5.0 CEQA CONSIDERATIONS

IN THIS SECTION:

Section 15126 of the State CEQA Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, and (4) growth-inducing impacts of the proposed project. It should be noted that although growth inducement itself is not considered an environmental effect, it is a relevant issue if it could potentially lead to foreseeable physical environmental effects.

5.1 SIGNIFICANT UNAVOIDABLE IMPACTS

The State CEQA Guidelines require a description of any significant impacts, including those which can be mitigated but not reduced to a level of insignificance (section 15126.2(b)). Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

The EIR identified four significant unavoidable project impacts, as well as several significant cumulative impacts to which the project's incremental contribution would be cumulatively considerable, which are listed below. A brief explanation is provided as to why these impacts were found to be significant and unavoidable. Alternatives to reduce or eliminate significant impacts are reviewed in subsection 5.5 of this chapter.

TRAFFIC:

- Impact 4.4-1: Traffic Impacts on Intersection Levels of Service
- Impact 4.4-2: Traffic Impacts on State Highway Levels of Service

WATER SUPPLY:

- Impact 4.5-1: Inadequate Future Water Supplies during Dry Years and Potentially During Normal Years

CUMULATIVE IMPACTS:

- Population Growth
- Traffic

- Water
- Air Quality
- Noise

Traffic. Future development accommodated by the proposed *General Plan 2030* would generate traffic that would result in unacceptable levels of service at 21 intersections. All could be improved to acceptable levels or improved to an extent that delays would be reduced to existing or below project levels, except for eight intersections. These include four local intersections) and four intersections on state routes. These intersections could not be improved to an acceptable LOS to meet City or Caltrans' standards. Therefore, the resulting effects on these eight intersections would be considered a significant, unavoidable impact as no feasible improvements have been identified. Additionally, funding availability for intersection improvements at other impacted intersections, as well as funding for transit service expansion, likely will remain constrained into the foreseeable future. With implementation of the proposed *General Plan 2030* policies and actions to reduce vehicular traffic, increase vehicle occupancy and support/encourage use of alternative transportation measures, traffic could be reduced, but it is likely it would not be reduced to a less-than-significant level at the remaining impacted intersections. Therefore, implementation of recommended improvements and support of alternative transportation facilities, particularly transit, cannot be assured. Thus, the impact to all the intersections identified as operating at unacceptable levels of service under the proposed *General Plan 2030* remains significant and unavoidable.

Future development accommodated by the proposed *General Plan 2030* would generate traffic that would contribute to existing and future forecast unacceptable levels of service along Highway 1 and Highway 17. Project traffic represents a significant addition, although the estimated General Plan buildout traffic is less than the future forecasts estimated by Caltrans in its draft "Corridor System Management Plan." With implementation of the proposed *General Plan 2030* policies and actions to reduce vehicular traffic, increase vehicle occupancy and support/encourage use of alternative transportation measures, and with future improvements along Highway 1 that are planned by Caltrans, traffic congestion along Highway 1 will be minimized. However, highway operations would continue to remain at unacceptable levels, and funding constraints and controversy over proposed Highway 1 HOV lanes may delay or affect implementation of improvements. Thus, the impact remains significant and unavoidable.

Water Supply. As discussed in the WATER SUPPLY (Chapter 4.5) section of this EIR, City water supplies are currently insufficient to meet existing demand during dry years and could potentially become insufficient after the year 2020 in normal years with development and growth accommodated by the proposed General Plan and other demands in the City's water service area. (Estimated water demand associated with buildout accommodated by the proposed General Plan 2030 would not exceed existing supplies in a normal year, but supplies could become insufficient during the General Plan timeframe with consideration of all demand within the water service area.) Construction of a desalination facility, as planned by the City of Santa Cruz, will provide a sufficient supplemental water supply during drought conditions for both existing and future demand and could be expanded to accommodate future growth. The City has completed a pilot desalination plant and is proceeding with design and environmental review for a permanent facility. Despite the City's intent to pursue an additional water supply for dry-year conditions, there are some uncertainties with these future actions. The City acknowledges the inherent uncertainty about its ability to obtain all necessary approvals for,

and completion of, the planned desalination facility. Therefore, a conservative conclusion is that the project impact on water supply during dry year conditions and potentially during normal conditions is significant and unavoidable.

Cumulative Impacts. The following were determined significant cumulative impacts to which the proposed project's incremental contribution was found to be cumulatively considerable.

- **Population Growth**. Cumulative growth (City and UCSC) could result in an average annual growth rate of 1.3% if the North Campus area is annexed to the City in the next 20 years. This projected level of growth exceeds historical growth rates between 1990 and 2009 (0.9-1.0%), as well as AMBAG population forecast growth rate of 0.65% between 2009 and 2030. This is considered a significant cumulative impact due to the substantial population growth and resulting physical effects that such growth could lead to (such as increased traffic and water supply demand, to name a few) that would be cumulatively induced. The population accommodated by the proposed *General Plan 2030* is over half of the increase, and thus, the project's incremental contribution is considered to be cumulatively considerable. However, future population forecasts could be developed and/or adjusted periodically to account for actual growth that occurs during the planning horizon.
- **Traffic**. Cumulative development and growth would generate traffic that would result in unacceptable levels of service at 26 intersections, all of which could be improved to acceptable levels or improved operations, except at 11 intersections, including five along state routes. Cumulative traffic along state highways would contribute to existing and future unacceptable levels of service. Therefore, the cumulative traffic would result in significant cumulative impacts at seven intersections and along Highways 1 and 17. Funding availability for facility improvements and expansion of transit service will likely remain constrained into the foreseeable future. Thus, implementation of recommended improvements and alternative transportation facilities cannot be assured, and the impact under the cumulative conditions remains significant, at City intersections and along state highways this is a significant cumulative impact, and the project's incremental increase would be cumulatively considerable.
- **Water Supply**. Cumulative development and growth in the City's water service area would result in a significant cumulative water impact, as it results in additional demand in a system that does not currently have adequate water supplies to meet existing or future demands during drought conditions or potentially during normal years at some time after the year 2020. The City's supplies are sufficient to meet cumulative water demands in a normal year through to the year 2030 if overall water use remains at 2007-2008 levels. However, If water demand is consistent with historic water use between 1999 and 2004, the City's total demand will be approximately 223 MGY greater than the available normal year supply of 4,314 MGY in 2030 (EKI, March 2011). Thus, cumulative development and growth would result in a significant cumulative impact during dry years and potentially also during normal years. The demand resulting from development accommodated by the proposed *General Plan 2030* represents nearly half of the future cumulative water demand. The project's incremental contribution is therefore considered "cumulatively considerable" and thus significant in and of itself. The City has identified a desalination plant as its best, potentially feasible option to alleviate shortages in

drought conditions and as a potential additional normal-year water supply to serve new growth, and therefore has committed to pursuing this option with the intent of obtaining all necessary regulatory approvals. However, the City acknowledges the inherent uncertainty about its ability to obtain all necessary approvals for the planned desalination facility. Furthermore, surface water supplies may be reduced due to implementation of wildlife protection strategies under a future HCP, which may require that the City seek additional supplies and/or expansion of a desalination facility beyond that capacity that is currently planned for drought supply. Thus, the impact remains significant and unavoidable.

- **Noise**. Cumulative development and growth would result in noise increases associated with the traffic increases, but the increases would not exceed significance criteria (more than a 3 dBA increase), except for three road segments (Swift Street north of Delaware and Mission Street between Bay and Walnut) that would be considered significant for some existing residences along these segments.

5.2 SIGNIFICANT IRREVERSIBLE IMAPCTS

The State CEQA Guidelines require a discussion of significant irreversible environmental changes with project implementation, including uses of nonrenewable resources during the initial and continued phases of the project (section 15126.6(c)). The Guidelines indicate that use of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with the project. Section 15227 further requires this discussion only for adoption of a plan, policy or ordinance by a public agency; the adoption by a Local Agency Formation Commission (LAFCO) of a resolution making determinations; and projects which require preparation of an EIS under the National Environmental Policy Act (NEPA). Since the proposed project is adoption of a general plan, a discussion of significant irreversible changes is provided below.

The proposed project is an update of the City's existing *General Plan / Local Coastal Plan 1990- 2005* that was adopted in 1992 and subsequently amended, which when adopted, will supersede the 1990-2005 General Plan and its several amendments. The Plan includes elements required by state law as well as a land use map, which will accommodate future development and growth in the City. An updated Local Coastal Plan is being prepared as a separate document.

According to section 15126.2(c), a project would generally result in a significant irreversible impact if:

- The project would involve a large commitment of nonrenewable resources during initial and continued phase of the project;
- Primary and secondary impacts would generally commit future generations to similar uses;

- The project would involve uses in which irreversible damage could result from environmental accidents; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

The City is primarily built out, and future development will largely be infill development on some vacant and underutilized sites. These sites are already utilized for urban development or are surrounded by urban development. Although the General Plan land use map represents a commitment to a mix of land uses that will support future development, the City is already urbanized. Thus, the proposed Plan would not commit future generations to uses that do not already exist.

Future development would result in the permanent and continued consumption of electricity, natural gas, and fossil fuels. Development allowed under the proposed *General Plan 2030* would irretrievably commit nonrenewable resources to the construction and maintenance of buildings, infrastructure and roadways. Energy demands would result for construction, lighting, heating and cooling of residences, and transportation of people within, to and from the City. However, the consumption of these resources would not represent unnecessary, inefficient, or wasteful use of resources given the implementation of proposed policies that address water, lighting and energy conservation measures. Several policies in the proposed General Plan promote energy conservation, which could minimize or incrementally reduce the consumption of these resources. Specifically, GOAL NRC7 seeks to reduce energy use with a significant production and use of renewable energy. Its four policies and accompanying actions would promote reduction of electricity and natural gas consumption, use of renewable energy sources, and use of energy-efficient lighting, vehicles, and water fixtures and appliances. A summary of the proposed General Plan *2030* policies that serve to reduce energy and fossil fuel consumption is presented in Table 4.6-10 in the PUBLIC SERVICES (Chapter 4.6) section of this EIR for further discussion.)

In addition, new structures will be required to be constructed in accordance with specifications contained in Title 24 of the California Code of Regulations and the City's Green Building Regulations. Anticipated changes in state building and energy efficiency requirements to help reduce greenhouse gas emissions will also reduce the rate of energy consumption increases. However, future construction activities would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil, natural gas, and gasoline) for automobiles and construction equipment.

Water resources are not considered nonrenewable, although during dry years, supplies may be constrained. As discussed above, the project would result in significant impacts on water supply during dry year conditions and potentially normal conditions. The City is in the process of developing plans for construction of a desalination facility to provide a supplemental water source during droughts due to insufficient water supplies during droughts under existing conditions. The proposed *General Plan 2030* supports implementation of the City's adopted *Integrated Water Plan*, which contemplates the construction of a desalination facility. While operation of a desalination plant may result in irreversible commitment of energy resources, the

City is currently studying measures to minimize energy consumption and greenhouse gas emissions as part of the desalination facility design and environmental review process.[1]

Indirect project impacts on the City's wastewater treatment facility (WWTF) were found to be less-than-significant. The WWTF is designed to handle the increase in wastewater that would be treated as a result of the project, and adequate capacity exists without the need to expand the plant or construct new improvements. The continued operation of the WWTF would not result in significant increases in fuel that could result in significant irreversible impacts.

Irreversible changes to the physical environment could occur from accidental release of hazardous materials associated with development activities. However, environmental accidents would be minimized adherence to federal, state and local regulations as discussed in the HAZARDOUS MATERIALS (Chapter 4.14) of this EIR. Future development accommodated by the proposed General Plan would be required to comply with all applicable federal, state and local laws regarding, transportation, storage, use and disposal of hazardous materials, which reduces the likelihood and severity of accidents that could result in irreversible environmental damage. Compliance with State and federal hazardous materials regulations would reduce the potential for accidental release of hazardous materials to a less-than-significant level.

No other irreversible changes are expected to result from the adoption and implementation of the proposed *General Plan 2030*.

5.3 GROWTH INDUCEMENT

CEQA requires that any growth-inducing aspect of a project be discussed in an EIR. Pursuant to the State CEQA Guidelines section 15126.2(d), this discussion should include ways in which the project could directly or indirectly foster economic or population growth or construction of new housing in the surrounding area. Projects which could remove obstacles to population growth (such as major public service expansion) must also be considered in this discussion as well as characteristics of the project that that may encourage and facilitate other activities that could result in significant impacts. According to CEQA, it must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment.

The proposed *General Plan 2030* would indirectly induce population, employment and economic growth by accommodating future development and growth and allowing for intensified development within some areas of the City. The *General Plan 2030* Land Use Map and land use designations are largely unchanged from the 1990-2005 General Plan / Local Coastal Program, except for three new mixed use land designations have been developed and applied to the following major transportation corridors: Mission Street, Ocean Street, Soquel, Avenue, and Water Street. Some of the draft *General Plan 2030* policies and actions support certain types of land uses and/or intensified redevelopment.

[1] It should also be noted that the desalination facility is jointly proposed with the Soquel Creek Water District to provide supplemental water sources to that agency in order to manage groundwater resources and avoid seawater intrusion into the aquifers.

As described in the PROJECT DESCRIPTION and LAND USE sections of this EIR (Chapters 3.0 and 4.1, respectively), buildout projections were estimated for the draft General Plan to provide an estimate of the amount of development that is expected to occur by the year 2030. The projected development includes 3,350 additional residential dwelling units with an associated population increase of 8,040 residents (based on 2.4 persons per household). It is estimated that approximately 75% of the new residential units would be multi-family units and 25% would be single-family units based on existing trends and assumptions developed for the traffic and water demand analyses.

The buildout projections also estimate approximately 3,140,000 additional square feet of commercial, office and industrial uses by the year 2030. Based on the non-residential uses, it is estimated that approximately 8,540 new jobs could be generated. (See the POPULATION AND HOUSING (Chapter 4.2) section of this EIR for further discussion.)

The estimated General Plan buildout would result in a population growth rate of 0.6%, which is slightly less than the historical rate experienced in the City since 1980 (0.9%), but only slightly higher than the AMBAG forecast rate (0.56%). These variations are not considered substantial, and the population increases supported by the proposed General Plan 2030 would not be considered substantial. However, the proposed General Plan does foster and support economic growth. See the POPULATION AND HOUSING (Chapter 4.2) section of this EIR for further discussion.

It is also noted that the proposed General Plan 2030 supports infill development along transportation corridors to promote alternative land use patterns to help reduce automobile travel. Development under the proposed General Plan would primarily occur on vacant infill sites, on underutilized properties that could be redeveloped at higher densities and/or land use intensities, and in the new mixed-use districts along the City's four major street corridors: Mission Street, Ocean Street, Soquel Avenue, and Water Street. Based on the estimated development occurring under the proposed plan,[2] approximately 55 percent of all new housing, 45 percent of new commercial development and 52 percent of new office development would located along these corridors. Thus, new development would be concentrated in specific areas. The draft Plan would result in local and regional benefits by promoting land use patterns that reduce automobile dependence and support regional transit systems, which could reduce greenhouse gas emissions, as well as traffic and air quality impacts associated with population growth and nonresidential development.

The proposed General Plan 2030 does not include policies or actions that would result in construction or expansion of major infrastructure or public facilities that could remove obstacles to growth. While, the Plan does support construction of a desalination facility, the facility has been long-planned and is intended to primarily provide a supplemental water source during drought conditions for the City and a supplemental water source for the Soquel Creek Water District. The facility could be expanded to accommodate growth. However, according to the City's adopted *Integrated Water Plan* EIR (that evaluated a desalination facility at a program level), expansion would also be subject to additional environmental review that would be required to further analyze growth inducement potential based on review of City, County and Capitola General Plans. Growth inducement also will be reviewed in the project-level

[2] See Table 3-3 in the PROJECT DESCRIPTION (Chapter 3.0) section of this EIR and Figure 2-3 for estimated distribution of new development per specific areas in the City.

desalination project EIR that is currently being prepared. (See the WATER SUPPLY [Chapter 4.5] section of this EIR for further discussion regarding a desalination facility and potential impacts.}

5.4 CUMULATIVE IMPACTS

CEQA REQUIREMENTS

The State CEQA Guidelines section 15120(a) requires that an EIR discuss cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. As defined in section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

An evaluation of cumulative impacts is required by CEQA when they are significant. When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. According to the California State CEQA Guidelines section 15130 (a)(1), there is no need to evaluate cumulative impacts to which the project does not contribute.

An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant, when for example, a project funds its fair share of a mitigation measure designed to alleviate the cumulative impact. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact. If a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact as provided in section 15183(j). Therefore, future projects that are determined to be consistent with the General Plan after it is adopted may rely on this analysis to streamline their environmental review.

CUMULATIVE PROJECTS

The State CEQA Guidelines provide that cumulative impacts be addressed either based on:

> (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, OR
>
> (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

In the case of an area-wide planning document, such as a General Plan, cumulative effects occur from development accommodated by the General Plan within the City combined with impacts of cumulative development within the planning area. This EIR includes a review of "buildout" under the proposed General Plan, which is consistent with the "summary of projections" approach; thus this EIR includes the cumulative component for the City. Other cumulative development includes development and growth at the University of California, Santa Cruz (UCSC) facilities, which is in the exclusive control of the University of California, and development and growth within areas served by the City Water Department and/or City wastewater treatment facility. The approach to determining cumulative impacts for these other areas are described below.

UCSC 2005 Future Development and Growth

UCSC CAMPUS

On September 21, 2006, the University of California Regents adopted the *2005-2020 Long Range Development Plan* (2005 LRDP) for the UCSC campus after certification of the 2005 LRDP EIR. The 2005 LRDP identifies campus goals and development objectives and provides a map of proposed campus land uses. The 2005 LRDP is a physical development and land use plan framework to accommodate the academic, research and student/faculty services for a projected campus enrollment. The plan anticipates a campus enrollment of 19,500 students by academic year 2020-2021, provision of 9,556 on-campus housing units/beds for students, faculty and staff, and includes a building program that would allow a total of approximately 8,242,400 gross square feet of development by academic year 2020-2021, of which 3,175,000 gross square feet would be additional building space on the UCSC campus.

The 2005 LRDP also includes an 18-acre property on Delaware Avenue that was purchased by the University in 2004. The property includes three buildings with a total of 782 University employees and affiliates (University of California Santa Cruz, September 2006, Volume II: Draft EIR). Currently two of the three buildings are occupied with a total of 200 employees and affiliates.

The 2005 LRDP EIR was legally challenged by several entities, including the City of Santa Cruz. A ruling by the Santa Cruz County Superior Court in *City of Santa Cruz et al. v. Regents of the University of California et al.* (CV 155571, consolidated with Case No. CV155583) concluded

that additional analyses relating to water supply, housing, and traffic mitigation were required. In August 2008 a "Comprehensive Settlement Agreement" was executed by all the parties, which resolved the lawsuits. The Settlement Agreement was entered as a final judgment of the Court, thereby, superseding the previous court ruling. The Agreement limits enrollment to 19,500 in the academic year 2020-0201 and requires provision of additional on-campus housing for students, among other provisions.

This cumulative analysis conservatively assumes that some level of additional student enrollment growth would be expected between 2020 and 2030. The 2005 LRDP extends to 2020, after which time an updated LRDP likely would be prepared. It is unknown at this time what level of development or enrollment growth would be envisioned in the next LRDP. In accordance with provisions of the Settlement Agreement (section 5.1), UCSC agreed that the next major amendment to the 2005 LRDP will include a comprehensive analysis of potentially feasible alternative locations to accommodate proposed UCSC enrollment growth beyond that analyzed in the 2005 LRDP EIR (i.e., satellite campuses, remote-classrooms, etc.) as a means of assessing UCSC's ability to meet the state mandate for higher education while taking into consideration City of Santa Cruz infrastructure including, but not limited to, transportation, water and off-campus housing. However, UCSC's response to the EIR Notice of Preparation (NOP) indicates that enrollment has annually increased at an average rate of 320-350 students per year and requested that this amount be used for 2020-2030 projections. Thus, this EIR assumes 350 new students per year between 2020 and 2030 (3,500 total students) beyond the growth envisioned in the 2005 LRDP EIR for a worst-case cumulative analysis.

Development on the UC campus is controlled by the University of California, which, as a state agency, is not subject to local ordinances. Development in the North Campus was evaluated in the 2005 LRDP EIR. UCSC is responsible for implementation of mitigation measures identified in the certified 2005 LRDP EIR for significant impacts and adopted by the Regents when they approved the LRDP in 2006. Cumulative impacts are summarized and incorporated by reference from this document pursuant to the State CEQA Guidelines section 15150, as relevant to the cumulative analysis, unless other new information has been made available for the cumulative analysis as noted in the text.[3] Pursuant to the Comprehensive Settlement Agreement adopted as a stipulated judgment by the Superior Court for the County of Santa Cruz in Case Nos. CV155571 and CV155583, except for the issues of water supply and housing, the 2005 LRDP EIR analyses regarding University-growth-driven impacts that could contribute to cumulative impacts off-campus are deemed adequate by operation of law. The 2005 LRDP EIR is not used for the cumulative water supply and off-campus housing impacts addressed below.

UCSC MARINE SCIENCE CAMPUS

The University of California also owns 98 acres of coastal property that includes the original Long Marine Lab (LML) complex (about 16 acres), the Younger Lagoon Reserve (about 24 acres), and an area formerly known as Terrace Point (about 58 acres). In January 2009, the California Coastal Commission certified a "Coastal Long Range Development Plan" (CLRDP) for this property that is now known as the UCSC Marine Science Campus (MSC). The CLRDP, which

[3] The 2005 LRDP Final EIR documents are on file and may be reviewed at the City of Santa Cruz Planning Department, 809 Center Street, Room 106, Santa Cruz, CA, Monday through Thursday, 8 AM – 12 PM and 1 PM to 5 PM. The documents are also available online at: http://lrdp.ucsc.edu/final-eir.shtml

was approved by The Regents of the University of California in December 2008, guides development of this marine campus through 2020. Some development has occurred at the site; projected long-term development currently includes approximately 279,335 additional square feet of new facilities; approximately 50,000 square feet of new development is currently proposed, including, including Coastal Biology Building, improvements to the Nature Education Facilities and infrastructure improvements. Development at the Marine Science Campus was evaluated in the 2008 CLRDP EIR. UCSC is responsible for implementation of mitigation measures identified in this certified EIR for significant impacts and adopted by the Regents when they approved the CLRDP and certified the EIR. Cumulative impacts are summarized and incorporated by reference from this document pursuant to the State CEQA Guidelines section 15150, as relevant to the cumulative analysis, unless other new information has been made available for the cumulative analysis as noted in the text.[4]

Water Service Area Growth

In addition to serving the City of Santa Cruz and a portion of UCSC, the City Water Department also serves portions of the unincorporated Santa Cruz County area east of the City and a portion of the City of Capitola. The City considered the regional population forecasts adopted by AMBAG in June 2008 as the most reliable basis for the cumulative analyses related to growth in the City's water service area, which is shown on Figure 4.5-1.[5] The County of Santa Cruz is not currently planning to update its existing General Plan, and discussions with County Planning Department staff indicate that there are no major foreseeable development projects within the service area that would not be covered with projected population and employment growth (Previsich, personal communication, August 2011). There are some sites identified in the County Housing Element for higher density development. The City of Capitola is mostly developed, and is currently in the process of updating its General Plan.

Wastewater Treatment Plant Service Area Growth

In addition to the City and a portion of UCSC, the City's Wastewater Treatment Facility (WWTF) also serves portions of the unincorporated areas of Santa Cruz County, including Live Oak, Soquel, and Aptos, as well as the City of Capitola. The areas served by the City's WWTF are shown on Figure 4.6.3.

CUMULATIVE IMPACT ANALYSIS

Cumulative Impacts Found Not To Be Significant

For some issues, the proposed project would not result in an impact, and thus would not contribute to a potential cumulative impact. In each of the following instances, either a

[4] The CLRDP Final EIR documents are on file and may be reviewed at the City of Santa Cruz Planning Department, 809 Center Street, Room 106, Santa Cruz, CA, Monday through Thursday, 8 AM – 12 PM and 1 PM to 5 PM. The documents are also available online at: http://ppc.ucsc.edu/cp/projects/11407/.

[5] All EIR figures are included in Chapter 7.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

significant cumulative impact has not been identified or the proposed *General Plan 2030*'s incremental contribution does not rise to the level of being cumulatively considerable, as explained. Potentially significant cumulative impacts are addressed in the following subsection.

LAND USE AND DEVELOPMENT

Land Use. As discussed in the LAND USE (Chapter 4.1) section of this EIR, adoption and implementation of the proposed General Plan, including future development accommodated by the Plan, would not result in significant land use impacts related to division of an established community, introduction of incompatible land uses or conflicts with plans or policies adopted to mitigate an environmental impact. Potential cumulative development includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and Coastal LRDP, as well as other development within the planning area of the proposed General Plan 2030 as shown on Figure 2-1. Major developments are not planned within the County area that is within the City's planning area, and future development would be considered infill within existing developed areas.

Future development at the University facilities (UCSC campus, the Delaware Avenue facility and the Marine Campus) would be in accordance with the University's adopted plans for these areas and would not result in introduction of incompatible land uses or divide an established community. UCSC is not subject to local plans, policies and regulations, and thus, the issue of potential conflicts with such plans or policies is not applicable. Nonetheless, due in part to the fact that the Comprehensive Settlement Agreement between the City and County of Santa Cruz and the University adequately addresses issues of compatibility through the additional mitigation measures aimed at housing, traffic mitigation and water supplies, the development at the University facilities, in combination with the proposed General Plan, is not expected to result in any cumulative land use incompatibilities.

Development potential within the *General Plan 2030* planning area outside City limits is limited. The areas within the County that are within the City's existing Sphere of Influence (SOI), which include an area along Seventh Avenue and in the Carbonera area, have been included in the analyses for the proposed General Plan. Lands to the west (within the unincorporated County area) are generally in agricultural or state park use in which future development would be limited. An area located to the north of the existing City limits along Graham Hill road is not included within the City's SOI. This area is designated Very Low Residential in accordance with existing County of Santa Cruz land use designations. The area is mostly developed with residential uses, and future development could include limited additional residential development, subject to County approvals. Such development would not introduce incompatible land uses or divide a community, but would be considered infill within an existing developed area. Future development would be subject to County policies and regulations.

> **Conclusion.** Potential cumulative development and growth at UCSC and other areas within the *General Plan 2030* planning would not result in cumulative land use impacts.

Housing. This EIR found that future development accommodated by the *General Plan 2030* would not result in a significant impact related to displacement of residents or housing. Future UCSC campus development includes new on-campus housing to accommodate new students and

staff in accordance with LRDP projections and provisions of the Comprehensive Settlement Agreement.

The University's 2005 LRDP EIR evaluated the impact on the City's housing supply as a result of student and staff growth (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II: Draft EIR, pages 4.11-17 – 4.11-25); a revised analysis was provided in the EIR for the City's proposed Sphere of Influence Amendment and Provision of Extraterritorial Water & Sewer Service (To Part of the UCSC North Campus) (City of Santa Cruz, July 2010, pages 5-14 – 5-17). The proposed *General Plan 2030* would not contribute to the UCSC demand for off-campus housing impact, and thus, there would be no cumulative impact related to this issue. This EIR has evaluated potential impacts related to future development of 3,350 residential units accommodated by the General Plan, but does not make a distinction as to who would reside in these units. However, it is noted that UCSC-related off-campus population within the City of Santa Cruz as a result of growth accommodated by the 2005 LRDP is estimated to result in a housing demand of approximately 525 to 860[6] units in the City of Santa Cruz based on existing residency and household size trends[7] (City of Santa Cruz, July 2010). Student growth between 2020 and 2030[8] could result in an additional housing demand of 132 units for a total a total UCSC demand of approximately 660 to 990 housing units. This potential housing demand is within the 3,350 residential units estimated to be accommodated by the proposed *General Plan 2030* to the year 2030. This potential demand is also well as within AMBAG's projected increase of 2,413 new housing units in the City of Santa Cruz by the year 2030. Since AMBAG's projections are made in part to satisfy state requirements to determine regional housing needs for local jurisdictions to use in developing their state-mandated Housing Elements, it is presumed that the identified housing projections (needs) in local jurisdictions will be met.

> **Conclusion.** Potential cumulative development and growth at UCSC and other areas within the General Plan 2030 planning would not result in significant cumulative impacts regarding displacement of housing or residents. The proposed *General Plan 2030* would not contribute to the UCSC demand for off-campus housing impact, and thus, there would be no cumulative impact related to this issue.

Aesthetics. Potential cumulative development that could affect issues related to aesthetics includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and Coastal LRDP and other areas in the General Plan planning area that could affect scenic views or scenic resources. The areas within the County that are within the City's existing Sphere of Influence (SOI), which include an area along Seventh Avenue and in the Carbonera area,

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[6] Based on historical data, the 2005 LRDP EIR assumed that except for commuters, all new students would be new to the area. The lower number reflects the scenario in which most new employees already live in Santa Cruz County (32%) and the higher number reflects the scenario in which all move to the area.

[7] About 47% percent of students and 8% of UCSC employees live on campus; of the off-campus residents, approximately 35% of students and 47% of employees live in the City of Santa Cruz (University of California Santa Cruz, July 2009). Off-campus student household size averaged about 3 students. For employees, approximately 1.1 employees reside per unit, both on and off campus in addition to non-employee dependents (Ibid.).

[8] Estimated as 3,500 students with 2,345 (67%) residing on campus and 34% of the remaining students (395) living within the City of Santa Cruz further described below in the "Population Growth" subsection of the "Significant Cumulative Impacts" section.

have been included in the analyses in for the proposed General Plan. The other unincorporated areas within the General Plan planning area are either in open space use or not part of a scenic viewshed. The lands to the west of the City are in agricultural, open space and public park uses; there would be no future development that would affect scenic views or resources or result in aesthetic impacts. The unincorporated area along Graham Hill Road to the north of the City is largely wooded, mostly developed, and not within scenic public views available from City locations.

No significant impacts were identified related to scenic views, scenic resources, visual quality of surrounding areas or light and glare as a result of the proposed *General Plan 2030* due to the proposed policies and actions that seek to protect scenic views and encourage sensitive development designs. Future development at the UCSC facilities would be subject to its own adopted LRDPs aesthetic policies for the main campus and marine science campus (LRDP, pages 74-75; CLRDP, Chapter 5, pages26-30). The University's 2005 LRDP EIR did not identify significant off-campus aesthetic impacts that would result in a cumulative impact to scenic views of the Monterey Bay or Santa Cruz Mountains (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume I: Draft EIR, pages 4.1-12 – 4.1-15 and Volume IV: Final EIR, pages 3-6 – 3-7). Thus, cumulative campus and City development would not result in cumulative aesthetics impacts.

Furthermore, future development at the University's Marine Science Campus in accordance with its CLRDP would not result in significant impacts to scenic views based photosimulations that show no obstruction of ocean or panoramic views (University of California Santa Cruz, January 2004, pages 4.1-31 to4.1-38). Potential development sites within the City are not within the public scenic viewsheds of UCSC's Marine Science Campus, except for the 11-acre, vacant Swenson site, located adjacent to the marine campus, east of Shaffer Road. Future development on this site would be partially within scenic views of the Monterey Bay as seen from the lower portions of the Moore Creek Preserve and Wilder Ranch State Park in which the marine campus is also visible, although existing tree cover partially screens the property from these public views. Future development would not be expected to be of the intensity and mass that would obstruct or block ocean views. Furthermore, policies and actions included in the proposed General Plan 2030 would ensure that scenic views of the ocean are protected with appropriate structural siting and design to preserve public scenic views as discussed in the AESTHETICS (Chapter 4.3) section of this EIR. Furthermore, the proposed General Plan specifically requires that the height, scale, and bulk of development take into consideration the rural transition at the city's edge (LU1.14).

> **Conclusion.** No significant cumulative impacts related to scenic views, scenic resources, visual quality of developed areas or light or glare have been identified for the proposed project and cumulative UCSC development.

PUBLIC SERVICES AND FACILITIES

Public Services. The City's Fire and Police Department serve City residents, and cumulative growth within the City has been evaluated in this EIR. Similarly, the City's landfill and Resource Recovery Facility only serve City residents. Thus, there would be no cumulative impacts related to these public services. Cumulative impacts related to wastewater treatment, parks and schools are discussed below.

Wastewater Treatment. The geographical area for the analysis of cumulative water impacts includes the area served by the City's wastewater treatment facility (WWTF). This includes the City of Santa Cruz, a portion of UCSC, lands within the Santa Cruz Sanitation District (south to Seascape) and two small county service areas. The City and County each have specified rights to treatment capacity. (See the "Wastewater Treatment and Collection" subsection of the PUBLIC SERVICES (Chapter 4.6) section of this EIR for a full description.)

Wastewater generated by the proposed project is estimated as approximately 0.55 mgd Cumulative wastewater flows for UCSC are estimated as between 0.2 and 0.45 mgd for the year 2010 (City of Santa Cruz, July 2010). This estimate represents an average per capita wastewater generation of 45-100 gpd, based on student enrollment levels. Using this per capita factor as a rough estimate for potential additional student enrollment of 350 students/year between 2020 and 230, an additional 0.154-0.350 mgd of wastewater flow could be generated. This would result in a potential additional flow attributable to UCSC of 0.35 to 0.80 mgd. As a result of City and UCSC cumulative development, up to approximately 1.35 mgd of additional wastewater flows may be generated by the year 2030. There is adequate remaining capacity within the City's treatment allocation (4.0 mgd remaining) to accommodate this cumulative increase.

Other areas served by the City's WWTF are within the county sanitation and/or service areas. Existing flows from the County total 5.5 mgd. In its review of countywide services conducted in 2005, LAFCO estimated a growth in wastewater flows within these sanitation districts as approximately 0.5% per year. This would result in an approximate 10% increase or about 0.55 mgd over existing flows of 5.5 mgd by the year 2030. This is within the remaining capacity of 2.5 mgd allocated to the County.

> **Conclusion.** Cumulative wastewater flows to the City's wastewater treatment facility are within remaining allocated capacities, and thus, there is no significant cumulative impact to the treatment facility capacity.

Parks. Potential cumulative development that could affect issues related to parks includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP. Cumulative population growth accommodated by the proposed *General Plan 2030* and UCSC 2005 LRDP would not result in significant cumulative impacts to parks. As discussed in this EIR, increased population and associated park use demand accommodated by the proposed General Plan would not be significant as increased use of existing parks is expected to be spread out throughout the City so that no substantial deterioration would occur at any one facility, and with implementation of the proposed *General Plan 2030* goals, policies and actions that set forth measures to avoid and minimize adverse impacts on parks and recreational facilities.

The University's 2005 LRDP EIR analyzed whether increased on-campus population under the 2005 LRDP would increase demand for recreational facilities in the City of Santa Cruz, thereby resulting in deterioration of existing recreational facilities or the need to construct new facilities that could result in significant environmental impacts. The EIR concluded that growth in on-campus daytime and residential population would not trigger the construction of new City parks and recreational facilities because the 2005 LRDP provides for new campus recreational facilities to serve the increased population (University of California Santa Cruz, September

2006, 2005 LRDP Final EIR, Volume II: Draft EIR, pages 4.13-11 to 4.13-12). The impact was therefore determined to be less than significant. The EIR also concluded that cumulatively, this impact would also be less than significant, but includes mitigation measures that require inclusion of children's recreational facilities in all new on-campus family housing developments and ensure that UCSC recreational facilities continue to be available to the public to further reduce the potential impact to recreational facilities in the City of Santa Cruz.

The 2005 LRDP EIR also includes a mitigation measures for collaboration with the City regarding Pogonip. Because of the proximity of the campus to Pogonip and because of the presence of trail connections between the campus and the park, the 2005 LRDP EIR found that the use of Pogonip trails would be expected to increase due to campus growth (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II: Draft EIR, page 4.13-12). Potential deterioration of trails could be reduced to a less-than-significant impact with implementation or LRDP EIR mitigation measures, including UCSC working with the City to ensure that Pogonip has adequate signage to inform users that bicycling is prohibited; providing campus maps that indicate the bicycle use policies in the park; working with campus outdoor activity groups to encourage trail stewardship, and coordinating with City efforts in recruiting volunteers for an annual or semi-annual trail maintenance day.

Conclusion. Cumulative impacts to City parks are less than significant.

Schools. Potential cumulative development that could affect school enrollments includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP. The LRDP EIR indicates that approximately 85 K-12 students would be generated by 2020. The estimated student enrollment between 2020 and 2030 could result in approximately 70 students for a total of 155 new students over the next 20 years. This would result in a total cumulative student generation of approximately 1,765 students over the next 20 years, including the proposed project. This could exceed existing school facility capacities depending on the rate of growth as the increase would not happen all at once. However, this is conservatively considered a potential significant cumulative impact to which the project's incremental contribution would be cumulatively considerable as the proposed project represents the majority of the student growth. However, with required payment of school impact fees to fund necessary facility expansion and/or additions, in conjunction with use of the former Natural Bridges Elementary School, the impact would be mitigated to a less-than-significant level. Potential addition or expansion of school classroom facilities is not expected to result in significant physical impacts due to the location of existing facilities within developed footprints. The School District has indicated this level of enrollment could be accommodated without construction of new schools, although some expansion of existing facilities may be necessary. It is not known which campuses may need to be expanded in the future to accommodate the additional enrollment.

Conclusion. Cumulative development and growth would increase enrollments in grades K through 12 by an estimated 1,765 students through 2030, and some schools may exceed capacity depending on the timing of growth, and thus, this is a potentially significant cumulative impact. The project's incremental contribution to this impact (approximately 2,010 students) is cumulatively considerable. However, the required payment of school impact fees and implementation of proposed General Plan policies

and actions would fully mitigate the project's cumulative contribution such that it would no longer be considered cumulatively considerable.

Storm Drainage and Water Quality. Potential cumulative development that could affect storm drainage and water quality includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP. The analyses included in this EIR found that future development accommodated by the draft *General Plan 2030* would have less-than-significant impacts on water quality, stormwater and flooding with implementation of existing City and state regulations and proposed General Plan policies and actions that require new development to maintain pre-development runoff levels and protect water quality. Impacts to the quality of water resources would be minimized by implementing Best Management Practices (BMPs) in accordance with the NPDES permit and other applicable regulations.

UCSC campus development under the 2005 LRDP would involve construction activities such as excavation, grading, and construction of new academic and housing facilities, as well as roadway and utility improvements. These activities could result in increased runoff and potential water quality degradation due to erosion and potential pollutants that could adversely affect water quality of downstream receiving waters, including the San Lorenzo River and Monterey Bay. UCSC campus development, in combination with potential development that could be accommodated by the draft *General Plan 2030*, could result in increased runoff and potential water quality impacts in the Moore Creek, Jordan Gulch, and San Lorenzo River watersheds. However, campus development would not result in substantial sources of runoff in off-campus watersheds, due to the mitigation measures the University is required to implement, and therefore would not have a substantial adverse effect on receiving water quality, except for potential erosion (University of California Santa Cruz, September 2006, Volume II: Draft EIR, pages 4.8-44 to 4.8-46). The potential for erosion of campus soils due to development, including tree removal, would be reduced to a less-than-significant level with implementation of mitigation measures and implementation of Best Management Practices in the campus *Storm Water Management Plan* that is part of the campus Storm Water Discharge Permit issued by the Regional Water Quality Control Board (University of California Santa Cruz, 2005 LRDP Final EIR, September 2006, Volume I, page 3-27 to 3-28).

Furthermore, a large amount of runoff from the UCSC campus is intercepted to the subsurface through sinkholes in the karst formation, including the above watersheds. Increased storm water runoff in the Jordan Gulch watershed does not leave the campus by way of surface runoff and is intercepted by the karst sinkholes. In the case of the Moore Creek watershed, it is possible that the sinkholes may fill with sediment, and runoff from new campus impervious surfaces would no longer enter the karst system and would instead leave the campus as stream discharge. However, implementation of mitigation measures adopted for the 2005 LRDP and compliance with the University's approved NPDES requirements would reduce erosion and sedimentation of sinkholes, such that the drainage system would continue to handle the runoff from the campus (University of California Santa Cruz, September 2006, Volume II: Draft EIR). Implementation of the 2005 LRDP EIR mitigation measures would avoid any increases in peak flows and would also avoid or minimize an increase in the volume of runoff that is discharged off site (University of California Santa Cruz, September 2006, Volume II: Draft EIR, pages 4.8-30, LRDP Mitigation HYD-3C and HYD-3D). Compliance with NPDES requirements for construction sites and the implementation of 2005 LRDP EIR mitigation measures would reduce the construction-phase storm water runoff impacts on water quality to a less-than-significant level (Ibid.).

The University's Marine Science Campus site is essentially a closed drainage system, with little influence from upgradient or crossgradient sites (University of California Santa Cruz, January 2004). With the exception of the drainage from the industrial areas to the north, drainage onto the site through overland flow from adjacent properties is minor (Ibid.). Runoff from the Marine Science Campus discharged runoff into the Younger Lagoon Reserve (YLR) and the Monterey Bay. Runoff from the areas north of the Marine Science campus flows onto the Marine Science Campus site via a culvert under the railroad tracks. There are no other vacant parcels in the project vicinity that drain into the YLR that could be developed in the future to result in increased runoff into the YLR. Therefore, any change in the volume and quality of runoff that is received in the YLR compared to existing conditions would be the result of the implementation of the CLRDP (Ibid.). Thus, there would not be a significant cumulative impact to which the proposed project would contribute.

A portion of the Marine Science Campus does drain to the Moore Creek watershed, which includes the existing vacant Swenson site within the City. Future development of this site would be subject to City regulations for stormwater management and water quality control. Development at both the Marine Science Campus and within the City would be required to comply with specified stormwater collection and discharge requirements, including NPDES requirements, which will offset and reduce the overall potential cumulative contribution to water quality degradation of the ocean and bay resulting from the cumulative development in the region. Within implementation of drainage and water quality protection measures required by the City and for UCSC development, cumulative stormwater drainage in the Westside with UCSC development at its Coastal Marine Science Campus would not result in a significant cumulative impact.

> **Conclusion.** Cumulative development and growth would result in increased runoff and potential water quality degradation. However, with implementation of existing City regulations and proposed policies, as well as state and UCSC regulations and requirements, including compliance with approved NPDES measures within the City and at UCSC, the increased runoff would not result in a significant cumulative impact to storm drain systems or water quality of receiving waters.

RESOURCES AND HAZARDS

Biological Resources. Potential cumulative development that could result in potential cumulative impacts to biological resources includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and CLRDP, as well as development accommodated by the proposed General Plan. Future UCSC development and limited sites within the City could cumulatively affect sensitive coastal prairie, riparian and wetland habitats and some special status species, including California red-legged frog, special status bird and bat species and the San Francisco dusky-footed woodrat. However, most of the sites within the City that would support sensitive habitat areas and special status species are protected in publicly owned and managed park and greenbelt lands, and implementation of proposed General Plan policies and actions, as well as implementation of other City plans, such as the *City-wide Creeks and Wetlands Management Plan,* would prevent significant impacts to biological resources. Future development would be subject to site-specific environmental review, and the proposed General Plan includes protocols for biological assessment regarded sensitive

habitats and special status species that will be required as part of the CEQA-review process in order to evaluate and mitigate potential impacts related to future development. Similarly, campus growth will be guided by the 2005 LRDP, which includes goals and policies to protect biological resources. Mitigation measures are also included in the 2005 LRDP EIR regarding to mitigate potential significant impacts related to sensitive habitats (northern maritime chaparral, coastal prairie, wetlands, riparian), special status species, and interference with wildlife breeding or movement. Future potential development accommodated by the proposed *General Plan 2030* would not contribute to potential biological impacts on the UCSC campus, as most new development would be located within existing urban areas.

Future development at the Swenson parcel adjacent to the University's Marine Science Campus, in combination with development at the marine campus, could result in potential cumulative impacts to wetlands and wildlife movement. However, with implementation of the proposed *General Plan 2030* goals, policies and actions that set forth measures to avoid and minimize adverse impacts on sensitive wetland habitats and to protect, enhance and maintain significant wildlife dispersal corridors and buffers, significant impacts would be avoided. The proposed General plan also includes Action LU1.1.4 that sets forth specific development/design directives for the Swenson parcel, which include: wetland buffers, locating parking away from Antonelli Pond and preserving public access to Antonelli Pond.

> **Conclusion.** With implementation of measures required by the City and UCSC for review and mitigation of potential biological resource impacts associated with new development, potential site-specific impacts would be less than significant. Thus, there would be no significant cumulative impacts related to biological resources, particularly sensitive habitats, special status species and wildlife movement.

Agriculture, Forest & Mineral Resources. Potential cumulative development that could affect agriculture, forest or mineral resources includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and CLRDP. Future development accommodated by the proposed General Plan would not result in conversion of agricultural or forest resources or contribute to any cumulative impacts related to conversion of these resources. Future development at UCSC could result in removal of forest resources, but the City's forested lands are largely located within existing public greenbelt and open space areas. Thus, the adoption and implementation of the *General Plan 2030* would not contribute to cumulative removal of trees/potential forest resources. There are no mineral resources within the City. The designated mineral resource (quarry adjacent to Wilder Ranch) to the west of the City is within the General Plan planning area, but is located within the unincorporated County jurisdiction. As discussed in the AGRICULTURE, FOREST & MINERAL RESOURCES (Chapter 4.15) section of this EIR, this quarry is currently regulated by the County of Santa Cruz, and mining is expected to be completed within the next 10± years. A reclamation plan has been approved for the site.

> **Conclusion.** Cumulative development and growth would result in conversion of agricultural or mineral resources. The adoption and implementation of the *General Plan 2030* would not result not contribute to potential conversion of forest resources on the UCSC main campus. Thus, there would be no cumulative impacts to which the proposed project would contribute.

Cultural Resources. Potential cumulative development that could result in potential cumulative impacts to cultural resources includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and CLRDP. Impacts to cultural resources are site-specific. There are no areas where City and potential UCSC development would overlap. Both the proposed General Plan 2030 and the University's adopted 2005 LRDP and certified EIR include policies and measures to conduct appropriate review for cultural resources and provide site-specific mitigation as may be required.

> **Conclusion.** With implementation of measures required by the City and UCSC for review and mitigation of potential cultural resource impacts associated with new development, potential site-specific impacts would be less than significant. Thus, there would be no significant cumulative impacts related to cultural resources.

Geology and Soils. Potential cumulative development that could result in or be affected by geology or soils hazards and constraints includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and CLRDP. Impacts related to exposure to geological hazards and/or soils constraints are site-specific impacts that affect individual development projects and that are adequately mitigated on an individual basis. As discussed in the GEOLOGY AND SOILS (Chapter 4.10) section of this EIR, state and local building code requirements for seismic shaking and preparing and implementing recommendations of a geotechnical report serve to reduce geologic and seismic risks to acceptable levels. Project design and building standards avoid the aggregation of individual effects into a significant combined impact. Therefore, there would be no cumulative impact.

> **Conclusion.** Site-specific project design and building standards avoid the aggregation of individual effects into a significant cumulative geologic or soils impact. Therefore, there would be no cumulative impact related to geology and soils.

Air Quality. Cumulative development and growth would result emissions of criteria pollutants. However, as overall emissions are projected to decrease, and based on estimates include in this EIR (see Chapter 4.11, there would be a net decrease in emission of ozone precursors. Potential PM_{10} emissions would be reviewed on a project level to ensure that Air District daily significance thresholds are not exceeded. Thus, cumulative development would not be expected to contribute to violations of air quality standards, and there would not be a significant cumulative impact related to air emissions.

According to MBUAPCD CEQA Guidelines, "A consistency analysis and determination serve as the project's analysis of cumulative impacts on regional air quality. Project emissions which are not consistent with the AQMP (Air Quality Management Plan) are not accommodated in the AQMP and will have a significant cumulative impact unless offset." The analysis of potential buildout under the proposed General Plan 2030 found that development could exceed growth projections included in the AQMP, and therefore, the project would be inconsistent with growth projections in the AQMP, even though overall emission levels are forecast to decrease in the future. The development potential under the 2005 LRDP EIR was found to be potentially inconsistent with the AQMP, but with revised AMBAG population forecasts in 2009, the LRDP growth was found consistent with the AQMP (City of Santa Cruz, July 2010 [DEIR Volume]). Therefore, there is no cumulative impact related to consistency with the AQMP.

Conclusion. The projected decrease in emissions in the future will offset cumulative emissions. Thus, cumulative emissions of criteria pollutants would not be significant.

Global Climate Change Quality. Cumulative development in the region, as well as throughout the state and globally, would contribute to generation of greenhouse gas (GHG) emissions with resulting effects on global climate change. Both the City and UCSC have developed emission reduction targets and are preparing Climate Action Plans. The UC Policy on Sustainable Practices addresses: green building design, clean energy standards, climate protection practices, sustainable transportation practices, sustainable operations, recycling and waste management and environmentally preferable purchasing practices. The State has also adopted reduction targets with a plan that identifies specific strategies (Scoping Plan) as discussed in the GLOBAL CLIMATE CHANGE (Chapter 4.12) section of this EIR.

The proposed project GHG emissions were found to be below the overall per capita level of 6.6 metric tons/year CO_2 equivalent (MT CO_2e) per year that would be achieved at the State level given the State's emission target and total service population (residents and employees). This is the significance threshold that also is being considered by the Monterey Bay Area Unified Air Pollution Control District in evaluating impacts of long-range plans, such as general plans.

UCSC's estimated campus emissions for 2009 were 73,086 metric tons of $CO2_e$ (University of California Santa Cruz, May 2011). The total GHG emissions resulting from campus development are estimated as a maximum of 21,777 MT CO_2e (City of Santa Cruz, July 2010), for a UCSC cumulative total of 94,864 MT CO_2e. With the addition of emissions from the proposed General Plan 2030, cumulative GHG emissions represents a per capita level of 4.1 CO_2e, which continues to be below the 6.6 MT CO_2e threshold. Although this estimate is only to the year 2020, it would be expected that continued implementation of actions and strategies by the State, UC and the City would continue to keep GHG emission levels below significance thresholds.

Conclusion. Cumulative development and growth within the City and at UCSC would result in GHG emissions, but are estimated to fall below per capita thresholds proposed by the MBUAPCD for long-range plans. Thus, the proposed project would not make a cumulatively considerable contribution to a significant cumulative impact.

Hazardous Materials. Hazardous materials are project and site-specific and can be mitigated with adherence to federal, state, and local laws and regulations as discussed in the HAZARDOUS MATERIALS (Chapter 4.14) section of this EIR. The proposed *General Plan 2030* would result in additional development within the City, which could increase the potential for exposure to hazards and hazardous materials. Cumulative development at the UCSC Main Campus and Marine Science Campus could also include use of and exposure to hazardous materials and other hazards. However, cumulative development would have a localized effect on the exposure of residents to these hazards. This type of exposure would not be compounded by additional exposure in other parts of the region. Additionally, the University's 2005 LRDP and EIR include measures to ensure that all hazards and hazardous materials are managed appropriately and according to federal, State and local regulations in order to ensure public safety.

Conclusion. Cumulative development would be required to comply with applicable local, state and federal regulations regarding hazardous materials that would avoid the aggregation of individual effects into a significant cumulative impact. Thus, cumulative growth and development would not result in a significant cumulative impact related to hazardous materials.

Potentially Significant Cumulative Impacts

LAND USE AND DEVELOPMENT IMPACTS

Population Growth. Potential cumulative development that could affect population growth within the City of Santa Cruz includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP. The areas within the County that are within the City's existing Sphere of Influence (SOI), which include an area along Seventh Avenue and in the Carbonera area, have been included in the analyses in for the proposed General Plan. The other unincorporated areas within the General Plan planning area are not proposed to be included in the City's SOI or annexed, and population growth in this area would be outside the City and would not affect City population growth. (It is noted that the draft General Plan supports annexation of a 5±-acre property to the City's Dimeo Lane landfill, but this would not result in residential uses or population growth.)

New on-campus residential population related to UCSC development and growth under the University's adopted 2005 LRDP is estimated at approximately 3,340 new residents (including students, employees and dependents), who would be living on the UCSC campus by the year 2020 (City of Santa Cruz, July 2010). Of this amount, at least approximately 1,570 residents would be living in the main campus area within City limits (Ibid.). The remaining on-campus residents may be expected to reside in the North Campus area, which is currently outside City limits, but proposed to be included within the City's SOI.[9] With both on- and off-campus projections, a total of approximately 3,015 to 3,800[10] residents making up the UCSC-related population are estimated to live in the City of Santa Cruz by 2020 with approximately (Ibid.).

The City's total estimated population in 2030 with development accommodated by the draft *General Plan 2030* is estimated at 67,022 residents as discussed in the POPULATION AND HOUSING (Chapter 4.2) section of this EIR. With cumulative development and growth at UCSC under the 2005 LRDP, the City's population could range between 70,040 and 70,820 residents. This would represent a population of approximately 4,150 to 4,940 residents above AMBAG's forecast population of 65,884 residents within the City of Santa Cruz in 2030. This cumulative level of growth represents an average annual growth rate of approximately 0.9% between

[9] Concurrent applications filed by the City of Santa Cruz and the UCSC are pending before the Santa Cruz County Local Agency Formation Commission (LAFCO) to amend the City's Sphere of Influence (City application) to include the 374-acre portion of the UCSC campus known as "North Campus" for the purpose of providing extraterritorial water and sewer services (UCSC application). The expansion of the SOI was analyzed in an EIR certified by the City of Santa Cruz in August 2010. The City has no plans, nor does it see any future need, to annex North Campus into City limits. The proposed General Plan supports inclusion of the North Campus in the City's Sphere of Influence (LU2.2.).

[10] The higher number assumes that all new staff would move to the Santa Cruz area, whereas the lower number assumes that most staff already reside in the City.

2009 and 2030. This is consistent with actual growth rates that have primarily occurred since 1990 (see Table 4.2-4 in the POPULATION AND HOUSING (Chapter 4.2) section of this EIR), and would not be considered a significant cumulative impact related to population growth as growth would be within historic levels and not considered substantial. Furthermore, some or all of the off-campus UCSC-related population that would reside within the City may be included population growth estimated for the General Plan 2030 buildout as the analysis does not specifically include or exclude UCSC-related population, and thus, the average annual growth rate would be less.

Additional UCSC population growth between 2020 and 2030 could result in an increased enrollment of 3,500 students, of which it could be expected that at least 67% would reside in on-campus housing, consistent with provisions of the Settlement Agreement, which would result in approximately 2,345 campus residents. It would be expected that most of this new on-campus population would be within the new development areas identified in the 2005 LRDP EIR, which is the North Campus area that is located outside of City limits. Of the remaining 1,155 new students, approximately 34% would be expected to reside within the City based on off-campus residency patterns (City of Santa Cruz, July 2010). This would result in a total of approximately 395 students living within the City. As indicated above, some or all of the off-campus UCSC-related population that would reside within the City may be included population growth estimated for the General Plan 2030 buildout as the analysis does not specifically include or exclude UCSC-related population, and thus, the average annual growth rate would be less. However, even with the addition of 395 residents within the City, the total cumulative growth would represent an average annual growth rate of approximately 0.9%, which has been the historical rate within the City.

It should be noted that the estimated UCSC growth between 2020 and 2030 is somewhat speculative, as the University would be required to update and adopt a new LRDP in or before 2020, as the current adopted 2005 LRDP governs campus planning up to the year 2020. However, the projection is consistent with historic UCSC growth rates, and for the purpose of CEQA analysis, this would be a worst-case assumption. Such growth may also result in an increase in faculty and staff, although no estimates have been provided.

Cumulative population growth would not be considered a significant cumulative impact based on existing jurisdictional boundaries. However, the North Campus area of UCSC is proposed to be included in the City's Sphere of Influence, which is supported by the proposed General Plan. If the Sphere amendment is approved by LAFCO, there may come a time at which annexation is proposed, although there are no plans or proposals by the City to do so at this time. As explained in the EIR prepared for the SOI expansion, neither the City nor UCSC, believes annexation is necessary since the University already maintains many of its own public services such a police and fire that would normally result from an annexation. However, if the North Campus were to be annexed, the City's population could further increase by approximately 4,115 residents to the year 2030. This would result in a total City population of o approximately 74,155 to 74,935 in 2030. This additional UCSC, growth when added to other cumulative population growth described above, would represent an average annual population growth rate of 1.3%. This level of growth would exceed historical rates that have ranged between approximately 1.0 and 0.7% since 1990 (see Table 4.2-4 [page 4.2-6] in the POPULATION AND HOUSING (Chapter 4.2) section of this EIR).

Conclusion. The estimated General Plan buildout would result in a average annual population growth rate of 0.6%, which is slightly less than the historical rate experienced in the City since 1980 (0.9%), but only slightly higher than the AMBAG forecast rate (0.56%). With cumulative UCSC growth to 2020, an average annual growth rate of 0.9% would be experienced, which is higher than the growth rate under the AMBAG estimates (0.66% per year), but consistent with historic rates, and thus, would not be considered substantial. However, if portions of the campus outside existing City boundaries are included in the City Sphere of Influence, potential future annexation could occur, and the resulting cumulative population growth would represent an average annual growth rate of approximately 1.3%. This exceeds historic rates, as well as annual average growth rates based on AMBAG forecasts for the year 2030. Although the 1.3% growth rate is only slightly higher than the historic 0.9-1.0% growth rate, it does represent a 20-30% increase and could be considered substantial. Therefore, this is considered a significant cumulative impact due to the substantial population growth and resulting physical effects that such growth could lead to (such as increased traffic and water supply demand) that would be cumulatively induced. The population accommodated by the proposed *General Plan 2030* is over half of the increase, and thus, the project's incremental contribution would be cumulatively considerable. However, future population forecasts could be developed and/or adjusted periodically to account for actual growth that occurs during the planning horizon.

PUBLIC FACILITIES & SERVICES

Transportation and Traffic. Potential cumulative development that could affect traffic includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and Coastal LRDP. The areas within the County that are within the City's existing Sphere of Influence (SOI), which include an area along Seventh Avenue and in the Carbonera area, have been included in the analyses in for the proposed General Plan. The other unincorporated areas within the General Plan planning area are designated for agricultural or recreational uses or very low residential densities (along Graham Hill Road), and would not be expected to generate significant amounts of traffic.

The Traffix model was used for the traffic impact analysis, which estimates the trip generation for all uses and distributes these new trips to the existing road network. Cumulative traffic volumes were calculated by adding peak-hour project trips generated by UCSC cumulative growth to the estimated General Plan buildout and existing volumes, which are provided in Appendix G. Cumulative UCSC trips were based on existing traffic in 2009 when the EIR Notice of Preparation was released and provisions of the Comprehensive Settlement Agreement, signed by the City, County, UCSC and other entities. These assumptions are outlined below:

- UCSC CAMPUS GROWTH: The Comprehensive Settlement Agreement limits traffic to an increase of 3,900 new daily trips over LRDP baseline conditions, not to exceed 28,700 average daily trips (ADT) to the main campus. The UCSC count in Spring 2009 was a total of 22,725 vehicles per day to the UCSC campus during which time 16,284 students were enrolled. This level of traffic represents an overall student generation rate of about 1.4 trips per student. Based on the 28,700 vehicles per day limit, the cumulative increment would be 5,975 vehicles per day. However, based on the trip generation rate and with the addition of approximately

3,500 students between 2020 and 2030, total cumulative campus trip generation was estimated at 9,187 new trips. The peak hour ratios and distribution will remain constant.

- MARINE SCIENCES CAMPUS: Cumulative traffic from the Marine Sciences Campus was based on the Coastal LRDP EIR and review with UCSC staff. Increased long-term terms were determined to be 1,804 daily trips with 198 PM peak hour trips. The Comprehensive Settlement Agreement limits total trips at this facility to 3,120 daily trips.
- 2300 DELAWARE: The Comprehensive Settlement Agreement indicates a limit of 2,068 ADT from the Delaware Avenue facilities assuming no change in office uses with 1,145 ADT associated with existing occupied facilities. This results in net cumulative increase of 923 ADT with 161 PM peak hour trips.

Intersection levels of service during the PM peak hour with cumulative development (including the proposed project) are summarized on Table 5-1. The level of service (LOS) calculations are included in Technical Appendix H-4, which is available for review at the City of Santa Cruz Planning Department[11] and is also included on the Draft EIR CD and on the online version of the Draft EIR on the City's website at www.cityofsantacruz.com, Planning Department.

The 21 intersections that would operate at unacceptable levels of service with buildout accommodated by the *General Plan 2030* would experience increases in delays with cumulative development and growth. In addition, the following five intersections would drop to an unacceptable LOS under cumulative conditions; all but one intersection is along routes that serve UCSC.

- Swift / Mission – from D (with project) to **E**
- Bay-Coolidge / High – from D (with project) to **F**
- Storey / King – from D (with project) to **F**
- King / Laurel- from D (with project) to **F**
- Frederick / Soquel – from D (with project) to **E**

Improvements have been identified for these 26 intersections that are forecast to operate at unacceptable levels of service as a result of future cumulative growth. Many of the impacted intersections can be improved to an acceptable LOS with signalization, turning restrictions, and/or other improvements. Table 5-2 summarizes these improvements and resulting LOS and delays for the impacted intersections. However, even with improvements, the following 11 intersections would remain at unacceptable levels.

- Western / High – Would improve from **F** to **E**
- River / Highway 1 – Would remain at **F**
- Bay / Mission – Would remain at **F**
- Laurel/Mission Would remain at **F**

[11] Located at 809 Center Street, Room 107, Santa Cruz, California during business hours: Monday through Thursday, 8 AM to 12 PM and 1 to 5 PM.

- King/Mission – Would improve from **F to E**
- Chestnut / Mission – Would remain at **F**
- Ocean / Water – Would remain at **F**
- Seabright / Water – Would improve from **F** to **E**
- Bay/California Ave. – Would improve from F to **E**
- Seabright / Murray – Would remain at **E**

Cumulative development would contribute to existing and future forecast unacceptable levels of service along Highway 1 and Highway 17. Traffic associated with UCSC development growth would add nearly 2,700 additional daily trips along Highway 1 and approximately 2,100 trips along Highway 17 (University of California, Santa Cruz, September 2006, Volume III: Recirculated DEIR, pages2-13 and Figure 2-3)). Project traffic represents a significant addition, although the estimated General Plan buildout traffic is less than the future forecasts estimated by Caltrans in its draft "Corridor System Management Plan." With implementation of the proposed *General Plan 2030* policies and actions to reduce vehicular traffic, increase vehicle occupancy and support/encourage use of alternative transportation measures, and with future improvements along Highway 1 that are planned by Caltrans, traffic congestion along Highways 1 will be minimized. The proposed General Plan also includes an action to work with the University to develop and implement strategies to reduce congestion along travel corridors (M2.4.4).

Conclusion. Cumulative development and growth would generate traffic that would result in unacceptable levels of service at 26 intersections, all of which could be improved to acceptable levels or improved operations (i.e., delays reduced to existing levels), except at 11 intersections, including five along state routes. Improvements would reduce delays below the level generated by cumulative traffic, but LOS would not be improved to meet City or Caltrans' standards at 11 intersections. Similarly, cumulative traffic along state highways would contribute to existing and future unacceptable levels of service. Therefore, the cumulative traffic would result in significant impacts at 11 intersections and along Highways 1 and 17. Funding availability for major facility improvements and expansion of transit service will likely remain constrained into the foreseeable future. Thus, implementation of recommended improvements and alternative transportation facilities cannot be assured, and thus, the impact to all intersections identified as operating at unacceptable levels of service under the cumulative conditions remains significant. Additionally, highway operations could continue to remain at unacceptable levels, and funding constraints and controversy over proposed Highway 1 HOV lanes may delay or affect implementation of improvements. With implementation of the proposed *General Plan 2030* policies and actions to reduce vehicular traffic, increase vehicle occupancy and support/encourage use of alternative transportation measures, the impact could be reduced, but likely not to a less-than-significant level at the remaining impacted intersections and along state highways. Thus, cumulative traffic increases at City intersections and along state highways is a significant cumulative impact, and the proposed project's incremental contribution to the increases would be cumulatively considerable.

TABLE 5-1
Intersection PM Peak Hour Levels of Service with Cumulative Growth

	Intersection	PM Peak LOS	Delay [in seconds]	V/C Ratio
SIGNALIZED INTERSECTIONS				
1	**Western/Hwy.** 1	C		
2	Swift/Mission	**E**	**72.2**	**1.142**
3	Miramar/Mission	D		
4	Almar-Younglove/Mission	C		
5	**Bay/Mission**	**F**	**222.5**	**1.515**
6	**Laurel/Mission**	**F**	**119.1**	**1.315**
7	Walnut/Mission	D		
8	**King-Union/Mission**	**F**	**155.4**	**1.313**
9	**Chestnut-Hwy. 1/Mission**	**F**	**164.8**	**1.380**
10	Moore/High	A		
11	**Bay/High/Coolidge**	**F**	**103.3**	**1.264**
12	Bay/Nobel-Iowa	B		
13	Bay/King	D		
14	California/Laurel	C		
15	Chestnut/Laurel	C		
16	Center/Laurel	C		
17	Center/Mission	C		
18	Pacific/Laurel	D		
19	Front/Laurel	D		
20	Front/Metro Center	A		
21	Front/Cathcart	A		
22	Front/Soquel	C		
23	Front/Cooper	A		
24	Pacific/ Water - Mission	C		
25	River/Water	D		
26	N. Pacific/River	B		
27	River/Potrero	B		
28	**River/Hwy. 1**	**F**	**244.5**	**1.540**
29	**River/Encinal**	**F**	**202.7**	**1.715**
30	San Lorenzo/Laurel-Broadway	B		
31	Riverside/San Lorenzo	D		
32	Riverside/Third	D		
33	Riverside/Beach	A		
34	**Ocean/San Lorenzo-East Cliff**	**F**	**120.8**	**1.55**
35	**Ocean/Broadway**	**F**	**95.1**	**1.728**
36	Ocean/Soquel	D		
37	**Ocean/Water**	**F**	**172.7**	**1.464**
38	Ocean/Kennan-Washburn	B		
39	Ocean-Hwy.17/Ocean-Plymouth	D		
40	Market/Water	C		

TABLE 5-1
Intersection PM Peak Hour Levels of Service with Cumulative Growth

	Intersection	PM Peak LOS	Delay [in seconds]	V/C Ratio
41	**N. Branciforte/Water**	**E**	**76.1**	**1.129**
42	**Branciforte/Soquel**	**E**	**67**	**1.071**
43	S. Branciforte/Broadway	B		
44	Seabright/Soquel	D		
45	Seabright/Broadway	C		
46	**Seabright/Murray**	**E**	**64.8**	**1.022**
47	Morrissey/Water-Soquel	D		
48	Morrissey/Fairmount	B		
49	**Frederick/Soquel**	**E**	**55.7**	**1.090**
50	Hagemann-Trevethan/Soquel	B		
51	Park Way/Soquel	C		
52	Capitola Rd./Soquel Ave.	C		
53	La Fonda/Soquel	B		
54	Riverside-Dakota/Soquel	A		
55	River S./Soquel	B		
56	Seventh Ave./Soquel Ave.	C		
57	Seventh Ave./Capitola Rd.	C		
58	Seventh Ave./Eaton	D		
UNSIGNALIZED INTERSECTIONS				
59	**Bay/California St**	**F**	**OVRFLW**	**3.540**
60	**Bay/California Ave**	**F**	**188.5**	**1.567**
61	West Cliff/Bay	D		
62	**Beach/Pacific Ave**	**E**	**44.8**	**1.093**
63	Pacific Avenue/Center	C		
64	**Storey/King**	**F**	**93.2**	**1.259**
65	**River/Fern**	**F**	**OVRFLW**	**1,259**
66	**King/Laurel**	**F**	**55.6**	**1.121**
67	**Laurent/High**	**F**	**196.3**	**1.190**
68	Market/Isbel-Goss	C		
69	North Branciforte/Goss	C		
70	Highway 1/Shaffer Rd	C		
71	Cedar/Laurel	D		
72	**Bay/Escalona**	**F**	**OVRFLW**	**2.193**
73	**Western/High**	**F**	**227.7**	**1.062**
74	Cliff/Beach	B		
75	Riverside/Second-Liebrandt	A		
76	**Seabright/Water**	**F**	**OVRFLW**	**3.234**
77	**Swift / Delaware**	**F**	**407.5**	**2.458**
78	Seventh Ave./Brommer	D		
79	Seventh Ave./E. Cliff	C		

SOURCE: Hatch Mott MacDonald

TABLE 5-2: Cumulative Intersection PM Peak Hour Level of Service with Recommended Improvements

Intersection	Existing		Cumulative		Recommended Improvement	With Mitigation	
	LOS	Delay	LOS	Delay		LOS	Delay
High St/Western Dr	E	45.9	F	227.7	TWLTL	**E**	40.7
Bay-Coolidge/High	D	35.4	F	103.3	Add wsbnd 1	D	50.1
High/Laurent	F	59.6	F	196.3	Signalize	B	13.3
River-Hwy 9/Hwy 1	F	83.9	F	244.5	Ebnd 2l 3t 1r, wbnd 2l 3t 1r, nbnd 1tl 1t 2r, sbnd 2l 1tl 1t 1r	**F**	104.3
River/Fern	B	14.5	F	Ovrfl	Signalize no l esbnd	B	14.3
River/Encinal	E	73.9	F	202.7	Ebnd 1l 1tr 1r, wbnd 1l 1tr, nbnd 1l, 1t, 1r, sbnd 1l,1t, 1tr	D	37.9
Bay St/Escalona Dr	F	782.2	F	Ovrfl	Escalona right turns only	C	24.9
King/Laurel	B	15	F	55.6	Add ebmd	D	34.1
King/Storey	B	15	F	93.2	Add sbnd l	D	29.3
Swift/Mission	B	19.1	E	72.2	Add nbnd r overlay	C	31
Bay/Mission	E	55.8	F	222.5	Ebnd 1l, 2t,1r, wbnd 1l,2t,1r,nbnd 1l,1t,1r, sbnd 2l,1t,1r	**F**	81.2
Laurel/Mission	C	24.9	F	119.1	Add Ebnd r	**F**	109
King-Union/Mission	C	32.7	F	155.4	Ebnd 21, 2t, 1r, wbnd 1l, 2t, 1r, nbnd 1l, 2t,1r, sbnd 2l,2t, 1r	**E**	65.9
Chestnut-Hw. 1/Mission	D	42.9	F	164.8	Ebnd 2l, 2t, 1r, wbnd 1lt,1t, 1r, nbnd 1l, 1t, 1tr, sbnd 1l,2t, 2r	**F**	164.6
Ocean/Water	E	73.6	F	172.7	Ebnd 2l, 2t, 1r, wbnd 1l,2t, 1r, nbnd 1l, 2t, 1r, sbnd 2l, 2t, 1r	**F**	135.1
N. Branciforte/Water	D	36.6	E	76.1	Add ebnd l, nbnd r & sbnd r	**E**	57.2
Seabright/Water	F	112.8	F	Ovrfl	Extend TWLTL & add nbnd r	**E**	40.4
Frederick/Soquel	C	28.6	E	55.7	Add nbnd t free	D	38.5
Bay/California Ave	F	67.6	F	188.5	Allow nbnd t free	**E**	38.3
Bay/California St.	F	434	F	Ovrfl	Allow sbnd t free	B	13.9
Branciforte/Soquel	C	23.6	E	67	Esbnd 1l, 1t, 1 tr, wsbnd 1l, 1tr no splt phase	C	24.8
Ocean /Broadway	C	34.3	F	95.1	Prohibit lfts from Ocean	D	38.2
Beach/Pacific Ave	C	20.9	E	44.8	Roundabout	C	
Ocean/San Lorenzo-E Cliff	E	64.7	F	120.8	Add sbnd r	D	49.1
Seabright/Murray	D	41.1	E	64.8	ADD wsbnd r, nbnd r & sbnd r	**E**	64.5
Swift/Delaware	C	23.9	F	407.5	Roundabout/Signal	C	25.1

The mitigation measure column reflects the recommended lane geometry where r = right turn lane, rt = right/through lane, l = left turn lane, lt = left/through lane, t = through lane, and twltl = two-way left turn lane.

SOURCE: Ron Marquez

Water Supply. Potential cumulative development includes water demand within the City's water service area, including UCSC and other areas outside City limits. As discussed in the WATER SUPPLY (Chapter 4.5) section of this EIR, the buildout accommodated under the draft *General Plan 2030* could result in an increase in water demand of approximately 251 MGY by 2030.

Cumulative Water Demand. Cumulative water demand within the remainder of the City's water service area was developed as part of the Water Supply Assessment prepared for this EIR (see Appendix D). Future water demand at UCSC to the year 2020 was determined as part of a Water Supply Assessment for the EIR for a proposed Sphere of Influence Amendment and Provision of Extraterritorial Water & Sewer Service to the North Campus of UCSC (SOI EIR) (City of Santa Cruz, July 2010).[12] The total net increase in UCSC water demand to 2020 was estimated as 126 MGY (EKI, March 2011).

As indicated above, the University's 2005 LRDP extends through 2020, and any further development plans beyond 2020 are unknown. To calculate water demand from 2020 through 2030 for UCSC, a demand factor was calculated by the City Water Department from historical water usage data between 1987 and 2008. Based on the assumed student growth (350 students per year) and demand factor, it is estimated that water demand for the UCSC campus will increase by 10 MGY from 2020 to 2030 (EKI, March 2011). Thus, the total UCSC water demand to 2030 is estimated as 136 MGY over existing water use.

Water demand in the remainder of the City's water service area was estimated based on population growth forecast by AMBAG (2008) for those areas served by the City Water Department other than UCSC. The population growth for the City's water service area outside of the City is estimated to be approximately 8.2% over the next 20 years (i.e., 0.4% growth per year; AMBAG, 2008). As discussed in the WATER SUPPLY (Chapter 4.5) section of this EIR, the City selected two time periods from which to estimate 2010 water demand: (1) 1999 through 2004 (Existing Water Demand Estimate [EWD])1) and (2) 2007 through 2008 (Existing Water Demand Estimate [EW]) 2). Projected water demand within the service area outside the City and excluding UCSC is estimated to be 1,525 MGY based on EWD Estimate 1 and 1,297 MGY based on EWD Estimate 2. Increased water demand is estimated as approximately 98 MGY (EWD 2) to 116 MGY (EWD 1) to the year 2030.

As shown on Table 2 in Appendix D, the existing water demand for the entire City's water service area with the proposed project is estimated to be 3,993 MGY based on EWD Estimate 1 and 3,522 MGY based on EWD Estimated 2. The projected water demand by 2030 for the entire City's water service area is estimated as 4,537 MGY based on EWD Estimate 1 and 4,046 MGY based on EWD Estimate 2, including miscellaneous water uses and system losses (EKI, March 2011).

[12] Concurrent applications filed by the City of Santa Cruz and the UCSC are pending before the Santa Cruz County Local Agency Formation Commission (LAFCO) to amend the City's Sphere of Influence (City application) to include the 374-acre portion of the UCSC campus known as "North Campus" for the purpose of providing extraterritorial water and sewer services (UCSC application). The City has no plans, nor does it see any future need, to annex North Campus into City limits.

Cumulative Impacts. Based cumulative water demand projections, the City's water supply for a normal hydrologic year is sufficient to meet cumulative demand through about the year 2020. After 2020, the City's normal year water supply may not be sufficient to meet the water demand projected for the development envisioned in the *General Plan 2030* and other development expected to occur within the City's water service area. If water demand is consistent with the EWD Estimate 1 (that reflects historic water use between 1999 and 2004), the City's total demand will be approximately 223 MGY greater than the available normal year supply of 4,314 MGY in 2030 (EKI, March 2011). This unmet demand would represent an average annual deficit of approximately 5%. However, if water demand is consistent with EWD Estimate 2 (that reflects lower overall water use in 2007 and 2008), the City will have sufficient normal year supply to meet the projected demand in 2030.

The City does not have sufficient water to meet current or future projected water demand during single or multiple dry years. This finding is consistent with the 2005 UWMP findings and the conclusions presented in the 2003 Integrated Water Plan ("IWP"), which states that the City's water system is inadequate to meet current demand under drought conditions (EKI, March 2011). An annual average deficit of 5% may exist between the City's water supply during a single dry year and the existing water demand (EKI, March 2011). With cumulative water demand, an annual average deficit of 12% between 2010 and 2020, and up to 16% by 2030 may be experienced during a single dry year (Ibid.). Annual average deficits are greater for multiple dry year periods. The annual average deficit between the City's water supply during a second dry year and existing demand is estimated to be 23% to 32% (Ibid.). This deficit increases to 33% to 40% by 2030 if planned development also is taken into account. It is important to note that these deficits are annual average values that do not address peak season cutbacks, which can be significantly greater than the annual average deficits due to seasonal variations in demand and supply, and limitations on the City's water storage facilities.

Supplemental Water Sources. As discussed in the WATER SUPPLY (Chapter 4.5) section of this EIR, the City has been actively considering possible new water supplies for nearly 20 years due to insufficient water supplies to meet existing demand during drought events (City of Santa Cruz Water Department, June 2005). Over 30 water supply options have been considered and evaluated as part of these efforts, culminating with the City adopting the *Integrated Water Plan* (IWP) in 2005 and the *2005 Urban Water Management Plan* (UWMP) in 2006.

The WATER SUPPLY (Chapter 4.5) section of this EIR fully describes the water supply options considered by the City, as well as other planning efforts and plans, and summarizes the IWP and UWMP. As indicated, the IWP and UWMP support conservation, 15% water use curtailment during a drought, and construction of a desalination plant. The City is actively implementing water conservation programs with good results and is pursuing construction of a desalination plant to provide a supplemental water source in drought conditions, with the potential for expansion to accommodate future growth.

The City's current plans support a supplemental water supply for drought protection to be provided by a 2.5 million-gallon-per-day (mgd) desalination plant (expected to be constructed and in operation by 2015) with a potential expansion of up to a total of 4.5 mgd in increments of 1 mgd as further needed. The proposed desalination facility is a joint partnership between the City of Santa Cruz and the Soquel Creek Water District (SqCWD), which is also looking for

a long-term supplemental water source to reduce its reliance on well water and avert the threat of seawater intrusion in local groundwater aquifers. The City recently completed a pilot desalination plant to gather information to establish the optimal design and operating parameter for the future construction and operation of a 2.5-mgd seawater desalination plant. Additional technical studies are currently underway, and design and environmental review for a permanent facility is in progress. A permanent facility is expected to be constructed and in operation by the year 2016, pending completion of project-level environmental review and regulatory permit approvals, i.e., approval of a coastal development permit from the California Coastal Commission.[13] At this time, it is not known when or if the plant would be further expanded to serve future planned growth.

The certified IWP EIR evaluates impacts of the construction of a desalination facility and associated pipelines on a programmatic level for a potential site located along the Delaware Avenue corridor in the City's Westside industrial area. Construction could have physical environmental effects, and the EIR identified potentially significant impacts (as summarized in Chapter 4.5 of this EIR) that could be mitigated to a less-than-significant level, except for temporary construction noise. The IWP EIR also includes a mitigation measure to require further review of population projections and City/County land use planning documents prior to undertaking environmental review of any expansion of a desalination plant in ensure that development of an additional water supply is consistent with planned growth projections (City of Santa Cruz/EDAW, June and October 2005).

The IWP EIR also evaluated cumulative impacts related to a construction and operation of a desalination plant in combination with other known development projects, road and infrastructure projects, and regional water programs and projects. Significant cumulative impacts that were identified include the following. All other cumulative impacts were found to be less than significant or less than significant with compliance and adherence to required regulations and mitigation standards. The project-level environmental review that is currently being conducted will further review and analyze cumulative impacts.

- *Groundwater Impacts:* Continued impacts to the groundwater basin with potential saltwater intrusion for the alternatives that did not include Soquel Creek Water District use of the desalination plant and rely on continued groundwater pumping.
- *Biological Resources:* Potential impacts to sensitive habitats and special status species as a result of project siting, construction and/or operation could be mitigated with pre-construction surveys, establishment of buffer zones and other construction controls.
- *Construction Traffic:* Potentially significant cumulative traffic impacts were identified if the desalination plant construction coincided with other major infrastructure improvements, especially the Highway 1/17 Merge Project. The EIR includes mitigation to coordinate construction schedules. However, as of the writing of this EIR, the desalination construction would occur after the completion of the Highway 1 project.

[13] Other potential permits, approvals and/or consultations for a permanent desalination plant and supporting infrastructure (i.e., intake facility and distribution pipeline) may be required from various agencies, including, but not limited to U.S. Fish and Wildlife Service, State Lands Commission, and California Department of Health Services.

The City's adopted IWP and UWMP identified seawater desalination as the only feasible alternative for a backup supply of drinking water during a drought. Several possible options were carefully evaluated, including drilling more wells, upgrades to the north coast system, recycled water and a water transfer involving exchange of groundwater with recycled wastewater for agricultural use on State Park lands north of the City. Both the wells and groundwater exchange concept ultimately proved infeasible. The maximum yield from four combined groundwater sources was found to yield 300 MGY or less during drought conditions (Carollo Engineers, November 2000). Overall, groundwater is potentially available but in a limited quantity, but none of the potential groundwater resources can provide a significant portion of the projected drought demand shortfall (Ibid.). Additionally, there were other environmental, regulatory and/or cost issues associated with some groundwater options that would affect overall feasibility for implementation.

Three alternatives were recommended for further review: desalination, wastewater reclamation, and maximizing use of existing sources and storage in Loch Lomond Reservoir. Recycled wastewater was determined potentially feasible for irrigation, including agricultural irrigation, but would produce limited yields (approximately 230 MGY) that were considered too small to meet the City's drought year needs and at a high cost. Improvements to maximize use of existing water sources and storage were identified, that collectively could provide approximately 600 MGY during a two-year drought. The upgrades would provide additional supply during drought and non-drought years and would also improve operational reliability and flexibility, but shortfalls during multiple-dry-year scenarios would continue to occur (Carollo Engineers, November 2000).

Thus, seawater desalination was the only practicable solution available to the City to meet drought and future demands. The WATER SUPPLY (Chapter 4.1) section of this EIR also discusses other supplemental water supplies that have been evaluated over the past 20± years and found to be not viable at the present time. These include several groundwater pumping options, conjunctive use with Soquel Creek Water District, and reservoir storage at the Olympia Quarry in the San Lorenzo Valley. The City's UWMP indicates that in addition to pursuing desalination, the City remains open to exploring other water supply alternatives that would not be feasible to develop in the short-term, but may be useful to consider over a 20-year timeframe, such as water recycling, groundwater recharge, reservoir expansion, aquifer storage and recovery and off-stream storage.

In addition to the IWP programs the City is pursuing, the City provides an annual review of water use and trends, and is required to update the UWMP every five years. Through these efforts, water demand trends and needs can be effectively monitored to ensure that other water supply options can be considered and planned as may be needed.

> **Conclusion.** Cumulative development and growth in the City's water service area would result in a significant cumulative water impact, as it results in additional demand in a system that does not currently have adequate water supplies to meet existing or future demands during drought conditions or potentially during normal years at some time after the year 2020, depending on the actual rates of growth and water demand rates experienced up to that time. The City's supplies are sufficient to meet cumulative water demands in a normal year through to the year 2030 if overall water use remains

at 2007-2008 levels. However, If water demand is consistent with historic water use between 1999 and 2004, the City's total demand will be approximately 223 MGY greater than the available normal year supply of 4,314 MGY in 2030 (EKI, March 2011). Thus, cumulative development and growth would result in a significant cumulative impact during dry years from now through 2030 without supplemental supplies and potentially during normal years after the year 2020. The demand resulting from development accommodated by the proposed *General Plan 2030* represents nearly half of the increase in the future cumulative water demand. The project's incremental contribution is therefore considered "cumulatively considerable" and thus significant in and of itself.

The incremental project water demand would be minimized with implementation of the proposed *General Plan 2030* policies and actions to reduce water demand, promote additional water conservation, manage and protect water supplies, and develop a reliable, supplemental water source, such as desalination, the impact could be reduced to a less-than-significant level. However, despite the City's intent to pursue an additional water supply for dry-year conditions, there are some uncertainties associated with these future actions.

The City's adopted IWP calls for conservation, curtailment during droughts and a supplemental water supply at a new desalination plant. The facility would provide a supplemental water supply during periods of drought and could be expanded in the future to provide additional water to accommodate growth planned within the City's water service area. As indicated above, the City acknowledges some uncertainty related to the approval of and timing for the construction of the permanent desalination plant construction and operation as design plans have not been completed, as well as uncertainty as to whether the Coastal Commission would issue the necessary approvals. The project is currently undergoing a project-level design and environmental review. For these reasons, the City concludes that it cannot "confidently determine" that this source "reasonably likely," as spelled out in the guidance provided by the California Supreme Court in its decision in *Vineyard Area Citizens for Responsible Growth, Inc., et al. v. City of Rancho Cordova* (2007) 40 Cal.4th 412. Nonetheless, the City has identified a desalination plant as its best, potentially feasible option to alleviate shortages in drought conditions and as a potential additional normal-year water supply to serve new growth, and therefore has committed to pursuing this option with the intent of obtaining all necessary regulatory approvals. Thus, the future desalination facility, which is planned and being pursued, is considered to be the most likely future water source, although it nonetheless remains somewhat uncertain until design, environmental review and regulatory approvals are completed. Furthermore, to provide capacity for additional growth, the plant would eventually need to be expanded, which would require additional design and engineering, environmental review and permit approvals.

The City acknowledges the inherent uncertainty about its ability to obtain all necessary approvals for the planned desalination facility. Furthermore, surface water supplies may be reduced due to implementation of wildlife protection strategies under a future HCP, which may require that the City seek additional supplies and/or expansion of a desalination facility beyond that capacity which is currently planned for drought supply.

RESOURCES AND HAZARADS

Noise. Potential cumulative development that could result in or be affected by noise includes development and growth at UCSC as set forth in the University's adopted 2005 LRDP and CLRDP. Future site-specific development at UCSC would not be in proximity to other development within the City, and thus, there would be no cumulative impact related to new development being sited in locations that could exceed standards for compatible noise or for construction-related noise impacts. The 2005 LRDP EIR found that traffic resulting from UCSC campus development could increase noise levels along arterial roads serving the campus by about to 1.0 to 2.5 decibels above estimated existing noise levels (University of California Santa Cruz, September 2006 – Volume II: Draft EIR, page 4.10-18 to 4.10-19). The addition of UCSC-related traffic noise to the City's model noise contours shows that potential noise increases along the major roads serving the University (Mission, High, Western, Delaware) would not exceed significance criteria (i.e., an increase of 3 or more decibels) or result in a significant cumulative impact.

Traffic-related noise increases from future development at UCSC's Marine Science Campus would result in increases of less than 0.5 dBA on most streets within that area with higher increases projected along Delaware in the vicinity of the marine campus. However, noise levels along Delaware would not be above 61 dBA with background traffic and would not exceed conditionally acceptable land use compatibility standards for residential uses (University of California Santa Cruz, January 2004, page 4.11-13).

Review of cumulative traffic conditions was conducted by the City's noise consultant with a review of cumulative noise levels based on cumulative traffic volumes identified in this EIR. It was found that nearly all study road segments would experience a traffic noise increase of less than 3 dBA under cumulative conditions (Goldberg, Rosen, Goldberg, Der & Lewitz, personal communication, August 2011). However, cumulative traffic could result in ambient noise levels exceeding 65 dBA with an increase exceeding 3 dBA along three segments: Swift Street north of Delaware (3.6 dBA increase); Mission Street between Bay and Laurel (3.2 dBA increase), and Mission Street between Laurel and Walnut (3.3 dBA increase). For these road segments, cumulative increase in ambient noise levels would be significant.

The impacted road segments are generally characterized by commercial development. However, there are older existing residences along Mission Street, particularly between Laurel and Walnut Streets and approximately 12 existing homes along Swift Street north of Delaware. New development projects along these road segments would be required to provide building designs to attenuate noise levels. Mitigation measures for existing homes would include construction of sound barriers, which may not be completely effective due to the gaps created at driveways, or soundproofing existing homes with measures such as window replacement. The area along Swift Street, however, is designated for industrial uses, even though some homes currently exist in the area. Additionally, the lands along Mission Street are designated commercial with a segment designated for mixed uses. Although, the impacted segments are designated for non-residential uses, in which a higher ambient sound level typically would be acceptable, the increased cumulative noise effect on existing residents is considered a significant impact to which the project's incremental contribution would be cumulatively considerable. Implementation of proposed *General Plan 2030* policies and actions to reduce

vehicle trips and overall traffic, as well as travel demand management measures implemented by UCSC, could reduce traffic such that noise increases would be below significance criteria. However, in the event that such trip reductions do not occur, the impact would be considered unavoidable.

> **Conclusion.** Cumulative development and growth would result in noise increases associated with the traffic increases, but the increases would not exceed significance criteria, except for three road segments (Swift Street north of Delaware and Mission Street between Bay and Walnut). Thus, the cumulative noise impact is considered significant, and the project's incremental contribution would be cumulatively considerable.

5.5 PROJECT ALTERNATIVES

CEQA REQUIREMENTS

According to the State CEQA Guidelines (section 15126.6), an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of potentially feasible project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

Because an EIR must identify ways to mitigate or avoid the significant effects that the project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. An agency may evaluate on-site alternatives, off-site alternatives or both. (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 489.) However, neither the CEQA statute nor the Guidelines require analysis of off-site alternatives in every case. An agency should consider whether any previous documents sufficiently analyzed alternative locations. If a previous document has evaluated a range of reasonable alternatives for a project with the same basic purpose, the EIR may rely on that document if relevant circumstances have not changed.

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those potentially feasible alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of

the project. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

It is important to understand that the EIR's analysis of alternatives constitutes the City staff's and consultants' advice and suggestions to the agency's ultimate decision-makers, here, the City Council. The ultimate determination of the actual feasibility of any of the alternatives considered in the EIR is left to the City Council, which may consider a broad range of factors in making its determination. (CEQA Guidelines, § 15091(a)(3).) These factors may include "specific economic, legal, social, technological, or other considerations." (Pub. Resources Code, § 21081(a)(3); see also *City of Marina v. Bd. of Trustees of the California State University* (2006) 39 Cal.4th 341, 369; *City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417 ["the concept of 'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors"].)

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

This section evaluates alternatives to the proposed project as required by CEQA. The State CEQA Guidelines (Section 15126.6) requires that an EIR describe and evaluate the comparative merits of a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain most of the basic objectives of the project. The guidelines further require that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project, or reducing them to a level of insignificance even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. The alternatives analysis should also identify any significant effects that may result from a given alternative.

SUMMARY OF SIGNIFICANT IMPACTS & PROJECT OBJECTIVES

Significant Project Impacts

This EIR identified seven significant project impacts and four significant cumulative impacts to which the project's contribution is cumulative considerable as summarized below.

- **Transportation & Traffic -** *Impact 4.4-1: Traffic Impacts on Intersections Levels of Service (LOS)*. Adoption and implementation of the proposed *General Plan 2030* would accommodate future development that would result in increased vehicle trips and traffic, resulting in changes in intersection levels of service to unacceptable levels or further deterioration of intersections currently operating at unacceptable levels of service. With implementation of proposed *General Plan 2030* policies and actions, including road improvements identified in an updated Traffic Impact Fee program, intersection

operations would be improved and traffic levels would be reduced, except at eight intersections.

- **Transportation & Traffic -** *Impact 4.4-2: Traffic Impacts on State Highway Levels of Service (LOS)*. Adoption and implementation of the proposed *General Plan 2030* would accommodate future development that would result in increased vehicle trips and traffic on state highways in the regions (Routes 1, 17, and 9), which would further exacerbate existing unacceptable levels of service.

- **Water Supply -** *Impact 4.5-1 Water Supply:* Adoption and implementation of the proposed *General Plan 2030* could indirectly result in increased development and population growth that would result in an increased demand for water supply in a system that currently has inadequate supplies during dry years and may have inadequate supplies in normal years in the future.

- **Public Services & Utilities -** *Impact 4.6-4 Schools:* Adoption and implementation of the proposed *General Plan 2030* could indirectly result in increased development and population growth that would generate elementary school student enrollments that could exceed capacity of existing schools.

- **Cultural Resources -** *Impact 4.9-1: Archaeological Resources and Human Remains*. Adoption and implementation of the proposed General Plan 2030 would accommodate future development that could directly or indirectly disturb or alter archaeological resources, historical archaeological, and/or human remains. Even with implementation of the proposed General Plan policies and actions for cultural resource protection, this is considered a potentially significant impact.

- **Cultural Resources -** *Impact 4.9-3: Paleontological Resources*. Adoption and implementation of the proposed General Plan 2030 would accommodate future development that could directly or indirectly disturb or alter paleontological resources. Even with implementation of the proposed policies and actions for cultural resource protection, this is considered a potentially significant impact.

- **Air Quality -** *Impact 4.11-1 Consistency with AQMP*. Adoption and implementation of the General Plan 2030 could indirectly result in increased population associated with potential development that would be accommodated by the Plan. The increased population would exceed population estimates in the Air Quality Management Plan in 2030, and thus the project would be inconsistent and conflict with the AQMP.

- **Cumulative Impacts:**
  - Population Growth
  - Traffic
  - Water
  - Noise

Project Objectives

The primary project objective is to update the City's General Plan, consistent with state law, and guided by the City's vision. This vision and guiding principles for *General Plan 2030* have been distilled into the following project objectives for the purposes of CEQA.

1. *Protect the unique environmental setting of the City, its natural and established open space, and the sustainable use of its natural resources.*
2. *Maintain the identity and vitality of existing neighborhoods, while actively pursuing affordable housing for a diversity of households and promoting compatible livability and high quality design in new buildings, major additions, and redevelopment.*
3. *Seek a mutually beneficial relationship with UC Santa Cruz, one where the City supports the University within the context of City responsibilities, community priorities, and the constraints of City infrastructure and resources; and one in which the University reciprocally supports the City by comprehensively addressing all of its needs to the greatest extent possible on the campus itself, and by fully mitigating whatever off-campus community impacts occur.*
4. *Provide an accessible, comprehensive, and effective transportation system that integrates automobile use with sustainable and innovative transportation options—including enhanced public transit, bicycle, and pedestrian networks throughout the community.*
5. *Ensure a sustainable economy for the community, actively encouraging the development of employment opportunities for residents of all levels and ages, and actively protecting from elimination current and potential sources of sustainable employment.*
6. *Encourage diverse technology, visitor serving, industrial, home business and commercial business enterprises, and strategic redevelopment.*
7. *Maintain the community's longstanding commitment to shared social and environmental responsibility, fostering a balance between employment, housing affordable to persons of all income levels, transportation, and natural resources.*
8. *Support education through the City's schools, educational systems and programs, library system and facilities, life-long learning community programs, and active communication/information network.*
9. *Support the City's arts community, unique historic areas and landmarks, cultural heritage and resources, and recreational facilities and community programs.*
10. *Offer high-quality social services and improve and maintain City infrastructure, community safety, and emergency preparedness.*
11. *Encourage citizen participation in government, respectful cooperation and mutual regard among residents, workers, students, and visitors, and shared responsibility for community well-being.*

ALTERNATIVES CONSIDERED

Section 15126.6(c) of the State CEQA Guidelines indicates that the range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are:

- failure to meet most of the basic project objectives,
- infeasibility, or
- inability to avoid significant environmental impacts.

Alternatives were considered that would result in a substantial reduction or elimination of identified significant unavoidable traffic, water and cumulative impacts, as well as the five identified significant impacts that could be reduced to a less-than-significant level with mitigation measures outlined in this EIR. In addition to the required No Project Alternative, these alternatives include a reduced growth rate alternative (Alternative 2) and a reduced land use density or intensity alternative (Alternative 3).

Due to the comprehensive nature of the proposed *General Plan 2030* policies and actions, the City did not identify any particular alternative policy strategy or strategies that could provide a feasible alternative under CEQA's criteria. Rather, the City focused on potentially feasible alternatives aimed at achieving different levels or patterns of growth across the City as a whole, consistent with the broad scope of the General Plan. Alternatives that would shift development to other areas also were reviewed, and it was concluded that such alternatives would result in increased localized impacts without reducing water demand or substantially reducing traffic. Consideration of expansion of the City limits and accompanying future development to the west or north was rejected due to long-standing policies and directives to protect agricultural and open space lands in the area to the west, as well as policies to maintain the City's greenbelt and current compact urban form. Additionally, expansion to the west would not reduce, but would further increase, traffic along Mission Street-Highway 1 and would not reduce or eliminate the significant unavoidable impacts related to traffic. Furthermore, the area to the north is mostly developed with little area for future development and has environmental constraints related to slopes and biological resources that could result in significant impacts.

Intensification of land use in the City's existing Sphere of Influence along Seventh Avenue also was eliminated from further consideration as this area is within the unincorporated County jurisdiction, and it is uncertain as to whether future development would annex and thus, be subject to City policies. Intensification of development at this location would not result in changes to water demand, and while there may be some shift of traffic impacts from the Westside of Santa Cruz, it likely would not substantially change traffic levels of service on impacted streets and could result in new significant impacts along Seventh Avenue.

ALTERNATIVES ANALYSIS

ALTERNATIVE 1: No Project

Section 15126.6(e) of the State CEQA Guidelines requires that the impacts of a "no project" alternative be evaluated in comparison to the proposed project. The Guidelines indicate that the EIR should discuss the existing conditions at the time the notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

PROJECT CHARACTERISTICS

Under the "No Project" Alternative, the City's existing 1990-2005 General Plan would remain in effect. As a result, the new mixed-use land use designations along the City's main transportation corridors and changes in land use designations at the Swenson and Golf Club Drive sites would not occur. Existing policies would be retained.

Since the existing General Plan would be retained under the No Project Alternative, some level of future development would be accommodated by the plan. As described in the LAND USE (Chapter 4.1) section of this, buildout projections to the year 2030 under the City's existing General Plan were estimated as 1,816 residential units and approximately 2,860,000 square feet of non-residential uses. This amount of development would result in a population increase of approximately 4,360 residents, based on the City's existing average household size, and approximately 7,565 employees. Table 5-3 summarizes key differences between the proposed project and the project alternatives with regards to potential development, population, and major impacts.

Under this alternative, residential development would be about half the amount that is projected under the proposed *General Plan 2030*. Total commercial and office development would be about the same as the proposed project, and industrial development would be slightly higher. Generally, the changes occur along the City's major transportation corridors (Mission, Ocean, Soquel and Water) as well as in the Harvey West and Golf Club Drive areas. The elimination of the proposed mixed-used land use designations would result in a decrease in housing units with a slight increase in commercial square footage along these corridors. The reduction in housing units also is attributed to maintaining existing residential densities in the Golf Club Drive area and fewer units at the Swenson site (80 maximum per the existing General Plan). Industrial uses are projected to increase in the Harvey West area without a potential large regional retail use as supported in the proposed *General Plan 2030*.

IMPACTS

Land Use and Development. Overall, land use development would be reduced under this alternative. No significant land use, population, housing or aesthetics impacts were identified for the proposed *General Plan 2030*. No changes in the less-than-significant land use impacts would be expected as development would continue to be infill and no land use incompatibilities would be generated. The No Project Alternative would result in reduced development and growth, and thus, population growth would be further reduced. Although the

mixed-use land use designations would be eliminated, mixed-use projects could still be developed within commercial zones under existing General Plan designations and Zoning Ordinance regulations. Typically, these types of projects would be developed under the Planned Development regulations that include design review and require Design Permits. Thus, potential impacts to the visual quality of the surrounding area would not be expected to change.

TABLE 5-3
Comparison of Alternatives

	PROPOSED PROJECT GP 2030 Buildout	ALTERENATIVE 1 NO PROJECT Existing GP	ALTERNATIVE 2 AMBAG Growth	ALTERNATIVE 3 Reduced Density
Dwelling Units	3,350	1,816	2,413	2,750
Total Non-Residential Square Footage	3,145,000 SF	2,870,000 SF	3,000,00 SF	3,125,000 SF
Commercial	1,090,000 SF & 310 Hotel Rooms	1,050,000 SF & 310 Hotel Rooms	Reduced by 50,000 SF from Proposed GP 2030 OR	970,000SF
Office	1,275,000 SF	940,000 SF	Reduced by 30,000 SF from Proposed GP 2030	1,275,000 SF
Industrial	780,000 SF	880,000 SF	Same as Proposed Project	880,000 SF
POPULATION INCREASE [From 2009]	8,040	4,360	5,790	6,600
EMPLOYEE INCREASE [From 2009]	8,665	7,565	8,082 [2010-2030]	8,645
TRAFFIC	21 intersections impacted; all can be improved to acceptable LOS except for 8 intersections.	20 intersections impacted; 5 improved over project levels. All Can be improved to acceptable LOS except for 5 intersections.	Impacts estimated to be between the No Project and Project levels.	Same as or similar impacts to Proposed Project
WATER DEMAND	239 MGY	174 MGY	200-203 MGY	210 MGY
SCHOOLS Elementary Students	915	495	660	750

Public Facilities and Services. As indicated above, the No Project Alternative would result in a reduced level of development than under the proposed *General Plan 2030*. Overall, traffic and public service demands would be reduced. The LOS for the majority of the study intersections remain at the same acceptable levels of service as with the proposed project (see Appendix C). Table 5-4 identifies the intersections in which there are changes in PM peak hour intersection levels of service (LOS) with the No Project Alternative. Overall, 14 intersection levels of service would improve to a better level. However, 20 intersections would continue to operate at unacceptable levels of service under this alternative, compared to 21 with the proposed project, although four intersections would improve from F to E (Mission/Laurel, Mission/King-Union, Ocean/Broadway, and Branciforte/Water). The Branciforte/Soquel intersection would improve from an unacceptable E LOS to D. Under project conditions, it was found that eight intersections would continue to operate at deficient levels of service even with improvement. Under the No Project Alternative, three of these intersections could be improved to an acceptable LOS: Bay/Mission, Western/High and Seabright/Water. Thus, this alternative would result in five intersections that could not be improved to an acceptable LOS. Traffic along state highways also would be reduced under this alternative, but would continue to contribute traffic to existing and future projected impacted segments along Highways 1 and 17. While traffic increases would be reduced, the No Project Alternative would not eliminate the significant unavoidable project and cumulative traffic impacts related to intersection LOS and traffic along state highways.

Water demand also would decrease to approximately 174 million gallons per year (MGY) under the No Project Alternative. This represents a reduction in demand of approximately 65 MGY compared to the proposed project. Under this alternative, total water demand within the City's water service area in 2030 would range between approximately 3,980 and 4,470 MGY. With a current estimated normal year supply of approximately 4,300 MGY, the No Project Alternative would continue to create a demand that could potentially exceed normal year supplies if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,800 MGY under a single-dry year and 2,700 MGY under a multiple dry year condition. Thus, while overall water demand would be reduced, the No Project Alternative would not eliminate the significant unavoidable project and cumulative water demand impacts under existing and future drought and potential future normal year conditions.

The No Project Alternative would result in reduced development and population growth, and thus, would result in incremental reductions in public service demands, wastewater generation, solid waste disposal, student generation, and energy use. These impacts were identified as less-than-significant, and would be further reduced. However, one significant impact was identified related to elementary school student generation and the potential for school enrollments to exceed capacity depending on the rate and timing of enrollments. Under the No Project Alternative, elementary school student enrollments would be reduced by nearly half the amount identified for the proposed *General Plan 2030*, thus substantially reducing future elementary school enrollments as compared to the proposed project and reducing the impact to a less-than-significant level.

TABLE 5-4
Intersection PM Peak Hour Levels of Service
Changes with *NO PROJECT*

	Intersection	PM Peak LOS with Project	PM Peak LOS with No Project
SIGNALIZED INTERSECTIONS			
4	Almar-Younglove/Mission	C	B
5	**Bay/Mission**	**F**	**F**
6	**Laurel/Mission**	**F**	**E**
7	Walnut/Mission	D	C
c	**King-Union/Mission**	**F**	**E**
9	**Chestnut-Hwy. 1/Mission**	**F**	**F**
18	Pacific/Laurel	D	C
c	Front/Laurel	D	C
28	**River/Hwy. 1**	**F**	**F**
29	**River/Encinal**	**F**	**F**
31	Riverside/San Lorenzo	D	C
34	**Ocean/San Lorenzo-East Cliff**	**F**	**F**
35	**Ocean/Broadway**	**F**	**E**
37	**Ocean/Water**	**F**	**F**
41	**N. Branciforte/Water**	**E**	**E**
42	**Branciforte/Soquel**	**E**	D
45	Seabright/Broadway	C	B
46	**Seabright/Murray**	**E**	**E**
UNSIGNALIZED INTERSECTIONS			
59	**Bay/California St**	**F**	**F**
60	**Bay/California Ave**	**F**	**F**
62	**Beach/Pacific Ave**	**E**	**E**
63	Pacific Avenue/Center	C	B
64	Storey/King	D	C
65	**River/Fern**	**F**	**F**
66	King/Laurel	D	C
67	**Laurent/High**	**F**	**F**
71	Cedar/Laurel	D	C
72	**Bay/Escalona**	**F**	**F**
73	**Western/High**	**F**	**F**
76	**Seabright/Water**	**F**	**F**
77	**Swift and Delaware**	**F**	**F**

Shaded areas denote intersections with improved LOS compared to the proposed *General Plan 2030* levels of service.

With the overall reduction in development under this alternative, there would be less of an increase in impervious surfacing with a reduced volume of stormwater runoff and associated storm drainage facility and water quality issues. Since most of the reduction in potential development is concentrated along the road corridors and Harvey West area, exposure to flood hazards would not substantially change or could be slightly reduced. However, all identified impacts related to hydrology, storm drainage and water quality were identified as being less than significant, but could be further reduced under this alternative.

Resources and Hazards. No significant impacts were identified related to biological resources. This alternative would result in a reduction in development potential, primarily within the urbanized areas. Areas in which potential biological impacts could occur would be the vacant and underutilized Swenson site and Golf Club Drive area. Existing land use designations would be retained on these sites, and existing General Plan policies and other City plans would continue govern future development siting so that significant biological impacts would not be expected.

Potentially significant impacts related to cultural resources (archaeology and paleontology) were identified with regards to lack of definition of a process to review such resources as part of future development proposals. These impacts would be eliminated under the No Project Alternative as the existing General Plan does provide a policy to guide this review (Cultural Resources 1.2, 1.2.2, 1.2.2.1).

This alternative would result in reduction of overall buildout, and thus, would result in reduced traffic-generated noise and criteria pollutant and greenhouse gas emissions, all of which were identified as less-than-significant impacts. The No Project Alternative would eliminate the significant impact related to consistency with the Air Quality Management Plan as the total population would be within the plan's forecasts, and thus, consistent with the plan.[14]

Exposure to geologic, seismic and soils hazards and constraints would generally remain unchanged, although overall development potential would be reduced. Similarly, exposure to hazardous materials would generally remain the same as with the proposed project as the overall commercial square footage is similar. However, industrial uses within the Harvey West area would increase slightly, with a potential slight increase in exposure to hazardous materials. However, with implementation of state and local regulations that regulate use and disposal of such materials, the impact would continue to be expected to be less-than-significant.

Cumulative Impacts. As indicated, the No Project Alternative would not eliminate significant, unavoidable impacts related to traffic and water supply, and the project's incremental contribution to significant cumulative traffic and water impacts would continue to be cumulatively considerable. The significant cumulative population growth impact associated with the proposed project would be reduced and would not be a significant cumulative impact, as cumulative population would be within historic growth rates (0.7%), even if the North Campus area of UCSC were annexed to the City at some point in the future. With a reduction in development and resulting traffic decreases, the cumulative noise increase along a portion of

[14] The No Project Alternative would add 4,360 residents to the City's existing (2009) population of 58,982 for a total of 63,342 which is less than AMBAG's forecast population for 2030 of 65,884 residents within the City.

Mission Street and Swift Street could be reduced to a less-than-significant cumulative impact as the noise increases that were found to be significant only slightly exceeded the 3 dBA increase significance criteria.

ABILITY TO MEET PROJECT OBJECTIVES

This alternative would meet the basic project objectives to protect the City's environment (#1) and neighborhoods (#2) and provide an accessible transportation system (#4), as well as the existing General Plan includes policies and programs in support of these objectives. The No Project Alternative partially meets the objective of fostering a reciprocal relationship with UCSC (#3). The existing General Plan includes Goal UC1 in Volume II of the 1990-2005 plan summary of the LRDP that states: "Work with UCSC to minimize and mitigate the adverse effect of its growth on the community, while encouraging active cooperation on jointly beneficial projects." Thus, the existing General Plan contains similar policy direction regarding UCSC, but it is not as strong as the guiding principles in the proposed *General Plan 2030*. The remaining project objectives (#5 through 10) generally addressed economic and social visions for the City, not environmental or land use objectives.

This alternative would not support the "sustainable" land use patterns that are promoted and emphasized in the proposed *General Plan 2030* policies as the new mixed-use land use designations would be eliminated under this alternative, and thus, would not fully meet transportation (#4) or affordable housing (#2) objectives. In considering alternative land use designations for the draft *General Plan 2030*, both the General Plan Advisory Committee and Planning Commission recommended the *General Plan 2030*'s land use map to the City Council. In doing so, both advisory bodies preferred that future residential growth be accommodated along the major corridors of the City through the assembly of parcels that could be redeveloped with mixed use development. To encourage such development, nodes were identified along the major corridors where larger sites could be created through the assembly of individual parcels. This approach is used in most cities that are near buildout. Development would encourage transit use by residents and also support the sustainability of transit by increasing ridership. The objective is to move toward higher density land uses that support transit instead of lower density auto centric development. This type of land use would also encourage affordable work force housing in the upper floors while maintaining commercial uses on the ground floor (#2, #4, and #5). The need for the development of new affordable workforce housing and sustainable economic development are mutual actions identified to carry out the goals of the proposed *General Plan 2030*.

ALTERNATIVE 2: Reduced Growth

PROJECT CHARACTERISTICS

This alternative assumes that growth would occur as forecast by AMBAG under which 2,413 new housing units are projected between 2009 and 2030, which would result in a population increase of 5,790 residents. Under AMBAG forecasts, the City would experience an increase of approximately 8,080 new employees between 1990 and 2030, which is slightly lower than, but similar to, the estimates of 8,175 employees under the proposed *General Plan 2030*. This reduction represents approximately 95 employees, which would generally correspond to approximately 50,000 square feet in commercial use or approximately 30,000 square feet of

office space. This alternative represents a reduction of housing by approximately one-third, as compared to the proposed project, with a similar, but slightly lower level of non-residential development. It is assumed that the reduction in housing would occur throughout the City without any concentration in one particular area. Alternative 3 reviews a reduced land use density/intensity scenario for specific areas. Table 5-3 summarizes key differences between the proposed project and the project alternatives with regards to potential development, population, and major impacts.

IMPACTS

Land Use and Development. Overall, residential development would be reduced under this alternative. No significant land use, population, housing or aesthetics impacts were identified for the proposed *General Plan 2030*. Development under this alternative would continue to be infill, and would not result in division of an established community. The impact related to potential land use incompatibilities due to allowing "community service facilities" in all districts would remain, although it was found to be less than significant, with a recommendation that the General Plan text be modified to delete this language.

This alternative would result in a reduced level of population growth (5,790) compared to the proposed project (8,040). The City's population in 2030 would be 64,772, which is within AMBAG's adopted forecast of 65,884 in the year 2030. Since this alternative includes development of housing units consistent with AMBAG's projections, this alternative also results in a population increase similarly consistent with these forecasts.

There would be no changes to aesthetic impacts, as scenic views and resources would be continue to be protected with proposed General Plan policies and actions. A reduced level of development could potentially reduce impacts related to degradation of the visual quality of a surrounding area as structural development would be reduced. However, with implementation of proposed policies and actions, this was not determined to be a significant impact of the proposed project.

Public Facilities and Services. Overall, traffic and public service demands would be reduced with the reduction in growth (and accompanying development) considered under this alternative. However, while traffic would be reduced, it is not expected that it would be reduced to a level that would eliminate all significant unavoidable project or cumulative impacts. Development under this alternative would result in residential development that is about midway between the proposed project and the no project alternative levels although non-residential development is similar to the proposed project. The No Project Alternative resulted in five intersections remaining at an unacceptable LOS compared to eight under the proposed project. It is expected the intersection LOS under this alternative would generally be somewhere between the No Project and Project levels. Traffic along state highways also would be reduced under this alternative, but would continue to contribute traffic to existing and future projected impacted segments along Highways 1 and 17. Thus, while traffic increases would be reduced, this alternative would not eliminate the significant unavoidable project and cumulative traffic impacts related to intersection LOS and traffic along state highways.

Water demand also would decrease to approximately 200-203 million gallons per year (MGY) under this alternative. This represents a reduction in demand of approximately 35-39

MGY compared to the proposed project, depending on whether non-residential use reductions occur within the commercial or office sector. Under this alternative, total water demand within the City's water service area in 2030 would range between approximately 4,010 and 4,500 MGY. With a current estimated normal year supply of approximately 4,300 MGY, this alternative would continue to create a demand that could potentially exceed normal year supplies after the year 2025, if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,800 MGY under a single-dry year and 2,700 MGY under a multiple-dry year condition. Thus, while overall water demand would be reduced, the No Project Alternative would not eliminate the significant unavoidable project and cumulative water demand impacts under existing and future drought and potential future normal year conditions.

The Reduced Growth Alternative would result in reduced development and population growth, and thus, would result in incremental reductions in public service demands on parks, fire and police services, wastewater generation, solid waste disposal, student generation, and energy use. These impacts were identified as less-than-significant, and would be further reduced. However, one significant impact was identified related to elementary school student generation and the potential for school enrollments to exceed capacity depending on the rate and timing of enrollments. Under this alternative, elementary school student enrollments would be reduced by nearly one-third the amount identified for the proposed *General Plan 2030* with 660 estimated elementary school children under this alternative compared to 915 with the proposed project. Thus, the project would reduce future elementary school enrollments by 30% as compared to the proposed project. The existing school capacity of 2,329 students is currently exceeded by approximately 295 students. Depending on the rate of growth and development, student enrollments under this alternative would be reduced, but the level of impact may remain at significant. Payment of school impact fees would continue to be required.

With the overall reduction in development under this alternative, there would be less of an increase in impervious surfacing with a reduced volume of stormwater runoff and associated storm drainage facility and water quality issues. However, all identified impacts related to hydrology, storm drainage and water quality were identified as being less than significant, but could be further reduced under this alternative.

Resources and Hazards. No significant impacts were identified related to biological resources. This alternative would result in a reduction in development potential, primarily within the urbanized areas. Implementation of the proposed General Plan policies and other City plans would continue to govern future development siting so that significant biological impacts would not be expected.

Potentially significant impacts related to cultural resources (archaeology and paleontology) were identified with regards to lack of definition of a process to review such resources as part of future development proposals. These impacts would not be eliminated under this alternative as there would be no change in the General Plan text or policies. The recommendations to modify the proposed policies to better articulate future review processes would continue to be warranted.

This alternative would result in reduction of overall buildout, and thus, would result in reduced traffic-generated noise and criteria pollutant and greenhouse gas emissions, all of which were

identified as less-than-significant impacts. This alternative also would eliminate the significant impact related to consistency with the Air Quality Management Plan as the total population would be within the plan's forecasts, and thus, consistent with the plan.[15]

Exposure to geologic, seismic and soils hazards and constraints would generally remain unchanged, although overall development potential would be reduced. Similarly, exposure to hazardous materials would generally remain the same as with the proposed project as the overall non-residential square footage is similar to t he proposed project. However, with implementation of state and local regulations that regulate use and disposal of such materials, the impact would continue to be expected to be less-than-significant.

Cumulative Impacts. As previously indicated, this alternative would not eliminate significant, unavoidable impacts related to traffic and water supply, and the project's incremental contribution to significant cumulative traffic and water impacts would continue to be cumulatively considerable. The significant cumulative population growth impact associated with the proposed project would be reduced and would not be a significant cumulative impact, as cumulative population would be within historic growth rates (0.7%), even if the North Campus area of UCSC were annexed to the City at some point in the future. With a reduction in development and resulting traffic decreases, the cumulative noise increase along a portion of Mission Street and Swift Street could be reduced to a less-than-significant cumulative impact as the noise increases that were found to be significant only slightly exceeded the 3 dBA increase significance criteria.

ABILITY TO MEET PROJECT OBJECTIVES

This alternative would meet the basic project objectives to protect the City's environment (#1) and neighborhoods (#2) and foster a reciprocal relationship with UCSC (#3). The remaining project objectives (#5 through 10) generally addressed economic and social visions for the City, not environmental or land use objectives, and could be met with the reduced development described in this alternative.

This alternative supports the "sustainable" land use patterns that are promoted and emphasized in the proposed *General Plan 2030* policies as there is no change in mixed-use land use designations, however, a lower level of growth would occur under this alternative. While the growth rate is consistent with AMBAG's projections (approximately 0.6% average growth per year), this level is not consistent with historic growth rates in the City. Since 1990, the City has experienced about a 0.9-1.0% average annual growth rate. Thus, this alternative may not adequately account for the level of development that could reasonably be expected within the General Plan's timeframe.

As a result of reduced growth, this alternative would not fully meet the transportation objective (#4) or affordable housing objective (#2 as it would potentially provide a lesser opportunity for mixed-use redevelopment along the City's major corridors as overall development and growth would be reduced throughout the City. As indicated in the "Alternative 1 – No Project

[15] The No Project Alternative would add 4,360 residents to the City's existing (2009) population of 58,982 for a total of 63,342 which is less than AMBAG's forecast population for 2030 of 65,884 residents within the City.

Alternative" discussion above, both the General Plan Advisory Committee and Planning Commission recommendations preferred that future residential growth be accommodated along the major corridors of the City with the objective is to move toward higher density land uses that support transit and also encourage affordable workforce housing in the upper floors while maintaining commercial uses on the ground floor (#2, #4, and #5). The need for the development of new affordable workforce housing and sustainable economic development are mutual actions identified to carry out the goals of the proposed *General Plan 2030* that would not be fully supported with this alternative.

ALTERNATIVE 3: Reduced Land Use Density/Intensity

PROJECT CHARACTERISTICS

This alternative assumes a reduction in land use density or intensity in the following areas:

- Reduce density along transit corridors and/or eliminate specified segments of mixed use designations to include removal of a mixed use segment along Mission between Bay Street and Walnut Avenue and changing the proposed mixed-use high density designated along Soquel Avenue to a mixed-used medium density designation.
- Maintain existing General Plan land use designations (and density) at Swenson site and Golf Club Drive area, both of which are currently designated for low density residential uses.
- Eliminate support of large retail commercial in Harvey West area.

These changes result in the reduction of residential uses by approximately 600 dwelling units. It assumes a reduction of approximately 85 units along Mission Street and 310 units along Soquel Avenue with the above changes in the mixed-use land use designations. The change from mixed-use high density to medium density along Soquel would also reduce the overall floor area ratio (FAR) and dwelling unit density. Maintaining existing land use designations of Low Density Residential at both the Swenson site and Golf Club Drive area would further reduce potential residential units by 205 units. The elimination of policy support for a large regional commercial use in the Harvey West area would reduce commercial square footage by approximately 120,000 square feet with a corresponding increase in industrial square footage; the total number of employees would be similar to the proposed project. Table 5-3 summarizes key differences between the proposed project and the project alternatives with regards to potential development, population, and major impacts.

IMPACTS

Land Use and Development. Overall, residential development would be reduced under this alternative. No significant land use, population, housing or aesthetics impacts were identified for the proposed *General Plan 2030*. Development under this alternative would continue to be infill, and would not result in division of an established community. The impact related to potential land use incompatibilities due to allowing "community service facilities" in all districts would remain, although it was found to be less than significant, with a recommendation that the General Plan text be modified to delete this language. This alternative would result in a reduced level of population growth (6,600) compared to the

proposed project (8,040). The City's population in 2030 would be 65,582, which is within AMBAG's adopted forecast of 65,884 in the year 2030.

The reduction of density and land use intensity along two mixed-use segments could potentially reduce impacts related to degradation of the visual quality of a surrounding area as structural development would be reduced. However, with implementation of proposed policies and actions, this was not determined to be a significant impact.

Public Facilities and Services. Overall, traffic and public service demands would be reduced with the reduction in development considered under this alternative. While traffic would be reduced, it is not expected that it would not be reduced to a level that would eliminate significant unavoidable project or cumulative impacts, as even the No Project Alternative (with substantially lower estimated development), did not result in a substantial improvement to intersection or highway conditions. Thus, while traffic increases would be reduced, this alternative would not eliminate the significant unavoidable project and cumulative traffic impacts related to intersection LOS and traffic along state highways.

Water demand also would decrease to approximately 210 million gallons per year (MGY) under this alternative. This represents a reduction in demand of approximately 29 MGY compared to the proposed project. Under this alternative, total water demand within the City's water service area in 2030 would range between approximately 4,015 and 4,500 MGY. With a current estimated normal year supply of approximately 4,300 MGY, the No Project Alternative would continue to create a demand that could potentially exceed normal year supplies if future demand proceeds at historic rates. The demand would also exceed currently available dry year supplies of 3,800 MGY under a single-dry year and 2,700 MGY under a multiple-dry year condition. Thus, while overall water demand would be reduced, the No Project Alternative would not eliminate the significant unavoidable project and cumulative water demand impacts under existing and future drought and potential future normal year conditions.

The No Project Alternative would result in reduced development and population growth, and thus, would result in incremental reductions in public service demands on police, fire and parks, wastewater generation, solid waste disposal, student generation, and energy use. These impacts were identified as less-than-significant, and would be further reduced. However, one significant impact was identified related to elementary school student generation and the potential for school enrollments to exceed capacity depending on the rate and timing of enrollments. Under this alternative, elementary school student enrollments would be reduced by approximately 150 students compared to the proposed *General Plan 2030*. While this would be a reduction, a significant impact on school capacity could still occur, although payment of school impact fees would continue to be a required mitigation measure that would reduce the impact to a less-than-significant level.

With the overall reduction in development under this alternative, there would be less of an increase in impervious surfacing with a reduced volume of stormwater runoff and associated storm drainage facility and water quality issues. However, all identified impacts related to hydrology, storm drainage and water quality were identified as being less than significant, but could be further reduced under this alternative.

Resources and Hazards. No significant impacts were identified related to biological resources. This alternative would result in a reduction in development potential along two mixed-use segments and at the Swenson and Golf Club Drive sites. Implementation of the proposed General Plan policies and other City plans would continue to govern future development siting so that significant biological impacts would not be expected.

Potentially significant impacts related to cultural resources (archaeology and paleontology) were identified with regards to lack of definition of a process to review such resources as part of future development proposals. These impacts would not be eliminated under this alternative as there would be no change in the General Plan text or policies. The recommendations to modify the proposed policies to better articulate future review processes would continue to be warranted.

This alternative would result in reduction of overall buildout, and thus, would result in reduced traffic-generated noise and criteria pollutant and greenhouse gas emissions, all of which were identified as less-than-significant impacts. This alternative also would potentially eliminate the significant impact related to consistency with the Air Quality Management Plan as the total population would be within the plan's forecasts, and thus, consistent with the AQMP. However, oncampus population growth at UCSC would account for some of the population increase, and when this is factored in, it is still possible that population would exceed AQMP forecasts. The development and growth under this alternative would result in construction of 2,750 housing units, which exceeds the AMBAG projection of 2,413 units for the City by the year 2030. As the unit method for evaluating consistency with the AQMP relies on consistency with housing unit forecasts, this alternative would continue to result in a significant impact.

Exposure to geologic, seismic and soils hazards and constraints would generally remain unchanged, although overall development potential would be reduced. Similarly, exposure to hazardous materials would generally remain the same as with the proposed project as the overall non-residential square footage is similar to t he proposed project. However, with implementation of state and local regulations that regulate use and disposal of such materials, the impact would continue to be expected to be less-than-significant.

Cumulative Impacts. As previously indicated, this alternative would not eliminate significant, unavoidable impacts related to traffic and water supply, and the project's incremental contribution to significant cumulative traffic and water impacts would continue to be cumulatively considerable. The cumulative population growth impact associated with the proposed project would be reduced, but the cumulative impact would continue to be significant as cumulative population would represent an average annual growth rate of approximately 1.2% if the North Campus area of UCSC were annexed to the City at some point in the future. This would exceed historic City growth rates or 0.9% per year. With a reduction in development and resulting traffic decreases along Mission Street with elimination of one mixed-use segment, the cumulative noise increase along a portion of Mission Street and Swift Street could be reduced to a less-than-significant cumulative impact as the noise increases that were found to be significant only slightly exceeded the 3 dBA increase significance criteria.

ABILITY TO MEET PROJECT OBJECTIVES

This alternative would meet the basic project objectives to protect the City's environment (#1) and neighborhoods (#2), and foster a reciprocal relationship with UCSC (#3). The remaining project objectives (#5 through 10) generally addressed economic and social visions for the City, not environmental or land use objectives, and could be met with the reduced development described in this alternative.

This alternative partially supports the "sustainable" land use patterns that are promoted and emphasized in the proposed *General Plan 2030* policies as there is no change in mixed-use land use designations. As a result of a reduction of mixed-use land designations and density, this alternative would not fully meet the transportation objective (#4) or affordable housing objective (#2) as it would potentially provide a lesser opportunity for mixed-use redevelopment along the City's major corridors. As indicated in the "Alternative 1 – No Project Alternative" discussion above, both the General Plan Advisory Committee and Planning Commission recommendations preferred that future residential growth be accommodated along the major corridors of the City with the objective is to move toward higher density land uses that support transit and also encourage affordable workforce housing in the upper floors while maintaining commercial uses on the ground floor. To encourage such development, nodes were identified along the major corridors where larger sites could be created through the assembly of individual parcels. It was also recognized that increased density were necessary in order to create the opportunity for the nodes to be developed. The need for the development of new affordable workforce housing and sustainable economic development are mutual actions identified to carry out the goals of the proposed *General Plan 2030* that would not be fully supported with this alternative.

Environmentally Superior Alternative

According to CEQA Guidelines section 15126.6(e), if the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Furthermore, Sections 21002 and 21081 of CEQA require lead agencies to adopt feasible mitigation measures or feasible alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. Where the environmentally superior alternative also is the no project alternative, CEQA Guidelines in Section 15126(d)(4) requires the EIR to identify an environmentally superior alternative from among the other alternatives.

In the present case, none of the alternatives, including the No Project Alternative (Alternative 1) would eliminate significant unavoidable project and cumulative impacts related to traffic and water supply, although all alternatives would result in a reduced level of traffic and water demand. The No Project Alternative would, however, reduce the other four identified significant impacts to less-than significant levels. Alternative 2 – Reduced Growth would also reduce the identified significant impact related to consistency with the Air Quality Management Plan to a less-than-significant level, although under the Alternative 3—Reduced Density/Land Use Intensity, this would remain significant and less-than-significant with mitigation. Potentially significant impacts on schools and cultural resources would remain significant under Alternatives 2 and 3, but could be mitigated. Table 5-5 provides a comparison of impact significant

between the proposed *General Plan 2030* and the alternatives evaluated in this section. Alternatives 2 and 3 could attain some of the objectives (#1 and #3) and partially attain others (#2 and #4).

Excluding the No Project Alternative (Alternative 1), Alternative 2 – Reduced Growth, is considered the environmentally superior alternative of the alternatives considered. Although it would not eliminate significant unavoidable impacts, it could result in the greatest reduction of traffic and water demand impacts and reduce some of the other identified significant impacts. However, it would not fully meet project objectives.

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TABLE 5-5: Comparison of Impacts of Project Alternatives

Environmental Issue	PP	ALT 1	ALT 2	ALT 3
LAND USE & DEVELOPMENT				
LAND USE				
▪ 4.1-1 – Divide Established Community	NI	NI	NI	NI
▪ 4.1-2 – Incompatible Land Uses	LS	NI	LS	LS
▪ 4-1-3 – Conflict with Plans	NI	NI	NI	NI
POPULATION & HOUSING				
▪ 4.2-1 – Increased Population	LS	LS-	LS-	LS-
▪ 4.2-2 – Displace Residents or Housing	LS	LS	LS	LS
AESTHETICS				
▪ 4.3-1 – Scenic Views	LS	LS	LS	LS
▪ 4.3-2 – Scenic Resources	LS	LS	LS	LS
▪ 4.3-3 – Degrade Visual Quality of Area	LS	LS-	LS-	LS-
▪ 4-3-4 – Create Light or Glare	LS	LS	LS	LS
PUBLIC FACILITIES & SERVICES				
TRANSPORTATION & TRAFFIC				
▪ 4.4-1 – Intersection Traffic	**SU**	**SU-**	**SU-**	**SU-**
▪ 4.4-2 – Highway Traffic	**SU**	**SU-**	**SU-**	**SU-**
▪ 4-4-3 – Create Traffic Hazards	NI	NI	NI	NI
▪ 4.4-4 – Conflict with Plans	NI	NI	NI	NI
WATER SUPPLY				
▪ 4.5.1 – Water Demand	**SU**	**SU-**	**SU-**	**SU-**
▪ 4.5.2 – Groundwater Impacts	LS	LS	LS	LS
PUBLIC SERVICES & UTILITIES				
▪ 4.6.1 – Fire Service	LS	LS-	LS-	LS-
▪ 4.6.2 – Police Service	LS	LS-	LS-	LS-
▪ 4.6.3 – Parks and Recreation	LS	LS-	LS-	LS-
▪ 4.6.4 – Schools	**S**	LS	**S-**	**S-**
▪ 4.6.5 – Wastewater	LS	LS-	LS-	LS-
▪ 4.6.6 – Solid Waste	LS	LS-	LS-	LS-
▪ 4.6.7 – Energy Use	LS	LS-	LS-	LS-
HYDROLOGY, DRAINAGE, WATER QUALITY				
▪ 4.7-1 – Drainage and stormwater runoff	LS	LS-	LS-	LS-
▪ 4.7-2 – Water Quality	LS	LS-	LS-	LS-
▪ 4.7-3 – Exposure to Flood Hazards	LS	LS-	LS-	LS-
RESOURCES & HAZARDS				
BIOLOGICAL RESOURCES				
▪ 4.8.1 – Riparian & Westland Habitats	LS	LS	LS	LS
▪ 4.8.2 – Other Sensitive Habitats	LS	LS	LS	LS
▪ 4.8.3 – Special Status Species	LS	LS	LS	LS
▪ 4.8.4 – Wildlife Movement	LS	LS	LS	LS
▪ 4.8.5 – Habitat Reduction	LS	LS	LS	LS
▪ 4.8.6 – Tree Protection	LS	LS	LS	LS
▪ 4.8.7 – Conflicts with Plans & Policies	LS	LS	LS	LS
CULTURAL RESOURCES				
▪ 4.9-1 – Archaeological Resources	**S**	LS	**S**	**S**
▪ 4.9-2 – Historical Resources	LS	LS	LS	LS
▪ 4.9-3 – Paleontological Resources	**S**	LS	**S**	**S**

(CONTINUED ON NEXT PAGE)

TABLE 5-5: Comparison of Impacts of Project Alternatives

GEOLOGY & SOILS				
▪ 4.10-1 – Exposure to Seismic Hazards	LS	LS	LS	LS
▪ 4.10-2 – Exposure to Other Geologic Hazards	LS	LS	LS	LS
▪ 4.10-3 – Soils Constraints	LS	LS	LS	LS
▪ 4.10-4 – Erosion	LS	LS	LS	LS
AIR QUALITY				
▪ 4.11-1 – Consistency with AQMP	**S**	LS	LS	**S**
▪ 4.11-2 – Criteria Air Pollutant Emissions	LS	LS	LS	LS
▪ 4.11-3 - Sensitive Receptors	LS	LS	LS	LS
▪ 4.11-4 - Odors	LS	LS	LS	LS
GLOBAL CLIMATE CHANGE				
▪ 4.12-1 – Greenhouse Gas Emissions	LS	LS	LS	LS
▪ 4.12-2 – Conflict with Adopted Plans	LS	LS	LS	LS
NOISE				
▪ 4.13-1 – Exposure to Noise	LS	LS	LS	LS
▪ 4.13-2 – Permanent Noise Increase	LS	LS	LS	LS
▪ 4.13-3 – Temporary Construction Noise Increase	LS	LS	LS	LS
HAZARDOUS MATERIALS				
▪ 4.14-1 – Creation of Hazards	LS	LS	LS	LS
▪ 4.14-2 – Exposure to Hazardous Materials	LS	LS	LS	LS
▪ 4.14-3 – Hazards Near Schools	LS	LS	LS	LS
AGRICULTURE, FOREST & MINERAL RESOURCES				
▪ 4.15-1 – Conflicts with Agricultural Uses	LS	LS	LS	LS

Notes:

PP = Proposed Project
ALT1 = No Project Alternative
ALT2 = Reduced Growth Alternative
ALT3 = Reduced Density and/or Land Use Intensity Alternative

Impact without Mitigation / Impact with Mitigation
NI = No Impact
LS = Less than significant impact
S = Significant
SU = Significant unavoidable impact
\+ = Greater adverse impact than proposed project
\- = Lesser adverse impact than proposed project