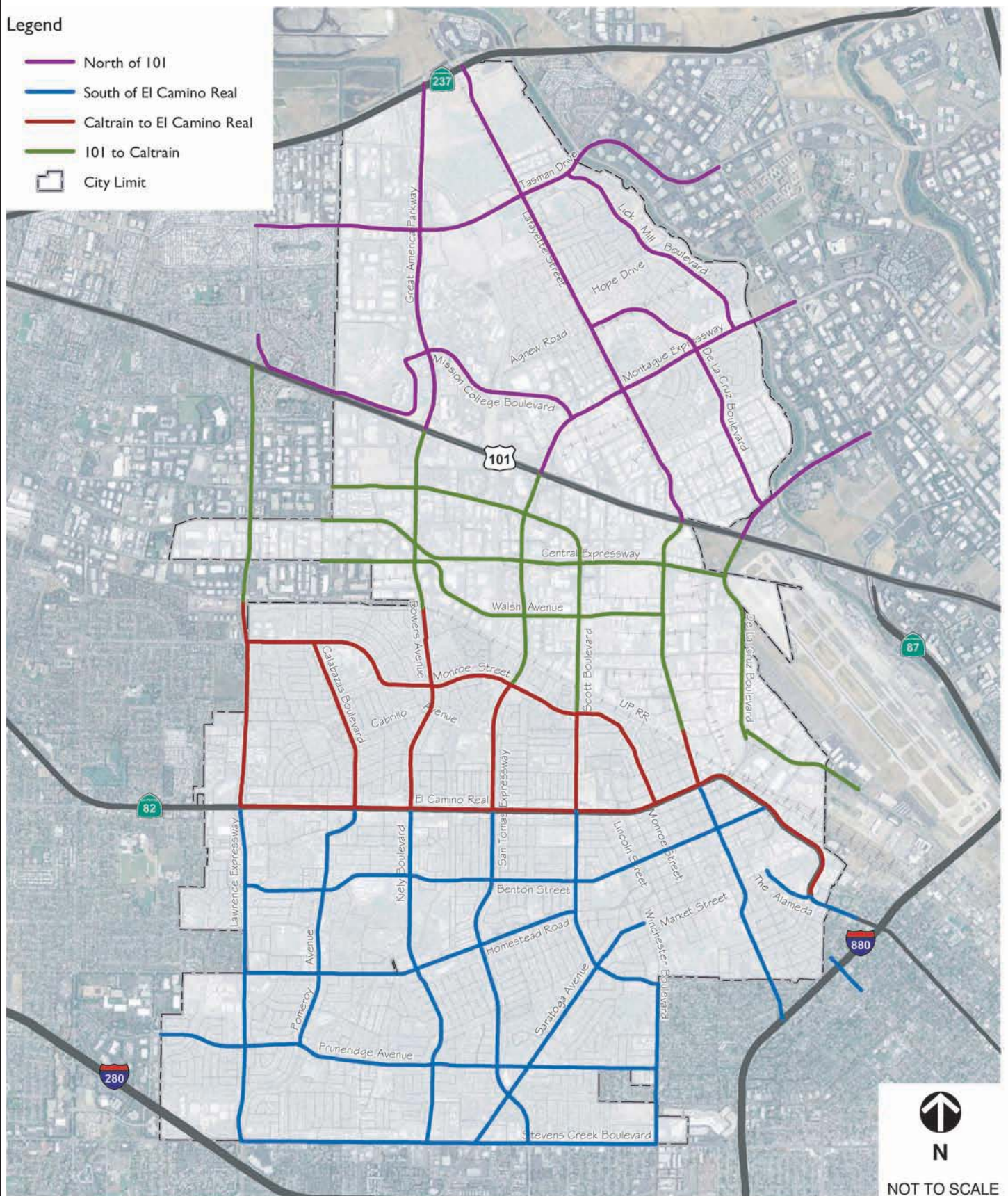


EXISTING DAILY ROADWAY SEGMENTS LOS

FIGURE 4.12-2

Legend

- North of I01
- South of El Camino Real
- Caltrain to El Camino Real
- I01 to Caltrain
-  City Limit



CONGESTED LANE MILES ANALYSIS ZONES

FIGURE 4.12-3

Figure 4.12-3 presents the boundaries of the four zones. For each zone, the roadway lane-miles for collector, arterial, and expressway facilities were summarized based on their daily operating levels. Residential and local streets are not included in these results, since these facilities are not included in the City's Travel Demand Model and they typically operate at an acceptable level throughout the day.

Table 4.12-5 summarizes the results indicating the percentage of lane miles that are uncongested (operating at LOS A, B, C, D, or E) and those operating at congested levels - LOS F. LOS E operations typically represent "at capacity" conditions, as detailed in Table 4.5-2 above and are considered acceptable under CMP impact criteria; so, for purposes of the congested lane miles analysis, LOS F operations are considered congested.

As shown in Table 4.12-5, under Existing Conditions, nearly all of the lane miles in the City, 98 percent, are uncongested and operate at LOS D or better. One percent of the lane miles operate at LOS E, and one percent operates at LOS F. South of El Camino Real, no lane miles operate at LOS E or F.

TABLE 4.12-5: EXISTING DAILY CONGESTED LANE MILES ANALYSIS

Geographic Area	Percent of Lane Miles		
	LOS D or better	LOS E	LOS F
North of US 101	98 percent	0 percent	2 percent
Between US 101 and Caltrain right-of-way	98 percent	0 percent	2 percent
Between Caltrain right-of-way and El Camino Real	97 percent	3 percent	0 percent
South of El Camino Real	100 percent	0 percent	0 percent
Total	98 percent	1 percent	1 percent

Source: Fehr & Peers, 2010.

4.12.1.8 Existing Daily Vehicle Miles Traveled

The proposed Draft 2010-2035 General Plan includes a policy that "promotes a reduction in the use of personal vehicles and vehicle miles traveled" (Policy 5.8.1-G3). To measure the effectiveness of the General Plan by this measure, Vehicle Trips (VT) and Vehicle Miles Traveled (VMT) were estimated and allocated to the City of Santa Clara using the following State-of-the-Practice methods:

- Internal-internal: All daily trips made entirely within the City of Santa Clara's limits.
- One-half of internal-external: One-half of daily trips with an origin within Santa Clara and a destination outside the City. This assumes that Santa Clara shares half of the responsibility for trips traveling to other municipalities.
- One-half of external-internal: One-half of daily trips with an origin outside the City limits and a destination within Santa Clara. Similar to internal-external trips, Santa Clara shares half of the responsibility of trips traveling from other municipalities.

- External-external: Trips that travel through the City, with no origin or destination within Santa Clara, are not included. This approach is consistent with the concept used for the internal-external and external-internal trips. Therefore, the external-external VT and VMT are assigned to other municipalities where the trips are originating or ending.

The City of Santa Clara's Travel Demand Model (Year 2008) was used to estimate existing vehicle trips and VMT. Table 4.12-6 summarizes existing daily vehicle trips and VMT for trips as described above. As shown, approximately 472,530 vehicle trips are generated and 2.7 million vehicle miles are traveled by the City's population and workforce each day.

TABLE 4.12-6: EXISTING DAILY VEHICLE TRIPS AND VEHICLE MILES TRAVELED

Existing Daily VT	472,530 trips
Existing Daily VMT	2,702,200 vehicle-miles
VT per Service Population ¹	2.13 trips per person
Average Trip Length (VMT/VT)	5.72 miles
VMT per Service Population ¹	12.2 vehicle-miles per person

¹ Service Population is defined as the number of residents living in the City plus workers employed within the City. For 2008, the population of Santa Clara was 115,500 and employment within the City is estimated at 106,680 employees (see 2010-2035 General Plan Table 5.2-1). Sources: Santa Clara General Plan Travel Demand Model, 2008; and Fehr & Peers, 2010.

Other measures of effectiveness derived from VT and VMT estimates include daily vehicle trips and VMT per service population. Service population is defined as the number of residents who live within the City limits, plus workers who are employed within the City limits. Based on the 2008 base year land uses developed by the City, there are 115,500 residents and 106,680 employees within the City of Santa Clara. VT per service population is therefore calculated as 2.13 trips per person, and the average trip length (or VMT divided by VT) under existing conditions is 5.72 miles. VMT per service population is estimated to be 12.2 vehicle-miles per person under existing conditions. These results are generally consistent with other adjacent communities in the South Bay, including San Jose and Mountain View.

4.12.1.9 Public Transit

Existing public transit service within the City is provided by VTA and consists of bus, light rail transit, and paratransit service. Commuter rail service is provided within the City by Caltrain, the Altamont Commuter Express (ACE), and the Capitol Corridor. Two commuter rail stops exist within Santa Clara, including the Great America Station the Santa Clara Transit Center. In addition, Amtrak California provides limited Thruway Motorcoach service to the Santa Clara Transit Center, which has temporarily replaced ACE service while the Union Pacific Railroad completes construction on the tracks. These services are shown in Figure 4.12-4 and described in Table 4.12-7.

TABLE 4.12-7: TRANSIT SERVICE WITHIN SANTA CLARA

Provider (Operator)	Service	Rail Stops	Extent of Service	Connections	Frequency
VTA (VTA)	Local, limited-stop, express, and rapid bus; Light rail transit	Old Ironsides, Great America, Lick Mill	Santa Clara County	Caltrain, Shuttles, ACE, Capitol Corridor	Varies for bus service; Light rail headways range from 15 to 45 minutes

Provider (Operator)	Service	Rail Stops	Extent of Service	Connections	Frequency
OUTREACH	Paratransit	n/a	n/a	n/a	n/a
Caltrain (Peninsula Joint Powers Board)	Commuter Rail	Santa Clara Transit Center	San Francisco to San Jose, select trains to Gilroy	VTA (Bus)	Weekday headways 30 minutes; Weekend headways 60 minutes
Altamont Commuter Express, ACE (San Joaquin Regional Rail Commission)	Commuter Rail	Great America	Stockton and San Jose	VTA (Bus, LRT), Shuttles	Four eastbound and four westbound trains, 60 minute headways
Capitol Corridor (Capitol Corridor Joint Powers Authority)	Commuter Rail	Great America	Auburn and San Jose	VTA (Bus, LRT), Shuttles, Thruway Motorcoach	Seven southbound and seven northbound trains
Thruway Motorcoach (Amtrak California)	Regional bus service	n/a	Extends Capitol Corridor to Santa Clara Transit Center	VTA (Bus, LRT), Shuttles, ACE, and Capitol Corridor	One westbound bus – AM; two eastbound buses - PM

Source: Fehr & Peers, 2010.

4.12.1.10 Pedestrian Circulation

Pedestrian facilities improve safety for pedestrians and can also encourage the use of alternative modes of transportation. These facilities include sidewalks, paths, pedestrian bridges, crosswalks, and pedestrian signals with crosswalks at signalized intersections to accommodate pedestrian circulation. In California, it is legal for pedestrians to cross any street at an intersection, except at unmarked locations between immediately adjacent signalized crossings or where crossing is expressly prohibited. Marked crossings reinforce the location, legitimacy of a crossing and its identification as a preferred safe location to channelize pedestrian crossings. In pedestrian-friendly cities, crossing locations are treated as essential links in the pedestrian network.

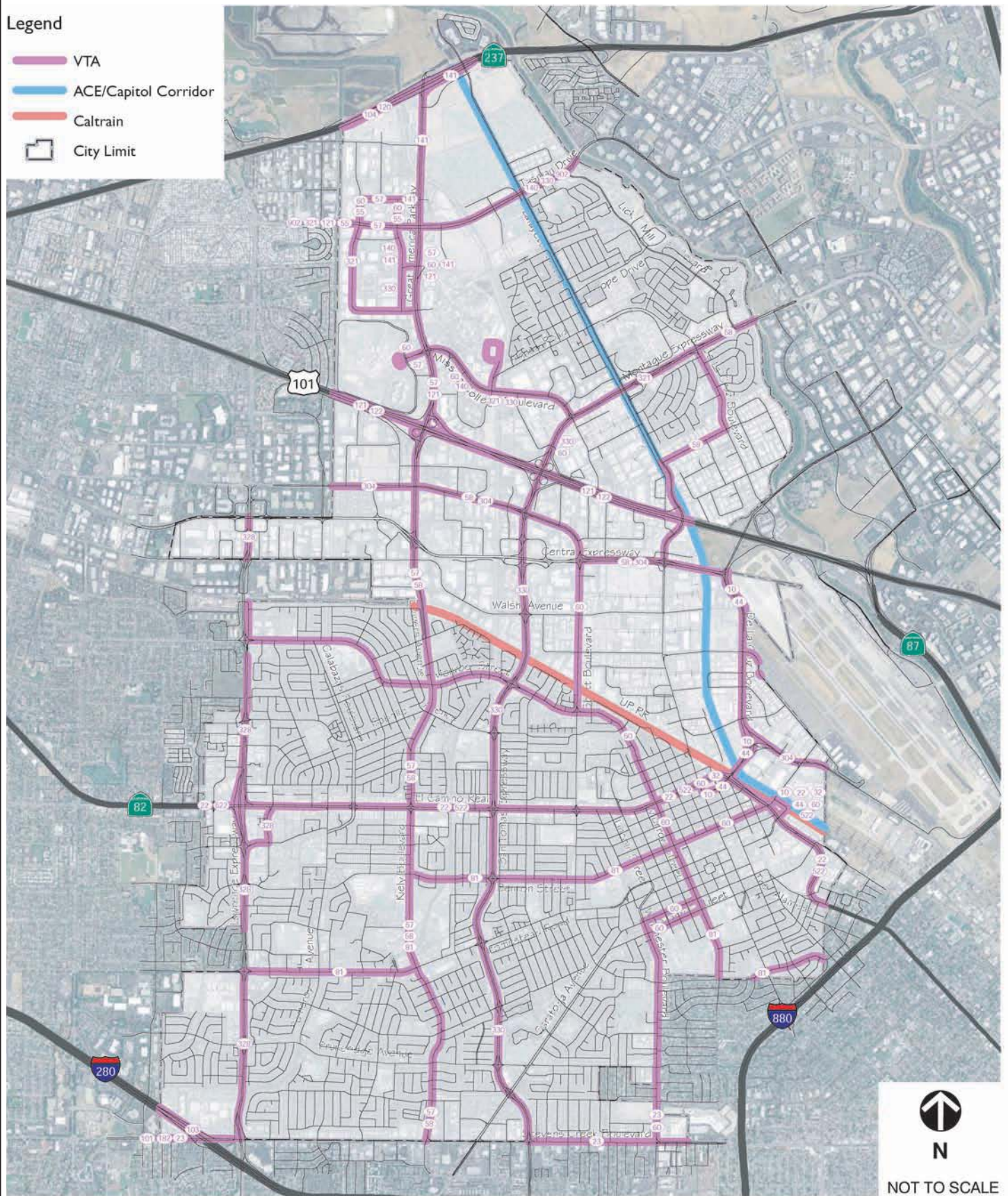
The City's pedestrian network consists of sidewalks, multi-use paths/trails, and both grade-separated and at-grade crossings. Santa Clara has many areas that seem especially conducive to walking for recreation and transportation, particularly in residential areas in the southern area of the City and along off-street paths, including the recently extended Saratoga/San Tomas Aquino Creek Trail. However, even in these areas there are several large arterials that act as barriers to walking, and there are some pockets of Santa Clara that have no sidewalks.

Key pedestrian focus areas in Santa Clara include Mixed Use Nodes, Neighborhood Centers, Downtown, and City Hall. Pedestrian amenities near these focus areas are enhanced with wide sidewalks, street trees, pedestrian-scale lighting, and attractive landscaping. Major barriers limiting pedestrian movement in Santa Clara include the US 101 freeway, Lawrence, San Tomas, Montague, and Central Expressways, railroad tracks, and El Camino Real.

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Legend

- VTA
- ACE/Capitol Corridor
- Caltrain
- City Limit



EXISTING TRANSIT SERVICE

FIGURE 4.12-4

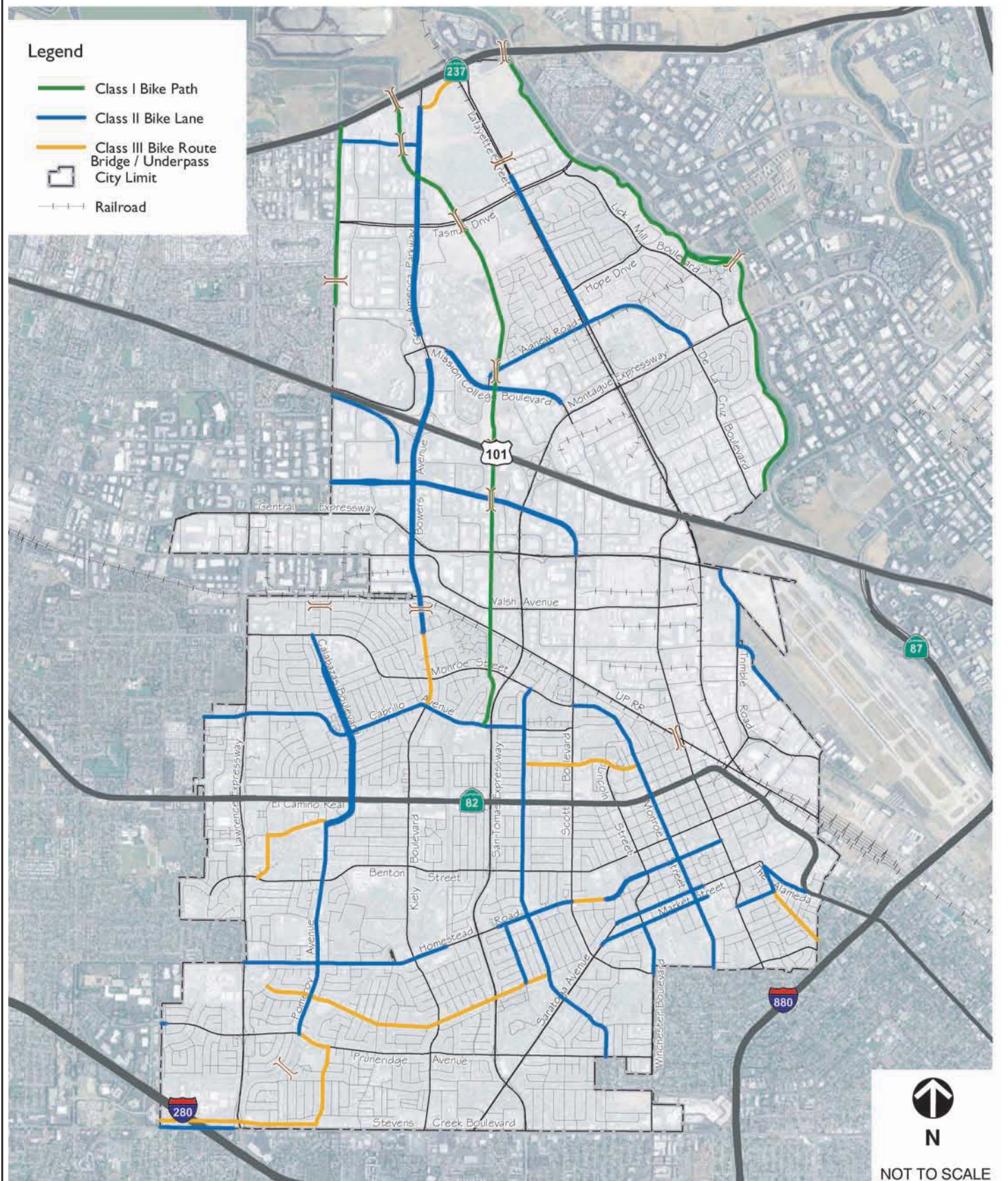
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4.12.1.11 *Bicycle Circulation*

The size, topography, and climate of Santa Clara make it an ideal City for bicycling. Bicycles are a convenient means of transportation for short trips, especially those less than two miles in length. According to the U.S. Department of Transportation, one-quarter of all trips in this country are under one mile; about 40 percent of all trips are two miles or shorter. The City of Santa Clara has developed policies as part of its recent Bicycle Plan Update (2009) and the proposed Draft 2010-2035 General Plan to encourage bicycling as a form of transportation and has implemented changes to roadways for bicyclists. Given that 30 percent of Santa Clara's working population is employed in Santa Clara, a comprehensive citywide bikeway network and support facilities, such as bicycle parking, showers and lockers at employment locations and other destinations, may greatly increase the mode share of bicycling as a form of transportation in Santa Clara.

Constraints to bicycling in Santa Clara are similar to constraints for motor vehicle and pedestrian traffic, in that circulation is limited by freeways, expressways, and railroad right-of-ways. Figure 4.12-5 depicts the existing bikeway network in Santa Clara. Class I bikeways are separated from motor vehicle traffic, as in the case of an off-street path along a creek trail and may be shared with pedestrians. Class II bikeways are located on streets and allow bicyclists to utilize a separate lane of travel, usually five to six feet wide, separated from motor vehicle traffic by a six-inch white stripe, and include bike lane stencils and signs. Class III bikeways are designated by signs and in some cases a shared-use arrow; cyclists share the travel lane with motor vehicle traffic on these routes.

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EXISTING BICYCLE NETWORK

FIGURE 4.12-5

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4.12.2 4.12.2 Regulatory Setting

The City of Santa Clara has jurisdiction over all City streets and City-operated traffic signals. The neighboring Cities of Sunnyvale, Cupertino, and San Jose have jurisdiction over local roadways outside the City limits. The California Department of Transportation (Caltrans) has jurisdiction over State facilities including I-280, I-880, US 101, SR 237, and SR 82 (El Camino Real). Caltrans also has jurisdiction over on- and off-ramp intersections with local streets such as the traffic signals that control access to and from US 101 at Great America Parkway, although the City maintains these intersections. The County of Santa Clara has jurisdiction over the Countywide Expressway system, including Lawrence Expressway, Central Expressway, Montague Expressway, and San Tomas Expressway. Transit agencies with operations within the City limits are VTA, Caltrain, ACE, and the Capitol Corridor.

4.12.2.1 California Department of Transportation

Caltrans recommends a target LOS at the threshold between LOS C and LOS D for their facilities. If the location under existing conditions operates worse than the appropriate target LOS, then the existing LOS should be maintained. For purposes of this analysis, the CMP level of service criteria discussed in section 4.12.2.2 are used for Caltrans facilities.

4.12.2.2 Valley Transportation Authority (VTA)

VTA requires that the proposed project impacts on the Congestion Management Program (CMP) System be addressed. The CMP system in Santa Clara includes the freeway and expressway systems, El Camino Real (SR 82), and intersections of regional significance, such as those along Great America Parkway-Bowers Avenue.

VTA has developed the Valley Transportation Plan 2035, which identifies the programs, projects and policies the VTA would like to pursue by 2035. It connects projects with anticipated funds and lays out a framework for the development and maintenance of the transportation system over the next 25 years. It considers all travel modes and addresses the links between transportation and land use, air quality, energy use and community livability.

4.12.2.3 Metropolitan Transportation Commission (MTC)

The majority of federal, State, and local financing available for transportation projects is allocated at the regional level by the Metropolitan Transportation Commission (MTC), the transportation planning, coordinating, and financing agency for the nine-county Bay Area. The current regional transportation plan, known as Transportation 2035, was adopted by MTC on April 22, 2009. Transportation 2035 specifies a detailed set of investments and strategies throughout the region from 2009 through 2035 to maintain, manage, and improve the surface transportation system. The Plan outlines eight goals: Maintenance and Safety; Reliability; Efficient Freight Travel; Security and Emergency Management; Clean Air, Climate Protection; Equitable Access and Livable Communities. The Plan specifies how anticipated federal, state, and local transportation funds will be spent in the Bay Area during the next 25 years. Most of this “committed funding” will go toward maintaining the region’s existing transportation infrastructure. Major transit projects included in the Transportation 2035 Plan include a BART extension from Fremont to San Jose/Santa Clara; electrification of the Caltrain system; enhanced

service along the Amtrak Capitol Corridor; and improvements to local and express bus services (including Bus Rapid Transit services on San Jose's Santa Clara Street/Alum Rock Corridor).

4.12.3 4.12.3 IMPACT ANALYSIS

4.12.3.1 Significance Criteria

The proposed Draft 2010-2035 General Plan would be considered to result in a significant transportation impact if, under build-out conditions in 2035, it would:

- Cause the level of service of a roadway segment to degrade to a level below the applicable peak hour standards
- Cause a CMP roadway segment to exceed the CMP LOS E threshold
- Result in a substantial increase in lane miles of congested roadways, based on the geographic area of the City and defined percentages for each area
- Result in an increase in Citywide vehicle miles traveled per service population
- Conflict with adopted policies, plans, or programs supporting alternative transportation
- Result in a degradation in vehicular operations in adjacent communities
- Result in inadequate emergency access

The above general significance criteria are interpreted as follows in evaluating the proposed 2010-2035 General Plan:

4.12.3.2 Roadway Segment Level of Service Impact Criteria (within City of Santa Clara)

An impact to roadway segments is considered significant when:

- For local roadway segments within the City, a project degrades the level of service from LOS D or better to LOS E or F.
- For freeways, expressways, and other CMP roadway segments, a project degrades the level of service from LOS E or better to LOS F.

If a segment is already operating at unacceptable levels, as defined by the controlling agency, an increase in traffic volume on the segment representing more than one (1) percent of the facilities' capacity is considered significant.

4.12.3.3 Congested Lane Miles Impact Criteria

An impact to congested lane miles is considered significant when:

- In the area south of El Camino Real within the City, a project causes the number of congested lane miles to increase by more than five percent;
- In the area between El Camino Real and the Caltrain right-of-way within the City, a project causes the number of congested lane miles to increase by more than 15 percent;
- In the area between the Caltrain right-of-way and US 101 within the City, a project causes the number of congested lane miles to increase by more than 20 percent; or
- In the area north of US 101 within the City, a project causes the number of congested lane miles to increase by more than 20 percent.

These thresholds were developed based on the assumptions detailed in the following paragraphs. The area south of El Camino Real is expected to undergo minimal land use changes as part of the proposed Draft 2010-2035 General Plan. The established neighborhoods and roadway system support a lesser degree of congestion. An increase of five percent in the number of congested lane miles in this area was selected as the threshold for significance, as this area is less able to accommodate significant increases in traffic. As daily traffic volumes typically fluctuate by approximately five (5) to ten (10) percent across non-summer mid-week days of the week, an increase in congested lane miles of less than five (5) percent is likely to be imperceptible to most drivers in this area.

The area north of the Caltrain right-of-way mainly houses industrial and service employment uses. In this area, a higher level of congestion is considered reasonable. A twenty percent threshold was developed since this area supports mainly employment uses, which have heavy peaking characteristics. The roadway segments in this area therefore experience more concentrated congestion patterns in the morning and evening peak than in a residential neighborhood, which has ongoing activity throughout the day. The roadway segments north of the Caltrain tracks are expected to have excess capacity during the mid-day and later evening hours, outside of the morning and evening commute time periods.

The area between the Caltrain right-of-way and El Camino Real includes mainly residential neighborhoods. It, however, also serves as a transition zone between the residential neighborhoods to the south of El Camino Real and the key employment centers of the northern portion of the City. Additionally, the lane miles associated with El Camino Real are included in this zone, and given the focus for redevelopment along El Camino Real as part of this Update, an intermediate level of congestion is expected to be considered reasonable.

4.12.3.4 Vehicle Miles of Travel (VMT) Impact Criteria

An impact to Citywide VMT is considered significant when:

- A project causes Citywide VMT per service population to increase over existing conditions.

4.12.3.5 Pedestrian Impact Criteria

A pedestrian impact is considered significant if a project would:

- Fail to accommodate existing pedestrian facilities;
- Fail to accommodate planned pedestrian facilities;
- Not provide accessible pedestrian facilities that meet current ADA best practices; or
- Create inconsistencies with adopted pedestrian system plans, guidelines, policies or standards.

4.12.3.6 Bicycle Impact Criteria

A bicycle impact is considered significant if a project would:

- Fail to accommodate existing bicycle facilities;
- Fail to accommodate planned bicycle facilities;

- Conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards; or
- Not provide secure and safe bicycle parking in adequate proportion to anticipated demand.

4.12.3.7 Transit Impact Criteria

A transit impact is considered significant if a project would:

- Result in development that is inaccessible to transit facilities

4.12.3.8 Adjacent Community Roadway Segment Impact Criteria

Study segments in adjacent communities were identified using the following criteria:

1. A peak-hour volume-to-capacity ratio of greater than 0.9 (in either peak hour), and
2. More than ten (10) percent of the peak-hour traffic volume on the segment attributable to the City of Santa Clara (in either peak hour)

These criteria are used determine which segments may be potentially impacted by the 2010-2035 General Plan. The criteria was developed to be consistent with CMP criteria, under which LOS E or better operations are considered acceptable, as a volume-to-capacity ratio of 0.9 roughly translates to LOS E operations. The ten (10) percent criterion was selected as it represents a notable amount of traffic on a segment attributable to the City of Santa Clara (one out of every ten vehicles).

A roadway segment impact in an adjacent community is considered significant if a project would:

- Result in a daily traffic increase of more than one (1) percent of a roadway segment's daily capacity, on study segments outside the City.

The addition of traffic on a study segment equaling more than one (1) percent of its capacity is also consistent with CMP thresholds.

4.12.3.9 Emergency Access Impact Criteria

An emergency vehicle access impact is considered to be significant if a project would:

- Provide inadequate design features to accommodate emergency vehicle access and circulation; or
- Cause a substantial decrease in travel speeds on primary emergency response routes such that emergency vehicles would be significantly delayed.

4.12.4 Methodology & Assumptions

Measures of effectiveness and roadway segment levels of service are evaluated for two scenarios:

- Existing Conditions, which represents transportation conditions in 2007/2008.
- Future (2035) Conditions assuming the 2010-2035 Santa Clara General Plan land uses are implemented.

Gross Citywide indicators, including vehicle trips (VT) and vehicle miles of travel (VMT) were estimated for the scenarios described above, and for the following Alternatives (*see Section 5 Alternatives*):

- Future (2035) Conditions with Current Santa Clara General Plan, representing a future scenario if the General Plan update is not adopted, and the existing General Plan continues to guide development in the City. Growth assumptions outside the City are the same as with the proposed Draft 2010-2035 Santa Clara General Plan.
- Future (2035) Conditions with Alternative General Plan, representing a similar level of residential growth to the proposed Draft 2010-2035 General Plan. Employment levels, however, were developed to accomplish a one-to-one (1:1) jobs-to-housing ratio for new growth within the City.

4.12.4.1 *Planned Transportation Changes*

The proposed Draft 2010-2035 General Plan balances all travel modes by organizing streets and other transportation facilities according to “typologies” which consider context and prioritize travel modes for each street. The transportation system is shown by mode on Figure 4.12-1 (City Map and Street Network), Figure 4.12-4 (Existing Transit Service), and Figure 4.12-5 (Existing Bicycle Network).

There are a number of planned improvements to the roadway system that are expected to occur independent of the 2010-2035 General Plan. These improvements include those to the regional expressway system that are under the jurisdiction of the County of Santa Clara, defined in the Valley Transportation Authority’s Valley Transportation Plan (VTP) 2035, and improvements that are programmed as part of the City’s Capital Improvement Program. To present a conservative analysis, the following improvements, while considered likely to be implemented during the timeframe of the proposed Draft 2010-2035 General Plan, were not included in the vehicular traffic modeling and roadway segment analysis.

1. Widening Central Expressway to six lanes between Lawrence Expressway and San Tomas Expressway (Countywide Expressway Study Funding Tier 1A)
2. Widening Montague Expressway to eight lanes between Trade Zone to Park Victoria (Countywide Expressway Study Funding Tier 1A)
3. Widening San Tomas Expressway to eight lanes between Williams Road and El Camino Real (Countywide Expressway Study Funding Tier 1A)
4. Widening Central Expressway between Mary Avenue and Lawrence Expressway to provide auxiliary lanes or acceleration/deceleration lanes (Countywide Expressway Study Funding Tier 1A)
5. Converting at-grade intersections on Lawrence Expressway at Arques Avenue, Kifer Road, and Monroe Street to grade-separated interchanges (Countywide Expressway Study Funding Tier 1B)
6. Converting US 101/Montague Expressway interchange to partial cloverleaf (Countywide Expressway Study Funding Tier 1B)

7. Widening the westside of Coleman Avenue from two to three lanes from Brokaw Road to City Limits (City of Santa Clara Capital Improvement Project)

In addition to planned roadway improvements described above, the elimination of a vehicular travel lane in each direction on El Camino Real is planned as part of the 2010-2035 General Plan. This would allow for the provision of a transit-only lane, or for wider sidewalks and bicycle lanes on El Camino Real. The elimination of one vehicular travel lane in each direction was included in the 2010-2035 General Plan transportation analysis, to present a more conservative analysis of vehicle traffic.

4.12.4.2 Travel Demand Forecasting



As discussed in the Travel Demand Forecasting section above, the Santa Clara General Plan Travel Demand Model was developed and applied to forecast changes in land use and the roadway network under Future Year (2035) conditions. Table 4.12-8 summarizes the number of vehicle trips estimated by the Model under existing conditions and with the proposed Draft 2010-2035 General Plan.

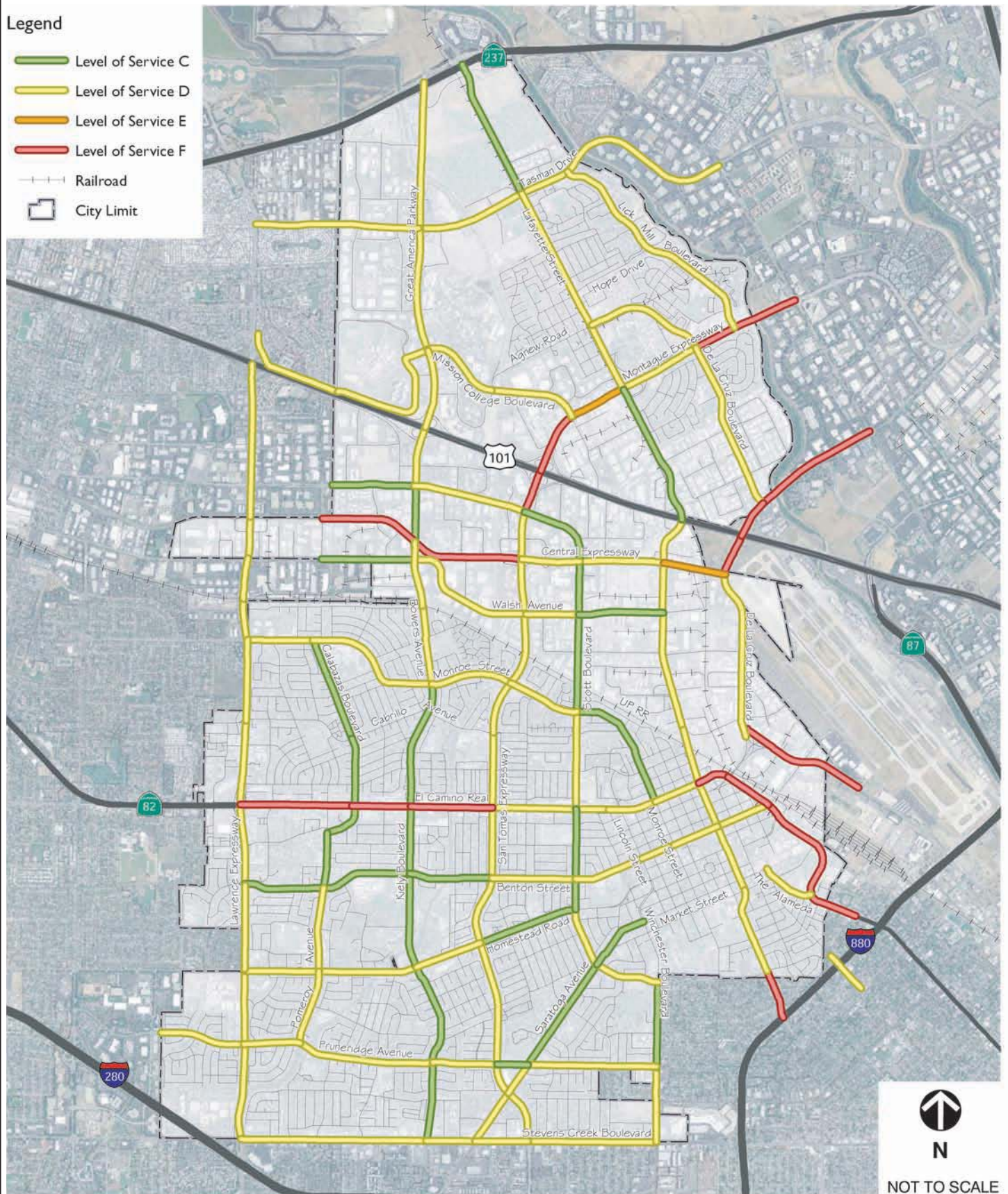
TABLE 4.12-8: CHANGE IN CITYWIDE VEHICLE TRIP GENERATION COMPARED TO EXISTING CONDITIONS		
Existing Conditions	2035 General Plan	Change
545,900	625,750	+79,850 (14.6 percent)
Source: Fehr & Peers, 2010.		

4.12.4.3 Future Traffic Volume Projections

Future year (2035) traffic volume projections for the major roadways in the City under the proposed Draft 2010-2035 General Plan conditions were developed using the Santa Clara General Plan Travel Demand Model. The forecasts were estimated by calculating the difference between the base and future year model outputs, and adding the increase to existing daily traffic counts. Figure 4.12-6 summarizes the daily roadway segment forecasts.

Legend

- Level of Service C
- Level of Service D
- Level of Service E
- Level of Service F
-  Railroad
-  City Limit



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4.12.5 **4.12.5 Summary of Future Conditions**

This section describes the potential impacts on the transportation system resulting from the land uses described in the proposed Santa Clara 2010-2035 General Plan.

4.12.5.1 **Future (2035) Roadway Segment Operations**

Daily traffic forecasts for the study roadway segments are shown in Table 4.12-9 along with the resulting level of service calculations. As noted in the table, the following segments are projected to operate at unacceptable levels based on City or CMP criteria as a result of future traffic generated by the 2035 General Plan and regional growth within Santa Clara County:

- Lafayette Street between El Camino Real and Benton Street
- Lafayette Street between Benton Street and Market Street
- Bascom Avenue between Newhall Street and I-880
- Montague Expressway between N. 1st Street and De La Cruz Boulevard
- Montague Expressway between Mission College Boulevard and US 101
- San Tomas Expressway between US 101 and Scott Boulevard
- Trimble Road between City Limits and De La Cruz Boulevard
- De La Cruz Boulevard between Trimble Road and US 101
- De La Cruz Boulevard between US 101 and Central Expressway
- Coleman Avenue between De La Cruz Boulevard and City Limits
- Central Expressway between Lawrence Expressway and Bowers Avenue
- Central Expressway between Bowers Avenue and San Tomas Expressway
- El Camino Real between Lawrence Expressway and Calabazas Boulevard
- El Camino Real between Calabazas Boulevard and Kiely Boulevard
- El Camino Real between Kiely Boulevard and San Tomas Expressway
- El Camino Real between Lafayette Street and De La Cruz Boulevard/Coleman Avenue
- El Camino Real between De La Cruz Boulevard/Coleman Avenue and Benton Street
- El Camino Real between Benton Street and The Alameda
- The Alameda between El Camino Real and I-880
- US 101 between De La Cruz Boulevard and Lawrence Expressway
- SR 237 between N. 1st Street and Lawrence Expressway
- I-880 between Bascom Avenue and Coleman Avenue
- I-280 between Saratoga Avenue and Lawrence Expressway

TABLE 4.12-9: EXISTING AND 2010-2035 GENERAL PLAN ROADWAY SEGMENT LOS SUMMARY

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Lawrence Expressway between US 101 and Central Expressway	79,010	D	93,030	D
Lawrence Expressway between Central Expressway and Kifer Road	63,970	D	80,790	D
Lawrence Expressway between Kifer Road and Monroe Street	67,960	D	83,090	D
Lawrence Expressway between Monroe Street and Cabrillo Avenue	52,890	C	64,760	D

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Lawrence Expressway between Cabrillo Avenue and El Camino Real	63,490	D	78,680	D
Lawrence Expressway between El Camino Real and Benton Street	58,230	D	70,840	D
Lawrence Expressway between Benton Street and Homestead Road	65,410	D	66,990	D
Lawrence Expressway between Homestead Road and Pruneridge Avenue	66,600	D	73,220	D
Lawrence Expressway between Pruneridge Avenue and Stevens Creek Boulevard	62,890	D	68,990	D
Great America Parkway between SR 237 and Tasman Drive	23,800	C	29,430	D
Great America Parkway between Tasman Drive and Mission College	36,590	D	39,420	D
Great America Parkway between Mission College Boulevard and US 101	39,600	D	41,070	D
Bowers Avenue between US 101 and Scott Boulevard	38,370	D	49,080	D
Bowers Avenue between Scott Boulevard and Central Expressway	16,410	C	23,060	C
Bowers Avenue between Central Expressway and Monroe Street	18,170	D	20,280	D
Bowers Avenue between Monroe Street and El Camino Real	13,460	C	14,760	C
Kiely Boulevard between El Camino Real and Benton Street	12,640	C	13,640	C
Kiely Boulevard between Benton Street and Homestead Road	8,970	C	12,750	C
Kiely Boulevard between Homestead Road and Pruneridge Avenue	12,050	C	14,690	C
Kiely Boulevard between Pruneridge Avenue and Stevens Creek	14,220	C	16,410	C
Lafayette Street between SR 237 and Tasman Drive	5,560	C	7,650	C
Lafayette Street between Tasman Drive and Montague Expressway	18,370	D	31,650	D
Lafayette Street between Montague Expressway and US 101	11,600	C	17,600	C
Lafayette Street between US 101 and Central Expressway	18,190	D	24,210	D
Lafayette Street between Central Expressway and Walsh Avenue	18,060	D	20,680	D
Lafayette Street between Walsh Avenue and Reed Street	15,140	C	20,700	D
Lafayette Street between Reed Street and El Camino Real	21,580	D	29,690	D
Lafayette Street between El Camino Real and Benton Street ¹³⁰	15,660	D	24,920	F
Lafayette Street between Benton Street and Market Street ³	16,500	D	25,830	F
Washington Street between Market Street and Newhall Street	15,720	C	23,010	D
Bascom Avenue between Newhall Street and I-880	26,860	C	39,280	F
Scott Boulevard between City Limit and Bowers Avenue	12,090	C	14,750	C

¹³⁰ Lafayette Street between El Camino Real and Market Street includes a two-way left-turn lane. During the morning and evening peak commute hours, this lane operates as a 'reversible' lane, providing additional vehicle capacity for vehicles in the peak commute direction. To present a conservative analysis, this section of Lafayette Street was analyzed as a two-lane segment (one lane in each direction).

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Scott Boulevard between Bowers Avenue and San Tomas Expressway	13,120	C	19,670	D
Scott Boulevard between San Tomas Expressway and Central Expressway	16,160	C	16,770	C
Scott Boulevard between Central Expressway and Walsh Avenue	8,980	C	15,460	C
Scott Boulevard between Walsh Avenue and Monroe Street	8,540	C	13,270	C
Scott Boulevard between Monroe Street and El Camino Real	8,610	C	9,900	C
Scott Boulevard between El Camino Real and Benton Street	9,390	C	13,590	C
Scott Boulevard between Benton Street and Homestead Road	11,530	C	15,850	C
Scott Boulevard between Homestead Road and Saratoga Avenue	14,070	C	19,940	D
Newhall Street between Saratoga Avenue and Winchester Boulevard	13,190	C	21,280	D
Montague Expressway between N. 1st Street and De La Cruz Boulevard	52,670	D	85,510	F
Montague Expressway between De La Cruz Boulevard and Lafayette Street	60,570	D	93,500	D
Montague Expressway between Lafayette Street and Mission College Boulevard	58,070	D	94,850	E
Montague Expressway between Mission College Boulevard and US 101	83,210	D	106,860	F
San Tomas Expressway between US 101 and Scott Boulevard	66,510	D	97,800	F
San Tomas Expressway between Scott Boulevard and Central Expressway	64,450	D	90,540	D
San Tomas Expressway between Central Expressway and Walsh Avenue	70,620	D	90,770	D
San Tomas Expressway between Walsh Avenue and Monroe Street	72,800	D	81,220	D
San Tomas Expressway between Monroe Street and Cabrillo Avenue	56,910	D	74,610	D
San Tomas Expressway between Cabrillo Avenue and El Camino Real	46,950	C	65,250	D
San Tomas Expressway between El Camino Real and Benton Street	49,940	D	68,570	D
San Tomas Expressway between Benton Street and Homestead Road	52,160	D	70,310	D
San Tomas Expressway between Homestead Road and Pruneridge Avenue	43,490	C	58,920	D
San Tomas Expressway between Pruneridge Avenue and Saratoga Avenue	46,160	D	65,640	D
San Tomas Expressway between Saratoga Avenue and Stevens Creek	36,100	C	51,250	D
Calabazas Boulevard between Monroe Street and Cabrillo Avenue	7,160	C	10,990	C
Calabazas Boulevard between Cabrillo Avenue and El Camino Real	7,360	C	9,370	C
Calabazas Boulevard between El Camino Real and Pomeroy Avenue	5,000	C	8,050	C
Pomeroy Avenue between Calabazas Boulevard and Benton Street	4,100	C	6,700	C
Pomeroy Avenue between Benton Street and Homestead Road	7,300	C	6,900	D

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Pomeroy Avenue between Homestead Road and Pruneridge Avenue	6,800	C	8,340	D
Lick Mill Boulevard between Tasman Drive and Montague Expressway	6,610	D	17,750	D
Tasman Drive between City Limit and Great America Parkway	12,790	C	26,360	D
Tasman Drive between Great America Parkway and Lafayette Street	16,290	C	30,910	D
Tasman Drive between Lafayette Street and City Limits	17,590	C	33,230	D
Wildwood Avenue between City Limits and Mercado Driveway	7,770	D	8,760	D
Mission College Boulevard between Mercado Driveway and Great America Parkway	16,000	D	17,510	D
Mission College Boulevard between Great America Parkway and Agnew Road	10,180	C	16,980	D
Mission College Boulevard between Agnew Road and Montague Expressway	28,530	D	29,870	D
Agnew Road between Lafayette Street and Montague Expressway	14,820	D	15,970	D
Trimble Road between City Limits and De La Cruz Boulevard	31,070	D	59,490	F
De La Cruz Boulevard between Montague Expressway and Trimble Road	11,910	C	19,210	D
De La Cruz Boulevard between Trimble Road and US 101	57,670	F	84,320	F
De La Cruz Boulevard between US 101 and Central Expressway	55,990	F	81,740	F
De La Cruz Boulevard between Central Expressway and Coleman Avenue	20,170	C	39,430	D
Coleman Avenue between De La Cruz Boulevard and City Limits	31,230	D	44,620	F
Central Expressway between Lawrence Expressway and Bowers Avenue	39,960	D	71,050	F
Central Expressway between Bowers Avenue and San Tomas Expressway	37,330	D	67,430	F
Central Expressway between San Tomas Expressway and Scott Boulevard	40,250	C	61,250	D
Central Expressway between Scott Boulevard and Lafayette Street	47,550	D	68,830	D
Central Expressway between Lafayette Street and De La Cruz Boulevard	59,700	D	75,610	E
Kifer Road between Lawrence Expressway and Bowers Avenue	11,180	C	12,860	C
Walsh Avenue between Bowers Avenue and San Tomas Expressway	14,680	D	15,690	D
Walsh Avenue between San Tomas Expressway and Scott Boulevard	12,580	C	15,570	D
Walsh Avenue between Scott Boulevard and Lafayette Street	5,530	C	6,230	C
Monroe Street between Lawrence Expressway and Calabazas Boulevard	13,190	C	17,720	D
Monroe Street between Calabazas Boulevard and Bowers Avenue	11,400	C	17,290	D
Monroe Street between Bowers Avenue and San Tomas Expressway	15,780	D	16,850	D
Monroe Street between San Tomas Expressway and Scott Boulevard	15,260	D	17,170	D

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Monroe Street between Scott Boulevard and El Camino Real	17,740	D	21,150	D
El Camino Real between Lawrence Expressway and Calabazas Boulevard	32,800	D	39,280	F
El Camino Real between Calabazas Boulevard and Kiely Boulevard	36,530	E	40,590	F
El Camino Real between Kiely Boulevard and San Tomas Expressway	32,040	D	41,220	F
El Camino Real between San Tomas Expressway and Scott Boulevard	25,690	D	33,730	D
El Camino Real between Scott Boulevard and Lincoln Street	26,260	D	32,480	D
El Camino Real between Lincoln Street and Monroe Street	25,190	D	32,420	D
El Camino Real between Monroe Street and Lafayette Street	23,640	D	31,220	D
El Camino Real between Lafayette Street and De La Cruz Boulevard/Coleman Avenue	25,450	D	38,370	F
El Camino Real between De La Cruz Boulevard/Coleman Avenue and Benton Street	28,820	D	41,380	F
El Camino Real between Benton Street and The Alameda	30,800	D	42,730	F
Benton Street between Lawrence Expressway and Pomeroy Avenue	9,750	C	12,660	C
Benton Street between Pomeroy Avenue and Kiely Boulevard	9,240	C	13,550	C
Benton Street between Kiely Boulevard and San Tomas Expressway	10,260	C	12,440	C
Benton Street between San Tomas Expressway and Scott Boulevard	10,540	D	10,800	D
Benton Street between Scott Boulevard and Lincoln Street	8,430	D	8,810	D
Benton Street between Lincoln Street and Monroe Street	8,800	D	9,060	D
Benton Street between Monroe Street and Lafayette Street	8,750	D	9,030	D
Benton Street between Lafayette Street and El Camino Real	8,220	D	8,540	D
Homestead Road between Lawrence Expressway and Pomeroy Avenue	14,370	C	21,280	D
Homestead Road between Pomeroy Avenue and Kiely Boulevard	20,610	D	23,280	D
Homestead Road between Kiely Boulevard and San Tomas Expressway	14,330	C	18,740	D
Homestead Road between San Tomas Expressway and Scott Boulevard	9,170	C	11,750	C
Pruneridge Avenue between City Limit and Lawrence Expressway	13,600	C	19,510	D
Pruneridge Avenue between Lawrence Expressway and Pomeroy Avenue	11,560	C	18,280	D
Pruneridge Avenue between Pomeroy Avenue and Kiely Boulevard	11,140	C	19,250	D
Pruneridge Avenue between Kiely Boulevard and San Tomas Expressway	13,830	C	23,790	D
Pruneridge Avenue between San Tomas Expressway and Saratoga Avenue	9,110	C	16,760	C
Pruneridge Avenue between Saratoga Avenue and Winchester Boulevard	10,830	C	22,390	D

Roadway Segment	Existing		2010-2035 General Plan	
	ADT	LOS	ADT	LOS
Stevens Creek Boulevard between Lawrence Expressway and Kiely Boulevard	24,940	C	28,680	D
Stevens Creek Boulevard between Kiely Boulevard and Saratoga Avenue	24,990	C	28,730	D
Stevens Creek Boulevard between Saratoga Avenue and San Tomas Expressway	33,540	D	38,570	D
Stevens Creek Boulevard between San Tomas Expressway and Winchester Boulevard	38,910	D	44,740	D
Saratoga Avenue between Stevens Creek Boulevard and San Tomas Expressway	22,460	D	34,070	D
Saratoga Avenue between San Tomas Expressway and Pruneridge Avenue	13,300	C	20,610	D
Saratoga Avenue between Pruneridge Avenue and Scott Boulevard	11,120	C	14,220	C
Saratoga Avenue between Scott Boulevard and Winchester Boulevard	9,810	C	11,870	C
The Alameda between Market Street and El Camino Real	11,890	D	14,540	D
The Alameda between El Camino Real and I-880	31,170	D	43,450	F
Park Avenue between Bellomy Street and I-880	6,500	C	8,440	D
Winchester Boulevard between Newhall Street and Pruneridge Avenue	11,260	C	15,950	C
Winchester Boulevard between Pruneridge Avenue and Stevens Creek Boulevard	20,550	D	25,240	D
US 101 from De La Cruz Boulevard to Montague Expressway	240,100	F	263,300	F
US 101 from Montague Expressway to Great America Parkway	241,800	F	263,000	F
US 101 from Great America Parkway to Lawrence Expressway	216,600	F	241,800	F
SR 237 from N. 1st Street to Great America Parkway	166,500	F	202,600	F
SR 237 from Great America Parkway to Lawrence Expressway	162,200	F	190,500	F
I-880 from Bascom Avenue to The Alameda	195,400	F	226,500	F
I-880 from The Alameda to Coleman Avenue	205,600	F	232,800	F
I-280 from Saratoga Avenue to Lawrence Expressway	251,200	F	283,700	F

Note: Bold indicates unacceptable operations (LOS E or worse for local facilities, LOS F for CMP facilities).

As the development envisioned by the proposed Draft 2010-2035 General Plan is implemented over time and future traffic volumes exceed the current capacity of certain segments of the roadway system, it would not be possible to maintain the current LOS D standard, i.e. add road capacity-enhancing improvements such as new lanes, without creating unacceptable conflicts with non-vehicular travel modes and adjacent land uses. Such conflicts could involve elimination of a bike lane, reduction in the width of a sidewalk, removal of a parkstrip or bus shelter, or substantially increasing the distance a pedestrian must cross through an intersection. As discussed previously, the proposed Draft 2010-2035 General Plan includes a goal to protect and prioritize non-vehicular travel modes. Therefore, given this policy preference for non-vehicular travel modes, it is foreseeable that implementation of the proposed Draft 2010-2035 General Plan would result in significant traffic congestion along certain roadways, as identified in Table 4.12-9, and the City would need to modify its transportation LOS policy to allow additional

growth and the resulting increased level of congestion, as recognized by Prerequisite Policy 5.1.1-P12, which states:

Prior to 2015, implement an Area Development Policy, or similar mechanism, to provide options for alternate vehicular Level of Service standards, such as one that evaluates new development based on an average weighted vehicular transportation LOS D, as a Citywide criteria for streets under the City's jurisdiction, with exemptions for new development in Focus Areas identified in Section 5.4 of the proposed Draft 2010-2035 General Plan for transit, pedestrian, and/or bicycle priority.

4.12.5.2 *Future Congested Lane Miles*

The analysis completed for the proposed Draft 2010-2035 General Plan summarized congested lane miles for the four specified geographic areas of the City:

- North of US 101
- Between US 101 and the Caltrain right-of-way
- Between the Caltrain right-of-way and El Camino Real
- South of El Camino Real

Table 4.12-10 summarizes the results.

TABLE 4.12-10: EXISTING AND 2035 (2010-2035 GENERAL PLAN) CONGESTED LANE MILES ANALYSIS

Geographic Area	Percent of Lane Miles								
	Existing			2010-2035 General Plan			Change		
	LOS D or better	LOS E	LOS F	LOS D or better	LOS E	LOS F	LOS D or better	LOS E	LOS F
North of US 101	98 percent	0 percent	2 percent	80 percent	3 percent	17 percent	-18 percent	+3 percent	+15 percent
Between US 101 and Caltrain right-of-way	98 percent	0 percent	2 percent	80 percent	2 percent	18 percent	-18 percent	+2 percent	+16 percent
Between Caltrain right-of-way and El Camino Real	97 percent	3 percent	0 percent	76 percent	0 percent	24 percent	-21 percent	-3 percent	+24 percent
South of El Camino Real	100 percent	0 percent	0 percent	98 percent	0 percent	2 percent	-2 percent	0 percent	+2 percent
Total	98 percent	1 percent	1 percent	85 percent	2 percent	13 percent	-13 percent	+1 percent	12 percent

Source: Fehr & Peers, 2010.

As shown, with the proposed Draft 2010-2035 General Plan, an additional 12 percent of the lane miles in the City degrade to LOS F. Little change occurs south of El Camino Real since minimal land use changes are planned for the area, which includes mainly established residential neighborhoods. The area north of El Camino Real includes land use intensification and redevelopment that would add traffic to the roadway system, therefore 15 to 24 percent of roadway segments degrade north of El Camino Real, which includes segments of El Camino Real itself as the traffic analysis assumed the removal of a travel lane in each direction at the same time traffic volumes increase due to future growth.

4.12.5.3 *Future (2035) Vehicle Miles Traveled*

To measure the effectiveness of the proposed Draft 2010-2035 General Plan, Vehicle Trips (VT) and VMT in 2035 conditions were estimated and allocated to the City of Santa Clara using State-of-the-Practice methods as described in the above Existing Daily Vehicle Miles Traveled section. The results are summarized in Table 4.12-11.

As shown, approximately 625,750 vehicle trips and 3.74 million vehicle-miles traveled are estimated under the proposed Draft 2010-2035 General Plan Conditions. This represents an approximate 15 percent increase in vehicle trips and 17 percent increase in VMT over existing conditions.

TABLE 4.12-11: FUTURE (2035) DAILY VEHICLE TRIPS (VT) AND VEHICLE MILES TRAVELED (VMT)

Measure of Effectiveness	Existing	2010-2035 General Plan	Change
Daily VT (trips)	545,900	625,750	+79,850 (+14.6 percent)
Daily VMT (vehicle-miles)	3,188,015	3,740,242	+552,227 (+17.3 percent)
VT per Service Population ¹ (trips)	2.46	2.03	-0.43 (-17.5 percent)
Average Trip Length (miles)	5.84	5.98	+0.14 (2.4 percent)
VMT per Service Population ¹ (vehicle-miles)	14.4	12.2	-2.2 (-15.3 percent)

¹ Service Population is defined as the number of residents living in the City plus workers employed within the City. For 2008, the population of Santa Clara was 115,500 and employment within the City is estimated at 106,680 employees. For 2035, the population of Santa Clara is projected to be 154,990 and employment within the City is projected to be 152,860 (see Table 5.2-1).

Sources: Santa Clara General Plan Travel Demand Model, 2008; and Fehr & Peers, 2010.

Based on the proposed Draft 2010-2035 General Plan land uses, the population of Santa Clara is projected to be 154,990 residents, and the number of employed persons within the City is projected to be 152,860, for a service population of 307,850. VT per service population in 2035 is therefore calculated as 2.03 trips per person. Compared to existing conditions, the number of trips per service population decreases by over 17 percent. This is likely due to a shift in travel modes – the Model shows an increase of approximately three (3) percent in the transit mode share, and a corresponding decrease in the number of single-occupant vehicle auto trips between 2035 and existing conditions. Conversely, the average trip length is projected to increase by a nominal amount of two (2) percent from 5.84 to 5.98 miles, which may partially be due to the residence locations of new employees living outside Santa Clara. In summary, the Model shows the service population of Santa Clara making vehicle trips less often, but traveling approximately the same distance between 2035 and existing conditions.

VMT per service population was calculated to be 12.2 vehicle-miles per person under the 2010-2035 General Plan. This represents a decrease of approximately 15 percent over existing conditions and is a desirable outcome as it relates to other aspects of travel (e.g., reduced greenhouse gas emissions from mobile sources). The change in a General Plan's VMT can be attributed to built environment variables, including density, diversity, design, and destination—the 4Ds. Each of these variables is described below:

- Density – residential and non-residential development per acre.
- Diversity – mix of residential, retail, and employment land uses.
- Design – connectivity and walkability of the transportation network.
- Destination Accessibility – location relative to the major regional attractions.

So, while at a gross level the proposed Draft 2010-2035 General Plan would result in an approximate 14.6 percent increase in total vehicle trips and 17.3 percent increase in total VMT over existing conditions, these overall increases in driving are occurring at the same time the City's service population (jobs + residents) is projected to grow by approximately 39 percent. That vehicle trip and VMT growth is projected to be substantially less than service population growth indicates that, at a gross citywide level, the proposed Draft 2010-2035 General Plan's mix and distribution of land uses appears beneficial compared to current conditions. There would, however, be significant localized congestion, as discussed in previous sections.

4.12.5.4 *Public Transit*

Several transit centers, including the Great America and Santa Clara Stations, serve the City and provide access to regional employment destinations. Improved transit service and connections to/from/through Santa Clara are essential to providing a competitive alternative to the automobile.

The proposed Draft 2010-2035 General Plan identifies several key transit corridors where more frequent transit service would be provided and transit facilities would be developed. On these corridors, pedestrian and bicycle accessibility would also be enhanced to provide better connections from surrounding areas to transit hubs. Bus rapid transit (BRT) or other enhanced transit service is proposed on El Camino Real and Stevens Creek Boulevard. The proposed Draft 2010-2035 General Plan identifies additional north-south opportunities for BRT along Great America Parkway/Bowers Avenue to access new employment and residential centers north of the Caltrain corridor; and along Lafayette Street, to provide a connection between recreation facilities and the Rivermark area to the north and El Camino Real, Downtown, and Santa Clara University to the south. Future transit planned in the City also includes a BART station and an Automated People Mover from the Airport at the existing Santa Clara Station.

In addition to providing more transit options or more frequent service, transit stations and stops must be accessible from major employment and residential land uses. In order to achieve greater accessibility and mode share, the integrated proposed Draft 2010-2035 General Plan co-locates higher intensity residential and non-residential development with existing and future transit nodes to maximize resident and employee accessibility to transit. Figure 4.12-7 shows the ten-minute ½-mile, walking shed around each transit node.

4.12.5.5 *Pedestrian and Bicycle Circulation*

The proposed Bicycle and Trail Network provides connections between residential neighborhoods, employment, recreation, education, and transit centers. Improvements to the network as defined in the proposed Draft 2010-2035 General Plan provide safe and convenient walking and biking facilities, reducing the need for driving and increasing recreation opportunities. The proposed Network includes an expanded system and support facilities, such as bicycle parking at employment, retail and other destinations. The proposed Draft 2010-2035 General Plan also identifies opportunities to extend trails along the City's creeks and north-south travel within the City.

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- Proposed San José Airport
People Mover (preferred alignment)
- Potential BRT or Similar Transit Service
- Proposed BART
- Potential High Speed Rail
- VTA Light Rail
- Caltrain
- Potential Transit Center
- ACE/Capitol Corridor
- ACE Shuttle Service (as of 2008)
- 2009 Bus Service
- Transit Opportunities
- City Limits



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Implementation of the proposed Draft 2010-2035 General Plan would have a beneficial impact on pedestrian and bicycle circulation and access. The proposed Draft 2010-2035 General Plan would encourage bicycle and pedestrian access by focusing land use development and complementary uses (housing, shopping, offices, transit facilities) within walking or bicycling distance of each other, and by providing an efficient system of Bicycle and Pedestrian Priority streets.

4.12.5.6 Roadway Segment Traffic Analysis in Adjacent Communities

Operations of roadway segments outside the City of Santa Clara's boundaries were also reviewed to determine the potential impacts of the proposed Draft 2010-2035 General Plan to adjacent cities and County facilities. Potentially affected roadway segments were chosen for inclusion in this analysis using the following criteria:

- A peak-hour volume-to-capacity (v/c) ratio of greater than 0.9 (in either peak hour), and
- More than ten (10) percent of the peak-hour traffic volume on the segment is attributable to the addition of 2035 General Plan land uses (in either peak hour)

Figure 4.12-8 presents the roadway segments in adjacent communities that meet these criteria, and thus, were included in the analysis. Table 4.12-12 summarizes the chosen study segments, daily capacity, calculated one (1) percent of the daily capacity, and growth due to the proposed Draft 2010-2035 General Plan. Growth due to the proposed Draft 2010-2035 General Plan was determined by isolating the traffic volume attributable to Santa Clara land uses for both the proposed Draft 2010-2035 General Plan and current 2000-2010 General Plan, and taking the difference between the two scenarios. Figure 4.12-9 identifies the current (2008) and future (2035) distribution of Santa Clara employees residing in other cities and counties.

The Current General Plan land use growth includes the residential projects in the City's approved Housing Element and the employment growth due to approved projects in the City. Therefore it represents conditions that would occur in the adjacent communities due to approved land use changes in Santa Clara. Given the changes in land uses and trip patterns and behavior between the two scenarios, vehicular traffic volumes on several segments decreased with the proposed Draft 2010-2035 General Plan land uses as compared to the Current General Plan scenario. Under the Current General Plan, minimal residential growth is planned in the northern area of the City. Therefore, Santa Clara residents from the southern area of the City or adjacent communities may commute to the northern areas of the City to fill the new employment opportunities. Therefore, these shifts in traffic traveling to/from Santa Clara are not unexpected, as they generally occur on heavily traveled commute corridor segments. Table 4.12-12 summarizes the results.

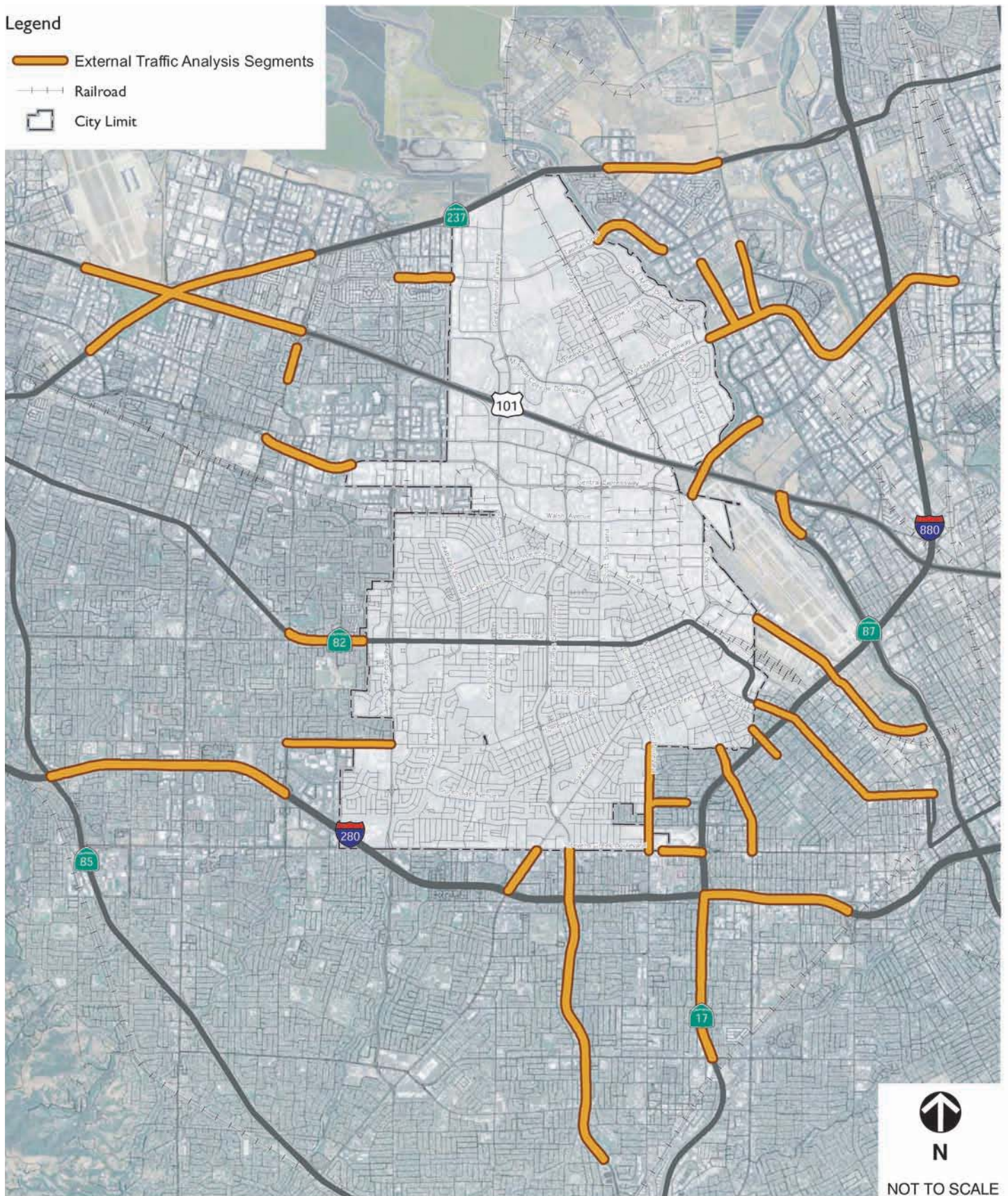
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Legend

External Traffic Analysis Segments

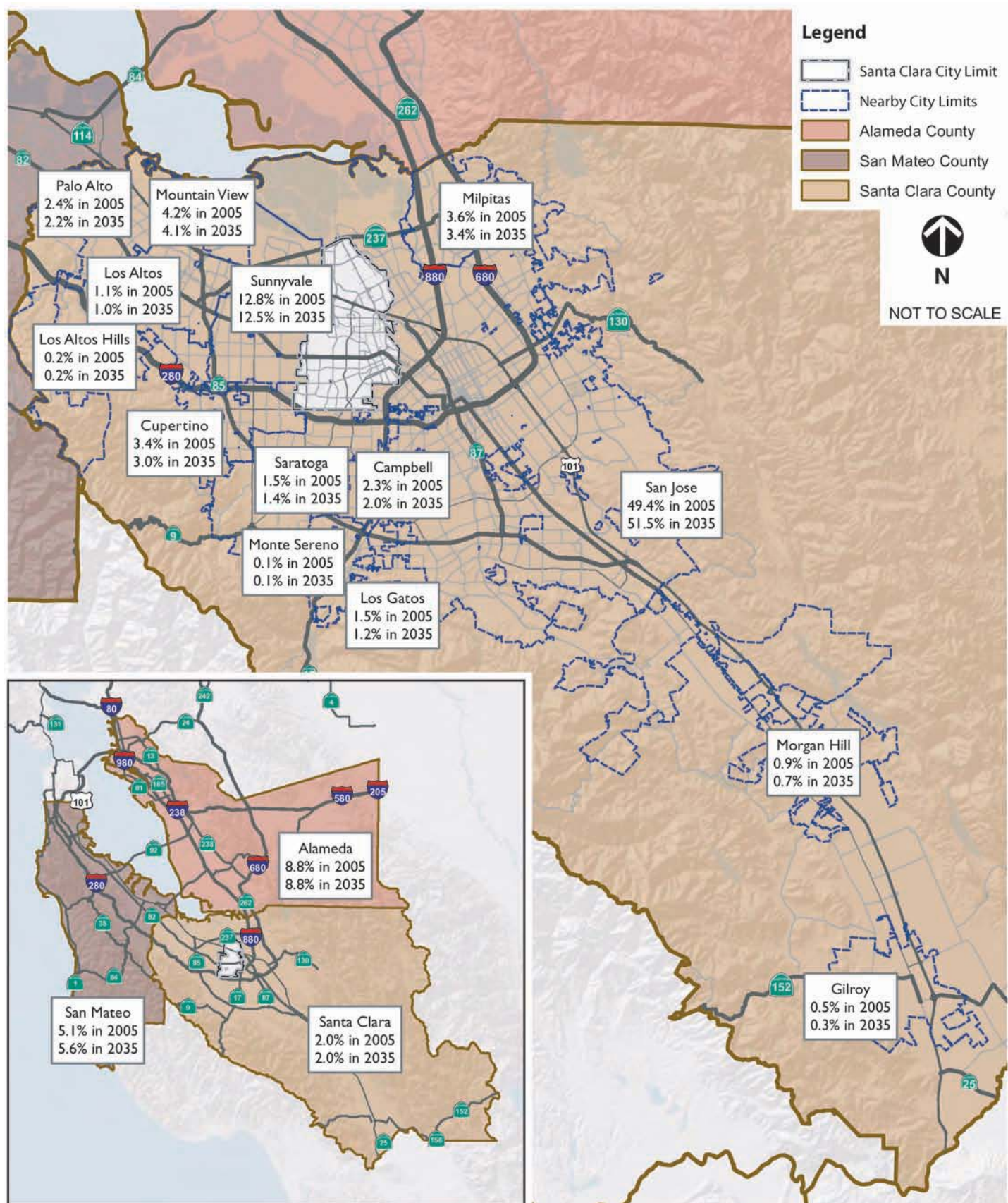
Railroad

City Limit



STUDY ROADWAY SEGMENTS OUTSIDE CITY

FIGURE 4.12-8



LOCATIONS OF EMPLOYEES
LIVING OUTSIDE OF THE CITY OF SANTA CLARA

FIGURE 4.12-9

TABLE 4.12-12: ROADWAY SEGMENTS IN ADJACENT COMMUNITIES ANALYSIS SUMMARY

Roadway Segments in Adjacent Communities	Daily Capacity	1 percent of Daily Capacity	Growth due to General Plan 2035	Growth Exceeds 1 percent of Capacity
Tasman Drive between Santa Clara City Limit – Champion Court	36,000	360	-	No
Tasman Drive between Santa Clara City Limit – Lawrence Expressway	36,000	360	-	No
N. 1 st Street between Rio Robles and Montague Expressway	36,000	360	-	No
Zanker Road between Rio Robles and Montague Expressway	36,000	360	+242	No
Trade Zone Boulevard between Montague Expressway and Lundy Avenue	36,000	360	-	No
Fair Oaks Avenue between Ahwanee Avenue and Duane Avenue	45,000	450	+121	No
El Camino Real between Helen Avenue and Henderson Avenue	57,000	570	+1,403	Yes
El Camino Real between Henderson Avenue and Poplar Avenue	57,000	570	+1,271	Yes
El Camino Real between Poplar Avenue and Wolfe Road	57,000	570	+1,274	Yes
Homestead Road between Lawrence Expressway and Tantau Avenue	38,000	380	+920	Yes
Homestead Road between Tantau Avenue and Wolfe Road	38,000	380	+855	Yes
Saratoga Avenue between Stevens Creek Boulevard and Kiely Boulevard	57,000	570	+905	Yes
Saratoga Avenue between Kiely Avenue and I-280 Northbound	57,000	570	+1,183	Yes
Saratoga Avenue between I-280 Northbound and I-280 Southbound	57,000	570	+822	Yes
Saratoga Avenue between I-280 Southbound and Moorpark Avenue	57,000	570	+351	No
Stevens Creek between Winchester Boulevard and Monroe Street	57,000	570	+108	No
Stevens Creek Boulevard between Monroe Street and I-880 Southbound	57,000	570	+129	No
Winchester Boulevard between Newhall Street and Hedding Street/Pruneridge Avenue	38,000	380	+227	No
Winchester Boulevard between Forest Avenue and Stevens Creek Boulevard	38,000	380	+418	Yes
Hedding Street between Winchester Boulevard and Monroe Street	38,000	380	+404	Yes
Bascom Avenue between Newhall Street and I-880 Southbound	36,000	360	+933	Yes
Bascom Avenue between I-880 Southbound and I-880 Northbound	36,000	360	+408	Yes
Bascom Avenue I-880 Northbound and Hedding Street	38,000	380	+12	No

Roadway Segments in Adjacent Communities	Daily Capacity	1 percent of Daily Capacity	Growth due to General Plan 2035	Growth Exceeds 1 percent of Capacity
Bascom Avenue between Hedding Street and Naglee Avenue	38,000	380	+381	Yes
Bascom Avenue between Naglee Avenue and San Carlos Street	38,000	380	+407	Yes
Park Avenue between Newhall Street and Hedding Street	11,000	110	+105	No
The Alameda between El Camino Real and Newhall Street	38,000	380	+309	No
The Alameda between Newhall Street and I-880 Southbound	38,000	380	+387	Yes
The Alameda between I-880 Southbound and I-880 Northbound	38,000	380	+272	No
The Alameda between I-880 Northbound and Hedding Street	38,000	380	+152	No
The Alameda between Hedding Street and Naglee Avenue/Taylor Street	38,000	380	+217	No
The Alameda between Naglee Avenue/Taylor Street and Lenzen Avenue	38,000	380	+101	No
The Alameda between Lenzen Avenue and Julian Street	38,000	380	+53	No
The Alameda between Julian Street and Race Street	38,000	380	-	No
The Alameda between Race Street and Stockton Avenue	38,000	380	-	No
The Alameda between Stockton Avenue and Autumn Street	38,000	380	-	No
Coleman Avenue between Brokaw Road and Newhall Street	54,000	540	+1,081	Yes
Coleman Avenue between Newhall Street and Airport Boulevard	54,000	540	+1,014	Yes
Coleman Avenue between Airport Boulevard and I-880 Southbound	54,000	540	+965	Yes
Coleman Avenue between I-880 Southbound and I-880 Northbound	54,000	540	+755	Yes
Coleman Avenue between I-880 Northbound and Hedding Street	54,000	540	+468	No
Coleman Avenue between Hedding Street and Taylor Street	54,000	540	+175	No
Coleman Avenue between Taylor Street and Autumn Street	54,000	540	-	No
De La Cruz Boulevard between US 101 Northbound and Trimble Road	66,500	665	+349	No
Trimble Road between De La Cruz Boulevard and Orchard Parkway	57,000	570	+618	Yes
Montague Expressway between Santa Clara City Limit and N. 1 st Street	87,000	870	+264	No
Montague Expressway between N. 1 st Street and Zanker Road	87,000	870	+618	No
Montague Expressway between Zanker Road and Trimble Road	87,000	870	+557	No
Montague Expressway between Trimble Road and McCarthy Boulevard	87,000	870	+348	No

Roadway Segments in Adjacent Communities	Daily Capacity	1 percent of Daily Capacity	Growth due to General Plan 2035	Growth Exceeds 1 percent of Capacity
Montague Expressway between McCarthy Boulevard and I-880 Southbound	87,000	870	+47	No
Montague Expressway between I-880 Southbound and I-880 Northbound	87,000	870	+145	No
Montague Expressway between I-880 Northbound and Oakland Road	87,000	870	+236	No
Montague Expressway between Oakland Road and Trade Zone Boulevard	87,000	870	+188	No
Central Expressway between Fair Oaks Avenue and Wolfe Road	67,500	675	+1,103	Yes
Central Expressway between Wolfe Road and Lawrence Expressway	77,000	770	+1,423	Yes
San Tomas Expressway between City Limit/Stevens Creek Boulevard to Moorpark Avenue	101,500	1,015	+81	No
San Tomas Expressway between Moorpark Avenue and Williams Road	101,500	1,015	+110	No
San Tomas Expressway between Williams Road and Payne Avenue	87,000	870	+200	No
San Tomas Expressway between Payne Avenue and Hamilton Avenue	87,000	870	+276	No
San Tomas Expressway between Hamilton Avenue and Campbell Avenue	87,000	870	+79	No
San Tomas Expressway between Campbell Avenue and Budd Avenue	87,000	870	+117	No
US 101 between Ellis Street and SR 237	167,000	1,670	+766	No
US 101 between SR 237 and Mathilda Avenue	167,000	1,670	+1,048	No
US 101 between Mathilda Avenue and Fair Oaks Avenue	152,000	1,520	+1,133	No
US 101 between De La Cruz Boulevard and SR 87	182,000	1,820	+527	No
US 101 between SR 87 and N. 1 st Street	171,000	1,710	+634	No
SR 237 between Moffett Boulevard and US 101	129,000	1,290	-	No
SR 237 between US 101 and Mathilda Avenue	129,000	1,290	-	No
SR 237 between Mathilda Avenue and Fair Oaks Avenue	148,000	1,480	-	No
SR 237 between N. 1 st Street and Zanker Road	129,000	1,290	-	No
SR 87 between Airport Boulevard and US 101	114,000	1,140	-	No
SR 17 between Hamilton Avenue and I-280	159,000	1,590	+883	No
I-280 between Meridian Avenue and Bascom Avenue/Leigh Avenue	152,000	1,520	+291	No
I-280 between Bascom Avenue/Leigh Avenue and I-880/SR 17	220,000	2,200	+272	No
I-280 between Wolfe Road and De Anza Boulevard	156,000	1,560	+675	No
I-280 between De Anza Boulevard and SR	186,000	1,860	+693	No

Roadway Segments in Adjacent Communities	Daily Capacity	1 percent of Daily Capacity	Growth due to General Plan 2035	Growth Exceeds 1 percent of Capacity
85				

Source: Santa Clara General Plan Travel Demand Model and Fehr & Peers, 2010.

4.12.6 Impacts and Mitigation Measures

Impact 4.12-1: Operating levels of City roadway segments degrade beyond the current City Level of Service standard with the addition of General Plan growth. (Significant Unavoidable)

The proposed Draft 2010-2035 General Plan includes new population and employment growth that would generate additional traffic and vehicular congestion. Roadway segment operations would degrade below the City's current Level of Service standard (LOS D) with the proposed Draft 2010-2035 General Plan on the following City street segments:

- Bascom Avenue between Newhall Street and I-880
- Trimble Road between Santa Clara City Limits and De La Cruz Boulevard
- De La Cruz Boulevard between Trimble Road and Central Expressway
- Coleman Avenue between De La Cruz Boulevard and the Santa Clara City Limit

The City, County, and VTA have identified roadway segment improvements that would improve operations on several of these segments. These improvements include:

- Trimble Road flyover ramp connection at Montague Expressway (VTP 2035)
- US 101/Trimble Road/De La Cruz Boulevard/Central Expressway interchange improvements (VTP 2035)
- Widening eastbound Coleman Avenue from two (2) lanes to three (3) lanes from Brokaw Road to the Santa Clara City Limit (City of Santa Clara's Capital Improvement Project)

While these improvements would improve roadway operations, they are not expected to improve levels of service to meet the City's current LOS D standard; projected future traffic volumes exceed the capacity of certain local roadway segments such that it would not be possible to maintain the current standard.

The proposed Draft 2010-2035 General Plan includes policies to improve the efficiency of the existing transportation system, while minimizing the addition of new roadways and widening of existing streets and intersections. These policies include:

5.8.2-G4	Technological advances applied to the roadway infrastructure to maximize the use of the existing roadway and support efficient traffic flow
5.8.2-P2	Discourage widening of existing roadway or intersection rights-of-way without first considering operational improvements, such as traffic signal modifications, turn-pocket extensions and intelligent transportation systems
5.8.2-P6	Interconnect and coordinate traffic signals to maximize vehicle flows on the City's roadway network to reduce the need for roadway widening
5.8.2-P7	Concentrate through traffic on major streets and encourage traffic distribution that maximizes the efficiency of the existing roadway network

Therefore, additional roadway widening projects are not being considered to mitigate roadway operational impacts due to the costs of acquiring additional right-of-way, the costs of the improvements, and physical constraints that make additional widening infeasible. The policies listed above would help to improve vehicular operations, but they would not fully mitigate the impacts of the 2010-2035 General Plan on the local roadway segments.

The proposed Draft 2010-2035 General Plan also includes goals and policies to protect and encourage alternative travel modes:

5.8.1-P1	Create accessible transportation networks system to meet the needs of all segments of the population, including youth, seniors, persons with disabilities and low-income households.
5.8.1-P2	Link all City transportation networks, including pedestrian and bicycle circulation, to existing and planned regional networks.
5.8.1-P4	Expand transportation options and improve alternate modes that reduce greenhouse gas emissions.
5.8.2-G3	A roadway network designed to accommodate alternate transportation modes in addition to vehicles
5.8.2-P1	Require that new and retrofitted roadways implement "Full-Service Streets" standards, including minimal vehicular travel lane widths, pedestrian amenities, adequate sidewalks, street trees, bicycle facilities, transit facilities, lighting and signage, where feasible.

While these policies may cause a shift to alternative modes of travel thus reducing traffic demand and improving vehicular operations, they would not improve levels of service to meet the City's current LOS D standard.

The proposed Draft 2010-2035 General Plan includes a policy to create alternate Level of Service standards for the City:

5.1.1-P12	Prior to 2015, implement an Area Development Policy, or similar mechanism, to provide options for alternate vehicular Level of Service standards, such as one that evaluates new development based on an average weighted vehicular transportation LOS D, as a Citywide criteria for streets under the City's jurisdiction, with exemptions for new development in Focus Areas identified in 5.4 for transit, pedestrian and/or bicycle priority.
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Mitigation Measures

Despite the proposed Draft 2010-2035 General Plan's overall land use-transportation efficiency, future development would nonetheless generate substantial additional traffic volumes that would cause congestion along certain roadway segments within the City's jurisdiction for which, in most cases, no feasible mitigation (i.e. ability to add new travel lanes) exists. Therefore, it is foreseeable the City would need to modify its transportation LOS policy to permit future development to degrade LOS beyond conditions considered appropriate under current policy. Therefore, the impact is significant and unavoidable.

Impact 4.12-2: Operating levels of CMP roadway segments degrade beyond the current CMP Level of Service standard with the addition of growth under the 2010-2035 General Plan. (Significant Unavoidable)

The proposed Draft 2010-2035 General Plan would generate additional traffic and vehicular congestion on CMP roadways and degrade operations below the current CMP Level of Service standard (LOS E) on the following expressway segments:

- Montague Expressway between N. 1st Street and De La Cruz Boulevard
- Montague Expressway between Mission College Boulevard and US 101
- San Tomas Expressway between US 101 and Scott Boulevard
- Central Expressway between Lawrence Expressway and San Tomas Expressway

The City, County, and VTA have identified roadway segment improvements that would improve operations on several of these segments. These improvements include:

- Reconfiguring the US 101/Montague Expressway-San Tomas Expressway interchange to a partial cloverleaf interchange (VTP 2035; Countywide Expressway Study, 2008)
- Providing at-grade intersection improvements at Montague Expressway/Mission College Boulevard (Countywide Expressway Study, 2008; Santa Clara Capital Improvement Project)
- US 101/Trimble Road/De La Cruz Boulevard/Central Expressway interchange improvements (VTP 2035)
- Widening Central Expressway from four (4) to six (6) lanes from Lawrence Expressway to San Tomas Expressway (Countywide Expressway Study, 2008)
- Trimble Road flyover ramp connection at Montague Expressway (VTP 2035)

Additional roadway widening projects are not being considered to mitigate roadway operational impacts due to the costs of acquiring additional right-of-way and the costs of the improvements, physical constraints that make additional widening infeasible, and the City of Santa Clara's lack of jurisdictional authority over CMP facilities. As listed under Impact 4.5-1, the proposed Draft 2010-2035 General Plan includes policies to encourage travel via alternative modes by improving the efficiency of the existing transportation system, while minimizing addition of new roadways and widening of existing streets and intersections, and specific alternative mode supportive policies. While these improvements and policies may improve vehicular operations, they would not improve levels of service sufficiently to meet the current LOS E standard for CMP facilities.

Mitigation Measures

No additional mitigation measures have been identified. This impact is significant and unavoidable.

Impact 4.12-3: Operating levels of Caltrans roadway and freeway segments degrade beyond the current CMP Level of Service standard with the addition of growth under the proposed Draft 2010-2035 General Plan. **(Significant Unavoidable)**

The proposed Draft 2010-2035 General Plan would cause operations on the following roadway segment on Caltrans facilities to degrade below the CMP Level of Service standard (LOS E):

- El Camino Real between Lawrence Expressway and The Alameda
- The Alameda between El Camino Real and I-880
- US 101 between De La Cruz Boulevard and Lawrence Expressway
- SR 237 between N. 1st Street and Lawrence Expressway
- I-880 between Bascom Avenue and Coleman Avenue
- I-280 between Saratoga Avenue and Lawrence Expressway

The City, County, and VTA have identified roadway segment improvements that would improve operations on several of these segments. These improvements include:

- Reconfiguring the US 101/Montague Expressway-San Tomas Expressway interchange to a partial cloverleaf interchange (VTP 2035; Countywide Expressway Study, 2008)

- US 101/Trimble Road/De La Cruz Boulevard/Central Expressway interchange improvements (VTP 2035)
- Constructing auxiliary lanes on US 101 between Great America Parkway-Bowers Avenue and Lawrence Expressway (VTP 2035)
- Constructing auxiliary lanes eastbound on SR 237 from Mathilda Avenue to Fair Oaks Avenue (VTP 2035)

Additional roadway widening projects are not being considered to mitigate roadway operational impacts due to the costs of acquiring additional right-of-way and the costs of the improvements, physical constraints that make additional widening infeasible, and the City of Santa Clara's lack of jurisdictional authority over Caltrans facilities. As listed under Impact 4.12-1, the proposed Draft 2010-2035 General Plan includes policies to encourage travel via alternative modes by improving the efficiency of the existing transportation system, while minimizing addition of new roadways and widening of existing streets and intersections, and specific alternative mode supportive policies.

While these improvements and policies may improve vehicular operations, they would not improve levels of service sufficiently to meet the CMP's current LOS E standard for Caltrans facilities.

Mitigation Measures

No additional mitigation measures have been identified. This impact is significant and unavoidable.

Impact 4.12-4: Substantial increases in levels of traffic congestion with the proposed Draft 2010-2035 General Plan would occur in one of the four geographic zones. **(Significant Unavoidable)**

The proposed Draft 2010-2035 General Plan includes new population and employment growth that would generate additional travel demand, vehicle traffic, and congestion on the City's street network and increase the congested lane miles in one of the four geographic areas beyond the threshold. For the zone between Caltrain right-of-way and El Camino Real, the congested lane miles would increase by 24 percent over existing conditions; compared to the threshold of 15 percent for this area. Therefore, this impact is considered significant.

Transit, bicycle, and pedestrian improvements are also planned for this area – including improved bicycle facilities on Monroe Street between Lawrence Expressway and San Tomas Expressway (bike route) and San Tomas Expressway and Scott Boulevard (bike lanes); Bowers Avenue between Cabrillo Avenue and El Camino Real, Warburton Avenue (bike route), Franck Avenue/Morse Lane (bike route), and Agate Drive (bike route). The City is also planning for improvements to the on-street portion of the Saratoga/San Tomas Aquino Creek Trail along Cabrillo Avenue and Calabazas Boulevard in this zone. The VTA is planning enhanced transit service along El Camino Real through Santa Clara.

The proposed Draft 2010-2035 General Plan includes policies to support the redevelopment of the El Camino Real focus area and improve the multi-modal transportation network in this zone, and throughout the City.

Transportation Policies	
5.4.1-G4	Pedestrian, bicycle, and transit priority for mobility in the El Camino Real Focus Area
5.4.1-P16	Work with the Valley Transportation Authority to improve transit access, information, and frequency along El Camino Real, including the implementation of a Bus Rapid Transit or similar transit service near Regional Mixed use areas

5.4.1-P17	Work with Valley Transportation Authority and Caltrans toward a roadway design for El Camino Real that includes narrower and/or reduced travel lanes, enhanced pedestrian facilities, wider sidewalks, street trees, planted medians, and enhanced signage and lighting, as well as transit and bicycle lanes without increasing overall right-of-way requirements
5.4.1-P18	Exempt El Camino Real intersections with [the El Camino Real] Focus Area from Citywide Level of Service standard for vehicles on a case-by-case basis or until an alternate standard is adopted in conformance with the Prerequisite Requirements
5.8.3-P3	Support transit priority for designated Bus Rapid Transit, or similar transit service, through traffic signal priority, bus queue jump lanes, exclusive transit lanes and other appropriate techniques
5.8.3-P5	Facilitate implementation of the transit system defined in the transit network classifications and illustrated on the Transit Network Diagram in Figure 5.7-2
5.8.4-P4	Facilitate implementation of the pedestrian and bicycle classifications as illustrated on the Bicycle and Pedestrian Network Diagram in Figure 5.7-3
5.8.4-P14	Promote bicycling and walking through education, safety publications, and information about health and environmental benefits

Mitigation Measures

The mitigation measure is to adopt the transportation-related proposed Draft 2010-2035 General Plan policies. As listed under Impact 4.12-1, the General Plan includes policies to encourage travel via alternative modes by improving the efficiency of the existing transportation system, while minimizing addition of new roadways and widening of existing streets and intersections, and specific alternative mode supportive policies.

While these improvements and policies may improve vehicular operations, they would not improve levels of service sufficiently along the affected roadway segments. The impact is significant and unavoidable.

Impact 4.12-5: Increased vehicle miles of travel with the proposed Draft 2010-2035 General Plan would occur due to population and employment growth planned within the City.
(Less Than Significant Impact)

The total VMT generated under the proposed Draft 2010-2035 General Plan for the City of Santa Clara is estimated to be 3.74 million vehicle-miles per day (or a net increase of 552,227 vehicle miles compared to existing conditions). The resulting average VMT per service population (resident and job) would be 12.2 vehicle miles per day, which represents a reduction of approximately 15.3 percent per service population compared to existing conditions. This reflects that the Focus Areas will include development of new complementary land uses that are in close proximity to each other, provide more opportunities for shorter trips that encourage walking and bicycling, and utilize higher densities of development that support enhanced transit service. At a citywide performance level, the proposed Draft 2010-2035 General Plan more efficiently links land uses and the transportation system network in that VMT and VT per service population are dropping compared to existing conditions, VMT growth is less than population growth, non-auto travel mode shares increase, and trip length is virtually unchanged. All of these indicators suggest the proposed Draft 2010-2035 General Plan is an efficient, well-balanced plan from a land use-transportation standpoint compared to existing conditions. Therefore, the impact on vehicle miles of travel is considered less-than-significant.

Impact 4.12-6: Increased motor vehicle traffic and increased congestion with the proposed Draft 2010-2035 General Plan would result in increased transit travel times on transit corridors. (Significant Unavoidable)

Increased vehicle traffic with the proposed Draft 2010-2035 General Plan would result in increased traffic congestion as described under Impacts 4.12-1 through 4.12-5. That congestion would affect several transit corridors, increasing travel times and disrupting the ability of the bus routes using these corridors to maintain reliable headways (time interval between arrivals). The traffic congested transit corridors include:

- El Camino Real
- Montague Expressway
- San Tomas Expressway
- Central Expressway
- Bascom Avenue
- Coleman Avenue
- De La Cruz Boulevard
- Trimble Road

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. Potential dedicated transit facilities at highly congested areas would maintain on-time performance and provide a service (for example five to ten minute headways) that would potentially add additional daily riders. Likewise, an unreliable service caused by poor on-time performance would likely 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 proposed Draft 2010-2035 General Plan identifies several goals and policies to promote and enhance transit use in an effort to minimize the need for automobiles and reduce automobile emissions.

The proposed Draft 2010-2035 General Plan also includes policies to support transit and relieve congestion along transit routes – including a key policy to support Bus Rapid Transit or similar service on El Camino Real. However, because implementation feasibility of transit-only lanes would be evaluated in more detailed studies and the effect of these policies is not fully known, the impact is considered significant and unavoidable.

Mitigation Measures

The mitigation measure is to adopt the transit supportive of the proposed Draft 2010-2035 General Plan policies including potential implementation of transit-only lanes. As it cannot be assured that these policies would substantially reduce this impact, the impact is significant and unavoidable.

Impact 4.12-7: The proposed Draft 2010-2035 General Plan would increase the number pedestrians and bicyclists on the roadways citywide, which could overload existing sidewalks, pedestrian paths and non-motorized multi-use paths, and bicycle parking, and could add pedestrians and bicyclists to locations with unsafe conditions. **(Less Than Significant Impact)**

The proposed Draft 2010-2035 General Plan relies on walking and bicycling to access transit and replace short automobile trips within Santa Clara. The proposed Draft 2010-2035 General Plan would encourage bicycle and pedestrian access by placing complementary uses (housing, shopping, offices, transit facilities) within walking or bicycling distance of each other, and by providing additional pedestrian connections and dedicated bicycle paths.

Proposed Draft 2010-2035 General Plan policies that reduce the impact and encourage bicycle and pedestrian travel are:

Transportation Policies	
5.8.1 – P1	Create accessible transportation networks system to meet the needs of all segments of the population, including youth, seniors, persons with disabilities and low-income households.
5.8.1 – P2	Link all City transportation networks, including pedestrian and bicycle circulation, to existing and planned regional networks.
5.8.4-P1	Provide a comprehensive, integrated bicycle and pedestrian network that is accessible for all community members.
5.8.4-P2	Provide a system of pedestrian and bicycle friendly facilities that supports the use of alternative travel modes and connects to activity centers as well as residential, office and mixed use developments.
5.8.4-P3	Link City pedestrian and bicycle circulation to existing and planned regional networks.

Mitigation Measures

Implementation of the proposed Draft 2010-2035 General Plan would have a beneficial impact on pedestrian and bicycle circulation and access. The mitigation measure is to adopt the pedestrian and bicycle supportive of the proposed Draft 2010-2035 General Plan policies. With these policies the impact is less-than-significant.

Impact 4.12-9: Motor vehicle traffic and congestion due to the proposed Draft 2010-2035 General Plan would increase on roadway segments outside of the City of Santa Clara.
(Significant Unavoidable)

Operations of key roadway segments outside of the City of Santa Clara's boundaries were also analyzed with the addition of the proposed Draft 2010-2035 General Plan land uses. Roadway segments in adjacent communities that warrant further study were identified if a segment's peak-hour volume-to-capacity ratio was greater than 0.9 (in either peak hour), and if more than ten (10) percent of the peak-hour traffic volume on the segment attributable to the proposed Draft 2010-2035 General Plan (in either peak hour). Segments shown in Table 4.12-12 were chosen for further analysis based on these criteria.

As shown in Table 4.12-12, the daily growth in traffic volume due to the proposed Draft 2010-2035 General Plan exceeds one (1) percent of the daily roadway capacity on several study segments in adjacent communities, including:

- El Camino Real between Helen Avenue and Henderson Avenue
- El Camino Real between Henderson Avenue and Poplar Avenue
- El Camino Real between Poplar Avenue and Wolfe Road
- Homestead Road between Lawrence Expressway and Tantau Avenue
- Homestead Road between Tantau Avenue and Wolfe Road
- Saratoga Avenue between Stevens Creek Boulevard and Kiely Boulevard
- Saratoga Avenue between Kiely Boulevard and I-280 Northbound
- Saratoga Avenue between I-280 Northbound and I-280 Southbound
- Winchester Boulevard between Forest Avenue and Stevens Creek Boulevard
- Hedding Avenue between Winchester Boulevard and Monroe Street
- Bascom Avenue between Newhall Street and I-880 Southbound
- Bascom Avenue between I-880 Southbound and I-880 Northbound
- Bascom Avenue between Hedding Street and Naglee Avenue
- Bascom Avenue between Naglee Avenue and San Carlos Street

- The Alameda between Newhall Street and I-880 Southbound
- Coleman Avenue between Brokaw Road and Newhall Street
- Coleman Avenue between Newhall Street and Airport Boulevard
- Coleman Avenue between Airport Boulevard and I-880 Southbound
- Coleman Avenue between I-880 Southbound and I-880 Northbound
- Trimble Avenue between De La Cruz Boulevard and Orchard Parkway
- Central Expressway between Fair Oaks Avenue and Wolfe Road
- Central Expressway between Wolfe Road and Lawrence Expressway

Since the growth due to the proposed Draft 2010-2035 General Plan exceeds one (1) percent of the daily capacity on each of these roadway segments, these impacts are considered significant. The City, County, and VTA have identified roadway segment improvements that would improve operations on several of these segments. These improvements include:

- Adding auxiliary lanes on Central Expressway between Mary Avenue and Lawrence Expressway (VTP 2035)
- Widening eastbound Coleman Avenue from two (2) lanes to three (3) lanes from Brokaw Road to the Santa Clara City Limit (City of Santa Clara's Capital Improvement Project)

The City of San Jose and Caltrans are also currently completing a study of The Alameda between Diridon Station at Cahill Street to I-880. While no vehicular capacity enhancing improvements are planned as part of this study, improvements to bicycle, pedestrian, and transit modes are being proposed and are currently under evaluation. No other feasible improvements for these study segments were identified. While these roadway improvements would improve operations, they will not fully mitigate the impacts of the proposed Draft 2010-2035 General Plan. Additionally, since these improvements are located outside of the City of Santa Clara, their implementation cannot be guaranteed. Therefore, these impacts remain significant and unavoidable.

Impact 4.12-10: Increased motor vehicle traffic and increased congestion with the General Plan could result in increased emergency response times. **(Significant Impact)**

The Public Services section of the proposed Draft 2010-2035 General Plan includes standards to maintain a minimum response time for police and fire emergency service calls:

5.9.3-P3	Maintain a City-wide average three minute response time for 90 percent of police emergency service calls.
5.9.3-P4	Maintain a City-wide average three minute response time for fire emergency service calls.

Increased vehicle traffic with the proposed Draft 2010-2035 General Plan would result in increased traffic congestion as described under Impacts 4.12-1 through 4.12-5. This congestion, anticipated mainly during the morning and evening commute periods, would result in decreased travel speeds and increased emergency vehicle response times on key routes in the City, including:

- El Camino Real-The Alameda
- Montague Expressway
- San Tomas Expressway
- De La Cruz Boulevard
- Coleman Avenue
- Central Expressway
- Trimble Road

Mitigation Measures

Based on increased congestion and decreased travel speeds on the roadway segments identified above, measures to maintain emergency response times may include redistributing service station boundaries and implementing traffic signal pre-emption for emergency vehicles. To mitigate the impact of the proposed Draft 2010-2035 General Plan on emergency vehicle response times, the proposed Draft 2010-2035 General Plan includes the following policy:

5.1.1-P5	Prior to the implementation of Phase II and III of the 2010-2035 General Plan, evaluate appropriate measures to maintain emergency response time standards.
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The mitigation measure is to adopt prerequisite policy 5.1.1-P5. With this policy, the impact is less-than-significant.

4.13 HAZARDS AND HAZARDOUS MATERIALS

The following discussion evaluates hazards and hazardous materials conditions and the environmental effects of implementation of the proposed Draft 2010-2035 General Plan.

4.13.1 Regulatory Framework

Numerous laws and regulations have been developed to regulate the management of hazardous materials and mitigate potential impacts. As a result, the storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated. Federal and State laws and regulations also apply to airport safety and height restrictions near airports. A summary of key regulations and policies is presented below.

4.13.1.1 *Federal*

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous wastes at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA), initially authorized in 1976, gives the U.S. EPA the authority to control hazardous waste from “cradle-to-grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled US EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Subtitle D of the RCRA – Closure of Landfills

Section 258.60 of the RCRA includes the closure criteria for municipal solid waste landfills (MSWLF). Owners or operators of all MSWLF units must install a final cover system that is designed to minimize infiltration and erosion. Following closure of each MSWLF unit, the owner or operator must conduct post-closure care, including maintaining the integrity and effectiveness of any final cover (258.61). Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems.

Hazardous Materials Transportation Act (HMTA)

Transportation of chemicals and hazardous materials is regulated by the U.S. Department of Transportation (DOT) under the Hazardous Materials Transportation Act (HMTA). Hazardous materials regulations for the types of containers, labeling, record keeping, and other requirements for the commercial movement of materials are contained in the Code of Federal Regulations (CFR) Title 49. Transportation requirements vary with the hazard class of each hazardous material.

Federal Aviation Administration Regulations

The Federal Aviation Administration (FAA) has promulgated regulations and policies to protect the safety and compatibility of aircraft operations. Foremost is Part 77 of Federal Aviation Regulations (FAR Part 77), "Objects Affecting Navigable Airspace", which sets forth standards and review requirements for protecting the airspace near airports, particularly by restricting the height of potential structures and minimizing other potential hazards (such as reflective surfaces, flashing lights, and electronic interference) to aircraft approaching or departing an airport.

Under FAR Part 77, the FAA must be notified of proposed structures within an extended zone defined by an imaginary slope that radiates out several miles from an airport's runways (almost 4 miles in the case of San Jose International Airport). Any proposed structure, including buildings, trees, poles, antennae, and temporary construction cranes, which would penetrate this slope, or which would stand 200 feet or more in height irrespective of location relative to an airport, must be submitted to the FAA for an aeronautical review. The FAA typically makes one of three determinations based on its aeronautical study: (a) the structure as proposed would not be an airspace obstruction or hazard; (b) the structure as proposed would be an airspace obstruction but not a hazard if subject to specified conditions, such as rooftop lighting/marketing and subsequent notification to the FAA of completed construction; or (c) the structure as proposed would be an airspace hazard and should not be approved.

As the FAA does not have authority to approve or disapprove a proposed off-airport land use, it is the responsibility of the City and other local land use jurisdictions to ensure that proposed development complies with the FAR Part 77 notification requirements and resulting FAA-issued determinations (the FAA does have the authority to protect the airspace by modifying flight procedures if feasible and/or restricting use of the airport). In its project review process, the City of Santa Clara does coordinate with San Jose staff on compliance with applicable FAA regulations and aeronautical determinations, including granting of aviation easements to San Jose to establish elevation limits over the project property.

The FAA also has policies discouraging potential hazardous wildlife attractants near airports, such as landfills, other trash processing facilities, and waste-water treatment facilities.

4.13.1.2 State

In California, the U.S. EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). In turn, local agencies including the Santa Clara Fire Department (SCFD) and the Santa Clara County Department of Environmental Health (SCCDEH) have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program. Oversight over investigation and remediation of sites impacted by hazardous materials releases can be performed by State agencies, such as Department of Toxic Substance Control (DTSC) (a division of Cal/EPA), regional agencies, such as the RWQCB, or local agencies, such as SCCDEH. Other agencies that regulate hazardous materials include the California Department of Transportation (CalTrans) and California Highway Patrol (transportation safety) and Cal/EPA Division of Occupational Safety and Health, better known as Cal/OSHA (worker safety).

Department of Toxic Substances Control (DTSC)

The DTSC regulates hazardous waste, remediation of existing contamination, and evaluates procedures to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

DTSC implements protective cleanup programs and standards. An estimated 90,000 properties throughout the State - including former industrial properties, school sites, military bases, small businesses and landfills - are contaminated, or believed contaminated, with some level of toxic substances. Some of these are “brownfields,” contaminant sites that often sit idle or underused, contributing to both urban blight and urban sprawl. As shown in Table 4.13-1, there are no DTSC response sites within Santa Clara.

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay Regional Water Quality Control Board (RWQCB) oversees the unauthorized releases of pollutants to soils and ground water but in some cases also to surface waters or sediments. Sites that are managed by the San Francisco Bay Regional Water Quality Control Board include sites with pollution from recent or historical surface spills, subsurface releases (e.g., pipelines, sumps, etc.), and other unauthorized discharges that pollute or threaten to pollute surface and groundwater.

The State Water Code provides authority for the RWQCB to require investigation and cleanup of sites with unauthorized pollutant releases. The Water Code Section 13304 also authorizes the RWQCB to require technical reports from suspected dischargers, issue “cleanup and abatement” orders to dischargers, and recover costs for oversight of site cleanup. State Water Board Resolution No. 92-49, “Policies and Procedures for Investigation, Cleanup and Abatement of Discharges Under Water Code Section 13304”; No. 68-16, “Statement of Policy with Respect to Maintaining High Quality of Waters in California”; and No. 88-63, “Sources of Drinking Water”, contain the policies and procedures that all Regional Water Quality Control Boards shall follow to oversee and regulate investigations and cleanup and abatement activities resulting from all types of discharge or threat of discharge subject to Water Code Section 13304. The RWQCB also provides guidance on required cleanup at low risk fuel sites.

Certified Unified Program Agency (CUPA) Program

The CUPA program was created by Senate Bill 1082 (1993) to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for several environmental and emergency management programs. The unified program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The City of Santa Clara Fire Department (SCFD) is the CUPA for the City of Santa Clara, as discussed under Local regulations, and administers the following six programs under the State’s Unified Program:

- The Hazardous Waste Generator (HWG) program and the Hazardous Waste Onsite Treatment activities (Health and Safety Code Division 20, Chapter 6.5 and California Code of Regulations, Title 22, Division 4.5);

- The Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements (Health and Safety Code Division 20, Chapter 6.67, Section 25270.5(c));
- The Underground Storage Tank (UST) program (Health and Safety Code Division 20, Chapter 6.7 and California Code of Regulations, Title 23, Chapters 16 and 17);
- The Hazardous Materials Release Response Plans and Inventory (HMRRP) program (Health and Safety Code Division 20, Chapter 6.95, Article 1 and California Code of Regulations, Title 19, Sections 2620-2734);
- California Accidental Release Prevention (CalARP) program (Health and Safety Code Division 20, Chapter 6.95, Article 2 and the California Code of Regulations, Title 19, Sections 2735.1-2785.1); and
- The Hazardous Materials Management Plans and the Hazardous Materials Inventory Statement (HMMP/HMIS) requirements (California Fire Code Title 24, Part 9, Sections 2701.5.1 and 2701.5.2).

Santa Clara County Department of Environmental Health

The SCCDEH oversees the management of medical waste in accordance with the Medical Waste Management Act (HSC Sections 117600 to 118360) and Santa Clara County Ordinance Code, Sections B11-260 to B11-268. The Hazardous Materials Program in the Hazardous Materials Compliance Division (HMCD) of the SCCDEH was established in 1983 with the adoption of the local Hazardous Materials Storage Ordinance, which regulates the storage of hazardous materials both above- and below-ground. The SCCDEH also oversees the Household Hazardous Waste Program, which provides the community with practical pollution prevention strategies for the use, recycling, and disposal of products containing hazardous substances. The Local Oversight Program, under the SCCDEH, (i.e., leaking underground storage tank cleanup program) addresses the protection of the County of Santa Clara's water resources, specifically groundwater basins, through the prevention of adverse environmental factors, preservation and improvement of beneficial environmental factors that affect the community's health and safety and the minimization of the economic costs to the general public and business community of the County.

Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) regulates and enforces workplace health and safety regulations established in Title 8 of the California Code of Regulations. Title 8 requirements protect workers from exposure to hazardous materials and contamination during demolition, excavation, and construction on development sites. Cal/OSHA regulations include procedures for safe handling of asbestos containing materials and lead-based paint during building demolition or renovation.

State Aeronautics Act

The California State Aeronautics Act [Public Utilities Code: Division 9, Part 1, Chapter 4, Article 3.5, Section 21670 et seq] requires the implementation and enforcement of the Comprehensive Land Use Plan (CLUP) by the local governmental agencies responsible for land use planning within each airport's Airport Influence Area (AIA). A CLUP contains policies and criteria that address compatibility between airports and future land uses that surround them by addressing noise, overflight, safety, and airspace protection concerns to minimize the public's exposure to excessive noise and safety hazards within the airport influence area for each airport over a 20-year horizon.

Once the ALUC has adopted a new or revised CLUP and transmitted that CLUP to an affected local agency, that local agency is mandated to incorporate the CLUP's provisions into its General and/or affected Specific Plan(s) within 180 days [Government Code 65302.3(b)]. The local agency is then required to adopt zoning ordinance(s) that implement the policies of their General/Specific Plan(s). If a local agency decides not to incorporate the CLUP policies verbatim in its General and/or Specific plans, it may overrule portions of the CLUP if it finds that General and/or Specific Plan(s) are consistent with the State Aeronautics Act. If the ALUC adopts or revises the existing CLUP subsequent to the adoption of the Draft 2010-2035 General Plan, the City will compare the General Plan with the newly adopted CLUP and take the appropriate measures as required by law.

California Accidental Release Prevention Program (CalARP)

The California Accidental Release Prevention Program (CalARP) affects businesses that store or use certain hazardous materials in excess of threshold quantities that may have off-site consequences if released. The program requires an assessment of the off-site hazard potential, and the implementation of a program to minimize the risk of release. Companies are required to prepare a Risk Management Plan for the Environmental Protection Agency pursuant 40 Code of Federal Regulations (CFR), Part 68. The regulations for this program, and the list of hazardous materials and their threshold quantities, may be found on the California Emergency Management Agency website. CalARP is California's version of the federal Risk Management Plan program authorized under the Clean Air Act.

4.13.1.3 Local

City of Santa Clara General Plan 2000-2010

Existing policies in the City of Santa Clara General Plan have been adopted for the purpose of avoiding or mitigating environmental effects resulting from planned development within the City. Relevant General Plan Policies that directly address reducing and avoiding impacts hazards and hazardous materials include the following:

Hazardous Materials

- Regulate hazardous materials use, storage, disposal and clean-up to protect the health of humans and the environment within the City of Santa Clara.
- All proposals to site a hazardous waste management facility shall assure compatibility with neighboring land uses and be consistent with the General Plan (including the Hazardous Waste Siting Constraints map), local land use permitting process, and the County Hazardous Waste Management Plan.
- In conjunction with other responsible agencies, inform all residents about the potential hazards associated with household products and how to dispose of them safely. (Ongoing, Street Dept.)
- Review the siting and/or design of hazardous materials storage, recycling, transfer and disposal facilities for consistency with the County Hazardous Waste Management Plan and policies and programs of this General Plan. (Ongoing, Planning Div.)
- Work with other agencies to support the reclamation of polluted resources and to prevent new sources of pollution. (Ongoing, Fire Dept., outside regulatory agencies)

Santa Clara City Code

The City Code includes the creation of four hazardous materials divisions which act as branches of the Santa Clara Fire Department, and assigns responsibilities to each division. The divisions are defined as (a) the hazardous materials administration division, (b) the hazardous materials training division, (c) the hazardous materials legislative division, and (d) the hazardous materials inspection division (Section 2.85.070). The City Code also includes adoption of the Santa Clara Municipal Fire and Environmental Code, which adopts by reference the International Fire Code (2006 Edition) with California amendments, and various portions of the Health and Safety Code of the State of California related to the Certified Unified Program Agency (CUPA) programs, enforced and administered by the City of Santa Clara. A list of the programs adopted under the International Fire Code, which relate to hazardous materials can be found in Chapter 15.60 of the Santa Clara City Code. The Santa Clara City Code addresses the procedures for accumulation, transportation and disposal of waste matter (Chapter 8.25).

Santa Clara Fire Department Hazardous Materials Division

The City of Santa Clara Hazardous Materials Division maintains a vital role as technical consultant to the Fire Department, the City, and the business community, advising on site construction, process installation, and the safe use and handling of hazardous materials as outlined in Federal, State, and local regulations. The Hazardous Materials Specialists perform critical staff support at the scene of approximately 50 chemical release incidents each year. The Santa Clara Fire Department Hazardous Materials Division provides a number of services to the citizens and businesses of Santa Clara, including:

- Consulting with businesses on how to safely store and use hazardous materials;
- Responding to hazardous materials emergencies;
- Training emergency response personnel in hazardous materials incident response;
- Conducting inspections of facilities where hazardous materials and wastes are used and/or stored;
- Reviewing construction plans for facilities using hazardous materials;
- Investigating exposures to or releases of hazardous materials; and
- Responsibility for implementing the Certified Unified Program Agency (CUPA) program for the City of Santa Clara

The Santa Clara Fire Department Hazardous Materials Division also implements the CalARP within the City of Santa Clara. Although not included within the CUPA program, the Santa Clara Fire Department also administers hazardous materials storage requirements under its municipal Fire and Environmental Code (Santa Clara City Code Chapter 15.60), which is discussed under *Santa Clara City Code*.

4.13.2 Existing Setting

4.13.2.1 Hazardous Materials Use

As is common to most urban communities, hazardous materials are used and stored by businesses operating within a wide range of industries including maintenance, manufacturing, construction, transportation, dry cleaning, automotive, medical and electronics, among others. Many products containing hazardous chemicals also are routinely used and stored in homes. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects and damage to the environment. These products also are shipped daily on the nation's highways,

railroads, waterways and pipelines. Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations and hospitals. Major transportation routes used to transport hazardous materials within Santa Clara include US 101, Caltrain and Union Pacific Railroad lines. Local roadways are also used to transport materials from these major routes to various businesses and institutions.

Each year, Californians generate two million tons of hazardous waste. One hundred thousand privately- and publicly-owned facilities generate one or more of the 800-plus wastes considered hazardous under California law. Properly handling these wastes avoids threats to public health and degradation of the environment. These substances are most often released as a result of transportation accidents, chemical accidents, or releases from above ground/underground storage tanks. Risks associated with accidental releases include exposure of emergency responders, the public, or the environment to these substances. Other hazards include explosion or fire.

Facilities that use hazardous materials are distributed throughout the City of Santa Clara within industrial, light industrial and commercial areas. Hazardous materials typically associated with common land uses are briefly discussed below.

Common Contaminants

Petroleum Oils and Fuels

Petroleum is used mostly, by volume, for producing gasoline, diesel, jet, heating, and other fuel oils. It is primarily used in trucks, ships and cars and for emergency power generation. Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs), typically used to store petroleum fuel, are regulated in California to help prevent release of petroleum and the contamination of soils and ground water. In addition to the fuels themselves, gasoline additives, such as methyl tertiary butyl ether (MTBE), have toxic properties that can impact human health and the environment.

A UST is defined by law as “any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous substances and that is substantially or totally beneath the surface of the ground” (certain exceptions apply). ASTs are constructed above grade. Leaking storage tanks are a significant source of petroleum impacts to soil and ground water and may pose the following potential threats to health and safety:

- Exposure from impacts to soils and/or groundwater
- Contamination of drinking water aquifers
- Contamination of public or private drinking water wells
- Inhalation of vapors

A large majority of reported petroleum releases are associated with USTs. Since the inception of the UST program in 1984, more than 45,000 leaking USTs have been reported in California and 33,000 of these sites have been remediated with approximately 12,000 leaking UST sites remaining to be investigated and mitigated. The State Water Resource Control Board (SWRCB) is responsible for cleanup and abatement of fuel leaks. Coordination between the SWRCB and the local Certified Unified Program Agency (CUPA) typically occurs in the oversight of the investigation and cleanup of fuel system releases. The storage tanks listed in Santa Clara are included in Table 4.13-1.

Natural Gas

In the Bay Area, natural gas is used for heating residences and commercial and industrial facilities. Natural gas is a colorless flammable gas or liquid that poses explosion hazards under certain conditions. The City purchases natural gas from third party suppliers for the production of electric energy. Gas is delivered to the City from basins in California, Canada and the Western United States by transmission mains.¹³¹ The gas is delivered to City residents via Pacific Gas & Electric Company (PG&E) natural gas lines. .

Propane

Propane is a flammable fuel that is derived from petroleum and natural gas and generally stored in liquid form in pressurized tanks. Propane is used as a fuel for a small number of vehicles and for barbeques and heating, cooking, and refrigeration in recreational vehicles. Several fueling stations in Santa Clara have large propane storage tanks.

Solvents (Volatile Organic Compounds)

A solvent is a substance capable of dissolving another substance to form a mixture. The most commonly-used solvents of concern are organic (carbon-containing) chemicals that usually have a low boiling point and evaporate easily. Solvents are usually clear and colorless liquids and many have a characteristic odor. Common uses for organic solvents are in dry cleaning (e.g. tetrachloroethylene or perchloroethylene [PCE]), as paint thinners (e.g. toluene, turpentine), as nail polish removers and glue solvents (acetone, methyl acetate, ethyl acetate), in spot removers (e.g. hexane, petrol ether), in detergents (citrus terpenes), in perfumes (ethanol), and in chemical syntheses.

Trichloroethylene (TCE) was one of the more commonly used solvents by the high tech industry in Silicon Valley in the 1980s; it mainly was used to wash microscopic pieces of dust off semiconductor chips. Today, it is a common contaminant in soil and ground water and is regulated due to its toxic properties. Exposures typically occur through drinking contaminated water or through inhalation of vapor that has off-gassed from contaminated soil or groundwater and entered nearby buildings.

Facilities with solvent releases to soils and ground water are typically overseen by the San Francisco Bay Regional Water Quality Control Board in the Site Cleanup Program (SCP) or by the DTSC. Many of these sites are regulated under cleanup requirements issued by the overseeing agency that generally mandate a time schedule for specific tasks that must be performed by the responsible party or parties to investigate and cleanup the site. The SCP was formerly known as the Spills, Leaks, Investigation, and Cleanup (SLIC) program. Facilities under the SCP in Santa Clara are listed in Table 4.13-1.

Agricultural Chemicals

Land within Santa Clara County has been used for agricultural purposes since at least the late 1800s. Pesticides (such as arsenical insecticides and organochlorine pesticides) were applied to crops in the normal course of farming operations. Pesticides are commonly found in the soils in Santa Clara due to the areas past agricultural history.

¹³¹ City of Santa Clara.2010. City of Santa Clara 2010-2035 Draft General Plan. March 2010.

Asbestos

Asbestos is a natural mineral fiber that was once commonly used in building materials. Inhaling airborne asbestos fibers can increase the risk of developing certain lung diseases, including lung cancer, mesothelioma and asbestosis. Many building materials can contain asbestos, especially those installed prior to 1980. The Federal government placed a moratorium on the production of most asbestos products in the early 1970s, but these products continued to be installed for many subsequent years.

Lead Based Paint

Lead-based paint is a major source of lead poisoning for children and can also affect adults. Lead was used as a pigment and drying agent in “alkyd” oil based paint. “Latex” water based paints generally have not contained lead. About two-thirds of the homes built before 1940 and one-half of the homes built from 1940 to 1960 contain heavily-lead paint. Some homes built after 1960 also contain heavily-lead paint. It may be on any interior or exterior surface, particularly on woodwork, doors, and windows. In 1978, the U.S. Consumer Product Safety Commission lowered the legal maximum lead content in most kinds of paint to 0.06 percent (a trace amount).

Toxic Gas Facilities

A toxic gas is a material that can result in serious health effects from exposure over a relatively short period of time. Locally, toxic gases are used at sites, such as semi-conductor manufacturing, laboratory and research, water treatment and large cold storage facilities.

Based on information provided by the Santa Clara Fire Department Hazardous Materials Division, there are 25 facilities in Santa Clara regulated under the Toxic Gas Ordinance.

Household Hazardous Materials

Many common products that are in daily use contain potentially hazardous ingredients and require special care when disposed. It is illegal to dispose of hazardous waste in the garbage, down storm drains, or onto the ground. Household hazardous materials (e.g., used paint, pesticides, cleaning products and other chemicals) are prevalent and often improperly stored in garages and homes throughout the community. Waste oil is a common hazardous material generated by city residents that is often improperly disposed and can contaminate surface water, ground water and soil.

Since 1991, the Santa Clara County Household Hazardous Waste Program has provided residents with a safe, convenient disposal service with year-round access. The County and 14 cities, including Santa Clara, participate in the countywide program and share costs based on the number of households served from each jurisdiction.

Universal Wastes

Universal wastes are hazardous wastes that are generated by a wide variety of entities that contain mercury, lead, cadmium, copper and other substances hazardous to human and environmental health. Common examples of universal wastes include televisions, computers, computer monitors, batteries, and fluorescent lamps.

Until recently, some universal wastes could be disposed in the trash under some circumstances; however, this is no longer the case. The universal waste rule (California Code of Regulations, title 22, division 4.5, chapter 23) allows people to handle and transport universal waste under a simple set of rules that are appropriate for the risks posed by the wastes but still protect people and the environment. In general, universal wastes now must either be sent directly to an authorized recycling facility or to a universal waste consolidator for shipment to an authorized recycling facility.

Medical Wastes

According to the Medical Waste Management Act (MWMA), HSC Sections 117600 -118360, medical waste is defined as waste that is generated or produced as a result of certain actions, including the diagnosis, treatment, or immunizations of human beings; research pertaining to the diagnosis, treatment, or immunizations of human beings; the production or testing of biologicals; and removal of a regulated waste from a trauma scene, or by a trauma scene waste management practitioner. The medical wastes are either biohazardous waste or sharps waste. The types of facilities that generate medical waste include medical and dental offices, clinics, hospitals, surgery centers, laboratories, research laboratories, education and research facilities, and trauma scene waste management practitioners.

Emergency Response to Accidental Releases

Accidental releases of hazardous materials may require an immediate response in order to protect human health and safety, and/or the environment. Hazardous material incidents differ from other emergency response situations because of the wide diversity of hazardous material types and large number of potential causes. Incidents may occur at fixed facilities or at any place along transportation routes. Circumstances such as the prevailing wind and geographic features in the vicinity of a release are relevant factors that may impact the severity of the incident and influence response actions.

The City of Santa Clara Hazardous Materials Division responds to emergency calls related to hazardous materials within the City. The City also participates in the ABAG Local Hazards Plan and also has adopted a City of Santa Clara Emergency Plan (2008). Along with the City's response capabilities, other responders or responsible agencies may include the California Highway Patrol, Caltrans, the San Francisco Bay Regional Water Quality Control Board, Santa Clara Valley Water District, Bay Area Air Quality Management District, Department of Toxic Substances Control and the California Department of Fish and Game. The California Emergency Management Agency, California State Warning Center also must be notified of all significant releases or threatened releases of a hazardous material, including oil and radioactive materials.

4.13.2.2 Existing Contamination

Information regarding reported hazardous materials release sites within Santa Clara was obtained from the GeoTracker database and from the Envirostor database. These databases are online search and Geographic Information System (GIS) tools for identifying sites with known or potential contamination, and sites where regulatory environmental oversight or review has been requested or required.

The GeoTracker database, maintained by the SWRCB, tracks regulatory data about leaking underground storage tank (LUST), Department of Defense, Site Cleanup Program and landfill

sites. The EnviroStor database is maintained by the DTSC and contains information on investigation, cleanup, permitting, and/or corrective actions that are planned, being conducted or have been completed under DTSC's oversight. The EnviroStor database includes Federal Superfund sites, DTSC State Response sites, DTSC Voluntary Cleanup sites and DTSC School sites.

Given that most new residential development, as well as other sensitive receptor populations (i.e., new schools, day care centers, convalescent homes, etc.), will occur in the Focus Areas, it is important to document existing contamination on properties within, or adjoining, the Focus Areas. Because some Focus Areas will not be available for development in five or 15 years, it is possible residual contaminations may be present at the time of redevelopment in 2015 or 2025 or beyond. Therefore, this discussion reflects existing conditions in 2010, but it is acknowledged conditions may change over time, and future development will need to account for, and address, conditions as they exist when that development is proposed.

The known potentially hazardous materials located in the Santa Clara Focus Areas as well as potentially hazardous materials located within 1,000 feet of the Focus Areas are identified in Table 4.13-1 and shown on Figure 4.13-1.

TABLE 4.13-1 CITY OF SANTA CLARA FOCUS AREAS- POTENTIALLY HAZARDOUS ENVIRONMENTAL CONDITIONS ¹³²						
Focus Area	Reported Hazardous Materials Spills and Releases					
	DTSC State Response Sites (Department of Toxic Substances Control) ¹	LUFT Sites (Leaking Underground Storage Tank) ²	NPL Sites (National Priority Sites) ³	SCP Sites (Spills, Leaks, Investigations, and Clean-ups)	UST Permit Sites (Underground Storage Tanks)	Voluntary Clean-up ⁵
Stevens Creek Boulevard		1 (within Focus Area)			2 (within Focus Area)	
Downtown		2			1	
Santa Clara Station		4 (3 within Focus Area)		2	4 (all within Focus Area)	1
El Camino Real		5 (4 within Focus Area)			8 (6 within Focus Area)	1
Lawrence Station		5 (all on-site)	1 (within Focus Area)			
Central Expressway		1	2 (both within Focus Area)	3 (2 within Focus Area)		
De La Cruz		3		2 (both within Focus Area)	3 (2 within Focus Area)	1
Great America Parkway					3 (2 within Focus Area)	
Tasman East						
¹ – The State Response list identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. ² - The LUST cases typically involve releases of petroleum fuels (gasoline or diesel) or waste oil from underground storage tanks (USTs). The listed SCP cases typically involve releases of volatile organic compounds (VOCs), such as solvents. Spills of petroleum products that were not contained in USTs and other contaminants such as metals and pesticides may also be involved. ³ - The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United						

¹³² SWRCB Geotracker 2008, City of Santa Clara 2008, Santa Clara Valley Water District 2008.

States and its territories. The NPL serves primarily informational purposes, identifying for the States and the public those sites that appear to warrant remedial actions.

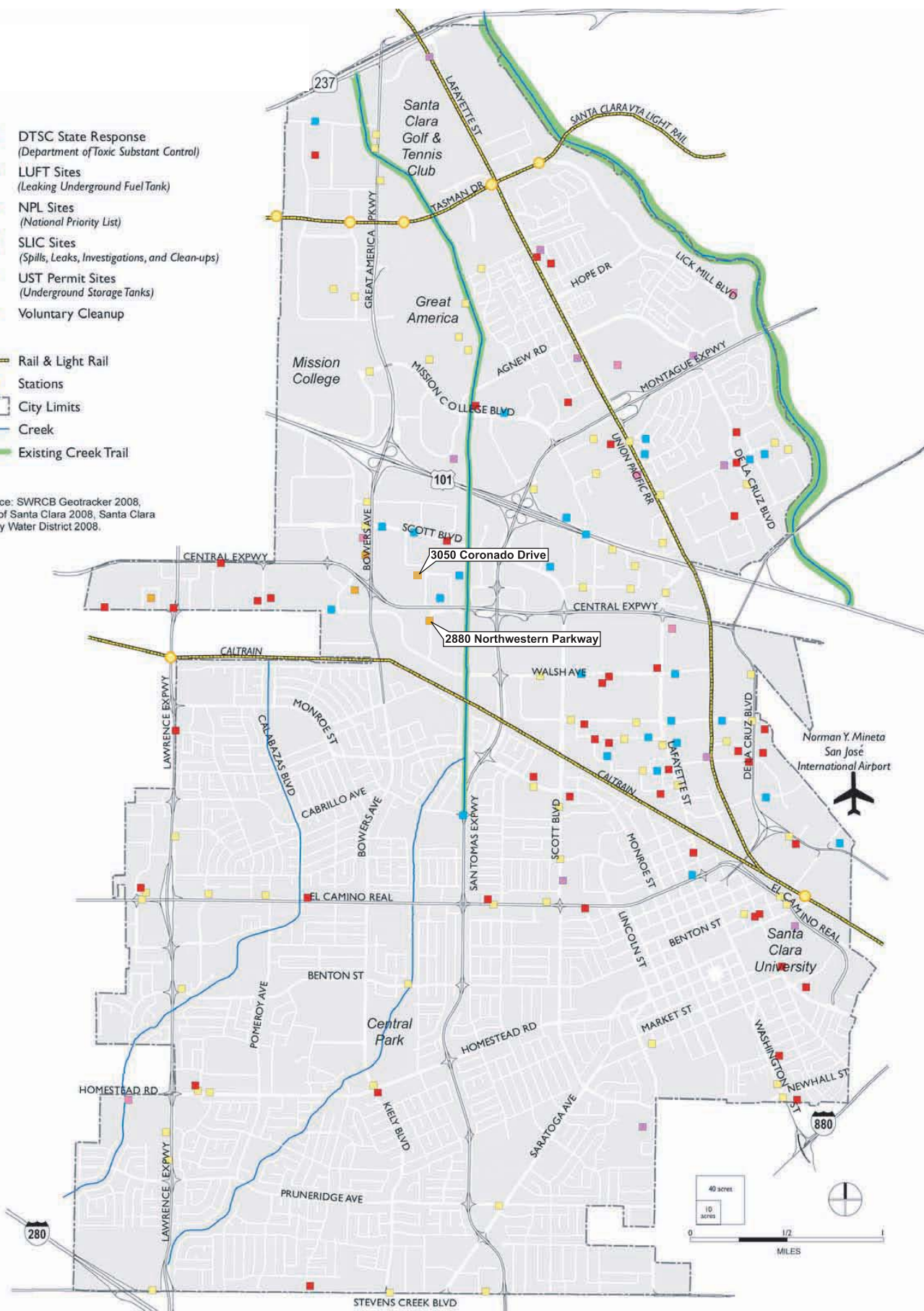
4 - In the Spills, Leaks, Investigations & Cleanup (SLIC) Program, Water Board staff oversee soil and water investigations, corrective actions, and human health risk assessments at sites with current or historic unauthorized discharges, which have adversely affected or threaten to adversely affect waters of the State. The program covers all types of pollutants (such as solvents, petroleum fuels, heavy metals, pesticides, etc) and all environments (including surface water, groundwater, sediment, and soil).

5 - DTSC's Voluntary Cleanup Program allows motivated parties who are able to fund the investigation and cleanup and DTSC's oversight to move ahead at their own pace to investigate and remediate their sites.

- DTSC State Response
(Department of Toxic Substant Control)
- LUFT Sites
(Leaking Underground Fuel Tank)
- NPL Sites
(National Priority List)
- SLIC Sites
(Spills, Leaks, Investigations, and Clean-ups)
- UST Permit Sites
(Underground Storage Tanks)
- Voluntary Cleanup

- Rail & Light Rail
- Stations
- City Limits
- Creek
- Existing Creek Trail

Source: SWRCB Geotracker 2008,
City of Santa Clara 2008, Santa Clara
Valley Water District 2008.



HAZARDOUS MATERIAL SITES

FIGURE 4.13-1

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Rail Lines

There are two rail lines that run through the City of Santa Clara. The first is owned by Caltrain and runs between San Francisco and San José. In the City of Santa Clara, the San Francisco/San José line runs generally west to east across the central portion of the City and serves as a boundary between a residential area to the south and an industrial area to the north. The Union Pacific Railroad (UPRR) maintains the right to intercity rail along the Caltrain corridor.¹³³ UPRR also operates on the second rail line which runs north to south in the City of Santa Clara, parallel to Lafayette Street. Operations on the rail lines include both passenger and freight service, with spur tracks in the industrial area of the City.¹³⁴

According to the UPRR, any form of freight, including hazardous materials, could be transported on any rail line at any time.¹³⁵

Landfill and Solid Waste Facilities

There are no active landfills located within the City of Santa Clara. The former All-Purpose Landfill encompasses 136 acres on both sides of Lafayette Street north of Tasman Drive in the City of Santa Clara. The landfill operated from 1965 until the early 1990s and accepted municipal waste, construction debris and non-hazardous industrial and commercial wastes. An unknown quantity of solvents, acids, bases, and heavy metals are also reported to have been disposed of at the landfill. Portions of the former landfill have been redeveloped as the Santa Clara Golf and Tennis Club and a bicycle motocross (BMX) track.¹³⁶

The Mission Trail Transfer Station, located at 160 Richard Avenue, is a permitted Materials Recovery and Transfer Station facility. This facility handles municipal solid waste and recyclables. Materials are dropped off for sorting and transfer by the City's waste hauler, local contractors, and residents.¹³⁷

Norman Y. Mineta San Jose International Airport

Mineta San José International Airport is owned and operated by the City of San José. The Airport accommodates aircraft departures and landings from both commercial aircraft and general aviation.¹³⁸ It served 8.3 million passengers in 2009 with over 100 flights a day on domestic and international air carriers. Air cargo flights are also supported at the Airport.¹³⁹

¹³³ Union Pacific. "Allowable Gross Weight Map." 2009. Accessed April 22, 2010. <http://www.uprr.com/aboutup/maps/attachments/allow_gross_ltr.pdf>

¹³⁴ City of Santa Clara. *Santa Clara General Plan*. Chapter 5(d).

¹³⁵ City of Santa Clara. *San José Korean Presbyterian Baptist Church Conditional Use Permit*. Hazardous Materials Users Survey. September 9, 2009.

¹³⁶ California Department of Resources Recycling and Recovery. "All Purpose Landfill". 2010. Accessed May 3, 2010 <<http://www.calrecycle.ca.gov/SWFacilities/Directory/43-AO-0001/Detail/>>

¹³⁷ California Department of Resources Recycling and Recovery. "Mission Trail Transfer Station". 2010. Accessed May 3, 2010. <<http://www.calrecycle.ca.gov/SWFacilities/Directory/43-AO-0002/Detail/>>
City of Santa Clara. "Garbage and Recycling Services Fact Sheet". Accessed May 3, 2010. <<http://www.recyclestuff.org/Guides/CityGuideSantaClara.pdf>>

¹³⁸ General aviation refers to all flights other than military and scheduled commercial airline flights.

¹³⁹ Mineta San Jose International Airport. "About SJS". Accessed April 29, 2010. <<http://www.sjc.org/about.php?page=index>>

Hazards associated with airport facilities include hazards to people on the ground from accidents near airport runways where accidents are most likely to occur and hazards to aviation associated with obstructions (such as towers, utility poles, or buildings) within airport approach and departure areas.

The ALUC was established to provide for appropriate development of areas surrounding public airports in Santa Clara County. The Santa Clara ALUC has adopted a Land Use Plan for those areas in the vicinity of Norman Y. Mineta San José International, Reid-Hillview, Palo Alto, and South County airports. The current plan was adopted in September 1992 and most recently amended in November 2008. The ALUC has established a final draft CLUP which includes policies and standards for the control of objects in navigable airspace, and the safety of persons on the ground and in aircraft. The final draft of the CLUP for this airport was completed in February 2010 and is expected to be adopted summer 2010. Provisions in the final draft CLUP include the regulation of land use, building height, and safety within areas adjacent to the airport.¹⁴⁰

The City's eastern border is adjacent to the Norman Y. Mineta San José International Airport.

Wildland-Urban Interface Areas

The California Department of Forestry and Fire Hazard Protection is responsible for the identification of very high fire hazard severity zones and transmission of these maps to local government agencies. There are no wildfire hazards in the City of Santa Clara.¹⁴¹

Surrounding Communities

The California Accidental Release Prevention Program (CalARP) Sites

The CalARP is meant to prevent the accidental release of specific regulated substances. Stationary sources with more than a threshold quantity of a regulated substance are required to be evaluated to determine the potential for and impacts of accidental releases from that covered process. An owner or operator of a stationary source may be required to develop and submit a risk management plan (RMP).

CalARP sites are constantly changing based upon new stationary sources moving into or out of industrial areas. Cities adjacent to the City of Santa Clara have a history of CalARP sites in proximity to the Santa Clara Focus Areas.

The City of San José

For risk assessment purposes, chemicals are considered to be of concern to a residential area if they are acutely toxic, exist in a form that readily allows off-site transportation (after release), and are used/stored in sufficient quantities such that they represent a relatively strong and continuous source of off-site migration.

¹⁴⁰ Santa Clara County Airport Land Use Commission. 2010. Final Draft Comprehensive Land Use Plan Santa Clara County Norman Y. Mineta San Jose International Airport. February 17, 2010.

¹⁴¹ California Department of Forestry and Fire Protection. "California Severity Zone Map Update Project". 2007. Accessed May 3, 2010. <http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_Statewide.php>

North San José is a mostly industrial area with many facilities which are hazardous materials users. North San José is located on the east side of the Guadalupe River, east of Santa Clara's existing Lick Mill residential area and east of the Tasman East and De La Cruz Future Focus Areas. An accidental release from a hazardous materials facility in North San José could affect planned residential development in the City of Santa Clara.

The quantities and types of hazardous materials in an industrial area can change as companies move into and out of an area. Table 4.13-2, below, represents some of the facilities which were located in San José in 2007 which, in the event of a worst-case scenario accidental release, could affect the proposed Tasman East and/or De La Cruz Future Focus Areas in the future.¹⁴²

TABLE 4.13-2 WORST-CASE ACCIDENTAL RELEASE SCENARIOS FROM FACILITIES IN NORTH SAN JOSÉ 2007

Hazardous User Facility	Chemical of Concern	Exposure Radius
JDS Uniphase (80 Rose Orchard Way, San Jose, CA)	Phosphine	1.8 miles
Cypress Semiconductor (198 Champion Court, San Jose, CA)	Chlorine	0.78 miles
OLS Energy Facility (3530 Zanker Road, San Jose, CA)	Ammonia	4.2 miles
Neophotonics (2911 Zanker Road, San Jose, CA)	Phosphine	1.4 miles
San José/Santa Clara Water Pollution Control Plant (WPCP) (700 Los Esteros Road, San Jose, CA)	Chlorine	6 miles

The Toxic Chemical Release Inventory System (TRIS) identifies facilities which release toxic chemicals into the air, water, and land in reportable quantities. In 2005, there were 14 sites listed in the TRIS database for North San José.

Within the City of San José, a number of local regulations govern the use and storage of hazardous materials. A Hazardous Materials Business Plan is generally required of any facility which generates any quantity of hazardous waste or handles hazardous materials in amounts greater than 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases. Toxic gas storage on industrial and commercial sites must also comply with San José City Code Chapter 17.78 (Toxic Gas Ordinance) and the California Fire Code. Engineering controls, such as secondary containment, automatic shut-off, seismic shutoff, emergency alarms, gas detection and signage may be required depending on the class and quantity of gas stored. The implementation and enforcement of San José policies, and State and Federal regulations regarding the use, storage and transport of hazardous materials reduce the potential for impacts to off-site land uses, in the event of an accidental release.¹⁴³

San José/Santa Clara Water Pollution Control Plant

The San José/Santa Clara Water Pollution Control Plant (WPCP) uses chlorine for wastewater disinfection, and sulfur dioxide to remove residual chlorine remaining in the wastewater prior to its discharge into the San Francisco Bay. To accomplish the tertiary treatment processes the WPCP uses up to 14,000 pounds (seven tons) of liquid chlorine per day. Chlorine and sulfur

¹⁴² Based upon analysis completed in 2007 for the Hyundai site and Vista Montana Park projects by the City of San José, located in North San José near the City of Santa Clara.

¹⁴³ City of San José. *North San José Development Policies Update Program EIR*. March 2005.

dioxide are classified as acutely hazardous materials in Title 40 of the California Code of Resources (CCR). Both chlorine and sulfur dioxide are delivered to the WPCP in rail cars via a rail spur from the Union Pacific Railroad. The Santa Clara City boundary is located approximately one mile southwest from the rail line intersection with Los Esteros Road. Liquid chlorine and sulfur dioxide are each delivered to the WPCP in 90-ton railcars and then transferred from the railcars in a liquid form through double-contained pipelines, containing leak-detectors, to evaporators located inside buildings. Methane is also present on the WPCP site as a component of digester gas which is generated during the anaerobic digestion process during the primary and biological treatments at the plant.

Generation of odors, on-site railroad deliveries and storage of gaseous chemicals at the WPCP represent impacts that could be considered inconsistent with any uses characterized by significant human occupation. Chemicals used and stored by the WPCP could cause serious injury or death in the event of an accidental release. For both chlorine and sulfur dioxide the worst case scenario would have impacts that reach most of northern Santa Clara County, including the northern portion of Santa Clara.

The WPCP's purchase and designation of buffer lands was intended to buffer adjacent land uses from potential odors and safety hazards. WPCP buffer lands include the undeveloped 400 acres that the City of San José is currently required by policy to maintain as a "buffer" between WPCP operations and neighboring communities and businesses. In accordance with the "City Council Policy on Use of San José/Santa Clara Water Pollution Control Plant Lands," buffer lands may be considered to provide "dual use" benefits. "Dual use" benefits means the land may provide a buffer as well as protect the environment and/or support recreational uses.

Although there has never been a serious incident involving the chemicals that resulted in off-site impacts, the WPCP is currently undergoing a Master Plan process which will phase out the use of gaseous chlorine within the next five years, and will substitute sodium hypochlorite (liquid bleach) for disinfection. Sodium bisulfate will be substituted for sulfur dioxide for dechlorination. Sulfur dioxide will still be needed as a back up for dechlorination. The change in chemical uses at the WPCP will pose a lesser risk to the public and will open the WPCP buffer lands for dual use benefits.¹⁴⁴

City of Cupertino

The City of Cupertino does not have any TAC facilities within 1,000 feet of the Santa Clara Focus Areas.¹⁴⁵

City of Sunnyvale

There are 12 TAC stationary sources located in the City of Sunnyvale which are within 1,000 feet of the Santa Clara Focus Areas. There are eleven facilities located in the vicinity of the

¹⁴⁴ H.T. Harvey & Associates. "San José/Santa Clara Water Pollution Control Plan/Pond A18 Master Planning Plant Land Opportunities and Constraints Assessment". 2007. Accessed April 27, 2010. <http://www.piersystem.com/posted/1823/Plant_Land_Ops_and_Constraints_Report_1_30_07.441119.pdf>

¹⁴⁵ Bay Area Air Quality Monitoring District. Toxic Air Contaminant Control Program Annual Report. 2004. Accessed May 1, 2010. <<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>>

Lawrence Station Future Focus Area, and there is one facility located in the vicinity of the El Camino Real Focus Area.¹⁴⁶ See Appendix H for a detailed list of the TAC facilities and associated contaminants.

4.13.3 Thresholds of Significance

For the purposes of this EIR, a hazardous materials or hazard impact is significant if implementation of the proposed project would:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.13.4 Impacts and Mitigation Measures

Possible hazardous materials contamination sources that could adversely affect future development and redevelopment within Santa Clara are identified for the Focus Areas. Other types of hazards to existing and future development in the City also include airport safety hazards. These conditions and relevant proposed Draft 2010-2035 General Plan policies are described below.

4.13.4.1 *Hazardous Materials Use and Potential for Accidental Releases*

The proposed Draft 2010-2035 General Plan allows for a greater mix of uses, including location of residential uses in proximity to businesses which could expose sensitive receptors to hazardous materials used, stored or disposed of as waste by industrial or in some cases, commercial, operations.

¹⁴⁶ Bay Area Air Quality Monitoring District. Toxic Air Contaminant Control Program Annual Report. 2004. Accessed May 1, 2010. <<http://www.baaqmd.gov/Divisions/Engineering/Air-Toxics/Toxic-Air-Contaminant-Control-Program-Annual-Report.aspx>>

Hazardous materials presently stored and used in Santa Clara include flammable liquids, acids, and similar substances. Some of these substances are routinely transported and kept in large enough amounts that improper handling or an accidental spill or leak could result in off-site consequences that could adversely impact nearby workers or the public.

Placement of additional sensitive receptors near facilities that could have an accidental release of a hazardous substance that would have off-site consequences, or conversely, location of a new industrial, commercial or institutional use that uses or stores toxic substances near sensitive receptors, including within ¼ mile of schools, could increase the risk of adverse health effects in the event of an accidental release. In addition to housing, it is likely that new sensitive receptors such as schools and day care centers will be developed within the Focus Areas.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated hazards policies that address proper hazardous materials use and storage and the proximity of sensitive uses to substantial hazards from accidental release of hazardous materials. The proposed Draft 2010-2035 General Plan Policies that provide program-level mitigation for risks associated with the use, storage, and disposal of hazardous materials within the City are identified below.

Prerequisite Policies	
5.1.1-P5	Prior to the implementation of Phase II and of Phase III of the General Plan, evaluate appropriate measures to maintain emergency response time standards.
5.1.1-P8	Prior to approval of residential development for Phase II and for Phase III in any Future Focus Area, complete a comprehensive plan for each area that specifies land uses, with the location of residential, retail, mixed uses, public facilities, schools and parks.
General Land Use Policies	
5.3.1-P21	Allow Public/Quasi Public uses, including places of assembly such as places of worship, schools, emergency shelters and convalescent homes, in all General Plan designations, except in areas designated Light Industrial and Heavy Industrial, provided that access is from a Collector or larger roadway, and provided that parcels designated High or Low Intensity Office/Research and Development are less than one-half acre, unless more than one such use is co-locating on the site.
5.3.1-P22	Encourage conveniently located child care and other family support services in the community, except in areas designated for Light and Heavy Industrial Uses.
Commercial Land Use Policies	
5.3.3-P15	Discourage auto-oriented uses, such as repair shops and service stations, from properties abutting residential uses and in areas with a pedestrian or mixed use emphasis
Mixed Use Land Use Policies	
5.3.4-P16	Discourage auto-oriented uses, such as drive-through retail establishments, auto repair, and service stations in mixed use designations.
Industrial Land Use Policies	
5.3.5-P17	Prohibit places of assembly, such as clubs, theaters, religious institutions and schools and uses catering predominately to sensitive receptors, such as children and the elderly, from sites designated as Light or Heavy Industrial, on parcels of one-half acre or larger in areas designated for High or Low Intensity Office/Research and Development, and on parcels without access from a collector or larger street.
5.3.5-P19	Restrict the use and storage of hazardous materials for industrial uses within 500 feet of existing residential uses.
School and Community Facility Policies	
5.9.2-P9	Prohibit new public and quasi public facilities on land designated for Light or Heavy Industrial uses on the Land Use Diagram, excluding public utility facilities.

Public Service Policies	
5.9.3-P6	Maintain the fire and hazardous materials mutual aid agreements with surrounding jurisdictions.
Conservation Policies	
5.10.1-P9	Promote the reduction, recycling and safe disposal of household hazardous wastes through public education and awareness and through an increase in hazardous waste collection events.
Safety Policies	
5.10.5-P24	Protect City residents from the risks inherent in the transport, distribution, use and storage of hazardous materials.
5.10.5-P25	Use Best Management Practices to control the transport of hazardous substances and to identify appropriate haul routes to minimize community exposure to potential hazards.
5.10.5-P27	Locate hazardous waste management facilities in areas designated as Heavy Industrial on the Land Use Diagram if compatible with surrounding uses and consistent with the County Hazardous Waste Management Plan.

Existing Regulations and Programs

Existing local, State and federal regulations that would reduce or avoid possible hazards from accidental releases of hazardous materials include:

- California Health and Safety Code, Code of Regulations, RCRA, and CUPA Program (DTSC, Santa Clara County Department of Environmental Health)
- California Accidental Release Prevention (CalARP) Program
- County Hazardous Waste Management Program
- Santa Clara City Code Section 2.85.070 and Chapters 15.60, 8.25, and 18.50

Impact 4.13-1: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could place sensitive uses in proximity to industrial, commercial or institutional hazardous materials users. An accidental release of hazardous materials that travels off-site could pose health or safety risks to these sensitive land uses. Implementation of proposed policies for adequate mitigation or separation buffers between uses and existing regulations and programs would substantially reduce hazards to people and the environment. **(Less Than Significant Impact)**

4.13.4.2 Reported Hazardous Materials Releases and Existing Contamination

Existing Soil, Soil Vapor and Groundwater Contamination

The presence of hazardous materials on future development and redevelopment sites could result in hazardous materials exposure of construction workers during the site preparation, demolition, and/or construction of new structures. Contaminated airborne dust could also migrate off-site during demolition or construction activities and affect adjacent land uses if improperly controlled.

Within Santa Clara a variety of chemical compounds associated with fuels, oil, flammable liquids, metals, pesticides or other hazardous substances originating from historical and/or current land uses may be found in soils that will be disturbed by future development or redevelopment. Releases of hazardous materials, such as volatile organic compounds and metals, into the environment could affect future residents or users through direct contact or, in

the case of volatile organic compounds, inhalation of soil vapors. Contaminated groundwater, where encountered during site redevelopment activities, could result in potential health risks to construction workers or the public. If excavations extend to the groundwater table, dewatering could be required and extracted contaminated groundwater would require on-site management and/or treatment.

Potentially hazardous environmental conditions from reported hazardous materials spills and releases are found in virtually all of the Focus Areas of the City. While a number of these reports represent cases considered closed by Responsible Agencies such as the Regional Water Quality Control Board, where there are changes in land uses or excavation into contaminated areas, a reevaluation of potential hazards and soil or groundwater management may be warranted.

Development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could occur on or near contaminated properties located throughout the City. Localized contamination of soil, soil vapor and ground water could adversely impact human health or the environment if not appropriately addressed and/or mitigated. In some instances, past contamination of properties has led to the recordation of deed restrictions which prohibit or limit certain land uses.

There are no DTSC sites within the City included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, among the Focus Areas, there are two listed sites within the Central Expressway Focus Area that have land use restrictions (overseen by the RWQCB) due to past contamination that complicate their potential future redevelopment as contemplated by the 2035 General Plan.

3050 Coronado Drive. This property has elevated VOC concentrations in groundwater and no well drilling or groundwater extraction at any depth is allowed without RWQCB approval. Appropriate remediation would need to be completed, and RWQCB authorization, prior to redevelopment with a residential and/or mixed use.¹⁴⁷

2880 Northwestern Parkway. This property has elevated VOC concentrations in groundwater, and site management requirements include no soil excavation and/or groundwater extraction without RWQCB approval. Land use covenants enforced by the RWQCB prohibit hospital use, use for school and day care center, residential uses, and elder care centers. Redevelopment of this property as part of the Future focus Area would need to be in accordance with these land use restrictions and subject to RWQCB authorization.¹⁴⁸

Hazards Associated with Building Materials

Remodel and repair activity, and demolition work in residential and commercial structures that disturbs asbestos-containing building materials may cause the release of asbestos fibers into the

¹⁴⁷State Water Resources Control Board website. Accessed May 2010. http://geotracker.swrcb.ca.gov/regulators/deliverable_documents/2547116935/Synertek_percent201_percent20percent28Santa_percent20Clara_percent29_percent20-percent20deed_percent20restriction.pdf.

¹⁴⁸State Water Resources Control Board website. Accessed May 2010. http://geotracker.swrcb.ca.gov/regulators/deliverable_documents/7586133658/deed_percent20restriction-sc3.pdf.

air, resulting in health impacts to workers, building occupants and the general public. There is no known health threat if asbestos-containing materials are in generally good condition and are left undisturbed.

Friable asbestos-containing material (i.e., material that can be crumbled, crushed or reduced to powder by hand pressure when dry) and non-friable asbestos-containing material that will be made friable during renovation or demolition are subject to regulation. National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines require the removal of potentially friable asbestos-containing material prior to building demolition or renovation that may disturb these materials.

Demolition and renovation of buildings also have the potential to release lead particles to the air, resulting in health impacts to workers, building occupants and the general public. If demolition or renovation activities are planned, the removal of lead-based paint is not required if it is bonded to the building materials. However, if the lead-based paint is flaking, peeling, or blistering, it should be removed prior to demolition. In either case, applicable OSHA regulations must be followed; these include requirements for worker training, air monitoring and dust control, among others. Any debris or soil containing lead must be disposed appropriately.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated hazards policies that address soil and groundwater contamination. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for risks associated with the soil and groundwater contamination and hazardous building materials within the City are identified below.

Safety Policies	
5.10.5-P22	Regulate development on sites with known or suspected contamination of soil and/or groundwater to ensure that construction workers, the public, future occupants and the environment are adequately protected from hazards associated with contamination, in accordance with applicable regulations.
5.10.5-P23	Require appropriate clean-up and remediation of contaminated sites.
5.10.5-P26	Survey pre-1980 buildings and abate any lead-based paint and asbestos prior to structural renovation and demolition, in compliance with all applicable regulations.

Existing Regulations and Programs

Existing local, State and federal regulations that would reduce or avoid possible contamination hazards include:

- Federal CERCLA or Superfund and California Health and Safety Code
- California Health and Safety Code, Code of Regulations, RCRA, and CUPA Program [Hazardous Waste Generator, Aboveground and Underground Storage Tank programs]
- Porter-Cologne Act, California Water Code
- California Code of Regulations [Cal/OSHA Worker Health and Safety Regulations]
- California Education Code Section 17210.1 and 17213.1 [Schools Property Evaluation and Cleanup]

Impact 4.13-2: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could occur in areas with soil or groundwater contamination or involve

demolition of buildings containing hazardous building materials. Implementation of proposed policies and existing regulations and programs would substantially reduce hazards to people and the environment. **(Less Than Significant Impact)**

4.13.4.3 Airport Safety Impacts

The redevelopment and development associated with the proposed Draft 20102-2035 General Plan is not located within the vicinity of a private airstrip and, therefore, would not result in a safety hazard for people residing or working with the redevelopment and development areas. The redevelopment and development associated with the proposed Draft 20102-2035 General Plan is located within the vicinity of the San Jose Airport.

Adopted Land Use Plan

The City's eastern border is adjacent to the Norman Y. Mineta San Jose International Airport. Portions of Santa Clara, including several of the Focus Areas, as further described below, fall within the height restriction area, as defined in the adopted Land Use Plan.

Height Restrictions

Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions to air navigation. Each surface is defined as a slope ratio or at a certain altitude above the airport elevation. The Santa Clara Station, Downtown, Central Expressway, eastern portion of the El Camino Real, and De La Cruz Future Focus Areas fall within the FAR Part 77 Surfaces 212 feet (above MSL) height restriction zone. The Great American Parkway and Lawrence Station Future Focus Areas fall within the FAR Part 77 Surfaces 300 and 350 feet (above MSL) height restriction zones. The Tasman East Future Focus Area falls within the FAR Part 77 Surfaces 400 feet (above MSL) height restriction zones.

The adopted CLUP states that "Proposed projects should not penetrate above the established height restriction boundaries, especially along the approach and departure routes." Building heights within the Focus Areas that fall within the FAR Part 77 Surfaces 212 feet height restriction zone would typically range from between three to five stories and five to eight stories. Utilizing a maximum of 15 feet per story, the maximum building height within these Focus Areas would be approximately 120 feet. The elevation above MSL in the City ranges from low elevation of near sea level in the north, to 175 feet above mean sea level at the southern boundary of the City. The proposed Draft 2010-2035 General Plan also includes Safety policies to address new development consistency with the FAR Part 77 Surfaces height restrictions.

Final Draft Comprehensive Land Use Plan

Portions of the Focus Areas are located within the height and safety restriction zones, as defined in the final draft Comprehensive Land Use Plan (refer to Figure 4.13-2 and Figure 4.13-3). Table 4.13-3 identifies the Focus Areas which are located within height and safety restriction zones, as defined in the final draft Comprehensive Land Use Plan.

Height Restrictions

Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions

to air navigation. Each surface is defined as a slope ratio or at a certain altitude above the airport elevation. The Santa Clara Station, Downtown, Central Expressway, eastern portion of the El Camino Real, and De La Cruz Future Focus Areas fall within the FAR Part 77 Surfaces 212 feet (above MSL) height restriction zone. The Tasman East, Great American Parkway and eastern portion of Lawrence Station Future Focus Areas fall within the FAR Part 77 Surfaces 362 and 412 feet (above MSL) height restriction zones.

The final draft CLUP States that “Structures of a height greater than 200 feet above ground level can be a special hazard to aircraft in flight.” Building heights within the Focus Areas that fall within the FAR Part 77 Surfaces 212 feet height restriction zone would typically range from between three to five stories and five to eight stories. Utilizing a maximum of 15 feet per story, the maximum building height within these Focus Areas would be approximately 120 feet. The elevation above MSL in the City ranges from low elevation of near sea level in the north, to 175 feet above mean sea level at the southern boundary of the City. The proposed Draft 2010-2035 General Plan also includes Safety policies to address new development consistency with the FAR Part 77 Surfaces height restrictions.

TABLE 4.13-3 FOCUS AREAS LOCATED WITHIN THE DRAFT CLUP HEIGHT AND SAFETY RESTRICTION ZONES

Focus Area	Portion of Focus Area in Zone	Height Restriction Zone		Safety Restriction Zone	
		FAR Part 77 Surfaces 212 feet (above MSL)	FAR Part 77 Surfaces 362 and 412 feet (above MSL)	Traffic Pattern Safety Zone	Turning Safety Zone
Santa Clara Station	Entire Focus Area	X		X	
Downtown	Entire Focus Area	X		X	
Central Expressway	Entire Focus Area	X			
El Camino Real	Eastern portion of Focus Area	X		X	
De La Cruz	Entire Focus Area	X			
	Extreme southwest portion of Focus Area at the intersection of De La Cruz and Trimble Road	X			X
Tasman East	Entire Focus Area		X		
Great America Parkway	Entire Focus Area		X		
Lawrence Station	Eastern portion of Focus Area		X		

Safety Zones

Safety zones have been identified around airports in conformance with federal and State regulations. Airport safety zones are established to minimize the number of people exposed to potential aircraft accidents in the vicinity of an airport by imposing density and use limitations within these zones. The Santa Clara Station, Downtown and eastern portion of the El Camino Real Focus Areas fall within the Traffic Pattern Safety Zone. The extreme southwest portion of the De La Cruz Future Focus Area at the intersection of De La Cruz Boulevard and Trimble Road falls within the Turning Safety Zone

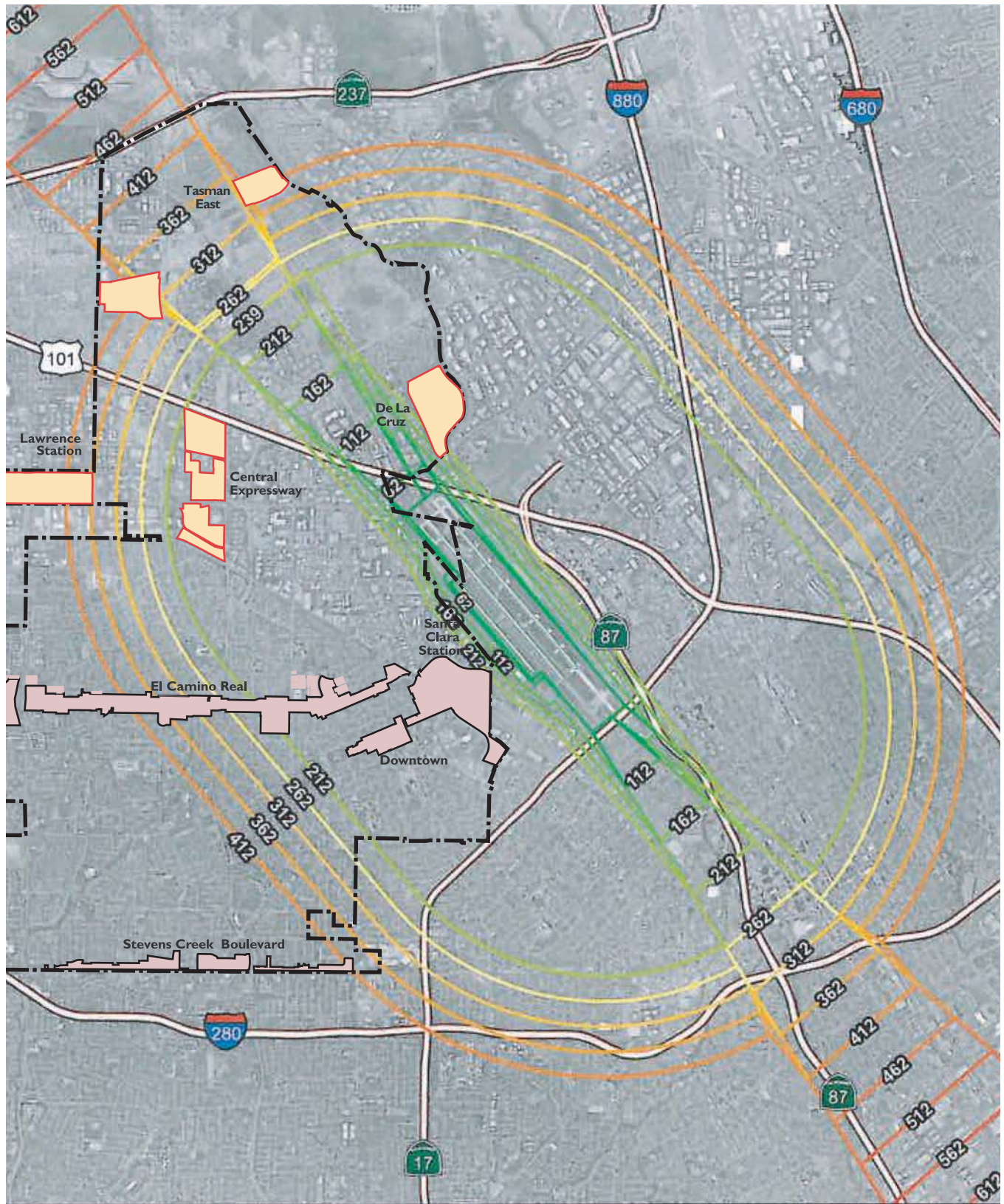
The Traffic Pattern Zone has the lowest level of exposure to potential aircraft incidents and there are no limits on residential uses. The Turning Safety Zone has the third highest level of exposure out of the six safety zones to potential aircraft incidents and includes the following restrictions on land use within this zone: no regional shopping centers, theaters, meeting halls, stadiums, schools, day care centers, hospitals, nursing homes or similar activities; no hazardous material facilities (gasoline stations, etc.); and residential, if non-residential uses are not feasible, allow residential infill to existing density. New Development in the De La Cruz Future Focus Area will include medium-density residential, open space, public facilities, and neighborhood retail. Some of these uses may be incompatible with the Turning Safety Zone restrictions on land uses.

As part of the prerequisites of the proposed Draft 2010-2035 General Plan and prior to approval of residential development in any Future Focus Area, a comprehensive land use plan will be completed for each Focus Area, which will include specification of location of land uses within the Focus Area. As part of the Safety Policies of the proposed Draft 2010-2035 General Plan, the land use plan will address the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the Airport Land Use Compatibility Plan and discourage schools, hospitals, sensitive uses, from locating within specified safety zones for the Airport as designated in the Airport Land Use Plan.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes policies that address maintaining safe operations in and around airport facilities. Proposed General Plan Policies and Actions that provide program-level mitigation for risks associated with airport operations within the City are identified below.

Safety Policies	
5.10.5-P29	Continue to refer proposed projects located within the Airport Influence Area to the Airport Land Use Commission.
5.10.5-P30	Review the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the Airport Land Use Compatibility Plan.
5.10.5-P31	Discourage schools, hospitals, sensitive uses and critical infrastructure, such as power plants, electric substations and communications facilities, from locating within specified safety zones for the Airport as designated in the Airport Comprehensive Land Use Plan.
5.10.5-P32	Encourage all new projects within the Airport Influence Area to dedicate an aviation easement.
5.10.5-P33	Limit the height of structures in accordance with the Federal Aviation Administration Federal Aviation Regulations, FAR Part 77 criteria.



Maximum Structure Height (feet above MSL)

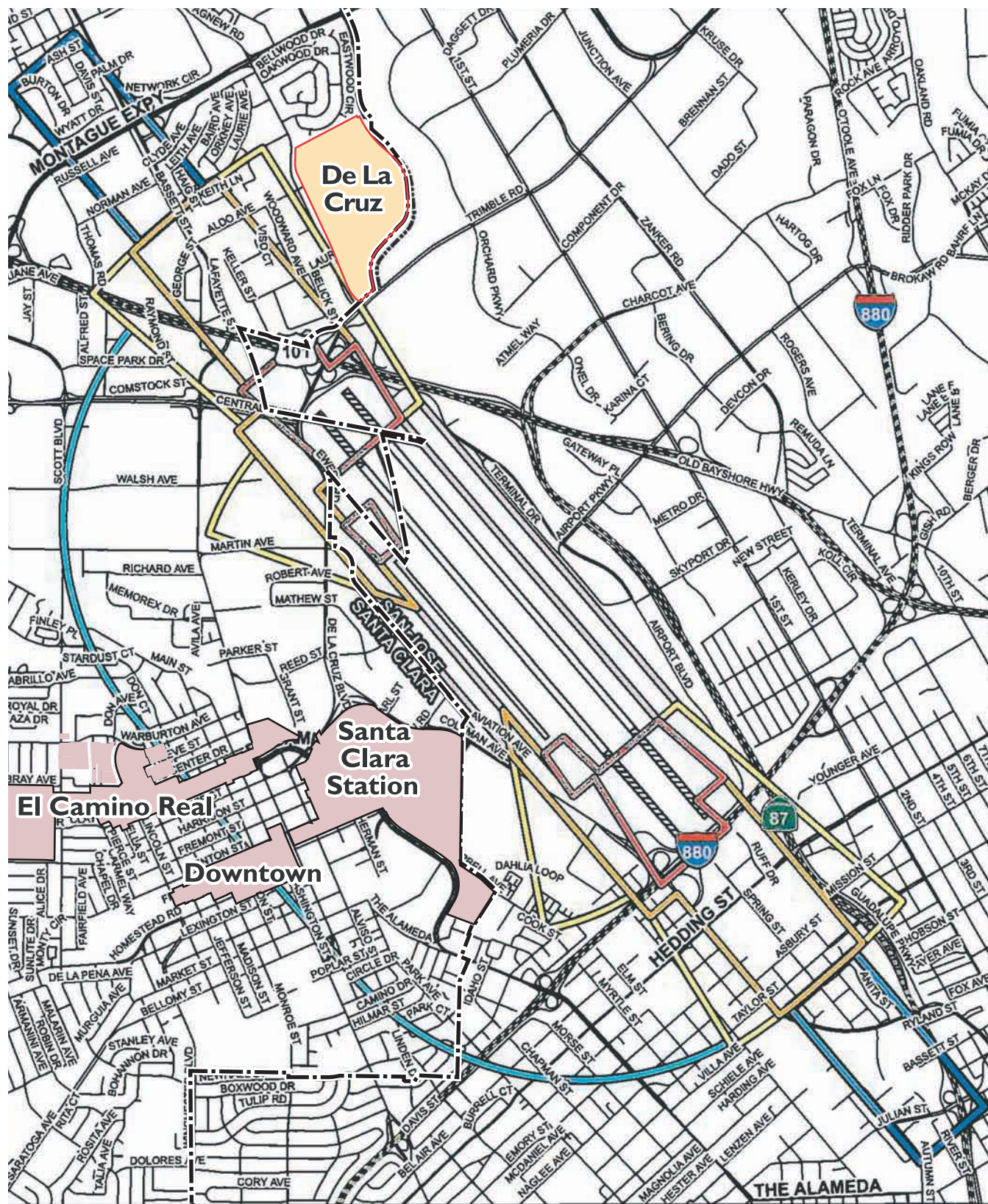
Runway	162	266	462
Ground Level	212	312	512
62	239	362	562
112	262	412	612

- Focus Areas
- Future Focus Areas
- City Limits

0 2,000 4,000 8,000 Feet N

This map created by Santa Clara County Planning Office. The GIS data was compiled from various sources. While deemed reliable, the Planning Office assumes no liability for errors or omissions. 12/05/2008. Y:\MapRm\GIS\Projects\2008\part17_04.mxd

SAN JOSE INTERNATIONAL AIRPORT FAR PART 77 SURFACES FIGURE 4.13-2



Safety Zones

- Runway
- Runway Protection Zone
- Inner Safety Zone
- Turning Safety Zone
- Outer Safety Zone
- Side-line Safety Zone
- Proposed Runway
- Taxiway Pattern Zone
- Focus Areas
- Future Focus Areas
- City Limits

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This map created by Santa Clara County Planning Office. The GIS data was compiled from various sources. While deemed reliable, the Planning Office assumes no liability for its use. 8/12/2008 1:14 PM S:\GIS\Projects\520-1\Figures\4.13-3.mxd

SAN JOSE INTERNATIONAL AIRPORT SAFETY ZONES FIGURE 4.13-3

Existing Regulations and Programs

Existing policies to address the restrictions of land uses within the ALUCP include:

- Federal Aviation Administration (FAA) FAR Regulations Part 77 [airspace standards for the design and construction of buildings in the vicinity of airports]
- State Aeronautics Act and California Public Utilities Code Sections 21658 and 21659 [regarding obstructions and airport safety].
- City of Santa Clara Zoning Ordinance
- Airport Land Use Compatibility Plan

The City will submit the proposed Draft 2010-2035 General Plan, prior to adoption, to the ALUC for a consistency determination as required by State law. The policies and criteria in the proposed Draft 2010-2035 General Plan are consistent with the final draft Comprehensive Land Use Plan that affects land use within the City. The City's compatibility with the ALUCP will be managed consistent with City adopted regulations and policies, in combination with State regulations.

Impact 4.13-4: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could occur in localized areas with identified building height and safety restrictions for Mineta San Jose International Airport. Implementation of proposed policies and existing regulations and programs would substantially reduce aviation hazards to people and property. **(Less Than Significant Impact)**

4.13.4.4 Emergency Response Plan

The City of Santa Clara Hazardous Materials Division responds to emergency calls related to hazardous materials within the City. The City also participates in the ABAG Local Hazards Plan and also has adopted a City of Santa Clara Emergency Plan (2008). The City does not maintain formal evacuation routes, as the most appropriate routes away from an area that may have been affected by a major disaster would be determined by the location and type of incident. It may be necessary to restrict travel on certain roadways within the redevelopment and development areas under the proposed Draft 2010-2035 General Plan to facilitate construction activities such as demolition, material hauling, construction, staging, and modifications to existing infrastructure. Such restrictions could include lane closures, lane narrowing, and detours, which would be temporary but could continue for extended periods of time. Lane restrictions, closures, and/or detours could cause an increase in traffic volumes on adjacent roadways, which could affect emergency response routes. Redevelopment and development under the proposed Draft 2010-2035 General Plan will include preparation a Traffic Management Plan, which would demonstrate where construction activities could interfere with emergency response routes and other traffic. With this information, the City is able to adequately plan around potential blocks in emergency right-of-way and would have the right to deny or halt construction activities if they would result in an adverse impact on public safety.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes policies that address maintaining public safety in the event of an emergency. Proposed General Plan Policies and Actions that provide program-level mitigation for maintaining public safety in the event of an emergency within the City are identified below.

Prerequisite Policies	
5.1.1-P5	Prior to the implementation of Phase II and of Phase III of the General Plan, evaluate appropriate measures to maintain emergency response time standards.
Roadway Network Policies	
5.8.2-P12	Coordinate transportation planning with emergency service providers to ensure continued emergency service operations and services.
Public Service Policies	
5.9.3-P5	Maintain emergency traffic preemption controls for traffic signals.
5.9.3-P6	Maintain the fire and hazardous materials mutual aid agreements with surrounding jurisdictions.
Safety Policies	
5.10.5-P1	Use the City's Local Hazard Mitigation Plan as the guide for emergency preparedness in Santa Clara.
5.10.5-P4	Identify appropriate evacuation routes so people can be efficiently evacuated in the event of a natural disaster.

Existing Regulations and Programs

Existing policies to address the maintenance of public safety in the event of an emergency include:

- City of Santa Clara Zoning Ordinance
- Santa Clara Fire Department Hazardous Materials Division
- ABAG Local Hazards Plan
- City of Santa Clara Emergency Plan (2008)

Impact 4.13-5: New development and redevelopment allowed under the proposed Draft 2010-2035 General Plan could impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Implementation of proposed policies and existing regulations and programs would substantially reduce the impairment of emergency response plans (**Less Than Significant Impact**)

4.13.5 Mitigation and Avoidance Measures for Hazardous Materials and Hazards Impacts

No mitigation measures are required.

4.13.6 Significance Conclusion

Implementation of the proposed Draft 2010-2035 General Plan in accordance with proposed policies and actions would result in less than significant hazard impacts and no mitigation measures are required.

4.14 NOISE

This section summarizes information on the noise environment in the Santa Clara planning area and provides an evaluation of the effects of the proposed Draft 2010-2035 General Plan on noise.

Information in this section was derived from the *Noise Report*, prepared by Illingworth & Rodkin, Inc., in April 2010 (Appendix J).

4.14.1 Introduction

4.14.1.1 Fundamental Concepts of Environmental Acoustics

Noise is defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1 of *Appendix J, Noise Report*.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels (in dBA) are shown in Table 4.14-1 below.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance of the receptor from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

TABLE 4.14-1 TYPICAL NOISE LEVELS IN THE ENVIRONMENT

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1,000 feet	110 dBA	Rock band
Gas lawn mower at 3 feet	100 dBA	
Diesel truck at 50 feet at 50 mph	90 dBA	Food blender at 3 feet
Noisy urban area, daytime	80 dBA	Garbage disposal at 3 feet
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
Quiet urban daytime	50 dBA	Large business office
Quiet urban nighttime	40 dBA	Dishwasher in next room
Quiet suburban nighttime		Theater, large conference room
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	
Source: Technical Noise Supplement (TeNS), Caltrans, November 2009.		

Since the sensitivity to noise increases during the evening and at night, mainly because excessive noise interferes with the ability to sleep, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The Day/Night Average Sound Level, Ldn, is essentially the same as CNEL, with the exception that the separate evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

4.14.1.2 Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA Ldn. Typically, the highest steady traffic noise level during the daytime is about equal to the Ldn and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA Ldn with open windows and 65-70 dBA Ldn if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

4.14.1.3 Groundborne Vibration Concepts

Ground vibration consists of rapidly fluctuating motions or waves. Railroad trains within the plan area are potential sources of substantial ground vibration depending on the distance, the type and the speed of trains, and the type of railroad track. People's response to ground vibration has been correlated best with the vibration velocity level. The vibration velocity level is expressed on the decibel scale. The abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold of perception for most humans. Perceptible vibration levels inside residences are attributed to the operation of heating and air conditioning systems, door slams, and foot traffic. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences. Table 4.14-2 identifies some common sources of vibration and the association to human perception or the potential for structural damage.

Table 4.14-3 displays continuous vibration impacts on human annoyance and on buildings. As discussed previously, annoyance is a subjective measure and vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generate the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to

measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

TABLE 4.14-2 TYPICAL LEVELS OF GROUNDBORNE VIBRATION

Human/Structural Response	Velocity Level, VdB	Typical Events (50-foot setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Difficulty with tasks such as reading a video or computer screen	90	Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, occasional events	70	Commuter rail, typical Bus or truck over bump or on rough roads Rapid transit, typical
Residential annoyance, frequent events	60	Buses, trucks and heavy street traffic
Approximate human threshold of perception to vibration	50	Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration		

Source: Transit Noise and Vibration Impact Assessment, US Department of Transportation Federal Transit Administration, May 2006.

TABLE 4.14-3 REACTION OF PEOPLE AND DAMAGE TO BUILDINGS FOR CONTINUOUS VIBRATION LEVELS

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception: Possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause "architectural" damage and possibly minor structural damage.

Source: Transportation Related Earthborne Vibrations. Caltrans, Technical Advisory, TAV-02-01-R9601, February 2002.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.2 to 0.3 mm/sec (0.008 to 0.012 inches/sec), PPV. Human perception to vibration

varies with the individual and is a function of the physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building.

Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high State of disrepair and the construction activity occurs immediately adjacent to the structure.

Railroad operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

4.14.2 Existing Setting

The primary sources of noise within Santa Clara are major freeways and arterial roadways traversing the City (Highway 101, Central Expressway, Lawrence Expressway, San Tomas Expressway, and Montague Expressway), Union Pacific rail lines, and aircraft overflights from the Norman Y. Mineta San José International Airport. Industrial facilities also include some sources of noise that could be annoying to nearby noise-sensitive uses.

To assist in the General Plan update process, ambient noise monitoring was conducted at a variety of land uses near major noise sources in the City. Short-term noise measurements were taken adjacent to major roadways and industrial noise sources. Additional long-term (24-hour) noise measurements were taken near rail activity where other major noise sources could be excluded to the extent possible. Monitored noise data were used to identify noise levels at varying distances from the City's major noise sources, and SoundPLAN V7.0, a three-dimensional ray-tracing computer program, was used to generate noise contours along major roadways and railroads throughout the City.

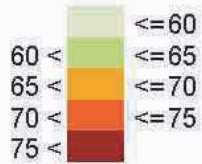
Existing traffic and rail noise levels were modeled and adjusted based on monitoring data, and are shown in Figure 4.14-1. Calculations assumed an acoustically "hard" ground surface, and do not take into account shielding by terrain or structures.

4.14.2.1 Vehicular Traffic

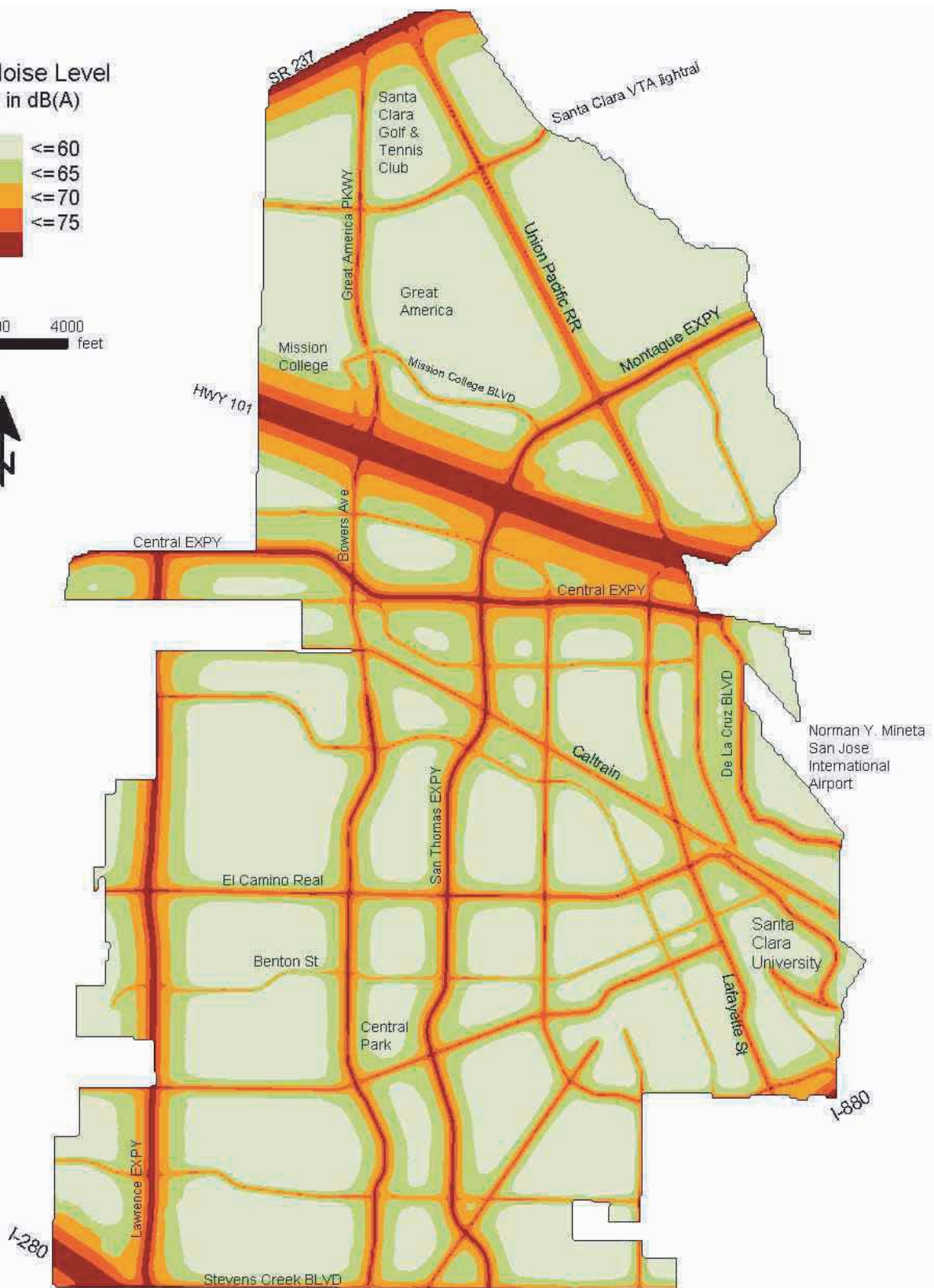
Roadway traffic is one of the more prevalent sources of noise in the City. Traffic noise at a particular location depends on the traffic volume on the roadway, the average vehicle speed, the distance between the receptor and the roadway, the presence of intervening barriers or structures between source and receiver, and the ratio of trucks (particularly heavy trucks) and buses to automobiles.

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Traffic Noise Level
CNEL, in dB(A)



0 1000 2000 4000 feet



Calculations assume an acoustically hard soil ground surface and do not take shielding from barriers or structures into account. Railroad noise levels are substantially higher near at-grade crossings as a result of train whistles.

EXISTING GROUND TRANSPORTATION NOISE CONTOURS
FOR MAJOR ROADWAYS AND RAILROADS IN SANTA CLARA

FIGURE 4.14-1

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A number of factors control how traffic noise levels affect nearby sensitive land uses. These include roadway elevation compared to the surrounding grade; any structures or terrain intervening between the roadway and the sensitive receptors; and the distance between the roadway and receptors. Because of the high traffic volumes on freeways and expressways in the area, Highway 101, Central Expressway, Lawrence Expressway, San Tomas Expressway, and Montague Expressway constitute the loudest roadway noise sources in the City. Industrial and commercial uses are located primarily along Highway 101 and Central Expressway; however, there are residences located along the Lawrence, San Tomas, and Montague Expressways.

Existing traffic noise levels on the Santa Clara roadway network were calculated in SoundPLAN V7.0 using the embedded FHWA Transportation Noise Model TNM software based on ADT traffic volumes counts and speeds supplied by Fehr & Peers Transportation Consultants. Table 4.14-4 summarizes existing CNEL traffic noise levels along major City roadways at a distance of 100 feet from the centerline of the roadway.

4.14.2.2 Railroad Noise

Trains can generate high, relatively brief, intermittent noise events, particularly near at-grade crossings. Train noise is an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Two Union Pacific Transportation Company rail lines run through the City of Santa Clara. The San Francisco line transects the City in a generally east-west direction and forms a boundary between residential uses to the south and industrial uses to the north. The other rail line parallels Lafayette Street from the northern portion of the City where it crosses under the Bayshore Freeway (Highway 101). Operations on these lines include both passenger and freight service, with spur tracks serving industrial areas. Based on noise monitoring of existing operations, the San Francisco rail line generates a noise level of about 65 dBA CNEL at a distance of 100 feet and the Lafayette Street rail line generates a noise level of about 64 dBA CNEL at a distance of 100 feet.

4.14.2.3 Airport Noise

The Norman Y. Mineta San José International Airport is located to the east of, and adjacent to, the City of Santa Clara. Noise generated by aircraft using the airport affects Santa Clara residents in the area north of the Bayshore Freeway. The City of Santa Clara uses the official Santa Clara County Airport Land Use Compatibility (ALUC) Referral Boundary (65 dB CNEL) Map as a basis for referring proposed projects to the Airport Land Use Commission. Based on the noise monitoring survey performed for the Santa Clara General Plan Opportunities and Challenges document, individual aircraft generate maximum noise levels in the range of 75 to 78 dBA L_{max} as they fly over residences in the area north of the Bayshore Freeway.

TABLE 4.14-4 EXISTING AND FUTURE CNEL NOISE LEVELS ALONG SANTA CLARA ROADWAYS

Roadway	Segment		Speed (mph)	CNEL at 100 ft. (dBA)		CNEL Increase (dBA)
	From	To		2009 Existing	2035 Build	
Lawrence Expwy	Pruneridge Ave	Stevens Creek Blvd	50	75	76	1
	Cabrillo Ave	El Camino Real	50	75	76	1
	Kifer Rd	Monroe St	50	75	76	1
	U.S. 101	Central Expwy	50	74	75	1
Kiely Ave	Pruneridge Ave	Stevens Creek Blvd	40	70	71	1
Bowers Ave	Monroe St	El Camino Real	40	70	70	0
	Hudson St	Monroe St	40	66	66	0
	U.S. 101	Scott Blvd	40	72	73	1
Great America Pkwy	Tasman Dr	Mission College Blvd	40	68	69	1
	SR 237	Tasman Dr	40	66	67	1
Saratoga Ave	Stevens Creek Blvd	San Thomas Expwy	40	67	69	2
San Thomas Expwy	Saratoga Ave	Stevens Creek Blvd	45	71	72	1
	Cabrillo Ave	El Camino Real	45	72	73	1
	U.S. 101	Scott Blvd	45	76	77	1
Montague Expwy	Lafayette St	Mission College Blvd	45	73	75	2
	N. 1 st St	De La Cruz Blvd	45	72	74	2
Winchester Blvd	Pruneridge Blvd	Stevens Creek Blvd	35	65	66	1
	Newhall St	Pruneridge Blvd	35	62	64	2
Bascom Ave	Newhall St	I-880	40	73	74	1
Stevens Creek Blvd	Lawrence Expwy	Kiely Blvd	40	66	67	1
Pruneridge Ave	Pomeroy Ave	Kiely Blvd	35	62	64	2
Homestead Rd	Pomeroy Ave	Kiely Blvd	40	66	67	1
The Alameda	El Camino Real	I-880	35	65	66	1
El Camino Real	Lawrence Expwy	Calabazas Blvd	40	67	67	0
	Scott Blvd	Lincoln St	40	68	68	0
Coleman Ave	De La Cruz Blvd	City Limits	40	67	69	2
Central Expwy	Lawrence Expwy	Bowers Ave	50	73	75	2
De La Cruz Blvd	U.S. 101	Central Expwy	40	62	64	2
	Montague Expwy	Trimble Rd	40	76	78	2
Trimble Road	City Limits	De La Cruz Blvd	35	68	71	3
Monroe St	Scott Blvd	El Camino Real	30	62	63	1
	Lawrence Expwy	Calabazas Blvd	35	67	68	1
Scott Blvd	City Limits	Bowers Ave	35	63	64	1
	Monroe St	El Camino Real	40	62	63	1
Wildwood Ave	City Limits	Mercado Driveway	40	76	76	0
Tasman Dr	City Limits	Great America Pkwy	40	64	67	3
	Great America Pkwy	Lafayette St	40	65	67	2
	Lafayette St	City Limits	40	65	68	3
Lafayette St	Reed St	El Camino Real	40	67	68	1
	Tasman Dr	Montague Expwy	40	65	67	2
	U.S. 101	Central Expwy	40	71	73	2
Kifer Rd	Lawrence Expwy	Bowers Ave	35	64	65	1

Roadway	Segment		Speed (mph)	CNEL at 100 ft. (dBA)		CNEL Increase (dBA)
	From	To		2009 Existing	2035 Build	
Benton St	Pomeroy Ave	Kiely Blvd	30	59	61	2
Park Ave	Bellomy St	I-880	30	59	60	1
US 101	De La Cruz Blvd	Montague Expwy	65	84	84	0
	Great America Pkwy	Lawrence Expwy	65	84	84	0
	Montague Expwy	Great America Pkwy	65	84	84	0
SR 237	N. 1 st St	Great America Pkwy	55	81	82	1
	Great America Pkwy	Lawrence Expwy	55	81	82	1
I-280	Lawrence Expwy	Wolfe Rd	65	84	84	0
I-880	Bascom Ave	The Alameda	65	83	83	0

* Substantial noise level increases (i.e., 3 dBA CNEL or greater) are indicated in bold font; such increases in proximity to existing noise-sensitive uses are shaded.

4.14.2.4 Industrial Noise

Industrial and manufacturing facilities within the City involve mobile and stationary noise sources that may affect adjacent noise-sensitive land uses. Industrial processes such as fabricating and grinding can create relatively high levels of noise within their immediate operating environments. In addition, truck movements and deliveries generate noise along the local roadway network. The scope and degree of noise generated by industrial uses depends on various factors, including the type of industrial activity, hours of operation, and the site's location relative to other land uses. One of Santa Clara's General Plan goals has been the separation of industrial and residential land uses. However, existing residential land uses are immediately adjacent to industrial land uses in the southwest corner of the City around Vallco Park and north of Bayshore around the De La Cruz industrial area. During the noise monitoring survey performed for the General Plan update industrial uses in the De La Cruz area were documented as generating a constant noise level of about 45 dBA at adjacent residences. Vallco Park uses were not audible at the noise monitoring location. However, noisy activities could take place at other times of the day or year that were not accounted for in the noise monitoring survey.

4.14.2.5 Construction Noise

Construction can be another significant, although typically short-term, source of noise. Construction is typically of most concern when it takes place near sensitive land uses, or occurs at night or in early morning hours. The dominant construction equipment noise source is usually diesel engines of heavy construction equipment. In a few cases, however, such as impact pile driving or pavement breaking, "process noise" related to specific activities dominates. Stationary equipment operates in one location for one or more days at a time, with either a continuous operation (e.g., pumps, generators, compressors) or a variable operation (pile drivers, pavement breakers). Mobile equipment moves around the construction site with power applied in cyclic fashion (e.g., bulldozers, loaders) or to and from the site (i.e., trucks). Construction-related noise levels generally fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of barriers between the noise source and receptor.

4.14.2.6 Other Noise Sources

Other existing sources of noise include noise from commercial, recreational, and school uses. Noise sources associated with commercial uses include mechanical equipment, as well as activities associated with parking lots, loading docks, and drive-thrus. Mechanical equipment is used extensively in buildings to provide heating, cooling, air circulation and water supply. Mechanical equipment that produces noise includes motors, pumps and fans. Although noise levels are generally low from these sources at nearby properties, such sources may operate continuously and may include pure tones that make them audible and sources of annoyance at a substantial distance.

Noise generating activities associated with schools include children at play, bells, and public address systems. High schools may include stadiums for day and evening athletic events, and public address/loudspeaker systems.

Intermittent or temporary noise sources include portable power equipment such as leaf blowers, lawn mowers, portable generators, electric saws and drills, and other similar equipment. Although these noise sources are typically short in duration, they are often loud and can be major sources of annoyance.

4.14.3 Regulatory Framework

This section describes the relevant guidelines, policies, and standards established by Federal and State Agencies and the City of Santa Clara.

4.14.3.1 Federal

Department of Housing and Urban Development (HUD)

New residential construction qualifying for HUD financing proposed in high noise areas (exceeding 65 dBA Ldn) must incorporate noise attenuation features to maintain acceptable interior noise levels. A goal of 45 dBA Ldn is set forth for interior noise levels and attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction any building will provide sufficient attenuation to achieve an interior level of 45 dBA Ldn or less if the exterior level is 65 dBA Ldn or less. Approvals in a "normally unacceptable noise zone" (exceeding 65 decibels but not exceeding 75 decibels) require a minimum of 5 decibels additional noise attenuation for buildings if the day-night average is greater than 65 decibels but does not exceed 70 decibels, or minimum of 10 decibels of additional noise attenuation if the day-night average is greater than 70 decibels but does not exceed 75 decibels.

Federal Transit Administration

This analysis uses the Federal Transit Administration's (FTA) vibration impact criteria for sensitive buildings, residences, and institutional land uses near railroads. The thresholds for residences and buildings where people normally sleep (e.g., nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day).

4.14.3.2 State

California Government Code Section 65302(f)

California Government Code Section 65302(f) requires that all General Plans include a Noise Element to address noise problems in the community. The State Office of Planning and Research (OPR) had established guidelines for the content of the Noise Element. A noise element shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control and shall analyze and quantify, to the extent practicable, current and projected noise levels for all of the following sources:

- Highways and freeways.
- Primary arterials and major local streets.
- Passenger and freight on-line railroad operations and ground rapid transit systems.
- Commercial, general aviation, heliport, and military airport operations, aircraft flyovers, jet engine tests stands and all other ground facilities and maintenance functions related to airport operation.
- Local industrial plants, including, but not limited to, railroad classification yards.
- Other stationary ground noise sources identified by local agencies as contributing to the community noise environment.

California Building Code - Noise Insulation Standards

The 2007 California Building Code establishes minimum noise insulation performance standards for hotels, motels, dormitories, apartment houses, and dwellings other than detached single family dwellings Chapter 12, Appendix Section 1207.11.2. The noise limit is a maximum interior noise level of 45 dBA Ldn. Where exterior noise levels exceed 60 dBA Ldn, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

Division of Aeronautics Noise Standards

Title 21 of the California Code of Regulations sets forth the State's airport noise standards. In the findings described in Section 5006, the standard States the following: "A level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction." Based on this finding, the airport noise standard as defined in Section 5012 is set at a CNEL of 65 dB.

California Department of Transportation – Construction Vibration

There are no State plans, policies, regulations or laws related to groundborne vibration that are applicable to the General Plan. However, California Department of Transportation (Caltrans) has adopted guidance for construction vibrations and this guidance is used in this analysis to address construction vibrations. Caltrans uses a vibration limit of 12.7 mm/sec (0.5 inches/sec), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of 5 mm/sec (0.2 inches/sec), PPV has been used for buildings that are found to be structurally sound but structural damage is a major concern. For historic

buildings or buildings that are documented to be structurally weakened, a conservative limit of 2 mm/sec (0.08 inches/sec), PPV is often used to provide the highest level of protection.

4.14.3.3 Local

City of Santa Clara General Plan

The Environmental Quality Element of the City of Santa Clara's current General Plan establishes policies to control noise within the community. Applicable policies presented in the General Plan are as follows:

- Protect to the extent possible existing developed areas of the City of Santa Clara from unacceptable noise levels.
- Reduce transportation generated noise within the City of Santa Clara where feasible.
- Comply with City, State and Federal guidelines for the compatibility of land uses with their noise environments, except where the City determines that there are prevailing circumstances of a unique or special nature.
- Within the San Jose Airport noise impact area, maintain residential neighborhoods as designated in the Land Use Element. Permit appropriate residential development in these neighborhoods subject to noise insulation.
- Reduce noise from fixed sources, construction, and special events.
- Prohibit any significant new residential development in the adverse noise environment created by the San Jose International Airport (65 CNEL and over).
- Maintain the separation between industrial and residential uses to reduce noise conflict.
- Establish a noise and land use compatibility chart as the basic City noise standard (see Table 4.14-5).

TABLE 4.14-5 LAND USE COMPATIBILITY FOR COMMON NOISE ENVIRONMENT									
Noise and Land Use Compatibility (Ldn & CNEL)									
Land Use	50	55	60	65	70	75	80	85	
Residential									
Educational									
Recreational									
Commercial									
Industrial									
Open Space									
	Compatible								
	Require Design and insulation to reduce noise levels								
	Incompatible. Avoid land use except when entirely indoors and an interior noise level of 45 Ldn can be maintained								

Santa Clara City Code

Chapter 9.10 of the City Code establishes noise level performance standards for fixed sources of noise. Noise levels generated by a fixed source of noise, defined as, "...a stationary device which creates sound or vibration while operating in a fixed or stationary position, including, but not limited to, residential, agricultural, industrial, and commercial machinery and equipment,

pumps, fans, compressors, air conditioners, and refrigeration equipment...” would be limited at the property line of adjacent land uses as indicated in Table 4.14-6. The City Code does not regulate mobile sources of noise. A mobile noise source is defined as, “...any noise, sound, or vibration source other than a fixed noise, sound, or vibration source, including but not limited to vehicles, hand-held power equipment, and portable music amplifiers...”. The noise limits are not applicable to emergency work, licensed outdoor events, City-owned electric, water, and sewer utility system facilities, construction activities occurring within allowable hours, permitted fireworks displays, or permitted heliports. Construction activities are not permitted within 300 feet of residentially zoned property except within the hours of 7:00 am and 6:00 pm on weekdays and 9:00 am and 6:00 pm on Saturdays. No construction is permitted on Sundays or holidays. For the purposes of new development, the General Plan criteria illustrated on Table 4.14.5 provides the basis for determination of noise impacts.

4.14.4 Thresholds of Significance

For the purposes of this EIR, a noise impact is significant if implementation of the proposed Draft 2010-2035 General Plan would:

- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

4.14.5 Impacts and Mitigation Measures

4.14.5.1 Existing and future noise levels at the locations of proposed noise sensitive developments allowed for under the 2010-2035 General Plan could exceed the City’s noise thresholds of acceptability.

Under the proposed Draft 2010-2035 General Plan, new noise-sensitive development is planned in noisy areas such as along major transportation corridors (e.g., El Camino Real, Stevens Creek Boulevard, US 101), railroads, and in the vicinity of Norman Y. Mineta San José International Airport. Single family residential development, schools, libraries, hospitals, convalescent homes, and places of worship are considered the most noise-sensitive land uses. Residential development is sensitive to community noise both outdoors and indoors during the daytime and nighttime. High-density/mixed use residential, commercial, and industrial development is less noise sensitive because uses are primarily indoors, and noise levels are mitigated with building

design and construction. Redevelopment and development associated with the proposed Draft 2010-2035 General Plan would place high-density residential uses adjacent to US 101 in the northern portion of the Central Expressway Future Focus Area.

Noise exposures along many roadways, the railroads, and in the environs of Mineta San José International Airport could exceed “normally acceptable” levels for these uses. New housing within the area between Scott Boulevard and US 101 could be exposed to noise levels that may be incompatible with residential uses. Therefore, acoustical analyses should be conducted to design mitigation that would reduce noise as low as practical in exterior use areas that maintain interior noise levels at the “normally acceptable” level (45 dBA CNEL).

A computer model was used to calculate ground transportation noise levels throughout Santa Clara. The model, SoundPLAN V7.0, is a three-dimensional ray-tracing program, which takes into account the source of noise, the frequency spectra, the topography of the area, and shielding provided by buildings. Existing and future traffic noise levels throughout Santa Clara were modeled to determine the noise level contours along major roadways and the railroads. Figure 4.14-2 displays the projected 2035 ground transportation noise contours in Santa Clara for major roadways and the railroad.

Where exterior noise levels exceed 60 dBA CNEL in new residential development areas, interior levels may exceed 45 dBA CNEL. Interior noise levels are about 15 dBA lower than exterior levels within residential units with the windows partially open and approximately 20-25 decibels lower than exterior noise levels with the windows closed, assuming typical California construction methods. Where exterior day-night average noise levels are 60 to 70 dBA CNEL, interior noise levels can typically be maintained below 45 dBA CNEL with the incorporation of an adequate forced air mechanical ventilation system in the residential units to allow residents the option of controlling noise by keeping the windows closed. In areas exceeding 70 dBA CNEL, like the redevelopment area in the Central Expressway Focus Area adjacent to US 10, the inclusion of windows and doors with high Sound Transmission Class (STC) ratings, and the incorporation of forced-air mechanical ventilation systems, may be necessary to meet 45 dBA CNEL.

The implementation of the proposed Draft 2010-2035 General Plan Noise Policies would require that the General Plan compatibility standards be used to determine where noise levels in the community are acceptable or unacceptable, and require noise attenuation measures to achieve the “normally acceptable” noise level standards. Noise analyses of new development proposals are required when appropriate in order to maintain consistency with the interior and exterior noise standards of the Noise Element. The interior noise limits set forth in the State Building Code are extended to all sensitive land uses in Santa Clara.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated noise policies that address noise levels. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for noise within the City are identified below.

Noise Policies	
5.10.6-P1	Review all land use and development proposals for consistency with the General Plan compatibility standards and acceptable noise exposure levels defined on Table 5.10-2.

5.10.6-P2	Incorporate noise attenuation measures for all projects that have noise exposure levels greater than General Plan “normally acceptable” levels, as defined on Table 5.10-2.
5.10.6-P3	New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation and shielding), building treatments (mechanical ventilation system, sound-rated windows, solid core doors and baffling) and structural measures (earthen berms and sound walls).
5.10.6-P6	Discourage noise sensitive uses, such as residences, hospitals, schools, libraries and rest homes, from areas with high noise levels, and discourage high noise generating uses from areas adjacent to sensitive uses.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible noise impacts include:

- California Building Code
- Santa Clara City Code Chapter 9.10

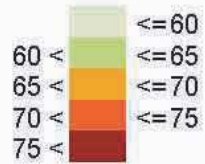
Impact 4.14-1: New development and redevelopment under the proposed Draft 2010-2035 General Plan could exceed the City’s noise thresholds of acceptability. Implementation of the existing programs and proposed goals and policies of the Noise Element reduce potential impacts associated with noise and land use compatibility. **(Less Than Significant Impact)**

4.14.5.2 New noise-producing land uses could generate noise levels that would exceed the City’s noise thresholds of acceptability or City Code noise limits at sensitive receivers in the vicinity.

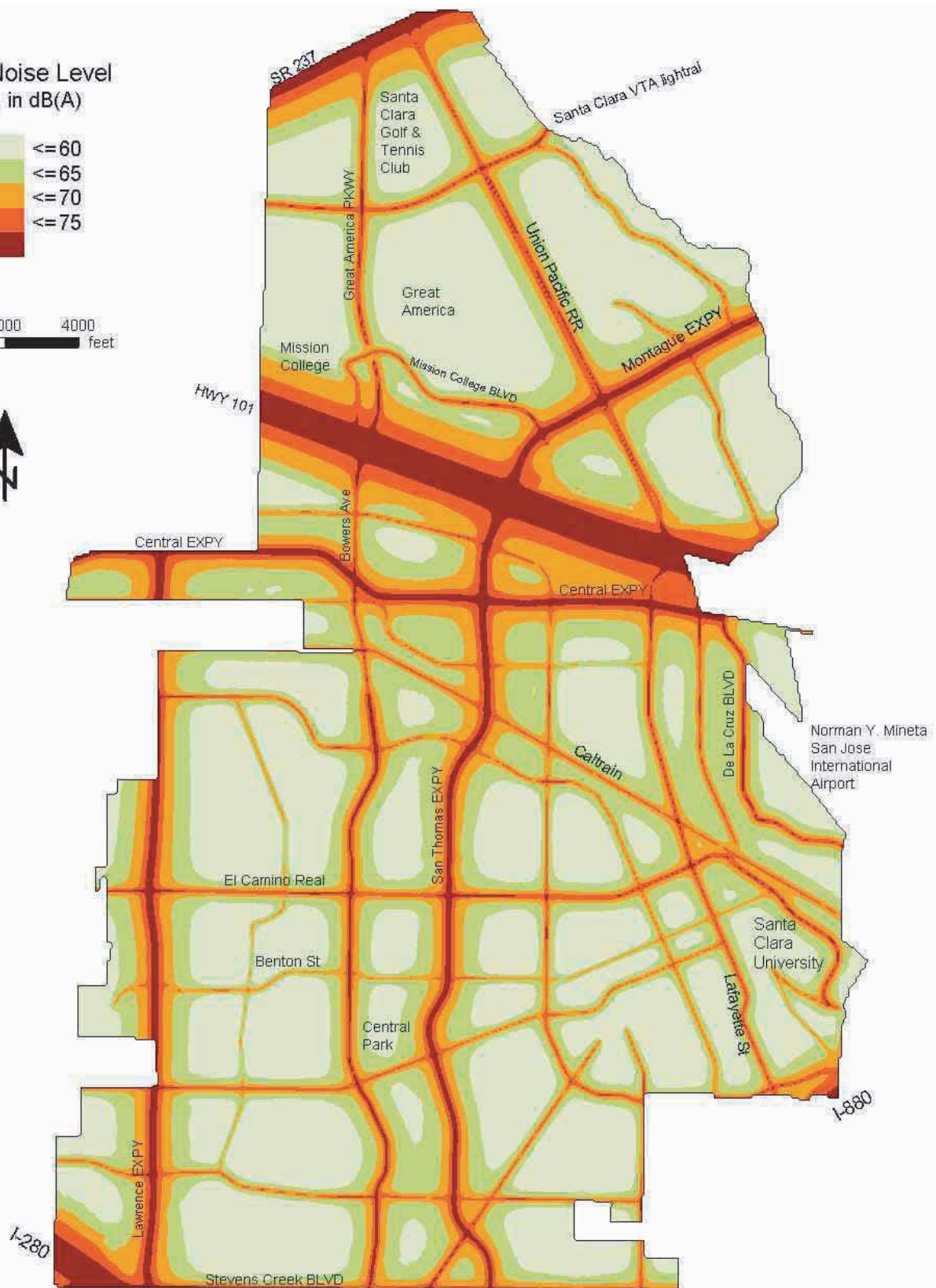
Mixed use development projects often include residential uses located above or in proximity to commercial uses, and are located in areas served by rail and bus transit along major roadways and the railroad corridor. Under the proposed Draft 2010-2035 General Plan, mixed use residential development is proposed in the downtown and along major roadways and the Caltrain rail (future High Speed Rail) corridor. Also, new research and development, office, commercial, retail, or other noise-generating uses developed under the proposed Draft 2010-2035 General Plan could substantially increase noise levels at noise-sensitive land uses or could expose receivers to noise levels that exceed the City Code noise limits.

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Traffic Noise Level
CNEL, in dB(A)



0 1000 2000 4000 feet



Calculations assume an acoustically hard soil ground surface and do not take shielding from barriers or structures into account. Railroad noise levels are substantially higher near at-grade crossings as a result of train whistles.

YEAR 2035 GROUND TRANSPORTATION NOISE CONTOURS
FOR MAJOR ROADWAYS AND RAILROADS

FIGURE 4.14-2

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Future operations at existing and proposed noise-producing land uses are dependent on many variables and information is unavailable to allow meaningful projections of noise. Noise conflicts may be caused by noise sources such as outdoor dining areas or bars, mechanical equipment, outdoor maintenance areas, truck loading docks and delivery activities, public address systems, and parking lots (e.g., opening and closing of vehicle doors, people talking, car alarms). Development under the proposed Draft 2010-2035 General Plan would introduce new noise-generating sources adjacent to existing noise-sensitive areas and new noise-sensitive uses adjacent to existing noise sources.

The proposed Draft 2010-2035 General Plan includes policies that require that all land uses and development proposals, including noise-generators, be reviewed to ensure consistency with the General Plan compatibility standards. The proposed policies also encourage noise control at the source through site design measures and operational noise controls and discourages locating incompatible land uses near to one another. New noise-generating projects developed under the proposed project would be subject to the City's City Code, ensuring that existing residences and other noise-sensitive land uses would not be exposed to excessive noise.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated noise policies that address noise levels. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for noise within the City are identified below.

Noise Policies	
5.10.6-P1	Review all land use and development proposals for consistency with the General Plan compatibility standards and acceptable noise exposure levels defined on Table 4.14-5.
5.10.6-P4	Encourage the control of noise at the source through site design, building design, landscaping, hours of operation and other techniques.
5.10.6-P5	Require noise-generating uses near residential neighborhoods to include solid walls and heavy landscaping along common property lines, and to place compressors and mechanical equipment in sound-proof enclosures.
5.10.6-P6	Discourage noise sensitive uses, such as residences, hospitals, schools, libraries and rest homes, from areas with high noise levels, and discourage high noise generating uses from areas adjacent to sensitive uses.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible noise impacts include:

- California Building Code
- Santa Clara City Code Chapter 9.10

Impact 4.14-2: New development and redevelopment under the proposed Draft 2010-2035 General Plan could exceed the City's noise thresholds of acceptability or City Code noise limits at sensitive receivers in the vicinity. Implementation of the existing programs and proposed goals and policies of the Noise Element reduce potential impacts associated with noise and land use compatibility. (**Less Than Significant Impact**)

4.14.5.3 Ground vibration levels resulting from railroad train operations at the setback of proposed residences could expose people to excessive groundborne vibration.

The proposed Draft 2010-2035 General Plan could result in the construction of sensitive land uses within portions of the plan area where known vibration sources exist or are currently planned, primarily along the existing active railroad corridors and the VTA light rail. Ground vibration from conventional railroad trains, high-speed trains, and light-rail trains passing through the plan area could exceed the guidelines set forth by the FTA if new buildings are constructed within approximately 100 feet of the tracks. Under the proposed Draft 2010-2035 General Plan, high-density residential, regional mixed use, community mixed use, and office/R&D projects are envisioned along the Caltrain corridor (also future High Speed Rail Corridor) and high-density residential and low intensity office/R&D are proposed along the Union Pacific Railroad that parallels Lafayette Street. The proposed locations of buildings and their specific sensitivity to vibration are not known at this time, however, such uses located in these areas could be exposed to ground vibration levels exceeding FTA guidelines.

Policies in the proposed Draft 2010-2035 General Plan States that the City will encourage transit agencies to develop and apply technologies to reduce vibration impacts from railroads and the light rail. The proposed Draft 2010-2035 General Plan should also include vibration standards to ensure compatible developments along these corridors with respect to potential vibration levels generated by railroad trains, light rail, and the future High Speed Rail system.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated noise policies that address ground vibration levels. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for ground vibration within the City are identified below.

Noise Policies	
5.10.6-P10	Encourage transit agencies to develop and apply noise reduction technologies for their vehicles to reduce the noise and vibration impacts of Caltrain, Bay Area Rapid Transit, future High Speed Rail, light rail and bus traffic.
Rail and Freight Policies	
5.8.7-P7	Maintain consistency with the Federal Transportation Authority vibration standards for land uses in proximity to railroads, light rail and future high speed rail.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible noise impacts include:

- California Building Code
- Santa Clara City Code Chapter 9.10

Impact 4.14-3: New development and redevelopment under the proposed Draft 2010-2035 General Plan could expose people to excessive ground vibration levels exceeding FTA guidelines. **(Significant Impact)**

The development of Mitigation Measure 4.14-1, as further described below, would be required in addition to the proposed Draft 2010-2035 General Plan policies to ensure that program-level vibration impacts are reduced to a less than significant level. In addition, the City will require

that individual development projects undergo project-specific environmental review. If project-level significant vibration impacts are identified, specific mitigation measures will be required under CEQA.

4.14.5.4 The anticipated increase in vehicular traffic would result in increased traffic noise, and in some cases, the increases would be substantial.

Increases in traffic noise gradually degrade the environment in areas sensitive to noise. According to CEQA, “a substantial increase” is necessary to cause a significant environmental impact. An increase of 3 dBA CNEL is considered substantial in noise sensitive areas along roadways analyzed in Santa Clara. Vehicular traffic on roadways in the City would increase as development occurs and the City’s population increases. These projected increases in traffic would occur over time and would increase noise levels throughout the community. Traffic noise levels throughout Santa Clara were projected for General Plan build-out in the year 2035 to determine how changes in vehicular traffic volumes would affect traffic noise levels. The relative increases in traffic noise along affected roadway segments are shown in Table 4.14-4.

Noise impacts resulting from buildout of the proposed Draft 2010-2035 General Plan are assessed by comparing projected noise levels to existing conditions. Noise levels along SR 237, Highway 101, InterState 280, and InterState 880 are expected to increase 0-1 dBA CNEL. A review of the data presented in Table 4.14-4 shows that noise levels would increase by less than 3 dBA CNEL between 2009 and 2035 with buildout of the General Plan except along certain segments of Trimble Road and Tasman Drive.

Existing land uses located adjacent to the segment of Trimble Road between De La Cruz Boulevard and the easternmost City limits are commercial and are not sensitive to increased traffic noise along Trimble Road. The noise environment in this area results from a combination of traffic noise along Trimble Road, traffic noise along Highway 101, and aircraft operations associated with Norman Y. Mineta San José International Airport. The overall increase in noise levels in the area would actually be less than 3 dBA CNEL as a result of the influence of Highway 101 traffic and aircraft in the area. Furthermore, there are no noise sensitive receptors known to exist along Trimble Road where this noise level increase is anticipated, so the increase in noise would not cause a significant impact in this area.

There are two segments of Tasman Drive where noise levels are expected to increase by 3 dBA CNEL. The first segment of Tasman Drive, from the westernmost City limits to Great America Parkway, is expected to experience a substantial increase in noise, however, the area is developed with commercial land uses that are not sensitive to increased traffic noise. Along Tasman Drive between Lafayette Street and the easternmost City limits, residential land uses are located south of the roadway. The traffic noise level increase would be substantial as noise levels are expected to increase by 3 dBA CNEL.

Policies within the proposed Draft 2010-2035 General Plan State that the City will develop and include noise reduction measures with improvements and extensions of City streets. A combination of mitigation measures such as the repaving of area roadways with a “quiet pavement”, replacement or construction of noise barriers, traffic calming, and sound insulation could be implemented Citywide to reduce the effects of increased traffic noise generated by development under the proposed Draft 2010-2035 General Plan.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan includes updated noise policies that address traffic noise. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for traffic noise within the City are identified below.

Noise Policies	
5.10.6-P11	Develop and include noise reduction measures with improvements and extensions of City streets.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible noise impacts include:

- Santa Clara City Code Chapter 9.10

Impact 4.14-4: New development and redevelopment under the proposed Draft 2010-2035 General Plan would result in increased traffic noise, and the increases would be substantial for residential land uses along Tasman Drive between Lafayette Street and the easternmost City limits. **(Significant Impact)**

4.14.5.5 Construction noise would cause a temporary or periodic increase in noise exposure above ambient levels.

The proposed Draft 2010-2035 General Plan would facilitate the construction of new projects within the Focus Areas as well as on numerous properties as identified on General Plan *Figure 2.3-1 Areas of Potential Development*. Residences and businesses located adjacent to proposed development sites would be affected at times by construction noise. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time. For the purposes of this assessment, noise levels exceeding 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} or more at nearby noise-sensitive land uses (e.g., residential land uses) for a period of more than one construction season would be considered significant. Where noise from construction activities exceeds 70 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} or more at sensitive industrial, office, or commercial land uses for a period of more than one construction season, the impact would also be considered significant.

Major noise-generating construction activities associated with new projects would include removal of existing pavement and structures, site grading and excavation, the installation of utilities, the construction of building cores and shells, paving, and landscaping. The highest construction noise levels would be generated during grading and excavation because of the use of heavy equipment, with lower noise levels occurring during building construction activities when activities move indoors and less heavy equipment is required. Construction equipment would typically include, but would not be limited to, earth-moving equipment and trucks, pile driving rigs, mobile cranes, compressors, pumps, generators, paving equipment, and pneumatic,

hydraulic, and electric tools. Table 4.14-7 presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by demolition and construction are about 77 dBA to 89 dBA L_{eq} measured at a distance of 50 feet from the center of a busy construction site. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA L_{max} at a distance of 50 feet. Typical hourly average construction-generated noise levels are about 81 to 89 dBA L_{eq} measured at a distance of 50 feet from the site during busy construction periods. During each stage of development, there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of the activity. These noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels.

TABLE 4.14-7 TYPICAL RANGES OF NOISE LEVELS AT 50 FEET FROM CONSTRUCTION SITES (DBA L_{eq})

	Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

The City's Noise Ordinance allows construction activities within 300 feet of any residentially zoned properties between the hours of 7:00 A.M. to 6:00 P.M. on weekdays other than holidays, and within the hours of 9:00 A.M. to 6:00 P.M. on any Saturday which is not a holiday. Quantitative noise limits for construction are not established in the ordinance.

Large construction projects facilitated by the proposed Draft 2010-2035 General Plan may result in a substantial temporary noise increase at adjacent noise-sensitive land uses. As a result, noise levels from these projects could exceed 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} or more, and last over one year in duration.

Impact 4.14-5: New development and redevelopment under the proposed Draft 2010-2035 General Plan would cause a temporary or periodic increase in construction noise exposure above ambient levels. **(Significant Impact)**

The development of a Mitigation Measure 4.14-3, as described below, would be required in addition to the proposed Draft 2010-2035 General Plan policies to ensure that program-level construction noise impacts are reduced.

4.14.5.6 Aircraft noise over proposed noise-sensitive land uses would exceed Santa Clara County Airport Land Use Commission (ALUC) noise thresholds, which could expose individuals living and working within the plan area to excessive aircraft noise.

Noise contours indicate general areas of likely community response to noise generated by aircraft activity and serve as the basis for land use compatibility determinations. The Santa Clara County ALUC has jurisdiction over new land uses in the vicinity of airports, and establishes 65 dBA CNEL as the maximum allowable noise level considered compatible with residential uses.

Adopted Land Use Plan

The adopted Land Use Plan includes a noise compatibility chart, which provides a general overview of land uses that are permissible in different noise environments. For example, the chart indicates that residential uses would be allowed within the 60-65 CNEL noise contour, but should be avoided above 65 CNEL unless directly related to airport service. The adopted Land Use Plan policies State that:

“New residential uses within the 65 dBA and 70 dBA CNEL noise contours which can be classified as infill will be considered only if it is demonstrated that such structures can be adequately insulated to control, interior noise, if the Airport Land Use Commission finds that exterior noise will not be intrusive, and if an aviation easement has been willingly granted to the jurisdiction owning the airport.”

The proposed Draft 2010-2035 General Plan would allow new residential development in areas of the City where existing and future aircraft noise levels associated with operations at Norman Y. Mineta San José International Airport would exceed 65 dBA CNEL. The portion of a proposed high density residential development area located northwest of the Great America Parkway/Tasman Drive intersection and the extreme southern portion of the De La Cruz Future Focus Area, near the intersection of De La Cruz Boulevard and Trimble Road falls within the 2010 65 dB CNEL aircraft noise contour. Some of these uses within the extreme southern portion of the De La Cruz Future Focus Area may be incompatible with the ALUC noise policy for land uses in the 65 db CNEL noise contour. There will be additional development on a citywide basis and part of these development areas fall within the 65 db CNEL noise contour.

As part of the Noise Policies of the proposed Draft 2010-2035 General Plan, the land use plan will implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/Research and Development uses compatible with the Airport land use restrictions. The City will also continue to encourage safe and compatible land uses within the Airport noise restriction area and work with the City of San José Airport to implement mitigation from aircraft noise to the fullest extent possible.

Final Draft Comprehensive Land Use Plan

The final draft Comprehensive Land Use Plan States that:

“No residential or transient lodging construction shall be permitted within the 65 dB CNEL contour boundary unless it can be demonstrated that the resulting interior sound levels will be less than 45 dB CNEL and there are no outdoor patios or outdoor activity areas associated with the residential portion of a mixed use residential project or a multi

unit residential project. (Sound wall noise mitigation measures are not effective in reducing noise generated by aircraft flying overhead.)”

The proposed Draft 2010-2035 General Plan would allow new residential development in areas of the City where existing and future aircraft noise levels associated with operations at Norman Y. Mineta San José International Airport would exceed 65 dBA CNEL (Figure 4.14-3). The future 65 dBA CNEL noise contour passes through a portion of the De La Cruz Focus Area located east of De La Cruz Boulevard. The final draft Comprehensive Land Use Plan Guidelines consider such noise levels excessive for new residential development. The proposed 2035 General Plan would also allow low intensity office/R&D in noise environments exceeding 65 dBA CNEL. The final draft Comprehensive Land Use Plan Guidelines cautions against the development of commercial land uses in noise environments ranging from 65 to 75 dBA CNEL, and requires that noise insulation be carefully reviewed to ensure adequate noise reduction in interior spaces.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2010-2035 General Plan Policies would govern new development proposed for areas susceptible to noise associated with Norman Y. Mineta San José International Airport. As part of the prerequisites of the proposed Draft 2010-2035 General Plan and prior to approval of residential development in any Future Focus Area, a comprehensive land use plan will be completed for each Focus Area, which will include specification of location of land uses. Through the planning process for development of the Focus Areas, the City will evaluate options for location of outdoor spaces to minimize any noise effects associated with the proximity of the airport. As part of the Noise Policies of the proposed Draft 2010-2035 General Plan, the land use plan will implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/R&D uses compatible with the Airport land use restrictions. The City will also continue to encourage safe and compatible land uses within the Airport noise restriction area and work with the City of San José Airport to implement mitigation from aircraft noise to the fullest extent possible. The City will require that individual development projects undergo project-specific environmental review. If significant project-level aircraft noise impacts are identified, specific mitigation measures will be required under CEQA.

The proposed Draft 2010-2035 General Plan includes updated noise policies that address airport noise. The proposed Draft 2010-2035 General Plan Policies and Actions that provide program-level mitigation for airport noise within the City are identified below.

Noise Policies	
5.10.6-P1	Review all land use and development proposals for consistency with the General Plan compatibility standards and acceptable noise exposure levels defined on Table 4.14-5.
5.10.6-P2	Incorporate noise attenuation measures for all projects that have noise exposure levels greater than General Plan “normally acceptable” levels, as defined on Table 4.14-5.
5.10.6-P3	New development should include noise control techniques to reduce noise to acceptable levels, including site layout (setbacks, separation and shielding), building treatments (mechanical ventilation system, sound-rated windows, solid core doors and baffling) and structural measures (earthen berms and sound walls).
5.10.6-P6	Discourage noise sensitive uses, such as residences, hospitals, schools, libraries and rest homes, from areas with high noise levels, and discourage high noise generating uses from areas adjacent to sensitive uses.
5.10.6-P7	Implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to

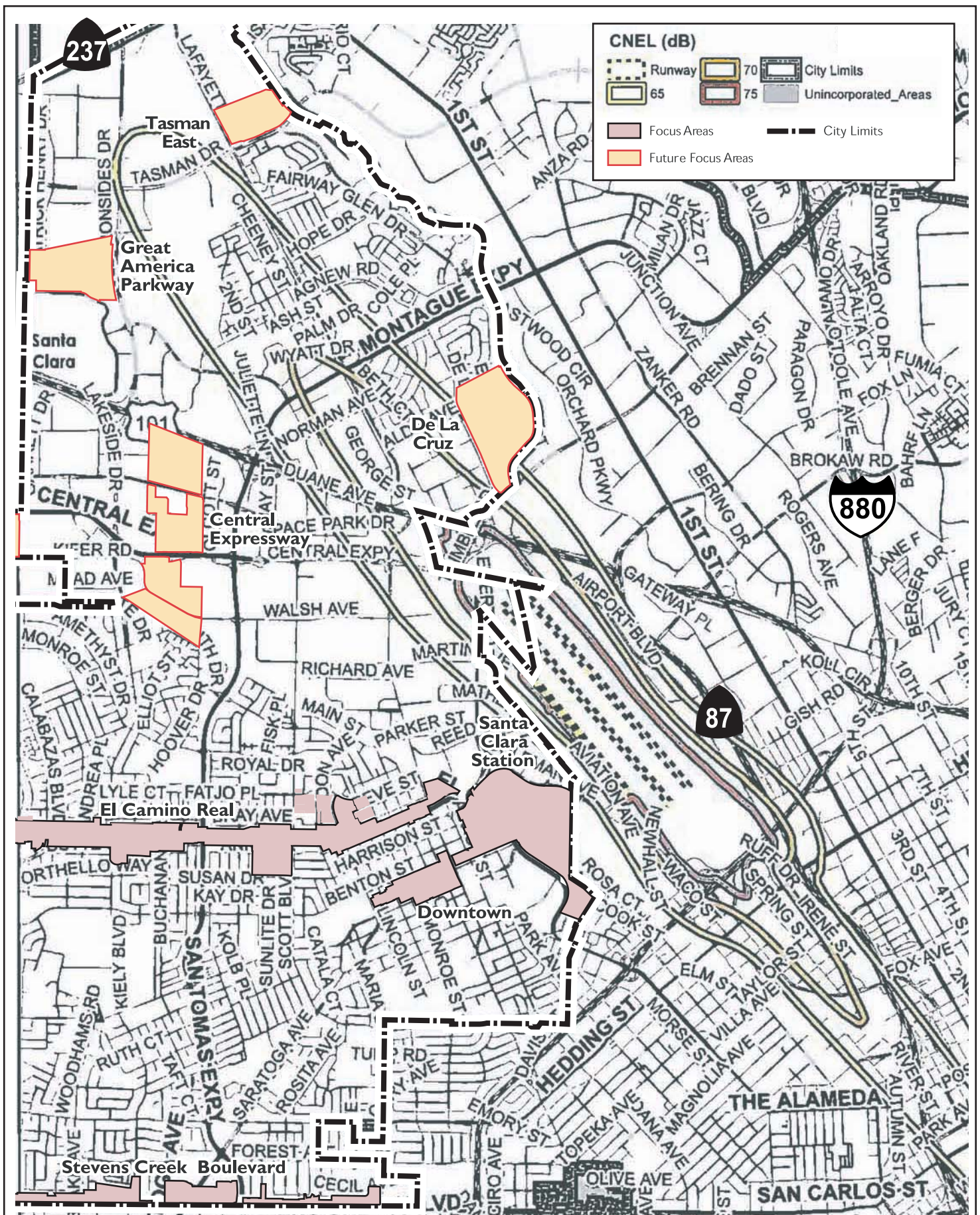
	aircraft noise in order to make Office/Research and Development uses compatible with the Norman Y. Mineta International Airport land use restrictions.
5.10.6-P8	Continue to encourage safe and compatible land uses within the Norman Y. Mineta International Airport Noise Restriction Area.
5.10.6-P9	Work with the City of San José Norman Y. Mineta International Airport to implement mitigation from aircraft noise to the fullest extent possible.

Existing Regulations and Programs

Existing State and local regulations that would reduce or avoid possible noise impacts include:

- Airport Land Use Compatibility Plan
- Santa Clara City Code Chapter 9.10

Impact 4.14-5: New development and redevelopment under the proposed Draft 2010-2035 General Plan would exceed Santa Clara County Airport Land Use Commission (ALUC) noise thresholds, which could expose individuals living and working within the plan area to excessive aircraft noise. Ensuring compliance with the local airport land use plan and the City's acceptable noise level standards and implementation of the policies would effectively reduce potential program-level aircraft noise impacts. **(Less Than Significant Impact)**



SAN JOSE INTERNATIONAL AIRPORT
2022 AIRCRAFT NOISE CONTOURS

FIGURE 4.14-3

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4.14.6 Noise Mitigation and Avoidance Measures for General Plan Impacts

Mitigation 4.14-1: Use the Federal Transit Administration vibration impact criteria, as described above under the Regulatory Setting, to evaluate the land use compatibility of sensitive uses proposed along the railroad/light-rail corridor using the best available information (e.g., High Speed Rail Program EIR) or site-specific measurements and analyses (assuming active railroad operations). Developers of sensitive uses shall demonstrate that potential impacts of existing or potential vibration have been minimized to the maximum feasible extent.

Mitigation 4.14-2: Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along local roadways by 2 to 3 dBA CNEL. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions, and future traffic noise increases could be mitigated to a less than significant level by repaving roadways with “quieter pavements.” To be a permanent mitigation, subsequent repaving would also have to use “quieter” pavements.

Existing residential receivers located along Tasman Drive between Lafayette Street and the easternmost City limits either front the roadway (private outdoor use areas are located behind the homes) or have outdoor use areas adjacent to the roadway that may or may not be shielded by fences or noise barriers. In situations where private outdoor use areas are located adjacent to the roadway, new or larger noise barriers could be constructed to provide the additional necessary noise attenuation in private use areas. Typically, increasing the height of an existing barrier results in approximately one dBA of attenuation per one foot of additional barrier height. The design of such noise barriers would require additional analysis. Traffic calming could also be implemented to reduce noise levels expected with the project. Each five mph reduction in average speed provides approximately one dBA of noise reduction on an average basis ($L_{eq}/CNEL$). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Residences could also be provided with sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA CNEL as a result of the projected increase in traffic noise. Treatments to the homes may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.

Each of these mitigation measures involves other non-acoustical considerations that could affect the City’s ability to implement them. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. Therefore, these measures may not ultimately be feasible. Given their implementation cannot be guaranteed, this impact is considered significant and unavoidable.

Mitigation Measure 4.14-3: Develop construction noise control plans that consider the following available controls in order to reduce construction noise levels as low as practical:

- Utilize ‘quiet’ models of air compressors and other stationary noise sources where technology exists;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Notify all adjacent land uses of the construction schedule in writing;
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

The potential short-term noise impacts associated with construction facilitated by the proposed Draft 2010-2035 General Plan would be mitigated by the adoption and implementation of the above policy that requires reasonable noise reduction measures be incorporated into the construction plan and implemented during all phases of construction activity to minimize the exposure of neighboring properties.

4.14.7 Significance Conclusion

New development and redevelopment under the proposed Draft 2010-2035 General Plan would cause a temporary or periodic increase in construction noise exposure above ambient levels, and could expose people to excessive ground vibration levels exceeding FTA guidelines. New development and redevelopment under the proposed Draft 2010-2035 General Plan would result in increased traffic noise, and in some cases, the increases would be substantial. Implementation of proposed policies and mitigation measures would reduce construction noise and ground vibration impacts to less than significant levels, however, the mitigation measures identified for roadway noise may not ultimately be feasible. Given their implementation cannot be guaranteed, this impact is considered significant and unavoidable.

4.15 ENERGY

This section was prepared pursuant to CEQA Guidelines Section 15126.4 (a)(1)(c) and Appendix F which requires that EIRs shall include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

4.15.1 Introduction

Energy consumption is analyzed in an EIR because of the environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emission of pollutants during both the production and consumption phases.

Energy usage is typically quantified using the British Thermal Unit (BTU). The BTU is the amount of energy that is required to raise the temperature of one pound of water by one degree Fahrenheit. As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWhr) of electricity are 123,000 BTUs, 1,000 BTUs, and 3,400 BTUs, respectively. Natural gas usage is expressed in therms. A therm is equal to 100,000 BTU.

Energy conservation is embodied in many federal, state and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Administrative Code sets energy standards for buildings, rebates/tax credits are provided for installation of renewable energy systems, and the Flex Your Power program promotes conservation in multiple areas. The City of Santa Clara currently has a policy (Public Facilities & Services Element Policy No. 7) in place that promotes energy conservation through the continued development of an innovative energy program to develop cost effective new power sources and encourage conservation.

4.15.2 Existing Setting

4.15.2.1 *Electrical Power*

The City owns and operates the municipal electric utility Silicon Valley Power (SVP), which serves more than 50,000 residential, commercial, industrial, and municipal customers within the City (Appendix K). SVP owns, operates, and participates in more than 510 megawatts of electric generating resources supplemented by purchase agreements for 261 MW of additional capacity. 228 MW or 44 percent of SVP-owned generating capacity comes from renewable energy sources, either geothermal, hydroelectric, or wind. SVP also has an ownership interest in transmission facilities. Table 4.6-1 is an overview of SVP's power generation resources.

TABLE 4.15-1: SILICON VALLEY POWER GENERATION RESOURCES

Generation Resource	Type	Total Capacity	Percent Capacity to SVP	Capacity to SVP
Donald Van Raesfeld Power Plant, City of Santa Clara	Natural Gas	147 MW	100%	147 MW
Cogeneration Plant No. 1, City of Santa Clara	Natural Gas	7 MW	100%	7 MW
Gianera Generating Station, City of Santa Clara	Natural Gas	49.5 MW	100%	49.5 MW
M-S-R Bighorn Wind Project, Bickleton, WA	Wind	200 MW	52.5% Purchase Agreement	105 MW
NCPA Geothermal Project, Sonoma/Lake County Border, CA	Geothermal	238 MW	44%	105 MW
Stoney Creek Hydroelectric System, Stoney Creek River System, CA	Hydroelectric	11.6 MW	100%	11.6 MW
Grizzly Hydroelectric Project, Plumas County, CA	Hydroelectric	20 MW	100%	20 MW
Altamont Wind Power Project, Alameda County, CA	Wind	20 MW	100% Purchase Agreement	20 MW
NCPA Combustion Turbine Project No. 1; Roseville, Alameda and Lodi, CA	Natural Gas	124.5 MW	25%	31 MW
Western Area Power Administration (WAPA), Sacramento, CA	Hydroelectric	N/A	Purchase Agreement	136 MW
M-S-R/San Juan, Four Corners, NM	Coal	507 MW	10%	51 MW
NCPA Calaveras Hydroelectric Project, Stanislaus River Basin, CA	Hydroelectric	247 MW	37%	91.4 MW
Ameresco – Forward, Manteca, CA ¹	Landfill Gas (LFG)	4.2 MW	100% Purchase Agreement	4.2 MW
Ameresco – Santa Clara, City of Santa Clara	Landfill Gas (LFG)	0.8 MW	100% Purchase Agreement	0.8 MW
G2 Energy, Wheatland, CA	Landfill Gas (LFG)	1.3 MW	100% Purchase Agreement	1.3 MW
Lodi Energy Center, Lodi, CA	Natural Gas	280 MW	26%	72 MW
M-S-R Bighorn Wind Project II, Bickleton, WA ¹	Wind	50 MW	35% Purchase Agreement	17.5 MW
Total Owned or Purchased				870.3 MW
Notes:				
1 – This project is still under consideration and not yet producing power, but the contracts are finalized or bonds are already sold.				

Source: Dyett & Bhatia et al. 2008.

SVP maintains over 288 miles of underground and 162 miles of overhead distribution lines and has 51,000 electric meters in its service area.¹³ Electricity is provided from various sources, including natural gas, wind and hydroelectric generation resources in California and other western states. Through the Santa Clara Green Power Program, a voluntary renewable energy program from SVP, residents and businesses can choose renewable energy for 100 percent of their energy usage. In 2009, 30 percent of the electricity provided by SVP was renewable; by 2020, SVP aims to have a third of the electricity it provides from renewable sources.

In 2009, Santa Clara electricity consumption across all sectors was approximately 2.8 million megawatt hours¹⁴⁹. The consumption by sector is depicted in Table 4.15-2 below.

TABLE 4.15-2 SANTA CLARA ELECTRICITY CONSUMPTION

2009	Accounts	Kilowatt-hours	Percent of Total
Residential	43,746	248,795,698	8.9%
Commercial	5,917	83,786,880	3.0%
Industrial	1,893	2,445,774,215	87.3%
Municipal	174	21,647,300	0.8%
Unmetered	385	N/A	N/A
<hr/>			
Total	52,115	2,800,004,093	100.0%

4.15.2.2 Natural Gas

The City's natural gas is provided by Pacific Gas & Electric Company (PG&E) via natural gas lines stretching from Oregon to Arizona. Gas is delivered from basins in California, Canada and the Western United States by transmission mains.

In 2008, Santa Clara natural gas consumption across all sectors was approximately 80 million therms¹⁵⁰. The consumption by sector is depicted in Table 4.15-3 below.

TABLE 4.15-3 SANTA CLARA NATURAL GAS CONSUMPTION

2009	Therms	Percent of Total
Residential	15,784,310	19.6%
Commercial	56,006,789	69.7%
Industrial	8,165,444	10.1%
Municipal	467,547	0.6%
Total	80,424,090	100.0%

4.15.2.3 Motor Vehicle Fuel Consumption

According to the traffic modeling conducted for the Draft 2010-2035 General Plan, the City's 2008 base case daily vehicle miles traveled (VMT) is 3,188,015. Assuming an average fuel economy of 20mpg, approximately 159,400 gallons of gasoline are consumed daily for Santa Clara automobile travel.

¹⁴⁹ Larry Owens, Manager Customer Services, Silicon Valley Power, personal communication.

¹⁵⁰ PG&E

4.15.3 Regulatory Environment

4.15.3.1 Federal

The National Energy Policy

The National Energy Policy, established in 2001 by the National Energy Policy Development Group (NEPDG), is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future (NEPDG 2001). Key issues addressed by the energy policy are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

4.15.3.2 State

California 2008 Energy Action Plan Update

The 2008 update to the 2005 *Energy Action Plan II* is the State's principal energy planning and policy document (State of California 2008). The updated document examines the state's ongoing actions in the context of global climate change. The 2005 *Energy Action Plan II* continues the goals of the original 2003 *Energy Action Plan*, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the first-priority actions to address California's increasing energy demands are energy efficiency and demand response (i.e., reduction of customer energy usage during peak periods to address system reliability and support the best use of energy infrastructure). Additional priorities include the use of renewable sources of power and distributed generation (i.e., the use of relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy the increasing energy demand and transmission capacity needs, clean and efficient fossil-fired generation is supported.

The *California 2008 Energy Action Plan Update* examines policy changes in the areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change.

Renewable Portfolio Standard Program

In 2002, with the adoption of SB 1078, California established its Renewable Portfolio Standard (RPS) program, with the goal of increasing the percentage of renewable energy in the State's electricity mix by at least 1%–20% per year by 2017. The adoption of SB 107 subsequently accelerated that goal to 2010 for electrical corporations, and the California Energy Commission (CEC) further recommended that the State increase the target for all retail electricity sellers to 33% by 2020.

The Renewable Portfolio Standard was developed to provide a flexible, market-driven policy to ensure that the public benefits of wind, solar, biomass, and geothermal energy continue to be realized as electricity markets become more competitive. The policy aims to ensure that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or county, putting the energy industry on a path toward increasing sustainability.

The CPUC and CEC are jointly responsible for implementing the RPS program. Legislation establishing the RPS created no obligation for local land authorities. However, in order to meet the requirements of this legislation, additional renewable energy projects and transmission line connections will be necessary and local land use planning processes can facilitate or hinder the ability of energy providers to establish these additional facilities. Further, to meet greenhouse gas (GHG) reduction goals of a particular jurisdiction, the ability of energy providers to increase their renewable energy portfolios is directly related to the ability of the jurisdiction to reduce GHGs associated with electricity consumption.

Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (CCR), were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The current version of the standards was adopted on April 23, 2008 and took effect August 1, 2009. Compliance with these standards is mandatory at the time new building permits are issued by City and County governments.

California Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code (CALGreen) that establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. Local communities may institute more stringent versions of the code if they choose. The code will go into effect as part of a local jurisdiction's building code on January 1, 2011.

California Senate Bill 1037 and Assembly Bill 2021

In 2003, the CPUC and CEC adopted an Energy Action Plan that prioritized resources for meeting California's future energy needs, with energy efficiency identified as the highest priority. Since then, this policy goal has been codified as SB 1037 and AB 2021 into statute through legislation that requires electric utilities to meet their resource needs first with energy efficiency.^[2] This policy also set new targets for statewide annual energy demand reductions of 32,000 GWh and 800 million therms from business-as-usual^[3]—enough to power more than 5 million homes or replace the need to build about ten new large power plants (500 MW each). These targets represent a higher goal than existing efficiency targets established by CPUC for

² SB 1037 (Kehoe, Chapter 366, Statutes of 2005) and AB 2021 (Levine, Chapter 734, Statutes of 2006) directed electricity corporations subject to CPUC's authority and publicly-owned electricity utilities to first meet their unmet resource needs through all available energy efficiency and demand response resources that are cost-effective, reliable, and feasible.

³ The savings targeted here are additional to savings currently assumed to be incorporated in CEC's 2007 demand forecasts. However, CEC has initiated a public process to better determine the quantity of energy savings from standards, utility programs, and market effects that are embedded in the baseline demand forecast.

investor-owned utilities due to the inclusion of innovative strategies. Achieving the State's energy efficiency targets will require coordinated efforts from the State, the federal government, energy companies, and customers. The California Air Resources Board (ARB) will work with CEC and CPUC to facilitate these partnerships. California's energy efficiency programs for buildings and appliances have generated more than \$50 billion in savings over the past three decades.

California Assembly Bill 32—Global Warming Solutions Act of 2006

Assembly Bill 32 (AB32) requires California to reduce its total GHG emissions to 1990 levels by 2020, which represents about a 30% decrease from current levels. In September 2007, ARB approved a list of nine Discrete Early Actions to reduce GHG emissions. CARB's Discrete Early Actions include maximizing energy efficient building and appliance standards, pursuing additional efficiency efforts, including new technologies and new policy and implementation mechanisms, and pursuing comparable investment in energy efficiency by all retail providers of electricity in California (including both investor-owned and publicly-owned utilities).

4.15.3.3 Local

City of Santa Clara Silicon Valley Power Environmental Stewardship and Renewable Portfolio Standard Policy

It is the policy of the City of Santa Clara to support the purchase and delivery of renewable energy to all customers in Santa Clara as a part of its business plan. Renewable energy shall be included in the utility portfolio of energy provided to customers. These resources shall be cost-effective, reliable, clean, and part of the ongoing energy purchase operations that reduces risk through a diversity of resources. Public Utilities Code Section 399.15 requires electric utilities to maintain a minimum of 20 percent of their energy from Eligible Renewable Resources by 2017 with one percent annual increases until that requirement is reached. The 2017 target was subsequently advanced to 2010 via Senate Bill 107 passed in 2006. Current proposed legislation would increase the 20 percent minimum to 33 percent by 2020.

SVP has exceeded California's 20 percent target for the past 20 years. More than 28 percent of SVP electricity is currently derived from Eligible Renewable Resources, as defined by Section 387 (which excludes large hydropower facilities). When large hydropower facilities are included, over 50 percent of SVP resources are derived from renewable resources.

It is the intent of the City of Santa Clara to continue to support the acquisition and/or ownership of renewable resources, work diligently to increase the amount of renewable power in our portfolio, and set yearly goals and milestones to increase their use. The goal and milestones under this policy statement are as follows:

Santa Clara's resource portfolio used to supply its retail electricity customers should contain:

- at least 33 percent Eligible Renewable Resources in the year 2020, with milestones of:
 - at least 20 percent Eligible Renewable Resources through 2013,
 - 24 percent Eligible Renewable Resources from 2014-2016, and

- 28 percent Eligible Renewable Resources from 2017-2019.

Customers also are given the opportunity to participate directly in programs that increase their individual use of renewable energy. Programs that support the retail installation of renewable energy resources, such as the Neighborhood Solar Program or rebates for the installation of Solar Electric generation systems, are available to customers through the Public Benefits Program.

4.15.4 Thresholds of Significance

Implementation of the proposed Draft 20102-0235 General Plan would have a potentially significant impact if it would:

- Result in the inefficient, wasteful and/or unnecessary use of energy; or
- Require construction of additional energy infrastructure facilities, the construction or operation of which would cause significant environmental effects.

4.15.5 Impacts and Mitigation Measures

Although the City is largely built-out, and future growth will be accommodated almost entirely through infill development, the General Plan will nonetheless consume additional energy. Multiple aspects of the General Plan have energy implications, including land use, housing, transportation and water usage.

Given current usage rates per residential unit and per square foot for the various non-residential land use types (commercial, industrial, public/quasi-public) planned under the Draft 2010-2035 General Plan, electric energy usage is forecast to increase to 4.0 MWh and natural gas usage to increase to 130,000,000 therms in 2035¹⁵¹. The City has some control over the production and supply of energy resources through its ownership and operation of Silicon Valley Power. Natural gas is anticipated to continue to be provided by PG&E through 2035. It is not anticipated that either SVP or PG&E will need to construct new energy facilities to accommodate increased demands associated with new growth under the Draft 2010-2035 General Plan.

The Draft 2010-2035 General Plan is forecast to result in roughly 3.740 million daily vehicle miles traveled. Assuming an average fuel economy of 35 mpg in 2035, approximately 106,800 gallons of gasoline would be consumed daily for Santa Clara automobile travel. As discussed in Section 4.12 *Transportation*, VMT per service population is forecast to decline by 15 percent under the Draft 2010-2035 General Plan compared to existing City travel patterns. In addition, a shift in travel mode share is predicted as alternative transportation options (public transit, biking, and walking) become more viable and convenient through implementation of the General Plan's mix of new land uses.

In addition, the General Plan includes policies to address energy consumption through a mix of land uses and alternate transportation options which support an increase in the efficient movement of people and goods. Through the implementation of sustainably-oriented goals and policies (General Plan Appendix 8.13), Santa Clara can also positively affect energy supply and

¹⁵¹ Sierra Research, *Technical Report Greenhouse Gas Inventories, City of Santa Clara*, June 2010. (Appendix L)

consumption by encouraging sound investments and behaviors that promote the use and expansion of renewable energy resources.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

Goals and policies throughout the Plan encourage reduced energy use. The proposed Draft 2010-2035 General Plan includes updated energy conservation policies that seek to conserve energy and generate energy using renewable sources. Proposed General Plan Policies that provide program-level mitigation for energy impacts are identified below.

Energy Conservation Policies	
5.10.3-P1	Promote the use of renewable energy resources, conservation and recycling programs.
5.10.3-P2	Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.
5.10.3-P3	Reduce energy consumption through sustainable construction practices, materials and recycling.
5.10.3-P4	Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.
5.10.3-P5	Encourage installation of solar energy collection through solar hot water heaters and photovoltaic arrays.
5.10.3-P6	Provide incentives for LEED certified, or equivalent development.
5.10.3-P7	Incorporate criteria for sustainable building and solar access into the City's ordinances and regulations.
5.10.3-P8	Maintain the City's level of service for high quality utilities and telecommunications infrastructure.
5.10.3-P9	Continue innovative energy programs to develop cost effective alternative power sources and encourage conservation.
5.10.3-P10	Work with Silicon Valley Power to implement adequate energy distribution facilities to meet the demand generated by new development.
5.10.3-P11	Work with the City of San Francisco to explore opportunities to share the Hetch-Hetchy right-of-way for electrical facilities.
5.10.3-P12	Work with Pacific Gas and Electric to ensure an adequate supply of natural gas to meet the demand generated by new development.
5.10.3-P13	Explore opportunities for alternative energy "fueling stations" and promote participation in shuttle services that use new technology vehicles to reduce greenhouse gas emissions

Conclusion

While the substantial new residential, commercial, and industrial development allowed under the proposed Draft 2010-2035 General Plan will result in increased overall consumption of energy compared to existing levels, the new development would not consume energy in a manner that is wasteful, inefficient, or unnecessary. Policies in the General Plan will serve to reduce growth in energy consumption to the extent feasible. New construction will be required to meet Title 24 building energy efficiency standards, including the new CALGreen requirements. In addition, the Climate Action Plan (discussed in Section 4.16 *Climate Change*) can be expected to focus on efforts to increase energy conservation and efficiency as a means of reducing greenhouse gas emissions. Based on the above discussion, the Draft 2010-2035 General Plan would not result in significant energy impacts. **(Less Than Significant Impact)**

4.16 CLIMATE CHANGE

This report is based in part on quantitative modeling of future greenhouse gas (GHG) emissions completed by Sierra Research, Inc. (see Technical Appendix L entitled *Technical Report Greenhouse Gas Inventories, City of Santa Clara*, dated September 2010).

4.16.1 Introduction

This section discusses the underlying causes behind climate change, federal and state governmental programs and regulations aimed at limiting the magnitude of climate change, forecasts the City's future GHG emissions within the context of California's climate change goals, and identifies strategies and measures the City could undertake to limit its contribution to climate change. Climate change impacts to the City of Santa Clara, both its built and natural environment, are discussed in each relevant section throughout this EIR, i.e. effects of warming temperatures on smog formation in Section 4.10 *Air Quality*, climate change implications for long-term water supplies in Section 4.7 *Public Utilities*, and increased risk of flooding due to climate change in Section 4.4 *Hydrology*.

4.16.2 Existing Setting

4.16.2.1 Climate Science Overview

Unlike emissions of criteria and toxic air pollutants (previously described in Section 4.10 *Air Quality*), which have local or regional impacts, emissions of GHGs have a broader, global impact. Global warming is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds.

The primary GHGs of concern are summarized in Table 4.16-1.

These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space, a process known as the 'greenhouse effect.' Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate. According to the Intergovernmental Panel in Climate Change (IPCC), it is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities.

The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005¹⁵². Previous scientific assessments assumed that limiting global temperature rise to 2-3°C above pre-industrial levels would require stabilizing greenhouse gas concentrations in the range of 450-550 parts per million (ppm) of carbon dioxide-equivalent (CO₂e).

Now the science indicates that a temperature rise of 2°C would not prevent dangerous interference with the climate system. Recent scientific assessments suggest that global temperature rise should be

¹⁵² IPCC. *Fourth Assessment Report: Climate Change 2007*. Available at http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html.

kept below 2°C by stabilizing greenhouse gas concentrations below 350 ppm CO₂e, a significant reduction from the current level of 385 ppm CO₂e.¹⁵³

TABLE 4.16-1 EXAMPLES OF GREENHOUSE GASES

GAS SOURCES

Carbon dioxide (CO ₂)	Fossil fuel combustion in stationary and point sources; emission sources includes burning of oil, coal, gas.
Methane (CH ₄)	Incomplete combustion in forest fires, landfills, and leaks in natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, and certain industrial processes.
Nitrous oxide (N ₂ O)	Fossil fuel combustion in stationary and point sources; other emission sources include agricultural soil management, animal manure management, sewage treatment, adipic acid production, and nitric acid production.
Chlorofluorocarbon (CFC), and Hydro-chlorofluorocarbon (HCFC)	Agents used in production of foam insulation; other sources include air conditioners, refrigerators, and solvents in cleaners.
Sulfur hexafluoride (SF ₆)	Electric insulation in high voltage equipment that transmits and distributes electricity, including circuit breakers, gas-insulated substations, and other switchgear used in the transmission system to manage the high voltages carried between generating stations and customer load centers.
Perfluorocarbons (PFC's)	Primary aluminum production and semiconductor manufacturing.

4.16.2.2 California Emissions Inventory

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural sectors. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2002-2004, accounting for 38 percent of total GHG emissions in the state. This sector was followed by the electric power sector including both in-state and out-of-state sources (18 percent) and the industrial sector (21 percent).

California produced 474 million gross metric tons (MMT) of CO₂ equivalent (CO₂e) averaged over the period from 2002-2004. CO₂e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH₄ has the same contribution to the greenhouse effect as approximately 23 tons of CO₂. Therefore, CH₄ is a much more potent GHG than CO₂. Expressing emissions in CO₂e takes the contributions of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.¹⁵⁴

4.16.2.3 Santa Clara 2008 Emissions Inventory

Santa Clara, with a service population of 222,000 (employees + residents) in 2008 is estimated to have generated GHG emissions of approximately 2.064 MMT, for emissions of approximately 9.3 MT CO₂e/SP/yr. The largest emission sector was electric energy consumption (43%) followed by mobile sources including on-road VMT (29%), industrial/commercial combustion processes (14%),

¹⁵³ Hansen, J. et al. "Target Atmospheric CO₂: Where Should Humanity Aim?" Open Atmos. Sci. J., 2008: 217-231.

¹⁵⁴ BAAQMD. *Proposed Thresholds of Significance Report*, May 3, 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Proposed-Guidelines.aspx>.

natural gas space heating (11%), and waste management (3%). For a detailed breakdown of emissions by sector, refer to Technical Appendix L.

4.16.2.4 Effects of Climate Change

Among the potential implications of global warming are rising sea levels, and adverse impacts to water supply, water quality, agriculture, forestry, and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Details of these changes in California include¹⁵⁵:

- Mean annual temperature increases from 2 to 6 degree C. California's complex terrain will modulate the temperature gains locally.
- Unknown change to annual precipitation total but an increase in extreme wet and dry conditions is expected. More precipitation will fall as rain than snow in the middle elevations of the mountains.
- Decreased seasonal snowpack accumulation particularly in the northern Sierra (up to 90 percent by 2100) and earlier melt time.
- Less mountain block recharge from snowpack expected with possible implications for long-term support of regional aquifers.
- Annual runoff concentrated more in winter months with more variability and greater extremes.
- Sea level rise up to 55 inches with the potential for higher rises if ice sheets collapse.
- Ecosystem challenges increased due to exacerbation of existing threats from above changes.

4.16.3 Regulatory Environment

4.16.3.1 Federal

The U.S. EPA is the Federal agency responsible for implementing the Clean Air Act (CAA). The U.S. Supreme Court in its 2007 decision in *Massachusetts et al. v. Environmental Protection Agency et al.*, ruled that carbon dioxide (CO₂) is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. Following the court decision, EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions. On December 7, 2009, the EPA Administrator made two distinct findings regarding greenhouse gases under section 202(a) of the CAA:

Endangerment Finding: The EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

¹⁵⁵ California Climate Change Center, *Our changing Climate- Assessing the Risks to California*. 2006. Available at http://www.climatechange.ca.gov/publications/biennial_reports/index.html#2006report.

The final rule was effective January 14, 2010. These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which EPA proposed in a joint proposal including the Department of Transportation's proposed Corporate Average Fuel Economy (CAFE) standards on September 15, 2009.¹⁵⁶

4.16.3.2 State and Regional

California has been on the leading edge of creating legislation to mitigate both GHG emissions and the impacts of climate change. To date, several concrete steps have been taken to reduce GHG emissions in the state, while specific impact mitigation strategies (i.e., a GHG emissions cap-and-trade program) have been recommended but not fully developed.

Assembly Bill 32

The California Global Warming Solution Act, also known as Assembly Bill 32 (AB 32), was signed into law by Governor Schwarzenegger in 2006. AB 32 requires the California Air Resources Board (CARB) to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008. *(Done)*
- Adopt mandatory reporting rules for significant sources of GHG by January 1, 2009. *(Done)*
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions. *(Done)*
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in GHG, including provisions for using both market mechanisms and alternative compliance mechanisms. *(Pending)*

Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to impacts on California's economy, the environment and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws and ensure that the rules do not disproportionately impact low-income communities.

Climate Change Scoping Plan

In December of 2008, CARB adopted its Climate Change Scoping Plan (Scoping Plan), which is the State's comprehensive plan to achieve GHG reductions in California. The Scoping Plan has a range of GHG reduction actions (see Table 4.16-5) which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system California will implement to achieve a reduction of 169 MMT CO₂e emissions, or approximately 28 percent from the state's projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario, so that the state can return to 1990 emission levels, as required by AB 32.

¹⁵⁶ US EPA website, accessed May 2010. Available at <http://www.epa.gov/climatechange/endangerment.html>.

Executive Order S-3-05

Governor Arnold Schwarzenegger issued Executive Order S-3-05 (EO S-3-05) in 2005 establishing the following near-term, mid-term, and long-term GHG emission reduction targets for California:

- -by 2010, reduce GHG emissions to 2000 levels;
- -by 2020, reduce GHG emissions to 1990 levels;
- -by 2050, reduce GHG emissions to 80 percent below 1990 levels.

The long-term 2050 target represents the level scientists believe is necessary to reach atmospheric GHG concentrations (below 350 ppm CO₂e) that will stabilize climate.

Senate Bill 375

Senate Bill 375 (SB 375), signed into law in September 2008, builds on AB32 by requiring CARB to develop regional GHG reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035; these regional targets will help achieve the goals of AB 32 and the Scoping Plan through changed land use patterns and improved transportation systems. Subsequently, metropolitan planning organizations (for the Bay Area, the Metropolitan Transportation Commission in partnership with the Association of Bay Area Governments) will be required to create so-called ‘sustainable community strategies’ to meet the target emissions reductions as part of the Regional Transportation Plan for that region.

Santa Clara’s 2035 General Plan has a direct relationship to SB 375 in that the City’s future mix and distribution of land uses will influence vehicle miles traveled (VMT) within and to/from the City. Passenger vehicles are the largest single source of GHG emissions in California, accounting for 30 percent of the state’s total. Reducing GHG from passenger vehicles relies upon a ‘three-legged stool’ of strategies: driving less, using less fuel per mile, and using fuel with a lower carbon-intensity. The City can only directly influence one ‘leg’ of the stool – VMT due to land use patterns. The other two ‘legs’ (vehicle fuel efficiency standards and the carbon-intensity of fuels) are the purview of state and/or federal agencies.

No later than September 30, 2010, the State Air Resources Board is required to provide each affected region, including the Bay Area, with greenhouse gas emission reduction targets for the automobile and light truck sector for 2020 and 2035, respectively. Once the regional target is provided, the MTC in partnership with ABAG will develop a Sustainable Community Strategy to achieve the Bay Area’s regional GHG reduction target, a process expected to continue through early 2013. Given this timing, it is not currently possible to evaluate the effectiveness of Santa Clara’s General Plan in terms of achieving its share of the as-yet-to-be-determined passenger vehicle-related GHG emissions reductions required of the Bay Area region’s future sustainable community strategy. However, as discussed in the *Transportation* section of this EIR, future travel modeling results indicate that the General Plan’s land use mix and distribution are relatively ‘carbon-efficient’ in that vehicle trips and VMT per ‘service population’ decrease in 2020 and 2035 compared to the City’s existing conditions.

4.16.4 Thresholds of Significance

The proposed General Plan would be considered to result in a significant climate change impact if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Applying the above general significance criteria quantitatively according to BAAQMD guidance, the General Plan would result in a cumulatively considerable contribution of greenhouse gases leading to global climate change if:

- 2020 Mid-term Target. GHG emissions in 2020 would exceed 6.6 MT CO₂e/SP/yr (residents + employees), thereby exceeding the average carbon-efficiency necessary to achieve AB 32 emissions levels.
- 2035 Long-term Target. GHG emissions in 2035 would exceed 3.3 MT CO₂e/SP/yr (residents + employees), thereby failing to maintain a trajectory to achieve Executive Order S-3-05 emissions levels in 2050.

4.16.5 Methodology

4.16.5.1 Framework for Evaluating Climate Change Impacts

As specifically allowed under recent amendments to the CEQA Guidelines¹⁵⁷, the City of Santa Clara has chosen to rely upon a quantitative GHG emissions threshold of significance established by BAAQMD for evaluating ‘Plan-level’ or comprehensive long-term planning initiatives such as a General Plan or Specific Plan. BAAQMD has also adopted separate ‘Project-level’ quantitative significance thresholds for ‘near-term’ construction projects that are applicable to a housing development or office project. The following discussion is based on BAAQMD’s ‘Plan-level’ GHG significance thresholds.

A GHG-efficiency metric (e.g., emissions per unit) enables comparison of a proposed General Plan to its alternatives and to determine if the proposed General Plan meets statewide emission reduction goals. The ‘service population’ (SP) approach considers efficiency in terms of the GHG emissions compared to the sum of the number of jobs and the number of residents at a point in time. The SP metric also allows comparison of the GHG efficiency of General Plan alternatives that vary residential and non-residential development totals.

Table 4.16-2 presents the City’s projected service population (jobs + residents) in 2020 and 2035.

TABLE 4.16-2 PROJECTED SANTA CLARA SERVICE POPULATION				
		2008	2020	2035
Existing City		222,000	~	~
General Plan		~	260,000	308,000

¹⁵⁷ **CEQA Guidelines Section §15064.7** – A lead agency may use thresholds by other agencies or experts, supported by substantial evidence.

4.16.5.2 Evaluating 2020 GHG Emissions

A SP-based GHG efficiency metric (see Table 4.16-3 below) was derived by BAAQMD from the emission rates at the comprehensive State level that 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.

TABLE 4.16-3: CALIFORNIA 2020 GHG EMISSIONS, POPULATION PROJECTIONS AND GHG EFFICIENCY THRESHOLDS - ALL INVENTORY SECTORS¹⁵⁸

All Inventory Sectors Greenhouse Gas Emissions Target	metric tons
CO ₂ e	426,500,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO ₂ e)/SP	6.6

If a General Plan demonstrates, through dividing the GHG emissions inventory projections by the amount of future growth that would be accommodated in 2020, that it could meet the GHG efficiency metrics proposed by BAAQMD (6.6 MT CO₂e/SP from all emission sectors), then the amount of GHG emissions associated with the General Plan would be considered less than significant, regardless of its size (and magnitude of GHG emissions). In other words, the General Plan would accommodate growth in a ‘carbon-efficient’ manner that would not hinder the State’s ability to achieve AB 32 goals in 2020, and thus, would be less than significant for GHG emissions and their contribution to climate change.

4.16.5.3 Evaluating 2035 GHG Emissions

In evaluating the Santa Clara General Plan’s future GHG emissions, it is important to note that the City’s planning horizon extends to 2035, surpassing the 2020 timeframe for implementation of AB 32. The goal of achieving 1990 GHG emissions levels by 2020 was established to be an aggressive, but achievable, mid-term target. However, the substantially more aggressive Executive Order S-3-05 goal of achieving in 2050 of GHG emissions *80 percent below* 1990 emissions levels represents the level scientists believe is necessary to reach atmospheric GHG concentrations that will stabilize the climate.¹⁵⁹

According to BAAQMD, the year 2020 should be viewed as a milestone year, and the General Plan in 2035 should not preclude the community from a trajectory toward the long-term 2050 goal. The 2020 timeframe is recommended by BAAQMD as the relevant mid-term threshold. BAAQMD encourages lead agencies to prepare similar projections for 2050 and use the projected 2035 build-out emissions profile of the General Plan as a benchmark to ensure that adoption of the plan would not preclude attainment of 2050 goals.¹⁶⁰

¹⁵⁸ BAAQMD. *Draft CEQA Guidelines*, May 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Proposed-Guidelines.aspx>.

¹⁵⁹ CA ARB. *AB 32 Climate Change Scoping Plan Document*, December 2008. Available at <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.html>.

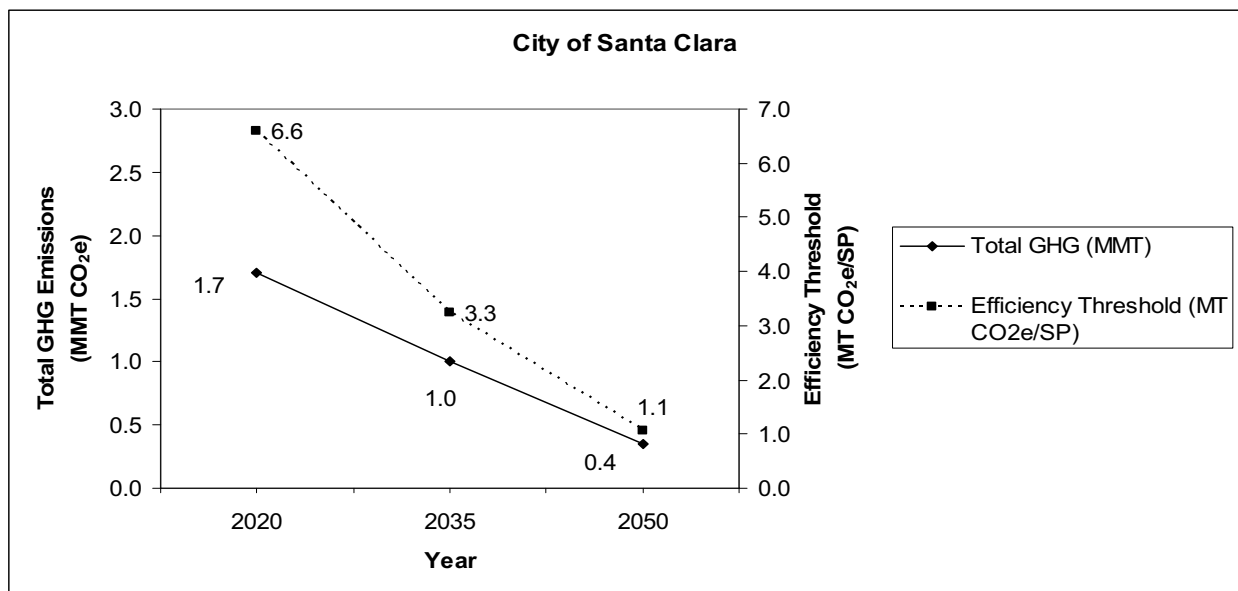
¹⁶⁰ BAAQMD. *Draft CEQA Guidelines*, May 2010. Available at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Proposed-Guidelines.aspx>.

Santa Clara's service population in 2050 can be forecast based on long-term regional growth projections as roughly 333,000.¹⁶¹ Using this long-term growth projection, an estimate can be made of the maximum City's GHG emissions in 2035 necessary to maintain a trajectory toward 2050 goals using a simple straight-line projection between the 2020 and 2050 GHG emissions level goals.

Relating these long-term City service population projections to the GHG efficiency levels established for 2020 and 2050, respectively, Figure 4.16-1 below depicts:

- 1) Citywide total GHG emissions in accordance with 2020 and 2050 goals,
- 2) GHG efficiency per SP in accordance with 2020 and 2050 goals, and
- 3) a straight-line projection of GHG emissions necessary in the General Plan's 2035 horizon year to maintain the trajectory to meet the long-term 2050 goal.

Figure 4.16-1: Future Santa Clara GHG Emissions per 2020 and 2050 goals



This comparison of future City growth and future GHG reduction goals indicates, once the City has achieved AB32 levels in 2020, gross Citywide GHG emissions must continue to decline over the following 30 years to 2050 by *more than a factor of four*, and the carbon efficiency per resident and job must *increase by a factor of six*, to reach the atmospheric GHG levels considered necessary to stabilize climate.

4.16.5.4 Comparing General Plan Emissions to Future Goals

The City has evaluated future GHG emissions in terms of the requirements of AB 32 and EO S-3-05. Accordingly, the GHG emissions attributable to existing and future sources within Santa Clara are being compared to desired future levels of emissions. This is a significant departure from the

¹⁶¹ Note: Projected Year 2050 Santa Clara service population of 333,000 is based on the City's proportional share of Santa Clara County growth projections developed for the Santa Clara Valley HCP for 2060. See 2nd Administrative Draft HCP Appendix J Nitrogen Deposition Contribution, available at http://www.scv-habitatplan.org/www/site/alias_default/documents_draft_hcp_chapters/292/draft_hcp_chapters.aspx.

traditional impacts analysis under CEQA, as recently confirmed by the California Supreme Court in *Communities for a Better Environment v. So. Coast Air Quality*¹⁶². The normal approach is to establish an existing environmental baseline condition and identify the incremental change (i.e. additional vehicle trips, additional pollutant emissions, increased noise, etc.) associated with the project being studied, and measure that change against an established significance threshold. Typically, if the resulting environmental change, determined by comparing the ‘project’ condition against existing conditions, exceeds the applicable threshold, a significant impact is reported. In essence, under CEQA, a project’s impacts are based on the magnitude of change from existing conditions.

However, the Plan-level GHG emissions per service population methodology adopted by BAAQMD for assessing a comprehensive General Plan’s contribution to future climate change involves a fundamentally different analysis in that a Plan’s emissions are compared to desired *future* levels, in 2020 and 2035 (based on a straight-line projection to 2050). In this analytical approach, the City’s *existing* GHG emissions are only of secondary importance. As described above, Santa Clara, with a service population of 222,000 (employees + residents) in 2008 is estimated to have generated GHG emissions of approximately 2.064 MMT, for emissions of approximately 9.3 MT CO₂e/SP/yr. The primary focus is a comparison of the City’s *future* GHG emissions against *future* statewide ‘carbon-efficiency’ targets. The City’s 2008 GHG emissions become relevant in identifying how ‘carbon-efficient’ the City is at the moment, and how much more carbon-efficient the City may need to become over time. Baseline 2008 emissions of 9.3 MT CO₂e/SP need to be reduced 29% to achieve the 2020 statewide efficiency. However, determining the significance of the General Plan’s forecast GHG emissions (whether cumulatively considerable or not), and if so, the magnitude of GHG emissions reduction necessary, depends on the comparison of *future* conditions - 2020 and 2035 GHG emissions under the General Plan and whether they would: 1) exceed AB32; and 2) be on a trajectory to meet EO S-3-05 emissions levels, respectively.

Climate change impact analysis therefore presents an atypical circumstance under CEQA. At the same time the City and the State as a whole anticipate substantial new population and employment growth, statewide aggregate emissions must be reduced substantially from existing levels. Therefore, maintaining current GHG emissions levels (i.e. no net change from existing conditions) is insufficient to meet state mandates, rather the ‘environment’ in terms of atmospheric concentrations of GHG must improve compared to baseline conditions. Normally, a project that maintained the status quo would be judged under CEQA to have no negative impact, however, in this case the expectation is that General Plans and other long-term comprehensive planning efforts will serve to actually improve existing environmental conditions by causing a net reduction in emissions by 2020 and continuing to substantially reduce GHG emissions into the future to meet 2050 goals.

4.16.6 Plan Impacts

GHG emissions everywhere contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single land use project, even at the scale of a comprehensive General Plan Update guiding development for the next 25 years, could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in Santa Clara, Santa Clara County, across California, the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts. Therefore, the

¹⁶² Published 2010 decision available at <http://www.courtinfo.ca.gov/cgi-bin/opinions.cgi?Courts=S>.

following analysis focuses on whether the City’s forecast GHG emissions represent a cumulatively considerable contribution to climate change or whether the City’s future land use mix and form will be consistent with statewide efforts to curb GHG emissions and avoid the worst anticipated climate change impacts.

CEQA requires “adequacy, completeness, and a good faith effort at full disclosure” rather than perfection, and the following analysis of the General Plan’s future GHG emissions is based on the information and modeling methodologies currently available. Calculating emissions from energy use with precision is difficult. The model depends upon numerous assumptions, and it is limited by the quantity and quality of available data. With this in mind, it is useful to think of any specific number generated by the model as an approximation, rather than an exact value. It should be acknowledged that the state of the art in terms of emissions modeling will continue to improve over time, and the City will refine the GHG estimates as it moves forward in preparing and implementing a Climate Action Plan (CAP).

The estimates of future GHG emissions have been made taking into account current and reasonably foreseeable technological advances (i.e. vehicle efficiency standards and fuel carbon-intensity requirements), however, the estimates largely reflect past and current performance and may represent scenarios that are in fact worse than what is likely to occur, as future emissions goals will not be met based on current technologies.

An estimate of GHG emissions for each of the following categories of activity within the City was made in 2020 and 2035:

- Electric energy use (including conveyance of raw water and sewage);
- Non-electric energy (natural gas) use for building space heating;
- Combustion and other enterprise process use of energy;
- Off-road equipment use for construction, industry, lawn and garden care, etc.;
- On-road transportation;
- Other transportation by trains, aircraft and ships;
- Solid waste management; and
- Sewage treatment.

As part of the GHG modeling effort, separate estimates of on-road vehicle GHG emissions were calculated using two distinct approaches. The first estimate follows BAAQMD guidance to calculate GHG emissions arising from the total VMT occurring within City boundaries. This method has two shortcomings for purposes of disclosing impacts under CEQA. First, this methodology associates VMT that is passing through the City and has no association to the City (i.e. the portion of a trip between San Jose and Sunnyvale that travels through Santa Clara). Second, this approach stops accounting for VMT once it crosses a jurisdictional boundary, and therefore VMT from inter-jurisdictional trips is not accounted for once it leaves the jurisdiction, which may lead to under reported VMT.

The second approach used to estimate on-road vehicle GHG emissions is based on VMT generated by City land uses, both within and outside the City boundary. Emissions estimated on the basis of City-Generated VMT provide a better representation of the on-road vehicle activity over which an individual city has jurisdictional responsibility in that it reflects the VMT associated with the land uses in the City. For purposes of CEQA, City-generated VMT provides a more direct estimate of the

impacts attributable to the project. As discussed in *Section 4.12 Transportation*, VMT were estimated and allocated to the City of Santa Clara using the following methodology:

- Internal-internal: All daily trips made entirely within the City of Santa Clara's limits.
- One-half of internal-external: One-half of daily trips with an origin within Santa Clara and a destination outside the City. This assumes that Santa Clara shares half of the responsibility for VMT from trips traveling to other municipalities.
- One-half of external-internal: One-half of daily trips with an origin outside the City limits and a destination within Santa Clara. Similar to internal-external trips, Santa Clara shares half of the responsibility for VMT from trips traveling from other municipalities.
- External-external: Trips that travel through the City, with no origin or destination within Santa Clara, are not included. This approach is consistent with the concept used for the internal-external and external-internal trips. Therefore, the external-external VT and VMT are assigned to other municipalities where the trips are originating or ending.

VMT estimated using the latter approach (City-Generated) was roughly one-third higher than using the former (Within City travel), and was the basis for the Mobile Sources emissions included in the emissions inventories discussed below. It must be kept in mind this methodology attributes one half (50 percent) of the inter-jurisdictional (internal-external trips, not pass-through) VMT to Santa Clara, and the remaining 50 percent of the inter-jurisdictional VMT emissions assigned to other jurisdictions are nonetheless occurring in the environment and contributing to climate change. Table 4.16-4 discloses the total VMT associated with the Draft 2010-2035 General Plan occurring in the environment, including the 50 percent VMT (which have associated GHG emissions) assumed to be the responsibility of other jurisdictions sharing inter-jurisdictional trips with Santa Clara.

TABLE 4.16-4 DRAFT 2010-2035 GENERAL PLAN ENVIRONMENTAL VMT IN 2035

Daily VMT Generated by Santa Clara (Includes 50% of VMT with one Trip End Outside City)	3,740,242
50% of VMT with one Trip End Outside City (Non-Santa Clara Responsibility)	3,517,352
Total Environmental VMT associated with Draft 2010-235 General Plan	7,257,594

4.16.6.1 Santa Clara 2020 GHG Emissions

Per Table 4.16-2 above, Santa Clara's service population in 2020 is projected to be approximately 260,000, consisting of 131,000 residents and 129,000 jobs. Therefore, to be as efficient as necessary to meet AB 32 goals, the City's gross aggregate GHG emissions should not exceed 1.7 MMT, determined by multiplying the service population by the efficiency standard. (260,000 SP X 6.6 MT CO₂e/SP/yr = 1,716,000 MT).

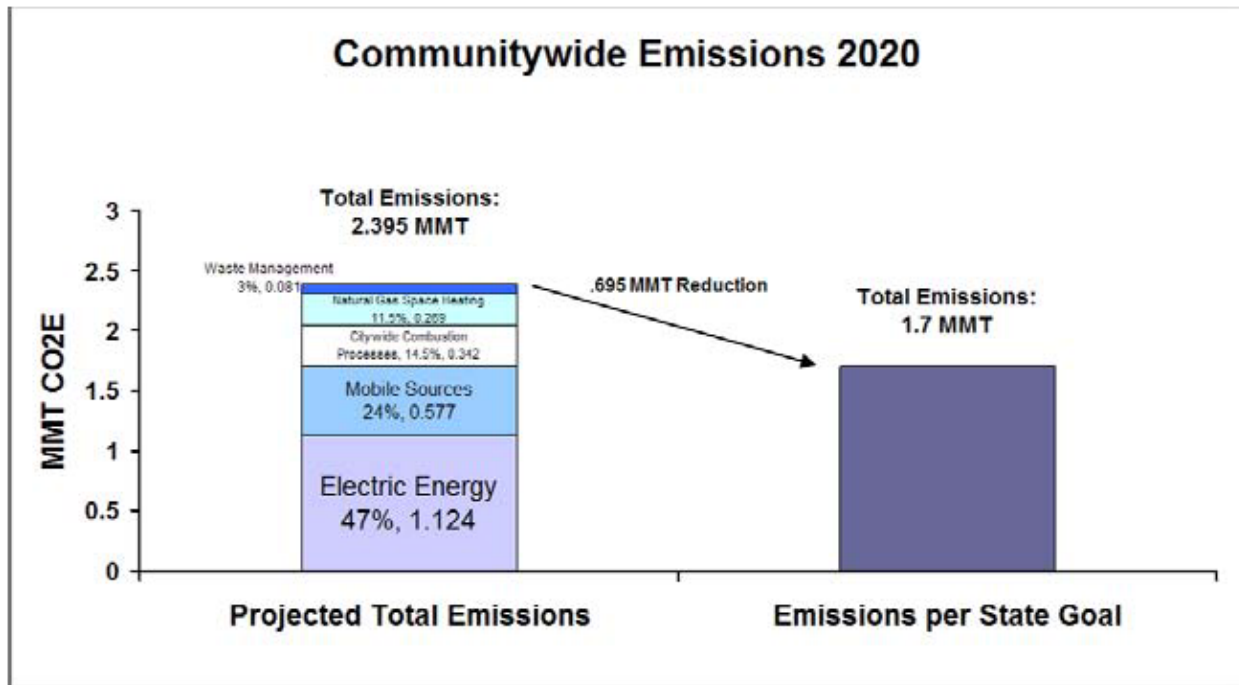
Modeling based on proposed General Plan growth for 2020 suggests the City will emit approximately 2.395 MMT, or 695,000 metric tons CO₂e more than AB 32 emission levels based on service population. The largest contributing category is electric energy use. The GHG emission projections for electric energy use conservatively use the 2008 GHG emissions per unit energy provided by the utilities instead of forecasting their potential improvements to 2020. This "business-as-usual" approach follows the same procedure taken by the Air Resources Board for the statewide

GHG emission inventory. The second largest generator of GHG emissions is mobile sources, primarily on-road vehicles. Mobile sources also include off-road vehicles and equipment such as locomotives, construction and lawn/garden equipment. The third largest category that generates GHG emissions is the diverse combustion and other process use of energy throughout industry and commerce within the City. This varied set of sources includes subsets defined by BAAQMD inventory for Santa Clara County as follows: commercial cooking (i.e., restaurants, cafes), ozone depleting substance substitutes, natural gas distribution, reciprocating engines (e.g., emergency generator engines), combustion gas turbines (i.e., not used for electric energy generation to the grid), major and minor natural gas combustion sources, and combustion by other fuels (i.e., again, not for electric energy generation to the grid).

Dividing the total emissions by the City's 2020 service population yields an average carbon-efficiency of 9.2 MT CO₂e/SP, or 2.6 MT CO₂e/SP above the statewide efficiency standard of 6.6 MT CO₂e/SP necessary to achieve AB 32 goals for 2020. At the state level, 2020 emissions are forecast under the "business as usual" scenario to be 596 MMT CO₂e and need to be reduced to 422 MMT CO₂e, a reduction of 174 MMT. Thus forecast state emissions will need to be reduced by 29% ($0.292 \times 596 = 174$).

Santa Clara's 2020 forecast CO₂e emissions are 2.395 MMT, and need to be reduced to 1.7 MMT, a reduction of 0.695 MMT. As a percentage, this largely matches the state as a whole; City 20920 emissions need to be reduced 29% to meet the AB 32 target ($2.395 \times 0.29 = 0.695$). On a service population basis, City's 2020 emissions are forecast to be 9.2 MT CO₂e/SP, and need to be reduced to 6.6 MT CO₂e/SP, a reduction of 28% on a per person and job basis.

So, Santa Clara's 2020 emissions need to be reduced by the same percentage as the statewide reduction in GHG emissions mandated under AB 32. The estimates of the City's future GHG emissions largely reflect past and current performance and may represent scenarios that are in fact worse than what is likely to occur. An updated, more refined 2020 emissions inventory estimate will be made as part of the Climate Action Plan prior to 20156. Figure 4.16-2 depicts the relative contribution of the City's various emissions sectors as forecast in 2020, and the emission reduction necessary to meet the 2020 state target as translated for Santa Clara's projected 2020 service population.

Figure 4.16-2: Santa Clara 2020 GHG Emissions Forecast

Santa Clara's current service population is approximately 222,000 and as proposed by the General Plan by 2020 would grow by 38,000 (jobs and residents) to a total of 260,000. Therefore, 85 percent ($222,000 \div 260,000$) of the City's future 2020 service population exists today and new growth comprises only 15 percent ($38,000 \div 260,000$) of the planned 2020 service population. This means the overwhelming majority of the forecast 2020 GHG emissions will be derived from sources present in the City today that will continue to emit GHG emissions into the future.

Going forward, new development will be designed, constructed, and operated according to the most efficient standards and practices of the time. However, representing only 15 percent of the future service population, it is unlikely that sufficient efficiencies to meet overall Citywide AB32 goals can be obtained from new development occurring in the City between 2010 and 2020. Accordingly, the bulk of the City's emissions reductions to meet the 2020 target will necessarily have to accrue from making the existing service population more 'carbon-efficient', i.e. making existing homes and businesses more carbon-efficient. Thus near-term 2020 GHG emissions reduction strategies to be developed in the Climate Action Plan (*see Section 4.16.6.3 Mitigation*) will likely have to largely focus on existing City sources.

Impact 4.16-1: The City's projected 2020 GHG emissions, without further reduction via a Climate Action Plan, would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to meet statewide 2020 goals as established by AB 32. (**Significant Impact**)

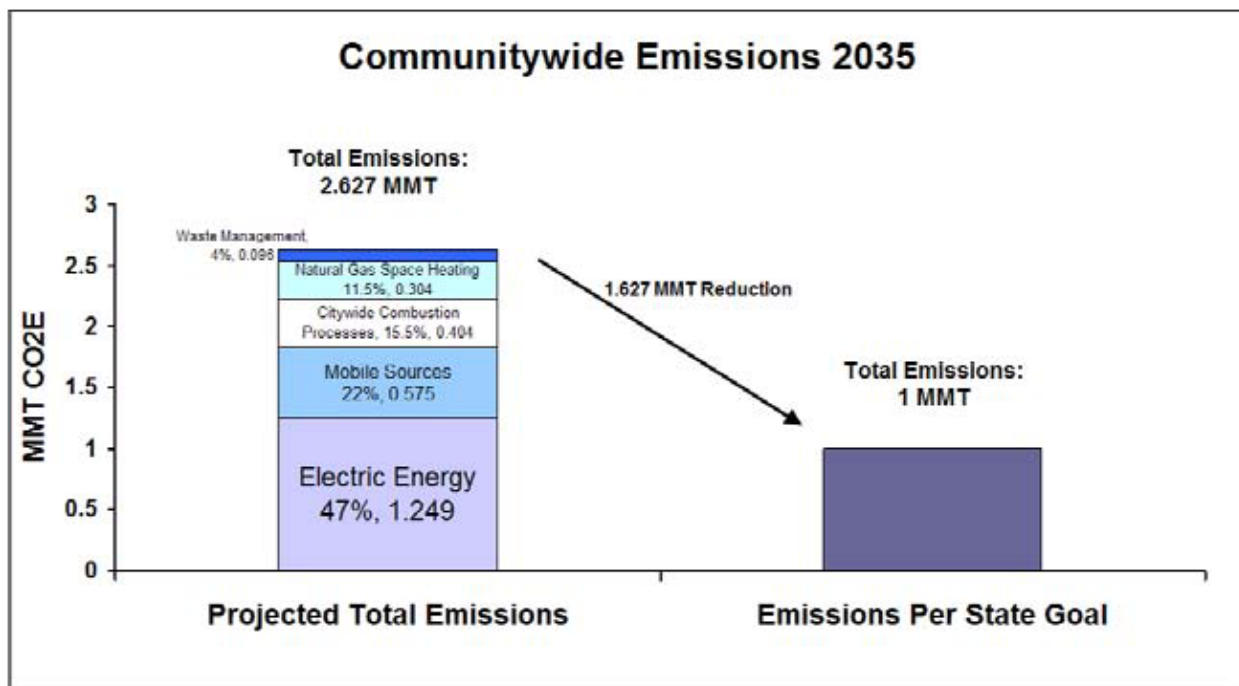
4.16.6.2 Santa Clara 2035 GHG Emissions

Per Table 4.16-2 above, Santa Clara's service population in 2035 is projected to be approximately 308,000, consisting of 155,000 residents and 153,000 jobs. As explained above, EO S-3-05 established a goal to reduce GHG emissions to 80 percent below 1990 levels by 2050, so halfway to that goal in 2035 would be 40 percent below 1990 levels. Therefore, to be as efficient as necessary to

maintain a trajectory to meet mandated 2050 levels, the City's 2035 GHG target is 1.0 MMT, 40 percent below the 2020 target of 1.7 MMT. This can also be calculated by multiplying the service population by the interpolated 2035 efficiency standard. $(308,000 \text{ SP} \times 3.3 \text{ MT CO}_2\text{e/SP/yr} = 1,016,400 \text{ MT})$.

Modeling based on proposed General Plan growth for 2035 suggests the City will emit approximately 2.627 MMT CO₂e, or 1.627 MMT more than emission levels necessary to maintain a trajectory toward 2050 state goals. Dividing the total emissions by the City's 2035 service population yields an average carbon-efficiency of 8.5 MT/SP, roughly 2.5 times the interpolated 2035 statewide efficiency standard of 3.3 MT CO₂e/SP necessary to maintain a trajectory to achieve the state's 2050 goals. Figure 4.16-3 depicts the relative contribution of the City's various emissions sectors, and the emission reduction necessary to maintain a trajectory to meet the 2050 state target, as translated for Santa Clara's projected 2035 service population. As with the 2020 inventory, the largest contributing category in 2035 is electric energy use, followed by mobile sources and the diverse combustion and other process use of energy throughout the City's industry and commerce.

Figure 4.16-3: Santa Clara 2035 GHG Emissions Forecast



As identified above, the City's 2035 GHG emissions are forecast to exceed the levels necessary to maintain a trajectory to achieve the state's 2050 goals. However, the estimates of the City's future GHG emissions largely reflect past and current performance and may represent scenarios that are in fact worse than what is likely to occur, as it is acknowledged that long-term emissions goals will not be met based on current technologies. Once the City has achieved AB32 levels in 2020, total gross City GHG emissions must continue to decline (at the same time the City continues to grow) over the following 30 years to 2050 by *more than a factor of four*, and the carbon efficiency per resident and job must *increase by a factor of six*. In addition to an efficient land use pattern and multi-modal transportation system, it appears achieving statewide 2050 emissions goals will require new and

substantially advanced technologies, an economy and a society that functions largely using carbon-neutral fuels.

Impact 4.16-2: The City's projected 2035 GHG emissions would constitute a cumulatively considerable contribution to global climate change by exceeding the average carbon-efficiency standard necessary to maintain a trajectory to meet statewide 2050 goals as established by EO S-3-05. **(Significant Impact)**

4.16.6.3 Mitigation

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed Draft 2035 General Plan includes numerous policies that would serve to reduce future GHG emissions, identified in Table 4.16-5 and Table 4.16-6 below.

Comparison of Santa Clara 2035 General Plan Policies to Address Climate Change to California Scoping Plan Measures

Table 4.16-5 below identifies the California Scoping Plan measures to reduce greenhouse gases and the associated proposed Draft 2035 General Plan policies that fit within each measure category. The table also identifies, where possible, the percentage of sector reductions associated with the policy in accordance with the values found in the BAAQMD CEQA Guidelines mitigation measures list.

TABLE 4.16-5 COMPARISON OF SANTA CLARA 2035 GENERAL PLAN POLICIES TO ADDRESS CLIMATE CHANGE TO CALIFORNIA SCOPING PLAN MEASURES

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
Energy Efficiency Measures		
5.10.3-P1 Promote the use of renewable energy resources, conservation and recycling programs.	<u>Energy Efficiency</u> 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).	
5.10.3-P3 Reduce energy consumption through sustainable construction practices, materials and recycling.	<u>Renewables Portfolio Standard</u> Achieve a 33 percent renewable energy mix statewide.	
5.10.3-P4 Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.	<u>Green Building Strategy</u> Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	
5.10.3-P9 Continue innovative energy programs to develop cost effective alternative power sources and encourage conservation.	<u>Million Solar Roofs Program</u> Install 3,000 MW of solar-electric capacity under California's existing solar programs.	
5.10.3-P13 Explore opportunities for alternative energy "fueling stations" and promote participation in shuttle services that use new technology vehicles to reduce greenhouse gas emissions.		
5.5.1-P6 For development proposing a minimum LEED Gold or greater equivalent, allow a ten percent increase in residential density and/or a ten percent increase in the maximum allowed non-residential square-footage, provided that the increased density and/or intensity is compatible with planned uses on neighboring properties and consistent with other applicable General Plan policies.		
5.10.3-P6 Provide incentives for LEED certified, or equivalent development.		
5.10.3-P7 Incorporate criteria for sustainable building and solar access into the City's ordinances and regulations.		

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
5.10.3-P2 Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.		100%
5.10.3-P5 Encourage installation of solar energy collection through solar hot water heaters and photovoltaic arrays.		70%
Water Conservation and Efficiency Measures		
5.1.1-P11 Prior to 2015, update the City's Urban Water Management Plan and encourage a 20 percent reduction in consumption.	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.	1% to 5%
5.3.1-P11 Encourage new developments proposed within a reasonable distance of an existing or proposed recycled water distribution system to utilize recycled water for landscape irrigation, industrial processes, cooling and other appropriate uses.		
5.10.3-P4 Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.		
5.10.4-P1 Promote water conservation through development standards, building requirements, landscape design guidelines, education and other applicable City-wide policies and programs.		1% to 5%
5.10.4-P3 Expand water conservation and reuse efforts throughout the City.		
5.10.4-P4 Promote water conservation, recycled water use and sufficient water importation to ensure an adequate water supply.		
5.10.4-P7 Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.		
5.10.4-P8 Require installation of native and low-water- consumption plant species when landscaping new development and public spaces to reduce water usage.		
Industrial Sources		
5.10.2-P3 Encourage implementation of technological advances that minimize public health hazards and reduce the generation of air pollutants.	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	

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
	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.	
5.10.2-P5 Promote regional air pollution prevention plans for local industry and businesses.		
Open Space and Agricultural		
5.10.1-P3 Require preservation of all City-designated heritage trees.	Sustainable Forests Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	
5.10.1-P4 Protect all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches measured from 48 inches above-grade on private and public property as well as in the public right-of-way.		
Solid Waste Reduction Measures		
5.10.1-P6 Encourage the use of local recycling facilities to divert waste from landfills.	<u>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste</u> 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.	
5.10.1-P7 Encourage a 50 percent per capita solid waste reduction.		
5.10.1-P8 Encourage curbside recycling and composting of organic and yard waste.		1% to 5%
Transportation and Motor Vehicle Measures		
The Draft General Plan does not involve the manufacture, sale, or purchase of vehicles. However, vehicles operating within the County would comply with any vehicle and fuel standards that the CARB adopts.	<u>Vehicle Climate Change Standards.</u> 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. <u>Light-Duty Vehicle Efficiency Measures.</u> 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. <u>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures.</u>	

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
	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. <u>Low Carbon Fuel Standard.</u> CARB 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% by 2020.	
5.3.3-P10 Encourage new grocery stores near residential neighborhoods to provide Santa Clara residents with access to fresh and healthy food options.	<u>Goods Movement</u> Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	
5.8.2-P8 Minimize disruption of traffic flow resulting from truck traffic and deliveries, particularly during commute hours.		
5.8.7-P1 Accommodate truck freight movement between the freeway system and Santa Clara's regional commercial destinations and local businesses.		
5.8.7-P2 Encourage the use of freight rail to serve the City's industrial area.		
5.8.7-P6 Discourage through truck and freight traffic on local and collector streets, except for deliveries to destinations only accessible from those streets.		
5.1.1-G4 Development of a multimodal transportation system that reduces the reliance on owning and driving single-occupant vehicles.	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.	0% to 5%
5.1.1-P6 Prior to the implementation of Phase II and of Phase III of the General Plan, identify bicycle, pedestrian and transit improvements that could off-set at least ten percent of anticipated vehicle miles traveled from development assumed in that phase.		0% to 5% (transit) 0% to 9% (bike and pedestrian)
5.1.1-P15 Prior to 2015, work with Valley Transportation Authority and other responsible agencies to develop a Regional Transportation Plan to address the Sustainable Community Strategy goals of AB32 (2006) and SB375 (2008).		
5.3.1-P13 Support high intensity development within a quarter-mile of transit hubs and stations and along transit corridors.		
5.3.1-P14 Encourage Transportation Demand Management strategies and the		0% to 9%

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
provision of bicycle and pedestrian amenities in all new development in order to decrease use of the single-occupant automobile and reduce vehicle miles traveled.		
5.3.1-P22 Encourage conveniently located childcare and other family support services in the community, except in areas designated for Light and Heavy industrial Uses.		
5.3.2-P2 Encourage higher-density residential development in transit and mixed-use areas and in other locations throughout the City, where appropriate.		-3% to 9%*
5.3.3-P6 Encourage neighborhood retail uses within a ten-minute walk of residential uses throughout the City.		2%
5.3.4-P2 Encourage mixed-use developments in proximity to employment centers and residential neighborhoods throughout the City.		-3% to 9%
5.3.4-P15 Maximize opportunities to connect streets, bicycle facilities and pedestrian pathways to improve accessibility between mixed-use development and surrounding neighborhoods, parks, open spaces, transit and public amenities. Provide clear signage, high visibility, adequate lighting and special paving to enhance pedestrian and bicycle facilities.		
5.3.5-P8 Encourage the provision of services and amenities as part of larger developments in employment areas that cater to lunchtime and service needs, such as dry cleaners, to reduce vehicle miles traveled.		
5.3.5-P9 Allow additional square footage of up to ten percent, but no less than 2,500 square feet, of a proposed office/R&D Development for commercial uses provided that such commercial uses have the potential to reduce daytime vehicle trips.		
5.3.5-P11 Construct sidewalks in industrial areas, with priority along streets served by existing or planned transit services.		
5.4.1-G4 Pedestrian, bicycle and transit priority for mobility in the El Camino Real Focus Area.		0% to 9% (bike and pedestrian) 0% to 15% (transit)
5.4.1-P16 Work with Valley Transportation Authority to improve transit access, information and frequency along El Camino Real, including the implementation of a Bus Rapid Transit or similar transit service near Regional Mixed-Use areas.		
5.4.2-G4 Pedestrian and transit priority for mobility in the Downtown Focus Area.		0% to 9% (bike and pedestrian)

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
		0% to 15% (transit)
5.4.2-P16 Work with Valley Transportation Authority (VTA) to implement a Downtown loop for transit access to Santa Clara Station.		0% to 15%
5.4.3-G4 Pedestrian and bicycle priority within the Santa Clara Station Focus Area with transit and vehicular priority to access the Station.		0% to 9% (bike and pedestrian) 0% to 15% (transit)
5.4.3-P2 Maximize residential development within walking distance of Station, particularly on the northeast side of the Caltrain corridor.		
5.4.3-P13 Provide new street, bicycle and pedestrian networks that encourage visibility, accommodate multiple modes of travel and maximize connections, particularly through large sites and to the Downtown and Santa Clara University.		0% to 9%
5.4.3-P14 Encourage alternative modes of travel to and from the Station, including biking, walking and shuttles.		0% to 9% (bike and pedestrian) 0% to 15% (transit)
5.4.3-P15 Prioritize vehicular and transit transportation modes on roadways, such as Coleman Avenue and De La Cruz Boulevard, that provide access to the Station and prioritize pedestrian and bicycle transportation modes on internal streets within the Santa Clara Station Focus Area.		0% to 9%
5.4.4-P10 Promote multimodal transit accessibility at Stevens Creek Boulevard and Saratoga Avenue.		0% to 15%
5.4.4-P11 Work with Valley Transportation Authority to implement a Bus Rapid Transit or similar transit service along Stevens Creek Boulevard, retaining on-street parking and median islands for landscaping.		0% to 15%
5.4.5-P9 Emphasize walkability and access to transit and existing roadways in Future Focus Area comprehensive plans.		0% to 15%
5.5.1-P5 For properties within one-quarter mile of a multimodal transit stop, allow a ten percent increase in residential density and/or a ten percent increase in the maximum allowed non-residential square footage, provided that the increased density and/or intensity is compatible with planned uses on neighboring properties and consistent with other applicable General Plan policies.		
5.8.1-G3 Transportation networks that promote a reduction in the use of personal vehicles and vehicle miles traveled.		
5.8.1-P4 Expand transportation options and improve alternate modes that		

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
reduce greenhouse gas emissions.		
5.8.1-P6 Implement Level of Service standards that support increased transit ridership, biking and walking, in order to decrease vehicle miles traveled and reduce air pollution, energy consumption and greenhouse gas emissions.		
5.8.3-P2 Support continued and upgraded Caltrain, Valley Transportation Authority, Altamont Commuter Express, and Capitol Corridor transit facilities and services.		0% to 15%
5.8.2-P7 Concentrate through traffic on major streets and encourage traffic distribution that maximizes the efficiency of the existing roadway network.		
5.8.2-P5 Support "traffic calming" and other neighborhood traffic management techniques to enhance the quality of life within existing neighborhoods and to discourage through-traffic on local streets.		1% to 5%
5.8.2-P6 Interconnect and coordinate traffic signals to maximize vehicle flow on the City's roadway network to reduce the need for roadway widening.		
5.8.3-P8 Require new development to include transit stop amenities, such as pedestrian pathways to stops, benches, traveler information and shelters.		0% to 15%
5.8.3-P9 Require new development to incorporate reduced onsite parking and provide enhanced amenities, such as pedestrian links, benches and lighting, in order to encourage transit use and increase access to transit services.		0% to 15%
5.8.3-P10 Require new development to participate in public/ private partnerships to provide new transit options between Santa Clara residences and businesses.		0% to 15%
5.8.3-P13 Advocate for frequent, direct transit service to all points in Santa Clara, particularly between residential and employment centers, as well as along the El Camino Real and Stevens Creek corridors.		0% to 15%
5.8.4-P2 Provide a system of pedestrian and bicycle friendly facilities that supports the use of alternative travel modes and connects to activity centers as well as residential, office and mixed-use developments.		0% to 9%
5.8.4-P8 Require new development and public facilities to provide improvements, such as sidewalks, landscaping, bicycle parking, bicycle lockers and bicycle racks, to promote pedestrian and bicycle use.		0% to 9%
5.8.5-P1 Require new development to include transportation demand management site- design measures, including preferred carpool and vanpool parking, enhanced pedestrian access, bicycle storage and recreational facilities.		H#

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
5.8.5-P2 Require development to offer on-site services, such as ATMs, dry cleaning, exercise rooms, cafeterias and concierge services, to reduce daytime trips.		2%
5.8.5-P3 Encourage all new development to provide on-site bicycle facilities and pedestrian circulation.		0% to 9%
5.8.5-P5 Encourage transportation demand management programs that provide incentives for the use of alternative travel modes to reduce the use of single- occupant vehicles.		
5.8.5-P6 Encourage transportation demand management programs that include shared bicycle and autos for part-time use by employees and residents to reduce the need for personal vehicles.		D
5.8.6-P2 Identify parking supply standards that promote economic development, neighborhood compatibility, environmental quality and public safety, while reducing dependence on the automobile.		
5.8.6-P3 Encourage flexible parking standards that meet business and resident needs as well as avoid an oversupply in order to promote transit ridership, bicycling and walking.		
5.9.1-P3 Provide trails along creeks and other rights-of-ways to link parks, open space, bicycle facilities and transit services with residential neighborhoods and employment centers.		
5.10.2-P2 Encourage development patterns that reduce vehicle miles traveled and air pollution.		-3% to 9%
5.8.3-P1 Support a coordinated regional transit system that circles the South Bay and the Peninsula, including existing and planned Bay Area Rapid Transit, Amtrak, Altamont Commuter Express, Caltrain, Valley Transportation Authority and High Speed Rail facilities.	High Speed Rail Support implementation of a high speed rail system.	0% to 15%
Other		
5.1.1-P10 Prior to 2015, adopt a Climate Action Plan to implement the City's sustainability and environmental quality Goals and Policies.	Local Government Local governments are essential partners in achieving California's goals to reduce greenhouse gas emissions. Local governments have broad influence and authority over activities that contribute to significant direct and indirect greenhouse gas emissions through planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the CARB proposed measures to reduce greenhouse gas emissions rely on local government actions.	

Santa Clara 2035 General Plan Policy	California Scoping Plan Measure	BAAQMD Sector Reduction Percentage
5.1.1-P19 Prior to 2025, evaluate the potential effects of climate change trends and identify any available mechanisms to address sea level rise, if any.		
5.8.4-P14 Promote bicycling and walking through education, safety publications, and information about health and environmental benefits.		E
5.8.4-P15 Work with school districts to implement a "Safe Routes to Schools" program to encourage children to walk to school.		
5.8.5-P7 Promote programs that reduce peak hour trips, such as flexible work hours, telecommuting, home-based businesses and off-site business centers, and encourage businesses to provide alternate, off-peak hours for operations.		1% to 100%
5.8.5-P8 Encourage local events that connect employees and residents with local transit providers and ridesharing options.		
5.8.5-P9 Promote transportation demand management programs that provide education, information and coordination to connect residents and employees with alternate transportation opportunities.		E
5.8.1-P5 Work with local, regional, State and private agencies, as well as employers and residents, to encourage programs and services that reduce vehicle miles traveled.		E
5.10.2-P4 Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.		
Notes: * - Negative 3% when no housing or employment centers within ½ mile of mixed-uses. # - A to H – at least 3 elements: 1% reduction, plus 5% of the reduction for transit and bike/pedestrian friendliness; At least 5 elements: 2% reduction, plus 10% of the reduction for transit and bike/pedestrian friendliness.		

Additional General Plan Policies to Address Greenhouse Gases

Table 4.16-6 below identifies additional policies from the proposed Draft 2035 General Plan that address GHG, but do not clearly fit within the Scoping Plan measure categories. The table also includes the percentage of sector reductions associated with the policy in accordance with the values found in the applicable BAAQMD mitigation measures list.

TABLE 4.16-6 ADDITIONAL GENERAL PLAN POLICIES TO ADDRESS GREENHOUSE GASES

Santa Clara 2035 General Plan Policy		BAAQMD Sector Reduction Percentage
5.1.1-P6	Prior to the implementation of Phase II and of Phase III of the General Plan, identify bicycle, pedestrian and transit improvements that could off-set at least ten percent of anticipated vehicle miles traveled from development assumed in that phase.	0% to 9%
5.3.1-P12	Encourage convenient pedestrian connections within new and existing developments.	0% to 9%
5.3.4-P11	Foster active, pedestrian-oriented uses at the ground level, such as retail shops, offices, restaurants with outdoor seating, public plazas or residential units with front stoops, in mixed-use development.	0% to 9% (bike and pedestrian) -3% to 9% (mixed use)
5.3.4-P12	Prioritize pedestrian-oriented streetscape and building design in mixed-use development, including features such as wider sidewalks, street furniture, specialty planters, signage, public art, street trees, special paving materials, decorative awnings, enhanced entrances, colors, variety of materials and textures and distinctive building massing and articulation.	0% to 9% (bike and pedestrian) -3% to 9% (mixed use)
5.3.4-P13	Encourage pedestrian linkages in mixed-use areas through measures such as enhanced lighting, curb bulb-outs, mid-block pedestrian crossings, pedestrian "refuge" areas in planted medians and pedestrian oriented building frontages.	0% to 9% (bike and pedestrian) -3% to 9% (mixed use)
5.4.1-P13	Provide publicly accessible open space and transit stops in each Regional Mixed-Use area.	0% to 15%
5.4.1-P17	Work with Valley Transportation Authority and Caltrans toward a roadway design for El Camino Real that includes narrower and/or reduced travel lanes, enhanced pedestrian facilities, wider sidewalks, street trees, planted medians, and enhanced signage and lighting, as well as transit and bicycle lanes without increasing overall right-of-way requirements.	0% to 9%
5.4.2-P13	Promote pedestrian-friendly streetscapes with trees, benches, outdoor seating, kiosks, amenities, banners and signature signage, and landscaping that reflect the historic neighborhood character.	0% to 9%
5.4.3-P6	Provide pedestrian-oriented retail uses to serve new residential development, Station visitors and area employees.	0% to 9%
5.4.3-P11	Encourage parking consolidation, alternate parking arrangements or reduced parking ratio within the Santa Clara Station Focus Area to promote the use of alternate transportation modes.	0% to 50%
5.4.3-P12	Minimize surface parking by requiring below grade or structured parking facilities with active uses along street frontages.	0% to 50%
5.4.4-P9	Provide internal pedestrian connections to surrounding neighborhoods and across Saratoga Avenue for new mixed-use development.	0% to 9% (bike and pedestrian) -3% to 9% (mixed use)
5.5.1-P7	For new mixed use development with exemplary design that provides appropriate transition measures to existing neighborhoods, allow a ten percent reduction in the minimum required residential density and/or a ten percent reduction in the minimum allowed non-residential square footage, provided that the reduced density and/or intensity is compatible with planned uses on neighboring properties and consistent with other applicable General Plan policies.	-3% to 9%
5.8.2-P1	Require that new and retrofitted roadways implement "Full-Service Streets" standards, including minimal vehicular travel lane widths, pedestrian amenities, adequate sidewalks, street trees, bicycle facilities, transit facilities, lighting and signage, where feasible.	0% to 9%
5.8.3-P3	Support transit priority for designated Bus Rapid Transit, or similar transit service, through traffic signal priority, bus queue jump lanes, exclusive transit lanes and other appropriate techniques.	0% to 15%
5.8.3-P4	Encourage the continued efforts by other agencies to provide transit services that are accessible and meet the needs of all segments of the population, including youth, seniors, persons with disabilities and low income households.	0% to 15%
5.8.3-P5	Facilitate implementation of the transit system defined in the transit network classifications and illustrated on the Transit Network Diagram	0% to 15%

Santa Clara 2035 General Plan Policy		BAAQMD Sector Reduction Percentage
5.8.3-P6	Encourage additional multimodal transit centers and stops in order to provide convenient access to commuter rail, buses, shuttle and taxi services.	0% to 15%
5.8.3-P7	Provide transit stops at safe, efficient and convenient locations to maximize rider ship, including near employment centers, higher-density residential developments and Downtown.	0% to 15%
5.8.3-P11	Encourage feeder services to carry commuters to transit stations, including shuttle connections from businesses, residences, and attractions to bus and rail services.	0% to 15%
5.8.3-P12	Improve the existing public transit system and support expanded services to increase rider ship.	0% to 15%
5.8.4-P3	Link City pedestrian and bicycle circulation to existing and planned regional networks.	0% to 9%
5.8.4-P6	Require new development to connect individual sites with existing and planned bicycle and pedestrian facilities, as well as with on-site and neighborhood amenities/services, to promote alternate modes of transportation.	0% to 9%
5.8.6-P1	Allow alternate parking standards for mixed-use development, development that meets specified transportation demand management criteria, and senior/group and affordable housing developments, as well as in the Downtown and areas within one quarter mile of transit centers and stops.	0% to 50%
5.8.6-P4	Encourage shared, consolidated and/or reduced parking in mixed-use centers and within one quarter mile of transit centers and stops.	0% to 50% (parking) -3% to 9% (mixed use)
5.8.6-P5	Allow alternate parking techniques, such as parking lifts, automated and tandem parking, in order to reduce the land area devoted to parking.	0% to 50%
5.8.6-P10	Support time limits for on-street parking to encourage alternate transportation modes to access destinations, such as Downtown, parks and libraries.	0% to 50%

Developing a GHG Reduction Strategy

In applying the state's future carbon-efficiency standards to the City's projected service population, in 2020 and 2035, respectively, this EIR identifies the City's target GHG emissions, and the projected emissions that would result from implementation of the 2035 General Plan in each target year. To bridge the forecast gap between estimated 2020 GHG emissions and what is considered necessary to meet state 2020 goals, the General Plan includes a Phase I Prerequisite Policy commitment to adopt and implement a Climate Action Plan (CAP, alternatively referred to as a 'GHG Reduction Strategy') by 2015 to achieve the City's share of the GHG emissions reductions necessary to meet AB32 targets.

Regarding 2035 emissions targets, achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Therefore, the City in 2010 is unable to conclude the 2035 emissions levels are achievable over the next 25 years, given the uncertainties concerning future regulations and technology that will be necessary.

The CAP will be the comprehensive strategy for achieving the City's 2020 GHG reductions and will determine the size of each sector's emissions (i.e. electricity vs. transportation vs. solid waste emissions) based on the relative feasibility of reducing GHG emissions in each sector. This is anticipated to follow a similar approach to the state's preparation of the Scoping Plan to address statewide 2020 GHG emissions, whereby the overall state emissions target is established along with the relative GHG reduction anticipated from each sector.

Santa Clara's Climate Action Plan for 2020 will include:

- GHG Inventory for Current Year and Forecast for 2020.
- An adopted GHG Reduction Goal for 2020 for the City from all sources (existing and future) which is equivalent to 1990 GHG emission levels, using the service population approach of statewide carbon-efficiency.
- Identification of feasible reduction measures to reduce GHG emissions for 2020 to 1990 levels.
- Application of relevant reduction measures included in the AB 32 Scoping Plan that are within the City's land use authority (such as building energy efficiency, etc.).
- Quantification of the reduction effectiveness of each of the feasible measures identified including disclosure of calculation method and assumptions.
- Identification of implementation steps to achieve the identified goal by 2020.
- Procedures for monitoring and updating the GHG inventory and reduction measures at least twice before 2020 or at least every five years.
- Identification of responsible parties for implementation.
- Schedule of implementation.

A Climate Action Plan Commitment for 2020 Is Not Deferred Mitigation

CEQA generally does not allow lead agencies to defer mitigation. Published case law concerning the development of a mitigation strategy for GHG emissions associated with a near-term development

project (a proposed oil refinery upgrade) (*Communities for a Better Environment et al v. City of Richmond*¹⁶³) provides that an EIR's mitigation scheme cannot rely on a tentative plan for future mitigation after completion of the CEQA process, with measures that are "cursorily described...non exclusive, undefined, untested and of unknown efficacy" and set out "for future consideration" with no effort to calculate the reductions that might result.

However, as acknowledged in the *CBE v. Richmond* decision, several other published cases have allowed the approach of setting a performance standard and setting forth a menu of potential mitigation measures, provided the lead agency made a significance finding early in the CEQA process (i.e. Draft EIR), divulged meaningful information about how it quantified the project's emissions, offered assurances that the plan was feasible and efficacious, and created objective criteria for determining the success of the measures.

As stated in the recent *California Native Plant Society v. Rancho Cordova*¹⁶⁴ published decision, it is appropriate to defer formulation of specific mitigation measures after the lead agency: 1) undertook a complete analysis of the significance of the environmental impact, 2) proposed potential mitigation measures early in the planning process, and 3) articulated specific performance criteria that would ensure that adequate mitigation measures were eventually implemented. According to the court, "Deferred selection of mitigation measures is permissible for kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process. The lead agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval. Where future action to carry a project forward is contingent on devising means to satisfy such criteria, the lead agency should be able to rely on its commitment as evidence that significant impacts will in fact be mitigated."

Such is the approach proposed by the General Plan in committing to prepare, adopt, and implement a CAP to systematically reduce the City's GHG emissions according to mid-term state goals. This EIR 1) discloses that future City GHG emissions are forecast to exceed applicable carbon-efficiency standards necessary to meet the state goals, 2) identifies a range of mitigation strategies that are known to reduce GHG emissions, and 3) commits the City to the preparation, adoption, and implementation of a CAP which contains the performance criteria against which the City's future action can be evaluated. The City's process to develop the CAP will be open, allowing for the input and active participation of interested agencies (i.e. BAAQMD, MTC, CARB, CA Attorney General's Office) as well as the public, prior to City adoption.

Implementation of the CAP will be an ongoing adaptive management process, whereby opportunities to reduce GHGs will be evaluated and selected based on a variety of factors, including available technology, relative cost, and policy preferences, among others. Therefore, it is not possible to precisely predict the specific set of actions and strategies the City will pursue and implement over the next 10 years to achieve the overall magnitude of GHG emission reductions necessary to achieve statewide 2020 goals. However, as a matter of policy integral to the General Plan itself, the City is committing to do its part to meet statewide AB 32 goals by 2020.

¹⁶³ Published 2010 decision available at <http://appellatecases.courtinfo.ca.gov/search.cfm?dist=1>.

¹⁶⁴ Published 2009 decision available at <http://appellatecases.courtinfo.ca.gov/search.cfm?dist=3>.

The General Plan's progressively phased approach provides multiple opportunities over time to update GHG emissions inventory projections, refine and improve reduction strategies, and confirm the City is on track to meet its 2020 target per AB 32.

Conclusion

2020 GHG Emissions. Forecast Citywide GHG emissions are projected to exceed efficiency standards necessary to meet mid-term state climate change reduction goals. However, through its General Plan policies the City is committed to the preparation, adoption, and implementation of a comprehensive greenhouse gas emissions reduction strategy (Climate Action Plan) to achieve its fair share of statewide emissions reductions for the 2020 timeframe consistent with AB 32. The CAP will specify the strategies, measures, and actions to be taken for each inventory sector (transportation, electricity, solid waste, water, etc.) to achieve the overall emission reduction target, and include an adaptive management process that can incorporate new technology and respond when goals are not being met. Therefore, with implementation of the mitigation strategy included in the General Plan, the City's future contribution to climate change will be less than cumulatively considerable for 2020 emissions. **(Less than significant impact with mitigation incorporated)**

2035 GHG Emissions. Citywide 2035 GHG emissions are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 state climate change reduction goals. Achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Given the uncertainties about the feasibility of achieving the substantial 2035 emissions reductions, the City's contribution to climate change for the 2035 timeframe is conservatively determined to be cumulatively considerable. **(Significant Unavoidable Impact)**

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5 ALTERNATIVES

5.1 INTRODUCTION

Section 15126.6 of the CEQA Guidelines requires that an EIR describe a reasonable range of alternatives to the proposed project that could feasibly attain most of the project objectives while avoiding or considerably reducing any of the significant impacts of the proposed project. This is defined in the same section of the CEQA Guidelines as not meaning every conceivable alternative to the project, but only a reasonable range of potentially feasible alternatives. In addition to the project alternatives, the No Project Alternative must also be analyzed in the document.

Because an EIR must identify ways to mitigate or avoid significant impacts, the discussion of alternatives is supposed to focus on alternatives “to the project or its location” that will substantially lessen or avoid the significant effects of the project, even if the alternatives might impede the attainment of the project objectives or be more expensive. [Section 15126.6(b)]

The three critical factors to consider in selecting and evaluating alternatives are: (1) the significant impacts from the proposed project which should be reduced or avoided by an alternative; (2) the project’s objectives; and (3) the feasibility of the alternatives available. Each of these factors is discussed below.

5.2 SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

As mentioned above, the CEQA Guidelines advise that an alternatives analysis in an EIR should be limited to alternatives that would avoid or substantially lessen any of the significant effects of the project and would achieve most of the project objectives. As discussed previously in this EIR, the project has significant unmitigated or unavoidable impacts on traffic, public utilities (long-term solid waste disposal), roadway noise impacts, and contribution to climate change from greenhouse gas emissions in 2035.

Alternatives may also be considered if they would further reduce impacts that are already less than significant because the project is proposing mitigation. Impacts that would be significant, but for which the project includes mitigation to reduce them to less than significant levels, include public utilities (water supply), biological resources, air quality, noise, and contribution to climate change from greenhouse gas emissions in 2020.

5.3 PROJECT OBJECTIVES

Pursuant to CEQA Guidelines Section 15124 the Lead Agency must identify the objectives, including the underlying purpose of the project. The underlying purpose of this proposed project is a comprehensive update of the City’s General Plan. The General Plan 2010-2035 represents a significant modification of the City’s goals and policies. The City’s objectives for the General Plan 2010-2035 are provided below.

- Preserve the City’s small-town feel, particularly by maintaining the character and quality of the City’s residential neighborhoods;
- Add opportunities for a mix of residential and commercial uses throughout the City in places with access to existing and future transit;

- Revitalize a landmark Downtown;
- Improve the visual and physical character of the City's commercial corridors;
- Enhance walkability and bicycle circulation throughout the City;
- Reduce traffic congestion and promote expansion of the public transportation system;
- Diversify industrial and business uses and intensify the employment base;
- Provide neighborhood commercial centers;
- Continue high quality public services and amenities, including open space and parks; and
- Encourage sustainability to protect energy, water supplies, and air quality.

The seven Major Strategies, defined during the community planning process, represent the overarching principles of the General Plan 2010-2035. The Major Strategies are reflected throughout the General Plan 2010-2035, and are the basis for the goals and policies. Each Major Strategy defines a distinct priority, such as economic vitality or sustainability, as summarized below.

- Enhance the City's High Quality of Life - Ensure that existing and new neighborhoods have access to a full complement of services and other amenities for everyday living.
- Preserve and Cultivate Neighborhoods - Ensure that existing neighborhoods character is preserved and new development fits into each neighborhood scale and context through careful transition policies.
- Promote Sustainability – Conserve resources through use of sustainable land use and design policies and measures for new and existing development.
- Enhance City Identity – Improve the identity and visual character of the City, emphasizing urban design to shape the character and appearance of major corridors and focus development areas.
- Support Focus Areas and Community Vitality – Encourage improvements to the design and quality of development along El Camino Real, Stevens Creek Boulevard, San Tomas Expressway, Bowers Avenue and Santa Clara's Downtown, with a greater mix of land uses at activity centers, in conjunction with improved commercial and streetscape design.
- Maintain the City's Fiscal Health and Quality Services – Encourage a mix of uses to ensure that sufficient revenues are generated to cover the cost of service needs.
- Maximize Health and Safety Benefits – Emphasize public safety in urban design and transportation policies through improved visibility, pedestrian-oriented building design, and lighting and infrastructure in order to promote for safe walking, bicycling, and driving.

5.4 FEASIBILITY OF ALTERNATIVES

CEQA, the CEQA Guidelines, and case law on the subject have found that feasibility can include a wide range of factors and influences. The Guidelines advise that such factors can include (but are not necessarily limited to) the suitability of an alternate site, economic viability, availability of infrastructure, consistency with a general plan or with other plans or regulatory limitations, jurisdictional boundaries, and whether the project proponent can "reasonably acquire, control, or otherwise have access to the alternative site". [Section 15126.6(f)(1)]

Recent case law¹⁶⁵ has established that an agency may determine an alternative to be infeasible based on undesirability from a policy perspective, and failure to fully accomplish project objectives. In addition, for projects involving a specific site, there is no specific requirement to consider a location alternative. Given that this EIR evaluates the proposed General Plan for the entire City of Santa Clara, it would not be meaningful to evaluate an alternative location, i.e. another city, for purposes of informing a decision about the City of Santa Clara General Plan. Therefore, this EIR evaluates the environmental effects of various alternatives to the proposed Draft 2010-2035 General Plan in Santa Clara.

5.5 ALTERNATIVES EVALUATED IN THE EIR

5.5.1 No Project/No Development

A No Project/No Development Alternative is not evaluated in detail in that there would be little value in doing so. The premise of this alternative is that the City would not adopt a new General Plan, and would not continue to implement the existing General Plan, effectively freezing the City in its current form as of 2010. Therefore, a comparison of the environmental effects of this alternative to the Draft 2010-2035 General Plan would largely describe how the City's existing environmental setting, as discussed throughout this EIR as the baseline condition, would be affected by the Draft 2010-2035 General Plan. As described in the following section discussing the No Project/Existing General Plan Alternative, there is and will continue to be substantial new development occurring under the existing General Plan, so the City's existing environmental setting will unavoidably be changing over the next 25 years. Therefore, this Alternative is not considered further.

5.5.2 No Project/Existing General Plan

The purpose of this alternative is to identify what development and associated environmental impacts would occur if the City does not adopt a comprehensive update of its General Plan, i.e. how the city would continue to grow and evolve under the current General Plan's goals and policies. This alternative would consist of:

1. The remaining development potential associated with the current 2000-2010 General Plan,
2. All 'in process' residential and non-residential development identified in General Plan Appendix 8.6 and summarized in Columns 'B' and 'C' in Table 5.2-1 of the General Plan, and
3. The draft 2007-2014 Housing Element (General Plan Appendix 8.12).

The No Project/Existing General Plan Alternative assumes the new residential and non-residential development identified above would occur in equal increments per year through 2035 (i.e. straight line projection). The Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman West and Tasman East) would remain employment lands (i.e. industrial and/or commercial) and would not be redeveloped with mixed use, transit-oriented development.

¹⁶⁵ *California Native Plant Society v. City of Santa Cruz*, available at <http://caselaw.lp.findlaw.com/data2/californiaStatecases/h032502.pdf>.

The service population (jobs+residents) under the No Project/Existing General Plan Alternative in 2035 would be approximately 265,000, consisting of 137,000 residents and 128,000 jobs. This service population is 14 percent less than accommodated by the 2010-2035 General Plan, while population growth would be 12 percent less, and job growth 16 percent less, or approximately 18,000 fewer residents and 25,000 fewer jobs than accommodated by the 2010-2035 General Plan, respectively. This represents substantial less new development occurring within the City than projected by ABAG through 2035.

This Alternative would not accommodate job or population growth as projected by ABAG for 2035. This additional growth is presumed, for purposes of this Alternative, to be accommodated elsewhere in the South Bay region. Depending upon the location and form of that development, associated environmental impacts could be similar, greater or reduced. The environmental effects of this development occurring outside of Santa Clara can not be considered without speculation, i.e. where and in what form the development would occur in other jurisdictions. Therefore, the following discussion focuses on the potential environmental effects of this Alternative that would occur in Santa Clara and does not attempt to evaluate the effects of development that might occur elsewhere in the region as a result of not being accommodated by Santa Clara under this Alternative.

5.5.2.1 Comparison of Environmental Impacts

As identified above, the No Project/Existing General Plan Alternative would accommodate less job and housing growth compared to the proposed 2010-2035 General Plan and would not introduce new housing in the Future Focus Areas. Therefore, there would be reductions in those environmental impacts that result from issues of scale (i.e. the generation of impacts from overall level of development) as well as due to location (i.e. placement of a sensitive land use near a pollutant source). However, this Alternative would still accommodate substantial growth, such that significant impacts are anticipated to occur as a result of ongoing development activity allowed under current plans and policies, as discussed by impact topic area below.

Land Use

Under the No Project/Existing General Plan Alternative, the type of land uses, including mixed-use, commercial, residential, and industrial, would be relatively similar to that which would occur under the proposed Draft 2010-2035 General Plan. The land use classifications under the proposed Draft 2010-2035 General Plan have been structured so that each designations “nests” within the designations in the currently adopted General Plan. Neither the No Project/Existing General Plan Alternative nor the proposed Draft 2010-2035 General Plan would physically divide existing communities within Santa Clara. The proposed Draft 2010-2035 General Plan includes both intensification of existing land uses and expansion of the allowed uses under the currently adopted General Plan, re-designation of certain areas to better correspond with existing economic and redevelopment plans, and prerequisites to allow logical planning for responsible growth for the City overall ensuring that the City maintains quality services for existing and future residents and businesses.

The No Project/Existing General Plan Alternative would not include residential and/or mixed-use development within the Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East), which are currently developed as industrial. Therefore, the No Project/Existing General Plan Alternative

would not introduce land uses that would have the potential to be incompatible with existing industrial land uses. The No Project/Existing General Plan Alternative would also not place housing within an area in conflict with the Airport Land Use Commission (ALUC) land use noise policies, thereby avoiding the need for mitigation. Land use impacts under the No Project/Existing General Plan Alternative would be incrementally reduced compared to the proposed Draft 2010-2035 General Plan.

Population and Housing

The jobs/employed resident ratio from the net new development under the No Project/Existing General Plan Alternative would be 1.65, compared to 1.29 from the net new growth under the 2010-2035 General Plan, and on a per unit basis, would lead to more inter-jurisdictional commuting and associated adverse environmental effects.

Aesthetics

While growth under the No Project/Existing General Plan Alternative would be subject to existing City regulations such as the Zoning Code and Design Guidelines, the current General Plan does not include the same amount of detail regarding visual quality of new urban development as those in the proposed Draft 2010-2035 General Plan goals, policies and actions addressing the visual quality of new urban development.

The current City of Santa Clara General Plan contains several policies related to aesthetics including architectural review for residential development and maintaining quality gateways into the City. While these policies would mitigate potential visual quality impacts, they are not as detailed and neighborhood specific as the policies in the proposed Draft 2010-2030 General Plan. For example, the proposed Draft 2010-2035 General Plan includes additional goals, policies and actions addressing the visual character of Santa Clara including recommended design guidelines for regulating new development, including within the proposed Focus Areas, maintaining views, protecting the character of residential neighborhoods and providing for attractive and functional gateways. As such, the No Project/Existing General Plan Alternative would not have the beneficial effect of providing additional policy guidance on the protection of visual quality resources within Santa Clara. For this reason, visual impacts under the No Project/Existing General Plan Alternative would be incrementally increased compared to the proposed Draft 2010-2035 General Plan.

Hydrology and Water Quality

The No Project/Existing General Plan Alternative would not include residential and/or mixed-use development within the Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East), which are currently developed as industrial. This would result in less exposure of housing and retail and commercial buildings to flooding, as the housing and retail and commercial buildings would not be placed in a special flood hazard area (SFHA), compared to those that would under the proposed Draft 2010-2035 General Plan.

The No Project/Existing General Plan Alternative would still accommodate substantial new and redevelopment. New development under the No Project/Existing General Plan Alternative or the proposed Draft 2010-2035 General Plan would be required to comply with the Flood Damage Prevention Code, adopted as part of the Santa Clara City Code. Additionally, new development

under either the No Project/Existing General Plan Alternative or the proposed Draft 2010-2035 General Plan would be required to comply with NPDES stormwater and Regional Water Quality Control Board requirements. Compliance with these regulations would ensure that the No Project/Existing General Plan Alternative would not result in stormwater that would substantially pollute water bodies or create substantial flood risks.

The No Project/Existing General Plan Alternative does contain policies addressing stormwater and flooding, but these policies are not as detailed and neighborhood specific as the proposed Draft 2010-2035 General Plan. For example, the proposed Draft 2010-2035 General Plan includes goals, policies and actions specific to types of methods and features for retention and infiltration in new development to address stormwater and flood hazards. Hydrology and water quality impacts under the No Project/Existing General Plan Alternative would be incrementally reduced due to less overall flood risk compared to the proposed Draft 2010-2035 General Plan.

Geology and Soils

The No Project/Existing General Plan Alternative would have less residential and nonresidential development than the proposed Draft 2010-2035 General Plan. However, current federal and State regulations require specific mitigations to avoid impacts related to geologic and seismic hazards, which would apply to both the No Project/Existing General Plan Alternative and the proposed Draft 2010-2035 General Plan. The No Project/Existing General Plan Alternative does contain policies addressing geologic and soil hazards but these policies are not as detailed and neighborhood specific as the proposed Draft 2010-2035 General Plan. For example, the proposed Draft 2010-2035 General Plan includes goals, policies and actions related to retrofitting existing development and conformance of all new development with State and regional regulations to address geologic and soil hazards. Taking into consideration policy guidance provided by the proposed Draft 2010-2035 General Plan, geology and soil impacts under the No Project/Existing General Plan Alternative would be incrementally increased compared to the proposed Draft 2010-2035 General Plan.

Public Services

Buildout under the No Project/Existing General Plan Alternative would result in 18,000 fewer residents than under the proposed Draft 2010-2035 General Plan. As a result, the demand for services under the No Project/Existing General Plan Alternative would be slightly lower which would be a minor improvement compared to the proposed Draft 2010-2035 General Plan. However, the No Project/Existing General Plan Alternative does not contain the policies and actions addressing police, fire, and library services specific to services associated with new development that are included in the proposed Draft 2010-2035 General Plan. For example, the proposed Draft 2010-2035 General Plan includes goals, policies and actions related to property maintenance and code enforcement to reduce crime and public/quasi public uses are allowed in all General Plan designations (except industrial) to provide shelter locations in case of emergencies. Taking into consideration policy guidance provided by the proposed Draft 2010-2035 General Plan, public service impacts under the No Project/Existing General Plan Alternative would be incrementally increased compared to the proposed Draft 2010-2035 General Plan.

Public Utilities

Given the overall reduction in growth accommodated under the No Project/Existing General Plan Alternative, demands for public utilities (water, sewer, landfills) would be reduced on a proportional basis compared to the 2010-2035 General Plan. Reduced water demand would require less water to be imported, require less groundwater to be pumped from the Santa Clara Sub-Basin, and require less treatment capacity at the Water Pollution Control Plant, all of which processes require substantial amounts of energy. The reduced service population (43,000 fewer residents + jobs) would also generate less solid waste (approximately 14 percent) requiring disposal capacity at Newby Island Landfill, which could incrementally extend the remaining lifespan of the landfill, but the City would nonetheless need to find a disposal option beyond 2024 when its current contract with Newby Island Landfill operator expires. Therefore, public utilities impacts would be incrementally reduced under the No Project/Existing General Plan Alternative.

Open Space, Parks, Trails and Recreation

The No Project/Existing General Plan Alternative would have less residential and nonresidential development than the proposed Draft 2010-2035 General Plan. This would result in less need for additional parkland and recreation facilities. However, the No Project/Existing General Plan Alternative does not contain as detailed and neighborhood oriented policies and actions addressing open space, parks, and recreation that are included in the proposed Draft 2010-2035 General Plan. For example, the proposed Draft 2010-2035 General Plan includes goals, policies and actions related to park size standards for new facilities such that parks will be appropriately sized to fulfill specific community purposes and maintenance of a parkland ratio for new residents. Taking into consideration policy guidance provided by the proposed Draft 2010-2035 General Plan, open space, parks and recreation impacts under the No Project/Existing General Plan Alternative would be incrementally increased compared to the proposed Draft 2010-2035 General Plan.

Biological Resources

Impacts to biological resources under the No Project/Existing General Plan Alternative are anticipated to be similar compared to the 2010-2035 General Plan in that the few remaining vacant parcels in the City would still be expected to develop with an urban use, thereby eliminating whatever limited habitat was present. Riparian protection strategies and measures would continue to be implemented through this Alternative, consistent with the 2010-2035 General Plan. With reduced total VMT due to 18,000 fewer residents and 25,000 fewer jobs, this Alternative would contribute less emissions to cumulative regional nitrogen deposition impacts to protected serpentine habitat in southern Santa Clara County.

Air Quality

The No Project/Existing General Plan Alternative would still accommodate substantial new and redevelopment. Total criteria air pollutant emissions would be reduced under this Alternative due to the lower overall level of growth. However, vehicular emissions would be greater on a per unit basis due to the 15 percent increase in VMT/SP compared to the Draft 2010-2035 General Plan. Construction emissions would be reduced due to the overall decrease in development activity.

The No Project/Existing General Plan Alternative would not include mixed use, transit-oriented development within the Future Focus Areas north of the Caltrain tracks (Central Expressway,

Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East) as planned under the proposed Draft 2010-2035 General Plan. This would result in less exposure of sensitive receptors to toxic air contaminants (TAC) associated with roadways, railroad tracks and industrial uses. By not locating housing near US 101 and the Caltrain tracks, this Alternative would avoid the need for mitigation to reduce pollutant exposures for future residents. By not developing the Future Focus Areas north of the Caltrain tracks, odor impacts may be avoided by not locating new residents near industrial uses that may create objectionable odors.

However, the No Project/Existing General Plan has limited policies to improve air quality, while the proposed Draft 2010-2035 General Plan includes strong policies and actions to improve air quality. For this reason, the No Project/Existing General Plan Alternative would cause a minor incremental increase in air quality impacts compared to the proposed Draft 2010-2035 General Plan.

Cultural Resources

Archaeological and historic impacts would be largely the same under this Alternative as compared to the Draft 2010-2035 General Plan. Current and proposed policies call for the identification and protection of significant archaeological and cultural resources. Areas with sensitive cultural resources proposed for new urban uses under the Draft 2010-2035 General Plan could otherwise be re-developed with urban uses under the Existing General Plan. Therefore, the No Project/Existing General Plan Alternative would not avoid construction activity on sites that have sensitive cultural resources, although the intensity of new development (i.e. floor-area-ratio or employees/acre) would likely be less in most cases under the No Project/Existing General Plan. This may mean that in some cases existing low-intensity buildings, if determined to be historic, could be adapted to new uses of a similar intensity while retaining their integrity. This scenario would be in contrast to the Draft 2010-2035 General Plan, in which increases in intensity are planned that would likely preclude adaptive reuse of most existing buildings.

Traffic

Total VMT under this Alternative is estimated to be 3.68 million miles daily, a reduction of approximately 58,000 miles daily compared to the 2010-2035 General Plan, however, the additional jobs, residents and commercial development would nonetheless result in substantial traffic congestion, including significant unavoidable impacts to City streets, State freeways and highways, County expressways, and roadways in surrounding jurisdictions. On a per unit basis, this Alternative would be 15 percent less efficient (i.e. increased VMT) than the 2010-2035 General Plan, with an efficiency of 13.9 VMT/SP compared to 12.15 for the Draft 2010-2035 General Plan.

Hazards and Hazardous Materials

Since the No Project/Existing General Plan Alternative would not include residential and/or mixed-use development within the Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East), it would have the potential to expose fewer people to risks associated with hazards and hazardous materials, including placement of structures and people within airport height and safety zones, and residences in areas adjacent to facilities that store hazardous materials. However, the No Project/Existing General Plan Alternative would still accommodate substantial new and redevelopment, including industrial uses, which are more likely to transport, store, and emit

hazardous materials that could be harmful to the public. Nonetheless, new development under the No Project/Existing General Plan Alternative would be subject to federal, State and local regulations that would reduce the potential for hazards and hazardous materials impacts to a less than-significant level. However, since the No Project/Existing General Plan Alternative would expose fewer people to risks associated hazards and hazardous materials, impacts under the No Project/Existing General Plan Alternative would be incrementally reduced compared to the proposed Draft 2010-2035 General Plan.

Noise

Due to regional increases in traffic, roadway noise levels will increase over the course of the next 25 years. These regional increases would occur under both the No Project/Existing General Plan Alternative and the proposed Draft 2010-2035 General Plan. The City's contribution to future roadway noise impacts would be reduced under the No Project/Existing General Plan Alternative due to the overall reduction in daily VMT compared to the 2010-2035 General Plan, however future roadway volumes are anticipated to grow sufficiently for roadway noise impacts to remain significant and require mitigation in areas with sensitive receptors. Noise policies in the Noise Element of the No Project/Existing General Plan Alternative and the proposed Draft 2010-2035 General Plan would help to mitigate noise impacts, but would not eliminate them completely. By not developing the De La Cruz Future Focus Area with housing, future exposure of residents to aircraft noise impacts would be avoided. By not developing the Central Expressway Future Focus Area, future exposure of residents to expressway, freeway and railway noise impacts would be avoided. Therefore, the No Project/Existing General Plan Alternative would be a minor incremental improvement compared to the proposed Draft 2010-2035 General Plan.

Climate Change

Overall greenhouse gas emissions under this Alternative would be 2.291 MMT, a reduction of approximately 237,000 MT in 2020 and 336,000 MT in 2035 compared to the Draft 2010-2035 General Plan. However, with a correspondingly smaller service population, emissions on a per unit basis would be similar, and would continue to exceed state goals. Emissions from vehicles would be somewhat higher on a per service population basis given that VMT/SP is 15 percent higher compared to the Draft 2010-2035 General Plan. The existing General Plan does not include a commitment to prepare and implement a Climate Action Plan, which would be necessary to reduce emissions per state goals. However, it is reasonable to assume the City would choose to prepare and implement a Climate Action Plan to address emissions associated with its existing General Plan. With less new development occurring compared to the 2010-2035 General Plan, GHG emission reductions would need to be realized from existing sources to an even larger extent than anticipated under the Draft 2010-2035 General Plan. Despite having slightly reduced total GHG emissions, the No Project/Existing General Plan Alternative would be slightly less 'carbon-efficient' on a service population basis compared to the proposed Draft 2010-2035 General Plan, and therefore, would not be environmentally superior for climate change impacts.

5.5.2.2 Relationship to Project Goals and Objectives

While the No Project/Existing General Plan Alternative would continue to allow substantial new development growth in Santa Clara, it would not achieve the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan and would not accommodate new housing and job growth at the levels anticipated by ABAG and allowed under

the Draft 2010-2035 General Plan. The proposed Draft General Plan 2010-2035 represents a significant modification of the City's goals and policies, and modification of those goals and policies by definition would not occur under the No Project/Existing General Plan Alternative.

5.5.2.3 Factors That Could Affect Feasibility

This Alternative includes the draft 2007-2014 Housing Element and would therefore satisfy the City's near-term housing needs. However, the No Project/Existing General Plan Alternative would not provide sufficient housing beyond the timeframe of the 2007-2014 Housing Element and the City, without designating additional land available for adequate housing capacity beyond 2014, would presumably not be in compliance with State housing requirements. Furthermore, as stated above, this Alternative fails to satisfy the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan.

Conclusion: The No Project/Existing General Plan Alternative is, on balance, environmentally superior compared to the Draft 2010-2035 General Plan in that the magnitude of impacts associated with the overall level of development would be reduced. The environmental impacts that would result from an additional 18,000 residents and 25,000 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided, however on a per unit basis, the No Project/Existing General Plan Alternative is less efficient than the Draft 2010-2035 General Plan in terms of increased VMT and GHG emissions per service population. This Alternative would not achieve the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan. Furthermore, this alternative would not accommodate ABAG-projected job and population growth for 2035, and would not provide sufficient housing beyond the timeframe of the 2007-2014 Housing Element, which would presumably cause the City to be out of compliance with State housing requirements.

5.5.3 Balanced General Plan Growth Jobs/Housing Alternative

The purpose of this alternative is to evaluate the environmental impacts of continuing to accommodate ABAG projected housing growth, but reduce the General Plan's net new jobs to equal the anticipated number of employed residents associated with the projected population increase. This alternative would provide an equal number of jobs for the 19,440 future employed residents that would result from the proposed General Plan's 32,400 net new residents, assuming 0.6 employed residents per capita. Accordingly, this alternative consists of 32,400 net new residents and 19,440 net new jobs. This job and housing growth would occur in addition to the 7,090 residents and 21,140 jobs already 'in process' associated with implementation of the current 2000-2010 General Plan, as identified in Table 5.2-1 of the Santa Clara General Plan.

This alternative also serves as a 'reduced development' alternative in that it accommodates substantially fewer (5,600) future jobs while still achieving ABAG projected population growth. In 2035, under this Alternative, the City would have a service population (jobs+residents) of approximately 302,000, consisting of 155,000 residents and 147,000 jobs.

As described above, this alternative would provide an equal number of jobs for the future employed residents and consists of 32,400 net new residents and 19,440 net new jobs. Given this alternative would accommodate the same residential growth as the proposed 2035 General Plan, there would be no change in the distribution or intensity of proposed new residential development compared to the 2035 General Plan. What would change is an overall reduction in

the number of planned jobs, and therefore an incremental reduction in the intensity, but not location, of proposed new non-residential development to accommodate the reduced amount of jobs.

5.5.3.1 Comparison of Environmental Impacts

Land Use

Under the Balanced General Plan Growth Jobs/Housing Alternative the type and distribution of land uses would be relatively similar to that which would occur under the proposed Draft 2010-2035 General Plan. Neither the proposed Draft 2010-2035 General Plan nor the Balanced General Plan Growth Jobs/Housing Alternative would physically divide any existing communities within the city limit or Sphere of Influence. Similarly, neither alternative would conflict with a land use policy nor management plan in that relevant policies and plans would be updated to be consistent with the current General Plan. As a result, the Balanced General Plan Growth Jobs/Housing Alternative would have the same impact as the proposed Draft 2010-2035 General Plan.

Population and Housing

The jobs/employed resident ratio from the net new development under the Balanced General Plan Growth Jobs/Housing Alternative would be 1.0, compared to 1.29 from the net new growth under the 2010-2035 General Plan. On a per unit basis, this Alternative would lead to less inter-jurisdictional commuting and associated adverse environmental effects.

Aesthetics

The Balanced General Plan Growth Jobs/Housing Alternative would contain the same policies and measures addressing the visual appearance of new development as the proposed Draft 2010-2035 General Plan. As a result, the potential project-level aesthetic impacts of new development would be mitigated in the same manner as the proposed Draft 2010-2035 General Plan. New development and redevelopment under the Balanced General Plan Growth Jobs/Housing Alternative would occur in the same location and form compared to the proposed Draft 2010-2035 General Plan, with the exception that commercial and industrial development would occur at slightly lower intensities (FAR and employees per acre) due to 5,600 fewer jobs. Consistent with the Draft 2010-2035 General Plan, the Balanced General Plan Growth Jobs/Housing Alternative would not convert existing open space areas to urban uses, degrade scenic vistas and would not expose people to light or glare. For these reasons, the Balanced General Plan Growth Jobs/Housing Alternative is considered to be equivalent, in terms of aesthetics, to the proposed Draft 2010-2035 General Plan.

Hydrology and Water Quality

The Balanced General Plan Growth Jobs/Housing Alternative would result in the same amount and type of new housing and nearly the same amount of non-residential development, albeit at slightly reduced intensities, compared to the proposed Draft 2010-2035 General Plan. Both the Balanced General Plan Growth Jobs/Housing Alternative and the proposed Draft 2010-2035 General Plan would not substantially increase impermeable surfaces, and therefore would not result in increased risk to flooding, stormwater contamination and the degradation of water quality in receiving water bodies. As under the proposed Draft 2010-2035 General Plan, there would be no risk of seiche or dam failure under the Balanced General Plan Growth Jobs/Housing

Alternative. Additionally, the Balanced General Plan Growth Jobs/Housing Alternative would contain the same policy guidance that is in the proposed Draft 2010-2035 General Plan protecting against flooding and hydrologic impacts, and would also be required to comply with the City's Municipal Code. For these reasons, the Balanced General Plan Growth Jobs/Housing Alternative is considered to be equivalent to the proposed Draft 2010-2035 General Plan.

Geology and Soils

The Balanced General Plan Growth Jobs/Housing Alternative would result in the same amount and type of new housing and nearly the same amount of non-residential development, albeit at slightly reduced intensities, compared to the proposed Draft 2010-2035 General Plan. With fewer jobs, fewer people would be exposed to geologic and seismic hazards under the Balanced General Plan Growth Jobs/Housing Alternative. However, this Alternative would include the same goals, policies and actions to address these hazards as under the proposed Draft 2010-2035 General Plan. As with the proposed Draft 2010-2035 General Plan, new development under the Balanced General Plan Growth Jobs/Housing Alternative would be subject to federal, State and local regulations that would reduce the potential for geological or soils-related impacts to a less-than- significant level. For these reasons, the Balanced General Plan Growth Jobs/Housing Alternative is considered equivalent to the proposed Draft 2010-2035 General Plan.

Public Services

Fewer jobs associated with the Balanced General Plan Growth Jobs/Housing Alternative would slightly decrease the demand for fire and police services, and parks and recreational services when compared to the proposed Draft 2010-2035 General Plan. This slight decrease in demand would not result in any change in impacts. As a result, the Balanced General Plan Growth Jobs/Housing Alternative would have the same impact as the proposed Draft 2010-2035 General Plan.

Public Utilities

Given the reduction in job growth under the Balanced General Plan Growth Jobs/Housing Alternative, demands for public utilities (water, sewer, landfills) would be reduced on a proportional basis compared to the 2010-2035 General Plan. Reduced water demand would require less water to be imported, require less groundwater to be pumped from the Santa Clara Sub-Basin, and require less treatment capacity at the Water Pollution Control Plant, all of which processes require substantial amounts of energy. The reduced service population (5,600 fewer jobs) would also generate less solid waste requiring disposal capacity at Newby Island Landfill, which could incrementally extend the remaining lifespan of the landfill, but the City would nonetheless need to find a disposal option beyond 2024 when its current contract with Newby Island Landfill operator expires. Therefore, public utilities impacts would be incrementally reduced under the No Project/Existing General Plan Alternative.

Open Space, Parks, Trails and Recreation

New development and redevelopment under the Balanced General Plan Growth Jobs/Housing Alternative would occur similar to the proposed Draft 2010-2035 General Plan. Additionally, the Balanced General Plan Growth Jobs/Housing Alternative would not increase the use of existing recreational facilities and parks or create the need for construction of additionally recreational facilities, compared to those under the proposed Draft 2010-2035 General Plan. For these

reasons, the Balanced General Plan Growth Jobs/Housing Alternative is considered to be equivalent to the proposed Draft 2010-2035 General Plan.

Biological Resources

Impacts to biological resources are anticipated to be similar compared to the 2010-2035 General Plan in that the few remaining vacant parcels in the City would still be expected to develop with an urban use, thereby eliminating whatever limited habitat was present. Riparian protection strategies and measures would continue to be implemented through the Balanced General Plan Growth Jobs/Housing Alternative, consistent with the 2010-2035 General Plan. With reduced total VMT from 5,600 fewer jobs, this Alternative would contribute less emissions to cumulative regional nitrogen deposition impacts to protected serpentine habitat in southern Santa Clara County.

Air Quality

Compared to the Draft 2010-2035 General Plan, the Balanced General Plan Growth Jobs/Housing Alternative would result in fewer (5,600) future jobs while still achieving ABAG projected population growth. It is anticipated that the lower level of job growth would result in approximately 38,000 less daily VMT compared to the proposed Draft 2010-2035 General Plan; with a minor reduction in VMT, air quality impacts due to vehicle emissions would be incrementally decreased under the Balanced General Plan Growth Jobs/Housing Alternative. However, on a per unit basis, VMT and associated vehicular emissions would be essentially unchanged when comparing the Balanced General Plan Growth Jobs/Housing Alternative to the Draft 2010-2035 General Plan. Construction emissions would be reduced due to the overall decrease in development activity.

The Balanced General Plan Growth Jobs/Housing Alternative would place new housing and other sensitive receptors in the same locations as proposed by the Draft 2010-2035 General Plan. This includes locating new mixed use, transit-oriented development within the Future Focus Areas north of the Caltrain tracks (Central Expressway, Lawrence Expressway, Great America Parkway, De La Cruz, and Tasman East) as planned under the proposed Draft 2010-2035 General Plan. This would result in the potential exposure, as with the Draft 2010-2035 General Plan, of sensitive receptors to toxic air contaminants (TAC) associated with roadways, railroad tracks and industrial uses. By locating housing near US 101 and the Caltrain tracks, this Alternative would create, as with the Draft 2010-2035 General Plan, the need for mitigation to reduce pollutant exposures for future residents. By developing the Future Focus Areas north of the Caltrain tracks, odor impacts may need mitigation due to locating new residents and other sensitive receptors near industrial uses that may create objectionable odors. As with the proposed Draft 2010-2035 General Plan, the Balanced General Plan Growth Jobs/Housing Alternative would include strong policies and actions to improve air quality. Therefore, air quality impacts would be incrementally decreased under the Balanced General Plan Growth Jobs/Housing Alternative.

Cultural and Historic Resources

Archaeological and historic impacts would be largely the same under this Alternative as compared to the Draft 2010-2035 General Plan. The potential for cultural resources impacts due to new residential and non-residential development would be the same under this Alternative compared to the Draft 2010-2035 General Plan, as would the policies and measures to avoid and

mitigate potential cultural resource impacts. Proposed policies call for the identification and protection of significant archaeological and cultural resources. Therefore, the Balanced General Plan Growth Jobs/Housing Alternative would have the same cultural resources impacts as the proposed Draft 2010-2035 General Plan.

Traffic

Total daily VMT under this Alternative is estimated to be 3.7 million miles, a reduction of approximately 38,000 miles daily compared to the 2010-2035 General Plan, however, the additional vehicle trips would nonetheless result in substantial traffic congestion, including significant unavoidable impacts to City streets, State freeways and highways, County expressways, and roadways in surrounding jurisdictions. On a per unit basis, VMT and vehicle trips per service population would be essentially unchanged when comparing the Balanced General Plan Growth Jobs/Housing Alternative to the Draft 2010-2035 General Plan. Modeling results indicate the modest reduction in jobs (5,600 fewer, for a citywide total of 147,000) under this Alternative would not substantially affect overall commute travel patterns, trip lengths, or travel modes share compared to the Draft 2010-2035 General Plan. Given the incremental decrease in overall daily VMT under the Balanced General Plan Growth Jobs/Housing Alternative, traffic impacts would be incrementally decreased, although on a per unit basis, traffic impacts would be equivalent to the Draft 201-2035 General Plan.

Hazards and Hazardous Materials

Since the Balanced General Plan Growth Jobs/Housing Alternative would allow for a slightly fewer jobs than the proposed Draft 2010-2035 General Plan, it would have the potential to expose fewer workers to risks associated with hazards and hazardous materials. Nonetheless, goals, policies and actions under the proposed Draft 2010-2035 General Plan would mitigate potential hazards and hazardous materials impacts under the Balanced General Plan Growth Jobs/Housing Alternative and new development under the Balanced General Plan Growth Jobs/Housing Alternative would be subject to federal, State and local regulations that would reduce the potential for hazards and hazardous materials impacts to a less than-significant level. As a result, the Balanced General Plan Growth Jobs/Housing Alternative would have the same hazards and hazardous materials impacts as the proposed Draft 2010-2035 General Plan.

Noise

Due to regional increases in traffic, roadway noise levels would increase over the course of 25 years. These regional increases would occur under both the Balanced General Plan Growth Jobs/Housing Alternative and the proposed Draft 2010-2035 General Plan. There would be reduced traffic noise levels (approximately 38,000 less daily VMT) and hence incrementally lower noise levels resulting from the Balanced General Plan Growth Jobs/Housing Alternative. However future roadway volumes are anticipated to grow sufficiently for roadway noise impacts to remain significant and require mitigation in areas with sensitive receptors. Noise policies to reduce and mitigate noise impacts would be the same under the Balanced General Plan Growth Jobs/Housing Alternative and the proposed Draft 2010-2035 General Plan, and the location of new housing and other sensitive receptors would remain unchanged between the two alternatives. Therefore, given the minor reduction in daily VMT due to fewer jobs, roadway noise impacts would be incrementally decreased under the Balanced General Plan Growth Jobs/Housing Alternative compared to the proposed Draft 2010-2035 General Plan.

Climate Change

Overall greenhouse gas emissions under this Alternative would be 2.368 MMT in 2020 and 2.582 MMT in 2035, a reduction of approximately 27,000 MT in 2020 and 45,000 MT in 2035 compared to the Draft 2010-2035 General Plan, respectively. However, with a correspondingly smaller service population, emissions on a per unit basis would be similar to the Draft 2010-2035 General Plan, and would continue to exceed state goals. Emissions from vehicles would be essentially the same on a per service population basis compared to the Draft 2010-2035 General Plan. A Climate Action Plan would continue to be necessary to reduce 2020 emissions to comply with State goals. Given the minor reduction in overall GHG emissions, climate change impacts would be incrementally decreased under the Balanced General Plan Growth Jobs/Housing Alternative compared to the proposed Draft 2010-2035 General Plan.

5.5.3.2 Relationship to Project Goals and Objectives

The Balanced General Plan Growth Jobs/Housing Alternative would meet housing needs for the City's projected population to 2035, but by definition would reduce the number of new jobs to equal the Draft 2010-2035 General Plan's net new employed residents. While accommodating 5,600 fewer jobs, this Alternative would otherwise satisfy the underlying purpose of this proposed project, which is a comprehensive update of the City's General Plan, including significant modification of the City's goals and policies.

5.5.3.3 Factors That Could Affect Feasibility

With the 5,600 fewer jobs identified in this Alternative, the anticipated effects would be less non-residential development and investment in the City, with the potential for a reduced revenue stream for City services, maintenance and facilities. The result could correspondingly affect neighborhood quality, provision of transit services, investment in Downtown and streetscape amenities, expansion of parks and open space opportunities, and quality of public services, such as libraries, police and fire services. In turn, these potential effects, if realized, would pose difficulties for meeting the City's seven Major Strategies, which serve as the foundation for its General Plan.

Conclusion: The Balanced General Plan Growth Jobs/Housing Alternative is, on balance, environmentally superior compared to the Draft 2010-2035 General Plan in that the magnitude of impacts associated with the overall level of development would be reduced. The environmental impacts that would result from an additional 5,600 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided, however on a per unit basis, the Balanced General Plan Growth Jobs/Housing Alternative is no more efficient than the Draft 2010-2035 General Plan in terms of VMT and GHG emissions per service population. The reduced job growth under this Alternative could result in a reduced revenue stream for public services, which could over time lead to fiscal challenges for implementing the City's seven Major Strategies, which form the foundation of the Draft 2010-2035 General Plan.

5.5.4 Additional Jobs/Housing Alternatives considered but rejected

As described above, this EIR considers an alternative to the proposed General Plan that balances the anticipated population growth with a number of new jobs equivalent to the anticipated number of new employed residents. The City could in theory consider more 'aggressive' 1:1 jobs/per employed resident alternatives to 1) attempt to balance the jobs/housing ratio for cumulative total new growth, including 'in process' employment development anticipated

independent of the proposed General Plan or 2) address the city's existing 'jobs-rich' imbalance. However, as discussed below, such alternatives would entail amounts of new residential development that render them infeasible.

5.5.4.1 *Balanced Cumulative Growth Alternative*

The cumulative total of planned new jobs in 2035, considering 'in process' and General Plan growth, is 46,180 jobs. Such job growth, if developed at a 1:1 jobs per employed resident ratio, would entail accommodating 76,966 new residents (assuming 0.6 employed residents per capita). This is more than double the 32,400 new residents planned in the 2035 General Plan, and nearly double the cumulative total 39,490 new population in the 2035 horizon, considering 'in process' and General Plan housing growth. The 76,966 residents under this alternative would require approximately 31,673 new housing units, or an additional 15,444 units beyond what is planned cumulatively in the 2035 General Plan horizon, and would represent roughly a 72 percent increase in the City's housing stock.

5.5.4.2 *Balanced Overall City Alternative*

To achieve a 1:1 jobs per employed resident ratio for the entire City at 2035, taking into account 152,860 total jobs in 2035, would entail a population of 254,766 (assuming 0.6 employed residents per capita). This represents 139,266 more residents than the City's current population, requiring approximately 57,311 new housing units, or an additional 41,082 beyond what is planned in the 2035 General Plan horizon, and would represent roughly a 130 percent increase in the City's housing stock.

To accommodate the substantial amounts of new housing presented in either potential alternative would require a substantial increase in land devoted to new housing development and/or a substantial increase in the planned average density, as demonstrated in Table 5.1.

TABLE 5.1 ALTERNATIVE RESIDENTIAL GROWTH AND DENSITY

Alternative	Population Growth	New Units	Density	Total Population
General Plan	32,400	13,312	32.5	154,990
Balanced Cumulative Growth	76,966	31,672	77	192,466
Balanced Citywide	139,266	57,311	140	254,766

Note: Density in units per acre, assuming land devoted to housing under proposed General Plan held constant.

Holding the new land area designated for housing under the proposed General Plan constant, residential densities would need to be increased to 77 du/ac to accommodate 31,673 units and increased to 140 du/ac to achieve 57,311 units. Such housing represents a dramatically different form and scale of development than anticipated in the proposed General Plan. Such intense development would be more akin to Downtown San Jose urban densities, and would be spread across Santa Clara, including interspersed within existing neighborhoods, thereby significantly changing the fundamental character of the City. This would be undesirable from a policy perspective in light of current and proposed General Plan policies seeking to maintain the character and scale in the City's existing neighborhoods.

Alternatively, if the assumed average density of 32.5 du/ac is held constant, the amount of land designated for housing (and land area for required services/infrastructure to support the

additional residential uses) would need to be increased by a factor of two for the Balanced Cumulative Growth and four for the Balanced Citywide, respectively, compared to the General Plan. Given that Santa Clara is a mature city hemmed in by adjacent cities and without substantial vacant undeveloped land for new housing, designating additional land for housing would necessarily entail converting substantial additional amounts of existing employment lands to residential use. This approach would need to be pursued to a much greater degree than the proposed General Plan's strategy to convert employment lands to develop new housing in the Central Expressway, Lawrence Expressway, De la Cruz, Great America, and Tasman West and Tasman East Focus Areas.

There would also be substantial fiscal implications for funding public services for such large amounts of new residential development, particularly providing adequate public facilities including schools, parks, libraries, and community centers, as discussed in the General Plan text (see General Plan, Fiscal Implications of Land Use pg.5-11)

Finally, case law supports the assumption that an EIR need not consider an alternative to address existing conditions, rather it must focus on alternatives that would avoid or reduce the impacts of the proposed project. The proposed General Plan housing and job growth would occur in addition to the 2,917 units (yielding 7,090 residents) and over 10 million square feet of non-residential development (yielding 21,140 jobs) already 'in process' prior to the General Plan update process. In this context, Santa Clara today is a jobs-rich community and has, independently of this comprehensive General Plan update, planned for substantial job growth that will be realized concurrent with the General Plan's initial phase, and regardless of whether the City adopts the proposed General Plan. Therefore, the existing 'in process' job growth is not the subject of this EIR, and the EIR need not consider an alternative to the proposed General Plan that addresses an existing or forecast jobs/housing imbalance, which would exist without the proposed General Plan. Therefore, it is appropriate to focus on an alternative to the jobs/housing ratio that would result from the General Plan growth alone.

5.6 COMPARISON OF ALTERNATIVES

Table 5.2 presents the relative level of impacts for the Draft 2010-2035 General Plan and the two Alternatives evaluated in this Chapter.

TABLE 5.2 COMPARISON OF IMPACTS BY ALTERNATIVE

Resource Category	Level of Impact		
	Proposed Draft 2010-2035 General Plan	No Project/Existing General Plan Alternative	Balanced General Plan Growth Jobs/Housing Alternative
Land Use	LTS	+	=
Population and Housing	SU	-	+
Aesthetics and Visual Resources	LTS	-	=
Hydrology and Water Quality	LTS	+	=
Geology and Soils	LTS	-	=
Public Services	LTS	-	=
Public Utilities	SM/SU ¹	+	+
Open Space, Parks, Trails and	LTS	-	=

Resource Category	Level of Impact		
	Proposed Draft 2010-2035 General Plan	No Project/Existing General Plan Alternative	Balanced General Plan Growth Jobs/Housing Alternative
Recreation			
Biological Resources	SM	+	+
Air Quality	SM	-	+
Cultural and Historic Resources	LTS	+	=
Transportation and Traffic	SU	+	+
Hazards and Hazardous Materials	LTS	+	=
Noise	SM/SU ³	+	+
Energy and Climate Change	SM and SM/SU ²	-	+
Fully Meets Project Objectives	Yes	No	No
Notes: ¹ – Landfill capacity past 2024 ² – Greenhouse Gas Emissions at 2035 ³ - Roadway noise from increased traffic. LTS Less than Significant SM Significant but includes Mitigation SU Significant Unavoidable + Incremental improvement compared to the proposed project = Same impact as proposed project - Incremental deterioration compared to the proposed project			

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines specify that an EIR must identify the environmentally superior alternative among those alternatives discussed. If the environmentally superior alternative is the “No Project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Based on the above discussion, the environmentally superior alternative is the No Project/Existing General Plan Alternative, because the project’s significant environmental impacts would be reduced, although not to a less than significant level, by avoiding the impacts from an additional 18,000 residents and 25,000 jobs that would be accommodated by the Draft 2010-2035 General Plan. However, this alternative would not achieve the underlying purpose of this proposed project, which is a comprehensive update of the City’s General Plan.

Based on the above discussion, after the No Project/Existing General Plan Alternative, the environmentally superior alternative would be the Balanced General Plan Growth Jobs/Housing Alternative, because the environmental impacts that would result from an additional 5,600 jobs accommodated by the proposed Draft 2010-2035 General Plan would be avoided. However, the reduced job growth under this Alternative could result in a reduced revenue stream for public services, which could over time lead to fiscal challenges for implementing the City’s seven Major Strategies, which form the foundation of the Draft 2010-2035 General Plan.

6 CUMULATIVE ANALYSIS

6.1 INTRODUCTION

Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. The CEQA Guidelines State (§15130) that an EIR should discuss cumulative impacts “when the project’s incremental effect is cumulatively considerable.” The discussion does not need to be in as great detail as is necessary for project impacts, but is to be “guided by the standards of practicality and reasonableness.” The purpose of the cumulative analysis is to allow decision makers to better understand the potential impacts which might result from approval of past, present and reasonably foreseeable future projects, in conjunction with the proposed project. The CEQA Guidelines advise that a discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence.

The effects of existing development are reflected in the existing conditions described in the specific sections of this EIR. Future development projects within the City would either occur as 1) part of the proposed 2035 General Plan (Column D of Table 5.2-1) or as ‘in process’ development under the current 2002-2010 General Plan (columns B and C of Table 5.2-1). The ‘in process’ development occurring under the current General Plan has been included as ‘background’ conditions throughout this EIR, meaning the impacts analysis takes into account existing conditions, the additional incremental impacts from ‘in process’ development that forms the ‘background’ conditions against which the General Plan is proposed, and the incremental effects of the new development that would occur under the 2035 General Plan itself. Therefore, this cumulative impacts analysis does not separately analyze the effects of development occurring under the existing 2002-2010 General Plan. The cumulative effects of projects undertaken by other public agencies within the City limits are accounted for in this cumulative analysis as well as in the sub-regional vicinity.

6.2 CUMULATIVE PROJECTS LIST

In order to meet the intent of the cumulative analysis requirement, the following discussion reflects the information known to the City of Santa Clara as of the date of circulation of this EIR. The relevant projects are listed in Table 6.2-1 below.

TABLE 6.2-1 CUMULATIVE PROJECTS LIST

BART Extension to Silicon Valley
California High Speed Rail
San Jose/Santa Clara Water Pollution Control Plant Master Plan
San Jose Envision 2040 General Plan update
Mission College Master Plan
Santa Clara University Master Plan
Santa Clara Unified School District projects
Campbell Union School District projects
Campbell Union High School District projects
Valley Habitat Plan
Newby Island Landfill Expansion
City of Sunnyvale General Plan Update
City of Cupertino General Plan
San Jose Airport Master Plan

6.2.1 BART Extension to Silicon Valley

The BART to Silicon Valley Project consists of an extension of the existing BART regional heavy rail system to Milpitas, San José and Santa Clara. The BART Extension to Silicon Valley will extend over 16 miles along the existing Union Pacific Railroad alignment south of the planned BART Warm Springs Station in Fremont. When completed, this fully grade-separated project will include: six stations – one in Milpitas, four in San José and one in Santa Clara; a 10-mile extension to Milpitas and the Berryessa area in east San Jose; a 5-mile tunnel in downtown San Jose; and a new maintenance and storage facility in Santa Clara. The BART extension from Fremont to Warm Springs is now under construction. This project is being managed by the Valley Transportation Authority on behalf of BART. The 5-mile extension to Warm Springs is planned to be complete by 2014.

The current efforts by VTA are focused on obtaining \$900 million in Federal funding for a first phase extension from Warm Springs to Berryessa. This \$2 billion, 10-mile project will begin final design in 2011 and is planned to start construction in 2012 and be complete by 2018. The remaining gap in the BART to Silicon Valley project is the 6-mile link from Berryessa to Downtown San Jose, Diridon Station, and the Santa Clara station near the Mineta San Jose International Airport. This section includes 5 miles of tunnel construction. The project is at 65 percent design completion and will resume project development when federal funding is secured for the first phase. The possible financing strategies are based on: improvement in the local economy (sales tax revenues are the source of local BART funds); seeking additional Federal funds (once the Berryessa extension funds are secured); increased Federal funding opportunities for urban transit as part of new Federal transportation policy bill (expected in 2011); and increased BART ridership projections based on connectivity with HSR service at Diridon Station (not accounted for in current BART studies). For the purposes of this EIR, the Berryessa-Downtown San Jose-Santa Clara Station BART segment is assumed in the cumulative analysis to be complete sometime between 2025 and 2035.

6.2.2 High Speed Rail (HSR)

The *project*-level EIR/Environmental Impact Statement (EIS) for the northern California segment of the HSR that would serve San Jose/Santa Clara is under preparation by the California High-Speed Rail Authority and anticipated to be complete in December 2010. The EIR/EIS for the HSR would address the environmental effects of the project, including noise, vibration, light, and visual impacts of the HSR.

The HSR *program*-level EIR was decertified by the High Speed Rail Board at the end of 2009 in response to an earlier adverse court ruling. Once the HSR program-level EIR is recirculated, new information will become available concerning options for how the trains might go from Gilroy to San José and from San Jose through Santa Clara and up the Peninsula to San Francisco, and the resulting environmental impacts. Once the program-level EIR is re-certified and the project is approved, the project-level EIR/EIS for the various HSR segments can move forward for certification and approval, and that information can be incorporated in the City's planning and environmental review processes.

6.2.3 San Jose/Santa Clara Water Pollution Control Plant Master Plan

The San Jose/Santa Clara Water Pollution Control Plant (Plant) Master Plan is being prepared to guide the Plant's development over the next 30 years. The Plant's entire property totals 2,600 acres including an 175-acre operations area, 800-acre sludge lagoons and drying beds, 856-acre former salt production pond, (Pond A18), and 769-acre riparian habitat and grasslands, adjacent to the Don Edwards National Wildlife Refuge. The Master Plan includes the upgrading the Plant facilities and equipment, planning for the current and future peak flows needs to serve the expected population and job growth within the Plant's service area that currently includes almost 1.4 million residents and 600,000 workers in eight cities, and changes to Plant land uses. The land use changes may include creating habitats and natural corridors to support wildlife, community parks and amenities, and commercial, retail and light industrial development.

The Draft Master Plan is scheduled to be completed in early 2011 and the Final Master Plan is anticipated to be completed shortly after preparation and certification of the CEQA/NEPA environmental review in early 2013.

6.2.4 City of San José Envision 2040 General Plan Update

Santa Clara shares its eastern, northern and southern boundaries with the City of San José. To the south along Stevens Creek Boulevard, San José's current General Plan supports auto sales and discourages residential development. To the east, adjacent to the San Jose Norman Y. Mineta International Airport, San José's General Plan promotes the redevelopment of the area under the Rincon South Planned Community which includes residential, hotels, retail, commercial, and industrial uses to take advantage of the light rail access and Airport proximity. Lastly, plans are underway for the Alviso area to the north. The City of San José is currently updating its General Plan to 2040 to accommodate an additional 470,000 jobs and 120,000 dwelling units.

The Specific Plan for the historic Alviso neighborhood in the City of San José, which borders Santa Clara to the north, projects modest growth to accommodate some retail, commercial and light industrial uses on a closed landfill site and an existing industrial site.

The City of San José has approved a Vision Plan for North San José. The area for this plan is located adjacent to Santa Clara's eastern boundary. The plan provides opportunities to increase office, industrial and R&D uses by over 26 million square feet to create up to 80,000 new jobs. The plan also proposes to convert 285 acres of existing industrial land to residential use and allow mixed use residential development within industrial areas. This could result in up to 32,000 new residential units adjacent to Santa Clara.

6.2.5 Mission College Master Plan

Mission College is a public community college located within the City of Santa Clara west of the intersection of Mission College Boulevard and Great America Parkway, just north of Highway 101. The Mission College Facilities Master Plan has been developed in support of the College's Draft Educational Master Plan, and anticipates the completion of the academic portion of the

campus, while providing for future campus completion projects¹⁶⁶. A significant portion of College property along the south perimeter of the campus has been developed with both retail and commercial office use by the Mercado Retail Center and Yahoo. The Facilities Master Plan also considers this area of District owned property for potential future public/private opportunities.

The Facilities Master Plan design provides for a coherent, centrally-focused campus design. It will include: the replacement and subsequent demolition of the existing Main Building; an interdisciplinary plaza, including open space with an outdoor amphitheatre, landscaping, covered walkways, and a water feature; the redesign of the front campus entry; and the creation of exterior paseos and courtyards. Significant utility infrastructure upgrades will be required to address the future projects of the Master Plan. Several of the newer buildings will require minor upgrades, while many of the older buildings may require more extensive renovation/modernization work. It is the intent of the Master Plan to remove the existing portable building structures and replace them with permanent facilities.

6.2.6 Santa Clara University Ten Year Capital Plan

The Santa Clara University (SCU) campus of approximately 100 acres is located within the City of Santa Clara at The Alameda and El Camino Real (Highway 82). The SCU Ten Year Capitol Plan (The Plan) outlines the SCU's building program for the years 2002 through 2011. The Plan includes six specific building projects that will be constructed on the existing campus. Construction of these new facilities is being phased over the ten year period and will result in an increase in approximately 250,000 square feet of academic floor and a Parking Deck. The new facilities include: a Business School; Multi-Use Facility; Heafey Law Library Expansion; Benson Center Expansion; Orradre Library Consolidation and Expansion; and a Parking Deck. Since 2002, the SCU has added two new projects to The Plan; a residential community for Jesuit faculty, and a student commons.

A Final EIR for The Plan was released in January 2003¹⁶⁷. As of April 2010, the preliminary cost and scope estimates for The Plan were completed, as well as a consolidated list of candidate projects.¹⁶⁸ Next steps in the process include: assess the project fundability; establish the final list of projects; and begin fundraising and design for the projects.

6.2.7 Santa Clara Unified School District Projects Bond Projects

Voters approved two General Obligation Bonds to make investments to expand, modernize and improve their school facilities: Measure B in June 1997 and Measure J in November 2004.

Measure J Bond provides extensive modernization for secondary schools, including: seismic upgrades to classrooms and schools, add school facilities to relieve overcrowding, and repair deteriorated plumbing, sewers, bathrooms, leaky roofs, aging boilers, inadequate heating, electrical and building systems. As of Fall 2009, Middle School Projects under the Measure J

¹⁶⁶ Mission College Draft Educational & Facilities Master Plan. Accessed May 24, 2010. Available at: http://www.missioncollege.org/gen_info/efmp_master_plan.html

¹⁶⁷ David J. Powers & Associates. 2003. Santa Clara University Ten Year Capital Plan Final EIR. January 2003.

¹⁶⁸ Facilities Capital Plan Update. Presented by Joe Sugg Asst Vice President University Operations. April 27, 2010. Accessed May 24, 2010. Available at: <http://university-operations.scu.edu/capitalplanupdate.pdf>

Bond include: Buchser; Cabrillo; and Peterson. Construction on these projects is expected to be completed by end of 2011.¹⁶⁹ As of Fall 2009, High School Projects under the Measure J Bond include Santa Clara and Wilcox. Construction on these projects is expected to be completed by end of 2010.¹⁷⁰ The Braly Elementary School was completed over the summer 2009.

Measure B Bond provided funds to improve health and safety conditions by the repair and renovation of neighborhood schools including replacing electrical, heating and plumbing systems to comply with current fire and safety standards and reducing danger from earthquakes with seismic upgrades and to enhance educational opportunities. The Measure B capital improvement program was augmented by State Facilities Act funding, joint use funding from the cities of Santa Clara, San Jose and Sunnyvale and other sources. Completed improvements included new elementary school play structures, new high school science classrooms and outdoor athletic facilities, major renovation of eleven elementary school campuses, a roof replacement program and two high school performing arts buildings.¹⁷¹

6.2.8 Campbell Union School District Bond Projects

The Measure H School Facilities Bond was approved by the voters of Campbell Union School District in March 2002 to continue the school facility improvements that the district began in the early 1990s. The bond is being implemented in phases over a 10-year period. As of June 2008 with all the bonds being issued, approximately 88 percent of funds have been expended. The remaining money will be primarily used for classroom and bathroom renovations at Blackford, Castlemont, Rosemary, Capri, Lynhaven, Forest Hill, Marshall Lane and Rolling Hills. All projects are running on schedule and anticipated to be completed no later than 2012.¹⁷²

6.2.9 Campbell Union High School District Bond Projects

The Measure G Bond was passed in 2006 to improve the quality of education by upgrading Campbell Union High School District school facilities, including: renovating older classrooms and deteriorating restrooms, including seismic upgrades; improving access for disabled students and teachers; modernizing libraries and homework centers; enhancing computer learning technology; and improving facilities for vocational training, arts, physical education and school safety. With the passage of Measure G, the renovation and upgrading of Boynton, Branham, Del Mar, Leigh, Prospect and Westmont High Schools has been ongoing since summer 2007. Projects are expected to be completed by summer 2010.¹⁷³

6.2.10 Santa Clara Valley Habitat Conservation Plan (Draft)

The City is adjacent to the area that will be covered by the proposed Santa Clara Valley Habitat Plan (Habitat Plan), which is a conservation program to promote the recovery of endangered

¹⁶⁹ Measure J Bond Santa Clara Unified School District Middle School Projects. Accessed May 24, 2010. Available at: <http://www.santaclarausd.org/bondprojects.cfm?subpage=467953>

¹⁷⁰ Measure J Bond Santa Clara Unified School District High School Projects. Accessed May 24, 2010. Available at: <http://www.santaclarausd.org/bondprojects.cfm?subpage=467955>

¹⁷¹ Measure B Bond Santa Clara Unified School District Projects. Accessed May 24, 2010. Available at: <http://www.santaclarausd.org/bondprojects.cfm?subpage=123066>

¹⁷² Measure H Bond Campbell Union School District Annual Report – June 2008. Accessed May 24, 2010. Available at: <http://www.campbellusd.k12.ca.us/bondh/AR-CBO-08.pdf>

¹⁷³ Measure G Bond Program Campbell Union High School District Project Sites. Accessed May 24, 2010. Available at: <http://www.cuhisd.org/MeasureG/index.html>

species while accommodating planned development, infrastructure and maintenance activities. The Habitat Plan is being developed through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, the Santa Clara Valley Water District, the Valley Transportation Authority, California State Parks, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the National Marine Fisheries Service. The Habitat Plan seeks to protect and enhance ecological diversity and function within more than 500,000 acres of southern Santa Clara County.¹⁷⁴ The final Plan will provide a framework for the Local Partners and landowners to complete projects while protecting at-risk species and their essential habitats, some of which only occur in Santa Clara County.

6.2.11 Newby Island Landfill Expansion

Newby Island Landfill is currently in the process of seeking authorization from the City of San Jose to expand its permitted capacity to accept an additional 15 million cubic yards. The reasonably foreseeable environmental effects of the proposed expansion of the Newby Island Landfill have been disclosed in a project-level EIR prepared by the City of San Jose.¹⁷⁵ The project is anticipated to undergo public hearings and receive a decision in late 2010. The proposed additional capacity would allow the landfill to continue receiving waste at existing levels at least until the estimated closure date of 2025. The landfill operator anticipates accepting waste quantities such that the landfill, even if granted the additional requested capacity, will reach capacity by 2025. However, depending upon the annual tonnages accepted by the landfill operator going forward, it is possible that the landfill, if granted additional capacity, could close at a later date, beyond 2025.

6.2.12 City of Sunnyvale General Plan Update

Santa Clara shares its western boundary with the City of Sunnyvale. Sunnyvale's 1997 General Plan designates the area bordering Santa Clara for industrial uses north of the Caltrain railroad tracks and residential uses south of the railroad tracks, with the exception of the existing residential and mobile home park between U.S. 101 and Tasman Drive. The Calabazas Creek provides a natural buffer between the Sunnyvale neighborhoods north of the Caltrain railroad tracks and the existing and planned employment centers in Santa Clara. The City of Sunnyvale is currently in the process of updating several elements of its General Plan.

In 2010 and 2011 the City will continue the process of updating the Land Use and Transportation Element of the General Plan (LUTE). In addition the City will be developing its first Climate Action Plan (CAP). The link between land use and transportation planning with climate policy will be explored during preparation of the LUTE and CAP. The City of Sunnyvale Council has also directed staff to consolidate the General Plan into a single-document. The Consolidation will be tiered off the Community Vision of the General Plan and will be the first step in creating a

¹⁷⁴ ICF Jones & Stokes. 2009. Santa Clara Valley Habitat Plan 2nd Administrative Draft. Prepared for the County of Santa Clara Planning Office.

http://www.scvhhabitatplan.org/www/site/alias_default/documents_draft_hcp_chapters/292/draft_hcp_chapters.aspx

¹⁷⁵ City of San Jose, *Newby Island Sanitary Landfill/The Recyclery Planned Development Rezoning Draft EIR*. Available at <http://www.sanjoseca.gov/planning/eir/EIR.asp>.

Comprehensive General Plan. The City is anticipating an additional 18,000 persons, 7,300 new housing units and 24,807 new jobs by the year 2025.¹⁷⁶

6.2.13 City of Cupertino General Plan

Cupertino shares a small portion of Santa Clara's western boundary. For this area, Cupertino's General Plan identifies streetscape and other landscaping improvements along Stevens Creek Boulevard to support residential and office uses midblock, and neighborhood commercial uses at corners. The South Vallco Park area, just east of the shared boundary, is approved for 711 housing units. The Cupertino General Plan allows building heights of up to 60 feet in this area.

The time frame of the City of Cupertino's General Plan is 2000-2020. A comprehensive review of Cupertino's General Plan began in early 2001 and was completed on November 15, 2005, when the City Council adopted amendments to the General Plan. The City is anticipating an additional 66,400 persons and 3,262 new housing units by the year 2020.¹⁷⁷

6.2.14 San Jose Airport Master Plan

A portion of the City of Santa Clara's eastern border is adjacent to the San Jose Airport. The Airport Master Plan for San Jose International consists of a program of facility improvements designed to fully accommodate commercial aviation demand (passengers and cargo) projected for the year 2017, with development phased as demand warrants and is determined to be financially feasible. The Master Plan was originally adopted by the City of San Jose in June 1997 and approved by the Federal Aviation Administration (FAA) in December 1999. Subsequent to its 1997 approval, the Airport Master Plan has been revised through a series of City-approved amendments and construction of various capital improvement projects has been completed or is currently underway. Most of the airfield improvement projects have been completed. Other projects that have been completed include various improvements to the on-Airport roadway system, a new Federal Inspection Services (FIS) building for international flights, and a new jet fuel storage and distribution facility. As part of the Airport Master Plan implementation, the City of San Jose has completed a noise mitigation program that included the soundproofing of over 1,300 dwelling units in the aircraft noise-impacted residential neighborhoods of Santa Clara north of US 101. Current construction activities include a new passenger terminal and adjacent parking garage with associated roadway improvements.

The City of San Jose is proposing to amend the approved Airport Master Plan in two primary categories: 1) Shift the horizon year from 2017 to 2027; and 2) With regard to air passenger, air cargo and general aviation, modify development program objectives and future facilities requirements to reflect updated demand forecasts. In 2009, the City completed an update to the aviation demand forecasts for San Jose Airport. Based on this 2009 updated forecast, the level of air passenger activity (i.e., 17.6 million annual passengers) at San Jose Airport that was originally projected to be reached by year 2010, and subsequently projected to be reached by 2017, is now projected not to be reached until year 2027. The projected annual air cargo volume

¹⁷⁶ City of Sunnyvale. LUTE Workshop Presentation. Accessed June 11, 2010. Available at: <http://sunnyvale.ca.gov/LinkClick.aspx?fileticket=mhXlsKSIEqM percent3d&tabid=495>

¹⁷⁷ City of Cupertino. 2005. City of Cupertino General Plan 2000-2020. Adopted by the Cupertino City Council, November 15, 2005.

for year 2027 is 189,700 tons. This demand level is 40 percent less than the 315,300 tons that had been previously projected to occur by year 2017.¹⁷⁸

6.3 CUMULATIVE IMPACTS ANALYSIS

For each subject area, the discussions below address the following aspects of cumulative impacts:

- Would the effects of the proposed project, when combined with the effects of all past, present, and pending development result in a cumulatively significant impact on the resources in question?
- If a cumulative impact is likely to be significant, would the contribution of the proposed project to that impact be cumulatively considerable?

6.3.1 Land Use, Population and Housing

The cumulative scenario includes new population and employment growth planned by the cities of Santa Clara, San Jose, Cupertino, and Sunnyvale. All cumulative population and employment growth would occur within the cities' existing urban growth boundaries, with no expansion of urban services to rural undeveloped areas. While some new development will occur through development of the relatively few remaining vacant infill parcels found in each city, the cumulative trend will continue to predominantly be redevelopment of existing low-intensity, underutilized parcels with new urban uses. Most new housing accommodated within the cumulative jurisdictions will be in a medium- or high-density attached or mixed-use format. New job growth will largely occur on previously developed parcels in intensified forms (i.e. more employees per acre compared to existing development patterns, often with structured parking). Given the interconnected nature of the cities and the regional transportation network, most workers will travel to jobs in a city different from where they live.

Per Table 6.2-2 below, the cumulative projects would accommodate an additional 441,100 residents in 2035. Assuming 0.6 employed residents per capita, this yields 264,660 additional employed residents. Therefore, with 559,130 new jobs planned in 2035, the resulting cumulative growth jobs per employed resident ratio would be approximately 2.1.

TABLE 6.2-2 PLANNED POPULATION, HOUSING AND EMPLOYMENT GROWTH

City	Population Growth		Housing Growth		Employment Growth	
	2020	2035	2020	2035	2020	2035
Santa Clara ^A	15,500	39,500	8,242	16,229	19,300	46,300
San Jose ^A	163,000	367,200	52,900	120,000	126,000	470,000
Cupertino ^B	5,754	4,100 ^C	3,262	2,230 ^C	2,280	6,560 ^C
Sunnyvale ^B	18,000 ^D	30,300 ^C	7,300 ^D	14,441 ^C	24,807 ^D	36,270 ^C
Totals	202,254	441,100	71,704	152,900	172,387	559,130

¹⁷⁸City of San Jose. 2010. NORMAN Y. MINETA SAN JOSÉ INTERNATIONAL AIRPORT MASTER PLAN UPDATE PROJECT SAN JOSÉ, CA. EIGHTH ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT. February 10, 2010. Accessed June 11, 2010. Available at: http://www.sjc.org/about/improve/overview/CR_EIR_Add.pdf

A – The anticipated growth is from a 2008 base year.
 B - The anticipated growth is from a 2005 base year.
 C - The projections for the year 2035 are based on ABAG 2009 Projections, as neither of these cities have considered long range plans that would accommodate the project growth to the year 2035.
 D - Values for City of Sunnyvale are for the year 2025 – the projected buildout year for the City's current General Plan.

In essence, the cumulative projects would accommodate two new jobs for every new employed resident, exacerbating Santa Clara County's existing jobs-housing imbalance (1.2 in 2005 according to ABAG Projections 2007). The environmental consequences will primarily be increased regional traffic congestion and air pollution from vehicles as workers unable to live near their employment commute long distances from outlying areas with affordable housing, continuing a pervasive trend over the past several decades as job growth has outpaced housing growth in Santa Clara County.

Considering both 'in process' growth and new growth proposed by the 2010-2035 General Plan, the City of Santa Clara would contribute to this cumulative imbalance in 2035 by adding 39,490 residents (yielding 23,694 employed residents) and 46,180 jobs, for a jobs per employed resident ratio of 1.95, (46,180 jobs divided by 23,694 employed residents). This is a cumulatively considerable contribution to a significant cumulative impact.

Impact CUMULATIVE CI-1: Build-out of the Draft General Plan in conjunction with other planned development would contribute cumulatively to land use impacts arising from a regional jobs-housing imbalance. (Significant Impact)

Mitigation Measure CUMULATIVE CI-1: None available. (Significant Unavoidable)

6.3.2 Aesthetics and Visual Resources

Visual and scenic resources are generally localized, although specific resources can be regional in nature, such as vistas of a mountain range. Build-out of the Draft General Plan would be limited to redevelopment of existing urbanized areas within Santa Clara, as there are only a small number of vacant undeveloped parcels remaining in the City. Cumulative development within Santa Clara by other public agencies, i.e. the public school districts, or in adjacent communities, i.e. San Jose, would also largely consist of 'recycling' of existing developed parcels for new urban land uses or intensification of existing land uses. Implementation of the proposed Santa Clara General Plan, including implementation of design review process and incorporation of applicable policies regulating the appearance of new development, would not result in impacts to regional visual and scenic resources, such as the Valley's surrounding hillsides, in that new and redevelopment would not be of a scale or density to affect regional visual and scenic resources. Therefore the City's contribution to cumulative regional visual and scenic resource impacts would be less than significant.

6.3.3 Cultural and Historic Resources

Projects in the City and other cumulative projects would implement mitigation that avoids or substantially lessens potentially significant impacts to cultural resources, as required by State law. These mitigation strategies would typically involve pre-construction identification surveys; significance evaluations; consultation with tribal descendant communities; culturally and legally appropriate treatment of human remains; archaeological construction monitoring; resource

documentation; and data recovery for unavoidable impacts. These mitigation strategies would generally avoid or substantially lessen the severity of impacts to cultural resources. Therefore, the City's contribution to cumulative impacts associated with cultural resources is less than cumulatively considerable.

6.3.4 Transportation and Traffic

Section 4.12 *Transportation* includes a detailed analysis of the cumulative conditions related to transportation and build-out of the Draft General Plan. The City travel demand model has been developed within the framework of the VTA's Santa Clara County model, which in turn is based on the MTC's Bay Area regional travel model. Future traffic volumes take into account future Bay Area regional growth in population and employment as projected by ABAG, adjusted to reflect the specific values proposed by Santa Clara's Draft 2010-2035 General Plan.

Given the integrated nature of the transportation network in northern Santa Clara County, and the close proximity of jobs and housing in adjacent jurisdictions, the predominant travel pattern is for trips to move between jurisdictions, as reflected by the fact that only 30 percent of Santa Clara's employed residents work in Santa Clara despite the City being relatively job-rich. This pattern is expected to continue into the future. It will continue to be common for trips to cross jurisdictions, i.e. as future development occurs in Santa Clara or in surrounding jurisdictions, each city will consider whether feasible mitigation exists that could be required of the new development project that has a trip end in another city. The CEQA process provides an opportunity for adjoining cities to work cooperatively to address the traffic impacts of new development that crosses jurisdictional lines. However, in many situations, roadways have been built out to their ultimate planned configurations and further capacity enhancing improvements will not be available.

Under cumulative conditions, which assumes build-out of all planned growth in the region, including the City's Draft General Plan, regional roadways and highways would experience levels of service in excess of those identified by responsible agencies, for which no feasible mitigation exists. These cumulative impacts, and the City's contribution to them under the Draft General Plan, are significant and unavoidable.

Impact CUMULATIVE CI-2: Build-out of the Draft General Plan in conjunction with other planned development would contribute cumulatively to regional transportation impacts. (Significant Impact)

Mitigation Measure CUMULATIVE CI-2: None available. (Significant Unavoidable)

6.3.5 Public Services

Public services are generally provided by local governments for areas within their jurisdictions and are not provided on a regional basis. Law enforcement and fire protection and emergency services are provided by local governments or fire protection districts for areas within their jurisdiction, supplemented by mutual aid agreements between agencies to pool resources. Public schools are provided by school districts to residential areas within their jurisdictions. While districts may cross city jurisdictional boundaries, school services are still provided at the local, rather than regional, level. The attendance boundaries and projected student population trends of the several school districts serving Santa Clara are discussed in Public Services.

As with the other public services described here, libraries are also generally provided by local governments for areas within their jurisdiction, and services are not provided on a regional basis. Social services are generally provided by counties, and not on a regional basis. Neighborhood parks and recreational services are generally provided by local governments for areas within their jurisdiction. The Draft General Plan would not substantially impact the use of the other jurisdiction's libraries, parks and recreation facilities in the region, although Santa Clara residents are also residents of Santa Clara County and would continue to take advantage of County parks, trails, and other recreational facilities, funded in part by Santa Clara resident taxes. Therefore, the cumulative regional impacts of the Draft General Plan associated with law enforcement, fire and emergency, schools, library, social, and neighborhood parks and recreation services are considered less-than-significant.

6.3.6 Public Utilities

6.3.6.1 Water

The Water Supply discussion in *Section 4.7 Public Utilities* considered the cumulative water demand and supply issues for all water retailers, including the City of Santa Clara, that rely upon the Water District's integrated wholesale water supply program. The City's contribution to cumulative water supply impacts would be less than significant with implementation of the identified policies and mitigation. Therefore, no further discussion of cumulative water issues is warranted in this chapter.

6.3.6.2 WPCP Cumulative Influent/Effluent

The San José/Santa Clara Water Pollution Control Plant (WPCP), which is located in the Alviso area of San José, provides wastewater treatment for the cities of Santa Clara, San José, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga, and Monte Sereno.

Currently, the WPCP has a capacity to treat an average of 167 million gallons per day (mgd) of dry weather influent flow (ADWIF).¹⁷⁹ Of this total capacity, the City of Santa Clara is allocated approximately 23 mgd, while San José is allocated approximately 108 mgd. The NPDES permit identifies a design peak hour wet weather flow (PHWWF)¹⁸⁰ of 271 mgd for the WPCP.

The National Pollution Discharge Elimination System (NPDES) permitting program limits the amount of treated wastewater that can be discharged to the San Francisco Bay to 120 mgd average dry weather effluent flow (ADWEF).¹⁸¹ The NPDES limit is due to potential impacts of additional freshwater discharges to saltwater marsh habitat, as well as pollutant loading to the San Francisco Bay. The NPDES permit requirement is a trigger that, if the 120 mgd ADWEF is exceeded, the WPCP is required to engage in specific mitigation activities such as increases in recycled water. This trigger has led to the development of conservation programs to reduce the volume of wastewater generated at the WPCP, including the South Bay Water Recycling

¹⁷⁹ Average Dry Weather Influent Flow (ADWIF) is the average daily flow over any five weekday period between the months of June and October.

¹⁸⁰ Peak Hour Wet Weather Flow (PHWWF) is the peak hour flow resulting from a rainfall event.

¹⁸¹ Average Dry Weather Effluent Flow (ADWEF) is the average daily effluent flow occurring over the three consecutive lowest flow months in the dry weather season (May through October).

(SBWR) program. The SBWR system includes over 100 miles of pipe serving the cities of Santa Clara, San José, and Milpitas. During the summer months, an average of 15 million gallons of recycled water are produced and distributed to over 550 customers per day.

In addition, the City of San José, which operates the WPCP, has prepared a Clean Bay Strategy (CBS) and the South Bay Action Plan. The CBS details the City of San José's control strategy to reduce effluent discharges to the south San Francisco Bay as required by the NPDES permit. The Clean Bay Strategy promotes an integrated watershed protection approach and considers all factors influencing water quality in the South Bay, including point and non-point sources of pollution, water supply issues and improving plant performance. The South Bay Action Plan describes the conservation, reuse and diversion activities designed to reduce effluent flow from the WPCP to below 120 mgd. A contingency plan of additional flow reduction activities will be implemented if the ADWEF were reach a planning trigger of 115 mgd.

Table 6.2-3 summarizes the WPCP's existing capacity and permitted flow.

TABLE 6.2-3: WPCP'S EXISTING CAPACITY AND PERMITTED FLOW		
Average Dry Weather Influent Flow Capacity (ADWIF)	Permitted Average Dry Weather Effluent Flow (ADWEF)	Peak Hour Wet Weather Flow Capacity (PHWWF)
(in million gallons per day)		
167	120	271

The WPCP treated 135 mgd ADWIF in 2000, 118 mgd ADWIF in 2002, and 117 mgd ADWIF in 2004 (most recent data available). The sewer flow from Santa Clara for 2008-2009 was approximately 13.3 mgd (ADWIF).¹⁸² The sewer flow from San José between 2000 and 2007 was approximately 98 mgd (ADWIF).¹⁸³ In recent years, the WPCP treated an average dry weather flow (ADWF)¹⁸⁴ of 113 mgd in 2005, 118 mgd in 2006, and 112 mgd in 2007 (most recent data available). In the last decade, the amount of discharge has been declining in part due to a decline in manufacturing uses in Santa Clara County, a general decline in industrial activity, and continued implementation of water conservation measures. Another factor in the reduction in activity is due to the economic conditions that resulted in high vacancy rates in the industrial areas of Santa Clara County.

A Master Plan is currently being prepared for the WPCP. The Master Plan is a cumulative project and considered in this cumulative analysis. The Master Plan will guide the Plant's development over the next 30 years. The purpose of the Master Plan is to identify technology options for the Plant's continued operations and land use scenarios for the Plant's 2,600-acre property. An important part of the Master Plan is to ensure that there will be sufficient treatment capacity in the future.

¹⁸² DeGroot, Chris. City of Santa Clara Department of Public Works, Water and Sewer Utilities Division. Personal communications. May 2010.

¹⁸³ Guo, Shelley. City of San José Department of Public Works. Personal communications. April 2010.

The projected 2035 flows are based on county and city population projections by the Association of Bay Area Governments (ABAG), Department of Finance, and Center for the Continuing Study of the California Economy.¹⁸⁵ For the City of Santa Clara, implementation of the proposed General Plan and ‘in process’ growth under the current 2002-2010 General Plan would result in a population of 155,000 residents in 2035, up from 115,500 in 2008. For the City of San José, it was estimated that the total population in the City would increase by about 40 percent from 974,000 people in 2007 to 1,367,000 people in 2035. It is estimated that San José will add 393,000 new residents between the years 2007 and 2035.

As Stated previously, the City’s current average dry weather flow is 13.3 mgd based on 2009 data. As new development occurs according to the 2035 General Plan, wastewater flows are projected to increase from 13.3 mgd to 20.1 mgd, while Santa Clara’s allocation is 22.585 mgd. Therefore, future ADWF is projected to remain within the City’s allocation of WPCP treatment capacity.

The City of San José is in the process of finalizing a capacity study for the WPCP Master Plan. However, based on preliminary analysis, the projected 2035 ADWIF is estimated to be 173 mgd and the PHWWF is estimated to be 427 mgd.¹⁸⁶ Table 6.2-4 below outlines the projected 2035 flows.

TABLE 6.2-4: PROJECTED 2035 WASTEWATER FLOWS TO THE WPCP		
Average Dry Weather Influent Flow (ADWIF)	Average Dry Weather Effluent Flow (ADWEF)	Peak Hour Wet Weather Flow (PHWWF)
(in million gallons per day)		
173	120†	427
Note: † It is difficult to estimate the future average dry weather effluent amount because the effluent flows are dependent on the use of recycled water and recycled water system projections. As part of the Master Plan, process measures are being explored, including an effluent pond to regulate the amount and time of discharge and possibly the addition of a polishing wetland that would mollify the impact of the Plant’s discharge to the Bay. It is anticipated that the future average dry weather effluent flow would not exceed 120 mgd. (Source: Krupp, Matt. City of San José, Environmental Services Department, Project Manager for the WPCP Master Plan. Personal communications. April 2010.)		

As shown in Table 6.2-4, the implementation of the cumulative projects, including the buildout of the proposed Santa Clara and San José General Plan updates, would increase the amount of sewer/wastewater discharge that would need to be treated compared to existing conditions and existing WPCP capacity. It is estimated that the ADWIF in 2035 would be six mgd greater than the WPCP’s existing treatment capacity.

¹⁸⁵ Center for the Continuing Study of the California Economy. Appendix B Projections of Jobs, Population, and Households for the City of San José. August 2008. <<http://www.rebuildtheplant.org/go/doctype/1823/30070>>

¹⁸⁶ Krupp, Matt. City of San José, Environmental Services Department, Project Manager for the WPCP Master Plan. Personal communications. April 2010.

As mentioned previously, technology options are being explored in the Master Plan to ensure the WPCP's continued operation in the future. In order to accommodate future projected flows, the WPCP would need to change its current secondary treatment process of Biological Nutrient Removal (BNR) to nitrification. By changing the secondary treatment process from BNR to nitrification, capacity would increase because processes would occur in parallel rather than in series.¹⁸⁷

The improvements required to change the secondary treatment process at the WPCP from BNR to nitrification are proposed as part of the Master Plan. The implementation of the WPCP Master Plan is part of this cumulative analysis, therefore, the improvements necessary to accommodate projected 2035 flows are assumed in this cumulative analysis. The WPCP Master Plan is undergoing its own environmental review process and it is anticipated that the EIR process for the Master Plan will begin in the latter half of 2010.

In addition to the improvements associated with the Master Plan, there are other strategies that can be implemented to address increased demand on the WPCP, including conservation measures such as reducing water usage to reduce the overall flow of wastewater to the WPCP. These programs will also reduce sewer/wastewater discharge, which reduces the demand for treatment capacity.

Increased use of recycled water for irrigation and recharging groundwater supplies will reduce the amount of discharge from the WPCP to the Bay; however, indoor uses will not reduce sufficient wastewater flow to the WPCP. Active implementation of aggressive strategies to facilitate use of recycled water could reduce the actual amount of discharge from the WPCP to the Bay. By connecting new users to SBWR pipelines and by expanding the SBWR system, Santa Clara can increase the amount of recycled water delivered to major businesses, City parks and landscaping, and school grounds. Over the next 15 years, the WPCP plans to achieve 100 percent beneficial reuse of the wastewater captured and treated through a combination of water conservation, expanded use of recycled water, and habitat protection.¹⁸⁸

With the buildout of the cumulative projects, the flows to the WPCP are anticipated to exceed the Plant's existing capacity. However, the cumulative projects include the implementation of the WPCP Master Plan, which includes improvements (e.g., changing the secondary treatment process from BNR to nitrification) that will increase the treatment capacity at the Plan and allow the WPCP to accommodate projected future flows. In addition, mandatory water conservation efforts and increased use of recycled water could be imposed by the City to reduce flow levels. As discussed previously, Santa Clara's future flows would remain within its allocation, therefore future flows exceeding current WPCP capacity would be attributable to increased flows from other jurisdictions beyond their current allocation, and Santa Clara's contribution would be less than cumulatively considerable by staying within its current allocation.

¹⁸⁷ Krupp, Matt. City of San José, Environmental Services Department, Project Manager for the WPCP Master Plan. Personal communications. April 2010.

¹⁸⁸ City of San José. "San José Green Vision." Accessed May 3, 2010. <<http://www.sanjoseca.gov/greenvision/WaterConservation.asp>>

Also, every land use permit issued by the City of Santa Clara includes the following standard permit condition:

1. The sanitary sewer (SS) mains serving the site not included in the Sanitary Sewer Capacity Model (SSCM) were monitored in the field by the developer. The field monitoring information along with the SS discharge information submitted by the developer were analyzed by a Civil Engineer and determined that said SS mains currently have enough conveyance capacity to accommodate the proposed development. The Civil Engineer's results may change based on pending development applications and future projects. The civil Engineer's results do not guarantee or in any way reserve or hold SS conveyance capacity until developer has final approval for the project.
2. The California Regional Water Quality Control Board has ordered that a maximum limit be imposed on the amount of treated wastewater, which can be discharged to South San Francisco Bay by the San Jose/Santa Clara Water Pollution Control Plan (Plant). Issuance of a building permit to implement this land use development approval may be delayed if the City has reached its' remaining allocated discharge capacity in the Plant prior to issuance of the building permit.

For the above reasons, the implementation of the cumulative projects would not result in the need for construction of new wastewater treatment facilities or expansion of existing facilities beyond the improvements assumed in the WPCP Master Plan.

6.3.6.3 Solid Waste

According to the Santa Clara County Integrated Waste Management Plan, the County had greater than 15 years of disposal capacity as of 2007.¹⁸⁹ Table 6.2-5 depicts the projected remaining capacity life of the County's landfills and 2005 disposal and diversion tonnages. The development, implementation and adoption of diversion programs established by all jurisdictions help extend landfill capacity and will continue to do so as these programs and outreach help the community understand and buy into the alternatives to landfilling waste.

TABLE 6.2-5 COUNTY LANDFILLS		REMAINING	DISPOSED	DIVERTED
Name of Facility	Site Life in 2007	Tonnage in 2005	Tonnage in 2005	Tonnage in 2005
Guadalupe Landfill 2	5 years	190,465		286,270
Kirby Canyon Landfill	29 years	290,320		332,182
Newby Island Landfill	14 years	636,198		819,283
Pacheco Pass Landfill	9 months	19,302		88,490
Palo Alto Landfill	5 years	20,985		38,210
Zanker Material Processing Facility	15 years	23,074		148,027
Zanker Road Landfill	18 years	13,805		283,876

As discussed in *Section 4.7 Public Utilities*, the City has an arrangement with the owners of the Newby Island Landfill, located in San Jose, to provide disposal capacity for the City through 2024. A number of the cumulative projects also dispose of their solid waste at Newby Island

¹⁸⁹ Santa Clara County, 2nd Five Year Report, 2007. Available at [http://www.sccgov.org/portal/site/iwm/agencyarticle?path=%2Fv7%2FIntegrated%20Waste%20Management%20\(DIV\)%2FHome](http://www.sccgov.org/portal/site/iwm/agencyarticle?path=%2Fv7%2FIntegrated%20Waste%20Management%20(DIV)%2FHome).

Landfill, which is currently in the process of seeking authorization from the City of San Jose to expand its permitted capacity to accept an additional 15 million cubic yards (a project included in the cumulative projects list). The reasonably foreseeable environmental effects of the proposed expansion of the Newby Island Landfill have been disclosed in a project-level EIR prepared by the City of San Jose.¹⁹⁰

The proposed additional capacity would allow the landfill to continue receiving waste from a variety of sources, including from the cumulative projects, at existing levels at least until the estimated closure date of 2025. Depending upon the annual tonnages accepted by the landfill operator going forward, it is possible that the landfill, if granted additional capacity, could close at a later date, in which case the landfill could continue to receive solid waste from the cumulative projects beyond 2024.

If Newby Island is not available to accept solid waste from the cumulative projects after 2024, the City and other affected jurisdictions would need to contract with the operator of another existing local landfill such as Kirby Canyon, Guadalupe Mines, or other, more distant landfills such as Forward Landfill in Stockton, California (approximately 147 miles from Newby Island), which would entail longer truck trips and likely substantial increases in environmental impacts associated with increased vehicular miles traveled, i.e. pollutant emissions, noise, etc.

The cumulative projects can be expected to pursue a range of policies to ensure adequate solid waste disposal capacity through source reduction, promotion of recycling, and waste diversion. The cities of Palo Alto, Sunnyvale and San José all have adopted zero waste goals for their waste reduction programs and are expected to substantially reduce the amount of waste landfilled over the next decade. Palo Alto and Sunnyvale, however, use the Kirby Canyon landfill and their waste reduction would not impact available capacity at Newby Island. The City of San José has circulated an RFP that would result in the direction of all commercial waste to Newby Island in the future (San José's commercial waste is not handled under an exclusive franchise at the present time and can be sent to any landfill). It is not possible to predict the net results of these programmatic changes on the quantity of solid waste directed by the City of San José to Newby Island in the future.

The extent of waste diversion that can be achieved by the cumulative projects is difficult to predict and there is no assurance there will be long-term local landfill capacity beyond 2025 available to serve the cumulative projects. This issue will be addressed on an ongoing countywide basis as the Santa Clara County Integrated Waste Management Plan is periodically updated.

Given the uncertainties concerning the location of solid waste disposal beyond 2024, the Santa Clara General Plan includes prerequisite policies which require an updated assessment of solid waste capacity prior to allowing development under Phase II (2015) and again prior to Phase III (2025). However, without identified long-term landfill capacity, cumulative solid waste impacts are presumed significant and Santa Clara's contribution, absent a zero-waste program, would be cumulatively considerable.

¹⁹⁰ City of San Jose, *Newby Island Sanitary Landfill/The Recyclery Planned Development Rezoning Draft EIR*. Available at <http://www.sanjoseca.gov/planning/eir/EIR.asp>.

6.3.7 Biological Resources

As discussed in Section 4.9 *Biology*, there is minimal vacant, undeveloped land within Santa Clara that provides suitable habitat for rare, threatened, or endangered flora or fauna. Most suitable habitat in the City is concentrated along the several creek corridors. The predominant biologic impacts associated with implementation of the 2035 General Plan would occur to common, urban-adapted species. In the rare instances where future development would involve a site with a special status species, appropriate mitigation, including avoidance, would be implemented to reduce the impacts to a less than significant level. Therefore, new construction and redevelopment within the Santa Clara would not contribute to cumulative impacts to special status plants and animals present within the City. As further discussed in Section 4.9 *Biology*, regional nitrogen deposition impacts to serpentine habitat in southern San Jose is a cumulative issue being addressed by the Local Partner agencies participating in the Valley HCP. For the reasons provided in Section 4.9 *Biology*, Santa Clara's NO_x contribution from new development allowed under the 2035 General Plan is considered less than cumulatively considerable. NO_x emissions associated with the City's electrical utility, Silicon Valley Power, are being mitigated on an ongoing basis through management of serpentine habitat on Coyote Ridge in San Jose.¹⁹¹

6.3.8 Air Quality

Air pollution is a regional issue affected by climate, land uses, and topography. Section 4.10, *Air Quality* includes a detailed analysis of the cumulative air quality conditions related to build-out of the Draft General Plan, as well as the proposed the Plan's conformance with the existing Bay Area 2005 Ozone Strategy and the draft 2010 Bay Area Clear Air Plan, which have been based on regional ABAG projections. The Santa Clara 2035 General Plan would conform with the current and proposed long-range air quality plans for the Bay Area, and therefore would result in a less than cumulatively considerable contribution to cumulative air quality impacts.

6.3.9 Climate Change and Energy

Section 4.16 *Climate Change* provides Plan-level analysis that places the proposed Draft 2010-2035 General Plan's growth within the cumulative context for California's 2020 and 2050 climate change goals. As discussed previously in the Climate Change section of this EIR, the City is committed to the preparation and implementation of a Climate Action Plan to ensure the proposed General Plan would be consistent with the state's 2020 emissions targets, and would contribute a less than cumulatively considerable amount toward future GHG levels. Achieving 2020 emissions levels will necessarily entail increased energy conservation and efficiency, and utilization of renewable sources. In addition to Santa Clara, the cities of San Jose and Sunnyvale are each developing Climate Action Plans to address their respective 2020 emissions.

Citywide 2035 GHG emissions are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 state climate change reduction goals. Achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Given the

¹⁹¹ Stuart B. Weiss, James Quenelle. *Monitoring Report on Mitigation Lands for Donald Von Raesfeld Power Plant, Silicon Valley Power*. November 11, 2009.

uncertainties about the feasibility of achieving the substantial 2035 emissions reductions, the City's contribution to climate change for the 2035 timeframe is conservatively determined to be cumulatively considerable.

6.3.10 Hydrology and Water Quality

New development in the City and surrounding jurisdictions sharing the same watersheds (Guadalupe River, Calabazas Creek, and San Thomas Aquino Creek) may alter local drainage and runoff characteristics. Storm water drainage systems are generally provided by local governments for areas within their jurisdictions, and are not provided on a regional basis. Therefore, the City's contribution to cumulative regional impacts associated with storm water drainage systems would be less than significant. In terms of water quality, increased cumulative urbanization would be expected to increase vehicle traffic and related releases of automobile-related pollutants, including petroleum hydrocarbons, metals, and sediment, drain from roads into surface waters and which could have a cumulative impact to local watersheds. Development in Santa Clara and adjacent cities would be required to comply with applicable NPDES permits, as discussed in *Section 4.4, Hydrology and Water Quality*, which would require that projects implement Best Management Practices (BMPs) to treat storm water runoff, prior to its discharge, to the maximum extent practicable. Compliance with applicable NPDES permits, as the permits are amended over the course of the General Plan's 25 year planning horizon, will reduce cumulative hydrology and water quality impacts to a less than significant level.

6.3.11 Geology and Soils

Geologic conditions are highly localized and implementation of a Draft General Plan would generally not result in cumulative geologic impacts, unless growth under the Plan would exacerbate a regional cumulative geologic issue (e.g., fault zone, massive landslide) affecting an extensive area covering multiple jurisdictions. There are no such regional geologic features in Santa Clara. Therefore, the City's contribution to regional cumulative impacts related to geology and soils, would be less than significant.

6.3.12 Hazards and Hazardous Materials

Hazardous materials and other public health and safety issues are generally site-specific or affect localized areas and would not be significantly affected by other development in northern Santa Clara County. Therefore, the City's contribution to regional cumulative impacts related to hazards and hazardous materials would be less than significant.

6.3.13 Noise

Section 4.14 *Noise* includes a detailed analysis of the cumulative noise conditions related to build-out of the Draft General Plan. Noise impacts are generally experienced locally as opposed to regionally. Future increases in noise from buildout of the Mineta International Airport Master Plan, the BART to Silicon Valley extension project, and the High-Speed Rail project would all contribute to future noise conditions that would affect specific areas of Santa Clara, however, the future development allowed under the Draft General Plan would not contribute to the railway or airport-related noise. Residents could be exposed to ongoing construction noise if multiple projects are clustered in an area and are constructed simultaneously or in sequence over a period of years. Increased traffic from build-out of the proposed Draft General Plan would contribute to a significant increase in traffic noise levels on roadway segments throughout the region, beyond

accepted thresholds in various communities. This impact, and the City's contribution to it with build-out of the Draft General Plan, is considered significant and unavoidable.

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7 OTHER CEQA-REQUIRED SECTIONS

As required by CEQA, this chapter provides an overview of the impacts of the Draft General Plan based on the technical analysis presented in this EIR. The topics covered include growth inducement, unavoidable significant effects and expected significant irreversible changes. A more detailed analysis of the effects the Draft General Plan would have on the environment is provided in Chapter 4.

7.1 GROWTH-INDUCING IMPACTS

A project is typically considered to be growth-inducing if it fosters economic or population growth. Typical growth inducements might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or removal of major barriers to development. Not all growth inducement is necessarily negative. Negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Providing urban services to a site, and the subsequent development, can serve to induce other landowners in the vicinity to convert their property to urban uses. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods and services associated with the population increase caused by, or attracted to, a new project.

7.1.1 Direct Impacts

The Draft General Plan encourages new growth in the developed areas of Santa Clara. Development in these areas would consist of infill development on the remaining vacant sites or redevelopment of underutilized sites. Since the infrastructure is largely in place, and since commercial growth would be required to comply with the City's standards for public services and utilities, secondary growth-inducing effects do not represent a significant environmental impact.

7.1.2 Indirect Impacts

The Draft General Plan would directly induce population, employment and economic growth by allowing intensified development within some areas of the City. The Draft General Plan would result in the following growth patterns based on the expected growth assumptions for the City limit:

- Under buildout conditions in 2035, the Draft General Plan would add approximately 32,400 new residents to the existing 2008 population within the City limit. This would, in combination with 'in process' growth, result in a city population of 154,990 in 2035, which would be approximately 8,890 more people than projected for 2035 by ABAG 2007 Projections and approximately 2,200 fewer people than projected for 2035 by ABAG 2009 Projections.
- Under buildout conditions in 2035, the Draft General Plan would result in approximately 13,312 additional residential units (and 2,917 'in process' units) to the 44,166 residential units estimated to exist in 2008.

- Under buildout conditions in 2035, the Draft General Plan would add approximately 25,040 new jobs (in addition to the 21,000 ‘in process’ jobs) to the 106,680 jobs estimated to exist in 2008.
- Under buildout conditions in 2035, the Draft General Plan would add 13,460,600 square feet (in addition to 9,852,100 square feet ‘in process’) of non-residential development (commercial, office/R&D/industrial, and public/quasi public) to the approximately 58,846,000 square feet existing in 2008.

State law requires the City to promote the production of housing to meet its fair share of the regional housing needs distribution made by ABAG. The housing growth in Santa Clara would generally have beneficial effects by allowing the City to address its regional fair-share housing obligations, (further described in the *Draft General Plan, Appendix 8.12 Housing Element*).

In addition, the type of growth envisioned by the Draft General Plan would be concentrated in specific, designated areas and new development would be pedestrian-friendly, use land efficiently and promote transportation alternatives. Housing along and near the transit corridors and Caltrain station would be encouraged, as would mixed use development. The growth envisioned under the Draft General Plan would result in regional benefits by promoting growth that encourages less automobile dependence and supports regional transit systems, which could reduce air quality and noise impacts associated with population growth and non-residential development.

Locating a large new employment use or adopting plans for substantial new amounts of employment uses beyond the needs of the local workforce can have the secondary effect of inducing population growth to the area as new out-of-area workers are attracted to the job opportunities, seek to move to the area, and create additional demand for new housing development. The proposed General Plan job growth, in addition to ‘in process’ job growth, will require additional residential development elsewhere in the region to provide adequate housing opportunities for future workers. The Draft 2010-2035 General Plan reduces the existing job/housing imbalance in Santa Clara by providing proportionally more housing in relationship to proposed jobs than evident in existing conditions. Since the proposed project will, however, induce substantial population growth at other locations, the impact is significant.

As discussed in detail in the Transportation, Air Quality, and Climate Change sections of this EIR, the City’s continued jobs/housing imbalance will contribute to air pollutant emissions (including greenhouse gas emissions) and congestion on area freeways, roadways and intersections, and constitutes a significant unavoidable impact. An alternative that would balance new job growth with residential development is discussed in *Chapter 5 Alternatives*.

7.2 SIGNIFICANT UNAVOIDABLE IMPACTS

A significant unavoidable impact is an impact that cannot be mitigated to a less than significant level if the project is implemented, because no feasible mitigation has been identified. While the majority of impacts associated with the Draft General Plan would be reduced to a less-than-significant level, adoption and implementation of the Draft General Plan would result in the following significant and unavoidable impacts:

Traffic and Circulation

The Draft General Plan would have significant and unavoidable freeway and roadway segments level of service impacts, including roadways in surrounding cities and under the jurisdiction of the County and Caltrans.

Climate Change

2035 GHG Emissions. Citywide 2035 GHG emissions are projected to exceed efficiency standards necessary to maintain a trajectory to meet long-term 2050 state climate change reduction goals. Achieving the substantial emissions reductions will require policy decisions at the federal and state level and new and substantially advanced technologies that cannot today be anticipated, and are outside the City's control, and therefore cannot be relied upon as feasible mitigation strategies. Given the uncertainties about the feasibility of achieving the substantial 2035 emissions reductions, the City's contribution to climate change for the 2035 timeframe is conservatively determined to be cumulatively considerable.

Public Utilities

Development allowed under the proposed Draft 2010-2035 General Plan would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs through 2024, however the City has no specific plan for disposing of solid waste beyond 2024, but will undertake a process to identify a solution prior to 2024.

Noise

New development and redevelopment under the proposed Draft 2010-2035 General Plan would result in increased traffic noise, and in some cases, the increases would be substantial.

7.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2(c) of the CEQA Guidelines requires a discussion of the extent to which a proposed project will commit nonrenewable resources to uses that future generations will probably be unable to reverse. An example of such an irreversible commitment is the construction of highway improvements that would provide public access to previously inaccessible areas. A project would generally result in a significant irreversible impact if:

- Primary and secondary impacts would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

7.3.1 Changes in Land Use That Commit Future Generations

Development under the Draft General Plan would result in the intensification of underutilized areas. This development would constitute a long-term commitment (i.e., likely to exist for next 50 to 100 years) to residential, commercial, industrial, parking and other urban uses.

7.3.2 Commitment of Resources

Development allowed under the Draft General Plan would commit nonrenewable resources to the construction and maintenance of buildings, infrastructure and roadways. These non-renewable resources include mining resources such as sand, gravel, steel, lead, copper and other metals. Buildout of the Draft General Plan also represents a long-term commitment to the consumption of fossil fuels, natural gas and gasoline. Increased energy demands would be used

for construction, lighting, heating, and cooling of businesses and residences, and transportation of people within, to, and from the planning area. General Plan policies associated with Energy would promote energy conservation, which could minimize or incrementally reduce the consumption of these resources.

Implementation of the Draft General Plan would also result in an irreversible commitment of limited, renewable resources such as lumber and water. General Plan policies associated with Water and Conservation would also result in some savings of renewable resources.

Proposed General Plan Policies That Reduce or Avoid Possible Impacts

The proposed General Plan includes updated policies that address nonrenewable and limited renewable resources. Proposed General Plan Policies that provide program-level mitigation for these resources are identified below.

Prerequisite Policies	
5.1.1-P3	Prior to the implementation of Phase II and of Phase III of the General Plan, undertake a comprehensive assessment of water, sanitary sewer conveyance, wastewater treatment, solid waste disposal, storm drain, natural gas, and energy demand and facilities in order to ensure adequate capacity and funding to implement the necessary improvements to support development in the next phase.
General Mobility and Transportation Policies	
5.8.1-P6	Implement Level of Service standards that support increased transit ridership, biking and walking, in order to decrease vehicle miles traveled and reduce air pollution, energy consumption and greenhouse gas emissions.
Conservation Policies	
5.10.1-P9	Promote the reduction, recycling and safe disposal of household hazardous wastes through public education and awareness and through an increase in hazardous waste collection events.
Energy Policies	
5.10.3-P1	Promote the use of renewable energy resources, conservation and recycling programs.
5.10.3-P2	Encourage new development to incorporate sustainable building design, site planning and construction, including encouraging solar opportunities.
5.10.3-P3	Reduce energy consumption through sustainable construction practices, materials and recycling.
5.10.3-P4	Promote sustainable buildings and land planning for all new development, including programs that reduce energy and water consumption in new development.
5.10.3-P5	Encourage installation of solar energy collection through solar hot water heaters and photovoltaic arrays.
5.10.3-P6	Provide incentives for LEED certified, or equivalent development.
5.10.3-P7	Incorporate criteria for sustainable building and solar access into the City's ordinances and regulations.
5.10.3-P9	Continue innovative energy programs to develop cost effective alternative power sources and encourage conservation.
5.10.3-P13	Explore opportunities for alternative energy "fueling stations" and promote participation in shuttle services that use new technology vehicles to reduce greenhouse gas emissions.
Water Policies	
5.10.4-P1	Promote water conservation through development standards, building requirements, landscape design guidelines, education and other applicable City-wide policies and programs.
5.10.4-P2	Expand water conservation and reuse efforts throughout the City.
5.10.4-P3	Promote water conservation, recycled water use and sufficient water importation to ensure an adequate water supply.
5.10.4-P6	Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate

	applications.
5.10.4-P7	Require installation of native and low-water-consumption plant species when landscaping new development and public spaces to reduce water usage.
5.10.4-P8	Require all new development within a reasonable distance of existing or proposed recycled water distribution systems to connect to the system for landscape irrigation.

7.3.3 Irreversible Damage from Environmental Accidents

Irreversible changes to the physical environment could occur from accidental release of hazardous materials associated with development activities. However, compliance with State and federal hazardous materials regulations and the City response plan, as discussed in section *4.14 Hazards and Hazardous Materials*, would reduce this potential impact to a less-than-significant level. No other irreversible changes are expected to result from the adoption and implementation of the Draft General Plan.

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CHAPTER 7 OTHER CEQA REQUIRED SECTIONS

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10 LIST OF ACRONYMS

The acronyms and definitions used throughout this document are included in Table 10.1 below.

TABLE 10.1 ACRONYMS AND DEFINITIONS	
A	
ABAG	Association of Bay Area Governments
ACE	Altamont Commuter Express
ACS	American Community Survey
ADT	average daily traffic
ADWF	average dry weather flows
ADWEF	average dry weather effluent flow
ADWIF	average dry weather influent flow
afy	acre-feet per year
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
AQP	Air Quality Plan
AST	aboveground storage tank
B	
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCB	Bay Checkerspot butterfly
BCDC	Bay Conservation and Development Commission
BDCP	Bay Delta Conservation Plan
BMPs	best management practices
BMX	bicycle motocross
BNR	biological nutrient removal
BOD	biological oxygen demand
BRT	bus rapid transit
C	
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAD	computer aided dispatch
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Prevention Program
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CAP	Climate Action Plan
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CASQA	California Storm water Quality Association
CBS	Clean Bay Strategy
CCR	California Code of Resources

CDFG	California Department of Fish and Game
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIWMB	California Integrated Waste Management Board
CLG	Certified Local Government
CLUP	Comprehensive Land Use Plan
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CO	carbon monoxide
CRRP	Community Risk Reduction Plan
CRS	Community Rating System
CSWP	comprehensive storm water management plan
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
D	
dB	decibel
dBA	decibel
DOF	Department of Finance
DOT	Department of Transportation
DTSC	Department of Toxic Substance Control
DU/AC	dwelling units per acre
E	
EFH	essential fish habitat
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
F	
FAA	Federal Aviation Administration
FAHCE	Fisheries and Aquatic Habitat Collaborative Effort
FAR	floor area ratio
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FSRS	Fire Suppression Rating Schedule
FTA	Federal Transit Administration
FWS	Fish and Wildlife Service
G	
GIS	Geographic Information System

H	
HAP	Hazardous Air Pollutant
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HMCD	Hazardous Materials Compliance Division
HMIS	Hazardous Materials Inventory Statement
HMMP	Hazardous Materials Management Plans
HMP	Hydromodification Management Plan
HMRRP	Hazardous Materials Release Response Plans and Inventory
HMTA	Hazardous Materials Transportation Act
HUD	Department of Housing and Urban Development
HWG	Hazardous Waste Generator
I	
IBC	International Building Code
ISO	Insurance Services Office
IWMP	integrated waste management plan
J	
K	
L	
LOS	level of service
LUST	leaking underground storage tank
M	
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MEP	maximum extent practicable
MGD	million gallons per day
MSAT	mobile source air toxic
MSL	mean sea level
MSWLF	municipal solid waste landfills
MTC	Metropolitan Transportation Commission
MWMA	Medical Waste Management Act
N	
NAAQS	National Ambient Air Quality Standards
NCCPA	Natural Community Conservation Planning Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmosphere Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priority Site
O	
O3	ozone
OFHA	other flood hazard area

OPR	State Office of Planning and Research
OSHPD	Office of Statewide Health Planning and Development
P	
Pb	Lead
PEIR	Program Environmental Impact Report
PG&E	Pacific Gas & Electric Company
PHWWF	peak hour wet weather flow
PM10	respirable particulate matter
PM2.5	fine particulate matter
PPC	Public Protection Classification
ppm	parts per million
PPV	peak particle velocity
Q	
R	
R&D	office/research and development
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposals
RHNA	Regional Housing Needs Allocation
RMP	risk management plan
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
S	
SAB	State Allocation Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SBWR	South Bay Water Recycling
SCBWM	Santa Clara Basin Watershed Management Initiative
SCCDEH	Santa Clara County Department of Environmental Health
SCFD	Santa Clara Fire Department
SCP	Site Cleanup Program
SCPD	Santa Clara Police Department
SCU	Santa Clara University
SCUSD	Santa Clara Unified School District
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
sf	square feet
SFHA	Special Flood Hazard Area
SFPUC	San Francisco Public Utilities Commission
SLIC	Spills, Leaks, Investigation, and Cleanup
SMARA	Surface Mining and Reclamation Act
SMART	Sonoma Marin Area Rail Transit
SO ₂	sulfur dioxide
STC	Sound Transmission Class
SVP	Silicon Valley Power
SWMP	Storm Water Management Plan
SWP	State Water Project

SWPPP	Storm water Pollution Prevention Program
SWRCB	State Water Resource Control Board
T	
TAC	toxic air contaminant
TAZ	traffic analysis zone
TCE	trichloroethylene
TCM	transportation control measure
TeNS	Technical Noise Supplement
TMDL	Total Maximum Daily Loads
TPM	Transit Priority Measure
TRIS	Toxic Chemical Release Inventory System
U	
UPRR	Union Pacific Railroad
URM	unreinforced masonry building
URMP	Urban Runoff Management Plan
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
V	
Valley HCP	Santa Clara Valley Habitat Conservation Plan
VMT	vehicle miles traveled
VOC	volatile organic compound
VT	Vehicle Trips
VTA	Valley Transportation Authority
W	
WBO	Western Burrowing Owl
WPCP	Water Pollution Control Plant
X	
Y	
YAC	youth activity center
Z	
Other	
µg/m3	micrograms per kilograms

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11 LIST OF APPENDICIES

The reference items proving support and documentation of the analyses performed for this report are listed below and included on CD in the back cover of this document. Copies of the appendices are available in print upon request to the City.

- A Notice of Preparation
- B Notice of Preparation Comment Letters
- C 2002 General Plan Amendments
- D City of Santa Clara General Plan 2010-2035 (CD)
- E Water Supply Forecast for General Plan Update 2035 Technical Memorandum
- F General Plan Update, City of Santa Clara Water Utility Potable Distribution System Technical Memorandum
- G Sanitary Sewer Capacity Assessment for General Plan Update Technical Memorandum
- H Listing of Toxic Air Contaminant Sources
- I Historic Resources
- J Noise Report
- K Silicon Valley Power Electrical Grid Capacity Assessment for the 2010 – 2035 General Plan Update Report
- L Technical Report Greenhouse Gas Inventories, City of Santa Clara
- M First Amendment Final EIR