

**CITY OF SANTA CRUZ**  
**Notice of Availability of Draft EIR**

**Project Location:** A portion of the UCSC North Campus that is adjacent to and north of Santa Cruz City limits.

**Project Description:** The project consists of an amendment to the City of Santa Cruz Sphere of Influence (SOI) to include a 374-acre portion of the UCSC "North Campus" for the purpose of providing extraterritorial water and sewer services to the area. Applications were submitted to the Santa Cruz Local Agency Formation Commission (LAFCO) by the City of Santa Cruz (for the SOI amendment) and by UCSC (for provision of extraterritorial services) in accordance with provisions of the "Comprehensive Settlement Agreement" regarding the University's 2005 Long Range Development Plan EIR. Implementation of the proposed project would adjust the City's probable physical boundaries and service area for water and sewer service to include the project area in which UCSC proposes development as set forth in its adopted 2005 LRDP and in the Comprehensive Settlement Agreement.

**Potentially Significant Effects on the Environment:** Potentially significant impacts were identified related to water supply availability during dry years, project effects on cumulative water supply during normal and dry years, and indirect project effects on greenhouse gas emissions and global climate change.

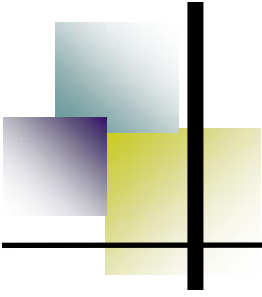
**Lead Agency:** City of Santa Cruz Planning and Community Development Department

**Public Review Period:** November 19, 2009 through January 19, 2010.

A copy of the Draft EIR may be reviewed or obtained at the Planning Department at the address below, and a copy is available for review at the Downtown Library at 224 Church Street. The Draft EIR can be found online at: [www.ci.santa-cruz.ca.us/](http://www.ci.santa-cruz.ca.us/)

City of Santa Cruz Planning and Community Development Dept.  
809 Center Street, Room 107  
Santa Cruz, CA 95060

Comments on the Draft EIR should be submitted in writing to Ken Thomas at the above address from November 19, 2009 until 5PM on January 19, 2010. Comments may also be emailed to Ken Thomas at [kthomas@ci.santa-cruz.ca.us](mailto:kthomas@ci.santa-cruz.ca.us). If you have any questions or comments, please contact Ken Thomas in the Planning Department at (831) 420-5148.



**DRAFT**  
**ENVIRONMENTAL IMPACT REPORT**

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**City of Santa Cruz**  
**Sphere of Influence Amendment**  
*(To Include Part of the UCSC North Campus)*  
and  
**Provision of Extraterritorial**  
**Water & Sewer Service**  
*(To Part of the UCSC North Campus)*

November 2009



**DRAFT**  
**ENVIRONMENTAL IMPACT REPORT**

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**CITY OF SANTA CRUZ**  
**SPHERE OF INFLUENCE AMENDMENT**  
*(To Include Part of the UCSC North Campus)*

*AND*

**PROVISION OF EXTRATERRITORIAL**  
**WATER & SEWER SERVICE**  
*(To Part of the UCSC North Campus)*

STATE CLEARINGHOUSE #2008102108

**PREPARED FOR**  
City of Santa Cruz



**PREPARED BY**  
Strelow Consulting  
*in association with*  
City of Santa Cruz Planning & Community Development Department

November 2009

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## IN THIS SECTION:

- Project Overview
- Purpose of EIR
- Consideration of Impacts
- EIR Issues
- EIR Process
- Report Organization

## 1.1 PROJECT OVERVIEW

This Environmental Impact Report (EIR) addresses the potential environmental effects of the proposed City of Santa Cruz Sphere of Influence amendment request to the Santa Cruz Local Agency Formation Commission (LAFCO). The City of Santa Cruz submitted an application to LAFCO to amend the City's Sphere of Influence (SOI) to include a 374-acre portion of the University of California Santa Cruz (UCSC) campus known as "North Campus" for the purpose of providing extraterritorial water and sewer services to this area. A Sphere of Influence is the probable physical boundaries and service area of a local government that is developed by LAFCOs in each county pursuant to State law. The University concurrently submitted an application to LAFCO for extraterritorial water and sewer service to be provided by the City of Santa Cruz. Upon completion of environmental review, LAFCO will consider the SOI request from the City as well as the request for provision of extraterritorial services submitted by UCSC to LAFCO.

The applications to LAFCO were made by the City and University in accordance with provisions of the "Comprehensive Settlement Agreement" regarding the University's 2005 Long Range Development Plan.<sup>1</sup> The objective of the project is to implement City of Santa Cruz obligations set forth in the Comprehensive Settlement Agreement with regards to provision of water and sewer services to the UCSC North Campus area. The Settlement Agreement was entered as a final judgment of the Santa Cruz Superior Court, and pursuant to this stipulated judgment, the City agreed to continue to provide water service to the campus to assist UCSC with achieving its on-campus housing commitment set forth in the Settlement Agreement. Furthermore, the City agreed to submit an application to LAFCO to amend its

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<sup>1</sup>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 and that resolved the lawsuits. The Settlement Agreement was entered as a final judgment of the Court, thereby, superseding the previous court ruling. See PROJECT DESCRIPTION (Chapter 3.0) of this EIR and Appendix C for further discussion.

Sphere of Influence to include most of the North Campus area of the UCSC Campus (project area) concurrent with UCSC submitting its own application request to LAFCO for provision of extraterritorial water and sewer service to the project area for development of up to 3,175,000 gross square feet of building space in this area as set forth in the 2005 LRDP. There are no currently proposed development plans for the North Campus or site-specific plans at this time to extend infrastructure to the area. There are no current proposals to annex the area to the City of Santa Cruz. A full description of the project is presented in the PROJECT DESCRIPTION (Chapter 3.0) of this EIR.

## 1.2 PURPOSE of EIR

This EIR has been prepared for the City of Santa Cruz (City), which is the lead agency for the project. Where a project is to be carried out or approved by more than one public agency, one public agency, the “lead agency,” shall be responsible for preparing an EIR. In accordance with section 15051 of the State CEQA Guidelines, where two or more public agencies will be involved with a project, the agency that will carry out the project is considered the lead agency. The lead agency is normally the agency with general governmental powers, such as a city or county. Additionally, the State CEQA Guidelines (section 15051(c)) indicate that where more than one public agency meet the criteria of lead agency, the agency which will act first on the project shall be the lead agency.

The City of Santa Cruz, University of California and Santa Cruz, and LAFCO discussed which agency would be lead agency. It was determined that the City of Santa Cruz was determined to should be the lead agency for environmental review as it is the agency responsible for carrying out the project, (providing water and sewer service) and is the first agency to act on the project, as well as being the agency with general governmental powers, compared to LAFCO and the University. Approval of the proposed project – the SOI amendment and provision of extraterritorial water and sewer service to a portion of the UCSC North Campus – would accommodate water and sewer service in the project area for development under UCSC’s adopted 2005 LRDP. The Regents of the University of California certified an EIR that analyzed the impacts of its 2005 LRDP and thereafter adopted the plan. The 2005 LRDP is the effective land use plan for the UCSC campus and no further University action is required with regard to the plan.

LAFCO and the University of California are responsible agencies. Pursuant to State CEQA Guidelines sections 15050 and 15051, the decision-making body of each responsible agency shall consider the Lead Agency’s EIR or Negative Declaration prior to acting upon or approving the project. Each responsible agency shall certify that its decision-making body reviewed and considered the information contained in the EIR or Negative Declaration on the project.

This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended in 2008, and the State CEQA Guidelines, which are found in Title 14 of the California Code of Regulations, commencing with section 15000. As stated in the CEQA Guidelines section 15002, the basic purposes of CEQA are to:

- ❑ Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- ❑ Identify the ways that environmental damage can be avoided or significantly reduced.
- ❑ Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- ❑ Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Pursuant to State CEQA Guidelines section 15121, an EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency. While the information in the EIR does not control the ultimate decision on the project, the agency must consider the information in the EIR and respond to each significant effect identified in the EIR by making findings pursuant to Public Resources Code section 21081.

### 1.3 CONSIDERATION OF IMPACTS

As indicated above, the focus of the environmental review process is upon significant environmental effects. As defined in section 15382 of the CEQA Guidelines, a “significant effect on the environment” is:

...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether a physical change is significant.

Section 15126 of the State CEQA Guidelines requires all phases of a project must be considered when evaluating its impact on the environment. Specifically, the following must be discussed in the EIR:

- (a) Significant environmental effects of the proposed project.
- (b) Significant environmental effects which cannot be avoided if the proposed project is implemented.
- (c) Significant irreversible environmental changes which would be involved in the proposed project should it be implemented.
- (d) Growth-inducing impact of the proposed project.
- (e) Mitigation measures proposed to minimize the significant effects.
- (f) Alternatives to the proposed project.

In evaluating the significance of the environmental effect of a project, the State CEQA Guidelines require the Lead Agency to consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project (CEQA Guidelines section 15064[d]). A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project. An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. For example, the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in traffic and air pollution. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects (State CEQA Guidelines section 15126.2[a]).

CEQA Guidelines section 15064(e) further indicates that economic and social changes resulting from a project shall not be treated as significant effects on the environment, although they may be used to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, this could be a situation in which a large retail chain store enters a local market and outcompetes local stores, causing closure of local business(es) for an extended period of time and resulting conditions of urban blight..

## 1.4 EIR ISSUES

An Initial Study was not prepared for the project. In accordance with State CEQA Guidelines section 15060(d), the City determined that an EIR was required to assess the potential environmental impacts of the project, and chose to begin work directly on the EIR. In the absence of an Initial Study, the lead agency shall still focus the EIR on the significant effects of the project and indicate briefly its reasons for determining that other effects would not be significant or potentially significant. Such an explanation is provided in the SUMMARY OF ENVIRONMENTAL IMPACTS (Chapter 2.0) section of this EIR.

Based on this preliminary review, the City has identified the following probable effects of the project, which will be addressed in the EIR. The EIR will analyze these issues and provide a determination of impact significance.

- ❑ Water Supply
- ❑ Wastewater Service
- ❑ Land Use
- ❑ Growth Inducement and secondary impacts of UCSC growth and development related to: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Hazardous Materials; Housing; Hydrology and Water Quality; Noise; Public Services; and Transportation and Traffic.

## 1.5 EIR PROCESS

A Notice of Preparation (NOP) for this EIR was circulated on November 3, 2008 (see Appendix A). The NOP was circulated to the State Clearinghouse and local, regional and federal agencies and organizations. Additionally, a public scoping meeting was held on November 19, 2008 to take public comment on the EIR scope. Letters of comment were received from the agencies, organizations and individuals listed below. These letters are included in Appendix A. Both the written comments and oral comments received at the scoping meeting have been taken into consideration in the preparation of this EIR.

- ❑ U.S. Army Corps of Engineers
- ❑ U.S. Fish and Wildlife Service
- ❑ California Regional Water Quality Control Board
- ❑ Local Agency Formation Commission of Santa Cruz County
- ❑ Monterey Bay Unified Air Pollution Control District
- ❑ Bonny Doon Rural Association
- ❑ Coalition for Limiting University Expansion (CLUE)
- ❑ Alex Anderson
- ❑ Tony Aprile

- ❑ Winona Hubbard
- ❑ Jodi Koumouitzes-Douvia
- ❑ Natasha Kowalski
- ❑ Hal Levin
- ❑ Tom Maimon
- ❑ Fred McPherson
- ❑ Celia Scott
- ❑ Don Stevens

The Draft EIR was published and circulated for review and comment by the public and other interested parties, agencies and organizations for a 60-day review period from November 19, 2009 through January 18, 2010. The Final EIR will include written responses to any significant environmental issues raised in comments received during the public review period, as well as any text changes that become necessary after consideration of public comments.. (See CEQA Guidelines, § 15088c.) The Final EIR will then be presented to the City Council. The City Council must ultimately certify that it has reviewed and considered the information in the EIR, that the EIR has been completed in conformity with the requirements of CEQA, and that the document reflects the City's independent judgment. (See CEQA Guidelines, § 15090, subd. (a).)

Pursuant to sections 21002, 21002.1 and 21081 of CEQA and sections 15091 and 15093 of the state CEQA Guidelines, no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant effects unless both of the following occur:

- (a) The public agency makes one or more of the following findings with respect to each significant effect:
  1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects on the environment.
  2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been or can and should be, adopted by such other agency.
  3. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.
  
- (b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.



Although these determinations (especially regarding feasibility) are made by the public agency's final decision-making body (here, the City Council) based on the entirety of the agency's administrative record as it exists after completion of a final EIR, the draft EIR must provide information regarding the significant effects of the proposed project and must identify the potentially feasible mitigation measures and alternatives to be considered by that decision-making body.

## 1.6 REPORT ORGANIZATION

The Draft EIR is organized with the following sections.

- ❑ **SUMMARY OF ENVIRONMENTAL IMPACTS:** This section provides a summary of all impacts, level of significance, and mitigation measures identified for the project, as well as a summary of alternatives. An overview of the project is provided, and issues of concern are summarized.
- ❑ **PROJECT DESCRIPTION:** A full description of all elements of project development and construction is provided.
- ❑ **ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES:** Each topical section in this EIR presents information in three parts. The Environmental Setting sections provide a general overview of the existing conditions on and adjacent to the project site. Local, State and federal regulations are also identified and discussed, when relevant.

A Relevant Project Elements section provides a description of the elements of the project that are relevant to the impact analysis for a particular topic. Relevant project information may relate to the size, characteristics and/or location of facilities and other plan elements, such as landscaping and design guidelines. Any project elements that may cause impacts, as well as those that may serve to eliminate or reduce impacts, will be identified.

The Environmental Impacts and Mitigation Measures section provides an outline of the criteria used to evaluate whether an impact is considered significant based on standards identified in the California Environmental Quality Act (CEQA), State CEQA Guidelines, agency policy or regulations and/or professional judgment are also used to further define what actions may cause significant effects. Significant impacts are identified and analyzed. Mitigation measures that would reduce significant impacts are identified. The significance of the impact after mitigation is also identified. For impacts found to be less-than-significant, mitigation measures

are not required, but where relevant, the EIR recommends project modifications or appropriate conditions of approval.

- ❑ **GROWTH INDUCEMENT:** This section evaluates direct and indirect growth inducement that may result from the proposed project and provision of extraterritorial water and sewer service to the North Campus portion of UCSC that is located outside city limits. Secondary physical impacts of growth also are addressed in this section.
- ❑ **CEQA CONSIDERATIONS:** This section evaluates the topics required to be included in an EIR including unavoidable impacts, irreversible impacts, cumulative impacts, and project alternatives.
- ❑ **REFERENCES:** This section identifies all agencies contacted and references consulted.
- ❑ **FIGURES:** All EIR figures are located in one section at the end of the document for ease of reference as some figures are referenced in all sections.

## 2.0 SUMMARY OF IMPACTS

### IN THIS SECTION:

- Project Summary
- Areas of Concern
- Summary of Alternatives
- Summary of Impacts & Mitigation Measures

This summary provides a brief description of the proposed project, known areas of concern, project alternatives, and all potentially significant impacts identified during the course of this environmental analysis. This summary is intended as an overview and should be used in conjunction with a thorough reading of the EIR. The text of this report, including figures, tables and appendices, serves as the basis for this summary.

### 2.1 PROJECT SUMMARY

This Environmental Impact Report (EIR) addresses the potential environmental effects of the proposed City of Santa Cruz Sphere of Influence amendment request to the Santa Cruz Local Agency Formation Commission (LAFCO) to amend the City of Santa Cruz's Sphere of Influence (SOI) to include the 374-acre portion of the University of California Santa Cruz (UCSC) campus known as "North Campus" for the purpose of providing extraterritorial water and sewer services. The City of Santa Cruz has submitted an application to LAFCO for the SOI amendment. A Sphere of Influence is the probable physical boundaries and service area of a local government that is developed by LAFCOs in each county pursuant to State law. The University has submitted an application to LAFCO for extraterritorial water and sewer service to be provided by the City of Santa Cruz. Upon completion of environmental review, LAFCO will consider the SOI request from the City as well as the request for provision of extraterritorial services submitted by UCSC to LAFCO.

Implementation of the proposed project would enable UCSC to move forward with plans to develop the North Campus as set forth in the University's adopted *University of California Santa Cruz Long-Range Development Plan 2005-2020* (hereinafter referred to as the 2005 LRDP) and as contemplated by the "Comprehensive Settlement Agreement."<sup>1</sup> Land use designations

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<sup>1</sup> 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 and that resolved the lawsuits. The Settlement Agreement was entered as a final judgment of the Court, thereby superseding the previous court ruling. See PROJECT DESCRIPTION section and Appendix C for further discussion.

in the project area include: Colleges and Student Housing; Employee Housing; Physical Education and Recreation; Campus Support; Academic Core; Campus Resource Land; Campus Natural Reserve; and Protected Landscape. As set forth in the Comprehensive Settlement Agreement, the project area would allow for development of 3,175,000 gross square feet of development as described in the 2005 LRDP. The University's application to LAFCO states that while the University does not intend to immediately commence construction of specific development for the North Campus area, the 2005 LRDP has been approved by The Regents of the University of California as an appropriate land use plan to accommodate the academic, research and student/faculty services for a projected campus enrollment of 19,500 full-time students by 2020-2021. Implementation of the 2005 LRDP contemplates that incremental development of the area will be needed to support the enrollment growth and will occur throughout the 2005 LRDP planning horizon based on space demand. There are no current development plans for the North Campus or plans to extend infrastructure to the area. There are no proposals to annex the area to the City of Santa Cruz. A full description of the project is presented in the PROJECT DESCRIPTION (Chapter 3.0) section of this EIR.

Future development that would be accommodated by the proposed provision of water and sewer services would be on University lands. The area proposed for inclusion in the City's Sphere of Influence is in the exclusive control of the University of California, and all development and infrastructure facilities necessary to accommodate the development will be approved, designed and constructed by the University. Future development would not be within the jurisdiction of the City of Santa Cruz, as the University is a state agency and not subject to local permits. Future UCSC development would be subject to environmental review requirements under CEQA.

## 2.2 AREAS OF CONCERN

The City of Santa Cruz, as the Lead Agency, has identified areas of concern based on comments received on the Notice of Preparation (see Appendix A) and comments received at a public scoping meeting held on November 19, 2008. Seventeen letters (or emails) of comment were received from agencies, organizations and individuals in response to the Notice of Preparation (see Appendix A). As a responsible agency, LAFCO submitted a letter indicating its concurrence with the list of probable environmental effects and secondary effects and also provided comments regarding annexation of existing UCSC apartments, drought mitigation measures, road maintenance and forest loss.

Issues or concerns raised by other comment letters include:

- Air quality impacts and project consistency with the Air Quality Management Plan and Air District Rule 216 (Requirements for Wastewater and Sewage Treatment Facilities).

- ❑ Water demand and supply, including potential water supply reductions as a result of the pending Habitat Conservation Plan being prepared by the City, relationship of north campus development / water demand with the City's Urban Water Management Plan and General Plan, and effects of global warming on water supplies.
- ❑ Potential adverse effects of development in the north campus of UCSC related to:
  - Greenhouse gas emissions and potential impacts of north campus development and logging on global climate change, including impacts related to additional water and wastewater facilities that require energy.
  - Biological resource concerns: request for wetlands delineation; request for species surveys for California red-legged frogs and Ohlone tiger beetles; impacts to north campus habitats; impacts to steelhead and biological resources of Wilder Creek; and recommendation that UCSC prepare a land management plan for biological resources.
  - Forest loss.
  - Hydrology: Potential adverse impacts of north campus development on the Cave Gulch watershed and Monterey Bay National Marine Sanctuary; review of rainfall data; and potential increased pumping of UCSC wells and impacts on offsite wells and springs.
  - Services: Potential adverse impacts on police, fire and emergency services.
  - Traffic: Potential adverse impacts on traffic and on bicycle and pedestrian safety due to north campus development on adjacent roads such as Empire Grade.
  - Impacts on public open space lands, such as Pogonip, Henry Cowell State Park and Wilder Ranch State Park.
- ❑ Cumulative impacts on Cave Gulch, Bonny Doon and surrounding neighborhoods.
- ❑ Project Alternatives.
- ❑ Resolve contradiction between LRDP EIR and the RWQCB's comments on the EIR.
- ❑ Consult with appropriate government agencies.
- ❑ Project consistency with the recently adopted ordinances regarding UCSC and expansion of water and sewer service areas was questioned.
- ❑ The 2005 LRDP EIR is inadequate to address impacts of campus development, including off-campus impacts, biological impacts, hydrological impacts, and traffic, and concerns were expressed regarding the use of the LRDP EIR to summarize campus growth and development impacts.
- ❑ The proposed Sphere of Influence boundaries include more land than just areas designated for development.
- ❑ Financial impact on City residents.

## 2.3 SUMMARY OF ALTERNATIVES

CEQA Guidelines require that an EIR describe and evaluate alternatives to the project that could eliminate significant adverse project impacts or reduce them to a less-than-significant level. The following alternatives are evaluated in this EIR in the Chapter 5 - CEQA Considerations.

- ❑ Alternative 1 – No Project Alternative
- ❑ Alternative 2 – Modified Sphere of Influence Amendment Area

As described in the “Alternatives” subsection of the CEQA CONSIDERATIONS (Chapter 6.0) section of this EIR, the primary objective of the proposed project is to implement City of Santa Cruz legal obligations to provide water and sewer service to the North Campus of UCSC set forth in the Comprehensive Settlement Agreement. There are no known, potentially feasible alternatives to the City provision of these services to the project area, as the City is the sole provider of urban services to the existing developed UCSC campus and surrounding areas within city limits. Any alternatives that would alter or conflict with the provisions of the Comprehensive Settlement Agreement were not considered potentially feasible as they would violate a legal judgment and would require the cooperation of, and renegotiation with, numerous agencies and individuals who signed the Agreement, which is not in the City’s control. Several alternatives were considered and eliminated from further review.

Of the alternatives considered, Alternative 2 is considered the environmentally superior alternative, as it would reduce or avoid some of the identified significant project and cumulative impacts.. However, it would not reduce or eliminate identified significant project and cumulative water impacts. No feasible alternative was identified that could eliminate these significant impacts, although implementation of some of the mitigation measures identified below could help reduce future water demand.

## 2.4 IMPACT & MITIGATION MEASURE SUMMARY

All impacts identified in the subsequent environmental analysis are summarized in this section. This summary groups impacts of similar ranking together, beginning with significant unavoidable impacts, followed by significant impacts that can be mitigated, followed by impacts not found to be significant.

### **Significant Unavoidable Impacts**

The following impacts have been identified as being significant, and although mitigation measures help reduce the level of significance, the impacts cannot be reduced to a less-than-significant level.

- **Impact 1-1:** The proposed project would result in future provision of water service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There are adequate supplies to serve the project in normal years, but there are inadequate water supplies to serve the project under existing and future multiple dry year (drought) conditions.

### **Mitigation Measures**

Construction of a desalination plant, as planned by the City of Santa Cruz, will provide a sufficient supplemental water supply during drought conditions for both existing and future demand. However, the project impact on water supply during dry years is considered significant and unavoidable because of the inherent uncertainty about the City's ability to obtain all necessary approvals for, and completion of, the planned desalination plant to provide adequate water supplies during a drought.

Implementation of the nine mitigation measures adopted by The Regents of the University of California in approving the 2005 LRDP (see list in the WATER SUPPLY [CHAPTER 4.1] section of this EIR), which are binding as part of the University's adopted Mitigation Monitoring and Reporting Program (MMRP), would reduce the severity of the impact. The implementation of the Comprehensive Settlement Agreement includes several provisions regarding UCSC water demand as set forth in Mitigation Measure 1-1 and 1-2, which are also binding and enforceable through judicial enforcement of the final judgment.

The implementation of the Comprehensive Settlement Agreement includes several provisions regarding UCSC water demand and development of a supplemental water source for dry-year conditions. UCSC's Settlement Agreement commitments are reflected in mitigation measures 1-1 and 1-2 below, and are judicially enforceable under the Settlement Agreement. UCSC agrees to reduce and restrict its water use during any periods of restriction or moratorium imposed upon the City's water service area. UCSC also agrees to implement identified high priority water conservation measures, which have been factored into the project water demand analysis. The Settlement Agreement also acknowledges the City's intention to implement its Integrated Water Plan, including additional water conservation, use curtailment in droughts, and construction of a desalination plant, and UCSC will contribute funds equivalent to the City's "System Development Charges" that will serve as its "fair share" contribution to finance improvements.

Despite the City's intent to pursue an additional water supply for dry-year conditions, UCSC adopted mitigation measures, and UCSC's agreement to participate in city-wide curtailments and restrictions, 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. Furthermore, the exact timing of implementation of UCSC conservation efforts (beyond the “high priority” measures specified in the Comprehensive Settlement Agreement for implementation within 5 years) and potential supplemental campus water sources, as well as the potential level of demand reduction, is not known. Therefore, a conservative conclusion is that the project impact on water supply during dry year conditions is significant and unavoidable, even with implementation of the identified mitigation measures.

1-1 Water Restrictions and/or Moratoriums:

- ❑ Except with regard to any UCSC housing projects under development, if the City establishes a service area-wide moratorium on new connections because of a water shortage emergency condition under State Water law, UCSC will not increase its water demands on the City water system from any University-owned properties, while the moratorium remains in effect.
- ❑ UCSC will comply with any service area-wide water restrictions or mandatory use curtailment imposed by the City in response to a declaration of water shortage emergency condition under State Water law.

*Responsibility for Implementation: University of California Santa Cruz.*

1-2 Contribution of Funds Equivalent to the City’s “System Development Charges”: For every increment of 85,000/gallons of water used over 206 MGY (2005 LRDP baseline year for the UCSC main campus, each incremental payment resets the baseline), UCSC will contribute funds to the City as follow.

- ❑ UCSC will pay a fee equivalent to the City’s System Development Charges (“SDC”) for Equivalent Residential Units (“ERU”) in its service area at a rate in effect on the date of payment;
- ❑ Payments represent UCSC’s proportionate share of use of City developed new water source capacity.

*Responsibility for Implementation: University of California Santa Cruz.*

- ❑ **Cumulative Water Supply Impacts:** The proposed project’s incremental contribution to this significant cumulative impact is considered to be “cumulatively considerable” and thus significant in and of itself. The incremental project water demand would be minimized with implementation of University-adopted mitigation measures (Mitigation Measures 1-1 through 1-9 in this EIR) and provisions of the Comprehensive Settlement Agreement (Mitigation Measure 1-10) in which UCSC has agreed to comply with water restrictions imposed within the



City's water service area and/or not increase water demand should a water connection moratorium be imposed within the service area. In addition, UCSC will contribute funds equivalent to the City's "System Development Charges" that will serve as its "fair share" contribution to finance desalination plant improvements. Mitigation measures to reduce project demand would help reduce the project's incremental contribution to cumulative impacts, but it is conservatively concluded that the project's incremental contribution remains cumulatively considerable. This is due to the size of the project demand, the fact that UCSC is the largest water customer in the service area, and the uncertainty related to timing of implementation and development of additional on-campus conservation measures and potential on-campus water supplies to offset demand.

- **Cumulative Global Climate Change:** Estimated GHG emissions from potential future North Campus development would increase campus emissions by approximately 27% over year 2007 levels of 79,726 MT CO<sub>2</sub>e estimated in UCSC's draft Climate Action Plan (December 2008). This represents a substantial increase over existing levels and is considered by the City to be a cumulatively considerable contribution to cumulative GHG emissions and global climate change.

The University's mitigation measures and sustainability policy and practices serve to implement many of the State Scoping Plan recommendations: energy efficiency, on-campus housing, transportation measures, green building designs, recycling reduction, and implementation of water conservation measures. They represent the most effective and practicable measures to reduce indirect GHG emissions. The measures are also consistent with OPR's guidelines for mitigation of GHG emissions, which include: encouraging jobs/housing proximity; encouraging walking, bicycling, and public transit use; and applying management strategies to improve operational efficiency of transportation systems (June 2008). While these measures may be effective in reducing the impact to a less-than-significant level, there is currently no data indicating in quantifiable terms the amount of reductions these measures could achieve, and thus, whether the 27% increase could be reduced to an insubstantial level. Therefore, it is conservatively concluded that the project's incremental effect on GHG emissions and global climate change would be cumulatively considerable.

### **Significant Impacts**

The following impacts have been identified as being significant which can be mitigated to a less-than-significant level with implementation of recommended mitigation measures.

None have been identified.

### **Less-than-Significant Impacts**

The following impacts were found to be less-than-significant. Mitigation measures are not required.

- **Impact 2-1:** The proposed project would result in provision of wastewater service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There is adequate treatment capacity to serve this area, and no expansion of the treatment plant or sewer lines will be required.
- **Impact 2-2:** The proposed project would result in provision of wastewater service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. New development would contribute flows to existing City-maintained sewer line segments that have adequate capacity to serve future development.

### **No Impacts**

The State CEQA Guidelines section 15128 require that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.

The EIR identified the following as not being an impact:

- **Impact 3-1:** The proposed project would not conflict with policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and thus would not result in impacts related to consistency with local plans and policies.

The proposed sphere of influence amendment and future provision of water and sewer services to the North Campus of UCSC would not directly result in new development or extension of water or sewer lines. Future development that would be served as a result of the project would be provided services via extension of existing campus water and sewer connections that would be extended by the University to serve new development at the time specific sites for such development are proposed. Future specific plans for the on-campus extension of water and sewer lines will undergo their own site-specific environmental review at the time they are proposed. Thus, the project would not result in direct physical impacts related to construction of new water or sewer lines or new structural development. Therefore, there would be no direct impacts related to aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils; hazards and hazardous materials, hydrology, noise, public services or traffic.

### Indirect Secondary Impacts of Growth

The proposed project would result in indirect growth impacts at the UCSC campus with future provision of water and sewer services, which would result in secondary impacts related to future development in the North Campus of UCSC. These impacts were evaluated in the UCSC 2005 LRDP Final EIR (University of California Santa Cruz, September 2006, 2005 LRDP FEIR Volumes I through VI) and updated in this EIR where relevant. Seven potentially significant impacts were identified that would remain significant, and thus, unavoidable related to future campus growth and development. Based on the review provided in this EIR and reflecting new data, where available, the following indirect, secondary impacts of campus growth and development in the North Campus area would be significant and unavoidable:

- ❑ **Air Quality:** Violation of air quality standards (AIR-2) related only to exceedences of the NO<sub>x</sub>.
- ❑ **Cultural Resources:** Changes to significance of historic structures or archaeological resources where resource cannot be preserved (CULT-3), although the potential for such resources to exist in the undeveloped North Campus area is low.
- ❑ **Hydrology and Water Quality:** Increased erosion and water quality degradation (HYD-3).
- ❑ **Noise:** Construction noise (NOIS-1) near sensitive receptors.
- ❑ **Transportation & Traffic:** Traffic - unacceptable levels of service at off-campus intersections (TRA-2); unacceptable freeway operations (TRA-6).
- ❑ **Utilities:** Expansion of cooling and heating water facilities (UTIL-7).

The 2005 LRDP Final EIR determined that all other identified significant impacts would be reduced to less-than-significant levels with proposed mitigation measures. These include the following impacts that are relevant to North Campus development:

- ❑ **Aesthetics:** Potential degradation of visual quality of surrounding area (AES-5).
- ❑ **Transportation & Traffic:** Traffic generation and impacts to on-campus intersections (TRA-1); parking (TRA-3); conflicts with alternative effectiveness of alternative transportation modes (TRA-4).
- ❑ **Public Services & Utilities:** Increased use of off-campus recreational facilities with potential deterioration of facilities (REC-2).
- ❑ **Biological Resources:** Impacts to sensitive habitats (northern maritime chaparral [BIO-1], coastal prairie [BIO-2]), wetlands (BIO-3) and riparian habitat [BIO-4]); impacts to special status species (Santa Cruz manzanita [BIO-1], special status bats [BIO-13]); impacts to nesting species (San Francisco dusky-footed woodrat [BIO-14]); interference with wildlife movement (BIO-15).

- **Cultural Resources:** Adverse effects to unknown archaeological resources (CULT-1); disturbance to human remains (CULT-4); and disturbance to paleontological resources (CULT-5).
- **Geology, Seismicity & Soils:** Exposure to geologic hazards (GEO-1); development on expansive soils (GEO-2). Development in areas underlain by karst features with potential for settlement or collapse (GEO-4) also is identified as a significant impact, but there is a low potential in North Campus area due to different underlying geologic formations.

## 3.0 PROJECT DESCRIPTION

### IN THIS SECTION:

- Project Location
- Environmental Setting
- Project Overview
- Background
- Project Characteristics
- Area Plans & Zoning
- Intended Uses of EIR

### 3.1 PROJECT LOCATION

The project site is located adjacent to the City of Santa Cruz on the University of California Santa Cruz (UCSC) campus at the northwestern edge of the city (see Figure 1). The 2,000-acre UCSC campus is located 70 miles south of San Francisco in the County of Santa Cruz between the northwest edge of the City of Santa Cruz and the Santa Cruz Mountains. The campus is bounded by Pogonip City Park and Henry Cowell Redwoods State Park to the east, private land holdings to the north and west, and Wilder Ranch State Park to the west. The project property is owned by the University of California. Figure 2 shows UCSC campus and off-campus facilities in relation to surrounding uses.

The approximate 374-acre site (portions of Assessor Parcel Numbers 061-321-40 and 062-041-49) is located north of the existing developed portion of the UCSC campus (see Figure 3).<sup>1</sup> The project site is located within an area that is known as “North Campus.” The “Lower Campus” and “Central Campus” to the south are located within Santa Cruz city limits, while the “North Campus” and “Upper Campus” to the north are located within the unincorporated area of Santa Cruz County. Figure 4 identifies UCSC campus areas. The North Campus area is contiguous with the City’s jurisdictional limits.

### 3.2 ENVIRONMENTAL SETTING

The project site covers a 374-acre portion of the North Campus located east of Empire Grade (hereinafter referred to as the “project area”). The project area is bordered by the developed UCSC campus within city limits to the south, the City-owned Pogonip property to the east, the undeveloped UCSC “Upper Campus” to the north, the undeveloped portion of the North West to the west of Empire Grade, and existing residential development and open space

<sup>1</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

within an unincorporated area of Santa Cruz County to the west. A short segment of Empire Grade Road forms the area's southwestern boundary (see Figure 3).

The site is primarily undeveloped and contains mostly forested lands. Small portions of UCSC's Colleges 9/10 and Crown Merrill Apartment complex are located within the project area, while the remainder of the project area contains a network of UCSC-constructed fire break gravel roads, underground water lines, a water system pump station, fire hydrants, and abandoned water tanks.

Campus development and expansion is planned for the project area in the University's adopted *Long-Range Development Plan 2005-2020* (hereinafter referred to as the 2005 LRDP). The 2005 LRDP covers campus growth (including the offsite Delaware Avenue facility) through a projected horizon year of 2020. The LRDP is further discussed below and in the LAND USE (Chapter 4.3) section of this EIR.

### 3.3 PROJECT OVERVIEW

The project consists of a proposed amendment to the City of Santa Cruz Sphere of Influence (SOI) to include a 374-acre portion of the UCSC "North Campus" for the purpose of providing extraterritorial water and sewer services. Applications were submitted to the Santa Cruz Local Agency Formation Commission (LAFCO) by the City of Santa Cruz (for the SOI amendment) and by UCSC (for provision of extraterritorial services). The applications to LAFCO were made by the City and University in accordance with provisions of the "Comprehensive Settlement Agreement" regarding the University's 2005 Long Range Development Plan EIR.<sup>2</sup> A Sphere of Influence is the probable physical boundaries and service area of a local government that is developed by LAFCOs in each county pursuant to State law.

Implementation of the proposed project would adjust the City's probable physical boundaries and service area for water and sewer service to include the project area in which UCSC proposes development in its adopted 2005 LRDP and as set forth in the Comprehensive Settlement Agreement. The 2005 LRDP estimates an on-campus enrollment of 19,500 students by academic year 2020-2021. UCSC's 2005 LRDP designates the project area for a mix of college, housing, physical education, academic facilities, campus reserve and protected landscape/resource land uses, which are further described in the LAND USE (Chapter 4.3) section of this EIR. Maximum new development under the 2005 LRDP is estimated to be

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<sup>2</sup>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 and that resolved the lawsuits. The Settlement Agreement was entered as a final judgment of the Court, thereby superseding the previous court ruling. See Appendix C for further discussion.

3,175,000 gross square feet, which may occur within the project area under provisions of the Comprehensive Settlement Agreement.

## 3.4 BACKGROUND

### City Sphere of Influence and Service Areas

A Local Agency Formation Commission (LAFCO) was established in each county in 1963 in accordance with State law to promote the orderly development of local government agencies, efficient provision of services, guide development away from prime agricultural land and discourage urban sprawl. LAFCO must adopt a Sphere of Influence (SOI) for each governmental agency (including special districts). A Sphere of Influence is the probable physical boundaries and service area of a local government. In certain circumstances, State law allows LAFCO to authorize a city or district to provide a service outside the agency's boundaries. Santa Cruz LAFCO has adopted procedures and policies for its consideration of these types of applications. Further description of LAFCO and governing guidelines, standards and policies is presented in the LAND USE (Chapter 4.3) section of this EIR. The existing Sphere of Influence for the City of Santa Cruz is shown on Figure 5. The SOI for the City of Santa Cruz includes lands within City limits, an unincorporated area along 7<sup>th</sup> Avenue, and another unincorporated area in the Carbonera Creek vicinity.

The City of Santa Cruz Water Department provides water service to an approximate 30-square-mile area that includes lands within existing City limits, a portion of UCSC that is within City limits (and a small adjoining portion of UCSC outside City limits), adjoining unincorporated areas of Santa Cruz County (i.e., Live Oak), a small part of the City of Capitola and coastal agricultural lands outside City limits (City of Santa Cruz Water Department, February 2006). In November 2006, LAFCO passed a resolution to grant the City of Santa Cruz "Areawide Approval" to provide water service to areas outside city limits pursuant to local rules. (See the LAND USE (Chapter 4.3) section of this EIR for further discussion.) The service area includes properties that are currently provided water service or are within the City or County urban service areas (see Figure 6). It should also be noted that the City's water service area covers a larger geographical area than the City's adopted Sphere of Influence.

The City of Santa Cruz provides municipal wastewater treatment and collection services to properties located in the City of Santa Cruz. The wastewater treatment plant serves as a regional facility that also serves areas outside the city as shown on Figure 7. These areas include:

- The Santa Cruz Sanitation District (see Figure 8), which includes the unincorporated areas of Live Oak, Soquel and Aptos and the city of Capitola);



- County Service Areas 10 and 57 (Rolling Woods and Graham Hill) as shown on Figure 9.

Further description of LAFCO and governing policies is presented in the LAND USE (Chapter 4.3) section of this EIR.

### UCSC 2005 LRDP

On September 21, 2006, the University of California Regents adopted the *Long-Range Development Plan 2005-2020* (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 (see Figure 10). The 2005 LRDP is a physical development and land use plan framework to accommodate the academic, research and student/faculty services for the campus. The 2005 LRDP 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 (gsf) of development (including existing development) by academic year 2020-2021. This represents approximately 3,175,000 gsf of new development. According to UCSC's application to LAFCO, implementation of the 2005 LRDP will ensure the ability of the University of California to comply with the Master Plan for Higher Education.

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 and housing, and an enforceable mechanism for traffic mitigation were required. In August 2008 a "Comprehensive Settlement Agreement" was executed by all the parties<sup>3</sup> that resolved the lawsuits. The Settlement Agreement was substituted as the final judgment of the Court, thereby superseding the previous court ruling. A summary of the Agreement is provided below.

### Comprehensive Settlement Agreement

Important provisions of the Settlement Agreement are summarized below. The full Comprehensive Settlement Agreement is included in Appendix C of this EIR.

- **Enrollment:** The 2005 LRDP projected a full-time equivalent (FTE) on campus 3-quarter average (fall-winter-spring) combined graduate and undergraduate enrollment of 19,500 in academic year 2020-2021. The Settlement Agreement revised

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<sup>3</sup> The parties include the City of Santa Cruz, the County of Santa Cruz, The Regents of the University of California, the Coalition for Limiting University Expansion (CLUE), the Rural Bonny Doon Association, Don Stevens, Peter L. Scott, Hal Levin, Jeffrey M. Arnett, Harry D. Huskey, Kaye Beth, Eric M. Grodberg, Sigrid McLaughlin, Russel B. Weisz, Heline B. Dowling, and John C. Aird.



the 2005 LRDP enrollment projections by limited undergraduate enrollment to 17,500, and total on-campus combined graduate and undergraduate to 19,480 in academic year 2020-2021 (section 1.1). Enrollment will be adjusted downward by UCSC if its settlement housing commitment (see below) is not met or water demand increases during a City service area-wide moratorium (section 1.3<sup>4</sup>).

- **Housing:** UCSC will provide 7,125 beds for student enrollment up to 15,000 and will provide additional housing to accommodate 67 percent of new-student enrollment above 15,000. This results in provision of a total of 10,125 available beds for an enrollment of 19,500. The 2005 LRDP originally called for UCSC to provide housing for 50 percent of undergraduates and 25 percent of graduate students during the life of LRDP for a total of 9,190 beds. The Settlement Agreement increases student housing by 935 beds that will be provided by new construction, remodeling and off-campus housing, the latter of which is limited to no more than 225 beds (sections 2.0 and 2.4). UCSC will also contribute specified fees to the City for each UCSC-owned or leased, off-campus student bed that results in a tax revenue loss to the City (which will be used by the City to support services for UCSC's off-campus population Section 2.4b). UCSC's increased housing commitment will revert to the 2005 LRDP commitment under conditions specified in the Settlement Agreement (sections 2.1c, 2.8e).
  
- **Water and Sewer Services:** In order to support UCSC in achieving its on-campus housing commitment, the City agreed to continue to provide water service to the campus through the existing connections (section 2.7a). The Settlement Agreement requires the City and UCSC to concurrently apply to the Santa Cruz LAFCO for a Sphere of Influence amendment (City application) and for extraterritorial water and sewer services (University application) for the area identified as the North Campus to allow for the development of 3,175,000 gross square feet of additional building space as described in the 2005 LRDP (section 2.8). The Settlement Agreement further provides that the City and County will negotiate an agreement for the SOI amendment to include the area below (south of) the line identified on the map in the Agreement (see Figure 10). The Agreement provides that UCSC's housing commitment under the Agreement will be excused if the LAFCO decision is legally challenged, and the final judicial determination upholds a LAFCO denial or reverses a LAFCO approval of the University's application (section 2.8e).

UCSC will pay a fee for increased water use (equivalent to the City's "system development charges") to cover its proportional share of use of City-developed new water source capacity and the City's construction of public facilities to serve UCSC's non-drought water demand on the main campus (section 3.1). Additionally, UCSC will comply with any service area-wide water restrictions and mandatory use

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<sup>4</sup> Section references are to the Comprehensive Settlement Agreement (August 2008).

curtailment imposed by the City in response to a declaration of water shortage emergency and/or if the City establishes a service area-wide moratorium on new connections because of a water shortage emergency (section 3.2).

- **Traffic:** UCSC will limit traffic increases to the main campus to 3,900 average daily trips (ADT) (for a total of 28,700) (section 4.1) with a monitoring program to insure compliance. If the traffic is exceeded, UCSC will reduce ADT by one or more of the following: adjusting enrollment, adjusting on-campus workforce or through implementation of ADT-reducing measures (section 1.4). This traffic increase will be increased by 1,300 ADT in the event UCSC is prohibited from developing the North Campus area or the City fails to amend its Sphere of Influence (section 4.1a). Furthermore, the parties agreed that UCSC's ability to meet applicable traffic commitments requires the City, County and Santa Cruz Metropolitan Transit District to continue existing services and provide transportation enhancements (section 4.1), but the City and UCSC will continue to work cooperatively on measures to reduce peak hour trips (section 4.6).

UCSC will pre-pay its proportional share of roadway infrastructure improvements associated with additional ADT generated by the 2005 LRDP (section 4.2). The ADT will be based on the City's Traffic Impact Fee program and will be equal to the fee paid by private developers. These payments fulfill UCSC's "fair share" commitment to 2005 LRDP mitigation measures (TRA-2A and portion of TRA-5A related to off-campus traffic) (section 4.3). UCSC will also pay for existing ADT related to its 2300 Delaware Avenue property, and for new ADT at the Marine Sciences campus as development is approved at the rate then in effect. Additionally, UCSC will provide other financial contributions to specified parking and road/intersection projects (sections 4.8 through 4.12).

- **2005 LRDP & LRDP EIR:** In recognition of the purpose and intent of Measures I and J<sup>5</sup> adopted by the City in November 2006, UCSC agrees that the next major amendment to the 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, remove classrooms) (section 5.1). Additionally, UCSC will continue to fund all warranted "University Assistance Measures" as specified in the Agreement (section 6.1).

For future projects under the 2005 LRDP, UCSC will not "tier" from or otherwise rely on the 2005 LRDP EIR water or housing analyses as invalidated by the Santa Cruz Superior Court (section 6.2). (Because the housing-related concerns raised in the LRDP litigation involved only *off-campus* housing, the City understands this

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<sup>5</sup> See the LAND USE (Chapter 4.3) section of this EIR for further discussion of these measures and subsequent City-adopted ordinances.

portion of the settlement only prohibits reliance on the LRDP EIR housing analysis as it relates to off-site housing.) The Settlement Agreement also acknowledges that the Santa Cruz Superior Court decision did not invalidate the LRDP EIR's traffic analysis and that the Court's decision regarding the adequacy of traffic mitigation is resolved by the Settlement Agreement (section 6.2).

### **3.5 PROJECT CHARACTERISTICS**

#### **Project Objectives**

The objective of the project is to implement City of Santa Cruz obligations set forth in the Comprehensive Settlement Agreement with regard to provision of water and sewer services to the UCSC North Campus area, and specifically to amend the City's Sphere of Influence boundaries to include this area to provide such services. The Settlement Agreement was entered as a final judgment of the Santa Cruz Superior Court, thereby superseding the previous court ruling regarding legal challenges to the University's 2005 LRDP EIR. Pursuant to this stipulated judgment, the City agreed to continue to provide water service to the campus through its existing water connections to assist UCSC with achieving its on-campus housing commitment set forth in the Settlement Agreement. Furthermore, the City agreed to submit an application to LAFCO to amend its Sphere of Influence to include the North Campus area of the UCSC Campus concurrent with UCSC submitting its own application request to LAFCO for provision of extraterritorial water and sewer service to the North Campus for development of up to 3,175,000 gross square feet of building space in this area as set forth in the 2005 LRDP.

#### **Project Description**

The proposed project consists of an amendment to the City of Santa Cruz Sphere of Influence (SOI) to include a 374-acre portion of the UCSC campus known as "North Campus" as shown on Figure 1 for the purpose of providing extraterritorial water and sewer services. The City of Santa Cruz submitted an application to LAFCO for the SOI amendment concurrent with the application submitted by UCSC to the Santa Cruz LAFCO for provision of extraterritorial water and sewer service to the project area. Both applications were submitted to LAFCO on October 28, 2008.

The City of Santa Cruz Water Department has provided a letter to LAFCO stating the City's willingness to provide sewer and water services on an extraterritorial basis to the project area proposed for inclusion within the City's SOI, and according to the terms of the Comprehensive Settlement Agreement, the City has agreed to provide water and sewer service to the area (City of Santa Cruz Water Department, October 22, 2008).

### **Need for Services**

The project area has an existing City Water Department point of connection, which is currently used for fire protection and provides water service to portions the College 9/10 and Crown-Merrill Apartments. Existing sewer service within the project area to College 9/10 and Crown-Merrill Apartments also is connected to the City of Santa Cruz wastewater system.

As previously indicated, the project is proposed to fulfill part of the City's commitments outlined in the Comprehensive Settlement Agreement and to assist UCSC in meeting its on-campus housing commitment as outlined in the 2005 LRDP and the Comprehensive Settlement Agreement. The project would enable UCSC to move forward with plans to develop the North Campus as set forth in its adopted 2005 LRDP and as set forth in the Comprehensive Settlement Agreement. UCSC's 2005 LRDP designates the proposed SOI project area for a mix of college, housing, physical education, academic facilities, campus reserve and protected landscape/resource land uses as shown on Figure 11 and further described in the LAND USE (Chapter 4.3) section of this EIR. Maximum new development square footage under the 2005 LRDP is estimated to be 3,175,000 square feet, which may occur within the project area. The 2005 LRDP does not specify how much development will be in the North Campus. However, the Settlement Agreement (section 2.8) states that "UCSC will apply for extraterritorial water and sewer services (for development of 3,175,000 gross square feet of additional building space under the 2005 LRDP for the service area below the line identified on the map attached...as Exhibit A)". The mapped area (see Figure 10) includes the project area as well as the existing developed campus to the south. Development of the land uses called for in the 2005 LRDP, which include the project area, will require City water and sewer service to the project area.

The net increase in student enrollment, employees and on-campus housing as a result of campus development that could occur within the project area is summarized on Table 1-1 based on existing conditions and provisions in the Comprehensive Settlement Agreement. In accordance with these provisions, on-campus student housing will increase by 935 beds over the amount identified in the 2005 LRDP Final EIR. Campus growth and secondary effects of UCSC-campus growth and development are addressed in the GROWTH INDUCEMENT (Chapter 5.0) section of this EIR.

The University's application to LAFCO states that while the University does not intend to immediately commence construction of specific development for the North Campus area, the 2005 LRDP has been approved by The Regents of the University of California as an appropriate land use plan to accommodate the academic, research and student/faculty services for a projected campus enrollment of 19,500 full-time students by the target year 2020-2021. Implementation of the 2005 LRDP contemplates that incremental development of the project area will be needed to support the projected enrollment growth and will occur throughout the 2005 LRDP planning horizon based on space demand.

**TABLE 1-1: Summary of Forecast Growth in the Project Area**

	<b>2007-2008 Total</b>	<b>2020 Total per 2005 LRDP FEIR</b>	<b>Net Increase</b>
On-Campus Student Enrollment	15,000	19,500	4,500
Campus Employees [1]	3,436	5,074	1,027
On-campus Student Housing	7,385	10,125	2,740
On-campus Employee Housing	238	443	205
[1] Based on “full-time equivalency” (FTE) per UCSC data (University of California Santa Cruz, July 2009, “East Campus Infill Housing Project Final EIR”). Since preparation of the 2005 LRDP FEIR, UCSC now counts employees according to FTE instead of headcount as estimated in the LRDP FEIR as it believes it is more accurate than the “headcount” approach that includes people who only teach one class per year or other employees with limited presence on campus. This results in 4,463 campus employees in the year 2020, (University of California, July 2009), which is approximately 611 fewer employees than estimated in the LRDP FEIR (5,074). Under the headcount method, total employees in the year 2020 was estimated at 5,074 in the 2005 LRDP FEIR with 4,093 people employed in the 2007/08 academic year (per UCSC Personnel Profile as of October 2007), resulting in a net increase of 981 new employees.			

At this time, there are no University-proposed site-specific development plans for the North Campus area or site-specific plans to extend infrastructure into this area. The 2005 LRDP includes conceptual plans to extend water and sewer lines to the project area primarily within a new planned roadway in the North Campus area. A schematic for utility line extension is included in the UCSC’s application to LAFCO for provision of extraterritorial services and is shown on Figure 13. There are no current proposals or plans to annex the area to the City.

The University’s application to LAFCO states that while the University does not intend to immediately commence construction of specific development for the North Campus area, the 2005 LRDP has been approved by The Regents of the University of California as an appropriate land use plan to accommodate the academic, research and student/faculty services for a projected campus enrollment of 19,500 full-time students by the target year 2020-2021. Implementation of the 2005 LRDP contemplates that incremental development of the project area will be needed to support the projected enrollment growth and will occur throughout the 2005 LRDP planning horizon based on space demand. At this time, there are no University-proposed site-specific development plans for the North Campus area or site-specific plans to extend infrastructure into this area. The 2005 LRDP includes conceptual plans to extend water and utility lines to the project area primarily within a new planned roadway in the North Campus area. There are no current proposals or plans to annex the area to the City.

The area proposed for inclusion in the City’s Sphere of Influence is in the exclusive control of the University of California, and all development and infrastructure facilities necessary to

accommodate future development will be approved, designed and constructed by the University. As a state agency, University development is not subject to local permits.

### 3.6 AREA PLANS AND ZONING

The project site is located within the unincorporated area of Santa Cruz County. The area is designated “Public Facilities” in the County General Plan and is zoned “Public Facilities.” The project area is not located within the County’s “Urban Service Line.” The City of Santa Cruz includes the project site in its 2005 General Plan/Local Coastal Plan, and it is designated “UCSC Development.” As previously indicated, UCSC’s 2005 LRDP designates the proposed SOI project area for a mix of college, housing, physical education and protected landscape/resource land uses as shown on Figure 11.

The State CEQA Guidelines require that a discussion be provided regarding any inconsistencies between a proposed project and applicable general and regional plans. Discussion of project consistency with the City and County General Plans is provided in the LAND USE (Chapter 4.3) section of this EIR.

Examples of other regional plans include air quality plans, water quality control plans, regional transportation plans, regional housing allocation plans, habitat conservation plans and regional land use plans. The proposed SOI amendment and provision of water and sewer services would not result in inconsistencies with other adopted regional plans. The project would not result in direct population growth or development. The future development of the project area that would be accommodated by the proposed project was evaluated in the 2005 LRDP EIR in connection with the University’s approval of the 2005 LRDP, and is addressed in the GROWTH INDUCEMENT (Chapter 5.0) section of this EIR. Applicable plans include air quality plans, housing plans, and habitat conservation plans. There are no other regional plans applicable to indirect development resulting from the proposed project. Regarding these plans, AMBAG determined that the 2005 LRDP is consistent with the Monterey Bay Unified Air Pollution Control District’s “Air Quality Management Plan” (Letter to Sally Morgan, UCSC, dated April 12, 2009). The provision of on-campus housing has been incorporated into AMBAG population and housing projections (Deshazo, AMBAG, personal communication, August 2009) that comprise regional housing allocations. There are no Habitat Conservation Plans for the North Campus area of UCSC.

### 3.7 INTENDED USES OF EIR

As indicated in the Chapter 1 – Introduction, the EIR is an informational document for the public and agency decision makers. CEQA requires that decision makers review and consider the EIR in their consideration of this project. The City of Santa Cruz is responsible for

providing water and sewer services to the requested area. The Santa Cruz LAFCO is responsible for approving the City's Sphere of Influence Amendment request and the University's request for extraterritorial services. UCSC also will consider the EIR as part of its application request to LAFCO. There are no other known related environmental review and consultation requirements for the project. Future development in the North Campus area of UCSC would be subject to UC approval, including project-specific environmental review.

# ENVIRONMENTAL SETTING IMPACTS & MITIGATION MEASURES

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4.1 Water Supply

4.2 Wastewater Service

4.3 Land Use





### ENVIRONMENTAL SETTING

**IN THIS SECTION:**

- Regulatory Setting
- City Water Service Area
- City Water Service System
- Water Demand in City Water Service Area
- Water Supply Limitations
- Water Supply Planning & Strategies
- UCSC Water Service & Demand

### REGULATORY SETTING

#### City Plans and Ordinances

Pursuant to State Water Code requirements, water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, must prepare and adopt an urban water management plan and update it every five years. The Act requires water agencies to evaluate and describe their water resource supplies and projected needs over a twenty year planning horizon, and to address a number of related subjects including water conservation, water service reliability, water recycling, opportunities for water transfers, and contingency plans for drought events (City of Santa Cruz Water Department, February 2006). The City adopted its *2005 Urban Water Management Plan* (UWMP) in February 2006 as further discussed below in the “City Water Supply Management” subsection.

The City of Santa Cruz has enacted several ordinances regarding water conservation. Chapter 16.02 of the Municipal Code sets forth water conservation provisions to prevent the waste or unreasonable use or method of use of water. Chapter 16.03 requires that plumbing fixtures be retrofitted with “low consumption plumbing fixtures”<sup>1</sup> in all residential, commercial and industrial buildings served by the City of Santa Cruz Water Department that use water in showers, toilets and urinals whenever a property is sold. Chapter 16.16 sets forth requirements for water-efficient landscaping and also is intended to comply with the California Government Code section 65591, et seq., the Water Conservation in Landscaping

<sup>1</sup> Section 16.03.030 defines “low consumption plumbing fixtures” as any showerhead rated to use a maximum of 2.5 gallons of water per minute, any toilet rated to use a maximum of 1.6 gallons per flush, and any urinal and associated flush valve rated to use a maximum of 1.0 gallons per flush.

Act. The regulations are applicable to applicants for new, increased or modified water service within the city water service area.

### **Water Supply Assessments**

In 2001, Senate Bill (SB) 610 amended California law regarding review of water availability for large projects (Section 10910 et seq. of the Water Code, Section 21151.9 of the Public Resources Code [CEQA] and Section 15155 of the State CEQA Guidelines). Pursuant to SB 610, preparation of “water supply assessments” (WSA) is required for projects subject to CEQA that meet specified criteria regarding project size (e.g., for projects of 500 or more residential units, 500,000 square feet or more of retail commercial space, 250,000 square feet or more of office commercial space, 500 or more hotel rooms, specified industrial uses or a project that would result in a water demand equal to or greater than the amount needed to serve a 500-unit residential project). These assessments, prepared by “public water systems” responsible for service, address whether there are adequate existing or projected water supplies available to serve proposed projects over a 20-year period, in addition to existing demand and other anticipated development in the service area. Where a WSA concludes that insufficient supplies are available, the WSA must lay out steps that would be required to obtain the necessary supply. The content requirements for the assessment include, but are not limited to, identification of the existing and future water suppliers and quantification of water demand and supply by source in five-year increments over a 20-year projection for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but does require a lead agency to address a water supply shortfall in its project approval findings.

### **Local Agency Formation Commission Requirements**

Pursuant to State law (Government Code section 56430), the Local Agency Formation Commission (LAFCO) is required to review all municipal services in the county once every five years. The Santa Cruz LAFCO completed and accepted its report in August 2005. LAFCO’s findings and conclusions are presented in the LAND USE (Chapter 4.3) section of this EIR.

## **CITY WATER SERVICE AREA**

The City of Santa Cruz Water Department provides water service to an approximately 30-square-mile area that includes lands within existing city limits, the portion of UCSC that is within city limits, adjoining unincorporated areas of Santa Cruz County (including Live Oak and residential subdivisions along Graham Hill road), a small part of the City of Capitola and coastal agricultural lands outside city limits (City of Santa Cruz Water Department, February 2006). In November 2006, LAFCO adopted a water service boundary map for the City’s

service area that includes properties that are currently provided water service or are within the city or county urban service areas (see Figure 6<sup>2</sup>). The City currently serves nearly 25,000 connections of which 88% are residential (Santa Cruz LAFCO, June 2005). In addition to domestic demand, the City supplies approximately 300 acre-feet of water per year for agricultural uses along the North Coast outside of city limits.

The City of Santa Cruz Water Department is a municipal utility that is owned and operated by the City of Santa Cruz. The governing body for the Water Department is the City Council, and the department is led by a Director who is appointed by the City Manager. A seven-member Water Commission advises the Council on policy matter involving operations and management of the water system. The Department operates financially as an enterprise in which all costs of running the system are paid by water rates, service charges, and related revenues. The Water Fund receives no tax or general fund revenues (City of Santa Cruz Water Department, February 2006).

The City currently imposes a “System Development Charge” (SDC) on all new connections, based on meter size; the purpose of an SDC is to charge new customers an equitable share of the cost of the infrastructure necessary to provide new water service. The fee is assessed at the time of connection to the water system and provides for payment of the capital costs incurred to provide service.

## CITY WATER SERVICE SYSTEM

The City has four primary water sources that are described below. The City’s water supply has limited capacity to serve additional users under normal conditions and has insufficient supplies to meet existing demand under drought conditions. Major facilities include a 24-million-gallon per day (mgd) water treatment plant, several pump stations, 16 distribution reservoirs, and about 300 miles of water pipelines throughout the service area (City of Santa Cruz Water Department, February 2006).

### Water Supply Sources

The City of Santa Cruz water system is comprised of four main sources of water supply:

- North Coast Sources;
- San Lorenzo River Diversions;
- Loch Lomond Reservoir; and
- Live Oak Wells.

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<sup>2</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

## NORTH COAST SOURCES

The North Coast sources consist of surface diversions from three coastal streams and a natural spring located approximately 6-8 miles northwest of downtown Santa Cruz. These sources are Liddell Spring, Laguna Creek, Reggiardo Creek and Majors Creek. The North Coast system has been in operation since the 1880s. The City has pre-1914 appropriative rights for surface diversion from Liddell Spring, Laguna Creek, Reggiardo Creek, and Majors Creek. As pre-1914 sources, the North Coast diversions are least affected by water rights limitations. Diversion from these sources is limited primarily by flows (City of Santa Cruz Water Department, February 2006).

## SAN LORENZO RIVER DIVERSIONS

The San Lorenzo River is the City's largest water supply source, and the City diverts water from the San Lorenzo River at two locations: the Tait Street Diversion, near the City limits just north of Highway 1, and the Felton Diversion located about 6 miles upstream from the Tait Street Diversion. The City is the largest user of water from the San Lorenzo River basin; however, three other water districts, several private water companies, and numerous individual property owners share the San Lorenzo River watershed as their primary source for drinking water supply (EKI, September 2009).

The main surface water diversion is located at Tait Street near the city limits just north of Highway 1. The Tait Street diversion is supplemented by two shallow, auxiliary wells located on the east side of the river, which are hydraulically connected to the river and tied to the City's appropriative rights for surface diversion. The other San Lorenzo River diversion is the Felton Diversion Station, which is an inflatable dam and intake structure built in 1974, located about six miles upstream from the Tait Street Diversion. Water is pumped from this diversion through the Felton Booster Station to Loch Lomond Reservoir. The facility is used to augment storage in the reservoir during dry years when natural inflow from Newell Creek is low (City of Santa Cruz Water Department, February 2006). Pursuant to current permits, this water must be diverted to the Loch Lomond Reservoir and cannot be sent directly to the Graham Hill water treatment plant. Thus, the City's ability to utilize water from the Felton Diversion is dependent on the volume of available storage in Loch Lomond Reservoir, and as a result, the Felton Diversion is operated only intermittently, as needed to augment storage in Loch Lomond Reservoir when natural inflow from Newell Creek to the reservoir is low (EKI, August 2009).

The City has rights to divert up to 12.2 cubic-feet-per-second (cfs) year-round from the San Lorenzo River at the Tait Street Diversion and adjacent wells (State Water Resources Control Board [SWRCB] Permit 2738 and License 7200). During periods of high flow, water from the Felton Diversion Dam on the San Lorenzo River is pumped up to the Loch Lomond Reservoir for storage. Under the City's current SWRCB permits (16123 and 16601), the City may divert up to 3,000 AFY (or 977 MGY) of water from the San Lorenzo River at the Felton Diversion

between September and May (City of Santa Cruz Water Department, February 2006). The City's SWRCB permits for the Felton Diversion also restrict diversions based on minimum instream flow requirements. In order to protect fish habitat in the San Lorenzo River, diversions at Felton may occur only when instream flow exceeds the prescribed flow. These minimum average daily flow requirements for instream flow are 10 cfs in September, 25 cfs in October, and 20 cfs from November to May (Ibid.). After fish flow requirements are met, the City has rights to divert 7.8 CFS during September, and 20 CFS from October to May, to an annual maximum of 2,998 acre-feet (977 million gallons) (Dudek & Associates, June 2005).

#### **LOCH LOMOND RESERVOIR**

Loch Lomond Reservoir (also referred to as Newell Creek Reservoir in the City's operating permit) is located near the town of Ben Lomond in the Santa Cruz Mountains. Constructed in 1960, the reservoir collects water from the Newell Creek watershed and has a maximum capacity of 2,810 million gallons. In addition to the City, the San Lorenzo Valley Water District is entitled to receive a portion of the water stored in Loch Lomond (City of Santa Cruz Water Department, February 2006). The City and the San Lorenzo Valley Water District both have rights to the water stored in the reservoir; the City's annual withdrawal limit is 1,042 million gallons.

#### **LIVE OAK WELLS**

Although groundwater constitutes only approximately 4% of the City's entire water supply, it has been a crucial component of the water system for meeting peak season demands and during periods of drought. The Live Oak Well system consists of three production wells (known as the "Beltz" wells located in the southeast portion of the City's water service area (City of Santa Cruz Water Department, February 2006). The average annual production is approximately 160 MGY, but the system was operated at its full 2 mgd capacity at times during the 1987-1992 drought during which time annual production reached 430 MGY (Ibid.). The City is actively pursuing replacement wells in the Live Oak area to restore full capacity of 2 mgd (Almond, City of Santa Cruz Water Department, personal communication, September 2009).

The water produced from the Live Oak Well system is derived from the Purisima Formation, which is the primary source of groundwater in the mid-Santa Cruz County region. Groundwater from the Purisima Formation is used by the City of Santa Cruz, the Soquel Creek Water District, Central Water District and numerous private wells. Total annual extraction from the Purisima aquifer by all pumpers is estimated at nearly 2,000 million gallons per year (MGD) of which the City produces approximately 167 MGD (8% of total) (City of Santa Cruz Water Department, February 2006). Groundwater level data collected over the past 15 years indicate that water levels across the Purisima Formation have been lowered by a combination of changes in recharge and the gradual increase in overall groundwater production from the aquifer. The City's *Urban Water Management Plan* indicates

that there is a potential for saltwater intrusion to jeopardize the safe production of groundwater from the Purisima aquifer, but also notes that at this time, under normal operations, there appears to be no imminent threat of seawater intrusion and the State Department of Water Resources has not identified the basin as overdrafted or projected to be overdrafted (Ibid.).

### **Water System Operations and Reliability**

In general, the City's water supply system is managed to take advantage of the better quality and least expensive water sources as a first priority and to retain the maximum amount of water possible in Loch Lomond Reservoir to safeguard against future droughts. In addition to considerations for cost, water quality, and storage, there are legal constraints on the diversion of surface waters contained in the City's water rights that govern the operation of the water system. Water supplies are generally dispatched to meet daily demands in the following order: North Coast, San Lorenzo River, Live Oak Wells, Loch Lomond reservoir (City of Santa Cruz Water Department, February 2006).

The North Coast sources are used to the greatest extent possible due to excellent water quality and the lowest production cost, and as previously indicated, these diversions are least affected by water rights limitations. Additional water needed to meet daily demands is pumped from the San Lorenzo River at Tait Street. During the summer and fall when the City's flowing sources are inadequate to meet peak season daily demands, supplemental water is brought in from the Live Oak Wells and Loch Lomond Reservoir (City of Santa Cruz Water Department, February 2006).

On average, about 79% of the City's annual water supply needs are met by surface diversions from the coastal streams (32%) and San Lorenzo River (47%), while approximately 17% is supplied by Loch Lomond Reservoir and 4% of the supply is derived from the Live Oak Well system (City of Santa Cruz, February 2006). With current facilities and normal water conditions, the North Coast streams, San Lorenzo River and Live Oak Wells are capable of producing an average of 3,270 MGY (approximately 10,000 acre-feet per year [AFY]) as summarized in Table 2-1. With Loch Lomond production, limited by the City's water rights to a maximum of 1,042<sup>3</sup> MGY (approximately 3,200 AFY), existing water supply availability totals 4,300 MGY (approximately 13,200 AFY) (City of Santa Cruz Water Department, February 2006).

The system is currently operating at about 93% of capacity (City of Santa Cruz Water Department, February 2006). Water production in 2005 totaled 3,580 MGY (approximately 11,000 AFY) with the majority (3,000 MGY / 9,200 AFY) gallons coming from the North Coast, San Lorenzo River, and Live Oak well sources, and 584 million gallons (approximately 1,800

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<sup>3</sup> Of this amount, 104 MGY (approximately 320 AFY), or 10%, is technically available to the San Lorenzo Valley Water District, but it has taken no action in recent years and has no current plan to exercise its entitlement.



acre-feet) drawn from Loch Lomond reservoir (City of Santa Cruz Water Department, June 2006). This was less than production in 2004 and the average production from 1999 through 2003. The Water Department indicates that this was due to unusually cool and foggy weather conditions during the summer and somewhat from increased water rates (Ibid.). Water production in 2007 totaled 3,900 MGY (approximately 11,970 AFY) (Goddard, City of Santa Cruz Water Department, personal communication, July 2009).

**TABLE 2-1: Existing City Water Supplies**

Source	Million Gallons Per Year	Acre-Feet Per Year
Groundwater	187	575
Surface Diversions:		
▪ North Coast Sources	1,077	3,305
▪ San Lorenzo River	2,008	6,165
▪ Loch Lomond Reservoir	1,042	3,200
<b>TOTAL</b>	<b>4,314</b>	<b>13,245</b>
<b>Source: City of Santa Cruz Water Department, February 2006</b>		

The City’s water supply system is able to meet 100% of the existing water demand in about 7 out of every 10 years and at least approximately 90% of existing demand in about 9 out of 10 years. A significant shortage occurs on average about 1 out of every 10 years (City of Santa Cruz Water Department, February 2006). The total water supply estimated to be available to the City in single dry years (i.e., 1994) is 3,800 MG (approximately 11,670 AF) or approximately 12% less than is available in normal years (Ibid.). According to the City’s UWMP, there would be a relatively small supply deficit in single dry years under current demand conditions. However, during an extreme two-year drought similar to the 1976-77 event, the estimated water supply available to the City in the second year of that event is 2,700 MG (approximately 8,300 AF), or about 37% less than is available during a normal year. Under this scenario, the City would experience a 46% peak season shortage in the second year (Ibid.). The peak season is between April and October since this is the period that would be most affected by a supply shortage due to peak water demand.

In average conditions, the UWMP indicates that there appears to be approximately 300 MGY of remaining water supply capacity (approximately 920 AF) with existing sources and operations (City of Santa Cruz Water Department, February 2006). However, based on an average water use of 3,900 MGY (approximately 11,970 AFY) in 2007 and historical annual averages, remaining water supply capacity is currently estimated at 400 MGY (approximately 1,230 AFY).

Under drought conditions, the City estimates a deficit of approximately 100 to 545 MG (approximately 307-1,675 AF) during a single dry year, and a deficit of approximately 1,200 to 1,645 MG (approximately 3,700-5,050 AF) during a multiple dry year condition (City of Santa



Cruz Water Department, February 2006). This multiple dry year shortfall is also expressed as the percent of supply available to meet demand during the peak season between April and October since this is the period most affected by a supply shortage. The water system was barely able to meet half of normal drought year demand during the peak season with 2005 demands, with the shortage projected to increase to as much as 56% in drought conditions in the year 2020 (Ibid.).

The City's adopted UWMP indicates that current water supplies will remain relatively unchanged with a total net production capacity of approximately 4,300 MGY (approximately 13,200 AFY) through the year 2030 assuming normal water conditions and no change to current operations or water rights. However, as further described below, existing water supplies may be reduced in the future as a result of other permit requirements and water rights issues, and the City is currently pursuing water conservation measures to reduce demand and construction of a desalination plant as a supplemental water source during drought conditions.

### **Facilities and Infrastructure**

Major facilities include two water treatment plants, several pump stations and 16 distribution reservoirs storing almost 50 million gallons of treated water. There are also about 300 miles of water pipelines throughout the service area (City of Santa Cruz Water Department, February 2006).

The City operates two water treatment facilities. All surface water is treated at the Graham Hill Water Treatment Plant, which currently has a capacity of approximately 20 million gallons per day (mgd). The 2-mgd Live Oak Water Treatment Plant treats groundwater to remove iron and manganese. Treated water from the Graham Hill plant flows to the Bay Street Reservoir and into the distribution system. Treated water from Live Oak is pumped directly into the distribution system (City of Santa Cruz, February 2006).

The City has 16 treated water storage reservoirs throughout the service area, with Bay Street Reservoir being the largest. The City has a total treated storage capacity of 45 MG (approximately 138 AF) or about 4.5 times average day demand (Santa Cruz LAFCO, June 2005). This level has been reduced with the City's recent removal of 35-million gallon (MG) Bay Street Reservoir due to age, deterioration, and safety issues. Through a two-phase construction project, that currently is in the design phase, the replacement reservoir will consist of two 6-million gallon tanks. The first tank is expected to be in operation sometime in the year 2011 with the second tank in operation approximately on year later (Almond, City of Santa Cruz Water Department, personal communication, September 2009).<sup>4</sup>

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<sup>4</sup> The original reservoir design was significantly oversized for emergency purposes. The capacity has been downsized in order to meet water quality requirements (e.g., how long treated water can be stored), but still meets demand and safety requirements.

The City's water system also includes: the 16-mile Coastal Transmission Main that pumps North Coast raw water to the Graham Hill treatment facility and the 9-mile Newell Creek Pipeline that carries water from Loch Lomond to the Graham Hill treatment plant. Additionally, the Felton Booster Pump Station is used to move water into and out of the Loch Lomond Reservoir. The Coast pump station, located next to the Tait Street Diversion, pumps raw water from the North Coast and San Lorenzo River sources to the Graham Hill Treatment Plant.

The City is in the process of implementing a long-term (10-20 year) rehabilitation and replacement program for its North Coast System pipelines and diversions. The 16-mile long North Coast System (NCS) includes five distinct pipeline reaches, and over half of the conveyance pipeline is more than 40 years old. The project includes replacement of pipelines in their current alignments or in new alignments designed to avoid sensitive habitats. Rehabilitation also includes modifications to the 100±-year old diversion structures, which are located above the anadromous reaches of the creeks (i.e., above the locations where fish return to spawn).

The first segment (High Street segment) was recently completed as part of the Bay Street Reservoir and System Transmission Improvement Project. A new 24-inch, approximately 2-mile long water transmission line was installed between the Bay Street Reservoir and Ocean Street in order to increase the daily replenishment rate at the Bay Street Reservoir by removing the hydraulic constraints that currently exist between the Graham Hill Water Treatment Plant and the Bay Street Reservoir. The second North Coast segment will complete the in-town North Coast Pipeline reach by connecting the newly installed High Street segment to the Coast Pump Station (City of Santa Cruz Water Department, October 2005). This segment is in the design phase and construction could start in fiscal year 2010 (Almond, City of Santa Cruz Water Department, personal communication, September 2009).

## **WATER DEMAND IN CITY WATER SERVICE AREA**

Water production has fluctuated over the past 15+ years; annual production has ranged from a high of approximately 4,400 MGY (approximately 13,500 AFY) in 2000 to a low of approximately 3,400 MGY (approximately 10,450 AFY) in 1990 (City of Santa Cruz Water Department, February 2006). Between 1999 and 2004, gross water production averaged about 4,200 MG (approximately 12,900 AFY), while net production has averaged 3,900 MGY (approximately 12,000 AFY) (Ibid.). Net water production, which is the amount of produced treated water that enters the distribution system, averages about 6% less than gross production. The difference between gross and net production is due to raw water sales, maintenance, and losses from leakage (Ibid.).

Water demand forecasts developed for the City in 1997 (Maddaus Water Management, March 1998) estimated that water demand would increase to approximately 4,900 MGY (approximately 15,000 AFY) by 2005 and up to approximately 5,300 MGY (approximately 16,300 AFY) in the year 2030 (City of Santa Cruz Water Department, February 2006). The estimated future demand was based on population and employment trend information and forecasts provided by AMBAG at the time the forecasts were developed, and demographic and land use information in the General Plans for the City of Santa Cruz, Santa Cruz County and Capitola from which water demand was analyzed for each major customer category. The total annual water demand projections (including metered demand and unmetered use) are outlined below. Unmetered uses include fire hydrants, main flushing and system losses related to leaking water lines.

- ❑ 2005: 4,867 MGY (approximately 14,940 AFY)
- ❑ 2010: 5,029 MGY (approximately 15,440 AFY)
- ❑ 2015: 5,094 MGY (approximately 15,640 AFY)
- ❑ 2020: 5,157 MGY (approximately 15,330 AFY)
- ❑ 2025: 5,239 MGY (approximately 16,100 AFY)
- ❑ 2030: 5,326 MGYR (approximately 16,350 AFY)

Actual total water use in recent years has been substantially lower than was predicted in the 1998 study (City of Santa Cruz Water Department, February 2006). All user groups were lower than had been projected, except for agriculture, which increased by a significant percentage (103% or 63 MGY [about 195 AFY] over actual use) relative to the forecast amount of 31 MGY (95 AFY) (Ibid.). As indicated above, annual net water demand has averaged 3,900 MGY (approximately 12,000 AFY), compared to approximately 4,900 MGY (approximately 15,000 AFY) predicted for the year 2005 (City of Santa Cruz Water Department, February 2006).

Reasons for lower actual demand than was previously forecast include: decrease in residential use due to participation in water conservation programs; fluctuation in economic conditions with opening and closing of businesses, closure of one large industrial account (Texas Instruments); lower UCSC usage than was forecast in the 1997 demand study, which was based on assumptions about higher on-campus student housing than had occurred; and lower water losses than had been predicted. Water conservation programs warrant the bulk of the credit for reducing indoor residential use. The difference in business use is thought to be a combination reflecting local economic conditions, business closures, and forecast error (City of Santa Cruz Water Department, February 2006).

Based on actual use, the city-adopted "Urban Water Management Plan" (UWMP) indicates that it is more plausible that water use within the entire service area would likely increase at a rate of between approximately 0.4% and 0.8% per year through 2020 (City of Santa Cruz Water Department, February 2006). The higher rate assumes that the City's three largest customer classes (single- and multi-family residential and business) grow at an annual rate of

0.8% and UCSC water use would increase as predicted in its LRDP by the year 2020. The lower rate is based on actual residential growth rates experienced since 1997 and carried out to 2020 and the assumption that UCSC water use increase would be about half of the 2020 prediction. Both scenarios were adjusted downward to account for 130 MGY of remaining conservation savings. Based on these percentages, the UWMP estimates a water demand of about 4,365 MGY (approximately 13,400 AFY) in the year 2020. These scenarios were not carried beyond the year 2020 in the UWMP because they were considered too speculative. As discussed below under the “Impacts and Mitigation Measures” subsection, the UWMP water demand projections for the City’s water service area were reviewed and updated as part of the preparation of the Water Supply Assessment and project impact analysis conducted for this EIR.

## WATER SUPPLY LIMITATIONS

The primary water management problem currently facing the City of Santa Cruz is the lack of adequate water supply during droughts due to the wide range in the yield of surface water sources from year to year and limited storage capacity. As previously indicated, in average conditions, there appears to be approximately 300-400 MGY (approximately 920-1,230 AFY) of remaining water supply capacity with existing sources and operations. Current city plans estimate that water demand under normal conditions will exceed water system capacity at some time between 2015 and 2020 (City of Santa Cruz Water Department, February 2006).

A basic assumption of the City’s *Integrated Water Plan* and UWMP is that the City will continue to use its existing water supply sources in the future without change in current production levels. However, the City faces a series of ongoing challenges that potentially could lead to some loss of existing supply in the future, although it is uncertain at this time to what extent and which supplies might be affected. These considerations are summarized below from the UWMP.

- ❑ **North Coast Streams and San Lorenzo River – HCP.** Continued access to the same amount of North Coast supply sources will depend on the outcome of a Section 10 “incidental take” permit application and accompanying Habitat Conservation Plan (HCP) for city activities that are designed to prevent take of a listed federal species. The permit and plan must be approved by the U.S. Fish and Wildlife Service and NOAA Fisheries. The goal of the HCP is to minimize and mitigate to the maximum extent practicable the effects of city activities on listed and other sensitive species. The conservation measures associated with the HCP may result in changes in the City’s operation and management activities and potentially affect the timing and use of this component of the City’s existing water supply. However, the effect, if any, on the City’s water supply is yet to be determined.

- ❑ **Water Rights Conformance Proposal.** The City is also in the process of developing and submitting filings to the State Water Resources Control Board (SWRB) to rectify a historical technical deficiency in the water rights on Newell Creek. Based upon the original filings, which were thought to be adequate due to the anticipated use of Loch Lomond Reservoir, these water rights allow only for diversion to storage and not for direct diversion, i.e., into the City's water supply distribution system. This circumstance makes the water supply technically unavailable as a source for City use during times when, for example, the reservoir is receiving more inflow from Newell Creek than is released downstream. The water rights filings by the City are intended to correct this historical deficiency and bring the water rights and current operations into conformance. The proposed direct diversion rights are limited to the same volume of water, purposes and places of use as the existing rights such that they match the existing rights to the extent possible while allowing direct diversion, consistent with historic practice. This petition is currently being protested by the California Department of Fish and Game, and a decision from the SWRB is pending (EKL, September 2009).
- ❑ **Felton Diversion Water Rights Time Extension Project.** Pursuant to the City's permits to divert water at Felton for storage in Loch Lomond Reservoir, the City must put all 3,000 AFY (approximately 977 MGY) of its entitlement to full beneficial use by December 2006, in order to maintain its appropriative rights to the water. While the City has been diligently putting water from the Felton Diversion to beneficial use over the years, to date the City has used just half the permitted amount on an annual basis. In the future, however, the City expects to need the full 3,000 AFY and, therefore, has filed petitions with the SWRCB to extend the time allowed for putting the full 3,000 AFY to beneficial use. The water supplied from the Felton Diversion is considered critical to meeting the City's projected future demand, in particular during operational outages, changes in operations in response to environmental concerns, and during dry years (Santa Cruz, 2006). This petition is currently being protested by the California Department of Fish and Game, and a decision from the SWRB is pending (EKL, September 2009).
- ❑ **Live Oak Wells System Reliability.** The City's ability to produce water from the Live Oak wells, in drought years and potentially all years, may be compromised by continued deterioration of the groundwater basin conditions due to region-wide over-pumping of the Purisima Formation. The City is currently in the process of pursuing installation of replacement wells to restore their original capacity of 2 mgd.

There has been increasing attention paid to the issue of global climate change and its potential effects on existing water resources and supplies. However, studies prepared to date by the State of California do not provide sufficient or specific information with respect to predicted effects on coastal water supplies to allow the City to reach a reliable conclusion of how global climate change may affect the City's water supplies. These studies have instead focused on

potential effects on the Sierra Nevada snowpack, and how a reduced snowpack could affect water supplies dependent on runoff from that snowpack (e.g., water supplies dependent on the operation of either the federal Central Valley Project or the State Water Project). Nor have specific studies been conducted by the City to address this issue.

General studies prepared by the State of California indicate that climate change may seriously affect the State's water resources as a result of temperature increases, changes in timing and amount of precipitation, and sea level rise that could adversely affect coastal areas (California Department of Water Resources, July 2006). It is possible that coastal watersheds such as the one above Santa Cruz could experience changes in frequency and amounts of precipitation (they currently don't receive much snow), which could affect the amounts of water available for diversion and storage in the City's existing facilities. Another study indicates that sea level is expected to rise an additional 22 to 35 inches by the end of the century (California Climate Change Center, July 2006). Generally, there are two ways it is thought that the Santa Cruz water supply system may be impacted: 1) sea level rise that would create greater likelihood of groundwater contamination from seawater intrusion; and 2) rainfall events that would likely be heavier and less frequent, thus affecting storage in Newell Creek Reservoir.

## WATER SUPPLY PLANNING & STRATEGIES

The City of Santa Cruz has been actively considering possible new water supplies for the past 20± years due to chronic, insufficient water supplies to meet existing demand during drought events (Gary Fiske & Associates, June 2003). The City's 1989 Water Master Plan identified alternatives to increase the City's water supply based on water demand projections developed at that time. Subsequently, nine projects were evaluated in a 1994 study (Camp Dresser & McKee, Inc., January 1994) that was overseen by a Technical Advisory Committee comprised of City Water Commission members, City Council members and Water Department staff. Of the evaluated projects identified below, the new wells at Thurber Lane and treatment of brackish groundwater in the Majors Creek area were selected as the highest ranking projects.

- ❑ Four new reservoir projects – two in the San Lorenzo River watershed and two on North Coast creeks;
- ❑ Three projects involving the expansion of Loch Lomond and treatment of brackish groundwater in the Majors Creek area;
- ❑ One groundwater project including new wells at Thurber Lane in Live Oak and treatment of brackish groundwater in the Majors Creek area; and
- ❑ One smaller reservoir project with groundwater wells at Thurber Lane and reclaimed water from the Scotts Valley Wastewater Treatment Plant.



### Integrated Water Plan (IWP)

In 1997, the City initiated an “integrated water planning” approach to consider all practical options for decreasing demand and increasing supply, which included preparation of studies related to water demand, water conservation, water curtailment, alternative water supplies, and evaluation of regional water supply alternatives. As part of this effort, a series of background studies were undertaken, including the following (City of Santa Cruz Water Department, EDAW, June 2005):

- ❑ Water Demand Investigation (Maddaus Water Management 1998)
- ❑ Water Conservation Plan (Gary Fiske & Associates 2000)
- ❑ Water Curtailment Study (Gary Fiske & Associates 2001)
- ❑ Alternative Water Supply Study (Carollo Engineers November 2000)
- ❑ Evaluation of Regional Water Supply Alternatives (Carollo Engineers March 2002)

An Integrated Water Plan (IWP) was prepared utilizing the results of these studies. The purpose of the IWP is to:

“to respond to the current drought-related crisis and plan for future growth. Specifically, it must help the City: 1) reduce near-term drought year shortages; and 2) provide a reliable supply that meets long-term needs while ensuring protection of public health and safety” (Gary Fiske & Associates, June 2003).

The IWP evaluated options for balancing water supply and demand that included conservation, curtailment, and new water supplies and infrastructure. Based on the water supply studies conducted since the mid-1980s, the water supply options considered in the IWP focused on the four following options:

- ❑ Seawater desalination was considered with construction of reverse osmosis, pretreatment and ancillary facilities. A specific location was not identified, although it was indicated that probable locations would be in the industrial area of Santa Cruz (southwest area of city) or on the University’s Long Marine Lab site (now known as the Coastal Marine Science Campus). A sequence of desalination sizing increments was reviewed for three curtailment profiles and for a facility serving only the City of Santa Cruz and for a facility serving the City and Soquel Creek Water District.
- ❑ Reclamation with a coast groundwater exchange arrangement was considered, which involved construction of a 4-5 mgd tertiary wastewater treatment plant, and associated facilities to deliver that water to North Coast farmers for irrigation purposes in exchange for City access to the groundwater supplies currently being used by the farmers.

- ❑ Development of the Santa Margarita Aquifer in Live Oak was also considered as a potential small source of supply. The aquifer is below the Purisima aquifer from which the current Beltz wells draw supply. However, little information was available regarding this supply when the IWP was prepared, although it assumed that this source will yield 100 million gallons annually (approximately 2,307 AF).

Based on evaluation of these options and combination thereof, under various drought curtailment options, the IWP determined that Strategies D-1 and D-2 (City-Only and Regional Desalination) at Curtailment Profile 2 (15% worst-year curtailment) as the preferred alternative. The final choice between the City-Only and Regional Desalination strategies was deferred to completion of the Environmental Impact Report on the IWP. For the desalination options, the IWP (and EIR) considered a 2.5-mgd desalination facility that could be upgraded by 1.0 mgd in two increments for a total capacity of 4.5 mgd. In November 2005, the City Council certified the IWP EIR and unanimously adopted the IWP as the City's long-term water resource strategy that includes the following three components (City of Santa Cruz Water Department, February 2006):

- ❑ Water conservation programs to maximize the use of the existing water resources.
- ❑ Customer water use curtailment (water use cutback) of up to 15% in times of shortage.
- ❑ Additional water supply provided by a 2.5 mgd seawater desalination facility that would be expandable in 1.0 mgd increments up to 4.5 mgd, if needed in future years.

### **Urban Water Management Plan (UWMP)**

In 2006, the City adopted the *2005 Urban Water Management Plan (UWMP)* that was prepared in accordance with state law requirements. The plan evaluates and describes water resource supplies and projected needs over a twenty-year planning horizon, and addresses a number of related subjects, including water conservation, water service reliability, water recycling, opportunities, water transfers, and contingency plans for drought events. As previously indicated, the City's UWMP estimates that water demand under normal conditions will exceed water system capacity at some time between 2015 and 2020.

The UWMP noted the following three primary components of the IWP. These measures and other supplemental water supply sources considered in the UWMP are summarized below.

- ❑ Conservation
- ❑ Curtailment
- ❑ Desalination



## CONSERVATION

The IWP calls for continued implementation of a broad set of conservation programs. Conservation programs include water survey programs, plumbing retrofits, water audits and leak detection and repair, large landscape conservation programs and incentives, high-efficiency clothes washer rebate program, and other public information programs.

The UWMP provides a description of these programs and indicates that a long-term water savings of nearly 300 MGY (approximately 920 AFY) could be achieved. A savings of approximately 153 MGY (approximately 470 AFY) had been achieved by 2005 (City of Santa Cruz Water Department, February 2006). The plumbing fixture retrofit program has produced the most water savings of any program, totaling about 11 MGY (approximately 34 AFY). As a result, conservation programs continue to offset new water demand from development and growth in new accounts, and then some, for the time being (Ibid.). As previously indicated, the remainder of the potential conservation savings has been taken into account in adjusted future demand estimates discussed above.

## CURTAILMENT

The IWP calls for supplying 85% of normal demand in critical drought years (e.g., the 1976-77 event), and for a corresponding reduction in peak season water use of up to 15%. This cutback would be achieved through temporary watering restrictions or rationing that target landscape irrigation and other outdoor uses..

The UWMP includes a “Water Shortage Contingency Plan” that was updated in March 2009. This plan was developed to fulfill two fundamental purposes:

- ❑ To establish the procedures and actions necessary to achieve the up-to-15% percent cutback in system-wide demand established in the City’s Integrated Water Plan, and
- ❑ To describe how the City would respond if faced with much larger shortages in water supply ranging as high as 50%.

The updated Water Shortage Contingency Plan uses a staged approach that classifies a shortage event into one of five levels spanning a water shortage range from 5-50%. The overall concept is that water shortages of different magnitudes require different measures to overcome the deficiency. Because there is so little the City can do in the short run to increase the supply of water, the focus of this plan is primarily on measures that reduce demand. Each stage includes a set of demand reduction measures that become progressively more stringent as the shortage condition escalates. Normally, only one of these five stages would be put into effect early in the year at the recommendation of the Water Director and remain in force for the entire dry season (City of Santa Cruz Water Department, March 2009). These stages include:

Stage	Magnitude of Water Shortage Stage	Title
1	0-5%	Water Shortage Alert
2	5-15%	Water Shortage Warning
3	15-25%	Water Shortage Emergency
4	25-35%	Severe Water Shortage Emergency
5	35-50%	Critical Water Shortage Emergency

Stages 1 and 2 represent a level of curtailment that is envisioned as being necessary to balance water supply and demand from time to time under the City’s Integrated Water Plan. Shortages of 15% or less, while inconvenient, do not directly threaten public safety or pose undue economic impact. Stages 3-5 are characterized as emergency water shortages since they result in more widespread hardships being felt throughout the community, may threaten public health and welfare, and cause more economic harm. Customer demand reduction goals were established for major water demand groups based on the following priorities: 1) health/safety, i.e., all domestic and sanitary uses, 2) business and industrial uses and, 3) irrigation and other outdoor uses) (City of Santa Cruz Water Department, March 2009).

**SUPPLEMENTAL WATER SUPPLY - DESALINATION**

The IWP identified seawater desalination as the most feasible alternative for a backup supply of drinking water in times of drought (City of Santa Cruz Water Department, February 2006). Thus, the City is planning to construct a seawater desalination plant as a backup water supply in times of drought. The desalination plant capacity of 2.5 mgd would be for drought protection, and the plant would only be used by the City intermittently during the dry seasons of dry and critically dry years when existing supplies fall short (Ibid.). The desalination facility could be expanded at a future time to provide additional supply up to 4.5 mgd in two increments of 1 mgd; the potential expansion is also intended for drought protection that could be exacerbated by future growth (Ibid.). The UWMP indicates that after 2015, “up to 1.25 mgd of water from the desalination plant may be needed on a regular basis as a supplemental water supply for the City, depending on the actual water demands at that time stemming from the physical expansion and enrollment growth at the University and the amount of growth allowed in the City and County of Santa Cruz and the City of Capitola under future General Plans” (Ibid.).

The desalination concept adopted by the City involves constructing a seawater intake system using an existing, abandoned wastewater outfall, building a new desalination plant and installing the associated pipelines and pump stations for delivering treated water to the Bay Street Reservoir and conveying seawater concentrate to the City’s wastewater facilities, where it would be blended with municipal wastewater flows and disposed via a deep ocean outfall (City of Santa Cruz Water Department, February 2006). A full-scale desalination facility site was proposed to be located in the industrial area along Delaware. The certified IWP EIR evaluates impacts of the construction of a desalination facility and associated pipelines on a

programmatic level for the initial construction of a 2.5 mgd facility for drought protection and two subsequent expansions (3.5 and 4.5 mgd).

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. Currently, the SCWD obtains all its water from groundwater sources and operates 16 active production wells with an estimated capacity of over 14 million gallons per day. The current annual water use for the SqCWD exceeds the available water supply by 15% even during non-drought conditions. The SqCWD would use up to 1 mgd of the future plant's capacity when the City doesn't need it, and would share in the cost of building and operating the plant. In early 2006, the SqCWD adopted the Integrated Resources Plan (IRP) that identified a regional seawater desalination plant with the City of Santa Cruz as the preferred conjunctive use project to be investigated. (City of Santa Cruz Water Department, 2008, desalination web site at: <http://www.scwd2desal.org/>).

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. The pilot plant, which was in operation between March 2008 and April 2009, was funded by a State grant and funds from the SqCWD and was a joint venture between the City of Santa Cruz and SqCWD. The 13 months of testing provided a full range of performance information that will be used to plan the full-scale seawater desalination facility. Additional technical studies are currently underway, and design planning for a permanent facility are likely to begin in 2010, followed by environmental review. A permanent facility is expected to be constructed and in operation by the year 2015, pending completion of project-level environmental review and regulatory permit approvals, i.e. approval of a coastal development permit from the California Coastal Commission.<sup>5</sup> At this time, it is not known when or if the plant would be further expanded to serve future planned growth.

#### **OTHER WATER SUPPLIES CONSIDERED IN UWMP**

**Recycled Water.** The City of Santa Cruz owns and operates a regional wastewater treatment facility providing service to the cities of Santa Cruz and Capitola and parts of unincorporated Santa Cruz County. The City's treated wastewater is potentially suitable for some agricultural applications and for limited public access irrigation. However, the level of treatment is not sufficient for general irrigation or unrestricted use on playgrounds, parks, schoolyards, etc. Additional treatment above that currently provided would be needed to meet the state public health and safety requirements. In addition to the treatment upgrades, a distribution system,

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<sup>5</sup> 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.

including pumps, meters, storage facilities, and separate piping, would be required to convey the recycled water to customers (City of Santa Cruz Water Department, February 2006).

The potential for using recycled water as a supplemental water supply was examined in the City's Alternative Water Supply Study (Carollo Engineers, 2000) and Evaluation of Regional Water Supply Alternatives (Carollo Engineers, 2002) during the IWP process. The following five project concepts for recycled water use were evaluated in the two reports (City of Santa Cruz Water Department, February 2008):

- The UWMP provides a description of these programs and indicates that a long-term water savings of nearly 300 MGY (approximately 920 AFY) could be achieved.
- Recycled water for groundwater recharge,
- Recycled water for direct use,
- Recycled water from Scotts Valley,
- Recycled water for landscape irrigation in the City, and
- Recycled water for North Coast agricultural application.

Of these concepts, two were determined to be viable projects: recycled water for in-City landscape irrigation, and recycled water for North Coast agricultural application. The other three projects were determined to be infeasible, unacceptable, or of too little benefit to pursue further. Even though these two recycled water concepts were carried forward in the supply studies, only the one involving the use of recycled groundwater for agricultural irrigation was developed further. The use of recycled water for landscape irrigation was eliminated due to a number of reasons, including the limited yield and high cost. The potential users of the recycled water were determined to be parks, schools, cemeteries, golf courses, and UCSC, with an estimated outdoor irrigation demand of approximately 170 to 230 MGY (approximately 520-700 AFY). This amount was considered too small by itself to meet the City's drought-year needs and also had a high capital cost. The City also considered the high cost of investing in a recycled water system to maintain turf areas during times of drought versus instituting drought management measures and curtailing those same outdoor uses of water at a relatively low cost when supplies fall short. Coupled with the fact that the recycled water concept did nothing to add to the supply of potable water, curtailment was favored in developing alternative strategies for the City's IWP (City of Santa Cruz Water Department, February 2006).

The evaluation of the option to exchange groundwater with recycled wastewater (for agricultural irrigation on State Park lands north of the City) estimated groundwater availability of about 400 MGY (approximately 1,230 AFY). However, this concept ultimately proved to be infeasible for a number of reasons. The additional supply would have been limited given the estimated yield from the groundwater basin. Coupled with costs as high as desalination, this option was not considered the superior option. Additionally, the California

Department of Parks and Recreation, the landowner of the agricultural lands to be irrigated with recycled water, opposed the exchange given legal and policy issues that could affect the entire state (City of Santa Cruz Water Department, February 2006). Some of the farmers, mostly organic growers, also opposed the concept of irrigation with reclaimed water.

Recycled water for landscape irrigation remains a viable alternative that could be pursued in the future. However, currently it is not the City's preferred water supply strategy. The 2005 UWMP indicates that the steps and actions to encourage and optimize recycled water will be defined in the future if and when recycling is selected and pursued to diversify the City's water supply portfolio (City of Santa Cruz Water Department, February 2006).

**Other Water Supply Alternatives.** The 2005 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 or longer time frame. The UWMP identifies the possible longer term options as:

- Recycled water
- Groundwater recharge
- Reservoir expansion
- Aquifer storage and recovery
- Off-stream storage.

#### **Other IWP-Evaluated Supplemental Water Supplies**

As part of the IWP process, ten potential water supply alternatives were identified and evaluated (Carollo Engineers, November 2000). These included:

- Groundwater Options
  1. Brackish groundwater supply from wells in the San Lorenzo River Alluvial Plain near the mouth of the river.
  2. Fresh groundwater supply from wells in the San Lorenzo Alluvial Plain.
  3. Groundwater supply from the Purisima Aquifer near the Beltz wells.
  4. Groundwater supply from the Santa Margarita Aquifer.
  5. Groundwater supply near the Wilder Ranch gravel quarry.
- Other Supplemental Sources
  6. Seawater desalination.
  7. Wastewater reclamation.
  8. Reservoir storage in the Olympia Quarry in the San Lorenzo Valley.

❑ Other Options

9. Maximized use of existing sources and storage in Loch Lomond Reservoir. This alternative includes increased capture and/or storage of surface water from existing north coast and San Lorenzo River supplies, in conjunction with optimized use of existing diversions.
10. Conjunctive use with Soquel Water District.

A screening of these alternatives was conducted as part of the 2000 Carollo Engineers study; screening criteria included whether the source would be reliable and sustainable during a multi-year drought and whether the alternative is feasible to be implemented, taking into account cost, environmental constraints and other public acceptance and regulatory concerns. A conceptual engineering analysis was then completed for each of the potentially viable alternatives. Table 2-2 summarizes the evaluated alternatives and associated constraints.

Based on this screening process, the following alternatives were determined not to be viable: brackish and fresh groundwater from the San Lorenzo River alluvial plain (1 and 2), conjunctive use with Soquel Creek Water District (SCWD) (10), and reservoir storage in Olympia Quarry (8) (Carollo Engineers, November 2000). The primary constraints on the brackish and fresh groundwater from the San Lorenzo River alluvial plain included: 1) potential impacts to riparian habitat or introduction of seawater into the aquifer as a result of pumping; 2) water rights issues since the brackish groundwater is likely hydraulically linked to the San Lorenzo River and may result in conflicts with the City's other water rights related to its Tait Street diversion; and 3) high treatment costs. In addition, the yield from these sources was expected to be limited (Ibid.). Conjunctive use with Soquel Creek Water District was not viable due to limited surface water supplies potentially available to SCWD, water rights issues, and continued groundwater pumping. Lastly, numerous technical and institutional issues were identified that deemed the storage at Olympia Quarry to not be viable (Ibid.).

The other groundwater options ultimately were determined not to be viable because as groundwater sources they are also affected during drought conditions and storage is not readily replenished. The analysis also estimated that the maximum reliable yield from four combined groundwater sources was estimated at 300 MGY (approximately 920 AFY) or less during drought conditions (Carollo Engineers, November 2000b). Thus, while overall, groundwater is potentially available in a limited quantity, none of the groundwater resources could 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. For example, the two biggest aquifers analyzed in the study (Santa Margarita aquifer near Wilder Ranch and Purisima aquifer) have existing users. The available (reliable) yield during a prolonged drought is also uncertain because the yield from the aquifers will likely decrease as other users increase their reliance on this supply (Carollo Engineers, September 2000).

**TABLE 2-2: City Water Supply Alternatives Summary**

Alternative	Recommend Further Evaluation	Comment
<b>Groundwater Options</b>		
Fresh Groundwater from the San Lorenzo Alluvium	No	<ul style="list-style-type: none"> <li>▪ Quantity limited</li> <li>▪ Potential conflict with existing water rights at Tait Street</li> <li>▪ Supply not reliable or sustainable during drought</li> </ul>
Brackish Groundwater from the San Lorenzo Alluvium	No	<ul style="list-style-type: none"> <li>▪ Quantity uncertain</li> <li>▪ Potential conflict with existing water rights at Tait Street</li> <li>▪ Supply not reliable or sustainable during drought</li> </ul>
Groundwater Supply from Purisma Aquifer near Beltz Wells	No	<ul style="list-style-type: none"> <li>▪ Existing users present institutional constraints</li> <li>▪ Quantity uncertain</li> <li>▪ Supply not reliable or sustainable during drought</li> </ul>
Groundwater Supply from Santa Margarita Aquifer near Belz	No	<ul style="list-style-type: none"> <li>▪ Quantity uncertain</li> <li>▪ Supply not reliable or sustainable during drought</li> </ul>
Groundwater from Santa Margarita Aquifer near Wilder Ranch	No	<ul style="list-style-type: none"> <li>▪ Existing users present institutional constraints</li> <li>▪ Quantity uncertain</li> <li>▪ Supply not reliable during drought</li> </ul>
<b>Other Supplemental Sources</b>		
Desalination	Yes	<ul style="list-style-type: none"> <li>▪ Reliable or sustainable supply of needed capacity</li> </ul>
Wastewater Reclamation	Yes	<ul style="list-style-type: none"> <li>▪ Net supply may be limited and cost high; additional work required to quantify these elements</li> </ul>
Reservoir Storage in Olympia Quarry	No	<ul style="list-style-type: none"> <li>▪ Numerous technical and institutional issues to be addressed</li> </ul>
<b>Other Options</b>		
Maximize Use of Existing Sources and Storage in Loch Lomond Reservoir	Yes	<ul style="list-style-type: none"> <li>▪ Benefit in drought and nondrought years</li> <li>▪ Improves system reliability and operation</li> </ul>
Conjunctive Use with Soquel Creek Water District	No	<ul style="list-style-type: none"> <li>▪ Water rights constraint</li> <li>▪ Quantity uncertain</li> <li>▪ Supply not reliable or sustainable during drought</li> </ul>
<b>Source:</b> Carollo Engineers, November 2000		



Artificial groundwater recharge was considered as a means to improve reliability/sustainability during a drought, but was not found to be a viable alternative as there are no surplus water sources available for recharge. Even if the City's surface water supplies were available for recharge, a water rights change (from diversion for direct use to diversion for storage) would be required, which would effectively preclude all conjunctive use alternatives with surface water and groundwater (Carollo Engineers, September 2000).

Groundwater recharge with reclaimed water was also considered. However, state guidelines stipulate that approximately 50% of the recharge water be reclaimed wastewater, thus requiring other water sources to be blended with the reclaimed water. Additionally, as indicated above, groundwater availability would be limited. The analysis found that even in a favorable scenario, approximately 100 MG (approximately 300 AF) would be available for blending that would result in about 200 MG (approximately 600 AF) of groundwater supply during a drought, which was considered low. Furthermore, state guidelines require that reclaimed water for potable use remain in the ground 6-12 months prior to use depending on the level of treatment and method of discharge. Lastly, the City's wastewater treatment plant would need to be upgraded to produce the quality of reclaimed water required for recharge, along with construction of associated pipelines.

As a result of this screening and evaluation process, three alternatives were recommended for further review: desalination, wastewater reclamation, and maximizing use of existing sources and storage in Loch Lomond Reservoir. A refined regional analysis of desalination and wastewater reclamation as a potential joint project with the Soquel Creek Water District was conducted in 2002. The IWP identified seawater desalination as the most feasible alternative for a backup supply of drinking water during a drought.

Improvements to maximize use of existing water sources and storage were identified that collectively could provide approximately 600 MGY (approximately 1,840 AFY) during a two-year drought. The upgrades could include additional treatment for turbidity on the North Coast supply; capacity upgrades of the North Coast pipeline; treatment and/or facility upgrades for turbidity at the Tait Street intake; capacity upgrades at the Coast pump station; and/or upgrading the hydraulic capacity of the Felton/Loch Lomond supply system. 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).

### **Ongoing Water Demand / Supply Planning**

As previously indicated, pursuant to state law, the City of Santa Cruz Water Department must prepare and adopt an urban water management plan and update it every five years. The City's existing 2005 UWMP will be updated and adopted by the end of 2010. The 2005 UWMP recommends that the water demand projections for the service area be reviewed and updated



once updates to the City of Santa Cruz, County of Santa Cruz, and City of Capitola General Plans have been completed. The City is currently in process of updating its General Plan. Thus, the City's water resource supplies and projected needs over a 20-year planning horizon will be assessed and updated every five years, which will enable the City to review water demand trends and review its water supply management and options.

## UCSC WATER SERVICE AND DEMAND

### UCSC Water Service

The City of Santa Cruz Water Department supplies water to the UCSC campus for domestic use, fire flow and irrigation on campus. The City currently provides water service to UCSC through nine (9)<sup>6</sup> connections at the western and southern margins of the campus (see Figure 12).<sup>7</sup> The northernmost connection, which is north of the City's limits, was installed by the City in 1973. Water is pumped from the City's Bay Street Reservoir to three consecutive reservoirs at different elevations on the UCSC campus that provide water service to different portions of the campus (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II). The domestic water service improvements that exist on campus are shown on Figure 12. The campus also has an emergency water storage reservoir (a 1-million tank) in the upper campus that is available to provide the campus with an emergency water supply and to provide adequate fire flow to the Crown/Merrill Apartments (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II).

Future campus development likely would require improvements to the on-campus water infrastructure, including additional water storage capacity and a new booster pump in the North Campus area. The addition of new pumps or replacement of existing pumps at the City's pump stations serving UCSC also may be necessary in order to provide greater pumping capacities (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume I). At this time, there are no site-specific plans to extend infrastructure into this area. However, the 2005 LRDP includes a conceptual plan to extend water lines to the project area within a new planned roadway in the North Campus area as shown on Figure 12.

Currently, all campus water use is served by the City of Santa Cruz Water Department. However, the University's 2005 LRDP EIR includes a mitigation measure (UTIL-9I) that states during drought situations, the University will utilize water from its existing supply well in Jordan Gulch for non-potable irrigation uses. The campus will also initiate a feasibility study on measures for utilization of reclaimed water (including rainwater, grey water, cooling tower

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<sup>6</sup> There are double meters in four locations and one small service to the barn.

<sup>7</sup> UCSC has nine existing service accounts with the City of Santa Cruz Water Department.

blowdown water and/or recycled water) in new development. Potential uses of reclaimed water include cooling, irrigation, and toilet flushing (UTIL-9G).

### **Existing and Future UCSC Water Demand**

The UCSC campus used approximately 206 MGY (approximately 635 AFY) of water in 2003 that was slightly reduced to approximately 190 MGY (approximately 585 AFY) in 2005 (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume IV). The most recent available data indicates that the campus used approximately 200 MGY (approximately 615 AFY) of water in 2007 (University of California Santa Cruz, May 2009), which represents approximately 5% of the City Water Department's total demand. Approximately 28% of the total campus water demand is used for irrigation. (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II).

Total on-campus water demand in 2020 with growth anticipated in the UCSC 2005 Long-Range Development Plan (2005 LRDP), including summer session, was estimated at 338 MGY (1,040 AFY) in the 2005 LRDP Final EIR (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume IV). Total UC demand, including off-campus facilities, was estimated at 361 MGY (1,100 AFY) in the year 2020. As part of the Comprehensive Settlement Agreement, additional student housing will be provided on campus and implementation of additional water conservation measures will be undertaken, which would result in a total on-campus water demand of 322 MGY (approximately 990 AFY) and total UC demand of 345 MGY (approximately 1,060 AFY) in the year 2020 as summarized on Table 2-3.

Water demand projections for the University were included in the City's 2005 Urban Water Management Plan (UWMP) based on the water projections developed for the Integrated Water Plan (IWP) (Maddaus Water Management 1998). The UWMP included up to 408 MGY (approximately 1,250 AFY) of water use by UCSC in the year 2020, an increase of 87 MGY (approximately 270 AFY) over the estimated water use of 321 MGY (approximately 985AFY) in the year 2005. As with other service area projections as previously discussed, the UCSC estimate proved to be high, with UCSC's actual water use in 2005 averaging approximately 200 MGY (approximately 615 AFY) instead of the projected 321 MGY.

### **Campus Water Conservation Efforts**

The UCSC campus has implemented a range of water conservation programs over the last 20+ years. Past and ongoing water conservation activities at UCSC include:

- Retrofit of campus toilets, showerheads and sink faucets with water- efficient fixtures.
- Use of predominantly drought-tolerant plant species in campus landscaping to reduce irrigation needs.

- ❑ Installation of drip and computerized irrigation systems.
- ❑ Adjustments to irrigation systems to reduce overspray or migration of water onto unlandscaped areas or hardscape.
- ❑ Use of mulch for landscaping.
- ❑ Installation of irrigation water meters.

**TABLE 2-3: UCSC Existing and Future Water Demand**

Location	Recent & Existing UCSC-Related Water Demand			Estimated 2020 Demand [4]
	2003 [1]	2005 [2]	2007 [3]	
<b>2005 LRDP</b>				
▪ Main Campus (w/o summer student residents)	206	190	200	328
▪ Summer Session (with summer student residents)	0	0	0	10
Additional On-Campus Housing per Settlement Agreement [5]				14
Water Conservation per Settlement Agreement [6]				(-30)
<i>On-Campus SUBTOTAL</i>	<i>206</i>	<i>190</i>	<i>200</i>	<i>322</i>
2300 Delaware Avenue	0	0	2	3
<i>LRDP SUBTOTAL</i>	<i>206</i>	<i>190</i>	<i>202</i>	<i>325</i>
<b>Marine Science Campus</b>	7	9	10	20
<b>UCSC TOTAL</b>	<b>213</b>	<b>199</b>	<b>212</b>	<b>345</b>
[1] 2005 LRDP DEIR base year [2] 2005 LRDP FEIR base year [3] Existing use provided by UCSC [4] Per 2005 LRDP Final EIR (September 2006, Volume IV) except for additional on-campus housing and water conservation as noted below. [5] 935 student beds; water demand estimate provided by UCSC [6] Maddaus Water Management, December 2007				

The 2005 LRDP EIR includes five mitigation measures that call for implementation of additional water conservation strategies to reduce water demand (UTIL-9A, 9B, 9C, 9E, 9H) and two measures that call for water audits to identify additional feasible measures that can be implemented (UTIL-9D, 9F). The 2005 LRDP Final EIR also indicates that due to continuing water shortages during a drought, the University anticipates that the campus would: 1) further develop conservation measures already in effect, including continued conservation education and use of ultra-low flow fixtures in new development; 2) explore the use of

rainwater and/or recycled water, as feasible, for irrigation; and 3) consider the viability of using existing on-campus wells to supply water for irrigation purposes (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume V-Master ResponseUTIL-2).

In December 2007, a water efficiency survey was completed for the University that identified high priority water conservation programs measures (Maddaus Water Management, December 2007). Implementation of these recommended projects is estimated to result in a 15% savings in total water use (Ibid.). As part of the Comprehensive Settlement Agreement, UCSC agreed to implement these measures within five years of execution of the Agreement.

### **Campus Groundwater Use**

At this time, groundwater is not extracted on the campus for any purpose, and the campus depends on the City's domestic water supply for both domestic and irrigation water. The UCSC campus is roughly divided into two hydrogeologic systems: upper/north campus system and central/lower campus system. Groundwater studies conducted by UCSC in 2000 (Nolan Associates) in the North Campus area indicated that the North Campus has a relatively uniform shallow groundwater system. Due to its limited thickness and extent, and moderate permeabilities, the upper/north campus groundwater system is not considered a viable source for long-term groundwater supply for the campus.

The southern two-thirds of the campus is underlain almost entirely by marble and schist that are characterized by a relative absence of surface streams and drainage channels with most precipitation discharging to the subsurface through fractures, and the presence of sinkholes, closed depressions, and swallow holes. It is estimated that approximately 40% of the surface runoff on the campus is intercepted by the marble aquifer system (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II). Four exploratory wells have been drilled on the campus in the past, all of which were on the lower campus. In 1989, a 7-day pumping test conducted at Well #3 indicated that the well could produce 100 gallons per minute (gpm) for long-term pumping without causing significant water level declines in the marble aquifer, and without affecting springs and spring-fed streams near the lower campus (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II). To date, Well #3 has not been used for any purpose other than to periodically monitor groundwater levels and groundwater quality. See the GROWTH INDUCEMENT (Chapter 5.0) section of this EIR for further discussion of campus groundwater sources.

Although campus groundwater sources have not been used to date, the University adopted a mitigation measure as part of its 2005 LRDP EIR that indicates that during drought conditions, the campus would extract groundwater for non-potable uses from the karst aquifer underlying the lower half of the campus to offset campus water demand in drought years (LRDP Mitigation UTIL-9I). Under this measure, it was assumed that groundwater would be

extracted from Well #3 during the eight driest months and would be used for irrigation on the Center for Agroecology and Sustainable Food Systems (CASFS) and at the UCSC Arboretum. The University estimated a total of 1.1 MGY (approximately 3.4 AF) of water would be extracted (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II). Existing average annual demand at these facilities is approximately 10 MGY (University of California Santa Cruz, May 2009).

## RELEVANT PROJECT ELEMENTS

The proposed project consists of an amendment to the City of Santa Cruz Sphere of Influence (SOI) to include a 374-acre portion of the UCSC “North Campus” as shown on Figures 1 and 3 for the purpose of providing extraterritorial water and sewer services. Applications to LAFCO were made by the City and UCSC in accordance with provisions of the “Comprehensive Settlement Agreement” regarding the University’s 2005 Long Range Development Plan EIR. The Agreement indicates that “to assist UCSC in achieving its on-campus housing capacity commitment”, the City will continue to provide water service to the Campus through its existing connections (section 2.7 of the Agreement).

Implementation of the proposed project would adjust the City’s probable physical boundaries and service area for water and sewer service to include the project area in which UCSC proposes development in its adopted 2005 LRDP and as set forth in the Comprehensive Settlement Agreement. The 2005 LRDP estimates an on-campus enrollment of 19,500 students by the academic year 2020. UCSC’s 2005 LRDP designates the project area for a mix of college, housing, physical education, academic facilities, campus reserve and protected landscape/resource land uses, which are further described in the LAND USE (Chapter 4.3) section of this EIR. Maximum new development under the 2005 LRDP is estimated to be 3,175,000 gross square feet, which may occur within the project area under provisions of the Comprehensive Settlement Agreement.

At this time, no annexation of land is proposed, nor has the University proposed site-specific development in the North Campus area. As previously indicated, there are no site-specific plans to extend infrastructure into this area. However, the 2005 LRDP includes a conceptual plan to extend water lines to the project area primarily within a new planned roadway in the North Campus area as shown on Figure 12.

## IMPACTS AND MITIGATION MEASURES

### CRITERIA FOR DETERMINING SIGNIFICANCE

In accordance with CEQA, State CEQA Guidelines (including Appendix G), City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

- ❑ Have insufficient water supplies available to serve the project from existing entitlements and resources and/or require new or expanded entitlements to serve the project; or
- ❑ Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The following analysis assesses impacts to the City of Santa Cruz water supplies as a result of the proposed Sphere of Influence amendment to provide extraterritorial water and sewer service to the project area. The City Water Department indicates that the proposed project will not result in the need to construct or expand its water treatment facility or other water infrastructure/facilities to accommodate future water demand resulting from the proposed project (Kocher, City of Santa Cruz Water Department, personal communication, August 2009).

The City of Santa Cruz Water Department reviewed the project and determined that preparation of a Water Supply Assessment (WSA) was necessary as the project would indirectly result in a water demand greater than the equivalent of 500 or more residential units, which under state law requires the preparation of a WSA. A 500-unit residential development within the City of Santa Cruz would use between approximately 26 and 42 MGY (approximately 80-130 AFY), and the project water demand is estimated as 100 MGY as further discussed below. Thus, the City determined that a WSA was required for the proposed project in accordance with state law. The WSA is included in Appendix B of this EIR, and is summarized in the following impact analyses.

On October 27, 2009, the Santa Cruz City Council approved the WSA in accordance with California Water Code requirements. A number of letters of comment were submitted to the Council regarding the WSA. Pursuant to the Council's directive, these letters are included in Appendix F of this EIR. Preliminary responses have been provided by the City Water Department. However, all comments received on the WSA will be considered and responded to as part of the Final EIR and response to all comments received on the Draft EIR.

The indirect, secondary effect of campus development on campus groundwater resources is addressed in the GROWTH INDUCEMENT (Chapter 5.0) section of this EIR.



## IMPACT ANALYSIS

**Impact 1-1:** The proposed project would result in future provision of water service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There are adequate supplies to serve the project water demand in normal years, but there are inadequate water supplies to serve the project under existing and future dry year (drought) conditions. This is considered a potentially significant impact.

### Project Water Demand

Portions of the proposed SOI amendment project area are designated for development of colleges, housing, and physical education and recreation uses in the UCSC 2005 LRDP. Maximum new development square footage under the 2005 LRDP is estimated to be 3,175,000 square feet for the entire campus, but this could be developed in the North Campus under provisions of the Comprehensive Settlement Agreement. The LRDP does not specify how much development will be in the North Campus, and the Comprehensive Settlement Agreement section 2.8 says UCSC will apply for extraterritorial water and sewer service for development of 3,175,000 gsf. Thus, for the worst-case CEQA analysis and estimating water demand, all LRDP development was assumed to occur in the project area, except for approved projects on main (central) campus that were deducted as discussed below, although it is not likely that all new LRDP development will occur in North Campus. Thus, implementation of the proposed project would enable UCSC to move forward with plans to develop the North Campus as set forth in its adopted 2005 LRDP with accompanying water demand.

Campus water demand was assessed as part of the WSA based on water demand estimates developed for the 2005 LRDP Final EIR, existing water demand, and provisions of the Comprehensive Settlement Agreement. Project water demand is summarized in Table 2-4, which shows that in the year 2020, project water demand is estimated to increase by 100 MGY (approximately 310 AFY) over existing demand. The total increase in water use by 2020 for all of the UCSC properties is projected to be 126 MGY (approximately 390 AFY).

Additional development associated with the 2005 LRDP was based on estimates prepared for UCSC (ARUP, 2006) that accounted for historical water use and new and approved facilities and water conservation with use of low-flow fixtures in new developments. The WSA concluded that the ARUP conservation projections appear reasonable based on measured historical on-campus water use and the percent savings documented by EPA retrofit studies. The projections in Table 2-4 also consider a number of projects that have been proposed or recently approved that would fall under the estimates for additional campus development, but are actually located on the main campus outside the proposed SOI project area. These projects are subtracted from the project water use, but included for other UCSC facilities as shown on Table 2-4.

The UCSC water demand estimates provided in Table 2-4 also account for provisions of the Comprehensive Settlement Agreement that stipulates construction of additional on-campus student housing (beds) and implementation of conservation measures (per Maddaus Water Management study, December 2007). The additional housing (935 student beds above what was estimated in the 2005 LRDP Final EIR) is estimated to have a water demand of 14 MGY (approximately 45 AFY). UCSC's implementation of high-priority conservation measures is estimated to reduce water use by 30 MGY (approximately 90 AFY) (EKI, September 2009) based on an estimated 15% reduction over existing uses. This savings reflects implementation of measures that address existing campus development and do not include water savings with new development as identified in the ARUP study.

Water demands associated with other future UCSC facilities (such as 2300 Delaware and the Marine Science Campus) are also listed in Table 2-4 in order to provide a complete estimate of future increases in UCSC's water use for the purpose of updating the City's service area-wide demands. The total UCSC-related water demand in the year 2020 is estimated as 338 MGY (approximately 1,040 AFY).

### **Water Supply Assessment**

The findings and conclusions of the WSA regarding project water demand and availability are summarized below. UCSC water demand was included in the City's 2005 Urban Water Management Plan (UWMP) based on a draft LRDP available at the time the UWMP was prepared, which envisioned a total campus enrollment of 21,000 students. As such, information from the 2005 UWMP was used in the WSA to fulfill requirements outlined in Water Code Section 10910 (d), (e), (f), and (g) and supplemented with new information provided by city staff (EKI, September 2009).

Water demand projections used to prepare the 2005 UWMP (Maddaus Water Management, 1998) included up to 408 MGY (approximately 1,250 AFY) of water use by UCSC, an increase of 87 MGY (approximately 270 AFY) over the 2005 water use of 321 MGY (approximately 985 AFY) projected for UCSC. The water service area projection was based on local population and employment trends published by AMBAG in 1997, demographic data and land use information from the City and County of Santa Cruz and the City of Capitola general plans, and estimates of water conservation savings from recent plumbing code changes. This projection proved to be a high estimate of demand growth, with UCSC's actual water use in 2005 averaging approximately 205 MGY (approximately 630 AFY) instead of the projected 321 MGY (City of Santa Cruz Water Department, February 2006). Additionally, as previously mentioned, the demand projections were high for all user groups.



**TABLE 2-4: Project Water Demand Summary  
(IN MILLION GALLONS PER YEAR [MGY])**

Area	Subtotal	TOTAL
<b>UCSC – SOI Amendment Project [1]</b> <ul style="list-style-type: none"> <li>▪ UCSC LRDP Additional Development – Main and North Campus [2]</li> <li>▪ UCSC LRDP-Summer Session</li> <li>▪ Plus 935 new beds per Settlement Agreement</li> <li>▪ Less Conservation Savings per Settlement Agreement</li> <li>▪ Less Approved/Proposed New LRDP Development located outside SOI Amendment area [3]</li> </ul> <p style="text-align: right;"><i>Subtotal</i></p>	<p style="text-align: center;">122</p> <p style="text-align: center;">10</p> <p style="text-align: center;">14</p> <p style="text-align: center;">-30</p> <p style="text-align: center;">-16</p>	<p><b>100</b></p>
<b>UCSC – Other Growth</b> <ul style="list-style-type: none"> <li>▪ Approved/Proposed New LRDP Development located outside SOI Amendment area [3]</li> <li>▪ UCSC LRDP-Delaware (2007-2020) [4]</li> <li>▪ UCSC Marine Science Campus (2007-2020) [4]</li> </ul> <p style="text-align: right;"><i>Subtotal</i></p>	<p style="text-align: center;">16</p> <p style="text-align: center;">1</p> <p style="text-align: center;">9</p>	<p><b>26</b></p>
<b>UCSC – Existing Water Demand – 2007 [5]</b> <ul style="list-style-type: none"> <li>▪ Main Campus</li> <li>▪ UCSC LRDP-Delaware</li> <li>▪ UCSC Marine Science Campus</li> </ul> <p style="text-align: right;"><i>Subtotal</i></p>	<p style="text-align: center;">200</p> <p style="text-align: center;">2</p> <p style="text-align: center;">10</p>	<p><b>212</b></p>
<b>UCSC TOTAL to 2020</b>		<b>338</b>
<p>[1] Developed by Erler &amp; Kalinowski, Inc. (EKI) as part of the project “Water Supply Assessment” based on proposed development square footages and water use factors identified by ARUP for UCSC (August 28, 2006) and as modified by Settlement Agreement as shown below.</p> <p>[2] Additional development was estimated by ARUP (2006) as part of 2005 LRDP FEIR and were based on the area of previously approved projects and proposed new land uses from the 2005 LRDP multiplied by water use factors derived from historical UCSC water use and incorporation of water-efficient fixtures in new development.</p> <p>[3] Projects under construction/proposed under adopted 2005 LRDP that are located outside of SOI Amendment area (Infrastructure Improvements, Porter Housing, Biomed Facility, Health Center, East Campus Infill Housing) (University of California Santa Cruz, July 2009).</p> <p>[4] Based on UCSC water use demand projections (year 2020) less existing use (year 2007).</p> <p>[5] Provided by UCSC.</p>		

Water demands for the City's entire service area was updated as part of the WSA. Projections for the City's water service area were developed for two separate demand scenarios (low/historic and high water use growth) as set forth in the UWMP. The UWMP water demand projections were updated from the 2005 UWMP as part of the WSA for the following two reasons: 1) to extend the projections out to the year 2030 (pursuant to state law requiring that a 20-year period be reviewed); and 2) to incorporate changes to UCSC's future demand projections in accordance with the 2005 LRDP Final EIR and provisions of the Comprehensive Settlement Agreement. The updated projections also are based on current AMBAG population projections (June 2008) that were multiplied by the average per capita water use projected for the years 2010 through 2020 in the UWMP for a 0.4% (low/historic) and 0.8% (high) annual water demand growth rate. The 0.8% annual increase (Scenario 1 in the WSA) reflects a high growth in the City's three largest customer classes (residential, business, and irrigation), which is consistent with general plans for the City's service area. The 0.4% annual increase (Scenario 2 in the WSA) reflects historical trends in water demand growth. Both of these growth rates are used in the city's existing UWMP. The updated and extended water demands are included in Appendix B and further discussed in the "Cumulative Impacts" subsection of the CEQA CONSIDERATIONS (Chapter 5.0) section of this EIR.

#### CONCLUSION – SUPPLY AVAILABILITY

**Normal Year.** The WSA concludes that the City's supplies are sufficient to meet the City's existing and project water demands in a normal year through the year 2030 based on a 0.4% annual increase in customer classes, which is consistent with historical trends in growth. This includes other existing and planned future uses in the City's water service area through the year 2030 (i.e., the 20 year evaluation horizon for this WSA). The proposed project would accommodate water service in the project area for development under UCSC's 2005 LRDP projected through academic year 2020-2021. Therefore, there are sufficient City water supplies to meet project water demands under historical growth conditions.

However, the WSA concludes that the City could potentially face a supply shortfall during normal years after the year 2025 with existing, project and other water demand growth in the City's water service area. This assumes a 0.8% annual increase in the City's three largest customer classes and is consistent with general plans for the City's service area. The magnitude of this potential supply shortfall is estimated as 42 MGY (approximately 130 AFY), and would not occur until at least 2025.<sup>8</sup> However, water supplies are sufficient to serve the proposed project in a normal year during the 20-year horizon based on existing water demand without other significant growth in the water service area; impacts with other development and water demand are further addressed in the "Cumulative Impacts" subsection of the CEQA CONSIDERATIONS (Chapter 6.3) section of this EIR.

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<sup>8</sup> The City's existing adopted IWP and UWMP predict that a shortfall during normal years could occur after the year 2015. The new finding cited in the WSA reflects an updated projection based on current AMBAG population projections, as well as reduced demand throughout the water service area that has occurred since adoption of these plans and since the former growth projections used to develop these plans.

**Dry Years.** The WSA concludes that the City does not have sufficient water to meet current or future projected water demand during dry years, irrespective of the proposed project, under either the low or high growth scenario. This finding is consistent with the 2005 UWMP findings and the conclusions presented in the 2003 Integrated Water Plan (“IWP”), which state that: “The City’s water system is grossly inadequate to meet current demand under drought conditions” (Gary Fiske & Associates, 2003).

Supply deficits are projected to be the greatest during the second year of a multiple-year drought. Supply deficits projected for 2010 range from 30% (WSA “Scenario 2”-0.8% annual demand growth) to 31% (WSA “Scenario 1”-0.4% annual demand growth). In 2030 this shortfall is projected to range from 36% (WSA Scenario 2) to 38% (WSA Scenario 1). Thus, the maximum projected supply shortfall presented in the WSA occurs in the year 2030 under Scenario 1, with a total supply deficit of 1,656 MGY (approximately 5,100 AFY). Compared to the project demand of 100 MGY and a maximum estimated future new development demand of 356 MGY (WSA Scenario 1), it is evident that most of the City’s dry-year supply shortfall is due to existing uses. Even in the “worst-case scenario” multiple-year drought, (i.e., WSA Scenario 1), implementation of the proposed project accounts for only 6% of dry-year supply shortfall (100 MGY out of 1,656 MGY), while other new development accounts for 21% of the supply shortfall (356 MGY out of 1,656 MGY) and existing users account for 72% of the supply shortfall (1,200 MGY) (EKI, September 2009).

It is important to note that the discussion above focuses on annual water supply shortfalls, and does not address peak season cutbacks, which can be significantly greater than the annual supply shortfall due to seasonal variations in demand and supply, and limitations on the City’s water storage facilities (EKI, September 2009).

**Conclusion.** Water supplies are sufficient to serve the proposed project in a normal year with existing water demand. Water supplies in a normal year may be insufficient after the year 2025 with other new development and growth in the City’s water service area under a “high” water demand growth (0.8% per year) scenario, which is further addressed in the “Cumulative Impacts” subsection of the CEQA CONSIDERATIONS (Chapter 6.3) section of this EIR.

Water supplies are not sufficient under existing conditions in dry years. Due to existing insufficient water supplies during dry waters, additional demand from the proposed project would be considered significant. Even though implementation of the proposed project accounts for only 1% of dry-year supply shortfalls in 2030, due to the size of the demand and the fact that the UCSC is the largest water customer in the service area, the additional project demand could potentially result in bringing the City into a more severe curtailment stage. Therefore, this is considered a significant impact.

The City Water Department estimates that approximately 64% of service area demand occurs over an approximate 7-month period of the year, during which time water supplies would be constrained during dry years. Based on this percentage, the proposed project's water demand during dry years would result in an additional demand of 64 MG or approximately 299,000 gpd prior to implementation of UCSC's required LRDP mitigation measures and Comprehensive Settlement Agreement commitments as discussed further below. This could potentially require the City to move into a more severe curtailment stage. With implementation of the LRDP mitigation measures and Comprehensive Settlement Agreement commitments, project water demand during the peak season in dry years is estimated at 53 MGY, which could result in additional per connection curtailments of 11 gpd than it otherwise would have been reached.

As previously mentioned, the City is pursuing construction of a desalination plant to provide a supplemental water supply in dry years, which is necessary even without the proposed project. This is further addressed below.

### **Reasonably Foreseeable City Water Supply Sources**

#### **DESALINATION**

The City is actively pursuing construction of a desalination plant as the preferred supplemental water source identified in the City's adopted IWP and UWMP. The City's adopted IWP reviewed six alternatives and identified seawater desalination as the only feasible alternative for a backup supply of drinking water during a drought to meet demand with a 15% curtailment level set forth in the adopted IWP. The other alternatives would not provide the yield needed to accommodate existing and future drought demands during a multiple-dry year period. As currently envisioned, the desalination facility would initially provide 2.5 mgd for supplemental supply during a drought and could be expanded to 4.5 mgd.

As a preliminary step, the City recently completed operation of a "pilot project" to gather information to establish the optimal design and operating parameters for a permanent facility. Based on these results, the City is moving forward with design plans and environmental review for a permanent facility for drought protection, which is expected to be constructed and in operation by the year 2015, pending completion of project-level environmental review and regulatory permit approvals, i.e., approval of a coastal development permit.

The City acknowledges some uncertainty related to the approval and timing of the permanent desalination plant construction and operation. The likelihood of construction of a permanent plant is currently uncertain as design plans have not been completed, as well as uncertainty as to whether the Coastal Commission would issue the necessary approvals. The project would be subject to further environmental review and permit approvals, which themselves create additional uncertainty. For these reasons, the City concludes that it cannot "confidently

determine” that this source is “reasonably likely,” as spelled out in the guidance provided by the California Supreme Court in its decision in *Vineyard Area Citizens et al. v. City of Rancho Cordova* (2007) 40 Cal.4th 412. Nonetheless, the City has identified a desalination plant as its best option to alleviate shortages in drought conditions, and therefore has committed to pursuing this option in the hope that it will obtain 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.

Another consideration regarding whether a desalination plant is likely to be constructed and operated is the fact that the City and Soquel Creek Water District (SqCWD) are pursuing the desalination plant as a joint project. The SqCWD would use some or all of the future plant’s capacity when the City doesn’t need it to reduce reliance on groundwater and potential seawater intrusion. The SqCWD would share in the cost of building and operating the plant. In 2006, the SqCWD Board adopted its updated Integrated Resource Plan, which identifies this regional desalination plan as its preferred use alternative, and the District has provided assistance with funding for the pilot desalination plant.

#### POTENTIAL IMPACTS OF DESALINATION FACILITY

The desalination concept adopted by the City involves constructing a seawater intake system using an existing, abandoned wastewater outfall, building a new desalination plant and installing the associated pipelines and pump stations for delivering treated water to the Bay Street Reservoir and conveying seawater concentrate to the City’s wastewater facilities, where it would be blended with municipal wastewater flows and disposed via a deep ocean outfall (City of Santa Cruz Water Department, February 2006). A desalination facility site was identified along the Delaware corridor. The certified IWP EIR evaluates impacts of the construction of a desalination facility and associated pipelines on a programmatic level for the initial construction of a 2.5 mgd facility for drought protection (Alternative D-1) and the same with participation of the SqCWD (Alternative 2) and two subsequent expansions (3.5 and 4.5 mgd) for each alternative. The EIR document, which consists of the following two documents, is hereby incorporated by reference in accordance with the provisions of the State CEQA Guidelines section 15150.<sup>9</sup>

- City of Santa Cruz Water Department. June 2005. *Draft Integrated Water Plan Program Environmental Impact Report*. State Clearinghouse #2003102140. Prepared by EDAW.

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<sup>9</sup> The EIR documents are available for review at the City of Santa Cruz Water Department, 809 Center Street, Room 102, Santa Cruz, California 95060; phone: 831-420-5200 and are also available for review online at: <http://www.ci.santa-cruz.ca.us/>.

- City of Santa Cruz Water Department. October 2005. *Final Program Environmental Impact Report, Response to Comments Document*. State Clearinghouse #2003102140. Prepared by EDAW.

Construction of a desalination plant could have physical environmental effects, and the IWP EIR identified potentially significant impacts that could be mitigated to a less-than-significant level, except for temporary construction noise, which was found to be a significant unavoidable impact. Potentially significant impacts that could be mitigated are summarized in Chapter 1 of the Draft EIR and updated in Chapter 3 of the Final EIR and include the following: hydrology and water quality, marine resources, land use, biological resources, air quality, noise, geology and soils, cultural resources, public services and utilities, visual resources, hazardous materials, and traffic. The identified impacts included both impacts of plant operation and construction. These are summarized below. It should be noted, however, that further project-specific environmental review will be conducted once permanent plant design plans are prepared.

Potentially significant desalination plant operational impacts include:

- *Water Quality Degradation* (5.1-2) due to discharge of seawater concentrate from the desalination plant and improper storage, use and disposal of chemicals at the desalination plant (5.1-3). The seawater concentrate produced from the desalination plant is proposed to be mixed with the effluent from the City's wastewater treatment plant. The analysis found that this combination would not exceed the City's wastewater plant discharge requirements and the salinity level would be lower than that of the ambient ocean water. With proper management, impacts would be reduced to a less-than-significant level. This includes construction of concentrate storage at the treatment plant for times when effluent flow is not adequate for mixing with the concentrate being generated by the desalination facility and control of mixing with automatic and continuous monitoring. Chemicals would be required to be properly stored and disposed, and the facility would be designed to prevent disposal of chemicals into the concentrate waste stream.
- *Impacts to Marine Resources* due to operation of the seawater intake which could entrap marine organisms (5.2-1). Construction of intakes, pumps and other facilities could result in disturbance to marine and/or nearshore habitat and species (5.2-4, 5.2-9). The impacts of the intake were determined to probably not be significant because the maximum daily intake is much lower than volumes that have been found to have significant adverse impacts on marine organisms and because the intake would be designed to reduce losses. However, this issue would require more detailed studies and analyses for a 4.5 mgd facility. Construction of facilities would proceed after site-specific reviews determine that none are located in sensitive areas.



- ❑ *Exposure to Flood* (5.1-4), *Seismic Hazards* (5.7-1), and/or *Soils Limitations* due to project siting (including distribution facilities) and operation that could be mitigated by implementation of recommended engineering and design measures to withstand and minimize damage from these hazards.
- ❑ *Impacts to Cultural Resources* due to inadvertent disturbance of potential or unknown cultural resources during (5.8-1, 5.8-2, 5.8-3) that can be mitigated by pre-construction and during construction surveys and protection.
- ❑ *Removal of Emergency Wastewater Discharge Pipeline* (5.9-4) with use of the wastewater plant's abandoned outfall line for the intake system that would be mitigated with upgrades to the treatment plant facilities.
- ❑ *Visual Impacts* (5.10-2, 5.10.3) that can be mitigated with proper design and vegetative screening.
- ❑ *Hazardous Exposure* to workers due to accidental spills and/or release of chemicals (5.11-1, 5.11-3) or disturbance of contaminated soils during construction (5.11-2) that can be mitigated with implementation of proper storage, containment, and emergency controls.

Construction impacts include:

- ❑ *Water Quality Degradation* (5.1-1) due to construction of the pipeline in locations close to surface water bodies and potential erosion during construction (5.7-2). These would be mitigated with implementation of construction controls and best management practices.
- ❑ *Impacts to Biological Resources* due to construction that may disturb sensitive habitat or special status species (5.4-1, 5.4-2, 5.4-3, 5.4-4, 5.4-5) or result in indirect impacts related to sedimentation (5.4-6). These impacts can be mitigated with standard pre-construction surveys, siting to avoid sensitive resources, establishment of construction buffer zones, and other construction controls and best management practices to prevent indirect impacts.
- ❑ *Air Emissions*, primarily related to air emissions during construction (5.5-2), that would be mitigated with standard dust control measures during construction.
- ❑ *Construction Traffic* for temporary periods during construction (5.12-1, 5.12-2) that can be mitigated with implementation of traffic control plans and measures.
- ❑ *Solid Waste Generation* (5.9-3) that would be mitigated with construction specifications regarding excavation reuse and recycling.
- ❑ *Construction Disturbance to Adjacent Land Uses* (5.3-1) due to construction noise, dust, etc. and potential interference with utility lines (5.9-1) that could be mitigated to some extent, although not to a less-than-significant level, with construction controls, such as limits on hours of operation.



The EIR also found that the first construction increment for both alternatives would have no growth-inducing impacts, and that the subsequent plant expansion increments would require further review of population projections and City/County land use planning documents prior to any expansion of a plant to ensure that development of an additional water supply is consistent with planned growth projections (City of Santa Cruz Water Department & EDAW, June 2005). In most cases, the EIR concluded that the CEQA significance level of impact between Alternatives D-1 and D-2 is similar (with D-1 being the City building a desal plant exclusively for its own use and D-2 being a joint project between the city and the SqCWD), except for the impact on local and regional groundwater supply. For this environmental issue area, Alternative D-2 is likely to provide a beneficial impact on the groundwater basin. The delivery of desalination water to SqCWD during normal and wet years would allow reduced pumping in the district and potentially contribute to additional groundwater in storage (Ibid.).

Project-level environmental review will be conducted once conceptual design plans are completed for a permanent facility, but based on the programmatic review conducted as part of the IWP, nearly all physical impacts are expected to be minimized or adequately mitigated. Expansion to provide additional capacity for planned growth would involve minimal physical expansion to add additional filters, but would also be subject to additional environmental review to further analyze growth inducement potential based on review of City, County and Capitola General Plans.

Global climate change is predicted to result in a sea level rise. The area in which a desalination plant is being considered is located approximately 20 feet above sea level, and not within areas that have been estimated to be affected by sea level rise within the City. Nonetheless, project design plans and future site-specific environmental reviews will need to assess and address this issue.

#### **ADDITIONAL CONTINGENT CITY WATER SOURCES**

As previously discussed, several possible water supply options were carefully evaluated, including drilling more wells, upgrades to the North Coast system, 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, leaving seawater desalination as the only practicable solution available to the City (City of Santa Cruz Water Department, February 2006). Recycled wastewater was determined to be potentially feasible for agricultural irrigation, but would produce high cost, limited yields that were too small to meet the City's drought-year needs (Ibid.).

Recycled water for landscape irrigation remains a viable alternative that could be pursued in the future. However, currently it is not the City's preferred water supply strategy. The use of recycled water for landscape irrigation was eliminated due to a number of reasons, including the limited yield and high cost. The potential users of the recycled water (i.e., parks, schools,

cemeteries, golf courses, UCSC) have an estimated outdoor irrigation demand of approximately 170 to 230 MGY (approximately 520-700 AFY). This amount was considered too small by itself to meet the City's drought-year needs and also had a high capital cost. Additionally, water recycling would be as expensive as desalination and would not provide a sustainable yield for a multiple-year drought scenario, and thus, would not be cost-effective.

Improvements to maximize use of existing water sources and storage also 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. These upgrades have been or are being pursued, and the production estimates for all such projects, e.g., rehabilitation of the North Coast pipeline, were assumed to be completed and incorporated into the drought "savings" built into the IWP.

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. These potential alternatives have not yet been fully studied and consideration of such sources would occur at some point further in the long-term.

### **Potential UCSC Water Sources**

The 2005 LRDP EIR includes an adopted mitigation measure (UTIL-9G) that requires UCSC to prepare a study on feasible measures for utilization of reclaimed water (including rainwater, grey water, cooling tower blowdown water and/or recycled water) in new development. A draft report was completed for the University in 2008 (ARUP, March 2008) that reviews three new supply alternatives including: rainwater harvesting; greywater recycling; and blackwater recovery. The study was submitted to the City during the preparation of this EIR and its findings are summarized below. It should be noted, however, that the City has not conducted an independent review of the report to determine whether or not its assumptions and conclusions are accurate. However, the information is being presented to disclose the water source alternatives that are being independently evaluated by UCSC.

Potential sources of rainwater include rain collected from existing and new building roofs and parking lots. Downspouts can be constructed or retrofitted to discharge to below-ground storage tanks where the water can be treated for reuse. A combination of primary settling and disinfection is generally required for reuse of rainwater depending on its end use (ARUP, March 2008). Greywater recycling involves collection of drain water from showers, sinks, laundry, and laboratory equipment which do not accept organic matter. Treatment may vary depending on end use and the types of pollutants in collection areas. Typically, treatment would involve primary grit and surfactant removal, followed by additional disinfection (Ibid.). Blackwater recycling is the collection and recovery of water from all domestic wastewater drains, including showers, sinks, laundry, laboratory equipment, toilets, urinals,

and kitchen sink facilities. Though they result in substantially greater water recovery compared to greywater or rainwater treatment systems, blackwater treatment systems are considerably more costly (Ibid.).

The study concluded that the studied alternatives could result in a water source of approximately 88 MGY when applied to new development with a further increase if existing facilities were retrofitted. The non-potable new water demand was estimated at approximately 62 MGY, including both indoor (55 MGY) and outdoor (7 MGY) demand (ARUP, March 2008). Rainwater harvesting and greywater recycling were identified as priorities for new North Campus buildings and new Family Student Housing, that would result in a water savings of about 28 MGY (Ibid.).

The study does not identify costs, nor has UCSC identified a schedule for implementation. Since the City does not have control over UCSC development and water use, these non-potable alternative water systems are not considered reasonably foreseeable City water sources for the purposes of this EIR's analysis. However, to the extent that UCSC develops a program for implementation, especially for new buildings, the SOI project water demand on City supplies would be correspondingly reduced. It is noted that rainwater harvesting in the North Campus area may need to be carefully reviewed in light of the adopted 2005 LRDP Mitigation Measure HYD-5A (via implementation of Mitigation Measure HYD-3D) that requires that runoff from new impervious areas in the north campus would still be allowed to infiltrate and thereby recharge the local groundwater system. The City expects that if the University were to develop any projects to augment its water supplies, further environmental review would be conducted.

### **Mitigation Measures**

Construction of a desalination plant, as planned by the City of Santa Cruz, will provide a sufficient supplemental water supply during drought conditions for both existing and future demand. However, the project impact on water supply during dry years is considered significant and unavoidable because of the inherent uncertainty about the City's ability to obtain all necessary approvals for, and completion of, the planned desalination plant to provide adequate water supplies during a drought.

Implementation of the nine mitigation measures adopted by The Regents of the University of California in approving the 2005 LRDP (as listed below), which are binding as part of the University's adopted Mitigation Monitoring and Reporting Program (MMRP), would reduce the severity of the impact. The implementation of the Comprehensive Settlement Agreement includes several provisions regarding UCSC water demand as set forth in Mitigation Measures 1-1 and 1-2, which are also binding and enforceable through judicial enforcement of the final judgment.

**UCSC 2005 LRDP FEIR MITIGATION MEASURES**

UTIL-9A The Campus shall continue to implement and improve all current water conservation strategies to reduce demand for water, including the following:

- Continue the leak detection and repair program.
- Install an individual water meter in each new employee housing unit to encourage residential water conservation.
- Install waterless urinals in all new buildings.
- Require that new contracts for washing machines in student residences be certified by the Consortium on Energy Efficiency 6 to have a water factor of 5.5 or less or meet an equivalent standard. New washing machines purchased for use in athletic facilities shall meet applicable standards for water-efficiency for institutional machines.
- Incorporate water-efficient landscaping practices in all new landscape installations. Water-conservative landscaping practices shall include, but will not be limited to the following: use of water-efficient plants, temporary irrigation systems for plant establishment areas where mature plants will be able to survive without regular irrigation, grouping of plants according to their water requirements, design of planting areas to maximize irrigation pattern efficiency, and mulch covering in planting areas.
- To facilitate monitoring of water usage in all new development, the Campus shall: (1) install separate meters on water lines for individual buildings and (2) install meters on irrigation lines where one point of connection irrigates 5,000 square feet or more.

UTIL-9B As new technologies become available, the Campus shall continue to conduct pilot programs for high-efficiency plumbing fixtures including, but not limited to, dual-flush toilets. If a piloted technology proves to be successful (i.e., the high-efficiency fixtures are effective in water savings and do not require more frequent or expensive maintenance than the existing standard), the Campus shall revise its standards to require use of the fixtures in all new buildings and in existing buildings as existing fixtures need to be replaced.

UTIL-9C Within one year following approval of the 2005 LRDP, the Campus shall implement a water conservation education program for campus residents. This will include but would not be limited to:

- Distribution to residents of employee housing of educational materials covering the following topics: basic home water conservation practices, plumbing retrofits and replacements, and strategies to conserve landscape irrigation.
- Designation of a staff member who will be responsible for developing and implementing a water conservation education and awareness

program to reduce water consumption in student residences, dining halls, and student affairs facilities.

UTIL-9D Within one year following approval of the 2005 LRDP, the Campus shall consult with the City of Santa Cruz regarding the appropriate scope of and initiate, an engineering audit of campus water use. The audit will assess existing campus water uses, identify options for reducing water consumption, prioritize feasible improvements based on the amount of potential water savings and cost effectiveness, and recommend top priority measures for implementation within the succeeding five years, and lower priority measures for potential subsequent implementation. The Campus will re-evaluate the lower priority measures during subsequent updates of the audit. The audit will include, but will not be limited to the following:

- An inventory of plumbing fixtures in all facilities on campus, which will identify the number and locations of fixtures and identify those that do not meet current campus standards for water efficiency. (Regarding retrofit of plumbing fixtures in student housing, see LRDP Mitigation UTIL-9H.)
- An inventory of irrigation systems on the campus, including identification of systems that are not metered, the methods used to control the irrigation schedule, and potential for improvement.
- An inventory of locations on campus where buildings and irrigation are on the same meter.
- An analysis of potential water conservation measures for the campus cooling water system.
- Identification of landscaped areas on campus that have plants that are high water-use.
- An engineering estimate of the additional water savings that would be achieved through implementation of the “high priority” measures and a re-evaluation of the University’s projected 2020 water demand.

UTIL-9E The Campus shall begin implementation of the top priority recommendations of the water audit conducted under UTIL-9D within one year of completion of the audit and complete implementation of the top priority recommendations within five years after completing the audit.

UTIL-9F The Campus shall, at intervals of no more than five years, during the term of the 2005 LRDP, revisit the results of the water audit conducted under LRDP Mitigation UTIL-9D, consult with the City of Santa Cruz Water Department, conduct round table discussions with representatives of relevant campus departments, and conduct additional study of new technologies as needed to identify additional feasible and effective water conservation measures for

implementation on the campus during the subsequent five year period. The following are among the measures that shall be considered:

- Adding existing irrigation systems to the campus's central control system.
- Retrofitting existing water meters such that building use and irrigation are separately metered.
- Replacing natural turf on athletic fields with artificial turf.
- Installing timers on showers in student residences.

UTIL-9G Within two years following approval of the 2005 LRDP, the Campus shall initiate a study on feasible measures for utilization of reclaimed water (including rainwater, grey water, cooling tower blowdown water and/or recycled water) in new development. Potential uses of reclaimed water include cooling, irrigation, and toilet flushing. The study shall contain a plan to utilize reclaimed water in new development as feasible and effective in water conservation, and shall include an implementation schedule.

UTIL-9H Within five years following approval of the 2005 LRDP, the Campus shall complete the retrofit of all plumbing fixtures in student housing not meeting the efficiency standards current in 2005 (1.6 gallons per flush for toilets). The new fixtures installed under the retrofit program shall conform to the campus standard for new buildings current at the time of the retrofit.

UTIL-9I If and when the City implements drought emergency management measures, the University will implement the following measures for the duration of the drought emergency:

- Reduce use of potable water for irrigation on the campus landscape, the CASFS and the Arboretum in accordance with reductions required by the City for similar users.
- Utilize water from the existing supply well in Jordan Gulch for non-potable uses. The Campus shall implement a program of monitoring flow at downgradient springs during the time when the well is being used.
- Require that residential water use on campus be reduced consistent with the City's target for multifamily residential facilities.

#### **COMPREHENSIVE SETTLEMENT AGREEMENT PROVISIONS**

The implementation of the Comprehensive Settlement Agreement includes several provisions regarding UCSC water demand and development of a supplemental water source for dry-year conditions. UCSC's Settlement Agreement commitments are reflected in mitigation measures 1-1 and 1-2 below, and are judicially enforceable under the Settlement Agreement. UCSC agrees to reduce and restrict its water use during any periods of restriction or moratorium



imposed upon the City's water service area. UCSC also agrees to implement identified high priority water conservation measures, which have been factored into the project water demand analysis. The Settlement Agreement also acknowledges the City's intention to implement its Integrated Water Plan, including additional water conservation, use curtailment in droughts, and construction of a desalination plant, and UCSC will contribute funds equivalent to the City's "System Development Charges" that will serve as its "fair share" contribution to finance improvements.

1-1 Water Restrictions and/or Moratoriums:

- Except with regard to any UCSC housing projects under development, if the City establishes a service area-wide moratorium on new connections because of a water shortage emergency condition under State Water law, UCSC will not increase its water demands on the City water system from any University-owned properties, while the moratorium remains in effect.
- UCSC will comply with any service area-wide water restrictions or mandatory use curtailment imposed by the City in response to a declaration of water shortage emergency condition under State Water law.

*Responsibility for Implementation: University of California Santa Cruz.*

1-2 Contribution of Funds Equivalent to the City's "System Development Charges": For every increment of 85,000/gallons of water used over 206 MGY (2005 LRDP baseline year for the UCSC main campus, each incremental payment resets the baseline), UCSC will contribute funds to the City as follow.

- UCSC will pay a fee equivalent to the City's System Development Charges ("SDC") for Equivalent Residential Units ("ERU") in its service area at a rate in effect on the date of payment;
- Payments represent UCSC's proportionate share of use of City developed new water source capacity.

*Responsibility for Implementation: University of California Santa Cruz.*

## CONCLUSION

Despite the City's intent to pursue an additional water supply for dry-year conditions, UCSC adopted mitigation measures, and UCSC's agreement to participate in city-wide curtailments and restrictions, 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. Furthermore, the exact timing of implementation of UCSC conservation efforts (beyond the "high priority" measures specified in the Comprehensive Settlement Agreement for implementation within 5 years) and potential



supplemental campus water sources, as well as the potential level of demand reduction, is not known. Therefore, a conservative conclusion is that the project impact on water supply during dry year conditions is significant and unavoidable, even with implementation of the identified mitigation measures.

## 4.2 WASTEWATER SERVICE

### ENVIRONMENTAL SETTING

**IN THIS SECTION:**

- **Regulatory Setting**
- **Wastewater Treatment**
- **Wastewater Collection**
- **UCSC Service**

### REGULATORY SETTING

#### Federal and State Regulations/Requirements

The Clean Water Act (CWA) regulates the discharge of pollutants to waters of the United States from any point source, enacted in 1972. The California State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards (RWQCB) have the authority in California to protect and enhance water quality, including administration of the National Pollutant Discharge Elimination System (NPDES) permit program for discharges, storm water and construction site runoff. The discharge of treated wastewater is included in the NPDES program. Wastewater systems are closely regulated both for health and environmental concerns. The RWQCB regulates operations and discharges from sewage systems through the NPDES permit.

Federal, state and local regulations are enforced by the City of Santa Cruz through permitting, monitoring and inspections of Significant Industrial Users (SIU). SIUs are defined in accordance with the Code of Federal Regulations 40 CFR 403.3 (t) as:

- All industrial users subject to Categorical Pretreatment Standards, or
- Any other user that has any one or more of the following characteristics:
  - An average discharge flow of equal to or greater than 25,000 gallons per day of process wastewater to the wastewater treatment facility (WWTF),
  - Contributes a process wastestream which is 5% or more of the average dry weather hydraulic or organic capacity of the WWTF,
  - Has a reasonable potential to adversely affect WWTF operations, or
  - Violates any pretreatment standard or requirement (in accordance with 40 CFR 403.8 (f) (6)) (City of Santa Cruz website: "Industrial Waste Discharge Program").

Pursuant to State law (Government Code section 56430), the Local Agency Formation Commission (LAFCO) is required to review all municipal services in the county once every five years. The Santa Cruz LAFCO completed and accepted its report in August 2005. LAFCO's findings and conclusions are presented in the LAND USE (Chapter 4.3) section of this EIR.

### **Local Regulations/Requirements**

Chapter 16.08 ("Sewer System Ordinance") of the City of Santa Cruz Municipal Code regulates discharge to sanitary sewer and storm drains and requires that all wastewater be discharged to public sewers. Septic tanks and cesspools are not allowed within city boundaries except as specified for limited conditions in Chapter 6.20 of the Municipal Code.

The Monterey Bay Unified Air Pollution Control District's Rule 216 requires any entity seeking to obtain an Authority to Construct or a Permit to Operate for a Wastewater or Sewage Treatment facility to obtain a permit from the District. The purpose of this Rule is to ensure that the projected served population of a Wastewater or Sewage Treatment facility is consistent with the Air Quality Plan as approved by the Monterey Bay Unified Air Pollution Control District for addressing the current State Implementation Plan requirements for attaining and maintaining federal ambient air quality standards and consistent with the Plan to attain and maintain the State Ambient Air Quality Standard. As explained further below, the proposed project does not include or require new or expanded construction of the City's existing wastewater treatment plant or facilities. Thus, this Rule does not apply to the proposed project (Getchell, Monterey Bay Unified Air Pollution Control District, personal communication, August 2009).

## **WASTEWATER TREATMENT – EXITING SETTING**

### **Overview**

The City of Santa Cruz owns and operates a regional wastewater treatment facility (WWTF), located on California Street adjacent to Neary Lagoon, that provides secondary level of treatment. The City treats sewage from domestic and industrial sources and discharges the treated effluent into the Pacific Ocean under the provisions of a waste discharge permit (NPDES No. CA0048194) issued by the California RWQCB, Central Coast Region (Order No. R3 - 2005 - 0003). Monterey Bay, into which the region's treated wastewater is disposed, was designated in 1992 as a National Marine Sanctuary. Wastewater influent and effluent characteristics are carefully monitored for compliance with state water quality requirements. The City also participates in a regional receiving water monitoring program with other dischargers in the Monterey Bay area (City of Santa Cruz Water Department, February 2006).

### **Service Area**

The City of Santa Cruz WWTF serves a population of approximately 130,000 in the cities of Santa Cruz and Capitola and parts of unincorporated Santa Cruz County (see Figure 7<sup>1</sup>). In addition to the City of Santa Cruz, the WWTF also serves the Santa Cruz County Sanitation District and Community Service Areas (CSA) 10 and 57 as further described below. The City also provides capacity for the City of Scotts Valley to discharge its treated wastewater into the Pacific Ocean via the City's discharge. The City of Santa Cruz accounts for its wastewater system as an enterprise activity, primarily relying on service charges for funding (Dudek & Associates, June 2005).

The Santa Cruz County Sanitation District provides wastewater collection service for the City of Capitola and the unincorporated communities of Aptos, Soquel and Live Oak (see Figure 8). The District receives periodic inquiries regarding sewer service in the La Selva Beach area due to septic problems in that area, but that area lies outside its current sphere of influence (Dudek & Associates, June 2005).

County Service Areas 10 and 57 (Rolling Woods and Graham Hill as shown on Figure 9) are also served by the City's WWTP. CSA 57 serves the Woods Cove subdivision off Graham Hill Road; the service area encompasses 0.1 square miles and has a current service population of 14 (7 connections). The area is expected to reach a population of 120 by 2015 as a result of buildout of the approved 60-lot Woods Cove subdivision.<sup>2</sup> CSA 10 serves a portion of the developed Rolling Woods subdivision also located off Graham Hill Road (Dudek & Associates, June 2005).

### **Treatment Levels and Plant Capacity**

#### **TREATMENT**

The City's WWTF was upgraded in 1998 to provide secondary treatment in order to meet state and federal waste discharge requirements. The City's treatment plant currently produces wastewater of a quality that would be classified as Disinfected Secondary-23. The treatment process consists of a series of steps, including screening, aerated grit removal, primary

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<sup>1</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

<sup>2</sup> The Board of Supervisors approved the Tentative Map on November 27, 1996. Subsequent to that, the County did supplemental environmental review to consider the developer's request to change from onsite sewage treatment to a transmission main to the City of Santa Cruz. In September 1998, the County filed a negative declaration and the County approved the revised sewer option on October 20, 1998 (County Application Number 98-0121) (McCormick, Santa Cruz LAFCO, personal communication, October 2009).

sedimentation, trickling filter treatment, solids contact, secondary clarification, and ultraviolet disinfection.

The City's treated wastewater is potentially suitable for some agricultural applications and for limited public access irrigation. However, the level of treatment is not sufficient for general irrigation or unrestricted use on playgrounds, parks, schoolyards, etc. Additional treatment above that currently provided would be needed to meet the state public health and safety requirements for these uses. In addition to the treatment upgrades, a distribution system, including pumps, meters, storage facilities, and separate piping would be required to convey the recycled water to customers (City of Santa Cruz Water Department, February 2006).

### **CAPACITY**

The WWTF has a permitted capacity of 17.0 million gallons per day (mgd). The current amount of wastewater treated at the WWTP is approximately 10.5 mgd (City of Santa Cruz, 2007 – Annual Report). With the closure of businesses within the city over the last 10 years (including, Lipton, Wrigley, Salz Tannery, and Texas Instruments), the amount of wastewater treated at the facility has decreased over that time period. Approximately 150 acre-feet per year (0.2 mgd) of treated water is retained for use at the treatment plant (Dudek & Associates, June 2008). The plant also treats excess dry weather flow of about 2 mgd from Neary Lagoon, typically from April through October.

The Santa Cruz County Sanitation District has treatment capacity rights of 8 mgd at the City of Santa Cruz WWTF. The City contributes approximately 5.0 mgd with a remaining capacity of 4.0 mgd. The Sanitation District contributes 5.5 mgd with a remaining capacity of 2.5 mgd. Approximately 50% of the wastewater treated at the plant is generated within the City of Santa Cruz.

The amount of wastewater treatment in the year 2020 is estimated at 10.78 mgd (Dudek & Associates, June 2008). At this time it is estimated that the 17 mgd capacity will be reached in approximately 30 years (City of Santa Cruz Planning and Community Development Department, April 2004).

### **WWTF MAINTENANCE & IMPROVEMENTS**

The agreement between the Sanitation District and the City stipulates that the District shall pay 8/17 (47%) of the project costs for treatment modifications, while operational and maintenance costs are split in proportion to the total flow, Biological Oxygen Demand (BOD) and Suspended Solids (SS) actually discharged<sup>3</sup> by each agency (Dudek & Associates, June 2008).

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<sup>3</sup> Flows are measured daily and monthly averages are prepared. SS are measured daily and BOD is measured weekly.

The WWTF has been upgraded several times since 1928 when the plant began operations (City of Santa Cruz, 2007-Annual Report). The WWTF was upgraded in 1998 to provide a secondary biological treatment system consisting of trickling filters/solids contact tanks to improve effluent quality and satisfy federal requirements and the California Ocean Plan.

As part of the approval for the secondary treatment improvements at the wastewater treatment plant, the City was required to mitigate the impacts to the adjacent Neary Lagoon. The City has budgeted \$741,429 through FY 2004-2005 from Wastewater Revenue for capital improvements to the Neary Lagoon Park based on the Neary Lagoon Management Plan (Dudek & Associates, June 2008).

According to the City's website<sup>4</sup>, other major accomplishments at the WWTF in the last 10 years include:

- ❑ \$60 million upgrade from advanced primary treatment to full secondary treatment.
- ❑ Completion of a photovoltaic system.
- ❑ Integration of a 1.3-megawatt cogeneration system into the facility power grid.
- ❑ Conversion of effluent purification from gas chlorine to UltraViolet Light treatment.
- ❑ Completion of an Odor Control System that reduces odors from the wastewater treatment plant by collecting exhaust air and sending it through a carbon absorption filter system.
- ❑ Implementation of staffing reorganization to optimize plant efficiency

### **Treated Effluent Disposal**

The treated effluent is disposed into the Monterey Bay via a deep ocean outfall constructed in 1980. The outfall extends 12,250 feet on the ocean bottom and terminates one mile offshore at a depth of approximately 110 feet below sea level. A 2,100-foot diffuser at the end of the pipe provides an initial dilution of greater than 139 parts seawater to one part wastewater (City of Santa Cruz Water Department, February 2006).

As previously indicated, the City of Scotts Valley discharges its treated effluent via the city's ocean outfall. The Scotts Valley Wastewater Treatment Plant has a permitted capacity of 1.5 million gpd and treats water to secondary and tertiary levels. Secondarily treated effluent that is not used for recycled water is transmitted via a main to Santa Cruz and discharged to the ocean through the outfall shared with the City of Santa Cruz.

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<sup>4</sup> <http://www.ci.santa-cruz.ca.us/pw/index.html>, "Wastewater Treatment Facility."

## WASTEWATER COLLECTION

The City of Santa Cruz wastewater collection system serves approximately 15,000 connections. The collection system includes 23 lift stations with a total capacity of 10.6 million gallons per day (Dudek & Associates, June 2005). The City maintains over 160 miles of sewer pipeline ranging in size from 6 to 54 inches in diameter.

The City does not have a current Wastewater Master Plan; the City's last "Sewer System Master Plan" was prepared in 1984. The City is in the process of completing a new Sewer Master Plan.

The City addresses infrastructure needs during the annual budgeting process. The City's proposed 2005-2007 Capital Improvement Program includes a number of projects for improvements to the wastewater system. In addition to rehabilitation and replacement projects, the CIP includes a number of projects where closed circuit TV will be used to identify problem areas and improve maintenance and repairs. The CIP also includes funding for replacing worn and obsolete equipment, and improving automation at the wastewater treatment plant. The CIP is reviewed and adopted annually (Dudek & Associates, June 2005).

The City has several long-term debts related to its wastewater infrastructure. In 1994 the City issued a Sewer Revenue Bond of \$5,660,000. Annual installments are \$105,000 to \$380,000 through November 2023 with interest rates ranging from 5.0% to 5.7%. Annual debt service is paid from revenues of the City's sewer system. The City also has a note payable to the State of California for the construction of secondary treatment improvements at the treatment facility. Annual payments are set at \$3,427,009 and include interest of 2.8%. The debt will be paid off in August 2018 (Dudek & Associates, June 2008).

## UCSC SERVICE

Wastewater generated by the UCSC campus is collected via the campus sewer system and conveyed to the City's wastewater treatment facility via City sewer trunklines. The University's sanitary sewer system collects and conveys flows from residential and nonresidential buildings on campus, as well as flows from the cooling tower and boiler blowdown (University of California Santa Cruz, September 2006, Volume I).

There are two major trunk sewers on the UCSC campus: a 10- to 12-inch diameter line along Heller Drive and Empire Grade Road and a 12- to 14-inch diameter line along Jordan Gulch. These combine into a single 21-inch diameter sewer line, which is fitted with a meter to monitor flow. South of the meter, a 15-inch line connects to the City's interceptor line at Bay Street and High Street. The 15-inch line runs down Bay Street to Meder Street, connecting with parallel 10- and 15-inch lines along Meder Street to the 12-inch Arroyo Seco line. The Arroyo



Seco line runs down the bottom of the Arroyo Seco canyon and connects with a 30-inch sewer line on Old Mission Street (University of California Santa Cruz, September 2006, Volume I).

The City regulates what the campus can discharge to make sure it properly treats it before discharging into Monterey Bay. Additionally, campus wastewater is routinely monitored by UCSC and the City of Santa Cruz to ensure that the campus complies with wastewater discharge limitations (University of California Santa Cruz, September 2006, Volume II).

In 2007, the UCSC campus generated a total of approximately 120 million gallons of wastewater (Fitch, UCSC, personal communication, September 2009) or approximately 330,000 gallons per day (gpd). It is noted that the campus' wastewater generation for 2007 represented approximately 60% of the on-campus water use for that year. The UCSC campus wastewater generation is included in the City's total contribution to the WWTF.

## RELEVANT PROJECT ELEMENTS

The proposed project consists of a proposed amendment the City of Santa Cruz's Sphere of Influence (SOI for provision of extraterritorial water and sewer services for a 374-acre portion of the UCSC North Campus (shown on Figure 3) that would allow for the development of 3,175,000 gross square feet of additional building space as described in the UCSC 2005 LRDP. At this time, no annexation of land to the City's municipal boundaries is proposed, nor has the University proposed site-specific development in the North Campus area. As previously indicated, there are no site-specific plans to extend infrastructure into this area. However, a schematic for utility line extension is included in the UCSC's application to LAFCO based on conceptual routes identified in the 2005 LRDP and LRDP EIR that primarily follow planned new roads. Proposed utility extension is shown on Figure 13.

## IMPACTS AND MITIGATION MEASURES

### CRITERIA FOR DETERMINING SIGNIFICANCE

In accordance with CEQA, State CEQA Guidelines (including Appendix G), City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in wastewater flows that exceed sewer line or treatment plant capacity or contribute substantial increases to flows in existing sewer lines that exceed capacity.

## IMPACT ANALYSIS

**Impact 2-1:** The proposed project would result in provision of wastewater service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There is adequate treatment capacity to serve this area, and no expansion of the treatment plant or sewer lines will be required. This is considered a less-than-significant impact.

The 2005 LRDP EIR estimated that campus development would result in an increase of approximately 122,500 gpd of wastewater discharged into the sanitary sewer system, based on the projected campus population and space growth, resulting in a total discharge of 423,875 gpd (University of California Santa Cruz, September 2006, 2005 LRDP Draft EIR, Volume II).. Further engineering analyses were provided by UCSC as part of the LRDP Final EIR, which estimated average and peak wastewater flows (URS, July 2005). Based on this analysis, average daily flow in the year 2020 would be about 767,500 gpd which represents an increase of approximately 447,500 gpd (0.45 mgd). However, the analysis assumed a higher campus population than would result with the LRDP that was ultimately adopted The Regents of the University of California. Thus, the estimated increase in wastewater flows is conservatively high, but would also account for additional on-campus housing as stipulated in the Comprehensive Settlement Agreement. This estimate also includes areas of the campus outside the proposed project SOI amendment area.

The estimated water demand for the proposed project is 100 MGY, some of which would be for irrigation. Campus irrigation demand has been estimated at approximately 30% of UCSC's total demand, although it appears that about 40% of the campus water use in the year 2007 was for irrigation or uses that did not enter the sanitary sewer system. Thus, approximately 60-70% of the project water demand is estimated to result in an equivalent amount of wastewater. This results in a potential increase of 60-70 MGY of wastewater or approximately 164,000 - 192,000 gpd. This estimate is higher than the estimate presented in the 2005 LRDP EIR, but lower than the amount estimated in the technical engineering review. Thus, project demand would be less than between 0.2 and 0.45 mgd.

Wastewater flows from campus development would be conveyed to the City's wastewater treatment plant, which has a design capacity of 17 million gpd and current average daily flow of approximately 10.5 mgd. The estimated 0.2 – 0.45 mgd of additional wastewater flows potentially resulting from the proposed project would be well within the City's remaining share (4 mgd) of the WWTP capacity and within the total remaining 6.5 mgd capacity of the plant. Therefore, there would be adequate capacity to serve the campus. Thus, project wastewater flow impacts upon the City's WWTP are less-than-significant, and would not result in the need to expand the treatment plant.

## **Mitigation Measures**

None are required.

**Impact 2-2:** The proposed project would result in provision of wastewater service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. New development would contribute flows to existing City-maintained sewer line segments that have adequate capacity to serve future development. This is considered a less-than-significant impact.

Analyses conducted for the UCSC LRDP EIR calculated peak dry and wet weather daily flows under 2020 conditions for each sewer trunkline and the 21-inch sewer main near the main entrance (URS, 2005). The analysis found that both campus mainlines, as well as the 21-inch main near the main entrance, would be adequate to handle the projected flows. The 2005 LRDP analysis concluded that the 15-inch City sewer into which the 21-inch main discharges would be at 100% capacity in 2020, and may need to be upgraded (University of California Santa Cruz, 2005 LRDP Final EIR, September 2006, Volume II). However, based on the City's hydraulic modeling conducted after the completion of the 2005 LRDP EIR, the City has concluded that this sewer line segment has adequate capacity for future UCSC development (Wolfman, City of Santa Cruz Public Works Department, personal communication, September 2009). The City's model included 1.6 mgd of peak dry weather flows and 2.9 mgd of wet weather flows from UCSC.

In addition, wastewater from the campus flows into a city sewer that runs down Bay Street for a short distance, runs to the west and then through the Arroyo Seco canyon. Improvements are currently being designed for a constrained downstream 10-inch sewer line segment (Wolfman, City of Santa Cruz Public Works Department, personal communication, September 2009). A portion of the Arroyo Seco line is considered to be undersized. The City installed a flow meter to determine what portion of the line, if any, will need to be upgraded. Review with the City of Santa Cruz Public Works Department during preparation of this EIR indicates that the Arroyo Seco line is subject to infiltration during rainy season and potential capacity constraints. Upgrades to the line are planned including lining and manhole cover improvements along approximately 6,000 linear feet of the line. The increased flows from the UCSC campus after buildout of the 2005 LRDP have been taken into consideration in this planning.

Thus, project wastewater flow would not exceed sewer line capacities, and increased wastewater generation to existing sewer lines is a less-than-significant impact.

Additionally, it is noted that as set forth in the Comprehensive Settlement Agreement (section 6.1), UCSC will continue to fund all warranted "University Assistance Measures" (UAMs) from the 1988 LRDP. These include UAM 5 (sewer line upgrades) and UAM 6 (water

treatment plant upgrades), and UCSC agrees to pay its proportional cost of upgrades necessary to serve the main campus, which will be negotiated once final cost estimates are developed.

Any new sanitary sewer construction on campus under the 2005 LRDP would be limited to repair, maintenance, and upgrade of existing facilities and extensions to serve new development in the North Campus. Since the 2005 LRDP envisions that many of these improvements would be placed in existing utility corridors or streets, they would be constructed in previously-disturbed areas where cultural and biological resources would likely not occur (University of California Santa Cruz, September 2006, Volume II).

### **Mitigation Measures**

None are required.

### ENVIRONMENTAL SETTING

**IN THIS SECTION:**

- **Regulatory Setting**
- **Existing & Planned Land Uses in Project Area**
- **LAFCO Policies**
- **City Sphere of Influence & Service Areas**
- **City & County Policies**

### REGULATORY SETTING

Pursuant to State law (Government Code Section 54773 et seq.) a Local Agency Formation Commission (LAFCO) was established in each county to promote the orderly development of local government agencies, efficient provision of services, to guide development away from prime agricultural land and to discourage urban sprawl. Pursuant to State law, LAFCOs must adopt a Sphere of Influence (SOI) for each governmental agency (including special districts), which is probable physical boundaries and service area of a local government.

The City and County of Santa Cruz are responsible for approval of use permits and other discretionary approvals related to development applications within their respective jurisdictions. The University of California as a state agency is not required to obtain local use permits from the City or County.

### EXISTING & PLANNED LAND USES IN PROJECT AREA

#### Existing Land Uses

The approximately 374-acre project site is located on the University of California Santa Cruz (UCSC) campus north of the existing developed portion of the campus (see Figures 1 and 2<sup>1</sup>), owned by the University of California. Known as “North Campus” in the University’s 2005 Long-Range Development Plan (2005 LRDP), the project site is located within the unincorporated portion of Santa Cruz County, contiguous to the City’s jurisdictional limits.

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<sup>1</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

The existing developed campus is located within the existing city limits of Santa Cruz, except for a portion of Colleges 9/10 and the Crown Merrill Apartments as discussed below.

The North Campus project site is primarily undeveloped. A small portion of UCSC's Colleges 9/10 and almost two-thirds of the Crown Merrill Apartment complex are located within the project area and are presently being served by the City's Water Department and sewer lines. Existing residential uses within this approximate 6-acre area consist of all or part of 12 residential buildings (see Figure 14) with approximately 80 student apartments that provide approximately 398 student beds. Estimated student residential population in these facilities in fall 2008 was approximately 378 persons (Morgan, UCSC, personal communication, September 2009).

The remainder of the North Campus area is undeveloped except for a network of UCSC constructed fire break gravel roads, underground water lines, a water system pump station, fire hydrants, and abandoned water tanks. The 245-acre area is characterized mostly by redwood forest habitat with mixed evergreen forest along the southern and western edges of the North Campus area. None of the campus lands, including the North Campus project site, is zoned Timberland Protection Zone (TPZ) (University of California, Santa Cruz, September 2006, Volume Two).

The project area does not contain agricultural lands or lands designed for agricultural use under the California Statewide Farmland Mapping Act. Based on the California Department of Conservation Farmland Mapping and Monitoring Program, no part of the UCSC campus has been designated as Prime Farmland or Farmland of Statewide Importance developed by the California Department of Conservation. The Center for Agroecology and Sustainable Food Systems, which is located in the central campus outside of the north campus, is designated Unique Farmland.

### **Land Use Designations & Planned Land Uses**

The project site is located within the unincorporated area of Santa Cruz County. The area is designated "Public Facilities" in the County General Plan and is zoned "Public Facilities." The project area is not located within the County's "Urban Service Line."

The City of Santa Cruz includes the project site in its 1990-2005 General Plan/Local Coastal Plan. The UCSC campus is designated "UC Santa Cruz Development", and the developed lower campus also has some areas that are designated "Agriculture/Grazing" and "Natural Areas. The Agriculture and Natural Areas designations occur on the main campus, and according to UCSC, reflect the University's 1988 LRDP land use designations (University of California Santa Cruz, September 2006, Volume II). The North Campus project area is designated "UCSC Development." Figure 15 shows the City's existing General Plan

designation for UCSC. The UCSC campus area within existing city limits is zoned “Public Facilities” in the City of Santa Cruz.

As previously indicated, the University of California as a state agency is not required to obtain local use permits from the City or County. Campus development and expansion is planned for the North Campus area in the University’s 2005 Long Range Development Plan. All future development and infrastructure necessary to accommodate the development will be designed, approved, and constructed by the University.

UCSC’s 2005 LRDP designates the following land uses for the proposed SOI amendment project area: Colleges and Student Housing, Employee Housing, Physical Education and Recreation, Protected Landscape, Campus Natural Reserve, Campus Resource Lands, Campus Support, and Academic Core. Figure 11 shows the 2005 LRDP land use designations for the project area. Maximum new development square footage under the 2005 LRDP is estimated to be 3,175,000 square feet, and this development may occur within the SOI project area pursuant to terms of the Comprehensive Settlement Agreement. The 2005 LRDP has been approved by The Regents as an appropriate land use plan to accommodate the academic, research and student/faculty services for a projected campus enrollment of 19,500 full-time students by 2020-2021. Implementation of the 2005 LRDP contemplates that incremental development of the project area will be needed to support the enrollment growth and will occur throughout the 2005 LRDP planning horizon based on space demand.

### **Special Districts**

According to information provided by the Santa Cruz LAFCO, the project site is located within the service areas of the districts identified below. None of these districts or county service areas have regulatory authority over the project SOI area. The University as a state agency does not pay property taxes, although private developments that lease land, i.e., on-campus private housing would be subject to local property taxes including assessments to these districts.

- Santa Cruz Elementary School District
- Santa Cruz High School District
- Cabrillo Joint Community College District
- Santa Cruz County Resource Conservation District Zone 4
- Santa Cruz Port District
- CSA 9 Public Works
- CSA 9, Zone C
- CSA 11 Parks
- CSA 12 Septic Maintenance
- CSA 38 Sheriff’s Patrol
- CSA 48 County Fire



- CSA 53 Mosquito Abatement
- Santa Cruz Metropolitan Transit District

## **LAFCO ROLE AND POLICIES**

### **LAFCO Purpose & Objectives**

The Local Agency Formation Commission (LAFCO) was created by State law in 1963 to regulate the boundaries of cities and special districts. There is a LAFCO in each of the 58 counties of California. The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 states that among the purposes of a LAFCO are discouraging urban sprawl, preserving open space and prime agricultural lands, efficiently providing governmental services, and encouraging the orderly formation and development of local agencies based upon local conditions and circumstances (Santa Cruz LAFCO website; <http://www.santacruzlafco.org> – “What is LAFCO?”).

The Santa Cruz LAFCO is comprised of seven members: two city council members chosen by the mayors of the cities in the county, two county supervisors chosen by the Board of Supervisors, two special district board members chosen by the twenty-four independent special district board chairpersons in the county, and a public member chosen by the other members of LAFCO (Santa Cruz LAFCO website; <http://www.santacruzlafco.org> – “LAFCO Home”).

LAFCO is required to review and approve or disapprove, with or without amendments, wholly, partially, or conditionally, governmental boundary change proposals with regards to spheres of influence, annexation, detachment, reorganization and/or extending a city’s water or sewer service area (Santa Cruz LAFCO website; <http://www.santacruzlafco.org> – “What is LAFCO?”).

In addition to the regulatory responsibilities referred to above, LAFCO is empowered to initiate and to make studies of existing governmental agencies. Such studies shall include, but not be limited to, inventorying such agencies and determining their maximum service areas and service capabilities.

### **LAFCO Policies & Review Standards**

#### **SPHERES OF INFLUENCE**

In order to carry out its purposes and responsibilities for planning and shaping the logical and orderly development and coordination of local governmental agencies so as to advantageously provide for the present and future needs of the county and its communities,

the Local Agency Formation Commission is required to develop and determine the sphere of influence of each local governmental agency within the county. A sphere of influence means a plan for the probable future physical boundaries and service area of a local governmental agency. Among the information considered in determining the sphere of influence of each local government agency, the Commission shall consider:

- ❑ The present and planned land uses in the area, including agricultural and open-space lands.
- ❑ The present and probable need for public facilities and services in the area.
- ❑ The present capacity of public facilities and adequacy of public services which the agency provides or is authorized to provide.
- ❑ The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency. (Government Code Section 56425) (Santa Cruz LAFCO website; <http://www.santacruzlafco.org> – “What is LAFCO?”).

The Santa Cruz LAFCO’s “Sphere of Influence Policies and Guidelines”<sup>2</sup> include 12 policy guidelines outlined for LAFCO to consider on matters regarding spheres of influence. These policy guidelines indicate that LAFCO will use spheres of influence to discourage inefficient development patterns and to encourage the orderly expansion of local government agencies (#1), supporting and taking into account City and County general plans (#2, 3). LAFCO normally will not include territory in a city sphere of influence which is not included in that city’s adopted general plan (#4), and proposals for urban development within a city’s sphere of influence should first be considered for annexation to that city (#11). Spheres of Influence will be periodically revised and updated to reflect changing conditions and circumstances (#5), and once adopted, are LAFCO’s primary guides for the area (#6), although annexation of territory within a sphere of influence is not automatic (#7). Other policies deal with special districts (#8), provision of services by more than one agency (#9), allocation of a “zero sphere of influence” (#10), and cooperation among agencies with jurisdiction in the coastal zone (#12). LAFCO will consider specific proposals on an individual basis. LAFCO promotes cooperation among the land use agencies with jurisdiction over lands in the Coastal Zone.

#### **PROVISION OF EXTRATERRITORIAL SERVICES**

In certain circumstances, State law allows LAFCO to authorize a city or district to provide a service outside the agency’s boundaries. Santa Cruz LAFCO has adopted procedures and policies for its consideration of these types of applications. In June 1994, the Santa Cruz LAFCO adopted a resolution regarding regulations for agencies to provide services to parties outside agency boundaries (Resolution No. 97-W). This resolution was amended in February 2007 (Resolution No. 2007-1). This resolution explains the procedures by which LAFCO will

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<sup>2</sup> Originally adopted by the Santa Cruz LAFCO on June 4, 1980 (Resolution No. 97-K) with the last amendment on August 5, 1998 (Resolution No. 97-X).

review requests to authorize a city or district to provide one or more services outside its jurisdictional limits pursuant to Government Code Section 56133. Section 9 of the amended resolution indicates that state law stresses the primacy of spheres of influence in coordinating services and LAFCO intends to reinforce that the standard in that services will be extended by annexation (and sphere of influence amendment, if necessary). The Commission shall limit its extraterritorial service authorizations to public health emergencies and circumstances where: a) facilities are already in place, and b) annexation would not be practical, and c) extraterritorial service is determined by the Commission to be consistent with the policies adopted in and pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000.

#### **FACTORS LAFCO MUST CONSIDER IN REVIEWING PROPOSALS**

The Santa Cruz LAFCO's website indicates that there are 15 factors that LAFCO must consider in the review of a proposal (Santa Cruz LAFCO website; <http://www.santacruzlafco.org> – “What is LAFCO?”). These factors are summarized below:

- Physically divide an established community;
- Population (and proximity to populated areas) and land use information, including assessed valuation.
- The existing and future cost and adequacy of services, including availability of water supplies and ability to provide services.
- The effect of the action on mutual social and economic interests, and on the local governmental structure of the county.
- The conformity of the proposal with LAFCO's adopted “Standards for Evaluating Proposals” regarding provision of planned, orderly, efficient patterns of urban development (which are summarized further below).
- Effects on agricultural lands.
- The definiteness and certainty of the boundaries of the territory.
- Consistency with appropriate city or county general and specific plans and consideration of spheres of influence applicable to the proposal.
- The comments of any affected local agency, landowner(s), voters or residents of the affected territory.
- The extent to which the proposal will assist the receiving entity in achieving its fair share of the regional housing needs.
- Promotion of environmental justice.

In addition to the above, LAFCO's "Standards for Evaluating Proposals" were adopted pursuant to Government Code Section 56375 for the evaluation of proposals.<sup>3</sup> LAFCO uses these standards when reviewing and acting upon proposals for annexations and other boundary changes. These standards include 16 policies with associated standards that address: consistency with adopted spheres of influence, need for and provision of services, consideration of General Plans, in-fill development and staged growth, promoting multi-purpose agencies, promoting logical boundaries, avoiding inclusion of areas solely due to financial desirability, the overall effects of the action, and agricultural land considerations.

### **Review of Municipal Services**

As previously indicated, state law requires each LAFCO to prepare service reviews of all local governmental services starting in 2001. The purpose of these reviews is to identify opportunities to improve the quality, efficiency, or cost-effectiveness of local services. Contents of service reviews include:

- Growth and population projections for the affected area.
- Present and planned capacity of public facilities and adequacy of public services, including infrastructure needs or deficiencies.
- Financial ability of agencies to provide services.
- Status of, and opportunities for, shared facilities.
- Accountability for community service needs, including governmental structure and operational efficiencies.
- Any other matter related to effective or efficient service delivery, as required by commission policy

The Santa Cruz LAFCO completed its report in August 2005, and LAFCO approved the countywide service review in December 2007 (Resolution No. 2007-9). The review is a comprehensive overview of public services within Santa Cruz County and includes the four cities and over 80 special districts providing municipal-type services such as water, wastewater service, fire protection, police protection and recreation within the County (Dudek & Associates, June 2005). The findings related to water and wastewater are summarized below:

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<sup>3</sup> Originally adopted by the Santa Cruz LAFCO on March 14, 1964 (Resolution No. 14) with the last major revision on June 11, 1984 (Resolution No. 97-0).

**CITY OF SANTA CRUZ WATER SUPPLY**

- 1) **Population and Growth.** Three of the City's four main water sources are currently utilized at capacity for most of the year, and there is no additional water available from these sources to support future growth.
- 2) **Infrastructure Needs and Deficiencies.** Overall, the Santa Cruz Water System is operating at approximately 93% of capacity and has little to no redundancy, which requires that all components operate continuously during dry months. The City has identified seawater desalination as a feasible option for an alternative backup water supply. Infrastructure and facility needs are addressed through the City Water Department planning and budgeting process, and water infrastructure improvements, renovation and rehabilitation are included in the City's annual Capital Improvement Program.
- 3) **Financing Constraints and Opportunities.** The City of Santa Cruz operates its water utility as an enterprise activity; service charges and other revenues fully cover the cost of operations. The City has long-term debt associated with the water system and has taken on new debt to fund a water main project from the Bay Street Reservoir and for construction of the first phase of the North Coast rehabilitation project.
- 4) **Costs and Rates.** The City is controlling water costs through conservation programs and demand management measures as well as maximizing water supply from the North Coast area that requires less treatment. Water rates are reviewed annually, and the City has adopted a multi-tiered rate structure for residential accounts to promote water conservation.
- 5) **Management and Accountability.** The City of Santa Cruz is achieving management efficiencies. Water services are addressed by the Santa Cruz City Council during regular meetings. Public notice is provided for all meetings. Information on the Water Department and conservation programs are provided on the City's website. The City of Santa Cruz Water Commission serves in an advisory role to provide guidance to the City.

**CITY OF SANTA CRUZ WASTEWATER SERVICE**

- 1) **Population and Growth.** Growth will result in continued demand for wastewater services. The City's Sewer System Ordinance authorizes mandatory sewer connection and declares other means of sewage disposal to be a nuisance; any new development will require connection to the wastewater system.
- 2) **Infrastructure Needs and Deficiencies.** Wastewater systems are generally constructed with a design capacity that will meet the service area needs at build-out. The City

of Santa Cruz wastewater system includes a citywide collection system and a regional wastewater treatment facility that also serves the Santa Cruz County Sanitation District and County Service Area 57 (Graham Hill/Woods Cove).<sup>4</sup> Infrastructure and facility needs are addressed through the City Department of Public Works planning and budgeting process. The City's Capital Improvement Program includes renovations to the wastewater collection system and the wastewater treatment facility. The Program is adopted annually and funded based on revenue and need.

- 3) **Financing Constraints and Opportunities.** The City of Santa Cruz operates its wastewater utility as an enterprise activity; service charges and other revenues fully cover the cost of operations. The City has long-term debt associated with the wastewater system. The City has restricted reserves to cover future bond payments as required by the terms of the agreements.
- 4) **Costs and Rates.** The City of Santa Cruz is controlling wastewater costs by actively monitoring and maintaining the collection and main lines through videotaped camera inspections. The Public Works Department has a program to identify and target sewer lines impacted by high stormwater infiltration and inflow. The City apportions the cost of operating the Santa Cruz Wastewater Treatment Facility with the Santa Cruz County Sanitation District based on flow volume. The City of Santa Cruz reviews wastewater rates annually. The City's wastewater rate structure for businesses is based on the constituents in the sewage and the level of treatment required; businesses generating sewage that requires more treatment pay higher rates.
- 5) **Management and Accountability.** Wastewater services provided by the cities are addressed by the respective City Councils during regular council meetings. The cities also provide information on their websites regarding wastewater services. As an additional measure of local accountability, the City of Santa Cruz Public Works Commission serves in an advisory role to provide guidance to the City Council on public works issues and capital improvement projects, including wastewater. The City of Santa Cruz is achieving management efficiencies for its wastewater systems through an organizational structure that includes two divisions: Wastewater Mains and Wastewater Treatment Facility.

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<sup>4</sup> CSA 10 (Rolling Woods) was approved to connect to the City's wastewater plant after the review study was completed.

## CITY SPHERE OF INFLUENCE & SERVICE AREAS

### SPHERE OF INFLUENCE

The existing Sphere of Influence for the City of Santa Cruz is shown on Figure 5. The SOI for the City of Santa Cruz includes lands within City limits, an unincorporated area along 7<sup>th</sup> Avenue and another unincorporated area in the Carbonera Creek vicinity. In January 2008, the Santa Cruz LAFCO approved a review that maintained the spheres of influence for numerous public agencies, including the City of Santa Cruz (Resolution No. 2008-1).

### WATER SERVICE

The City of Santa Cruz Water Department provides water service to an approximate 30-square-mile area that includes lands within existing City limits, a portion of UCSC that is within City limits (and a small adjoining portion of UCSC outside City limits), adjoining unincorporated areas of Santa Cruz County (i.e., Live Oak), a small part of the City of Capitola and coastal agricultural lands outside City limits (City of Santa Cruz Water Department, February 2006). It should also be noted that the City's water service area covers a larger geographical area than the City's adopted Sphere of Influence.

In November 2006, LAFCO passed a resolution to grant the City of Santa Cruz "Areawide Approval" to provide water service to the areas outside the current city limits as shown on a water service area map submitted by the City and as amended by LAFCO (to exclude the northern portion of Chaminade). The service area includes properties that are currently provided water service or are within the City or County urban service areas (see Figure 6). The LAFCO action was taken pursuant to local regulations that were adopted by LAFCO in June 1994 (Resolution No. 97-W, amended through Resolution No. 2007-1 in February 2007) to implement Government Code section 56133. This section of the Government Code includes provisions for LAFCOs in each county to regulate the service areas of cities and special districts outside the boundaries of those agencies. The City of Santa Cruz applied to the LAFCO pursuant to Section V of the local regulations for authorization to provide water service to certain areas outside the City limits. This Areawide Approval will expire on November 1, 2016.

### WASTEWATER SERVICE

The City of Santa Cruz provides municipal wastewater treatment and collection services to properties located in the City of Santa Cruz. The wastewater treatment plant serves as a regional facility that also serves areas outside the city as shown on Figure 7. These areas include the Santa Cruz Sanitation District and County Service Areas 10 and 57 (Rolling Woods and Graham Hill) as shown on Figures 8 and 9, respectively. Further discussion of wastewater treatment services is included in the WASTEWATER (Chapter 4.2) section of this EIR.



## CITY & COUNTY POLICIES

### County of Santa Cruz

#### GENERAL PLAN/LOCAL COASTAL PLAN

The Santa Cruz County 1994 General Plan/Local Coastal Plan (GP/LCP) outlines policies and programs to guide future growth and development. The project area is located in the Bonny Doon planning area (near its southeastern edge) and is designated “Public Facilities”. The objective of the Public Facility/Institutional land use designation is to ensure adequate present and future land availability for public and quasi-public facilities, including schools and university facilities (2.21). Policy 2.21.1 acknowledges the potential expansion of public facilities, but also limits development to fit into the context of existing environments. Policy 2.21.5 requires that long-term Master Plans be written for public facilities prior to new development or expansions, in part to coordinate with adjacent uses and to take into consideration potential impacts on neighboring development.

There are several other County GP/LCP policies potentially relevant to the proposed Sphere of Influence amendment and provision of extraterritorial water and sewer service to the North Campus area of UCSC. The County GP/LCP policies seek to cooperate with LAFCO and other agencies in working out inter-jurisdictional issues (1.2.1); support adherence to spheres of influence (1.2.2); and encourage the orderly annexation of urban areas to adjacent cities (1.2.4). The GP/LCP land use policies designate an “Urban Services Line” (USL) to delineate areas appropriate for future urban density and seek to program the timing and location of public service extensions to support projected levels of development (2.1.1) and seek to site new development within, adjacent to or in close proximity to existing developed areas with adequate public services and where it will not have significant adverse effects on natural resources (2.1.4).

### City of Santa Cruz

#### GENERAL PLAN/LOCAL COASTAL PROGRAM

The City’s 1990-2005 General Plan/Local Coastal Program (GP/LCP) was adopted on October 27, 1992. The City is in the process of updating its General Plan. The existing City of Santa Cruz General Plan accounts for a student enrollment of 15,000 by the year 2005, and as previously indicated, the SOI project site is designated “UCSC Development”. The GP/LCP indicates that UCSC is a state institution with its own development plan and therefore, a distinctive land use designation is assigned to the portion of the campus within the City boundaries. A variety of academic, housing, and open space University land uses are outlined in this designation.

There are several other City GP/LCP policies potentially relevant to the proposed Sphere of Influence amendment and provision of extraterritorial water and sewer service to the North Campus area of UCSC as outlined below:

- ❑ Physically divide an established community;
- ❑ CD 1.2: Do not expand the City's Sphere of Influence other than annexing the balance of UCSC lands outside of the coastal zone (1.2.1) and consolidating the City limits in the Carbonera area (1.2.2).
- ❑ CD 1.3.4: Encourage continued preservation of significant portions of the UCSC campus in open space land uses.
- ❑ L 1.7: Ensure that future growth and development of Santa Cruz occurs consistent with the City's carrying capacity and that such growth does not lead to overdraft of any water source.
- ❑ L 4.1.3: Cooperate with UCSC to ensure that adequate services are paid for and provided as part of any expansion of the campus.
- ❑ CF 1.2.2: Update General Plan map as warranted by adoption of area specific and management plans and LRDP changes.
- ❑ CF 2.2: Coordinate with UCSC in implementation of education objectives in its LRDP.
- ❑ CF 6.5.1: Work with UCSC to develop a master plan for upgrades to University water pumping and storage facilities.

The City's existing General Plan/LCP also includes a summary of the UCSC 1989 LRDP in Volume II – "Area and Specific Plan Summaries." Policies are included to support the stated goal to "work with UCSC to minimize and mitigate the adverse effect of its growth on the community, while encouraging active cooperation on jointly beneficial project. Specific relevant policies include:

- ❑ 1.3: Expand services to UCSC contingent on the University's success in meeting its housing goal and mitigation measures.
- ❑ 1.7: Approve the expansion of services to UCSC only as required by law or as they mitigate impacts.

#### **CITY ORDINANCES 2008-18 AND 2008-19**

In November 2006, two measures on the local ballot were adopted by voters. Measure I was a proposed City ordinance to promote sustainable growth in the City of Santa Cruz by opposing the negative impacts of proposed University of California Santa Cruz (UCSC) growth. Measure J was the adoption of a charter amendment related to expansion of the City's water or sewer service area. In 2007, measures were overturned in court based on inadequacies in the notice and review procedural compliance for the environmental review prepared for the Measures. In October 2008, the Santa Cruz City Council adopted the following two ordinances

that are generally the same as the original measures and referred to as “Measures I and J” (these measures were not legally challenged, and the statute of limitations period in which to bring any challenge has passed):

- ❑ 2008-18: An ordinance adding Chapter 16.24 to the Santa Cruz Municipal Code pertaining to expansion of City water and sewer service areas. The ordinance requires that the City Council not initiate an expansion of the City’s water service area or sewer service area with LAFCO unless authorized to do so by the approval of a ballot measure to this effect for specified exceptions to protect public health, safety and welfare.
- ❑ 2008-19: An ordinance adding Chapter 16.22 to the Santa Cruz Municipal Code promoting sustainable growth in Santa Cruz by opposing the negative impacts of proposed University growth. This ordinance generally pertains to UCSC, and its purpose is to express community concerns regarding UCSC growth; to assure the City takes whatever actions are within its legal powers to avoid significant adverse effects of University growth, particularly on the housing market, traffic congestion and water supply; to assure that City services which facilitate University growth are provided only after the University pays the full costs of constructing and operating such services; and to confirm that the extension of public services outside the City limits will not be undertaken without approval of LAFCO. The ordinance lists three policies to prevent adverse impacts from University growth: a) opposition of the 2005 LRDP enrollment increase of 4,500 students unless all significant impacts are fully mitigated; b) no extension of City water and sewer services to the University beyond the existing City limits without approval of LAFCO; and c) the University shall pay the full costs of mitigating impacts, and the City shall not provide additional services until anticipated costs for providing these services are fully paid to the City.

## RELEVANT PROJECT ELEMENTS

The proposed project consists of an amendment to the City of Santa Cruz Sphere of Influence (SOI) to include a 374-acre portion of the UCSC “North Campus” as shown on Figures 1 and 3 for the purpose of providing extraterritorial water and sewer services. The City agreed to submit an application to LAFCO to amend its SOI to include North Campus area east of Empire Grade concurrent with UCSC submitting its own application request to LAFCO for provision of extraterritorial water and sewer service to the North Campus for development of up to 3,175,000 gross square feet of building space in this area as set forth in the 2005 LRDP. At this time, there are no University-proposed site-specific development plans for the North Campus area or site-specific plans to extend infrastructure into this area. The 2005 LRDP includes conceptual plans to extend water and sewer lines to the project area primarily within a new planned roadway in the North Campus area. A schematic for utility line extension is

included in the UCSC's application to LAFCO for provision of extraterritorial services and is shown on Figure 13.

## IMPACTS AND MITIGATION MEASURES

### CRITERIA FOR DETERMINING SIGNIFICANCE

In accordance with CEQA, State CEQA Guidelines (including Appendix G), City of Santa Cruz plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

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

### IMPACT ANALYSIS

The proposed project would extend the City's Sphere of Influence to include most of the North Campus area of UCSC. The area is contiguous to and part of the existing UCSC site and includes some existing campus housing. Thus, the expansion of the City's SOI and subsequent provision of water and sewer service to this area would not physically divide an established community. No lands outside the UCSC campus would be affected. There are no adopted Habitat Conservation or Community Conservation Plans in the project area.

**Impact 3-1:** The proposed project would not conflict with policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect, and thus would not result in impacts related to consistency with local plans and policies.

The following discussion provides a review of consistency with local plans and policies. In accordance with State CEQA Guidelines, Appendix G, the review focuses on policies or regulations adopted for the purpose of avoiding or mitigating an environmental impact. There are no apparent conflicts between the proposed project and applicable plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect as discussed below.

Because the policy language found in any city or county general plan is often susceptible to varying interpretations, it is often difficult to determine, in a draft EIR, whether a proposed project is consistent or inconsistent with such policies. Case law interpreting the Planning and Zoning Law (Gov. Code, § 65000 et seq.) makes it clear that: (i) the ultimate meaning of such policies is to be determined by the elected city council, as opposed to city staff and EIR consultants, applicants, or members of the public; and (ii) the city council's interpretations of such policies will prevail if they are "reasonable," even though other reasonable interpretations are also possible (*See No Oil, Inc. v. City of Los Angeles* (1987) 196 Cal.App.3d 223, 245-246, 249.) Courts have also recognized that, because general plans often contain numerous policies emphasizing differing legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some policies (*Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.). Furthermore, courts strive to "reconcile" or "harmonize" seemingly disparate general plan policies to the extent reasonably possible. (*No Oil, supra*, 196 Cal.App.3d at p. 244.).

In light of these considerations, the review below represents the best attempt of City staff and consultants to advise the Santa Cruz City Council of their opinions as to whether the proposed project is consistent with identified goals and policies of the City and County General Plans and other relevant local plans/policies. The public should recognize that the opinions expressed below are in no way binding on the City Council, and may be contrary to the position ultimately adopted by the City Council in the exercise of its discretion.

### **City of Santa Cruz Policies and Regulations**

#### **GENERAL PLAN / LOCAL COASTAL PLAN**

The proposed SOI amendment, provision of water and sewer services and future development of the North Campus by UCSC are consistent with the City's General Plan designation for the site – "UCSC Development," which would consider additional development in the area. Such development implements education objectives of the LRDP, which the City's General Plan supports (Policy CF2.2). The proposed project is consistent with the existing General Plan plan that supports expanding the City's Sphere of Influence and annexing UCSC lands (Policy CD1.2). Policy CF1.2.2 directs the City to update to the General Plan as the University's LRDP is updated (Policy CF1.2.2), which is not specifically relevant to the proposed project, but does provide a policy recognition to General Plan updates due to LRDP changes. The project further appears consistent with Policy CD1.3.4, which encourages open space preservation on the UCSC campus, in that about half or more of the SOI-North Campus area is designated for open space and resource protection uses in the 2005 LRDP.

The City also seeks to work with UCSC to develop a master plan for University water system upgrades (Policy CF6.5.1) and to work with UCSC to ensure that adequate services are paid for as part of any expansion to the campus (Policy L4.1.3). The provisions of the

Comprehensive Settlement Agreement set forth the details of the payments that the University will provide for such services, consistent with Policy L4.13. Policy CF6.5.1 is a directive to the City to work with UCSC in planning for water system upgrades. As indicated in the WATER SUPPLY (Chapter 4.1) section of this EIR, future extension of water lines would be implemented by UCSC as part of future development. Additionally, the University anticipates that future campus development likely would require improvements to the on-campus water infrastructure, including additional water storage capacity and a new booster pump in the North Campus area (University of California Santa Cruz, September 2006, 2005 LRDP Final EIR, Volume II). Policy L.1.7 seeks to ensure that future growth and development in Santa Cruz is consistent with the City's carrying capacity and that growth does not lead to overdraft of any water. Provision of water and sewer service is evaluated in this EIR regarding adequacy of supplies. As indicated, existing City water supplies are insufficient under existing and future conditions during a multiple-dry year drought, but wastewater service is adequate. The City's groundwater resources comprise a small amount of the overall supply, and are not in imminent threat of being overdrafted.

Volume II of the City's existing General Plan/LCP also includes a summary of the UCSC 1989 LRDP with policies are included to support the stated goal to "work with UCSC to minimize and mitigate the adverse effect of its growth on the community, while encouraging active cooperation on jointly beneficial project. The proposed project is in support of UCSC's on-campus housing goals, consistent with Policy 1.3 that seeks to expand City services to UCSC contingent on the University's success in meeting its housing goals. Policy 1.7 calls for expansion of services to UCSC only as required by law or as they mitigate impacts. Several measures are specified related to water, wastewater and traffic improvements, which appear to have been implemented by "University Assistance Measures" proposed by the University at the time the 1989 LRDP was adopted. Some of these measures are superseded by provisions of the Comprehensive Settlement Agreement, that is a final stipulated judgment of the Court.

#### **CITY ORDINANCES 2008-18 AND 2008-19**

Project consistency with Ordinances 2008-18 and 2008-19 was reviewed by the City Attorney. The City Attorney believes that the City's SOI application to LAFCO is not in conflict with these adopted ordinances, as the ordinances were not in effect when the application to LAFCO was filed. They were finally adopted on October 28, 2008 and did not go into effect until November 27, 2008. The ordinances are not retroactive and hence have no application to the two subject LAFCO applications, which were filed with LAFCO in October 2008.

The City, as lead agency, has prepared this EIR in connection with the application the University has submitted to LAFCO for extraterritorial sewer and water service from the City to an area in the UCSC North Campus planning area outside City limits and City water/sewer area boundaries, as well as a concurrent application filed by the City with LAFCO to amend the City's sphere of influence so as to facilitate the University's LAFCO application. Neither application, if granted, would serve to annex new territory to either of the City's two service



areas or otherwise function to alter the boundaries of those two service areas as they currently exist.

More importantly, for substantive reasons as well, there is no conflict. The ordinances, which have primary application to the University, were adopted by the City Council in late October 2008 and must be viewed in the context of the Comprehensive Settlement Agreement between the University and the City, which the City Council approved less than one month earlier, in September 2008. That agreement requires the University to file the subject LAFCO application for extraterritorial service (Section 2.8) and the City to file the subject LAFCO sphere of influence amendment application (Section 2.8a). The City and County are required to provide all documentation necessary to allow for LAFCO's processing of the University's application (Section 2.8c). Similarly, each party to the Agreement, including the University, the City, the County and CLUE, is required to cooperate with one another and take all actions "...which may be necessary or appropriate to give full force and effect to the terms and to fully implement the goals and intent of this Agreement" (Section 9.0). Most significantly, Section 7.4 of the Comprehensive Settlement Agreement provides,

The parties agree that the purpose and intent of Measures I and J, as adopted by the City in November 2006, will be satisfied and fulfilled upon finalization of this fully executed settlement agreement for development consistent with the 2005 LRDP. The parties further agree that any additional action to effectuate the intent and purpose of Measures I and J is unnecessary provided that the parties fulfill their commitments under this Agreement.

Hence the City could not have subsequently adopted ordinances which expressly or implicitly interfered with the University's ability to comply with its obligations under the Agreement or which prohibited the City itself from taking the actions it promised to take pursuant to the Agreement unless the City was willing to breach the Agreement, expose itself to liability for doing so and in the process lose all of the benefits that the Agreement conferred upon the City.

In adopting the "Measure I and J" ordinances in October, the City did not breach the Agreement or impose requirements upon itself requiring it to breach the Agreement in the future. The "Measure I" ordinance (Ordinance No. 2008-17) requires the University to fully mitigate the impact of its UCSC campus growth and expansion as a precondition to the City's provision of municipal services to accommodate that growth and expansion. As explained above, the Comprehensive Settlement Agreement, arduously negotiated by the City, County, University and CLUE over a period of eight months, delineates precisely the housing, traffic, water and other mitigation measures the University will implement and adhere to so as to assure full mitigation of its growth-induced impacts.



The “Measure J” ordinance (Ordinance No. 2008-18), in pertinent part, provides that “... the City Council shall not initiate an expansion of the City’s water service area or sewer service area with the State of California Local Agency Formation Commission unless authorized to do so by the approval of a ballot measure to this effect by City voters at a general or special municipal election.” As explained above, the University, in compliance with its contractual settlement agreement obligation, has initiated the subject LAFCO proceeding, not the City. However, even if one were to argue that the City, by submitting the Sphere of Influence amendment application necessary to allow for LAFCO’s processing of the University’s application, is an “application initiator”, the City’s application still does not run afoul of the ordinance. The ordinance applies to applications which would serve to expand the City’s water or sewer service areas. Such an expansion is accomplished through an annexation procedure before LAFCO pursuant to which LAFCO approves new service area boundaries, typically illustrated by a map depicting the boundaries of the current service area compared to the boundaries of the proposed expanded service area. In this instance the University is not requesting that its North Campus planning area be annexed to the City’s water and sewer service areas. It is requesting that although this planning area is outside those service areas, it be allowed to receive “extraterritorial” sewer and water service from the City for development undertaken in that area which is contemplated by its 2005 LRDP (and the Comprehensive Settlement Agreement). Such extraterritorial service is authorized by statute with LAFCO’s approval. (See Government Code, § 56133.)

### **County of Santa Cruz Policies**

The proposed SOI amendment, provision of water and sewer services and future development of the North Campus by UCSC are consistent with the County’s General Plan designation for the site –“Public Facilities” – as it meets the objective of the designation to ensure adequate present and future land availability for university facilities (Policy 2.21). Although Policy 2.21.1 acknowledges the potential expansion of public facilities, it seeks to limit development to fit into the context of existing environments. In that the proposed project is intended to serve an existing university with additional development contiguous to existing development, the project appears consistent with this policy. Policy 2.21.5 requires that long-term Master Plans be written for public facilities prior to new development or expansions, and the 2005 LRDP does this. Policy 1.2.1 also seeks to cooperate with LAFCO and other agencies in working out inter-jurisdictional issues (1.2.1). Policies 1.2.2 and 1.2.4 support adherence to spheres of influence and orderly annexation of urban areas to adjacent cities. LAFCO will consider the proposed sphere of influence amendment according to its review standards. While annexation is not proposed, the proposed provision of extraterritorial water and sewer services to the proposed SOI amendment could be considered an orderly extension of services as the UCSC campus is already served by the City of Santa Cruz, and its developed area is located mostly within city limits. The project area and future development would be adjacent to or in close proximity to existing developed, consistent with Policy 2.1.4. As discussed in this EIR, water supplies are currently constrained during drought conditions, but wastewater services are adequate. Future development in the North Campus area as a result of the project

could have significant impacts on some natural resources, but can be mitigated. With mitigation, secondary impacts of development resulting from indirect growth impacts of the proposed project would be consistent with the intent of Policy 2.1.4 that siting new development does not result in significant adverse effects on natural resources. (See the GROWTH INDUCEMENT (Chapter 5.0) section of this EIR. Thus, there do not appear to be any significant inconsistencies or conflicts between the proposed project and the County's existing General Plan/Local Coastal Program.

### **LAFCO Policies**

The Santa Cruz LAFCO will review and analyze the proposed SOI amendment request and request for extraterritorial water and sewer service during its deliberation of the applications. The review will look at the proposed project in the context of the Coretese-Know-Hertzberg Local Government Reorganization Act of 2000, LAFCO's adopted "Sphere of Influence Policies and Guidelines" and LAFCO's "Standards for Evaluating Proposals".

LAFCO staff and Commissioners will appropriately review the project information and EIR to make a determination on the submitted applications. The policies and guidelines serve to guide their review of certain topical areas, rather than providing specific policies against which a project consistency review could be made. LAFCO is a responsible agency that will make its own independent review and analysis on the matter.

However, the following project features are identified as related to some of LAFCO's standards and guidelines.

- ❑ The project area is contiguous to existing City limits and existing water service area that are located adjacent to and south and east of the SOI project area. A small portion of the project area already is provided City water and sewer services.
- ❑ The proposed project supports planned growth set forth in the UCSC 2005 LRDP, and is consistent with City and County General Plan designations that also support university uses.
- ❑ The UCSC campus is a single entity and is located mostly within City limits.
- ❑ There would be no conversion of or impacts to agricultural lands with future development in the North Campus area.

### **Conclusion**

Based on the review above, the proposed project does not appear conflict or be inconsistent with the existing City or County General Plan/Local Coastal Program policies. Additionally, it was determined that the proposed project does not conflict with City Ordinances 2008-18 and 2008-19.

**Mitigation Measures**

None are required.

## 5.0 GROWTH INDUCEMENT

### IN THIS SECTION:

- Introduction
- Growth Inducement Potential
- Secondary Impacts of Campus Growth

## INTRODUCTION

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 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.

## GROWTH INDUCEMENT

### EXISTING POPULATION AND PROJECTIONS

#### Regional Population

The City of Santa Cruz is the largest city within Santa Cruz County in terms of population, followed by Watsonville, Scotts Valley and Capitola. The City's current population represents approximately 22% of the total County population (266,519), and the City also accommodates approximately 22% of the County's total housing stock (California Department of Finance, May 2008). According to AMBAG data, the City provides 20% of the jobs found within the County (AMBAG, June 11, 2008a).

As of January 1, 2008, the City of Santa Cruz had a reported population of 58,125 (California Department of Finance, May 2008).<sup>1</sup> This is an increase of 8,414 City residents over the City's 1990 population of 49,711 residents. Overall, the City's population increased at an average annual growth rate of approximately 1% (0.9) since 1990. The average household size in the

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<sup>1</sup> California CEQA Guidelines section 15125(a) requires that existing environmental conditions be described as they exist at the time the Notice of Preparation (NOP) is published. The NOP for this EIR was published in November 2008. At this time regional population figures were available from the State as reported by January 1, 2008.

city of Santa Cruz was approximately 2.4 in 2008 (California Department of Finance, May 2008).

As of January 1, 2008, Santa Cruz County had a reported total population of 266,519 (California Department of Finance, May 2008). Reported population for other cities in Santa Cruz County is: Capitola – 10,105; Scotts Valley – 11,697; and Watsonville – 51,703. Existing County population is shown on Table 3-1.

### **UCSC Population**

In 2007-2008<sup>2</sup>, UC Santa Cruz main campus three-quarter average enrollment<sup>3</sup> totaled 15,000 full-time equivalent (FTE) on-campus students (University of California Santa Cruz, October 14, 2008) and 3,436 FTE employees.<sup>4</sup> Approximately 19% of the employees were faculty and 81% were staff. For the 2007/2008 academic school year, the University-related campus population also included 490 on-campus dependents (University of California Santa Cruz, July 2009).

In 2007-08, UCSC supported a total population of 7,779 people residing in on-campus housing units, including students, faculty and dependents (University of Santa Cruz, California, July 2009). As discussed in the LAND USE (Chapter 4.3) section of this EIR, a small portion of UCSC's Colleges 9/10 and almost two-thirds of the Crown Merrill Apartment complex are located within the SOI project (North Campus) area with an estimated population of approximately 380 students that live in these facilities, and thus, are within the unincorporated area of Santa Cruz County.

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<sup>2</sup> California CEQA Guidelines section 15125(a) requires that existing environmental conditions be described as they exist at the time the Notice of Preparation (NOP) is published. The NOP for this EIR was published in November 2008. At this time, campus population and employment figures were available for the 2007-08 academic school year.

<sup>3</sup> Enrollment at UC Santa Cruz varies each quarter. The Campus uses an average of the student enrollment levels in the three primary quarters (fall, winter and spring) to track changes in enrollment from one year to another. That average is referred to as the three-quarter average enrollment.

<sup>4</sup> Based on "full-time equivalency" (FTE) per UCSC data (University of California Santa Cruz, July 2009, "East Campus Infill Housing Project Final EIR"). Since preparation of the 2005 LRDP FEIR, UCSC now counts employees according to "full-time equivalency" (FTE) instead of headcount as estimated in the LRDP FEIR as it believes it is more accurate than the "headcount" approach that includes people who only teach one class per year or other employees with limited presence on campus. According to campus data, 4,093 people were employed at the University in 2007-2008 based on the headcount approach headcount and excluding student employees ("UCSC Personnel Profile by Status and Gender from the Payroll Activity Record as of October 2007.")

### **AMBAG Population Projections**

AMBAG prepares and regularly updates population, housing and employment projections for the cities and counties in its region. The forecasts are made in five-year increments. The current forecast, which was adopted by AMBAG in June 2008, covers the years from 2005 to 2035. These population projections are outlined in Table 3-1 for the City and other jurisdictions within Santa Cruz County.

Population in the City of Santa Cruz is projected to increase to 63,265 in 2020 according to AMBAG (2008). This represents an increase of 5,140 people between 2008 and 2020. The City's existing population (58,125) is slightly less than what was previously forecast by AMBAG (and included in the City's existing General Plan) for both the years 2005 (59,700 total population) and 2010 (60,800 total population). AMBAG population projections for the City of Santa Cruz reflect an average annual increase of about 0.8% between 2005 and 2020, which is slightly less than the actual rate of growth (0.9%) the City experienced between 1990 and 2008. It should be noted that the 2008 AMBAG forecast includes population increases at UCSC based on the amount of housing that will be provided on the campus (Deshazo, AMBAG, personal communication, August 2009).

**TABLE 3-1:  
Existing Population and Population Forecasts for Santa Cruz County**

Jurisdiction	Existing Population [1]	AMBAG Forecasts [2]			Increase 2008- 2020	Long-Term Forecasts [2]	
		2010	2015	2020		2025	2030
City of Santa Cruz	58,125	58,919	62,480	63,265	5,140	64,649	65,884
Capitola	10,015	10,124	10,222	10,693	678	10,862	11,090
Scotts Valley	11,697	11,923	12,126	12,311	614	12,427	12,688
Watsonville	51,703	51,903	54,857	56,544	4,841	58,975	61,245
Unincorporated County	134,979	135,173	135,297	137,681	2,702	138,822	139,690
COUNTY TOTAL	266,519	268,041	273,983	280,493	13,975	285,735	290,597
[1] Population as of January 1, 2008 per California Department of Finance (May 2008).							
[2] AMBAG, June 2008.							

Total population in the County of Santa Cruz is projected to increase by 13,975 persons between 2008 and 2020. AMBAG population projections for Santa Cruz County as a whole reflect an average annual increase of about 0.5% between 2005 and 2020.

## GROWTH INDUCEMENT POTENTIAL

The proposed project would not directly induce growth as no new development, housing or employment is proposed as part of the project. The proposed project would indirectly support planned growth on the UCSC campus with amendment of the city's Sphere of Influence (SOI) and ultimate provision of water and sewer service to the North Campus area of UCSC. Implementation of the proposed project would support UCSC in moving forward with plans to develop the North Campus as set forth in its adopted *2005 Long Range Development Plan* (2005 LRDP) and the Comprehensive Settlement Agreement to accommodate a campus enrollment of 19,500 students and associated staff increases by the year 2020 and to provide additional on-campus housing. Maximum new development square footage under the 2005 LRDP is estimated to be 3,175,000 square feet, and as provided in the Settlement Agreement, this additional development may occur within the project SOI Amendment area. Thus, the growth that may be accommodated by amending the City's SOI and providing extraterritorial water and sewer service to the North Campus area may include all the additional new campus growth envisioned in the 2005 LRDP, except developments approved or proposed on the main campus since adoption of the 2005 LRDP.

Thus, the proposed SOI amendment would indirectly facilitate on-campus development and growth, including new residents and employees. The project would also indirectly result in secondary population growth off campus as related to the increased enrollment and employment planned in the 2005 LRDP. However, the proposed SOI amendment and future provision of extraterritorial water and sewer service to the North Campus would not result in service to other areas located outside of the North Campus.

The following growth inducement analysis provides a review of indirect population and employment growth on the UCSC campus as a result of the proposed project, as well as secondary population growth off campus. The review is based on existing population estimates, current population projections that were not available when the 2005 LRDP FEIR was prepared, and the terms of the Comprehensive Settlement Agreement related to provision of on-campus student housing.

### **Campus Population and Employee Growth**

Under the final, adopted 2005 LRDP, future development of the campus would accommodate a three-quarter average enrollment of 19,500 full-time equivalent (FTE) students by the academic year 2020-21. This represents an increase of about 4,500 students over the 2007-2008 enrollment level of 15,000 students. Additionally, a total of 4,463<sup>5</sup> faculty and staff are anticipated by 2020-21, which represents an increase of approximately 1,027 new employees between the 2007-08 and 2020-21 academic years.

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<sup>5</sup> Based on "full-time equivalency" (FTE) per UCSC data (University of California Santa Cruz, July 2009, "East Campus Infill Housing Project Final EIR") as discussed in the previous footnote.



Some of the new student and employee population would have dependents, such as spouses, partners, children or parents that would also result in additional population. The number of dependents of students was based on the projected increase in student dependents at the on-campus Family Student Housing site. Dependents of employees was based on an average 2.38 person per household size, which is the average household size in the City of Santa Cruz, where the majority of new UCSC-related population is expected to reside as further discussed below.

Table 3-2 summarizes the estimated UCSC year-2020 campus population with dependents. Approximately 6,000 (6,035) persons could be added to the daily campus population by 2020-21 under the University's adopted 2005 LRDP, including student and employee dependents living on campus. Additionally, the 2005 LRDP Final EIR anticipates about 200 non-UC employees and daily visitors to the campus.

**TABLE 3-2: Summary of UCSC Campus Population & Housing Growth**

	2007-2008 Total	2020 Total per 2005 LRDP FEIR	Net Increase
On-Campus Student Enrollment	15,000	19,500	4,500
Campus Employees [1]	3,436	4,463	1,027
<i>On-Campus Dependents</i> [2]	490	998	508
<b>TOTAL ON-CAMPUS POPULATION</b>	<b>18,926</b>	<b>24,961</b>	<b>6,035</b>
On-campus Student Housing	7,385	10,125	2,740
On-campus Employee Housing	238	443	205
<p>[1] As previously mentioned, since preparation of the 2005 LRDP FEIR, UCSC now counts employees according to "full-time equivalency" (FTE) instead of headcount as estimated in the LRDP FEIR. This results in 4,463 campus employees in the year 2020, (University of California, July 2009), which is approximately 611 fewer employees than estimated in the LRDP FEIR (5,074). Under the headcount method, total employees in the year 2020 was estimated at 5,074 in the 2005 LRDP FEIR with 4,093 employees in the 2007/08 academic year (per UCSC Personnel Profile as of October 2007), resulting in a net increase of 981 new employees. The FTE approach results in a slightly higher level of employee growth, which is used in this EIR analysis.</p> <p>[2] Includes student and employee dependents living on campus. SOURCE: University of California Santa Cruz. July 2009. "East Campus Infill Housing Final EIR" (Table 3.11- 3).</p>			

### UCSC On-Campus Residential Growth

Some of the new students and employees would be housed on campus. The total on-campus student housing has been modified to reflect provisions of the Comprehensive Settlement Agreement that increases the amount of housing that will be provided on campus from what was evaluated in the 2005 LRDP EIR. The Comprehensive Settlement Agreement indicates that 10,125 student beds will be provided on campus. As shown on Table 3-2, approximately

2,740 new student beds and 205 new employee housing units would be added on the UCSC campus by the year 2020, which may be located in the Central (Main) or North Campus areas.

Since adoption of the 2005 LRDP, several student and one employee housing projects have been approved in the Central-Main Campus area of UCSC outside of the project SOI amendment area. These include three approved student housing projects (Porter A [177 beds], Porter B [120 beds], and East Campus Infill Project [594 beds]); one employee housing project under construction (Ranch View Terrace [84 units]); and planned expansion of the Student Housing Project (201 new units). Therefore, approximately 1,092 new student beds (out of 2,740 new beds) and 84 new employee housing units (out of 205 new units) would be located on the existing developed campus within existing City limits and outside the SOI project area.

Table 3-3 summarizes the total new on-campus residential population related to UCSC development and growth under the 2005 LRDP. Approximately 3,340 new residents would be living on the UCSC campus by the year 2020, of which approximately 1,570 residents would be living in the Main Campus area outside of the SOI project area. The remaining 1,770 residents may be expected to reside in the North Campus project area, and thus, will need water and wastewater service. Therefore, the project would indirectly accommodate approximately 1,780 new on-campus residents. Currently the project area is in the unincorporated area of Santa Cruz County. The new on-campus residential population would be within the unincorporated area of Santa Cruz County until such time that the SOI area may be annexed to the City. However, there are no current or currently foreseeable plans to annex the SOI area to the City, and the application sought by the City is for approval of a Sphere of Influence amendment for provision of extraterritorial services, not the expansion of municipal boundaries.

**Secondary Off-Campus Population Growth**

The residency of off-campus students and employees (including commuters from out of County) was estimated based on the most recent UCSC data on residency (University of California Santa Cruz, July 2009). Based on this data and planned on-campus housing, the future UCSC-related population would be expected to reside in the County as follows:

- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>□ <b>Students:</b></li> <li>□ <b>Faculty &amp; Staff:</b></li> </ul> | <ul style="list-style-type: none"> <li>50% on-campus<sup>6</sup></li> <li>10% off-campus out of City<sup>8</sup></li> <li>10% on-campus<sup>8</sup></li> <li>31% off-campus out of City</li> </ul> | <ul style="list-style-type: none"> <li>34% off-campus in City of Santa Cruz<sup>7</sup></li> <li>6% commuters from out of County</li> <li>46% off-campus in City of Santa Cruz<sup>8</sup></li> <li>13% commuters from out of County</li> </ul> |
|---|--|---|

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<sup>6</sup> 10,125 on-campus student beds are required under the Comprehensive Settlement Agreement, which represents about 52% of the total future enrollment of 19,500 students. UCSC assumes a 95% occupancy rate (University of California Santa Cruz, July 2009), which lowers the percentage to 50%.

<sup>7</sup> Off-campus residency provided by UCSC (July 2009).

<sup>8</sup> Based on 1.1 employees per unit and housing unit counts provided in University of California Santa Cruz, July 2009, "East Campus Infill Housing Final EIR".

**TABLE 3-3: UCSC On-campus Residential Growth, 2008-2020**

	<b>Total Net Increase 2008-2020</b>	<b>Total On-Campus</b>
<b>New Student and Employee Residential Population</b>		
Total New Students	4,500	
Commuters [1]	270	
Net Increase	4,230	
Total New Employees	1,027	
Commuters [1]	133	
Net Increase	894	
Total New Students & Employees	5,124	
<b>New On-campus Student and Employee Residential Population</b>		
On-Campus Student Residents [2]		2,603
Student Dependents [3]		301
On-Campus Employee Residents [4]		226
Employee Dependents [5]		207
<b>Subtotal New Student &amp; Employee On-Campus Residential Population (Including Dependents)</b>		<b>3,337</b>
Residents Living in Existing Developed Central Campus		
▪ Students [6]		1,092
▪ Student Dependents [3]		301
▪ Employees [7]		92
▪ Employee Dependents [5]		84
<b>Subtotal – Total Residents Living on Main Campus (Including Dependents)</b>		<b>1,569</b>
<b>REMAINDER – Total Residents Living in SOI (North Campus) Project Area (Including Dependents)</b>		<b>1,768</b>
<p>[1] Based on UCSC data with 6% of students and 13% of employees commuting from out of County (University of California Santa Cruz, July 2009).</p> <p>[2] Based on the net increase of student beds projected for 2020/21 (2,740) with a 95% occupancy rate per University data (University of California Santa Cruz, July 2009).</p> <p>[3] On-campus student families would reside in the Student Family Housing project; Future residency and number of dependents are estimated in the 2005 LRDP EIR (University of California Santa Cruz, September 2005, Volume III, section 3.4.4.)</p> <p>[4] Based on net increase in employee housing (205) and household size of 1.1 employee per unit per UCSC data (University of California Santa Cruz, July 2009).</p> <p>[5] On-campus employee dependents are estimated to increase by 207 by 2020 as provided by UCSC staff (Klaus, personal communication, August 2009) based on data in University of California Santa Cruz, July 2009, “East Campus Infill Housing Final EIR”.</p> <p>[6] Porter A [177 beds], Porter B [120 beds], East Campus Infill Project [594 beds] and planned expansion of the Student Housing Project (201 new units).</p> <p>[7] Ranch View Terrace [84 units].</p>		

Table 3-4 summarizes the total new residential population related to UCSC development and growth under the 2005 LRDP that would be indirectly accommodated by the proposed project based on the residency percentages identified above. Out-of-county commuters are excluded as they would not generate new population growth within the County. Some student and employee families would have dependents. The growth summarized in Table 3-4 assumes that all new students enrolled at UCSC would be new to the area (except for commuters) as described in the 2005 LRDP EIR. The 2005 LRDP EIR also analyzed two employee scenarios: 1) all new employees would move the County from other areas outside the County; and 2) consistent with existing trends, approximately 68% of employees already reside in Santa Cruz County at the time they are hired and the remaining 32% would move from outside the county. These two scenarios are also reflected in Table 3-4.

**TABLE 3-4: Summary of UCSC-Related Residential Population Growth, 2008-2020**

New Campus Population	All New Residents			All New Students & 32% New Staff		
	New to County	Reside in City	Reside Elsewhere in County	New to County	Reside in City	Reside Elsewhere in County
Students [1]	4,230			4,230		
<i>On-Campus</i> [2]		1,393	1,511 [3]		1,393	1,511 [3]
<i>Off-Campus</i> [4]		1,253	374		1,253	374
<i>Dependents [Off-Campus]</i> [5]		113	34		113	34
Subtotal		2,759	1,919		2,759	1,919
Employees [1]	894			286		
<i>On-Campus</i> [2]		176	257 [3]		176	257 [3]
<i>Off-Campus</i> [6]		401	267		36	24
<i>Dependents [Off-Campus]</i> [7]		467	311		42	28
Subtotal		1,044	835		254	309
<b>TOTAL</b>	<b>5,124</b>	<b>3,803</b>	<b>2,754</b>	<b>4,516</b>	<b>3,013</b>	<b>2,228</b>
<b>TOTAL NEW RESIDENTS</b>	<b>6,557</b>		<b>5,241</b>			

[1] Less commuters.  
 [2] On-campus residents (students or employees and associated dependents) as cited in Table 3-3.  
 [3] Portion of new on-campus student residents that may reside within the SOI project area that is within the unincorporated area of the county, but could at some time annex to the City.  
 [4] 1,627 students are estimated to live off-campus based on on-campus residency cited in Table 3-3, and off-campus residency is based on historical residency patterns: 34% live in city of Santa Cruz and 10% live elsewhere in county.  
 [5] From 2005 LRDP Draft EIR, based on proportion of on-campus students with dependents (9%).  
 [6] Based on historical residency patterns: 46% live in city of Santa Cruz and 31% live elsewhere in county, and 1.1 employees per unit per UCSC data (July 2009); see [7] for other employee household members.  
 [7] Based on average household size of 2.38 with 1.1 employees and 1.28 dependents.

<sup>9</sup> Based on on-campus residency of 2,603 students and 226 employees as shown on Table 3-3, the remaining new students and employees (1,627 and 668, respectively, less commuters) would be expected to reside off-campus.

As summarized on Table 3-4, it is estimated that total indirect growth that could result from the proposed project (including students, employees and their dependents) would be approximately 6,557 new residents if all of the increased campus population moved to Santa Cruz County, and approximately 5,240 new residents if existing residency patterns continue, in which approximately 68% of all employees are hired locally. Of these new residents, approximately 3,010 to 3,800 people are estimated to live in the City of Santa Cruz, with approximately 1,570 persons living on campus. The remaining 2,230 – 2,755 new residents are projected to live elsewhere in the county, including approximately 1,770 living on campus in the unincorporated project area.

The projections in Table 3-4 count new on-campus housing in the SOI project area (North Campus) as being outside the city as this area currently is within the unincorporated area of Santa Cruz County. However, with inclusion in the project area into the city's sphere of influence, the site could ultimately be annexed to the City. The North Campus would remain within the county until such time that an annexation request were submitted to and approved by LAFCO. An annexation application may be submitted to LAFCO in the future by UCSC or the City, although there are no current, known plans to do so, nor is it known exactly when or if such application may be submitted in the future. If the area is ultimately annexed to the City, total residential population in the City could increase by a total of approximately 4,780 - 5,570, of which the majority (approximately 3,340) would be housed on campus. Residential population increases in the remainder of the county would be commensurately smaller in this event with an increase by approximately 460-985 people.

### **Conclusion**

The proposed project would not directly induce growth as no new development, housing or employment is proposed. The proposed SOI amendment would indirectly facilitate on-campus development and growth, including new residents and employees. The project would also indirectly result in secondary population growth off campus as related to the increased enrollment and employment. The project would not induce growth in other areas than the project SOI-North Campus area.

- **Indirect Campus Population & Employee Growth:** The proposed SOI amendment would indirectly facilitate planned development and growth on the UCSC main campus, including 4,500 potential new students and 1,027 new employees, of which approximately 1,770 are estimated to be on-campus residents in the project area. Currently the project area is in the unincorporated area of Santa Cruz County. Thus, the new population would be within the County until such time that the SOI area may be annexed to the City, which as previously indicated, there are no current or currently foreseeable plans to annex the SOI area to the City.

- **Indirect Off-Campus Residential Population Growth:** A total of approximately 5,240-6,560 new on- and off-campus residents are estimated as a result of the 2005 LRDP growth. Of these new residents, approximately 3,010 to 3,800 people are estimated to live in the City of Santa Cruz with approximately 1,570 persons living within the city limits on campus. The remaining 2,230-2,755 new residents are projected to live elsewhere in the county with approximately 1,770 living on campus within the unincorporated area of Santa Cruz County. If the SOI project area is ultimately annexed to the City, residential population in the City could increase by a total of approximately 4,780-5,570, of which the majority (3,340) would be housed on campus. Residential population increases in the remainder of the county would then be commensurately reduced, and would total approximately 460 to 985 people.

The proposed project will accommodate planned growth, but will not induce new or additional UCSC growth beyond what is planned in the 2005 LRDP. The proposed project will not serve areas other than the specified North Campus area of UCSC. The 2005 LRDP EIR (LRDP Impact POP-1) concluded that the increment of population that would be added to the study area as a result of campus growth under the 2005 LRDP would be substantial compared to the projected population growth in the City and the rest of Santa Cruz County. The 2005 LRDP EIR concluded that this impact was significant and unavoidable.

Although the project would indirectly result in increased population due to serving UCSC planned development and growth, the project would not have a new net growth-inducing effect on the campus or on other properties because the proposed project would support already-planned and conceptually approved development as set forth in the 2005 LRDP and Comprehensive Settlement Agreement. The potential increase of 3,010-5,570 residents in the City of Santa Cruz (of which approximately 60% would be on-campus residents) is within or would slightly exceed AMBAG population projections for the year 2020, but would be within the projections for the year 2025, assuming that the project area would ultimately annex to the City of Santa Cruz. The population served by the proposed project would only slightly exceed the AMBAG population projections for the City of Santa Cruz in the year 2020 if all of the project area annexes to the City and all new employees move to the area from outside Santa Cruz County.

- **Growth in Other Areas Due to Extension of Services:** The proposed SOI amendment and future provision of extraterritorial water and sewer service does not include extension of water and sewer lines. Service to future development would be provided via existing campus connections that would be extended by the University to serve new development at the time specific sites for such development are proposed. At this time, there are no University-proposed site-specific plans to extend infrastructure into this area. The 2005 LRDP includes conceptual plans to extend water and sewer lines to the project area primarily within a new planned



roadway in the North Campus area. A schematic for utility line extension is included in the UCSC's application to LAFCO for provision of extraterritorial services and is shown on Figure 13. The 2005 LRDP includes a conceptual plan to extend water to the project area as shown on Figure 12. Future specific plans for the on-campus extension of water and sewer lines will undergo their own site-specific environmental review at the time they are proposed. Additionally, no area other than the North Campus would be served by the project.

Because the project would not result in extension of water or service lines outside of the project area, the potential for offsite growth inducement as a result of the project is low. The 2005 LRDP EIR (LRDP Impact POP-2) considered whether campus growth under the 2005 LRDP would indirectly induce substantial population growth in the area through extension of roads or other infrastructure and concluded that it would not. Utilities and other infrastructure on the campus would be extended to serve planned growth on the campus under the 2005 LRDP. Growth in off-campus areas would not be triggered by the utility extensions serving the campus, as most of the surrounding neighborhoods are built out, and the undeveloped lands adjacent to the campus are within city or state parks and are protected from development. The UCSC campus is generally surrounded by public open space and park lands (Pogonip, Henry Cowell Redwoods State Park, and Wilder Ranch State Park). The Cave Gulch neighborhood, located in unincorporated Santa Cruz County to the west side of the project site, is currently within the County's Residential Agricultural (RA) zone district. This designation allows limited residential development in non-urban areas outside of the Urban or Rural Service Lines if the land has adequate water and septic system suitability; small-scale agriculture is permitted while maintaining a residential priority. The Cave Gulch neighborhood is currently developed with residential uses and is not anticipated to intensify in use. According to UCSC communications with the County Planning Department, the County has no plans to change the general plan land use designations or zoning of unincorporated areas near the campus. Therefore, extension of utilities to serve development under the 2005 LRDP would not be expected to result in indirect growth pressures that would induce substantial population growth off campus.

## SECONDARY EFFECTS OF CAMPUS GROWTH

The following section reviews secondary, indirect impacts of development and growth in the North Campus area of UCSC as a result of amending the City's Sphere of Influence to provide extraterritorial water and sewer service to this area. 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.

The 2005 LRDP EIR was legally challenged, and the Superior Court of Santa Cruz County determined that the EIR's water supply analysis was deficient, two traffic mitigation measures were not considered feasible or enforceable, and the population and housing analysis was deficient as it did not identify probable locations of off-campus housing necessary to serve the LRDP. Other claims challenging the 2005 LRDP EIR were rejected (Superior Court for the State of California, County of Santa Cruz, December 17, 2007). Thus, except for the three above issues (water supply, traffic mitigation and off-campus housing), the 2005 LRDP EIR analyses regarding impacts on the campus and in the North Campus in particular have already been completed and are deemed adequate by operation of law. It is, therefore, reasonable to use these existing analyses to address the secondary, indirect impacts of the proposed SOI amendment and provision of extraterritorial water and sewer service to the North Campus.

Unless otherwise noted, the summaries below are drawn from the 2005 LRDP Final EIR [FEIR], Volumes I through VI (University of California Santa Cruz, September 2006, "University of California Santa Cruz 2005-2020 Long-Range Development Plan Environmental Impact Report-SCH#2005012113). The following summaries note the FEIR Volume and section from which summaries are derived. The 2005 LRDP Final EIR is hereby "incorporated by reference" pursuant to the State CEQA Guidelines section 15150. The documents are on file and may be reviewed at the City of Santa Cruz Planning Department, 809 Center Street, Room 106, Santa Cruz, CA during normal business hours: 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>

For some topics, updated analyses have been provided where data is available. For example, this EIR includes a review of global climate change as this topic was not included in the 2005 LRDP EIR. Additionally, this EIR provides updates to other analyses, where noted, based on the availability of new studies that have become available since the 2005 LRDP EIR was certified by The Regents of the University of California include, but are not limited to:

- ❑ Adopted AMBAG population forecasts (June 2008),
- ❑ Updated Air Quality Management Plan (Monterey Bay Unified Air Pollution Control District, August 2008),
- ❑ State of California laws and studies regarding global climate change, and
- ❑ UCSC documents (Stormwater Management Plan [October 2008], Approval of NPDES Permit for UCSC by the California Regional Water Quality Control Board [April 2009], University of California Policy on Sustainable Practices [March 2007], a UCSC Draft Climate Action Plan [December 2008], and East Campus Infill EIR [July 2009]).

This EIR addresses the secondary effects of water supply and wastewater services in previous sections of this EIR, Chapters 4.1 and 4.2, respectively. The following topics related to secondary impacts of indirect growth inducement and development of the North Campus as a result of the proposed project are addressed below:

- ❑ **Land Use and Development:** Land Use; Housing; Aesthetics
- ❑ **Public Facilities, Services and Utilities:** Transportation & Traffic; Public Services; Utilities
- ❑ **Resources and Hazards:** Agricultural, Mineral and Forest Lands; Biological Resources; Cultural Resources; Geology and Soils; Hydrology and Water Quality; Air Quality; Noise; Hazards & Hazardous Materials

## LAND USE & DEVELOPMENT

### Land Use

Implementation of the proposed project would enable UCSC to move forward with plans to develop the North Campus as set forth in its adopted 2005 LRDP and as contemplated by the Comprehensive Settlement Agreement to accommodate a campus enrollment of 19,500 students by the year 2020. UCSC's Long Range Development Plan 2005-2020 (2005 LRDP) designates the proposed sphere of influence amendment area for a mix of academic, housing, physical education and protected landscape/resource land uses. Maximum new development square footage under the 2005 LRDP is estimated to be 3,175,000 square feet, which may occur within the project area as set forth in the Settlement Agreement. Implementation of the 2005 LRDP contemplates that incremental development of the sphere of influence amendment area will be needed to support the enrollment growth and will occur throughout the 2005 LRDP planning horizon based on space demand. The area proposed for inclusion in the City's Sphere of Influence is in the exclusive control of the University of California, and all development and infrastructure facilities necessary to accommodate future development will be approved, designed and constructed by the University. The LAND USE (Chapter 4.3) section of this EIR further describes existing and planned land uses and consistency with relevant local land use plans, policies and ordinances.

### Housing

The on-campus housing summary below is drawn from the 2005 LRDP Final EIR, Volume II, Section 4.11, as updated by project changes described in Volume IV, Chapter 3, Section 3.2.3, (*Changes to Draft EIR, Volume II, Section 4.11 Population & Housing*).

The off-campus housing summary below is based on a review of current on- and off-campus housing unit counts developed annually by the California Department of Finance and population projections adopted by AMBAG in 2008 for the years 2010 to 2035.

## ENVIRONMENTAL SETTING

**On-Campus Housing.** In the 2007/2008 academic school year, UC Santa Cruz had a total of 7,385 student beds, including about 277 student beds in off-campus housing leased by the University in the City of Santa Cruz (Morgan, University of California, personal communication, November 2009). Thus, UCSC had 7,108 on-campus student beds with 7,009 students residing on campus. In addition, the campus had 238 employee housing units, which were occupied by 280 UCSC employees for an average of 1.15 employees per household (Ibid.).

On-campus housing is projected to increase to 10,125 student beds in the year 2020. This includes 935 additional beds than accounted for in the 2005 LRDP as a result of provisions of the Comprehensive Settlement Agreement. Total employee housing is estimated to increase to 443 units.

About 47% percent of students and 8% of employees lived on campus; about 6 % of students and 13% of employees commuted to the campus from outside of Santa Cruz County (University of California Santa Cruz, July 2009). Of the off-campus residents, approximately 35% of students and 47% of employees lived in the City of Santa Cruz, and about 12% of students and 32% of employees resided elsewhere in Santa Cruz County (Ibid.).

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 (University of California Santa Cruz, July 2009).

**Off-Campus Housing.** As of January 1, 2008, the City of Santa Cruz had a total of 23,379 housing units within city limits (California Department of Finance, 2008). The City's housing stock increased by 4,015 units from 19,364 units in 1990. This represents an average annual increase in housing units of approximately 1.2% between 1990 and 2008 or approximately 223 units per year.

As of January 1, 2008, Santa Cruz County had a reported total of 104,479 housing units (California Department of Finance, May 2008). Reported total housing units for other cities in Santa Cruz County are: 5,412 units for Capitola, 4,646 units for Scotts Valley, and 14,066 units for Watsonville.

AMBAG's long-term forecasts estimate that approximately 24,794 total housing units would be accommodated in the City in the year 2020 as summarized on Table 3-5 (AMBAG, June 2008). This represents an increase of 1,415 housing units between 2008 and 2020, which reflects an average annual growth rate of 0.5% or approximately 118 units per year. Overall, the total number of housing units in Santa Cruz County would increase by 5,664 units by the year 2020 as shown on Table 3-4, which represents an average annual growth rate of 0.5%.

**Table 3-5:  
Existing Santa Cruz County Housing Units and AMBAG Housing Forecasts**

Jurisdiction	Existing Housing Units[1]	AMBAG Forecasts [2]			Increase 2008-2020	Long-Term Forecasts [2]	
		2010	2015	2020		2025	2030
City of Santa Cruz	23,379	23,633	24,133	24,794	1,415	64,649	65,884
Capitola	5,412	5,500	5,601	5,763	351	5,859	5,966
Scotts Valley	4,646	4,784	4,848	4,919	273	4,965	5,071
Watsonville	14,066	14,093	14,838	15,347	1,281	16,018	16,628
Unincorporated County	56,976	57,498	58,075	59,321	2,345	59,808	60,257
<b>COUNTY TOTAL</b>	<b>104,479</b>	<b>105,509</b>	<b>107,496</b>	<b>110,143</b>	<b>5,665</b>	<b>112,040</b>	<b>113,865</b>
[1] Population as of January 1, 2008 per California Department of Finance (May 2008).							
[2] AMBAG, June 2008.							

#### IMPACTS AND MITIGATION MEASURES

**On-Campus Housing.** The 2005 LRDP Final EIR (University of California Santa Cruz, September 2006, Volume II) concluded that implementation of the 2005 LRDP would not displace a substantial number of existing housing units. The Family Student Housing Redevelopment Project would temporarily (for about 2 years) remove about 100 units on the campus. However, this housing would be replaced with twice the number of housing units over a period of about two years (Chapter 3 in Volume III of the 2005 LRDP Final EIR). Because the affected housing would be replaced, there would be no long-term impact relative to displacement of housing. Construction of the new colleges may require the removal of the Campus Trailer Park, which currently provides 42 student beds. The potential removal of this housing was taken into account in planning additional student housing that would be provided on the campus under the 2005 LRDP. Therefore, no impact would occur, and no additional analysis is required. Note that even without increased population on campus, the Campus might elect to construct additional housing in order to meet on-campus housing demand for certain types of housing.

**Off-Campus Housing.** Based on the growth analysis in the previous section and estimated residential population shown above in Tables 3-3 and 3-4, it is estimated that approximately 1,290 to 1,654 new students and employees (excluding dependents) would reside off campus in the City of Santa Cruz and approximately 400 to 650 new students and employees would reside off campus in other areas of Santa Cruz County.<sup>10</sup> The off-campus UCSC-related

<sup>10</sup> As indicated in the previous section, the 2005 LRDP EIR assumed that except for commuters (based on historical data), all new students would be new to the area and two employee scenarios were evaluated: one in which all new employees are new to the area and a second in which approximately 32% of the new employees would move to the area consistent with historical trends. Thus, the lower number reflects the scenario

housing unit demand is summarized in Table 3-6. As shown, the UCSC-related off-campus population is estimated to result in a housing unit demand of approximately 525 to 860 units in the City of Santa Cruz and approximately 170 to 390 units within other areas in Santa Cruz County. UCSC residency data for existing students and employees indicates that after the City of Santa Cruz, primary areas of residence for students are Live Oak (4.5%), Capitola (1.3%), Aptos (1.1%) and Watsonville (1%), and primary areas of residence for employees are Live Oak (7%), Watsonville (6%), Aptos (5%), and Scotts Valley (3%) (University of California Santa Cruz, July 2009).

**TABLE 3-6: UCSC Off-Campus Housing Unit Demand to Year 2020**

	City of Santa Cruz		Elsewhere in Santa Cruz County	
	Total Residents	New Households	Total Residents	New Households
Students	1,253		374	
▪ Households with Dependents [1]		113		34
▪ Other Households[2]		380		113
Employees [3]	36-401	33-365	24-267	22-243
<b>Total Households &amp; New Housing Unit Demand</b>	<b>526-858</b>		<b>169-390</b>	
[1] It is conservatively assumed that each student dependent constitutes a separate student household and housing unit demand. The rate for off-campus student dependents is from the 2005 LRDP Draft EIR, which is based on the proportion of on-campus students with dependents (see Table 3-4). [2] Assumes a student household size of 3.0 students per unit. [3] Assumes 1.1 employees per household . The low range assumes existing hiring trends in which approximately 32% of new employees move to the county; the high range assumes all new employees move to the county.				

The potential housing demand in the City of Santa Cruz (526-858 units) is within AMBAG’s projected increase of 1,415 new housing units in the City of Santa Cruz by the year 2020. Similarly, the potential new housing demand elsewhere in the County (169-390 units) is well within AMBAG’s projected increase of 4,250 units elsewhere in the County.

In summary, it is expected that sufficient housing will be provided to accommodate potential off-campus UCSC-related housing demand based on AMBAG’s projections. 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.

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in which most new employees already live in Santa Cruz County and the higher number reflects the scenario in which all move to the area.

It should also be noted that currently there are approximately 610 residential units in the City of Santa Cruz that are under construction, approved or proposed throughout the City.<sup>11</sup> All of these units have undergone or will undergo site-specific environmental review as part of the development application review process. Furthermore, the City's draft Housing Element (for the years 2007-2014) indicates that approximately 325 housing units could be constructed on residentially-designated sites, on underutilized parcels along major transportation corridors, and in an area south of Laurel Street. This includes vacant lands for which projects have not been approved or proposed in the above list and an identified site on Laurel Street. The draft Housing Element addresses the housing need until the year 2014 and is scheduled to be presented to the City Council for adoption in November or December 2009. Taken together, known or potential development totals nearly 950 dwelling units, which exceeds the potential additional indirect housing demand of 525-860 units to the year 2020.

### Aesthetics

The synopsis below is drawn from the 2005 LRDP Final EIR, Volume I, Section 4.1, as updated by project changes described in Volume IV, Chapter 3, Section 3.1.4 (*Changes to Draft EIR, Volume I, Section 4.1 Aesthetics*).

#### **ENVIRONMENTAL SETTING**

The campus is on the south-facing slope of the Santa Cruz Mountains, which act as a scenic backdrop to the city of Santa Cruz and adjacent areas. The mountains are visible from most areas of the city of Santa Cruz. Some locations in the city and on the campus provide panoramic views of the Monterey Bay. Much of the North Campus area is forested in mixed second growth conifer and redwood forest, with some stands of oak woodland and chaparral and occasional grassy openings.

No prominent long-range scenic views from the north campus were identified in the 2005 LRDP EIR. Short-range views through forested areas of ravines and pathways are available in some areas of the north campus. The lower campus grasslands and forest canopy of the upper campus are visible from various points throughout the city of Santa Cruz, including the wharf, the Boardwalk and Highway 1. The north campus forms a forested backdrop in some distant views from the City and the lower campus, but is not itself considered a scenic resource. Most campus development is not visually prominent from off campus locations due to location within the forested central campus. Nighttime lighting from some central campus

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<sup>11</sup> Based on the City Planning Department's "Cumulative Project List" (October 2009) that is maintained and regularly updated by the City of Santa Cruz Planning and Community Development Department. This does not include units that are being occupied, but includes other housing units throughout the City that are under construction, approved or pending development applications, including residential units at the approved Delaware Mixed Use Project that would developed over an approximately 15-year period and could result in addition of 161-248 housing units.



facilities and roads are visible from off-campus locations and there is some night sky glow from campus, particularly in fog.

The Santa Cruz County General Plan designates Empire Grade Road, which runs along the western margin of the north campus, as a scenic road. The City of Santa Cruz General Plan describes the foothills of the Santa Cruz Mountains, including the UC Santa Cruz campus, as a scenic resource (City of Santa Cruz 1994: Map CD-3).

Campus development is subject to design review by the Design Advisory Board, a board of architects and design professionals. Campus Standards that are applied to project designs address lighting design and minimization of off-site light pollution; careful siting of a project within its setting; avoidance of tree removal; and sustainable design. Development under the 2005 LRDP also is guided by Physical Planning Principles and Guidelines that focus on preservation of open space, maintaining continuity of wildlife habitat, and integration of new facilities with the natural environment. These guidelines reduce the potential for campus development to result in visual impacts.

#### IMPACTS AND MITIGATION MEASURES

Three primary issues were considered in the 2005 LRDP EIR aesthetics analysis: the nature and magnitude of anticipated visual change resulting from 2005 LRDP development; the number of public vantage points from which this change would be visible; and the number of viewers who would be affected by this change.

**Scenic Vistas.** The 2005 LRDP EIR concluded that new development in the North Campus would not be expected to affect scenic vistas to the Monterey Bay since views to the ocean are blocked by the existing forest (Impact AES-1), and the impact therefore would be less than significant. It was also determined that development would not have a substantial adverse effect on uphill scenic vistas of the upper campus as viewed from the lower campus or the City of Santa Cruz (Impact AES-2) as most of the new North Campus development would be screened by the surrounding forest. Therefore, development in the North Campus would not substantially change existing views, and impacts to scenic views would be less than significant.

**Scenic Resources.** The 2005 LRDP EIR did not identify any scenic resources in the North Campus, and thus no impacts to scenic resource would result from future development in the north campus area. The 2005 LRDP EIR did identify the meadows on the lower campus, and the historic buildings and rock exposures in the Cowell Ranch Historic District, as scenic resources. LRDP Impact AES-3 (potential impacts to scenic resources around lower campus meadows) and LRDP Impact AES-4 (impacts to the scenic visual character of the Cowell Lime Works Historic District) are not relevant to development in the North Campus.



**Visual Character and Quality.** Under the policies of the 2005 LRDP, new development in the North Campus would be sited sensitively in order to maintain the campus pattern of clustered development surrounded by undeveloped landscape and protection of distinctive physical forms. Additionally, development areas within the north campus area are generally surrounded by areas designated as “Protected Landscape” and “Campus Natural Reserve” which would provide a buffer between future campus development and adjoining properties, such as the Cave Gulch neighborhood, and Empire Grade Road.

The 2005 LRDP EIR determined that development under the 2005 LRDP, nonetheless, could substantially degrade the visual character of the campus and adjacent areas. The 2005 LRDP EIR identified mitigations that would preserve the valued visual elements of the landscape. These include LRDP Mitigation AES-5A, which requires Design Advisory Board review of new development; AES-5B, which requires that new development in the redwood forest to the extent feasible be designed to be below the height of the surrounding trees; AES-5C, which requires that design and construction preserve mature healthy trees to the greatest extent feasible; and AES-5D, which stipulates that the campus will continue its site stewardship program to maintain the wooded visual character of the central and North Campus. These measures will reduce potential impacts to the wooded visual character of the campus by helping to maintain the visual continuity of forested areas; ensuring that, from off-campus locations and from vantage points in the lower campus area, the forest areas would not appear substantially changed as a result of development under 2005 LRDP. Thus, with mitigation, the impact to the visual character of the campus and adjacent areas would be less than significant.

Concerns were expressed by members of the public regarding the visual impact from development of a corporation yard off of Empire Grade Road near Cave Gulch (in an area designated “Campus Support”), which was envisioned in the 2005 LRDP. As part of the August 2008 “Comprehensive Settlement Agreement” resolving litigation involving the 2005 LRDP (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), the campus agreed not to develop a corporation yard at the above-described location. LRDP Mitigation AES-5E would ensure that the site plan and design of any development in this Campus Support area would include visual buffers and structural site design to screen buildings from view along Empire Grade Road and at the Santa Cruz Waldorf School. This mitigation would mitigate the potential degradation of visual character of the Cave Gulch area to a less-than-significant level.

**Light and Glare.** Development under the 2005 LRDP could create new sources of substantial light or glare on campus that could adversely affect daytime or nighttime views in the area, a potentially significant impact. In the forested setting of the North Campus there is relatively little potential for reflective glare; however, LRDP Mitigation AES-6A calls for use of non-reflective exterior surfaces or other design measures to avoid new sources of reflective light. AES-6B requires that new development lighting will include directional lighting methods to

minimize light spillage and pollution. AES-6C and -6E require Design Advisory Board review of projects to require incorporation of measures to limit project-related light and glare and to ensure, with respect to outdoor lighting, that only the minimum amount of lighting needed for safety is included in each project. LRDP Mitigation AES-6D requires that lighting on outdoor sports and recreation fields be turned off by 10 PM. These measures would ensure that light and glare impacts of new development is reduced to less-than-significant levels.

## **PUBLIC FACILITIES AND SERVICES**

As previously indicated, this EIR addresses the project impacts on water supply and wastewater services in previous sections of this EIR (Chapters 4.1 and 4.2, respectively).

### **Transportation and Traffic**

The synopsis below is drawn from the 2005 LRDP Final EIR, Volume II, Section 4.14, as updated by additional analysis (Volume VI, Appendix A, Recirculated Draft EIR – Additional Traffic Analysis), project changes described in Volume IV, Chapter 2 (Project Refinements) and Chapter 3, Section 3.2.6 (Changes to Draft EIR, Volume II, Section 4.14 Traffic, Circulation and Parking) and revisions to mitigation measures presented in FEIR Volume IV, Table 1-1. In addition, the August 2008 Comprehensive Settlement Agreement, resolving litigation involving the 2005 LRDP, specifies how the campus' fair share of off-campus traffic mitigations will be calculated and paid to the City of Santa Cruz.

The following discussion also includes some updated traffic volume and intersection level of service data based on new information provided in UCSC's "East Campus Infill Housing EIR" (University of California Santa Cruz, July 2009) and updated traffic counts conducted by the city of Santa Cruz in late 2006-2007.

### **ENVIRONMENTAL SETTING**

The main campus is served by two roadway entrances: the main entrance at the Bay and High Street intersection and the west entrance at Empire Grade Road and Heller Drive. In 2007-08, UCSC conducted on Campus roadways and at the main and west gates of the main campus. Two weeks of traffic counts were collected at the two campus entrances during fall 2007 and again during spring 2008. The updated gate counts recorded 21,900 average daily vehicle trips traveling into and out of the campus on an average weekday. This represents a decrease of almost 2,900 average daily trips to the campus since the 2005 LRDP baseline reporting year of 2003-04, despite a campus population increase since that time of more than 1,100 persons (University of California Santa Cruz, July 2009).

Planned improvements in the vicinity of North Campus include installation of a traffic signal at the Empire Grade Road/Heller Drive intersection is planned. Within the North Campus area, a new loop road is proposed in the LRDP with a new entrance on Empire Grade Road.

The 2005 LRDP EIR traffic analyses indicated that on-campus intersections operated at acceptable levels, but 5 off-campus intersections (as noted below) operated at unacceptable levels at the time the traffic analysis was conducted (in 2003).

- ❑ Empire Grade/Western Drive (LOS F in PM peak hour)
- ❑ Bay Street/Escalona Drive (LOS F in AM and PM peak hours)
- ❑ Mission Street/Bay Street (LOS E in PM peak hour)
- ❑ Mission Street/King Street-Union Street (LOS F in AM peak hour and LOS E in PM)
- ❑ High Street/Highland Avenue (LOS F in PM peak hour)

Intersection traffic counts were collected during the weekday PM peak hour (4:00 – 6:00 PM) at the 73 intersections throughout the City in May 2006, November 2006 and February 2007 as part of the City's General Plan update. Unacceptable levels of service were identified during the PM peak hour at the following additional intersections that are in the vicinity of UCSC or along a major regional corridor that provides access to UCSC:

- ❑ Highway 1 / Highway 9-River Street (E)
- ❑ Ocean Street / San Lorenzo Blvd. -East Cliff Drive (E)
- ❑ Morrissey Boulevard / Water Street-Soquel Avenue (E)
- ❑ Bay Street / California Street (F)
- ❑ Mission Street / Miramar Avenue (F)
- ❑ Highway 1 / Shaffer Road (F)

Transportation Demand Management (TDM) emphasizes the movement of people and goods rather than motor vehicles, and gives priority to public transit, ridesharing, and non-motorized travel, particularly under congested traffic conditions. UCSC has identified TDM as an important strategy to change travel behavior and sustain the City's and the Campus's transportation system over the long term. Campus TDM goals include: reduction of peak hour trips; shift of trips to non-peak times; increase in vehicle occupancy by promoting carpooling, vanpooling, ride sharing and transit; and increase the percentage of people bicycling, walking, ride sharing, or using transit (University of California Santa Cruz, July 2009).

## IMPACTS AND MITIGATION MEASURES

The 2005 LRDP FEIR indicates that the total campus population would generate 6,678 average daily trips (ADT), including 351 AM peak hour trips and 459 PM peak hour trips (University of California Santa Cruz, September 2006, Volume IV). However, pursuant to the stipulated judgment set forth in the Comprehensive Settlement Agreement, UCSC agreed to a maximum traffic increase of 3,900 average daily trips (ADT) to the main campus (for a total of 28,700 ADT) with implementation of a monitoring program to insure compliance. The 2005 LRDP proposes a new loop road in the North Campus to connect to the existing Hagar and Heller Roads with an extension to create a new access point at Empire Grade. (Potential impacts of new road construction were evaluated in the 2005 LRDP as with other new development as discussed in other sections.)

**On-Campus Intersection LOS.** The 2005 LRDP EIR considered the potential for campus population growth under the 2005 LRDP to cause an increase in on-campus traffic that could result in unacceptable levels of service at on-campus intersections (LRDP Impact TRA-1). It concluded that potentially significant level-of-service (LOS) impacts will be experienced at two on-campus intersections (Hagar Drive/McLaughlin Drive and Heller Drive/Meyer Drive) if the growth in traffic outpaces the modifications to the on-campus circulation system proposed under the 2005 LRDP. LRDP Mitigation TRA-1 requires the campus to monitor LOS at the Hagar Drive/McLaughlin Drive and Heller Drive/Meyer Drive intersections every three years and implement improvements as needed to maintain an acceptable level of service. The implementation of this mitigation ensures this potential impact will be less than significant.

**Off-campus Intersection LOS.** The 2005 LRDP EIR concluded that campus growth under the 2005 LRDP would cause unacceptable levels of service at 10 off-campus intersections in the City of Santa Cruz (LRDP Impact TRA-2). To reduce the significance of this impact, the campus is required to implement LRDP Mitigation TRA-2B, to expand its transportation demand management programs to increase the use of sustainable transportation modes above 55% by 2020 to reduce peak hour traffic volumes. The LRDP identifies a list of measures that will be considered for the TDM program. The implementation of this measure would reduce the severity of the anticipated impact. In addition, LRDP Mitigation TRA-2A requires the campus to pay its fair share of the cost of off-campus intersection improvements needed to maintain acceptable levels of service at the 10 identified intersections. The 2005 LRDP EIR concluded that the impact of campus growth on off-campus intersections would remain significant and unavoidable, even with mitigation, since the timing of implementation of improvements at the affected off-campus intersections was beyond the control of the University. However, based on the provisions of the August 2008 Comprehensive Settlement Agreement, the University has contributed its proportional share of funds to the City for implementation of the intersection improvements,<sup>12</sup> and the City has committed to implement

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<sup>12</sup> According to City staff, UCSC has paid all of the traffic fees due at this time to include: the TIF for the Main Campus and 2300 Delaware buildings A and B existing use (\$1,427,400 and \$418,868.70),

the traffic improvements in a timely manner. The Settlement Agreement also identifies other former “University Assistance Measures” that the UCSC will continue to fund regarding specified traffic improvements. The Settlement Agreement also acknowledges that the Santa Cruz Superior Court decision did not invalidate the LRDP EIR’s traffic analysis and that the Court’s decision regarding the adequacy of traffic mitigation is resolved by the Settlement Agreement.

Additionally, the August 2008 Comprehensive Settlement Agreement requires UC Santa Cruz to manage average daily trips (ADT) growth and includes specific actions and thresholds. Pursuant to the Settlement Agreement, traffic increases are limited to a specified total with 3,900 new ADT, and if this level is exceeded, UCSC will reduce ADT by one or more of the following: adjusting enrollment, adjusting on-campus workforce or through implementation of ADT reducing measures. The total traffic increase specified in the Settlement Agreement will be increased by 1,300 ADT in the event UCSC is prohibited from developing the North Campus area or the City fails to amend its Sphere of Influence (section 4.1a). Furthermore, the parties agreed that UCSC’s ability to meet applicable traffic commitments requires the City, County and Santa Cruz Metropolitan Transit District to continue existing services and provide transportation enhancements (section 4.1), but the City and UCSC will continue to work cooperatively on measures to reduce peak hour trips (section 4.6).

**Freeway Operations.** The 2005 LRDP EIR concluded that full implementation of the 2005 LRDP would contribute to significant LOS impacts at five on-ramps or off-ramps (LRDP Impact TRA-6). The campus is required to implement transportation demand management improvements, under TRA-2B, that will reduce the campus’ contribution to off-campus traffic. In addition, the campus is required by LRDP Mitigation TRA-6B to contribute fair share funds towards improvements identified by the state at the five affected freeway facilities. Implementation of the types of improvements identified in the 2005 LRDP EIR (*Recirculated Draft EIR – Additional Traffic Analysis - Chapter 2*) would ensure acceptable operations at the five significantly affected freeway facilities. However, implementation of the improvements is not within the jurisdiction or control of the University or the City, and the responsible agency (Caltrans) may elect not to implement the facilities identified in the LRDP EIR. As a result, the feasibility and/or implementation of LRDP Mitigation TRA-6B cannot be guaranteed and the 2005 LRDP EIR concluded that this impact would be significant and unavoidable.

**Parking.** The 2005 LRDP EIR determined that campus growth under the 2005 LRDP could generate demand for parking in excess of on-campus parking capacity if the development of planned parking does not keep pace with other growth on campus, or if parking supply is reduced as a result of development on existing parking lots (LRDP Impact TRA-3). This potentially significant impact was determined to be reduced to less-than-significant levels through implementation of LRDP Mitigation TRA-2B, which requires the campus to continue

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Mission Street Widening payment (\$107,500), and their share of the Bay Street paving (514,145.55). That is all of the traffic fees that are due at this time.

implementation of, and making improvements to, TDM measures to reduce traffic to (and parking on) campus; TRA-3B, requiring monitoring of campus parking utilization rates and construction of new parking when demand in a parking zone exceeds 90 percent; and TRA-3C, requiring continued enhancement of existing parking management systems to maximize utilization of existing parking capacity.

**Conflict with Effectiveness of Alternative Transportation.** The 2005 LRDP EIR determined that campus growth would result in increases in pedestrian, bicycle, motor vehicle and transit traffic circulation volumes that could conflict with and reduce the effectiveness of alternative modes of transportation, including transit, bicycle and pedestrian travel (LRDP Impact TRA-4). This potentially significant impact is reduced to a less-than significant level through the University's implementation of LRDP Mitigation TRA-4A through -4F, under which the campus will monitor on- and off-campus transit service annually to assess the need for improvements in campus circulation and use the results of this monitoring to improve the operational efficiency and capacity of on-campus transit and work with SCMTD on the efficiency and capacity of off-campus transit; implement measures to reduce transit delay associated with pedestrian crosswalks on campus roadways; coordinate implementation of roadway and circulation improvements with the pace of campus development; implements bicycle circulation improvements to maintain effectiveness of bicycles as a transportation mode; and implement integrated transit, bicycle and pedestrian way-finding systems on the main campus.

Potential hazards regarding installation of a new intersection and signal along Empire Grade were evaluated in the 2005 LRDP Final EIR, which concluded that the new intersection would not increase traffic hazards along Empire Grade (see Volume V, section 5.2.13-Master Response TRAFFIC-2. Impacts on Empire Grade Road). A minimal amount of traffic would be added to the roadway as a result of development in the North Campus, which would not change existing conditions for bicyclists. It is also expected that with existing and future campus bike routes, bicycle travel through the campus would be preferable to Empire Grade as a bicycle route.

**Special Events Traffic.** The 2005 LRDP EIR determined (LRDP Impact TRA-5) that traffic generated by simultaneous full-capacity special events on campus would cause 10 off-campus intersections to operate at LOS E or F during event-related peak hours, and cause congestion on campus related to visitors searching for parking. Because the impact of special event traffic with respect to intersection LOS would be relatively infrequent and of short duration, the impact was considered less than significant. The impact would be further reduced through implementation of LRDP Mitigations TRA-5A through -5D, which include implementation of other traffic congestion mitigations cited above, improved parking management for special events, including expansion of on-campus night and weekend parking enforcement to better manage parking resources; on-line parking permit sales and way-finding information, to reduce visitor back-up at the campus main entry kiosk; and promotion of the on-line Campus Events calendar to coordinate traffic producing events and related parking management.



**Emergency Access.** The 2005 LRDP Draft EIR presents a summary description of the Campus Emergency Response Plan (ERP), and the EIR addresses the effect of North Campus development on Empire Grade Road during an emergency requiring evacuation (Impact HAZ-9). The Final EIR indicated that in the case of most emergencies involving evacuation, the north loop road to Empire Grade Road would not be the primary evacuation route because it is not the most direct way to exit from most parts of the campus. The north entrance and connector road to Empire Grade Road would be needed mainly to provide an evacuation route for the residents of the envisioned north campus development in the event that there is a fire that would prevent travel between the north campus and the west entrance. Because only those persons who would live in the northwestern portion of the campus would likely exit via the north entrance, the traffic associated with this population would not interfere substantially with evacuation of Cave Gulch and Bonny Doon residents. It is unlikely that both the entire Campus and Cave Gulch/Bonny Doon would all be subject to any single emergency evacuation. Additionally, the north loop road would provide an alternate evacuation route for Cave Gulch and Bonny Doon residents in the event of closure of Empire Grade Road between the north and west entrances to campus. The north loop road would also facilitate emergency response to Cave Gulch and Bonny Doon in such cases. One major reason that the north loop road is planned as a loop was explicitly to provide one or more alternative routes should one route be blocked, and to allow traffic to disperse via multiple routes.

### **Public Services & Utilities**

The 2005 LRDP EIR analyzed impacts to public services in Volume I, Section 4.12 and Volume IV, Sections 2.2.2 and 3.2.4, while impacts related to recreation are addressed in Volume II, Section 4.13, and Volume IV, Sections 2.2.2 and 3.2.5. Impacts to solid waste disposal are addressed in Volume II, Section 4.15..

### ***Fire Protection***

#### **ENVIRONMENTAL SETTING**

The UC Santa Cruz Fire Department provides first response for all emergencies on University property. Under a mutual aid agreement, the City of Santa Cruz Fire Department (SCFD) is also responsible for providing fire suppression services to the campus at the same level of service as it provides to the city at large, and typically assists the UC Santa Cruz Fire Department with structural fires. The California Department of Forestry and Fire Protection (CDF) responds to all wildfires in unincorporated areas of Santa Cruz County, including the portion of the UC Santa Cruz campus that is in unincorporated Santa Cruz County.



## IMPACTS AND MITIGATION MEASURES

The 2005 LRDP EIR analyzed whether on-campus development and on-campus population under the 2005 LRDP would result in significant environmental impacts associated with the provision of new or altered fire department facilities in order to maintain the response standards and service ratios (LRDP Impact PUB-2). The EIR concluded that, although expansion of the UC Santa Cruz Fire Department facility would be required to serve the additional development and population, the environmental impacts of this expansion would be less than significant.

### ***Police Protection***

#### ENVIRONMENTAL SETTING

The UC Santa Cruz Police Department is the sole provider of police protection services on campus. When required, the UC Santa Cruz Police Department and City of Santa Cruz Police Department (SCPD) provide mutual support, as stipulated in a memorandum of understanding between the two agencies signed in 1971. The County of Santa Cruz Sheriff's Office provides services to County residents including off-campus students, faculty and staff living in unincorporated areas of the County, and assists the UC Santa Cruz Police Department on campus upon request.

## IMPACTS AND MITIGATION MEASURES

The 2005 LRDP EIR analyzed the potential environmental impacts that could result from the provision of new or altered facilities required for the UC Santa Cruz Police Department or the City of Santa Cruz's Police Department in order to maintain each department's applicable service objectives (LRDP Impact PUB-1). The EIR concluded that no environmental impacts would be associated with facility expansions needed to maintain service levels in response to growth under the 2005 LRDP at either the UC Santa Cruz or the City of Santa Cruz Police Department.

### ***Parks and Recreation***

#### ENVIRONMENTAL SETTING

There is extensive public open space in the Santa Cruz area, including several state and regional parks and public beaches. The City and County of Santa Cruz also maintain city and regional recreational facilities. These facilities are available to UCSC students and employees, including both those who live on campus and those who reside in the community. UCSC recreational facilities, including hiking and biking trails, open space, and recreational facilities, also are available to community members.

## IMPACTS AND MITIGATION MEASURES

The 2005 LRDP EIR analyzed whether increased on-campus population under the 2005 LRDP would increase demand for recreational facilities on campus and in the City of Santa Cruz thereby resulting in deterioration of existing recreational facilities (LRDP Impact REC-2) or the need to construct new facilities that could result in significant environmental impacts (LRDP Impact REC-1). The EIR concluded that growth in on-campus daytime and residential population would not trigger the construction of new city parks and recreational facilities (REC-1) because the 2005 LRDP provides for new campus recreational facilities to serve the increased population, and the City of Santa Cruz indicated that it does not intend to develop substantial new recreation acreage. The impact was therefore determined to be less than significant. The EIR concluded that cumulatively, this impact would also be less than significant, but identified LRDP Mitigation REC-4 to 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 EIR concluded that implementation of LRDP Mitigations REC-2A through REC-2D, which require inclusion of children's recreational facilities in all new on-campus family housing developments, implementation of storm water control measures to minimize erosion associated with increased use of facilities, and collaboration with the City regarding Pogonip, would reduce to a less-than-significant level the potential for campus population increases to result in deterioration of existing recreational facilities (REC-2). The EIR further concluded that some of the State beaches and parks in the area could experience deterioration related to overuse. However, the 2005 LRDP-related population would represent a very small portion of the overall population expected to use the state parks and beaches; therefore the contribution of LRDP-related development to the cumulative impact would not be cumulatively considerable and the impact was determined to be less than significant. Mandatory implementation by the campus of LRDP Mitigations REC-2 and REC-4, discussed above, would further reduce the LRDP's less-than-significant contribution to this impact.

Because of the proximity of the campus to Pogonip City Park and because of the presence of trail connections between the campus and the park, the use of the Pogonip trails would be expected to increase due to campus growth. This could result in physical deterioration of due to potential use of off-road bicycles on and off trails that could lead to increased erosion and deterioration of the vegetation cover. Bikes are prohibited in the park, with the exception of the Cowell Wilder Regional Trail connection, but the illicit use of bicycles on park trails, to which UC Santa Cruz students, faculty, staff and affiliates may contribute, is a long-standing issue. This problem could be exacerbated by population growth associated with the 2005 LRDP. This would be a potentially significant impact. To reduce the impact on the Pogonip City Park trails to a less-than-significant level, the Campus shall implement LRDP Mitigation REC-2C and will work with the City to ensure that Pogonip has adequate signage to inform users that bicycling is prohibited; will notate campus maps to indicate the bicycle use policies in the park; and will work with campus outdoor activity groups to encourage trail

stewardship. The potential impact to Pogonip and other city parks would also be reduced through implementation of LRDP Mitigation REC-2D, under which the Campus would coordinate with City efforts in recruiting volunteers for an annual or semi-annual trail maintenance day. These measures would reduce the impact to a less-than-significant level.

The LRDP EIR also analyzed whether development in the North Campus would result in the fragmentation of or other changes to the designated trails (LRDP Impact REC-3). The impact of LRDP-related population living off campus in the study area communities was also analyzed, primarily, although not solely, in the communities in which these persons would reside. The impact of this population growth on the need to develop new recreational facilities (LRDP Impact REC-4) and on the potential to deteriorate existing recreational facilities (LRDP Impact REC-5) was analyzed as part of the cumulative impact analysis.

The EIR also concluded that while some of the undesignated trails on the North Campus would be removed by new development and not replaced or relocated (REC-3), because the use of these undesignated trails by recreational users is unauthorized, the loss or impairment of these undesignated trails is not considered a significant impact. Further, while North Campus development could cut off the Cowell Wilder Regional Trail, proposes to relocate the affected portion of the trail to the north prior to development in this area. Therefore, this impact was determined to be less than significant.

## **Schools**

### **ENVIRONMENTAL SETTING**

Dependents of UCSC students or employees who reside on campus or in the community may attend school in the community. Currently, all Santa Cruz schools are operating below capacity, and school age population is projected to decline in the next decade.

### **IMPACTS AND MITIGATION MEASURES**

The 2005 LRDP EIR analyzed whether on-campus residential population growth under the 2005 LRDP could create demand for public school facilities in the Soquel, Live Oak, Scotts Valley, Pajaro Valley and San Lorenzo school districts, the construction of which could result in significant environmental impacts (LRDP Impact PUB-3). The EIR concluded that, based on current capacities, it does not appear as though new facilities would be needed to serve the projected growth in enrollment, including that resulting from campus growth under the 2005 LRDP. Therefore, there would be no significant environmental effects from the construction of new school facilities.

## ***Solid Waste Disposal***

### **ENVIRONMENTAL SETTING**

The City of Santa Cruz owns and operates a municipal landfill, located three miles west of the city limits, that serves the entire incorporated city, including UCSC. The landfill has a total capacity of 10,484,325 cubic yards (cy) with an estimated remaining capacity of 6,029,272 cy (58%). The LRDP EIR indicates that the City has not plans for a new landfill as the existing facility is not expected to reach capacity until 2037.

In 2004, the City landfill accepted 56,100 tons of solid waste. The campus generated about 2,450 tons per year or 6.7 tons of solid waste per day in 2003. That amounts to 251 pounds of solid waste per person per year.

The City had a waste diversion rate of 48%. The UCSC campus disposed directly of about 2,450 tons of solid waste in the City landfill in 2003, which represents about 4% of the total waste disposed at the landfill. UCSC implements a recycling program that collects materials throughout the campus, including cardboard; mixed paper; clear and colored glass; aluminum, tin, and steel cans; plastic; green-waste; and e-waste.

### **IMPACTS AND MITIGATION MEASURES**

Development under the 2005 LRDP would increase the volume of municipal solid waste that would require disposal, but would not require an expansion of the city landfill (UTIL-4), and the impact was considered less-than-significant. Under the 2005 LRDP, the campus waste disposal to the landfill was estimated to increase to about 3,473 tons of solid waste per year. Although not considered a significant impact, the will implement mitigation measure UTIL-4 in which the Campus will continue to improve its recycling and waste reduction programs and identify additional means of reducing waste.

## ***Electricity and Natural Gas***

### **ENVIRONMENTAL SETTING**

Pacific Gas and Electric (PG&E) provides gas and electric services to the UC Santa Cruz campus. In addition, the campus' Central Heating Plant, which provides heating to the campus core, includes a cogeneration system that produces electricity. The cogeneration system has the capability of operating independently of the PG&E grid and provides back-up power for the campus core area labs and facilities that have critical power needs. The cogeneration system provides approximately 2.6 megawatts (MW) of power. However, it operates at 2.3 MW due to restrictions imposed by the Monterey Bay Area Unified Air Pollution Control District. On average, the cogeneration plant provides about one-third of the main campus electricity.

UC Santa Cruz's electricity distribution network is campus-owned and mostly underground. Electrical system peak total demand in 2003 was approximately 9.49 megavolt-amperes (MVA),<sup>4</sup> for which the campus electrical system had adequate capacity and back-up capacity.

## IMPACTS AND MITIGATION MEASURES

With campus development under the 2005 LRDP, campus use of electricity would increase to an anticipated peak electricity demand of approximately 21.01 MVA. In 2003, the campus' electrical system maximum demand was 9.49 MVA. Development under the 2005 LRDP would require the expansion of the campus electrical system, which would not result in significant environmental impacts (UTIL-5) and was considered a less-than-significant impact. Additionally, development would require the expansion of natural gas transmission systems, which would not result in significant environmental impacts (UTIL-6).

One of the principles of the 2005 LRDP is sustainability and environmental stewardship. This principle emphasizes promoting and exploring sustainable practices including energy conservation. Furthermore, in July 2003, The Regents approved a systemwide Green Building Policy, which includes a commitment to the principles of energy efficiency and sustainability for all capital projects within budgetary constraints and regulatory and programmatic requirements. The policy requires new buildings to exceed the requirements of Title 24 by at least 20 percent. The continued implementation of these policies would help minimize on-campus energy use as the campus population grows under the 2005 LRDP. To further reduce energy use, the Campus will implement LRDP Mitigation UTIL-5 that requires that the heating and cooling of new campus buildings added to the Campus Energy Management System be controlled.

Future campus growth would increase demands on the campus electrical infrastructure and require localized upgrades and line extensions, particularly to the north campus area. Extensions to serve development in the North Campus would be placed within the area of disturbance of the north campus loop road, the impacts of which are addressed in other sections in the 2005 LRDP EIR, i.e., biotic resources.

## RESOURCES AND HAZARDS

### Agricultural, Mineral and Forest Resources

#### AGRICULTURAL RESOURCES

The 2005 LRDP EIR analyzed agricultural resources in Volume 1, Section 4.2. Based on the California Department of Conservation Farmland Mapping and Monitoring Program, no part of the UCSC campus has been designated as Prime Farmland or Farmland of Statewide Importance developed by the California Department of Conservation. The Center for

Agroecology and Sustainable Food Systems, which is located in the central campus outside of the north campus, is designated Unique Farmland. No conversion of agricultural lands would occur with future development in the north campus area nor would development under the 2005 LRDP lead to conversion of farmland to non-agricultural uses as there are no agricultural lands adjacent to the UCSC campus in general, and to the North Campus, in particular.

#### **MINERAL RESOURCES**

The Initial Study prepared for the 2005 LRDP EIR (Volume II, Appendix A) indicated that the UCSC campus is situated in an area designated as a Mineral Resource Zone due to the presence of subsurface limestone marble, and the area is classified as Zone 3 – an area where mineral resources are known to exist but where insufficient information is available to determine the value of the resources. The State Division of Mines and Geology has indicated to UCSC that development within Class 3 Zones is not considered to result in a significant impact.

#### **FOREST RESOURCES**

Appendix G of the State CEQA Guidelines (Environmental Checklist) does not currently include forest lands. However, proposed changes to the Guidelines that are expected to be in effect in January 2010 include consideration of forest lands as part of the agricultural resources question. The proposed changes include new checklist questions as to whether a proposed project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526) or whether the project would result in the loss of forest land or conversion of forest land to non-forest use. Because of the proposed changes, a discussion is included in this EIR. The synopsis below is drawn from the 2005 LRDP Final EIR, Volume I, Section 4.4.2.6.

"Forest land" under Public Resources Code section 12220(g) is defined as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The definition is part of the California Forest Legacy Program Act of 2007 that encourages the long-term conservation of productive forest lands by providing an incentive to owners of private forest lands to prevent future conversions of forest land and forest resources. The focus is on acquiring easements for conservation of forest resources.

The Z'berg-Nejedly Forest Practice Act (Public Resources Code Section 4526) defines "timberland" as "land.....which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products...." None of the UCSC campus lands are zoned Timberland Protection Zone (TPZ). However, the 2005 LRDP EIR assumed that all of the land in the north campus mapped as redwood forest, mixed evergreen forest, dwarf redwood forest, chaparral, chaparral-forest transition, and dwarf-



redwood mixed-chaparral transition is, or might be considered, timberland, as well as lands in the central campus.

Development under the proposed 2005 LRDP would result in the conversion of about 120 acres of land that could be considered “forest land” (under the Public Resources Code section noted above) or classified as timberland to other developed uses. Timberland conversion is defined in the California Forest Practice Rules (Article 7, 1100 (g)) as “transforming timberland to a non-timber growing use through timber operations.” Development under the proposed 2005 LRDP would require removal of trees from some areas that would be considered to be timberland, under the definition above, and this clearing would be considered to be timberland conversion.

Approximately 73 acres of timberland in the north campus would be converted based on past campus practices of developing clusters of buildings interspersed with forest. Thus, the 2005 LRDP EIR assumed that approximately half of the timberland in each of the proposed north campus development areas would be removed, except in the north campus area designated for Physical Education and Recreation, where nearly all of the trees would be removed to allow for the development of athletic fields. Trees would be removed only in connection with approved projects on individual project sites, during the initial stages of project development.

Redwoods are widespread throughout the Santa Cruz Mountains, occurring on most of the more than 150,000 acres of conifer and mixed evergreen timberland reported in the timber inventory prepared for the Santa Cruz County Planning Department in 1979. The removal of 73 acres of forest land would not be substantial in comparison to the acres remaining on campus, in the County and throughout the state. Furthermore, large-scale commercial logging is not compatible with the existing and proposed uses of the campus, so the existing timberland is not, in practice, available for such logging.

The California Forest Practice Rules (14 CCR Section 895-1110), which implement the Forest Practice Act, are enforced by the California Department of Forestry and Fire Protection (CDF). These rules require that an owner of land that meets the definition of timberland prepare a Timber Harvesting Plan (THP) and obtain a Timberland Conversion Permit (TCP) from CDF before removing trees or other forest products. In addition, a Timber Harvesting Plan (THP) must be filed and must be approved by CDF before timber operations (removal of trees) may begin. The THP process has been certified as a CEQA-equivalent process pursuant to PRC Section 21080.5, and THPs must include feasible mitigation measures or alternatives that would substantially lessen or avoid significant adverse impacts that the activity may have on the environment. This would be required for future development in forested campus areas, including the north campus.



## **Biological Resources**

The synopsis below is drawn from the 2005 LRDP Final EIR, Volume I, Section 4.4, as updated by Volume IV, Chapter 3, Section 3.1.5 (*Changes to Draft EIR, Volume I, Section 4.4 Biological Resources*), revisions to mitigation measures presented in FEIR Volume IV, and responses to comments presented in FEIR Volume V. Although some of the species, habitat or resources that are considered for the campus as a whole may not occur in the North Campus area, all potential biological resources impacts of 2005 LRDP development are summarized in this section, but emphasis is placed on the North Campus when resources are known.

### **ENVIRONMENTAL SETTING**

Natural communities in the UCSC campus include grasslands, coastal prairie, dwarf redwood forest, redwood forest, mixed evergreen forest, coyote brush scrub, riparian, and chaparral. In the North Campus, coastal prairie is confined to a small meadow north of the Crown/Merrill Apartments. Redwood forest occurs in much of the North Campus, where it intergrades with mixed evergreen forest. All of the redwood forest on the campus, including dwarf redwood forest, is second-growth, having been logged at least once between 1860 and 1960. Mixed evergreen forest is present along the southern and western edges of the North Campus area. Northern maritime chaparral and mixed forest chaparral occur also on the North Campus. Coyote brush scrub represents a very small part of the vegetative cover on the campus.

**Sensitive Natural Communities.** Sensitive natural communities identified on the campus include: northern maritime chaparral, coastal prairie, riparian woodland and scrub, and wetlands are sensitive natural communities that occur on the campus. The general distribution of on-campus vegetation communities and habitat types is shown on 16.<sup>13</sup>

*Northern maritime chaparral* (NMC), considered to be a sensitive natural community by DFG (Holland 1986) covers approximately 48 acres of the UCSC Cruz campus and represents about two percent of the total campus area. NMC within the north campus mostly occurs on the level to gently sloping uplands and is largely associated with outcrops of Santa Margarita sandstone, although it also occurs on schist and possibly on quartz diorite. The dominant shrub in NMC stands is brittleleaf manzanita. Santa Cruz (heartleaf) manzanita (*Arctostaphylos andersonii*), a special-status species, is locally dominant in some patches of chaparral. The community tends to succeed to other vegetation types in the absence of wildfire or controlled burns.

*Coastal prairie*, a relatively rare native grassland type, is found on campus in three locations (including a portion of North Campus) and totals 111 acres, of which approximately 1.5 acres is located within the SOI project area. Coastal prairie throughout its range has been found to

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<sup>13</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.

support 30 species of special status plant and animal species and is currently protected by the County of Santa Cruz and the Coastal Commission who recognize the rarity of the habitat.

On campus, native perennial grasses, especially California oat grass, are prominent in coastal prairie, and although nonnative annual grasses are still present, their relative proportion is lower than in other areas of grassland. Three special status plant species have been identified on the UCSC campus outside of the north campus area (San Francisco popcornflower [*Plagiobothrys diffusus*], Point Reyes horkelia [*Horkelia marinensis*], and microseris [*Microseris paludosa*]).

**Riparian Woodland and Scrub.** Central coast arroyo willow riparian forest is recognized by the California Department of Fish and Game (CDFG) as a sensitive community. Riparian woodland and scrub on campus are largely a mixture of Central Coast Arroyo Willow Riparian Forest and Black Cottonwood Riparian Forests. Approximately 4 acres of riparian woodland and scrub (recognized by CDFG as a sensitive community [CNDDDB 2005]) occurs on the lower campus along lower Moore Creek. Patches of riparian woodland understory species also occur in Jordan Gulch and high quality redwood riparian habitat occurs in Cave Gulch.

**Wetlands.** Jurisdictional wetlands are defined as areas regularly saturated by surface water or groundwater and dominated by vegetation that is adapted for saturated-soil conditions. Any wetland that meets the state or federal definition of jurisdictional wetland is considered a sensitive natural community. Seeps, springs and depressional wetlands that may qualify as jurisdictional wetlands occur in the North Campus area, usually in small patches (less than 500 square feet). Drainages associated with seeps and springs occur as narrow linear features in forest or along road margins.

The mixed evergreen forest in the North Campus contains depressional areas underlain by a subsurface clay layer (EcoSystems West 2004a). These depressional areas contain variable densities of hydrophytic plant species (EcoSystems West 2004a). Due to local variations in the frequency and duration of inundation of these areas, some may meet the regulatory definition of waters of the United States and/or waters of the state, while others probably do not. In addition, mesic grassland areas in coastal prairie and grassland areas may meet the regulatory definition of waters of the U.S. and/or of the state.

**Special-Status Species.** Special-status species are defined as plants and animals that are protected under the California or federal Endangered Species Acts or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

**Plant Species.** Special-status plants that are known to occur or have the potential to occur on the campus are listed in Table 4.4-1 (located at the end of this section). Four special-status plants are known or suspected to occur on campus: Santa Cruz manzanita, Point Reyes

horkleia, marsh microseris, and San Francisco popcorn flower. Of these species, Santa Cruz manzanita occurs primarily in the chaparral of the north campus, but the other species have been observed/reported in other portions of the UCSC campus.

**Wildlife Species.** Forty special-status wildlife species were identified as having the potential to occur in northern Santa Cruz County. Of these, the following 30 species were identified as occurring on the campus or as having a moderate to high potential to occur on the campus.

- ❑ **Seven invertebrate species:** Ohlone tiger beetle (*Cicindela ohlone*), San Francisco lacewing (*Nothochrysa californica*), Monarch butterfly (*Danaus plexippus*), and cave species: Santa Cruz telemid spider (*Telemid* sp.), Dolloff Cave spider (*Meta dolloff*), Empire Cave pseudoscorpion (*Microcraegris imperialis*), and MacKenzie's cave amphipod (*Stygobromus mackenziei*) (the latter four associated with karst caverns);
- ❑ **One amphibian species:** California red-legged frog;
- ❑ **Two reptile species:** southwestern pond turtle (*Clemmys marmorata pallida*) and Coast horned lizard (*Phrynosoma coronatum frontale*) (neither of which is likely to occur in habitats present in the North Campus area);
- ❑ **Eight bat species:** pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii townsendii*), western red bat (*Lasiurus blossevillei*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), yuma myotis (*Myotis yumanensis*), and greater western mastiff bat (*Eumops perotis californicus*); and
- ❑ **Two other mammal species:** San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) and American badger (*Taxidea taxus*); and
- ❑ **Ten birds species:** Cooper's hawk (*Accipiter cooperii*); Sharp-shinned hawk (*Accipiter striatus*), Golden eagle (*Aquila chrysaetos*), Northern harrier (*Circus cyaneus*), White-tailed kite (*Elanus caeruleus*), Cooper's Hawk (*Accipiter cooperii*), Long-eared owl (*Asio otis*), Western burrowing owl (*Athene cunicularia hypugea*), Vaux's swift (*Chaetura vauxi*), Yellow-breasted chat (*Icteria virens*), and California yellow warbler (*Dendroica petechia brewsteri*).

It should be noted that the North Campus area does not include habitat for all of the species listed, and many of these species have not been observed in the North Campus area or on the campus as a whole in recent years. None of the invertebrate, amphibian or reptile species have been detected/recorded in the North Campus area. However, most bat species have been detected in the north campus area, and the north campus supports potential habitat for the San Francisco dusky-footed woodrat and nesting habitat for the sharp-shinned hawk, golden eagle, white-tailed kite, and long-eared owl.

**Wildlife Movement.** The CEQA Guidelines state that a project would have a significant impact if it would "interfere substantially with the movement of any native resident or migratory fish

or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.” The campus currently provides important habitat linkages and wildlife corridors between several adjacent large tracts of open space. Wildlife with large home ranges, such as black-tailed deer, gray foxes, and bobcats, are expected to travel through the forested areas of the North Campus when moving between Henry Cowell Redwoods State Park and Wilder Ranch State Park.

Many birds and mammals (e.g., bats, black-tailed deer, raccoon, gray foxes, and bobcat) that forage in the grassland of the lower campus seek both water and forest shelter (nest sites, roosts, and cover) within the North Campus, upper campus and adjacent parklands. The Moore Creek drainage and the Jordan Gulch drainage are the two corridors that likely provide consistent access between the central campus, where many species forage, and the North Campus.

There is no evidence that any terrestrial species use UC Santa Cruz for regular migration. Migratory songbirds are common on campus, as are Monarch butterflies and other migratory invertebrates.

Some common wildlife species with larger home ranges that would potentially bring them into contact with new LRDP development are present on the campus. Raccoons (*Procyon lotor*) are found in all types of habitats and acclimate well to living near humans. They likely occupy both the Moore Creek and Jordan Gulch drainages and limit their ranges to the respective watersheds. Coyotes (*Canis latrans*) are often sighted in the campus meadows and grasslands. Coyotes at UC Santa Cruz likely are acclimated to humans and use existing riparian corridors to reach the Great Meadow. Similar to coyotes, bobcats (*Lynx rufus*) are seen regularly hunting in the afternoons in the meadows. Individuals seen on the campus likely move down through the riparian corridors to reach grasslands in lower campus from forested areas to the north. Mountain lions (*Felis concolor*) can have a home range of up to 100 square miles. Lions are shy and elusive. They are excellent jumpers and can leap distances of 20 feet, so fences do not pose a barrier to lion movement. The black-tailed deer (*Odocoileus hemionus* ssp. *columbianus*) are very common and move freely on the campus, frequently around buildings and across roads.

**Habitat Conservation Plans/Natural Community Conservation Plans.** Pursuant to an Implementing Agreement and Habitat Conservation Plan executed by the University in conjunction with an application for an Incidental Take Permit issued by the U.S. Fish and Wildlife Service, the UC Regents has committed to protect 13.0 acres in the southwestern corner of the campus in perpetuity as habitat for the California red-legged frog (*Rana aurora draytonii*) and Ohlone tiger beetle (*Cicendela ohlone*), and 12.5 acres, for the duration of the permit, south of the Ranch View Terrace Housing Project on the lower campus as habitat for the California red-legged frog and as potential habitat for the Ohlone tiger beetle. Long-term management and monitoring is provided on both sites under this agreement. The North Campus area is not subject to an HCP/NCCP.

## IMPACTS AND MITIGATION MEASURES

Campus growth through 2020 will be guided by the 2005 LRDP, including the following goals and principles for the protection of biological resources: Respect major landscape and vegetation features; maintain continuity of wildlife habitats; and maintain natural surface drainage flows as much as possible. In addition to these principles, biological resources on the campus are protected by four land use designations in the 2005 LRDP that allow only minor or incidental new development (such as interpretive signs, paths and/or service roads). These include Campus Natural Reserve, Protected Landscape, Campus Resource Land, and Campus Habitat Reserve, which together comprise approximately 1,068 acres of the 2,020-acre main campus.

**Sensitive Natural Communities.** Development under the 2005 LRDP could result in direct and indirect impacts to northern maritime chaparral and coastal prairie habitats that recognized as being sensitive.

*Northern maritime chaparral* (NMC), which supports Santa Cruz manzanita, a special-status plant (that is addressed further below), generally occurs in the North Campus area and would be directly or indirectly affected by future campus development (LRDP Impact BIO-1). The LRDP EIR estimates that approximately 12 acres of northern maritime chaparral could be removed with development in addition to other scattered, smaller and marginal patches of this habitat. Up to 20 acres that are transitional between chaparral and mixed hardwood forests and up to 17.5 acres of dwarf redwoods mixed with chaparral could be removed by proposed north campus development. Although these transitional communities are not considered sensitive by CDFG, they contain components of the northern maritime chaparral community. The loss represents approximately 0.4 percent of the area of northern maritime chaparral in California documented in the CNDDDB, and 0.6 percent of northern maritime chaparral in Santa Cruz County documented in the California Natural Diversity Data Base (CNDDDB). Indirect impacts could occur with development that leads to fragmentation of habitat. Development area north of the Colleges and Student Housing area could fragment a large patch of northern maritime chaparral, and remove a portion of a large patch of chaparral near the intersection of Chiquapin, West, and Red Hill Roads.

Development is not proposed for the areas in which the other identified special status plants occur. Santa Cruz manzanita occurs on campus primarily as a dominant or common species within northern maritime chaparral, so impacts to this special-status species usually overlap with impacts to northern maritime chaparral. Santa Cruz manzanita in the north campus would be removed by construction within proposed development areas, and as a result of the construction of the north campus loop road and the road connecting Empire Grade Road with the north campus loop road. Up to 14.6 acres of Santa Cruz manzanita stands (of high, moderate, and low density), representing up to 40 percent of the extent of Santa Cruz manzanita stands on campus, could be removed by proposed development. Out of the 19 distinct patches of Santa Cruz manzanita mapped, up to nine of these patches (47 percent)

could be completely or partially removed by development under the 2005 LRDP. Two of these nine stands of Santa Cruz manzanita are of high density.

This potentially significant impact would be reduced to a less-than-significant level with implementation of LRDP Mitigation BIO-1A through 1C, which call for avoidance, compensatory long-term preservation, management and monitoring of comparable stands on campus and, if management of existing stands is not successful, for restoration of chaparral/forest transition stands and long term monitoring and management.

*Coastal Prairie.* Development also could result in impacts to the coastal prairie sensitive natural community (LRDP BIO-2). Up to 1.5 acres of coastal prairie, representing about 1.3 percent of the overall coastal prairie area on the campus, could be lost to campus development under the 2005 LRDP, primarily in the north campus area. This potentially significant impact similarly would be reduced to a less-than-significant level through implementation of LRDP Mitigations BIO-2A and -2B. These measures require the design of the project to avoid the coastal prairie habitat, or, if it is not avoidable, restoration at a 3:1 ratio. A management and monitoring plan with success criteria is required prior to losses of the habitat.

**Wetlands.** Development could result in direct and indirect impacts to jurisdictional wetlands, a potentially significant impact (LRDP Impact BIO-3). Construction of new campus facilities in the proposed SOI project area located south of Chinguapin Road and east of Red Hill Road, as well as construction of the North Campus loop road, could result in the loss of isolated wetlands. Depressional wetlands are located in mixed evergreen forest in portions of these areas. In addition, direct and indirect impact to forest springs and seeps may occur. LRDP Mitigations BIO-3A through -3D require site wetlands reconnaissance, delineation, avoidance and, if jurisdictional wetlands cannot be avoided, wetlands restoration or creation based on permitting consultation with regulatory agencies. Implementation of these mitigations would reduce the potential impact to a less-than-significant level. Changes in hydrologic regime that may result from development, due to increased runoff or reduced groundwater supplies, may result in the degradation of seeps and springs.

Comments received on the 2005 LRDP DEIR requested further analysis of wetland resources and impacts, including preparation of a jurisdictional wetlands delineation. Several similar comments were presented on the Notice of Preparation of this EIR (see Appendix A). As indicated in the LRDP FEIR (Section 5.1.1, Master Response Bio-2 Wetlands), a formal delineation of wetland and aquatic resources was not conducted because these resources are dynamic and their precise boundaries are likely to change over the 15-year term of the 2005 LRDP. Due to the dynamic nature of aquatic resources, delineations of waters of the U.S. are considered valid to meet requirements under the Clean Water Act for only three to five years from the date of their verification. Therefore, as discussed in the LRDP FEIR, the University has elected to formally delineate aquatic resources within individual project areas at the time that detailed environmental analyses are conducted for each project. As discussed in the LRDP EIR, direct or indirect impacts to jurisdictional aquatic resources will require permits



from the responsible agencies, which may include the U.S. Army Corps of Engineers (ACOE), Central Coast Regional Water Quality Control Board (CCRWQCB), and California Department of Fish and Game (CDFG).

However, in response to comments related to wetlands, additional analysis was conducted as part of the LRDP FEIR to develop an estimate of potential wetland acreage that is present within areas that would be developed, general descriptions of the locations and types of wetland resources that could be affected by development under the 2005 LRDP, and a strategy for avoiding, minimizing and mitigating those impacts. The analysis for North Campus showed that out of about 4.7 acres of potential wetlands, about 1.6 acres could be lost as a result of development proposed under the 2005 LRDP and would require mitigation as identified above.

Direct impacts to wetland resources are not anticipated in any watersheds outside the mapped aquatic resource areas described above. Indirect impacts to wetland resources outside the mapping area are discussed in Volume II of the Draft EIR on pages 4-8-29 through 4.8-48, and in Volume III on page 2-68 (LRDP Impacts HYD-3, HYD-4, HYD-6, and IIP-SW Impact HYD-3). Available information on the location and nature of aquatic resources outside the mapping area, collected as part of biological and hydrologic studies to support the 2005 LRDP and the Infrastructure Improvements Project, is adequate to analyze indirect impacts to these resources.

**Riparian Habitat.** Construction of bridge crossings and other improvements under the 2005 LRDP could result in a substantial temporary and permanent adverse impact on riparian vegetation, a potentially significant impact (LRDP Impact BIO-4). The proposed bridges over Cave Gulch and over two branches of Jordan Gulch Creek may remove or degrade riparian vegetation in these drainages. Construction in the proposed Colleges and Student Housing development area on the north campus and storm drainage improvements could also result in direct or indirect impacts to riparian vegetation in Cave Gulch. No bridge footings or other permanent structures would be constructed in the creeks. The extent of riparian vegetation present in the area and the amount of vegetation affected will be determined on a project-by-project basis. The maximum permanent riparian habitat impact from bridge projects and storm drainage improvements is estimated to be 0.7 acres.

The potential impact would be reduced to a less-than-significant level through implementation of LRDP mitigations BIO-4A through -4D, which require avoidance, and/ or restoration and enhancement at the impact site and/or compensatory restoration and monitoring at a nearby site.

**Special Status Species.**

*Special Status Plants.* The 2005 LRDP EIR concluded that the implementation of the LRDP would not result in impacts to special status plants (LRDP Impact BIO-5), except for Santa



Cruz manzanita, which is addressed under Impact BIO-1 (as described above under the “Sensitive Natural Communities” impact discussion).

Development under the 2005 LRDP has the potential to introduce or cause the spread of noxious weeds, which could reduce the abundance of native plants and sensitive communities (LRDP Impact BIO-6), a potentially significant impact. Mitigation measure LRDP Mitigation BIO-6 specifies practices to be incorporated in construction contract specifications to ensure that earth and vegetation moving do not result in the spread of noxious weeds, sudden oak death or pitch pine canker. With the implementation of these measures, the impact would be less than significant.

**Special Status Wildlife.** Development in the north campus under the 2005 LRDP could result in impacts to special status bat species and nesting birds. Though, Ohlone tiger beetle and California red-legged frog are not expected in the proposed Sphere of Influence amendment project area, these species are addressed below. Indirect impacts to invertebrate cave species could occur due to drainage impacts, which also is discussed below.

The 2005 LRDP EIR assessed the potential for development to result in substantial adverse impact associated with the loss of potential habitat or other indirect impacts to the *southwestern pond turtle or coast horned lizard* (LRDP Impact BIO-10) and concluded that the potential habitat for these species on campus is apparently not occupied at present and that, further, the project would not result in significant changes to that habitat. The potential impact therefore is less than significant and no mitigation is needed.

**Ohlone tiger beetle (OTB).** Development under the 2005 LRDP could result in a substantial adverse impact on *Ohlone tiger beetle (OTB)* populations on the campus from increased bicycle use on trails and obstruction of potential movement corridors by trees planted in the Arboretum (LRDP Impact BIO-7), a potentially significant impact. However, the OTB has not been observed in surveys in the North Campus area. The beetle is known to occur on the upper campus and on the lower campus west of Empire Grade Road, and no 2005 LRDP-related development is planned in these areas. Most occurrences of the Ohlone tiger beetle on campus are within or adjacent to active recreational trails in the upper campus. LRDP Mitigation BIO-7A and BIO-7B provide measures that would reduce these impacts to a less-than-significant level by prohibiting bicycles on trails that support Ohlone tiger beetles, installing temporary fencing and signs at trail entries during periods of beetle activity, and consultation with the U.S. Fish and Wildlife Service regarding any vegetation modification near the Arboretum (outside project SOI) area.

**California red-legged frog (CRLF).** Development under the 2005 LRDP could result in a substantial adverse effect on breeding or important movement habitat for *California red-legged frog (CRLF)*; direct impacts to California red-legged frog populations; or indirect impacts on the species from downstream hydrological changes in the Moore Creek watershed, a potentially significant impact (LRDP Impact BIO-9). The closest observation of CRLF to the

North Campus area was approximately 0.4 miles northwest of the campus, at Adams Creek, a tributary of Wilder creek. No CRLF have been observed on the North Campus. Implementation of LRDP Mitigation BIO-9, which applies to development in the Moore Creek watershed, requires avoidance of construction during rain periods, biological surveys and biological monitoring, and would reduce the potential impact to a less-than-significant level.

As indicated in the 2005 LRDP Final EIR (University of California Santa Cruz, September 2006, Volume V - Response to Comment FA-1-4), UCSC Cruz has prepared a habitat conservation plan for the Ohlone tiger beetle and California red-legged frog in conjunction with the Ranch View Terrace project. The U.S. Fish and Wildlife Service certified that HCP in 2005. HCPs are prepared to mitigate the impacts of proposed activities that might incidentally result in harm or "take" of wildlife species that are listed as threatened or endangered, or to the habitat of these species. It is not anticipated that the proposed 2005 LRDP would result in take of threatened or endangered species or their habitat in other areas of the campus. If such impacts were to be identified in the future when site-specific development proposals are reviewed, site specific habitat and species surveys would be prepared and additional HCPs or appropriate consultation would be undertaken as required by USFWS regulations. One comment received on the NOP for this EIR requested that "protocol" species surveys be conducted for the California red-legged frog and Ohlone tiger beetle. However, these would be conducted at the time site-specific development is proposed, but as indicated above, to date no California red-legged frogs or Ohlone tiger beetles have been observed on the North Campus. At this time UC Santa Cruz has no plans to develop a Campus Wide Habitat Conservation Plan.

*Special Status Bat Species.* Eight special-status bat species have been observed foraging throughout all areas of the campus. Forested areas within the central campus and the north campus contain features suitable for bat foraging that could be removed or degraded by future development proposed under the 2005 LRDP (estimated to be up to 100 acres of potential habitat removal). Most of the high-quality roosting sites are also located within riparian zones or forested areas designated as Campus Resource Lands or Campus Natural Reserve and would not be disturbed by development under the LRDP. Bats roosting in the north campus may be more sensitive to disturbance because of the lack of development and relatively low level of human activity in that area. LRDP Mitigations BIO-13A and BIO-13B will be implemented in conjunction with north campus projects in order to reduce the potential for impacts to bat roosting sites. Implementation of LRDP Mitigations BIO-13A and BIO-13B, when necessary, would reduce development-related impacts to roosting special-status bat species to a less-than-significant level.

*Cave Invertebrates.* The 2005 LRDP analyzed whether development and increased campus population under the 2005 LRDP would result in loss or degradation of habitat for *cave invertebrates*, including the Santa Cruz telemid spider, Dollof Cave spider, Empire Cave pseudoscorpion, or Mackenzie's Cave amphipod and concluded that the impact would be less than significant. An increase in surface runoff due to increased impervious surfaces could increase the quantity of water that drains into sinkholes and enters the karst system, and

result in indirect adverse effects due to flooding. However, the Campus would implement LRDP Mitigation HYD-3C, which would ensure that post-development peak flows do not exceed pre-development peak flows, and LRDP Mitigation HYD-3D would maximize infiltration. As a result, peak flows would generally remain at the same levels as under existing conditions, and the general pattern of infiltration would not be significantly affected. To the extent that there is periodic flooding and water levels in the caves are somewhat higher than under existing conditions, this would not adversely affect the special-status invertebrates, as it would be within the range of the natural fluctuation in water levels that results from large storms. The University would implement LRDP Mitigation BIO-8A and -8B, to discourage uses of campus caves that could jeopardize special species habitat, and to consult with regulators on installation of a gate on Empire Cave, to further minimize this impact.

*Steelhead.* Comments received on the NOP raised questions regarding impacts of the 2005 LRDP planned development on steelhead in Wilder Creek as Cave Gulch is a tributary to Wilder Creek. The California Natural Diversity Data Base has recorded steelhead in Wilder Creek (Bill Davilla, EcoSystems West Consulting Group, personal communication, August 2009). Part the Cave Gulch watershed/drainage (see Figure 17) is designated for academic uses in the 2005 LRDP. However, as further discussed under “Hydrology,” with implementation of Mitigation HYD-3D, peak stormwater flows would not exceed pre-development levels. Thus, drainage patterns are not expected to be changed in this area to the extent that downstream flows would be reduced or steelhead habitat otherwise indirectly affected.

**Interference with Breeding Success.** Development under the 2005 LRDP could result in the loss or abandonment of active nests for special-status raptors (LRDP Impact BIO-11), a potentially significant impact. The impact would be reduced to a less-than-significant level by the implementation of mitigation BIO-11, which required preconstruction surveys during nesting season and implementation of measures to avoid identified nests of special status birds and migratory birds.

The 2005 LRDP EIR analyzed the potential for development under the 2005 LRDP to result in a substantial adverse impact on western burrowing owl (LRDP Impact BIO-12). USFWS has officially recognized that no burrowing owl breeding occurs in Santa Cruz County. No western burrowing owl breeding pairs have been documented on campus since the early 1980s. While individuals and nest sites are protected under the Migratory Birds Treaty Act, wintering habitat is not. Thus, all potential impacts to burrowing owl due to future construction proposed under the 2005 LRDP are considered less than significant, and no mitigation is required. However, LRDP Mitigations BIO-12A and BIO-12B are included to further reduce this less-than-significant impact in the event that burrowing owls establish nests in the future in suitable habitat present on the campus lands.

Development under the 2005 LRDP could result in a substantial adverse impact associated with the disturbance of roosting sites for special-status bats (LRDP Impact BIO-13), a

potentially significant impact. LRDP Mitigations BIO-13A and -13B, which require bat surveys for projects that would remove trees during bat breeding season, avoidance of maternity roosts, or bat relocation in accordance with CDFG requirements, ensures that the impact will be reduced to a less-than-significant level.

Development under the 2005 LRDP could result in a substantial adverse impact associated with the loss of potential San Francisco dusky-footed woodrat nests (LRDP Impact BIO-14), a potentially significant impact. Implementation of LRDP Mitigation BIO-14, which requires preconstruction survey of suitable woodrat habitat to detect woodrat nests, construction buffers, or nest relocation, ensures the impact will be reduced to a less-than-significant level.

**Wildlife Corridors.** Development under the 2005 LRDP could interfere substantially with the movement of wildlife species or with established native resident or migratory wildlife corridors (LRDP Impact BIO-15), a potentially significant impact. Under the 2005 LRDP, Moore Creek and Jordan Gulch drainages, which have been identified as wildlife movement routes between the lower campus and the North Campus, would be maintained through the campus core and between the new colleges proposed under the 2005 LRDP. This will help maintain the riparian connectivity between the meadows and the adjacent open space areas of upper campus, Wilder Ranch State Park, Pogonip City Park, and Henry Cowell Redwoods State Park.

The North Campus currently provides important wildlife movement routes between several adjacent tracts of large open space. The North Campus is located immediately between the upper meadows of Wilder Ranch State Park on the northwest and the meadows of Pogonip City Park and the forest of Henry Cowell Redwoods State Park on the east. One developed area, the Cave Gulch neighborhood, lies directly to the west. Wildlife with large home ranges are expected to travel through the North Campus when moving between these environments. Potential development of the North Campus consistent with the 2005 LRDP would shift the urban-wildland interface (i.e., the boundary between campus development and large blocks of open space) northward, maintain open space between development areas, and will not interfere substantially with the movement routes through the North Campus that were identified previously (EcoSystems West 2004a). These routes allow for a northern corridor between the campus core riparian corridors and a corridor along the northern rim of the campus to adjacent parklands. The connectivity between these two corridors would be slightly impaired by development of the North Campus loop road, but would not be eliminated. Migration across this new loop can occur through forested areas between developments. A secondary route between east and middle development areas of approximately 300 feet is adequate to maintain most wildlife movement because of the densely forested vegetation that will still provide significant cover and visual buffering. For these reasons, impact to wildlife movement from the developments in the North Campus is considered to be less than significant.

## **Cultural Resources**

The synopsis below is drawn from the 2005 LRDP Final EIR, Volume I, Section 4.5, as amended by Volume IV, Chapter 3, Section 3.1.6 (*Changes to Draft EIR, Volume I, Section 4.5, Cultural Resources*) and revisions to mitigation measures presented in FEIR Volume IV, Table 1-1.

### **ENVIRONMENTAL SETTING**

UC Santa Cruz has identified historic buildings and structures, historic features, and prehistoric and historic archaeological sites on the main campus. About 40 percent of the north campus area was surveyed in 2005 (Pacific Legacy 2005), with emphasis on known site vicinities, open areas, and areas around seeps and springs. Much of the area that has not been intensively surveyed lies within steep drainages, is heavily forested or vegetated in brush or other vegetation too dense to allow passage or ground visibility. The only significant cultural resource identified in archaeological survey on the North Campus is one prehistoric archaeological site, CA-SCR-160. The Cowell Lime Works National Register Historic District, on the lower campus, would not be affected in any way by development in the north campus area. The only human burials encountered on the campus were associated with a prehistoric archaeological site that is not located in the north campus development area. No historic human burial have been encountered.

There are three potentially fossil-bearing formations on the main campus: the Santa Margarita sandstones, doline fill deposits in area underlain by marble, and Quaternary marine or non-marine terrace deposits. Doline fill deposits in area underlain by marble, and Quaternary marine or non-marine terrace deposits do not appear to be present on the North Campus. Further, no fossil finds have been documented in doline fill deposits and Quaternary marine terrace sediments in the region, nor have any fossil finds been made on campus, despite extensive development in areas underlain by doline and Quaternary marine and on-marine terrace deposits. Limestone caves -- of particular scientific interest -- are present in Cave Gulch, but none is known in any North Campus area proposed for development under the 2005 LRDP.

Santa Margarita sandstones in the Santa Cruz region have yielded significant marine vertebrate fossils. Although no such finds have been made in Santa Margarita formation sandstones on campus, this may be because there has been no development in these areas. Santa Margarita sandstone formations occur in the North Campus area and are thus considered to have high potential to include significant fossils.

### **IMPACTS AND MITIGATION MEASURES**

**Archaeological Resources.** The only known archaeological resource in the North Campus area (CA-SCR-160) is in a protected area that will not be subject to development. However, it is

possible that other undiscovered archaeological resources would be discovered and adversely affected in the course of future development. The LRDP EIR includes a suite of mitigation measures, CULT-1A through -1G, that require archaeological records search, survey, contractor awareness training, significance assessment, avoidance and preservation in place where possible, and/or appropriate data recovery. These measures, in most cases, would mitigate the impact to a less-than-significant level.

**Historic Resources.** Since there are no historic buildings or structures in the North Campus, this impact does not apply. Similarly, highly significant historical resources have not been identified in the North Campus. However, in the event such a resource is identified in the course of North Campus development, the 2005 LRDP EIR determined that implementation of LRDP Mitigations CULT-3A and -3B would avoid damage and preserve significant information about the site. Nonetheless, if such an impact did occur, the impact would be significant and unavoidable.

**Human Remains.** The 2005 LRDP EIR assessed the potential for implementation of the proposed 2005 LRDP to disturb human remains (LRDP Impact CULT-4) and determined that the impact was potentially significant. The implementation of LRDP Mitigation CULT-4A through -4D will ensure that human remains in archaeological and isolated contexts will be protected from destruction that might result from development, through identification, Native American consultation, preservation in place or recovery, respectful treatment and study, and appropriate disposition. The implementation of the identified measures would reduce the impact to a less-than-significant level.

**Paleontological Resources.** The 2005 LRDP EIR considered the potential for development under the 2005 LRDP to disturb or destroy unique paleontological resources and determined that the impact could be potentially significant (LRDP Impact CULT-5). LRDP Mitigations CULT-5A through -5C would reduce the potential impact to less-than-significant level by ensuring that the potential to encounter sensitive formations is assessed during the project planning process; paleontological monitoring and data recovery are carried out as appropriate; and discoveries during construction are protected and assessed; and impacts minimized through feasible design and construction modifications.

**Unique Geological Resources.** The 2005 LRDP EIR considered the potential for increased population on campus, under the 2005 LRDP, to result in damage to the scientific and cultural value of unique geologic resources (LRDP Impact CULT-6), and determined that the impact would be potentially significant. Specifically, increased recreational use of the limestone caverns in the Campus Natural Reserve could result in impacts to the cave habitat of special status insect species. The impact would be reduced to a less-than-significant level through implementation of LRDP Mitigations BIO-8A and -8B, under which the Campus will continue to limit activity in the vicinity of the caves in the Campus Natural Reserve, and will post appropriate signs and website information informing visitors of the values represented by the caves and informing visitors of prohibitions against, fire, littering or removal of materials.



## **Geology and Soils**

The 2005 LRDP EIR analyzed impacts associated with geology, soils and seismicity in Volume 1, Section 4.6, and Volume 4, Sections 2.2.2 and 3.1.7.

### **ENVIRONMENTAL SETTING**

Beneath the surface soils and sedimentary rocks on campus, the geologic complex consists of two major rock types: a marble/schist substrate and a granitic substrate. The marble/schist substrate underlies most of the campus, including the central, lower, and north campus. Granitic rock underlies the upper campus, the north campus west of Cave Gulch and the northern edge of the north campus, and also forms intrusions into the marble in the central and lower campus. In the north and upper campus (generally, all areas north of McLaughlin Drive) the schist and granitic rocks are overlain in some areas by thin (5- to 30-foot) eroded remnants of the Santa Margarita sandstone and marine terrace deposits.

The U.S. Soil Conservation Service has mapped 12 different soil types and complexes on the campus. Most of the soil on campus is loam, a mixture of clay, silt, sand, and organic matter. The predominant soil types in the North Campus and upper campus are the Watsonville loam, Lompico-Felton complex, and the Aptos loam. The dominant soil type in the central campus is the Nicene-Aptos complex and the predominant soil types in the lower campus are Elkhorn sandy loam, Los Osos loam, Ben Lomond-Felton complex, and Watsonville loam. Soils on large portions of the North Campus have a slight to moderate erosion potential; significant areas of soils with a high to very high erosion potential are present in the upper, central, and lower areas of the campus.

### **IMPACTS AND MITIGATION MEASURES**

CEQA Checklist items regarding rupture of a known fault and septic tanks or alternative wastewater disposal systems were focused out in the Initial Study for the 2005 LRDP EIR and were not analyzed further in the EIR. The UC Santa Cruz campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults on the campus. The campus does not have septic tanks or alternative wastewater systems and none would be developed under the 2005 LRDP.

**Seismic Shaking.** No active or potentially active faults have been identified on campus but the campus could experience significant ground shaking associated with a seismic event on active faults in the region, which could expose people and property to the risk from unstable ground conditions. The 2005 LRDP EIR concluded that the hazards associated with seismic ground shaking would be less than significant because compliance with the University of California Policy on Seismic Safety and emergency preparedness and health-and-safety policies and programs would be adequate to address the hazards to people and structures.



**Landslides, Lateral Spreading, Liquefaction and Expansive Soils.** North Campus development consistent with the 2005 LRDP contemplates the construction of bridges, some of which could cross areas with landslide potential. There are also some limited areas within the North Campus where soils may be susceptible to liquefaction. Expansive soils are present on parts of the campus, including the North Campus. Although these can cause heaving and cracking of concrete slabs, pavement, and structures founded on shallow foundations, engineering solutions are available to address these hazards, and the California Building Code includes requirements for construction on expansive soils. New construction in areas with potential for landslides, liquefaction and expansive soils could expose people and property to risk from unstable ground conditions (LRDP Impact GEO-1). However, when implementing 2005 LRDP the campus is required to comply with LRDP Mitigation GEO-1, which requires that detailed geotechnical studies be conducted to guide project engineering on sites that are not well-characterized, would reduce these risks to a less-than-significant level.

**Development on Karst.** Karst features (including ravines, sinkholes, closed depressions, swallow holes, underground streams, and caverns) are present in areas of the campus that are underlain by marble and may result in settling or collapse beneath a structure. Development on karst could expose people and property to the risk from unstable ground conditions, a potentially significant impact. The 2005 LRDP EIR concluded that implementation of LRDP Mitigation GEO-1 would reduce this impact to a less-than-significant level. The North Campus is underlain by schist and sandstone; therefore, the potential for encountering karst hazards is low.

**Soil Erosion.** The 2005 LRDP EIR analyzed the potential for soil erosion to result from soil disturbance during construction, and from development and use of the envisioned North Campus loop road (LRDP Impact GEO-2). The EIR concluded that the impacts would be less than significant because of the erosion and sedimentation controls required of all construction projects to comply with Campus Standards and the National Pollutant Discharge Elimination System (NPDES) requirements for construction site storm water discharges. The potential for erosion resulting from alterations to predevelopment storm water runoff patterns are discussed under *Hydrology and Water Quality*.

### **Hydrology and Water Quality**

The 2005 LRDP EIR analyzed hydrology and water quality impacts in Volume II, Section 4.8, Volume IV, Sections 2.2.2 and 3.2.1, and Volume V (Master Response HYRDO-1, LRDP Impact HYD-3).

#### **ENVIRONMENTAL SETTING**

The geology of the North Campus and upper campus consists of weathered schist and granitic rocks, which are overlain in some areas by thin (5- to 30-foot thick) eroded remnants of Santa

Margarita sandstone and marine terrace deposits. In this area, surface flow is dispersed, which encourages percolation of rainwater, and recharge of a shallow groundwater system, which in turn feeds springs and seeps located along the southern and eastern edge of the North Campus.

Bedrock beneath the central and lower campus consists of marble and schist bedrock overlain by deposits of residual soils and colluvium, where karst topography has developed as a result of the dissolution of marble. As a result, very little storm water runoff from the central or lower campus is conveyed by surface streams to channels downstream of the campus. Instead, storm water is captured by the karst aquifer, stored and transmitted via solution channels and caves, and discharged in springs at lower elevations to the east, south and west of the campus.

**Stormwater Drainage.** The campus is drained through both surface and subsurface drainages by watersheds that originate within the campus boundaries. Three watersheds – Cave Gulch, Moore Creek and Jordan Gulch, drain approximately 1,100 acres in the central portion of the approximately 2,020-acre campus (see Figure 17). Cave Gulch, which drains most of the northwestern portions of the campus, joins Wilder Creek immediately west of the campus. Moore Creek, which drains the central portions of the campus, flows in a southwesterly direction and discharges into Antonelli Pond near the coast. Jordan Gulch drains the central and eastern portions of the campus and continues as a spring-fed channel down Bay Street.

The majority of North Campus area drains to the Cave Gulch, but the central and eastern portions also drain to the Moore Creek, Jordan Gulch, and Pogonip (San Lorenzo River) watersheds. In general, campus lands that presently discharge into the Cave Gulch drainage system are largely undeveloped and contain only a few service roads used for recreation and emergency vehicles access and a 1-million gallon water tank. The few developed areas within the watershed are a portion of the Campus Trailer Park, the western half of Kresge and Porter Colleges, and a portion of Family Student Housing complex.

The existing campus drainage system mainly involves: (1) conveyance of storm runoff from areas of impervious surfaces to main trunk channels through culverts or lined ditches, (2) construction of detention and sediment filtration facilities to detain excess runoff and slowly release it downstream in order to avoid increasing peak flows and to remove suspended sediment, and (3) in the Moore Creek drainage, the detention of excess runoff behind earthen dams near the base of campus. These practices have helped reduce slope erosion and the release of peak runoff to off-campus areas; however, detention systems do not address runoff from development constructed before 1989 and unprotected trunk channels have been adversely affected by erosion and sedimentation. As noted above, gullyng has occurred on off-campus lands adjacent to the eastern campus boundary. The Campus has developed and has been implementing a set of erosion control standards that are based substantially on Chapter 16.22 of the County Code (Erosion Control Ordinance). These standards are part of a Campus Standards Handbook (UCSC 2001). Based on the recommendation in the *Stormwater and Drainage Master Plan*, the Campus is proposing to implement a storm water drainage

improvement project to address the existing erosion conditions in drainages throughout the campus.

**Water Quality.** Since 1989, water quality sampling has been conducted at six groundwater well, spring and surface water locations. The samples are analyzed for a complete California Administrative Code Title 22 suite (general mineral, physical and inorganic) and semi- to non-volatile range hydrocarbons (diesel-kerosene-motor oil range).

UCSC construction and industrial activities are currently subject to the Phase I NPDES storm water requirements in accordance with requirements of the federal Clean Water Act through California Regional Water Quality Control Boards (RWQCB). Under Phase II of the NPDES program, SWRCB has issued three general permits: (1) Municipal permits – required for operators of small municipal separate storm sewer systems (MS4s), including universities, (2) Construction permits – required for projects involving one acre or more of construction activity, and (3) Industrial permits. The municipal permit requires development and implementation of a Storm Water Management Program (SWMP). The purpose of the SWMP is: (1) to identify pollutant sources potentially affecting the quality and quantity of storm water discharges; (2) to provide Best Management Practices (BMPs) for municipal and small construction activities implemented by University staff and contractors; and (3) to provide measurable goals for the implementation of the SWMP to reduce the discharge of the identified pollutants into the storm drain system and associated water ways. The goal of the SWMP is to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP), as defined by the EPA. “Minimum Control Measures” (MCMs) is the term used by the EPA for the six MS4 program elements aimed at achieving improved water quality through NPDES Phase II requirements. UCSC campus received approval of its NPDES Permit for storm drainage requirements in April 2009, which includes MCMs and BMPs to protect water quality.

**Groundwater.** The UCSC campus is roughly divided into two hydrogeologic systems: upper/north campus system and central/lower campus system. At this time, groundwater is not extracted on the campus for any purpose, and the Campus depends on the City’s domestic water supply for both domestic and irrigation water.

Groundwater studies conducted by UCSC in 2000 (Nolan Associates) in the North Campus area indicated that the North Campus has a relatively uniform shallow groundwater system; depths to groundwater throughout the main portion of the North Campus ranged from about 2 to 16 feet below ground surface. Due to the shallow groundwater and the moderate permeability of the near-surface materials, the North Campus area has a high density of springs and seeps. Due to its limited thickness and extent, and moderate permeabilities, the upper/north campus groundwater system is not considered a viable source for long-term groundwater supply for the campus. Previous groundwater studies conducted for the University in 1985 (Nick Johnson) indicate that while there are some domestic wells adjacent

to the upper campus area, the yields (typically from 5 to 25 gallons per minute) are not adequate to meet campus water supply needs.

The southern two-thirds of the campus is underlain almost entirely by marble and schist that are characterized by a relative absence of surface streams and drainage channels with most precipitation discharging to the subsurface through fractures, and the presence of sinkholes, closed depressions, and swallow holes. It is estimated that approximately 40% of the surface runoff on the campus is intercepted by the marble aquifer system.

Four exploratory wells have been drilled on the campus in the past, all of which have been in the lower campus. Three test wells were installed in January and December 1988, one adjacent to the upper quarry (Well #2) and two in Jordan Gulch (Well #1 and Well #3) below the lower quarry. In each well, the depth to groundwater was about 100 feet below ground surface. A fourth test well (MW-1B) was installed in August 1989, with a static depth to groundwater of about 58 feet below ground surface. In 1989, a 7-day pumping test conducted at Well #3 by University consultants<sup>14</sup>, indicated that the well could produce 100 gallons per minute (gpm). To date, Well #3 has not been used for any purpose other than to periodically monitor groundwater levels and groundwater quality.

#### IMPACTS AND MITIGATION MEASURES

CEQA Checklist items regarding placement of housing or other structures in flood hazard areas, flooding as a result of failure of a levee or dam, and inundation by seiche, tsunami or mudflow were focused out in the Initial Study for the 2005 LRDP EIR and were not analyzed further in the EIR. Areas proposed for housing on campus are not within a 100-year flood hazard area or within the inundation hazard area that could be affected by a failure of levees or dams, including Newell Creek Dam, and the campus is not in an area subject to inundation by seiche, tsunami, or mudflow.

**Wastewater Discharge Requirements.** Although the volume of wastewater discharged by the campus would increase, in general, the types of activities and uses on the campus would remain unchanged, so there is no reason to expect the quality of wastewater that is discharged to the City's sewer system would change. Therefore, the 2005 LRDP EIR concluded that campus development under the 2005 LRDP would not result in wastewater that would violate wastewater discharge requirements.

**Drainage.** The 2005 LRDP provides information on general areas of the campus where future buildings, facilities and infrastructure would be built, but the site-specific siting and details of future projects are not yet known. For purposes of the program-level analysis in 2005 LRDP EIR, the hydrologic analysis is based on the conservative assumption that 70% of each proposed new development area under the 2005 LRDP would be impervious. In areas where

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<sup>14</sup> Weber and Associates and Johnson, Nicholas M. March 1989. "Evaluation of Groundwater Resources at the University of California, Santa Cruz, Parts I and II." Prepared for Campus Facilities, UCSC.

the future development would be infill development, impervious areas would increase from 60 to 70%. The EIR estimates the increased runoff that would result from increases in impervious surfaces within each of the major campus watersheds for a 2-year storm and a 25-year storm.

The EIR concluded that campus development under the 2005 LRDP could alter drainage patterns in the project area and would increase the rate or amount of surface runoff, which could exceed the capacity of storm water drainage systems, resulting in flooding on or off site (HYD-4). (Flooding impacts are discussed below.) Implementation of LRDP Mitigation HYD-3C 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. Future development would require expansion of the campus storm drainage conveyance system and detention facilities, especially in the North Campus area, but such construction would not result in significant physical impacts (UTIL-3).

The Draft EIR concludes that increased runoff from the addition of impervious surfaces within some of the watersheds, including the Cave Gulch watershed, could add to existing erosion problems that are present in those watersheds (HYD-3). Accordingly, the Draft EIR proposes mitigation measures (revised LRDP Mitigations HYD-3A through -3E), which would reduce the impact to a less-than-significant level if they could be implemented for all future development projects under all conditions. Where conditions at the project site allow for it (gentle slopes, permeable soil, etc.), pursuant to LRDP Mitigation HYD-3D, natural and engineered infiltration and storage techniques would be used to ensure that the volume of storm water runoff does not exceed pre-project conditions. The mitigation measures would be implemented close to where the runoff is generated whenever possible. In addition, if project-specific review indicates that the project could increase runoff volumes in an impacted watershed, the Campus would consider diverting some or all of the runoff generated at a project site from one watershed to another. Any such diversion would be implemented only after a detailed evaluation showed that the receiving drainage could accommodate the diverted flows without increasing the potential for flooding or erosion.

The EIR concludes that the impact could be significant and unavoidable despite implementation of these mitigation measures because project-specific data are not available at this time for all future projects and it cannot be determined whether, for all future projects in the affected watersheds, feasible design measures will be available that would decrease the volume of flow to the extent needed to avoid all increases in erosion. Some of the site constraints that could limit the feasibility of such measures are impermeable soils, insufficient space on or near the project site for infiltration of runoff, and the potential for infiltrated water to affect the stability of soils in some areas underlain by karst. Project-specific environmental review of individual projects will address specific control measures and their feasibility. According to LRDP Mitigation HYD-3C, each project developed under the 2005 LRDP will include design measures to control peak flows in order to maintain post-development peak flows for the 2-, 5-, and 10-year events at pre-development levels, and to reduce the peak flow

from a 25-year event to the pre-project 10-year flow. Note that this mitigation measure continues an existing campus standard. Revised LRDP Mitigation HYD-3D requires that future projects maximize infiltration and reduce the volume of new runoff to the maximum extent practicable.

In the Cave Gulch watershed, an estimated 54 acres of impervious surfaces would be added through development under the 2005 LRDP, which would increase the total impervious area in this watershed to 61 acres. The Pump Station Tributary in the Cave Gulch watershed would be affected by the increased impervious surfaces associated with the connector road to Empire Grade Road. This channel contains existing erosion problems and certain improvements to control erosion in this tributary are included in the Infrastructure Improvements Project, which may stabilize this channel. These improvements are expected to be in place long before the connector road or the campus support development in Cave Gulch would be built. Therefore, it is possible that an increase in volume of runoff due to new impervious surfaces may not trigger substantial erosion in this channel. However, because the grades in this area are steep and the soils are erosive, the Campus will implement LRDP Mitigation HYD-3B in conjunction with the construction of the new road, and LRDP Mitigations HYD-3C and HYD-3D for other development to avoid potential substantial erosion. While it would be possible to design and incorporate facilities to avoid an increase in peak flows from project sites in this watershed, it is uncertain whether the storm water management facilities could be included in the design of each project in this watershed to avoid or adequately minimize an increase in the volume of runoff discharged from the sites of new development. Therefore, significant new flows could be added to the drainages in the watershed which could result in substantial erosion. This EIR therefore conservatively concludes that even with mitigation, the impact would be significant.

**Flooding.** The 2005 LRDP EIR concluded that while an increase in the rate or amount of surface runoff could exceed the capacity of storm water drainage systems, increased runoff from new development under the 2005 LRDP would not increase the potential for flooding (LRDP Impact HYD-4). There are no facilities in the areas near identified areas that could be adversely affected by this flooding, the impact would be less than significant. Furthermore, by implementing LRDP Mitigation HYD-3C, the Campus 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. This will prevent flooding from occurring more frequently than under existing conditions.

**Water Quality.** The 2005 LRDP EIR impact HYD-3 also identified potentially significant impacts on water quality that could result from the increased runoff associated with new impervious surface, and from the increase urban pollutants in storm water runoff resulting from human activity, including vehicle use and use of undesignated trails by pedestrians and bicyclists. The EIR identified LRDP Mitigation Measures HYD-3A through HYD-3D to reduce these impacts but as indicated above, concluded even with this mitigation, the impact related to erosion and sedimentation due to new development on the campus would be significant.



The 2005 LRDP EIR concluded that campus development under the 2005 LRDP could result in significant storm water runoff during construction, which could substantially degrade water quality (LRDP Impact HYD-2), but that the impact would be reduced to a less-than-significant level by implementation of LRDP Mitigation Measures HYD-2A and HYD-2B, which require construction site controls for projects that disturb less than one acre and erosion control measures for grading on steep slopes. These mitigations apply to all areas of the campus, including the north campus.

Implementation of the control measures in the University's NPDES Permit also will mitigate water quality impacts associated with increased runoff and storm drainage system improvements. Campus water quality monitoring data shows that campus development has not resulted in an increase in urban runoff pollutants, and with the Phase II NPDES requirements, the Campus will be required to implement a rigorous program to avoid water quality impacts.

**Cave Flooding and Water Quality.** Caverns are commonly encountered in karst topography. Several caves, with entrances or openings in the walls of the creek canyons, are present in the Cave Gulch and Wilder Creek canyons, both on and off the campus. The 2005 LRDP EIR concluded that the potential for campus development to alter drainage patterns, increase the rate and amount of surface runoff, affect the quality of runoff, and cause flooding and water quality impacts in caves on or off site (LRDP Impact HYD-6) is potentially significant. Some runoff from the North Campus is within the Wilder and Cave Gulch watersheds; therefore, development on the North Campus could contribute to this impact. An increase in surface runoff due to increased impervious surfaces could increase the quantity of water that drains into sinkholes and enters the karst system, and therefore could potentially cause flooding of Empire and Bat Caves.<sup>15</sup>

However, campus implementation of LRDP Mitigation Measures HYD-3C through HYD-3D, requiring the campus to minimize increases in the volume of runoff and to protect the water quality of storm water runoff, this impact is reduced to a less-than-significant level. These measures would ensure that post-development peak flows do not exceed pre-development peak flows from a 25-year storm, and LRDP Mitigation Measure HYD-3D which would maximize infiltration. As a result, peak flows would generally remain at the same levels as under existing conditions, and because infiltration of runoff would occur adjacent to the new impervious surfaces, the general pattern of infiltration would not be significantly affected. In light of these measures, water levels in these caves may not increase. To the extent that there is periodic flooding and water levels in the caves are somewhat higher than under existing

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<sup>15</sup> Note that even under existing conditions, most of the rain that falls on the campus ends up in the karst aquifer; however, there is some water that is lost via evapotranspiration. If more areas are placed under impervious surfaces, the rain that falls on these impervious surfaces would become runoff that will end up as additional discharge in the karst aquifer.



conditions, this would not adversely affect the caves. The caves are not used for any purpose other than by students for recreation and by some campus scientists to study cave invertebrates and salamanders. The recreational use of caves by students is not appropriate and is discouraged by the Campus. The periodic flooding of the caves would not substantially reduce the opportunities for scientists to study the caves. As discussed above, the caves are occupied by certain special-status insects. However, the periodic flooding would be within the range of the natural fluctuation in water levels that results from large storms.

Changes to the quality of water in the caves are a concern for cave invertebrate species that are known from the Cave Gulch caves. As indicated above, with implementation of 2005 LRDP mitigation measures and increased stormwater management efforts, the quality of runoff that drains through these caves should not degrade, and the impact would be less than significant.

**Groundwater.** The 2005 LRDP EIR concluded that the potential for LRDP development to impact groundwater quality, groundwater supplies through pumping, or interfere with groundwater recharge through the increase in impervious surface resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (LRDP Impact HYD-5) was less than significant. Potential impacts on groundwater that could result under the 2005 LRDP include reduced spring flows and lowering of water levels in adjacent wells as a result of a reduction in recharge due to increased impervious surfaces, and as a result of groundwater extraction under drought conditions, in the event that LRDP Mitigation UTIL-9I is implemented to reduce demand for water from the City's water supply. Under this measure the campus would operate an existing well (WSW #1 also known as Well #3) located in Jordan Gulch during a drought to draw water for non-potable uses, principally irrigation. The 2005 LRDP EIR estimates that a total of 1.1 million gallons (approximately 3.4 acre-feet) of water would be extracted (based on irrigation estimates at the time) and used for irrigation of the UCSC Arboretum and Center for Agroecology and Sustainable Food Systems during dry years. Implementation of LRDP Mitigation HYD-5C requires water level monitoring of wells and springs if an existing or new campus well is utilized, with termination or reduction in pumping if average water levels and spring flows show a substantial reduction.

No groundwater extraction is proposed on the North Campus or upper campus. Since no groundwater extraction is planned for these areas, there would be no groundwater extraction-related effects (i.e., might result in drawdown of springs, seeps or wells) on the upper/north campus seeps and springs or on seeps, springs, and domestic water supply wells in the Cave Gulch and Bonny Doon area. Although no mitigation was required, the approved 2005 LRDP requires the campus to implement LRDP Mitigation Measures HYD-5A through HYD-5C to further reduce this less-than-significant impact. Implementation of LRDP Mitigation HYD-5A (via implementation of Mitigation Measure HYD-3D) requires that runoff from new impervious areas in the north campus would still be allowed to infiltrate and thereby recharge the local groundwater system. This would ensure that north campus springs, as well as springs that discharge in Wilder Creek, Cave Gulch, and Tunnel Gulch on the east and north,

and seeps that discharge to the east into drainages of the San Lorenzo River would not be affected.

There are approximately 13 domestic wells in the Cave Gulch area that draw water from the weathered granitic mantle or deeper fractures in the granitic bedrock. However, most of the campus development would be cross-gradient (and not up-gradient) from the Cave Gulch wells and would be separated from the Cave Gulch neighborhood by Cave Gulch, a deep channel that likely serves to separate the shallow aquifer in the granitic area from the shallow aquifer in the schist/sandstone area. Furthermore, with the implementation of LRDP Mitigation HYD-5A, infiltration of runoff on the north campus would be maximized, which would minimize potential impact on groundwater recharge. Therefore, existing Cave Gulch wells would not be adversely affected.

LRDP Mitigation Measures HYD-5B and HYD-5C require that the Campus follow certain procedures to ensure that pressure grouting does not affect groundwater quality, and that the Campus monitor spring flows and groundwater levels if it pumps groundwater from the karst aquifer in the central campus and terminate or reduce pumping if monitoring indicates that campus use of groundwater is contributing to a net deficit in aquifer volume. It is not likely that LRDP Mitigation Measure HYD-5C, which would reduce the potential impacts of pressure grouting for construction on karst, would apply to development on the North Campus, which is underlain by schist and sandstone.

### Air Quality

The 2005 LRDP EIR analyzed impacts to Air Quality in Volume 1, Section 4.2, and Volume 4, Section 2.2.2. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) updated the *Air Quality Management Plan* and *CEQA Air Quality Guidelines* in 2008. Thus, the summaries below are updated as relevant to reflect current data and conditions.

#### **ENVIRONMENTAL SETTING**

The UC Santa Cruz campus is located in the city and county of Santa Cruz, which is within the North Central Coast Air Basin (NCCAB or Basin). The Basin includes Santa Cruz, Monterey, and San Benito counties. The 2005 LRDP EIR analyzed both emissions of criteria pollutants, which are regulated at the federal level by the U.S. Environmental Protection Agency (U.S. EPA) and at the state level by the California Air Resources Board (CARB); and toxic air contaminants, which are airborne pollutants for which there are no air quality standards but that are known to have adverse human health effects.

The NCCAB is currently in attainment for the federal PM<sub>10</sub> (particulate less than 10 microns in diameter) standards and state and federal nitrogen dioxide, sulfur dioxide and carbon monoxide standards. The basin is considered attainment or unclassified for other national

standards and non-attainment for the 1-hour State ozone standard and for the State PM<sub>10</sub> standard.

Sensitive receptors considered in the LRDP EIR analysis included two childcare centers on campus, West Lake Elementary School and the Santa Cruz Waldorf School. The 2005 LRDP EIR used significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) in its 2004 CEQA Guidelines.

## IMPACTS AND MITIGATION MEASURES

The CEQA Checklist question related to objectionable odors was not analyzed in the 2005 LRDP EIR, as none of the new facilities that would be built on campus under the 2005 LRDP would involve a source of objectionable odors.

**Operational Emissions of Criteria Pollutants.** The 2005 LRDP EIR analyzed the potential for daily emissions from campus operations to exceed MBUAPCD significance thresholds and therefore contribute substantially to a violation of air quality standards or hinder attainment of the regional air quality plan (LRDP Impact AIR-2). The focus was on criteria pollutants from campus operations, including space and water heating, emergency generators, the campus cogeneration system, and vehicle travel, thus covering stationary and mobile sources. The EIR concluded that emissions of nitrous oxides (NO<sub>x</sub>) resulting from campus growth would exceed the MBUAPCD significance threshold.

The 2005 LRDP EIR identified three mitigations that would reduce emissions. These include LRDP Mitigation Measure AIR-2A, which requires consideration of design and construction features in new development that would reduce emissions such as orientation of buildings to optimize solar heating, use of solar or low-emission water heaters, and installation of best available insulation; AIR-2B, which requires that the campus to implement Mitigation Measure TRA-1B to reduce motor vehicle trips; and AIR-2C, which requires the campus to install to install emission controls on new gas turbines to reduce emission. However, the LRDP EIR concluded that implementation of these mitigations would not reduce NO<sub>x</sub> emissions to a less-than-significant level. Thus, the impact is considered significant and unavoidable.

**Local Carbon Monoxide Concentrations.** The 2005 LRDP EIR analyzed the potential that traffic generated by development under the 2005 LRDP, in conjunction with traffic associated with other regional growth, would result in an increase in local carbon monoxide (CO) concentrations at study area intersections (LRDP Impact AIR-3). Based on the results of modeling of CO emissions at six selected intersections using the modeling program CALINE4, the EIR concluded that predicted CO concentrations would be less than state and federal standards at all six intersections analyzed, and thus the impact would be less than significant. Since the intersections analyzed had either the highest delay or the highest traffic volumes, the

other intersections not analyzed are expected to experience even smaller, less-than-significant impacts related to CO concentrations.

**Conflict With Air Quality Management Plan.** Air Quality Management Plans (AQMPs) are developed for regions that do not meet ambient air quality standards. The MBUAPCD considers any project that is not consistent with the AQMP to make a cumulatively considerable contribution to a significant cumulative impact. A consistency determination performed as part of the LRDP EIR determined that campus growth was not accounted for in AMBAG's 2004 population forecasts that were in effect at the time, and therefore, the 2005 LRDP was not considered to be consistent with the AQMP (LRDP Impact AIR-4), and a significant impact was identified. The 2005 LRDP EIR concluded that even with implementation of LRDP Mitigation Measures AIR-4A and AIR-4B (working with AMBAG and MBUAPCD to ensure that campus growth is included in regional forecasts), the increase in emissions from campus growth under the 2005 LRDP may hinder the region's attainment of air quality standards; the impact was considered significant and unavoidable.

In June 2008, AMBAG updated its regional population forecasts, and the MBUAPCD updated the Air Quality Management Plan in August 2008. To implement LRDP Mitigation Measures AIR-4A and AIR-4B, the Campus worked with AMBAG to ensure that campus growth associated with the 2005 LRDP was accounted for in the 2008 regional population forecasts, the updated regional population forecasts included UCSC LRDP-related growth. In April 2009, AMBAG re-evaluated consistency of the 2005 LRDP with the Air Quality Management Plan and determined that the LRDP is consistent with the 2008 regional forecasts and the Air Quality Management Plan (AMBAG, April 13, 2009). Thus, the significant, unavoidable impact identified in the 2005 LRDP FEIR has been eliminated.

**Operational Emissions of Toxic Air Contaminants.** UC Santa Cruz conducted a Health Risk Assessment (HRA) to identify potential human health risks from toxic air contaminant (TAC) emissions associated with routine operations anticipated to occur under the 2005 LRDP (laboratory operations; natural gas and diesel fired stationary combustion sources such as boilers, the cogeneration system, and emergency generators; diesel-fueled vehicles on campus roadways; and painting operations). The results of this HRA indicated that campus operations under the 2005 LRDP would not result in a substantial human health risk to campus occupants and other populations in the vicinity of the campus from long-term exposures to TACs, but would result in a substantial health risk to campus occupants at certain on-campus locations from short-term exposures to TACs (LRDP Impact AIR-5). This would be a potentially significant impact. The EIR concluded that implementation of LRDP Mitigations AIR-5A and AIR-5B would reduce this impact to a less-than-significant level. These measures include testing program for emergency generators and a schedule for testing and replacing the existing cogeneration system with a new system with lower emissions within three years of LRDP approval.

**Construction Emissions.** The 2005 LRDP EIR analyzed the potential that construction activities under the 2005 LRDP could result in emissions of respirable particulate matter (PM<sub>10</sub>) exceeding the MBUAPCD significance threshold LRDP Impact AIR-1). The EIR concluded that the emissions would not exceed the threshold and the impact would be less than significant. However, the EIR identified LRDP Mitigation Measure AIR-1, which requires implementation of specified dust-control measures during construction, consistent with standard MBUAPCD recommendations. This would further reduce this less-than-significant impact. In conjunction with the environmental review of all future land disturbing construction projects, the Campus use the MBUAPCD guidance to evaluate the construction emissions from future projects.

At the request of the MBUAPCD, the HRA for the 2005 LRDP EIR evaluated potential health risks associated with emissions of TACs from potential construction projects. The 2005 LRDP EIR concluded that construction activities under the 2005 LRDP could potentially result in a substantial health risk to campus occupants at certain on-campus locations from short-term exposures to TACs (LRDP Impact AIR-6), a potentially significant impact. The EIR identified LRDP Mitigation Measure AIR-6 to reduce the impact to the extent feasible, which would include implementation of measures to minimize construction emissions such as use of cleaner fuels and electrical equipment. However, the EIR concluded that because of uncertainties inherent in the analysis, it was not possible determine the significance of the impact.

### **Global Climate Change**

The subject of global climate change was not addressed in the 2005 LRDP. Appendix G of the State CEQA Guidelines (Environmental Checklist) does not currently include global climate change as a topic to be addressed. However, proposed changes to the Guidelines that are expected to be adopted by January 2010 include a new checklist question to address greenhouse gas emissions, as well as other revisions to the Guidelines that make clear global climate change is an issue that must be addressed in environmental reviews conducted under CEQA. Because of the likelihood of adoption of the proposed changes (as well as other legislative enactments and executive actions regarding global climate change), a discussion is included in this EIR. The draft changes require that the significance of impacts from greenhouse gas emissions be assessed in environmental documents. Greenhouse gas emissions and global climate change are discussed in the “Cumulative Impacts” subsection of the CEQA CONSIDERATIONS (Chapter 6.0) section of this EIR. A brief summary is provided below

#### **ENVIRONMENTAL SETTING**

The major greenhouse gases include, but are not limited to, the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide (California Governor’s Office of Planning and Research, June 2008). The last

three of the six identified GHGs are primarily emitted by industrial facilities. California is a substantial contributor of global greenhouse gases, emitting over 400 million tons of carbon dioxide (CO<sub>2</sub>) a year.<sup>16</sup> The primary contributors to GHG emissions in California are transportation, electric power production, and industry.

The State of California recently passed the Global Warming Solutions Act of 2006 (AB32) and the Governor's Executive Order S-3-05 and AB 32 both seek to achieve 1990 emissions levels by the year 2020. Executive Order S-3-05 also requires that by 2050 California's GHG emissions be 80% below 1990 levels. The California Air Resources Board (CARB) is the lead agency for implementing AB 32, and in accordance with provisions of AB 32, prepared a statewide GHG Inventory and a Scoping Plan with identified measures to meet reduction targets.

The UC Policy on Sustainable Practices was adopted by the Regents in 2006 and revised in March 2007, March 2008, and September 2009. This policy was developed to standardize campus practices and promote a more ecologically friendly and efficient use of our resources. The policy addresses: green building design, clean energy standard, climate protection practices, sustainable transportation practices, sustainable operations, recycling and waste management and environmentally preferable purchasing practices (University of California, September 2009).

The UC Santa Cruz Chancellor and representatives of the city and county of Santa Cruz signed a Climate Action Compact in September 2007. The Chancellor's Council on Climate Change, which was created in January 2008, is currently working on a Climate Action Plan for the campus. The plan will set a target date for climate neutrality by quantifying emission sources, identifying projects to reduce those emissions, and implementing the projects (University of California Santa Cruz, July 2009). UCSC prepared a draft "Climate Action Plan" in December 2008 to identify ways to meet the University GHG reduction goals. The Plan has not yet been adopted, but identifies a number of energy-related projects, including solar projects and shutting down the campus cogeneration plant, in order to meet GHG reduction goals. The draft Plan also considers planning guidelines for future projects and developing a greenhouse offsets policy (University of California Santa Cruz, December 2008).

The campus's estimated emissions for 2007 were 70,000 to 80,000 metric tons of CO<sub>2</sub> (University of California Santa Cruz, July 2009).

#### **IMPACTS AND MITIGATION MEASURES**

The proposed SOI amendment and provision of water and sewer services to UCSC's North Campus would not directly result in generation of greenhouse gas emissions. However, the proposed project would indirectly result in UCSC campus and growth and development in

<sup>16</sup> California Air Resources Board 1990 to 2004 State Inventory (November 2007).



the North Campus, which would result in GHG emissions. Based on a calculation of GHG emissions associated with North Campus development that was prepared as part of this EIR, it was concluded that the project's indirect incremental contribution to greenhouse gas emissions and global climate change as a result of North Campus development would be cumulatively considerable. See the "Cumulative Impacts" subsection of the CEQA CONSIDERATIONS (Chapter 6.0) section of this EIR for a full discussion.

### **Noise**

The 2005 LRDP EIR analyzed impacts associated with Noise in Volume 2, Section 4.10, and Volume 4, Section 2.2.2.

#### **ENVIRONMENTAL SETTING**

The 2005 LRDP EIR defined the study area for evaluating noise impacts to include all of the main campus, residences or schools within 1,000 feet of the campus boundary, 2300 Delaware Avenue property and residences/parks within 1,000 feet of the property boundary, and major city streets leading to the main campus or 2300 Delaware Avenue including Bay, High, Mission, and Swift Streets, Delaware Avenue, and Western Drive. Noise-sensitive receptors considered in the EIR include residences, daycare centers, schools, hospitals and parks.

An ambient noise survey was conducted at selected sites on the main campus, not including the North Campus, in February and April, 2005, to evaluate the baseline noise levels for the EIR analysis. Potential increases in noise levels from vehicular traffic were estimated using the Federal Highway Administration Traffic Noise Model (FHWA-TNM), Version 2.0, based on existing and projected traffic volumes and speeds. For purposes of evaluating noise impacts from traffic and other permanent noise sources, noise standards consistent with State guidelines and the City of Santa Cruz General Plan were used. Noise measures taken near campus (along Empire Grade near Waldorf School) reported ambient levels within acceptable standards for residences and schools.

#### **IMPACTS AND MITIGATION MEASURES**

The two checklist items under Appendix G of the CEQA Guidelines related to airport noise were not analyzed in the 2005 LRDP EIR because the main campus is not located near a public airport or private airstrip.

**Noise Exposure.** The 2005 LRDP EIR analyzed the potential for residents of housing that would be developed under the 2005 LRDP to be exposed to high noise levels from increased vehicular traffic on the campus road network associated with LRDP development (LRDP Impact NOIS-3). The EIR concluded that the impact would be less than significant without mitigation, but identified LRDP Mitigation Measure NOIS-3 to further reduce this impact.



This measure calls for the inclusion of noise attenuation features in the design of housing constructed under the 2005 LRDP.

**Permanent Noise Increases.** As a result of regional population and employment growth as well as campus growth under the 2005 LRDP, traffic on city streets is expected to increase relative to current conditions. The 2005 LRDP EIR analyzed the potential for this increase to result in a noticeable increase in ambient noise levels (i.e., whether: (1) future noise levels would exceed the applicable ambient noise standards; or (2) the modeled increase in noise would be substantial (LRDP Impact NOIS-2). The EIR concluded that the impact would be less than significant and no mitigation is required.

**Construction Noise.** The 2005 LRDP EIR concluded that with implementation of LRDP Mitigation Measure NOIS-1, construction noise at sensitive receptors on campus (housing, academic buildings and childcare centers) located at distances of 100 feet or more from the construction equipment would be below the significance threshold. However, construction could occur at distances less than 100 feet from existing and future sensitive receptors on the north campus, and would result in noise levels that exceed the criteria at these nearby receptors (LRDP Impact NOIS-1). Therefore, the 2005 LRDP EIR considered the exposure or nearby sensitive receptors to excessive construction noise to be a significant and unavoidable impact.

### **Hazards and Hazardous Materials**

The 2005 LRDP EIR analyzed impacts related to hazards and hazardous materials in Volume 1, Section 4.7, and Volume 4, Sections 2.2.2 and 3.1.7.

#### **ENVIRONMENTAL SETTING**

Hazardous chemicals are currently stored, used, and disposed of by three broad groups on the campus: science research and teaching laboratories, other academic and administrative units, and Physical Plant, which uses hazardous materials in building and ground maintenance. UC Santa Cruz Environmental Health and Safety facilitates and monitors Campus compliance with health and safety regulations and of coordinates the management of hazardous materials on campus. UC Santa Cruz maintains and routinely tests an Emergency Response Plan that sets forth standard operating procedures adopted by UC Santa Cruz for handling emergencies resulting from fires, floods, storms, earthquakes, hazardous material incidents and other potential disasters.

#### **IMPACTS AND MITIGATION MEASURES**

**Hazardous Materials.** Campus growth under the 2005 LRDP would involve an increase in the number of laboratories and the expansion of other facilities, such as building and vehicle

maintenance, which would increase the use, storage and transportation of hazardous chemicals, radioactive materials, and/or biohazardous materials on campus, as well as a potential increase in the potential for accident or upset to result in releases of hazardous materials into the environment (LRDP Impacts HAZ-1, HAZ-2, HAZ-3, HAZ-4). The 2005 LRDP EIR concluded that this increase would not create significant hazards to the public or the environment because the Campus complies with federal and state regulations and guidelines for the storage, handling, disposal and transport of hazardous materials, as well as Campus health and safety policies and procedures. Therefore, the increase in the use, storage and transportation of hazardous materials would not result in a significant hazard to the public or the environment. To further reduce the less-than-significant impact associated with increased generation of hazardous waste, the Campus will implement LRDP Mitigation Measure HAZ-2.

Several schools and childcare centers are located within ¼ miles of the campus, including two childcare facilities on campus, as well as private and public schools near the campus. The Waldorf School in the Cave Gulch area is within ¼ mile of the north campus area. Although hazardous materials and waste use within ¼ mile of one or more of these facilities would likely increase as a result of campus growth under the proposed 2005 LRDP (LRDP Impact HAZ-5), these materials would not exist in quantities sufficient to result in an accidental release whose effects would extend beyond the laboratory or support building where the release occurs, and the impact would be less than significant. Therefore, the increased use of hazardous materials would not pose a risk to occupants of the school or campus community.

Under the 2005 LRDP, the use of hazardous material by non-UC entities would increase, which could pose a risk to the campus or the public through routine use or in upset conditions if the practices of non-UC entities on campus do not provide the same level of environmental protection required of campus laboratories and department, a potentially significant impact. Under LRDP Mitigation Measure HAZ-11, non-UC Santa Cruz entities operating on campus would be subject to the same laws, regulations and campus policies that apply to campus laboratories, which would reduce this impact to a less-than-significant level.

**Contaminated Soil and Groundwater.** There are no known sites with soil or groundwater contamination on the main campus – including the North Campus; the past uses of the campus are well known and are not likely to have resulted in soil or groundwater contamination. Therefore, the 2005 LRDP EIR concluded that the potential that construction activities under the 2005 LRDP would expose construction workers and campus occupants to contaminated soil or ground water (LRDP Impact HAZ-6) is a less than significant impact.

**Contaminated Building Materials.** The LRDP EIR concluded that demolition or renovation of buildings under the proposed 2005 LRDP could potentially expose construction workers and campus occupants to contaminated building materials, including asbestos and lead-based paints (LRDP Impact HAZ-7). Compliance with federal and state regulations and Campus policies and procedures ensures that the potential for exposure of workers to contaminated

building materials or other contamination inside structures would be less than significant. Although mitigation was not required, the 2005 LRDP EIR identified LRDP Mitigation Measure HAZ-7 to further reduce this less-than-significant impact. This impact and mitigation, however, are not applicable to development on the North Campus, where there is no existing development.

**Emergency Response.** The 2005 LRDP EIR concluded that hazardous materials use on campus under the proposed 2005 LRDP would not exceed the existing emergency response capabilities (LRDP Impact HAZ-8), and this impact therefore would be less than significant.

Campus development under the 2005 LRDP could result in construction-related road closures that could interfere physically with the campus's Emergency Operations Plan (EOP) (LRDP Impact HAZ-9), which would be a potentially significant impact. The 2005 LRDP EIR concluded that implementation of LRDP Mitigation Measures HAZ-9A through HAZ-9D, which stipulate campus standards regarding potential road closures; annual testing of the campus' Emergency Operations Plan (EOP); expansion of the EOP for applicability to the north campus; and provision of a secondary egress route for the north campus prior to any new development there, would reduce the impact on emergency response to a less-than-significant level.

The 2005 LRDP EIR analyzed the potential that evacuation of the North Campus by way of a north entrance on Empire Grade would not interfere substantially with evacuation by residents of the Cave Gulch neighborhood and Bonny Doon. In fact, with the provision of the north entrance on Empire Grade Road, it would be possible for the residents of Cave Gulch neighborhood and Bonny Doon to use campus roads to exit the area in an emergency affecting Empire Grade Road.

**Wildland Fires.** Campus expansion to the North Campus would result in increased risk from wildland fire (LRDP Impact HAZ-10), as the chaparral and chaparral-forest transitional vegetation found in some areas on the north campus are more prone to fire than the redwood forest that surrounds the existing central campus development. This would be a potentially significant impact. Implementation of LRDP Mitigation Measures HAZ-10A through HAZ-10D, which require annual fire inspections of all campus buildings; development of a fire management plan prior to north campus development; wildfire caution signage on the north campus; and compliance with the International Uniform Wildland Interface Code, would decrease the risk from wildland fires to a less-than-significant level.

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## 6.0 CEQA CONSIDERATIONS

**IN THIS SECTION:**

- Significant Unavoidable Impacts
- Significant Irreversible Changes
- Cumulative Impacts
- Project Alternatives

### 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 one significant unavoidable project impact:

- **Impact 1-1:** The proposed project would result in future provision of water service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There are inadequate water supplies to serve the project under existing and future multiple dry year (drought) conditions.

As discussed in the WATER SUPPLY (Chapter 4.1) section of this EIR, City water supplies are currently insufficient to meet existing demand during dry years. Construction of a desalination plant, as planned by the City of Santa Cruz, will provide a sufficient supplemental water supply during drought conditions for both existing and future demand. The City has completed a pilot desalination plant and is proceeding with design and environmental review for a permanent facility.

Implementation of University adopted 2005 LRDP mitigation measures could reduce the project water demand (see pages 4.1-42 to 4.1-44 in the WATER SUPPLY (Chapter 4.1) section of this EIR. These include nine mitigation measures that were adopted by The Regents of the University of California in approving the 2005 LRDP, and are binding as part of the University's adopted Mitigation Monitoring and Reporting Program (MMRP). The adopted mitigation measures include implementation of water conservation measures, studying other potential water supplies, and utilizing an existing on-campus groundwater well for irrigation during drought conditions. Seven measures call for implementation of water conservation strategies to reduce water demand and conducting water audits to identify additional feasible

measures that can be implemented. One measure indicates that the campus will initiate a study on feasible measures for utilization of reclaimed water (including rainwater, grey water, cooling tower blowdown water and/or recycled water) in new development. Potential uses of reclaimed water include cooling, irrigation, and toilet flushing. Additionally, if and when the City implements drought emergency management measures, the University will reduce use of potable water for irrigation in accordance with reductions required by the City for similar users; will utilize water from the existing supply well in Jordan Gulch for non-potable uses, and will require that residential water use on campus be reduced consistent with the City's target for multifamily residential facilities.

Mitigation Measures 1-1 and 1-2 include provisions of the Comprehensive Settlement Agreement in which UCSC agreed to reduce and restrict its water use during any periods of restriction or moratorium imposed upon the City's water service area. Failure of UCSC to comply with the Settlement Agreement commitments is judicially enforceable, and would also result in enrollment reductions as specified in the Comprehensive Settlement Agreement. UCSC also agreed to implement identified high priority water conservation measures, which have been factored into the project water demand analysis in this EIR. The Settlement Agreement also acknowledges the City's intention to implement its Integrated Water Plan, including additional water conservation, use curtailment in droughts, and construction of a desalination plant. UCSC will contribute funds equivalent to the City's "System Development Charges" that will serve as its "fair share" contribution to finance improvements.

Despite the City's intent to pursue an additional water supply for dry-year conditions, UCSC adopted mitigation measures, and UCSC's agreement to participate in city-wide curtailments and restrictions, 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. Furthermore, the exact timing of implementation of UCSC conservation efforts (beyond the "high priority" measures specified in the Comprehensive Settlement Agreement for implementation within 5 years) and development of potential supplemental campus water sources, as well as the potential level of demand reduction, is not known. Therefore, a conservative conclusion is that the project impact on water supply during dry year conditions is significant and unavoidable, even with implementation of the identified mitigation measures.

## **SIGNIFICANT IRREVERSIBLE CHANGES**

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 subject to a decision by LAFCO, a discussion of irreversible changes is provided below.

The proposed project consists of an amendment to the City of Santa Cruz Sphere of Influence (SOI) and provision extraterritorial water and sewer services for a 374-acre portion of the UCSC North Campus as planned in the University's adopted 2005 LRDP. Thus, the direct impacts of the proposed project are associated with the City's provision of water and sewer services, both of which are currently provided to the developed portion of UCSC.<sup>1</sup>

Direct project impacts on water and wastewater service would not result in a large commitment of non-renewable resources. 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. 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. While operation of a desalination plant may result in irreversible commitment of energy resources, the proposed project does not result in an independent need to construct the plant, which is currently needed for dry years without the project.<sup>2</sup> Nonetheless, the City is currently studying techniques to minimize energy consumption and greenhouse gas emissions.

Direct project impacts on the City's wastewater treatment facility (WWTF) were found to be less-than-signification. 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.

With the provision of water and sewer services, the proposed project would indirectly accommodate additional development and growth at UCSC that is planned in the 2005 LRDP

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<sup>1</sup> The developed portion of UCSC is located within the existing city limits of Santa Cruz, except for portions of Colleges 9/10 and the Crown Merrill Apartments that are located in the unincorporated County area as discussed in the LAND USE (Chapter 4.3) section of this EIR.

<sup>2</sup> 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.



approved by The Regents of the University of California, including future development in the North Campus. Development under the 2005 LRDP would result in the continued commitment of the UC Santa Cruz campus to institutional uses, thereby precluding any other uses for the lifespan of the campus (University of California Santa Cruz, 2005 LRDP Final EIR, September 2006, Volume II, section 6.2).

The 2005 LRDP EIR indicates that additional irreversible commitments to future uses include those related to new development on the North Campus, including conversion of forest and habitat areas to developed uses (University of California Santa Cruz, 2005 LRDP Final EIR, September 2006, Volume II, section 6.2). Such development would result in the permanent and continued consumption of water, electricity, natural gas, and fossil fuels. However, the consumption of these resources would not represent unnecessary, inefficient, or wasteful use of resources given the University's implementation of water, lighting and energy conservation measures. In addition, the Campus will continue to construct new facilities under the 2005 LRDP in accordance with specifications contained in Title 24 of the California Code of Regulations and with the UC Green Building Policy. The UCSC campus consumption of natural resources is expected increase at a lesser rate than the projected population increase due to the variety of energy and water conservation measures that the Campus has implemented and will continue to implement (Ibid.). In addition, anticipated changes in state building and energy efficiency requirements to help reduce greenhouse gas emissions and 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.

Additionally, the campus complies with all applicable state and federal laws and existing campus programs, practices, and procedures related to hazardous materials, which reduces the likelihood and severity of accidents that could result in irreversible environmental damage. There has never been an on-campus accident that resulted in irreversible environmental damage, indicating that current practices with respect to hazardous materials handling are adequate, and thus the potential for the 2005 LRDP to cause irreversible environmental damage from an accident or upset of hazardous materials, is less than significant (University of California Santa Cruz, September 2006, 2005 LRDP FEIR, Volume II, section 6.2).



## 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.

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).

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. Relevant potential cumulative impacts to which the proposed Sphere of Influence amendment project would contribute include water supply and wastewater services provided by the City of Santa Cruz. Each of these topics is addressed below.

The proposed project would result in indirect growth impacts at the UCSC campus with future provision of water and sewer services, which would result in secondary impacts related to future development in the North Campus. These impacts are summarized in the GROWTH

INDUCEMENT (Chapter 5.0) section of this EIR and fully analyzed in the 2005 LRDP EIR, which also assesses cumulative impacts. There are no other known planned or proposed cumulative projects near the North Campus area that would contribute to cumulative impacts. Additionally, the proposed project would not result in indirect growth inducement to other areas adjacent to the North Campus due to future extension of on-campus water and sewer lines as discussed in the GROWTH INDUCEMENT section of this EIR.

## 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.

The proposed project is a sphere of influence amendment for the provision of extraterritorial water and sewer service to the project area to support campus growth and development as contemplated in the 2005 LRDP by the academic year 2020/2021. Given this long-term timeframe, the City determined that the most appropriate approach would be to use growth projections in an adopted plan. The City's existing General Plan/Local Coastal Plan was prepared in 1990 and is currently being updated. As such, the existing General Plan is outdated with regards to growth projections. A *Draft General Plan 2030* was released in March 2009. Preparation of an EIR is in progress and is expected to be complete and distributed for public review in early 2010.

According to the General Plan EIR Notice of Preparation (NOP), the General Plan EIR will include a review of existing land uses and existing/planned buildout projections. A general plan "buildout" projection was developed as part of the General Plan Update process that considers the potential development estimated to occur in the City Santa Cruz by the year 2030 based on land use map changes, vacant lands, sites subject to reuse or redevelopment, and underutilized parcels. The draft buildout projections estimate the following new development by the year 2030: a) 3,729 residential units; b) 1,292,289 square feet of commercial development; c) 1,318,916 square of office space; and d) 388,156 square feet of industrial development. These projections are currently being reviewed by the City Planning

and Community Development and are subject to revision as part of the General Plan EIR (Ken Thomas, personal communication, September 2009).

Because of this uncertainty, the use of draft and unadopted General Plan buildout numbers would be speculative. Since the existing General Plan is outdated and the General Plan Update has not been adopted nor has environmental review been completed, the City considered the regional population, housing and employment forecasts adopted by AMBAG in June 2008 as the most reliable basis for the long-term cumulative analyses. As discussed below, the methodology used to develop the 20-year projections in the City's "Urban Water Management Plan" were based on population projections that have been re-evaluated as part of the "Water Supply Assessment" (WSA) prepared for this EIR. These projections account for other future growth in the City's water service area.

## CUMULATIVE IMPACT ANALYSIS

### Water Supply

#### CUMULATIVE DEMAND

The geographical area for the analysis of cumulative water impacts includes the lands within the City of Santa Cruz water service boundaries. The proposed project will contribute to cumulative water demand under normal conditions in which supplies are limited, and under drought conditions in which there are existing water shortages. In recent years, annual system water demand has consistently averaged between 3,900 and 4,000 million gallons per year (MGY) (City of Santa Cruz Water Department, June 2006). In average conditions, there appears to be approximately 300-400 MGY of remaining water supply capacity with existing water sources and operations (Ibid.).

The City's existing adopted water plans (i.e., Urban Water Management Plan [UWMP]) indicate that total future water demand would exceed normal year capacity sometime between the year 2015 and 2020, and cumulative water demand would also increase during drought periods in which City supplies cannot meet water demand under existing conditions. However, as discussed in the WATER SUPPLY (Chapter 4.1) section of this EIR, a "Water Supply Assessment" (WSA) was prepared in accordance with state law, and water demands for the City's entire service area were updated as part of the WSA. As summarized below, the WSA determined that the cumulative water demand may exceed normal year supplies after the year 2025 if a high rate of growth is assumed.

The WSA-developed projections for the City's water service area were developed for two separate demand scenarios (low [0.4%] and high [0.8%] annual water demand growth rates) as set forth in the UWMP. The updated projections are based on current AMBAG population

projections (June 2008) for the City's water service area that were multiplied by the average per capita water use projected for the years 2010 through 2020. The 0.8% annual increase reflects high growth in the City's three largest customer classes (residential, business, and irrigation), which is consistent with general plans for the City's service area. The 0.4% annual increase reflects historical trends in growth. The updated and extended water demands are shown on Table 4-1.

**Normal Year.** The WSA estimates that total water demand in the City's water service area in the year 2030 would be between approximately 4,222 and 4,356 MGY (approximately 12,960 and 13,370 acre-feet per year [AFY]) (EKI, September 2009). During normal hydrologic years through 2030, the City expects to have a total of 4,314 MGY (approximately 13,245 AFY) of reliable water supplies based on the historical water demand rates (i.e., 0.4% annual growth). However, at the higher rate of water demand growth (i.e., 0.8% per year) projected in the general plans for the City's service area, the City's water supplies may, during a normal year, be insufficient to fully support the demands of the proposed project and the City's other existing and planned future uses after 2025. However, even under this high-end water demand growth rate, the magnitude of projected shortfall represent less than 1% of the City's total projected demand in 2030, or 42 MGY (approximately 130 AFY) during a normal year (Ibid.). If water demand increases at a lower historical rate of 0.4% per year, the City will be able to meet the demands of the proposed project and other existing and planned future uses during normal years through the year 2030 (the 20-year evaluation horizon for the WSA).

**Dry Years.** The WSA concludes that the City does not have sufficient water to meet current or future projected water demand during dry years, irrespective of the proposed project. This finding is consistent with the 2005 UWMP findings and the conclusions presented in the 2003 Integrated Water Plan ("IWP").

Supply reliability during a single dry year was estimated in the 2005 UWMP based on the amount of water that was available to the City in 1994, the most recent single dry year on record. Based on the 2005 UWMP's analysis, the City's cumulative water supplies are expected to be reduced from a normal year of 4,314 MGY (approximately 13,245 AFY) to approximately 3,800 MGY during a single dry year. This represents a reduction of 12% (514 MGY) from the City's normal year available supply (EKI, September 2009).

Supply deficits estimated in the WSA are projected to be the greatest during the second year of a multiple-year drought. Supply deficits projected for 2010 range from 30% (under a low growth scenario) to 31% (high growth). In 2030 this shortfall is projected to range from 36% to 38%. Thus, the maximum projected supply shortfall presented in the WSA occurs in the year 2030 under high growth rates (0.8% annually) with a total supply deficit of 1,656 MGY (approximately 5,080 AFY). Under the low growth scenario (0.4%), the projected supply shortfall in the year 20230 is 1,522 MGY (approximately 4,670 AFY) (EKI, September 2009).



**TABLE 4-1: Projected Future Water Demand for the City of Santa Cruz Water Service Area**

Projection	Water Demand (mgy) (a)					
	2005	2010	2015	2020	2025	2030
<b>Population Forecast</b>						
AMBAG (2009) (b)	93,160	96,399	100,670	103,275	104,539	106,454
<b>Water Demand Forecasts</b>						
MWM 1998 Forecast (c)	4,867	5,029	5,094	5,157	5,240	5,323
UWMP Scenario 1 (0.8% Growth) (d)	3,900	3,962	4,154	4,345	--	--
UWMP Scenario 2 (0.4% Growth) (e)	3,900	3,866	3,963	4,058	--	--
UWMP Scenario 1 Adjustments (f)						
<i>Extension from 2020 to 2030 (g)</i>	--	--	--	--	4,350	4,430
<i>UCSC adjustments (h)</i>	--	-25	-50	-74	-74	-74
<b>Updated UWMP Scenario 1 (i)</b>	<b>3,900</b>	<b>3,937</b>	<b>4,104</b>	<b>4,271</b>	<b>4,276</b>	<b>4,356</b>
UWMP Scenario 2 Adjustments (f)						
<i>Extension from 2020 to 2030 (g)</i>	--	--	--	--	4,121	4,196
<i>UCSC adjustments (h)</i>	--	9	17	26	26	26
<b>Updated UWMP Scenario 2 (i)</b>	<b>3,900</b>	<b>3,875</b>	<b>3,980</b>	<b>4,084</b>	<b>4,147</b>	<b>4,222</b>

**Abbreviations:**

AMBAG - Association of Monterey Bay Area Governments  
 mgy - million gallons per year  
 UCSC - University of California at Santa Cruz  
 UWMP - Urban Water Management Plan

**Notes:**

- (a) Water demand forecasts are based on discussions with staff from the City's water and planning departments and the City's Environmental Impact Report consultant.
- (b) Population projections from AMBAG (2009) include UCSC.
- (c) Projections from the City's Water Demand Investigation were completed based on then-current information on local population and employment trends published by the Association of Monterey Bay Area Governments ("AMBAG"), and demographic data and land use information from the existing general plans (from the City of Santa Cruz, Santa Cruz County, and the City of Capitola).
- (d) The 2005 UWMP's "Scenario 1" demand projections were based on the assumption that the City's three largest customer classes (single-family residential, multi-residential and business, and irrigation) would grow at an annual rate of 0.8% (in proportion to the amount of growth envisioned in existing housing elements from general plans for the City and County of Santa Cruz and the City of Capitola), and that water use at the University would increase as predicted in the 2005 LRDP Draft EIR.
- (e) The 2005 UWMP's "Scenario 2" assumed that residential and business water use would increase at an annual rate of 0.4% (based on actual residential growth rates experienced since 1997), and that water use at the University would increase at half of what was predicted in the 2005 Long Range Development Plan ("LRDP") Draft Environmental Impact Report ("EIR").
- (f) Adjustments were made to the UWMP Scenarios 1 & 2 for two reasons (1) in order to extend the projections through the year 2030, as is required for a Water Supply Assessment ("WSA") pursuant to Water Code Section 10910, and (2) to account for reductions in the projected water demand for UCSC associated with the 2005 LRDP Final Environmental Impact Report and the Settlement Agreement. Both Updated UWMP Scenarios include the full volume of projected 2020 demand for UCSC. Therefore, Scenario 1 has been adjusted downward while Scenario 2 has been adjusted upward, to account for the full volume of updated UCSC demand.
- (g) Demands were extended from 2020 to 2030 by the City for the purpose of this report, assuming a gross per capita water use of 114 gallons per day per person ("gpd/person") for UWMP Scenario 1 and 108 gpd/person for UWMP Scenario 2.
- (h) Adjustments to the UCSC water demand projections (which include the demand for the Project) are equal to the difference between the prior projected UCSC demand growth by 2020 included in the UWMP scenarios (200 mgy for Scenario 1 and 100 mgy for Scenario 2), and the updated projected UCSC demand growth by 2020 presented in Table 1 (126 mgy for both scenarios). After 2020, demand growth by UCSC is assumed to be included in the per capita-based demand growth (Reference 1).
- (i) The Updated UWMP Scenarios 1 & 2 are used for the purpose of evaluating the sufficiency of the City's water supplies to meet the projected future demands (including the demands of the Project), as is required in a WSA. The City has chosen to include these two potential future demand scenarios as the higher and lower ranges of the City's estimated future demand. Actual future development will be planned by the appropriate land use planning agencies for the City and County of Santa Cruz and the City of Capitola.

**References:**

- 1 Personal communication with the Water Department and Planning Department Staff, 13 July 2009.
- 2 MWM, 1998. *Water Demand Investigation*; prepared by Maddaus Water Management.
- 3 AMBAG, 2009. *Monterey Bay Area 2008 Regional Forecast. Population, Housing Unit and Employment Projections for Monterey, San Benito and Santa Cruz Counties to the Year 2035.*

**SOURCE:** Erler & Kalinowski, Inc.

## SUPPLEMENTAL CITY WATER SUPPLIES

As discussed in the WATER SUPPLY (Chapter 4.1) 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 4.1) 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<sup>3</sup> and is pursuing construction of a desalination plant to provide a supplemental water source in drought conditions, with the potential for expansion of the desalination plant 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 engineering for a permanent facility is likely to begin in 2010, followed by environmental review. A permanent facility is expected to be constructed and in operation by the year 2015, pending completion of project-level environmental review and regulatory permit approvals, i.e. approval of a coastal development permit from the California Coastal Commission.<sup>4</sup> 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

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<sup>3</sup> As noted in section 4.6 of this EIR, a savings of approximately 153 MGY (approximately 470 AFY) had been achieved by 2005 from implementation of conservation programs with the plumbing fixture retrofit program producing the most water savings, totaling about 11 MGY.

<sup>4</sup> 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.

environmental effects, and the EIR identified potentially significant impacts (as summarized in Chapter 4.1) 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.

- ❑ *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.

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 [approximately 700 AFY]) 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 (approximately 1,840 AFY) 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 adequate long-term supplies during normal years potentially at some time after the year 2025. The WSA concludes that the City's supplies are sufficient to meet the City's existing and project water demands in a normal year through the year 2030 based on historical water demand growth. However, with a higher level of water demand growth, the City could face a supply shortfall during normal years sometime after 2025. Such a short-fall would only occur if other new development occurs at a rate greater than what has historically occurred (i.e., greater than the historic 0.4% annual growth included in UWMP). The magnitude of this supply shortfall is estimated at 42 MGY (approximately 130 AFY), and

would not occur until at least 2025.<sup>5</sup> Supplies are currently insufficient during a multiple-year drought, and under existing cumulative conditions with the project, the City faces of supply deficit of approximately 1,520 – 1,650 MGY (approximately 4,670 – 5,080 AFY).

The proposed project's incremental contribution to this significant cumulative impact is 100 MGY. The City Water Department estimates that approximately 64% of service area demand occurs over an approximate 7-month period of the year, during which time water supplies would be constrained during dry years. Based on this percentage, the proposed project's water demand during the peak season in dry years is 64 MGY. The project's contribution is considered to be "cumulatively considerable" and thus significant in and of itself.

The incremental project water demand would be minimized with implementation of University-adopted mitigation measures (2005 LRDP measures as listed in WATER SUPPLY (Chapter 4.1) section of this EIR) and provisions of the Comprehensive Settlement Agreement (Mitigation Measures 1-1 and 1-2) in which UCSC has agreed to comply with water restrictions imposed within the City's water service area and/or not to increase water demand should a water connection moratorium be imposed within the service area.

Implementation of LRDP Mitigation Measure Util-9I commits UCSC during a City-declared drought to require residential water use on campus be reduced consistent with the City's target for multifamily residential facilities. The Comprehensive Settlement Agreement further commits UCSC to comply with any service area-wide water restrictions or mandatory use curtailment imposed by the City in response to a declaration of water shortage emergency condition under State Water law.

The City's UWMP Water Shortage Contingency Plan requires a 15% reduction in peak season water use during critical drought conditions. Accordingly, implementation of LRDP Util-9I will reduce UCSC demand by 9.6 MGY to 54.4 MGY during the peak season in a critically dry year applying 15% reduction on all UCSC uses as required by the Comprehensive Settlement Agreement. LRDP Util-9I further commits UCSC to (1) reduce use of potable water for irrigation on the campus landscape, the CASFS and the Arboretum in accordance with reductions required by the City for similar users; and (2) utilize water from the existing supply well in Jordan Gulch for non-potable uses. The 2005 LRDP EIR estimates that a total of 1.1 MGY (approximately 3.4 acre-feet) of water would be extracted and used for irrigation during dry years (University of California Santa Cruz, September 2006 – 2005 LRDP EIR, Volume II, section 4.8). In addition, the Comprehensive Settlement Agreement commits UCSC to contribute funds equivalent to the City's "System Development Charges" that will serve as its "fair share" contribution to finance desalination plant improvements.

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<sup>5</sup> The City's existing adopted IWP and UWMP predict that a shortfall during normal years could occur after the year 2015. The new finding cited in the WSA prepared in 2009 reflects an updated projection based on current AMBAG population projections, as well as reduced demand throughout the water service area that has occurred since adoption of these plans and the former projections used to develop these plans.

Mitigation measures to reduce project demand would help reduce the project's incremental contribution to cumulative impacts, but it is conservatively concluded that the project's incremental contribution remains cumulatively considerable. This is due to the size of the project demand, the fact that UCSC is the largest water customer in the service area, and the uncertainty related to timing of implementation and development of additional on-campus conservation measures (beyond the "high priority" measures specified in the Comprehensive Settlement Agreement for implementation within 5 years) and potential on-campus water supplies to offset demand. As discussed in the WATER SUPPLY (Chapter 4.1) section of this EIR, a feasibility study prepared for UCSC to implement 2005 LRDP EIR Mitigation Measure UTIL-9G studied potential utilization of reclaimed water (including rainwater, grey water, cooling tower blowdown water and/or recycled water) in new development (ARUP, March 2008). Rainwater harvesting and greywater recycling were identified as priorities for new North Campus buildings and new Family Student Housing that would result in a water savings of about 28 MGY (Ibid.). However, the study does not identify costs, nor has UCSC identified a schedule for implementation. Since the City does not have control over UCSC development and water use, these non-potable alternative water systems are not considered reasonably foreseeable City water sources for the purposes of this EIR's analysis. However, to the extent that UCSC develops a program for implementation, especially for new buildings, the SOI project water demand on City supplies would be correspondingly reduced.

The City's adopted IWP includes a supplemental 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 would be subject to further environmental review and permit approvals, which themselves create additional uncertainty. 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 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 water supply to serve new growth, and therefore has committed to pursuing this option in the hope that it will obtain 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.

### **Wastewater Service**

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, and lands within the Santa Cruz Sanitation District (south to Seascap) and in two small county service areas. (See the WASTEWATER SERVICE [Chapter 4.2] of this EIR for a full description.) Wastewater treatment is adequate within the timeframe of the proposed project and backgrounds studies prepared as part of the City's General Plan Update process indicate that the 17 mgd WWTP capacity will be reached in approximately 30 years ( City of Santa Cruz Planning and Community Development Department, April 2004). When the flow to the treatment facility reaches 13 mgd (estimated to occur in 2020) the City will conduct a study to evaluate plant capacity and possible additions if needed (Ibid.). Therefore, during the planning horizon of the proposed project (10± years), cumulative impacts related to wastewater treatment would not be considered significant.

### **Global Climate Change**

Appendix G of the State CEQA Guidelines (Environmental Checklist) does not currently include global climate change as a topic to be addressed. However, proposed changes to the Guidelines that are expected to be adopted by January 2010 include a new checklist question to address greenhouse gas emissions, as well as other revisions to the Guidelines that make clear global climate change is an issue that must be addressed in environmental reviews conducted under CEQA. Because of the likelihood of adoption of the proposed changes (as well as other legislative enactments and executive actions regarding global climate change), a discussion is included in this EIR. The draft changes require that the significance of impacts from greenhouse gas emissions be assessed in environmental documents. The following section has been prepared for this EIR, including quantified project greenhouse gas emissions prepared by Donald Ballanti (see Appendix D).

#### **BACKGROUND**

The subject of global climate change has gained increasing statewide, national and international attention. Reports released by the State of California indicate that climate change could have profound impacts on California's water supply and usage in addition to other environmental and ecosystem effects. In the report prepared by the California Climate Change Center, "Our Changing Climate: Assessing the Risks to California" (2006), the state's top scientists consider global warming to be a very serious issue requiring changes in resource, water supply and public health management. Natural processes and human activities such as fossil fuel combustion, deforestation and other changes in land use are resulting in the accumulation of greenhouse gases in the atmosphere (GHGs), the most prevalent of which is carbon dioxide (CO<sub>2</sub>). An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, commonly referred to as global warming, which is

expected to affect weather patterns, average sea level, ocean acidification and precipitation rates.<sup>6</sup>

The major greenhouse gases include, but are not limited to, the following:

- ❑ Carbon Dioxide (CO<sub>2</sub>). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35%. Carbon dioxide is the most widely emitted greenhouse gas and is the reference gas. In 2004, 83.8 percent of California's greenhouse gas emissions were carbon dioxide.<sup>7</sup> Carbon dioxide is the most widely emitted GHG and is the reference gas (Global Warming Potential [GWP] of 1) for determining GWPs for other GHGs.
- ❑ Methane (CH<sub>4</sub>). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane come from landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.
- ❑ Nitrous Oxide (N<sub>2</sub>O). Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.
- ❑ Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum.
- ❑ Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi conductor manufacturing.
- ❑ Sulfur hexafluoride (SF<sub>6</sub>). Sulfur hexafluoride is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity.

The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide (California Governor's Office of Planning and Research, June

<sup>6</sup> Jones & Stokes. August 2007. "Addressing Climate Change in NEPA and CEQA Documents."

<sup>7</sup> California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, December 2006, [http://www.energy.ca.gov/2006publications/CEC\\_600\\_2006\\_013/CEC\\_600\\_2006\\_013\\_SF.PDF](http://www.energy.ca.gov/2006publications/CEC_600_2006_013/CEC_600_2006_013_SF.PDF).

2008). The last three of the six identified GHGs are primarily emitted by industrial facilities. California is a substantial contributor of global greenhouse gases, emitting over 400 million tons of carbon dioxide (CO<sub>2</sub>) a year.<sup>8</sup> The primary contributors to GHG emissions in California are transportation (41%), electric power production (22%), industry (21%), agriculture and forestry (8%), and other sources, including commercial and residential uses (8%) (California Energy Commission, December 2006). Approximately 91% of California's emissions are carbon dioxide produced from fossil fuel combustion (Ibid.).

#### STATE REGULATORY SETTING AND ACTIONS

Although GHG emissions are not currently addressed in federal regulations, the State of California passed the Global Warming Solutions Act of 2006 (AB32), which seeks to reduce GHG emissions generated by California. The Governor's Executive Order S-3-05 and AB 32 (Health & Safety Code, § 38501 et seq.) both seek to achieve 1990 emissions levels by the year 2020. Executive Order S-3-05 goes even further than AB 32, and requires that by 2050 California's GHG emissions be 80% below 1990 levels. AB 32 defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrocarbons, perfluorocarbons and sulfur hexafluoride.

The California Air Resources Board (CARB) is the lead agency for implementing AB 32. CARB identified 36 "early actions to mitigate climate change in California" in April 2007 as required by AB 32. These actions relate to low carbon and other fuel standards, improved methane capture at landfills, agricultural measures, reduction of hydrocarbons and perfluorocarbons from specified industries, energy efficiency, and a variety of transportation-related actions.

In accordance with provisions of AB 32, CARB<sup>9</sup> has completed a statewide Greenhouse Gas (GHG) Inventory that provides estimates of the amount of GHGs emitted to, and removed from, the atmosphere by human activities within California. The inventory includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons. The emissions inventory covers seven sectors: transportation, electricity generation, industrial, residential, agriculture, commercial and forestry. The initial GHG Inventory covers years 1990 to 2004. CARB recently updated the GHG emissions inventory to include the years 2005 and 2006 (California Air Resources Board, May 2009).

Based on review of this inventory, in December 2007 CARB approved a 2020 emissions limit of 427 million metric tons, which is equivalent to the 1990 emissions level. A preliminary estimate of approximately 600 million metric tons has been estimated for 2020 without reductions. However, the preliminary numbers indicate that the difference between 1990

<sup>8</sup> California Air Resources Board 1990 to 2004 State Inventory (November 2007).

<sup>9</sup> In January 2007, AB 1803 transferred responsibility for developing and maintaining the state's greenhouse gas inventory from the California Energy Commission (CEC) to the CARB, which used the CEC GHG inventory as a starting point to develop 1990 GHG emissions.



emissions levels and ARB's preliminary estimate for 2020 emissions is 172 million metric tons (California Air Resources Board, November 2007).

In accordance with requirements of AB 32, a Scoping Plan was released in October 2008 and adopted by CARB in December 2008. Key elements for reducing the state's greenhouse emissions to 1990 levels by 2020 include:

- ❑ Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- ❑ Achieving a statewide renewables energy mix of 33 percent;
- ❑ Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- ❑ Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- ❑ Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- ❑ Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation (California Air Resources Board, October 2008).

The Scoping Plan identifies 18 emissions reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roofs program, industrial emissions, high speed rail, green building strategy, recycling, sustainable forests, water and air (California Air Resources Board, October 2008).

Final CARB regulations are not due until January 1, 2011, and will not be operative until January 1, 2012. By the former date, CARB must adopt "greenhouse gas emissions limits and emissions reductions measures ... to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit[.]" (Health & Safety Code, § 38562(a).)

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and effects of GHG emissions are subject to CEQA. It also directs OPR to develop draft CEQA Guidelines to address GHG emissions and directs the California Resources Agency to certify and adopt these guidelines by January 1, 2010. OPR issued draft



amendments to the Guidelines in April 2008, which are currently undergoing public review. It is expected that the Resources Agency will adopt the proposed amendments in January 2010.

Senate Bill 375 builds upon the principles set forth in AB 32 and provides a means for addressing climate change in CEQA documents. SB 375 aims to reduce greenhouse gas emissions by discouraging urban sprawl and reducing vehicle miles traveled. Among other things, SB 375 will require regional transportation plans to include a “sustainable community strategy” (SCS) to meet greenhouse gas reduction targets set by the California Air Resources Board. To encourage smart growth development, SB 375 provides streamlined review under CEQA for certain projects consistent with the SCS: transit priority projects (projects comprising at least 50% residential use, a residential density of at least 20 units per net acre and located within one half mile of a regional transit corridor) and residential or mixed use projects with a residential component requiring at least 75% of the total square footage.

#### LOCAL ACTIONS

**City of Santa Cruz Efforts.** The City of Santa Cruz has been developing emissions strategies to reduce greenhouse gas (GHG) emissions to 1990 levels. In June 2007, the City Council adopted a set of General Plan goals and policies on climate change; including reducing community-wide greenhouse gas emissions 30% by 2020, reducing 80% by 2050 (compared to 1990 levels), and for all new buildings to be emissions-neutral by 2030. In August 2008, the City completed an Emissions Inventory, which provides information regarding municipal and community-wide emissions. This document provides the data and guidance to City staff and Council to direct future program implementation. Specifically, 2005 emissions levels have been quantified for each community sector (business, residential, municipal, and transportation) and by fuel source (natural gas, electricity, petroleum, other). Benchmark emissions for 1990 have been estimated to prioritize reduction opportunities. This inventory also establishes a standard reporting procedure that can be replicated periodically to meet State requirements and demonstrate the feasibility and effectiveness of the various city programs (City of Santa Cruz, August 2008).

The City’s Emissions Inventory estimated residential emissions to be 74,769 metric tons in 2005, equaling 3.5 tons per residence. This number is below previous estimates of 4.19 metric tons per household in 2000 and 4.6 metric tons in 1996. While these numbers are estimates, the data suggests increased efficiency and conservation in Santa Cruz homes (City of Santa Cruz, August 2008).

The City of Santa Cruz is in the process of preparing Climate Action Plan based on the results of the emissions inventory. In October 2007, the County of Santa Cruz, the City of Santa Cruz and the University of California Santa Cruz partnered to create a *Climate Action Compact* (CAC). The compact signatories realized that while climate change is a global issue, the causes and effects of those changes must be addressed locally. The goal of the CAC is to achieve meaningful and measurable progress towards lowering local greenhouse gas emissions

through the implementation of cooperative programs. To that end, the CAC partners initiated a process to develop actions necessary to accomplish the goals outlined in the compact. Two of the most important goals are to develop partnerships with other local jurisdictions and to design a portfolio of potential cooperative projects to significantly lower GHG emissions and climate change impacts in the region (City of Santa Cruz, August 2008).

**University of California & UCSC Efforts.**

University of California. The UC Policy on Sustainable Practices was adopted by the Regents in 2006 and revised in March 2007, March 2008, and September 2009. This policy was developed to standardize campus practices and promote a more ecologically friendly and efficient use of our resources. The policy addresses: green building design, clean energy standards, climate protection practices, sustainable transportation practices, sustainable operations, recycling and waste management and environmentally preferable purchasing practices (University of California, September 2009). The policy guidelines that address these topics recommend that University operations:

- ❑ Incorporate the principles of energy efficiency and sustainability in all capital projects, renovation projects, operations and maintenance within budgetary constraints and programmatic requirements.
- ❑ Minimize the use of non-renewable energy sources on behalf of the University's built environment by creating a portfolio approach to energy use, including the use of local renewable energy and purchase of green power from the grid as well as conservation measures that reduce energy consumption.
- ❑ Incorporate alternative means of transportation to/from and within the campus to improve the quality of life on campus and in the surrounding community. The campuses will continue their strong commitment to provide affordable on-campus housing, in order to reduce the volume of commutes to and from campus. These housing goals are detailed in the campuses' Long Range Development Plans.
- ❑ Track, report and minimize greenhouse gas emissions on behalf of University operations
- ❑ Minimize the amount of University-generated waste sent to landfill.
- ❑ Utilize the University's purchasing power to meet its sustainability objectives.

The University of California, as a ten-institution system, has signed the American College and University Presidents Climate Commitment (ACUPCC). Each signatory commits to completing an inventory of greenhouse gas emissions within one year, and to developing, within two years, an institutional plan to achieve climate neutrality as soon as possible. The commitment also includes specific interim actions, including requiring that new campus construction will be built to at least the U.S. Green Building Council's LEED Silver standard or equivalent; purchasing Energy Star appliances; offsetting greenhouse gas emissions generated by institutional air travel; encouraging and providing access to public transportation;

purchasing or producing at least 15 percent of the institution's electricity consumption from renewable sources; supporting climate and sustainability shareholder proposals at companies where the institution's endowment is invested; and adopting measures to reduce waste (University of California Santa Cruz, July 2009).

UCSC. The UC Santa Cruz Chancellor and representatives of the city and county of Santa Cruz signed a Climate Action Compact in September 2007. The partners in this compact agreed to:

- ❑ Set and present a GHG reduction goal for their organizations;
- ❑ Identify specific inter-institutional cooperative projects that reduce GHG emissions, stimulate investment in the community and foster economic development;
- ❑ Present a comprehensive GHG reduction action plan for their organization; and
- ❑ Immediately invite others from the public, private, and nonprofit sectors in the region to join in the effort (University of California Santa Cruz, July 2009).

The Chancellor's Council on Climate Change, which was created in January 2008, is currently working on a Climate Action Plan for the campus. The plan will set a target date for climate neutrality by quantifying emission sources, identifying projects to reduce those emissions, and implementing the projects (University of California Santa Cruz, July 2009).

UCSC prepared a draft "Climate Action Plan" in December 2008 to identify ways to meet the University GHG reduction goals. The Plan has not yet been adopted, but identifies a number of energy-related projects, including solar projects and shutting down the campus cogeneration plant, in order to meet GHG reduction goals. The draft Plan also considers planning guidelines for future projects and developing a greenhouse offsets policy (University of California Santa Cruz, December 2008).

The draft Climate Action plan reported the direct Campus emissions, including those from University vehicles, space and water heating, and emissions from purchased electricity, which is considered indirect. The 2006 inventory reported a total of approximately 40,000 metric tons of GHG emissions. The 2006 inventory did not include emissions from air travel, commuting and purchases. The Campus has completed a draft inventory for 2007, which includes air travel and nonfleet mobile sources such as commuters, METRO buses, delivery vehicles, but does not include emissions associated with purchased goods. The campus's estimated emissions for 2007 were 70,000 to 80,000 metric tons of CO<sub>2</sub> (University of California Santa Cruz, July 2009). UCSC completed its first year of third-party-certified GHG reporting for the year 2007 through the California Climate Action Registry. The Registry is a non-profit organization originally formed by the State of California, that serves as a voluntary GHG registry by organizations (online at: <https://www.climateregistry.org/CARROT/Reports/CREntityEmissionReport.aspx>.)

## GREENHOUSE GAS EMISSIONS CALCULATIONS

The proposed SOI amendment and provision of water and sewer services to UCSC's North Campus would not directly result in generation of greenhouse gas emissions. However, the proposed project would indirectly result in UCSC campus growth and development in the North Campus, which would result in GHG emissions.

A calculation of GHG emissions associated with North Campus development was prepared by Donald Ballanti, Certified Consulting Meteorologist, and is included in Appendix D. The level of emissions was calculated for this EIR and considered carbon dioxide, methane and nitrous oxide emissions, which according to OPR's technical advisory, are "the most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide" (California Governor's Office of Planning and Research, June 2008). The calculations discuss existing and future operational emissions in terms of CO<sub>2</sub>e emissions from vehicular traffic, area sources, and energy consumption, including construction emissions, direct traffic emissions, and indirect emissions, including electrical use, water delivery, forest conversion, and wastewater treatment/solid waste disposal.

The total GHG emissions resulting from North Campus development is estimated as a maximum of 21,776.77 metric tons/year CO<sub>2</sub> equivalent (MT CO<sub>2</sub>e), which would occur at the year of completion of new North Campus development, sometime between now and 2020. Once construction is completed, construction emissions and tree removal sources would be eliminated, and GHG emissions would be 17,005.80 MT CO<sub>2</sub>e per year (see Appendix D).

To date, no local or state agency has adopted significance criteria for GHG emissions. As part of OPR's drafting revisions to the CEQA Guidelines regarding GHG emissions, CARB was asked to provide technical recommendations for setting thresholds of significance for GHG emissions. Draft recommendations for establishing a threshold approach were released by CARB technical staff on October 24, 2008. The recommendations set forth an approach for industrial, residential and commercial projects with a numeric threshold level recommended only for industrial uses. The recommendations have not been adopted or included in other state-adopted documents. On April 13, 2009, OPR issued draft CEQA Guidelines covering GHG emissions, but these proposed amendments to the State CEQA Guidelines do not specify significance thresholds for GHG emissions.

Several state agencies and entities have issued technical advisories, white papers and proposals with suggested methods for analyzing the impacts of GHG emissions, with and without a GHG emissions significance threshold. The California Air Pollution Control Officers Association (CAPCOA) prepared a white paper on CEQA and climate change in January 2008 (CAPCOA 2008). The white paper is intended to be used as a resource by lead agencies when considering policy options and not as a guidance document. Specifically, the white paper discusses three possible approaches to evaluating the significance of GHG emissions and possible mitigation measures; however, CAPCOA does not endorse any particular approach.

The three alternative significance approaches are: (1) determining significance without establishing a significance threshold for GHG emissions; (2) setting the GHG emission threshold at zero; and (3) setting the GHG emission threshold at some nonzero level.

The proposed State CEQA Guidelines' amendments add a new question regarding GHG emissions, asking whether a project would a) generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment or b) conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The proposed revisions also indicate that an adopted plan may be used to determine whether a project's incremental contribution is cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program (section 15183.5b). The Guidelines further indicate that such a plan may include:

- ❑ Quantification of GHG emissions;
- ❑ Establishment of a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
- ❑ Identification and analysis of GHG emissions from specific actions or categories of actions anticipated within the geographic area;
- ❑ Identify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- ❑ Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

## CONCLUSION

Global climate change impacts are a result of cumulative emissions from human activities in the region, the state and the world. Cumulative development and growth in the area would contribute primarily indirect emissions of GHGs that in conjunction with other global emissions, would contribute to global climate change. Given international concerns and the state of California's recent laws and indication of the serious nature of this issue, cumulative impacts related to global climate change are considered significant.

Estimated GHG emissions from potential future North Campus development would increase campus emissions by approximately 27% over year 2007 levels of 79,726 MT CO<sub>2</sub>e estimated in UCSC's draft Climate Action Plan (December 2008). This represents a substantial increase over existing levels and is considered by the City to be a cumulatively considerable contribution to cumulative GHG emissions and global climate change.

The proposed revisions to the State CEQA Guidelines (section 15126.4(c)) indicate that potential project mitigation measures include:

- ❑ Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency’s decision;
- ❑ Reductions in emissions resulting from a project through implementation of project features,
- ❑ Project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines and generally relate to energy conservation;
- ❑ Off-site measures, including offsets, to mitigate a project’s emissions;
- ❑ Measures that sequester greenhouse gases; and
- ❑ In the case of the adoption of a plan, such as a general plan, long range development plan, or greenhouse gas reduction plan, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

Currently, the draft UCSC Climate Action Plan has not been adopted, and the City does not have jurisdiction to impose mitigation measures on the University. However, the City finds that indirect GHG emissions generated by the proposed project would be offset by implementation of UC-adopted 2005 LRDP mitigation measures; continued implementation of the University of California’s “Policy on Sustainable Practices”; and potentially further by the ultimate implementation of the UCSC Climate Action Plan. These measures and programs address key elements to be implemented by local governments as identified in the State Scoping Plan, including green building designs, energy efficiency, sustainable operations, transportation management, and recycling and waste management. UCSC’s efforts to date have resulted in the following milestones of progress toward improved climate protection and campus sustainability:<sup>10</sup>

- ❑ Energy efficiency projects completed since 2004 have lowered annual campus CO<sub>2</sub> emissions by approximately 1,600 metric tons.
- ❑ Trip-reduction programs have resulted in nearly six in ten people traveling regularly to and from the campus (vs. three in ten throughout the Santa Cruz community) using alternatives to single-occupancy vehicles.
- ❑ The campus has reduced per capita water consumption by 40% since the 1980s, and has conservation plans under development to reduce total annual use by another 20 to 30 million gallons.
- ❑ UCSC has set aside 55% of its nearly 2,000-acre campus as natural habitat.

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<sup>10</sup> “2008 UCSC Sustainability Update.” Online at: <http://sustainability.ucsc.edu/images/docs/ucsc-sustainability-update-10.2008finalcolor.pdf> and included in Appendix E.



The University's Sustainable Practices Policy (see Appendix E) requires new buildings to be designed to minimum LEED-certified levels, and renovated buildings will be designed to exceed Title 24 energy efficiency standards by 20%. Several of the mitigation measures adopted by the Regents for the 2005 LRDP require incorporation of measures to reduce energy use and subsequent emissions, such as project building orientation and incorporation of solar water heaters (AIR-2A).

UCSC's existing Transportation Demand Management programs (LRDP Mitigation TRA-2B) have the objective of increasing sustainable transportation modes above 55% during the 2005 LRDP planning horizon. Other transportation-related measures include reducing on-campus parking demand associated with single-occupant commuters (TRA-3A), improving on-campus shuttle efficiency and operations (TRA-4B), and implementing bicycle circulation improvements (TRA-4E & 4F). Traffic reduction is partially reflected in the GHG emissions estimate prepared for this EIR due to the daily traffic limit imposed by the Comprehensive Settlement Agreement (3,900 ADT). This represents about a 40% reduction in daily trips and associated emissions that have already been factored into the GHG emissions calculations at full buildout. Additionally, the campus provides on-campus student and employee housing, which will be increased as a result of the Comprehensive Settlement Agreement and should further reduce the percentage of students and employees traveling regularly by car to campus.

A number of other 2005 LRDP mitigation measures address other means to reduce emissions. LRDP Mitigation AIR-2C requires the UCSC campus to install VOX and NO<sub>x</sub> controls on new gas turbines to reduce emissions by 90%. LRDP Mitigation AIR-6 identifies measures to reduce construction emissions. LRDP Mitigation UTIL-4 calls for the campus to continue to improve its recycling and waste reduction programs and identify additional means of reducing waste.

The University's sustainability policy and UCSC's implementation of 2005 LRDP mitigation measures and other ongoing sustainable practices serve to implement many of the State Scoping Plan recommendations regarding: energy efficiency, provision of on-campus housing, transportation demand reduction measures, green building designs, recycling reduction, and implementation of water conservation measures. They represent the most effective and practicable measures to reduce indirect GHG emissions. The measures are also consistent with OPR's guidelines for mitigation of GHG emissions, which include: encouraging jobs/housing proximity; encouraging walking, bicycling, and public transit use; and applying management strategies to improve operational efficiency of transportation systems (June 2008). As a result, future University growth would not be considered an impediment to the emissions reduction targets developed by the State Scoping Plan pursuant to AB 32. However, while the above measures may be effective in reducing the project's incremental effect to a less-than-cumulatively considerable level, there is no current data indicating in quantifiable terms the amount of reductions these measures could achieve. Nor is there an adopted UCSC Climate Action Plan that specifies levels of GHG reduction associated with implementation of



different measures.<sup>11</sup> Thus, the City cannot be definitely determine whether the 27% increase could be reduced to level that is less than cumulatively considered as would be specified in an adopted greenhouse reduction plan. Therefore, the City conservatively concludes that the project's incremental effect on GHG emissions and global climate change would be cumulatively considerable.

## 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. Thus, the City considers it appropriate to review the University's LRDP EIR and its alternatives analysis in determining whether there is a need to evaluate an off-site alternative (in this case, an alternative SOI boundary amendment) for this project.

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<sup>11</sup> Although the proposed State CEQA Guidelines' revisions that propose use of adopted plans to evaluate cumulative impacts have not yet been adopted, they are the most current state-directive on cumulative impact evaluation, and therefore are appropriate to consider in this EIR. Adoption is expected by January 1010.

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 one direct significant project impact and two significant cumulative impacts:

- ❑ **Impact 1-1:** The proposed project would result in future provision of water service to the North Campus portion of the UCSC campus that would support new planned development and growth to the year 2020. There are adequate supplies to serve the project in normal years, but there are inadequate water supplies to serve the project under existing and future multiple dry year (drought) conditions.
- ❑ **Cumulative Water Supply Impacts:** City water supplies are currently inadequate for existing and future growth during multiple dry year (drought) conditions and potentially insufficient for future normal year conditions after the year 2025. The proposed project's incremental effect on significant cumulative water demand/supply impacts under both normal and dry years is considered cumulatively considerable, and thus, significant.
- ❑ **Cumulative Global Climate Change Impacts:** Estimated GHG emissions from potential future North Campus development that would indirectly result from the proposed project would increase campus emissions by approximately 27% over year 2007 levels. This represents a substantial increase over existing levels and is considered by the City to be a cumulatively considerable contribution to cumulative GHG emissions and global climate change.

The proposed project would not directly induce growth as no new development, housing or employment is proposed as part of the project. The proposed project would indirectly support planned growth and development on the UCSC campus with amendment of the city's Sphere of Influence (SOI) and ultimate provision of water and sewer service to the North Campus area of UCSC. However, the proposed project will accommodate planned growth, but will not induce new or additional UCSC growth beyond what is planned in the 2005 LRDP. The secondary impacts of development and growth in the North Campus area of UCSC include significant impacts that can be mitigated to a less-than significant level related to:

- ❑ Aesthetics (degradation of visual quality);
- ❑ Biological Resources (sensitive habitats, wetlands, riparian habitat, special status plant species, special status wildlife species, interference with wildlife movement);
- ❑ Cultural Resources (disturbance to unknown archaeological and paleontological resources);
- ❑ Geology and Soils (geologic hazards, expansive soils);
- ❑ Public Services (recreation); and

- ❑ Transportation and Traffic (on-campus traffic generation, parking, alternative transportation modes effectiveness, and off-campus traffic as modified by provisions of the Settlement Agreement that contain additional traffic mitigation).

Significant unavoidable impacts related to future UCSC growth and development include:

- ❑ Air quality (violation of NO<sub>x</sub> standards);
- ❑ Cultural Resources (historic or archaeological resources where resource cannot be preserved, although the potential for such resources to exist in the undeveloped North Campus area is low);
- ❑ Hydrology and Water Quality (potential erosion and water quality degradation depending on future site-specific development designs);
- ❑ Noise (construction noise) near sensitive receptors;
- ❑ Transportation and Traffic (unacceptable freeway operations); and
- ❑ Utilities (expansion of cooling and heating water facilities).

### **Project Objectives**

The objective of the project is to implement City of Santa Cruz obligations set forth in the Comprehensive Settlement Agreement with regard to provision of water and sewer services to the UCSC North Campus area, and specifically to amend the City's Sphere of Influence boundaries to include this area to provide such services. The Settlement Agreement was entered as a final judgment of the Santa Cruz Superior Court. Pursuant to this stipulated judgment, the City agreed to continue to provide water service to the campus through its existing water connections to assist UCSC with achieving its on-campus housing commitment set forth in the Settlement Agreement. Furthermore, the City agreed to submit an application to LAFCO to amend its Sphere of Influence to include the project area of the UCSC Campus concurrent with UCSC submitting its own application request to LAFCO for provision of extraterritorial water and sewer service to the North Campus for development of up to 3,175,000 gross square feet of building space in this area as set forth in the 2005 LRDP.

## **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.

The primary objective of the proposed project is to implement City of Santa Cruz legal obligations to provide water and sewer service to the North Campus of UCSC set forth in the Comprehensive Settlement Agreement. There are no known alternatives to the City provision of these services to the project area, as the City is the sole provider of urban services to the existing developed UCSC campus and surrounding areas within city limits. Any alternatives that alter the provisions of the Comprehensive Settlement Agreement were not considered feasible as they would violate a legal judgment and would require the cooperation of, and negotiation with, numerous agencies and individuals who signed the Agreement, which is not in the City's control, and which the City considers unlikely to occur.

A number of alternatives were suggested in NOP comment letters and scoping meeting, but were eliminated from further consideration for the reasons discussed below.

- ❑ **Revised Project to Provide Alternative Sewage Disposal Systems.** Under this suggested alternative, only water would be provided by the City and wastewater would be provided by onsite alternative sewage disposal systems. Specifically, the "Living Machine" system was suggested and described as being in use at various educational facilities in the United States (Oberlin College in Ohio, and the Marine Environmental Research and Training Station campus in Oregon). A cursory online investigation indicates that water would be required at some level to create wetlands or other holding facilities in which plants are grown and used to break down bacteria. The use of such systems, while a potentially viable alternative in some situations, was eliminated from further consideration for several reasons. As the alternative would require use of water to grow plants, it would not reduce (and could increase) project dry-year and cumulative water supply impacts. This alternative would violate the Settlement Agreement clauses regarding City provision of extraterritorial sewer services and would not be feasible for the City to implement as it is not a system utilized by the City nor does the City have jurisdiction over land use/development decisions made by the University of California. The project area could potentially be annexed to the City in the future with approval of the Sphere of Influence amendment, and the use of alternative sewage disposal systems would be inconsistent with Chapter 6.20 of the Santa Cruz Municipal Code, which requires that all wastewater be discharged to a public sewer.
- ❑ **Develop On-Campus Water Supplies.** This alternative suggests development of on-campus water resources to provide for the increased demand resulting from UCSC growth. The possibilities that are recommended include: a) rainfall water

capture, storage, treatment to offset additional water demand; b) development of greywater management and treatment; and c) instituting more water conservation on the UCSC campus. This alternative was eliminated from further consideration primarily because development of these options is not a water supply option for the City of Santa Cruz Water Department as the City does not have jurisdiction over the University or its potential water sources. Furthermore, the recommended measures are already included as adopted 2005 LRDP mitigation measures.

As discussed in the WATER SUPPLY (Chapter 4.1) section of this EIR, a feasibility study prepared for UCSC to implement 2005 LRDP EIR Mitigation Measure UTIL-9G studied potential utilization of reclaimed water (including rainwater, grey water, cooling tower blowdown water and/or recycled water) in new development (ARUP, March 2008). Rainwater harvesting and greywater recycling were identified as priorities for new North Campus buildings and new Family Student Housing, that would result in a water savings of about 28 MGY (Ibid.). However, the study does not identify costs, nor has UCSC identified a schedule for implementation.

The City understands that while the University may have begun to develop the technical and feasibility analyses of one or more of the components of this alternative, the bulk of the details required to flesh out this alternative for substantive analysis remain speculative at this time. Since the City does not have control over UCSC development and water use, these non-potable alternative water systems are not considered reasonably foreseeable City water sources for the purposes of this EIR's analysis. However, to the extent that UCSC develops a program for implementation, especially for new buildings, the SOI project water demand on City supplies would be correspondingly reduced.

It is also noted that the rainfall capture and storage systems typically require large areas to store enough water captured during rainy seasons to save until needed in dry seasons, the creation of which could result in potential significant impacts. Additionally, the 2005 LRDP Final EIR mitigation measure HYD-5A (via implementation of Mitigation Measure HYD-3D) requires that runoff from new impervious areas in the north campus be allowed to infiltrate and thereby recharge the local groundwater system. This would ensure that north campus springs, as well as springs that discharge in Wilder Creek, Cave Gulch, and Tunnel Gulch on the east and north, and seeps that discharge to the east into drainages of the San Lorenzo River would not be affected. Because of these uncertainties about whether these components could be implemented and actually reduce or avoid the impacts associated with the City's water supply challenges, this alternative is considered infeasible.



- ❑ **Relocate North Campus Development to the Main Campus.** This suggested alternative would relocate potential project area development to the central and lower campus through increased density and infill within the existing developed campus and/or expansion into open areas. This would eliminate future development in the North Campus. The central and lower campus areas (see Figure 4<sup>12</sup>) are located within existing city limits. Therefore, this alternative would not eliminate the significant unavoidable project and cumulative water and global climate change impacts as the new development would be located within the City, and thus, the City would automatically provide water and sewer service pursuant to its existing service obligations. This alternative also does not meet the primary project objective of fulfilling the City’s legal obligations under the Comprehensive Settlement Agreement.

Increased density and infill on the existing campus was considered as a potential alternative in the 2005 LRDP EIR (University of California Santa Cruz, September 2006, 2005 LRDP FEIR, Volume II), but was rejected for further analysis because the University indicated there is not enough in-fill space within the core to accommodate all the needed academic space without development of buildings extending above the treetops, resulting in greater visual impacts. Furthermore, this option would require expansion between building clusters, and result in the loss of all the intervening space that defines each of the clusters within the campus core. The 2005 LRDP EIR did consider an alternative that expands the campus to the south of existing development (LRDP Alternative 3).

Although the City does not consider this to be a potentially feasible alternative to the project, this potential alternative could be a result of a “No Project” alternative and is discussed further below under the “No Project Alternative.”

- ❑ **Redirect Student Enrollment to Other Campuses or Construct New Campuses.** This suggested alternative does not meet the primary project objective of fulfilling the City’s legal obligations under the Comprehensive Settlement Agreement. It is not considered feasible as the City has no jurisdiction over enrollment or development decisions of The University of California. Furthermore, the 2005 LRDP EIR considered this proposal as an alternative to the 2005 LRDP and determined that it would not eliminate impacts (University of California Santa Cruz, September 2006, 2005 LRDP EIR, Volume V, Master Response 5.2.18). For example expansion to accommodate projected enrollment growth would be difficult at some campuses such as UC Davis that is situated on prime farmland. UCLA and UC Berkeley that have limited physical space for expansion and accommodating new development and population. The new tenth UC campus in

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<sup>12</sup> All EIR figures are included in Chapter 8.0 at the end of the EIR (before appendices) for ease of reference as some figures are referenced in several sections.



Merced offers new opportunities and will accommodate a portion of the currently projected increases in enrollment (an estimated 13,500 by 2024-25), but this new campus cannot grow quickly enough to accept all of the growth, nor would it be reasonable to expect that all of the program and research growth could occur at a single campus. The University of California does not have plans to open an eleventh campus at this time (Ibid.). The 2005 LRDP EIR concluded that for these reasons, while it is possible that additional UC campuses may be built in the future, entirely or even substantially accommodating the immediate and near term demand for UC education at a new campus site is not a feasible alternative to growth at UC Santa Cruz. Further, because any future campus site is likely to present its own set of environmental issues, development at another site likely would not eliminate significant environmental impacts, but would simply trade one set of impacts for another, or result in similar impacts at another location.

The 2005 LRDP EIR also considered satellite campuses at Moffett Field in Santa Clara County and at the former Fort Ord in Monterey County (University of California Santa Cruz, September 2006, 2005 LRDP EIR, Volume II). Under the Moffett Field alternative, approximately 2,000 students and 460 associated faculty and staff could be accommodated in facilities to be developed at the Silicon Valley Center at the former Naval Air Station Moffett Field. A reuse plan adopted by NASA for Moffett Field establishes a Research Park, including a 40-acre University Reserve for education, research facilities and housing dedicated to higher education partners, including UC Santa Cruz, Carnegie Mellon University, San Jose State University, and Foothill-DeAnza Community College. The University of California has a letter of intent that would allow it to develop a facility on 25 acres. Given the distance of the NRP from the UC Santa Cruz campus, the impediments to physical development of the site, including infrastructure and transportation constraints, and the early state of development of academic programs, which cannot serve significant numbers of undergraduates, development of a satellite campus at Moffett Field was not considered a viable alternative to growth on the main UCSC campus.

A satellite campus in Monterey County on UC-owned land at the former Fort Ord (UC MBEST) would accommodate about 2,200 students and 480 employees and about 1.3 million gross square feet of the proposed building space. Most of the site contains protected reserve lands, and water allocation is limited to the first phases of development envisioned under the Master Plan prepared by the University for the site. The primary goal of the UC MBEST is to develop alliances among businesses, government, and educational and research institutions to address economic opportunities, especially in agriculture and industry. Programs would be designed to facilitate knowledge transfer between businesses, government, and educational institutions via research relationships and training/teaching programs. The existing MBEST Master Plan would need to be revised to accommodate a

satellite campus for UCSC campus growth and would require administrative, research, teaching, and housing facilities to function as a relatively independent campus. Under this alternative, the uses and programs planned and envisioned under the UC MBEST Master Plan would not be accommodated and would have to be abandoned or the planned uses would have to be developed would require additional land development at MBEST. The latter might not be feasible due to water allocation and land use constraints (University of California Santa Cruz, September 2006, 2005 LRDP EIR, Volume II). The alternative was found to result in a reduction or elimination of some significant impacts, but would also result in new significant impacts due to new development. Additionally, this alternative would not meet some of the key objectives of the LRDP and would require the abandonment of the University's plans for UC MBEST (Ibid.).

For these reasons, redirecting student enrollment to other campuses or sites was eliminated from further consideration. However, in accordance with provisions of the Comprehensive Settlement Agreement, the University has agreed to include a comprehensive analysis of potentially feasible alternative locations to accommodate enrollment as part of the next LRDP amendment.

## PROJECT ALTERNATIVES EVALUATION

### **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.

The "No Project" Alternative assumes that the proposed Sphere of Influence amendment and request for provision of extraterritorial water and sewer service to the project area of UCSC would be denied or an approval would be overturned by legal action. This may result in UCSC halting development and/or student enrollment if these services cannot be provided to the project area for planned development under the approved 2005 LRDP. Under this situation, UCSC-related water demand and sewer service demand would not increase and none of the impacts identified in the EIR related to provision of water and sewer service would occur. However, as discussed below, this alternative could result in redirecting development to the main campus that is within the City's existing service area, in which case water and sewer service demands may remain unchanged

CEQA Guidelines section 15126.6(e)(3)(B) further indicates that if disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this “no project” consequence should be discussed. In certain instances, the no project alternative means “no build” wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project’s non-approval on the physical environment. After defining the no project alternative using one of these approaches, the lead agency should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be 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.

Pursuant to the above section, should the proposed Sphere of Influence amendment (and provision of services) be denied or an approval legally overturned, under provisions of the Comprehensive Settlement Agreement, UCSC is excused from the housing commitment in the Settlement Agreement (additional on-campus housing) and the lower 2005 LRDP on-campus housing commitment will be reinstated (section 2.8e). Additionally, a reduced daily traffic commitment that is specified in the Settlement Agreement will be excused in the event that the City fails to amend its Sphere of Influence, although UCSC would pay traffic impact fees for the resulting increased traffic (section 4.1a). Additionally, UCSC retains its right to assert any and all rights or legal positions regarding its ability to develop the project area, including, but not limited to, the applicability of an exemption or immunity from LAFCO’s jurisdiction (section 2.8b), and all parties retain the right to assert any and all legal claims or positions regarding any LAFCO decision or UCSC’s ability to develop the North Campus (section 2.8b).

Thus, the No Project Alternative could foreseeably result in the University pursuing other options to develop the project area or cause the University to shift development elsewhere on campus, such as to infill of the existing developed campus with southerly expansion in several areas. Infill was considered in the 2005 LREP EIR and was determined to result in new or greater impacts than the University-approved 2005 LRDP (University of California Santa Cruz, September 2006, 2005 LRDP EIR, Volume II (section 5.3) and Volume V (Master Response 5.2.22).

#### **IMPACTS**

If the proposed Sphere of Influence amendment (and future provision of water and sewer services) is not approved, the No Project Alternative may result in North Campus development if UCSC successfully asserts other legal actions to develop this area and/or development may intensify and expand in other existing campus areas. The University may direct development on the Main (Central) Campus that is within existing City limits. In either case, the significant project water and cumulative impacts identified in this EIR would not be eliminated as water demand and wastewater generation would remain unchanged. The No Project Alternative would result in excusing the University from meeting its additional on-campus housing commitment specified in the Settlement Agreement, and the lesser level of

on-campus housing (as set forth in the 2005 LRDP FEIR) would be reinstated. This would have the effect of increasing traffic impacts as the Agreement would allow an increase in daily traffic of 1,300 daily trips, although UCSC would have to pay traffic impact fees on the increased trips to mitigate the additional traffic contribution within the City. Thus, the project's incremental contribution to significant cumulative global climate change impacts could increase.

The secondary impacts of growth and development would not change if the University is successful in asserting legal or other claims regarding development of the North Campus. If campus development is expanded in other areas of the main and lower campus (such as described in the 2005 LRDP EIR<sup>13</sup>), secondary impacts of growth would be mostly the same and in a few instances less than what was identified for the North Campus. However, in addition to increased traffic that would occur as a result of the Settlement Agreement provisions described above, infill and expansion would result in more severe significant impacts related to aesthetics (especially scenic resources), biological resources (special status species [California red-legged frog, burrowing owls] and wildlife movement), cultural resources, geology and soils (hazards associated with development on karst formations), and drainage (University of California Santa Cruz, September 2006, 2005 LRDP FEIR, Volume II and Volume V).

#### **MEETING PROJECT OBJECTIVES**

This alternative would not meet the basic project objectives to implement the City's obligations set forth in the Comprehensive Settlement Agreement to provide water service to the project area of UCSC to assist UCSC with achieving its on-campus housing commitment.

#### **ALTERNATIVE 2: Modified Sphere of Influence Amendment Area**

This alternative would exclude some resource lands (as designated in the 2005 LRDP) from inclusion within the Sphere of Influence amendment area. This would serve to tighten the line to include those areas designated for future development (and limited intervening lands designated for Natural Reserve), and thus, provision of services. Some lands designated as "Protected Landscape" and "Campus Natural Reserve" would be excluded Figure 18 provides a general concept of the modified SOI area. Since the amount of development that could occur in the North Campus under the 2005 LRDP is specified in the Settlement Agreement, reducing future potential development is not feasible for reasons previously described associated with changing the Settlement Agreement.

#### **IMPACTS**

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<sup>13</sup> University of California Santa Cruz, September 2006. 2005 LRDP Final EIR, Volume II, section 5.4.3).

This alternative would not eliminate areas proposed for development or change the amount of the development that could occur, and water demand would remain unchanged. Thus, the significant project and cumulative water and [elimiateclimate](#) change impacts identified in this EIR would not be reduced or avoided, and secondary impacts of growth and development in the North Campus would remain unchanged. However, no new significant impacts would result from this alternative. Additionally, the alternative could provide strengthened protection of campus the “resource lands.” Although development is not proposed in the 2005 LRDP, elimination from the SOI amendment area would require seeking another SOI amendment in the future if development of the excluded area were ever re-considered.

#### **MEETING PROJECT OBJECTIVES**

This alternative would meet the basic project objectives to implement the City’s obligations set forth in the Comprehensive Settlement Agreement to provide water service the North Campus area of UCSC to assist UCSC with achieving its on-campus housing commitment.

#### **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, Alternative 1 – No Project Alternative, would not eliminate or reduce the identified significant impacts and could result in additional significant impacts without attaining the basic project objectives. Alternative 2 – Modified SOI Amendment Area, is considered the environmentally superior alternative of the alternatives considered. Although it would not reduce or eliminate significant impacts, it would not result in additional significant impacts. As discussed above, the alternative could provide better protection of designated campus “resource lands” as elimination from the SOI amendment area would require seeking another SOI amendment in the future if development of the excluded area were ever reconsidered.

**IN THIS SECTION:**

- Agencies Contacted
- References
- Report Preparation

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- ❑ Alisa Klaus
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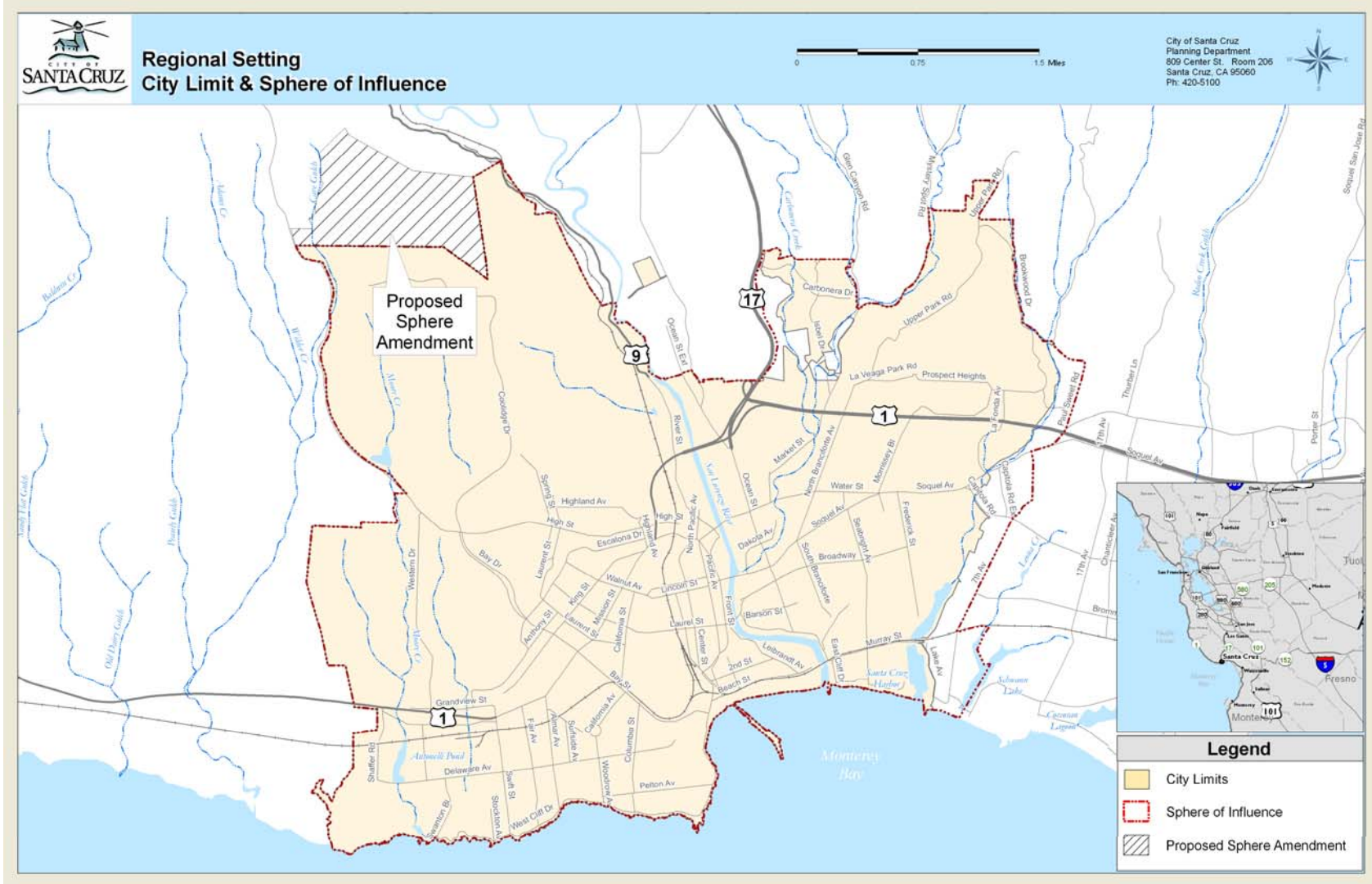
- ❑ Juliana Rebagliati, Planning and Community Development Department
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- ❑ Rich Westfall, GIS Mapping

## 8.0 EIR FIGURES

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3. Project Site
4. UCSC Campus Areas and Development
5. City of Santa Cruz Sphere of Influence
6. City of Santa Cruz Water Service Area
7. Areas Served by City Wastewater Treatment Plant
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10. UCSC 2005 LRDP Land Use Map
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16. UCSC On-Campus Habitats
17. UCSC On-Campus Watersheds
18. Alternative 2: Modified Sphere of Influence Amendment Area

**FIGURE 1: Regional Location**



**SOURCE:** City of Santa Cruz

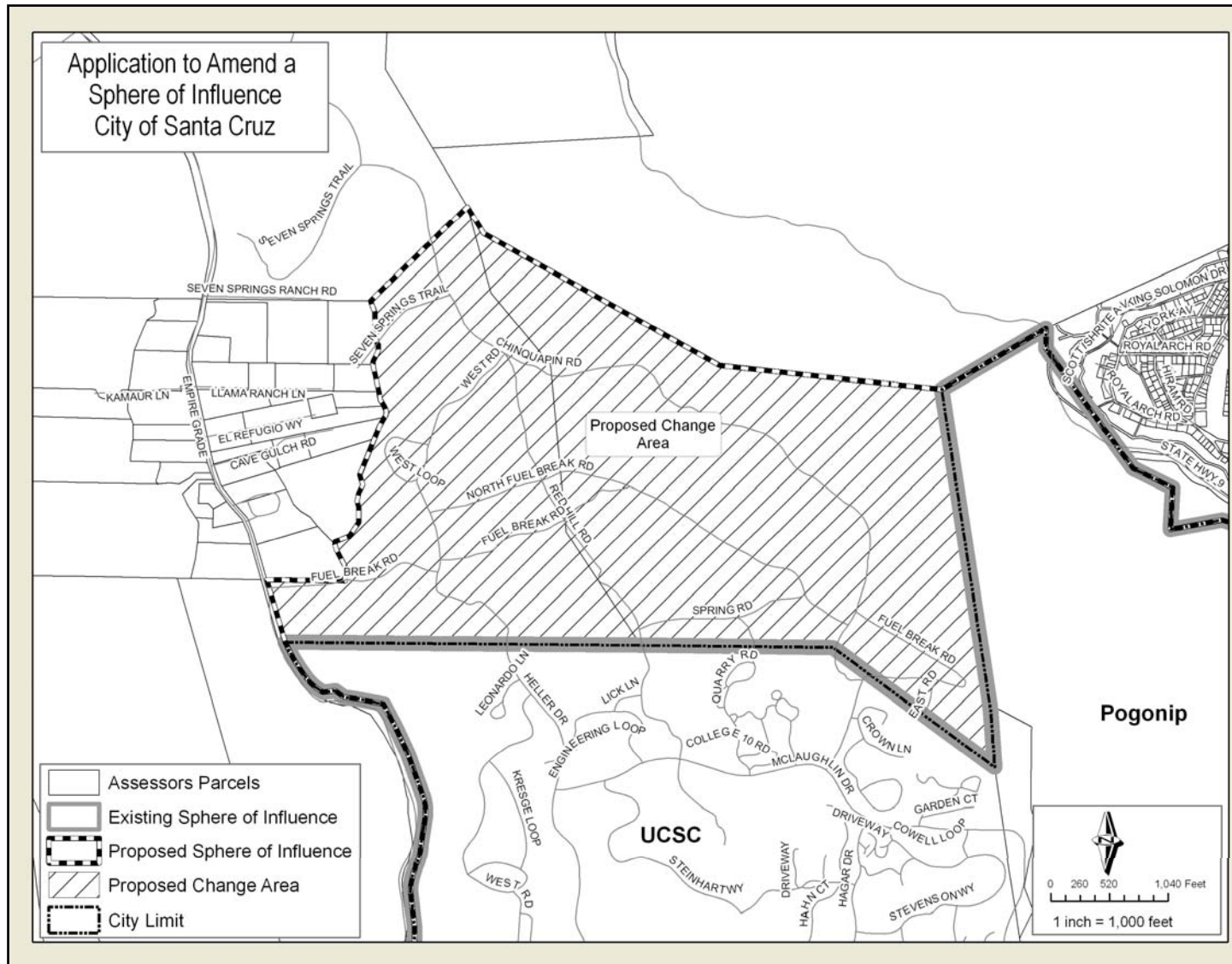


**FIGURE 2: UCSC Campus and Facilities**

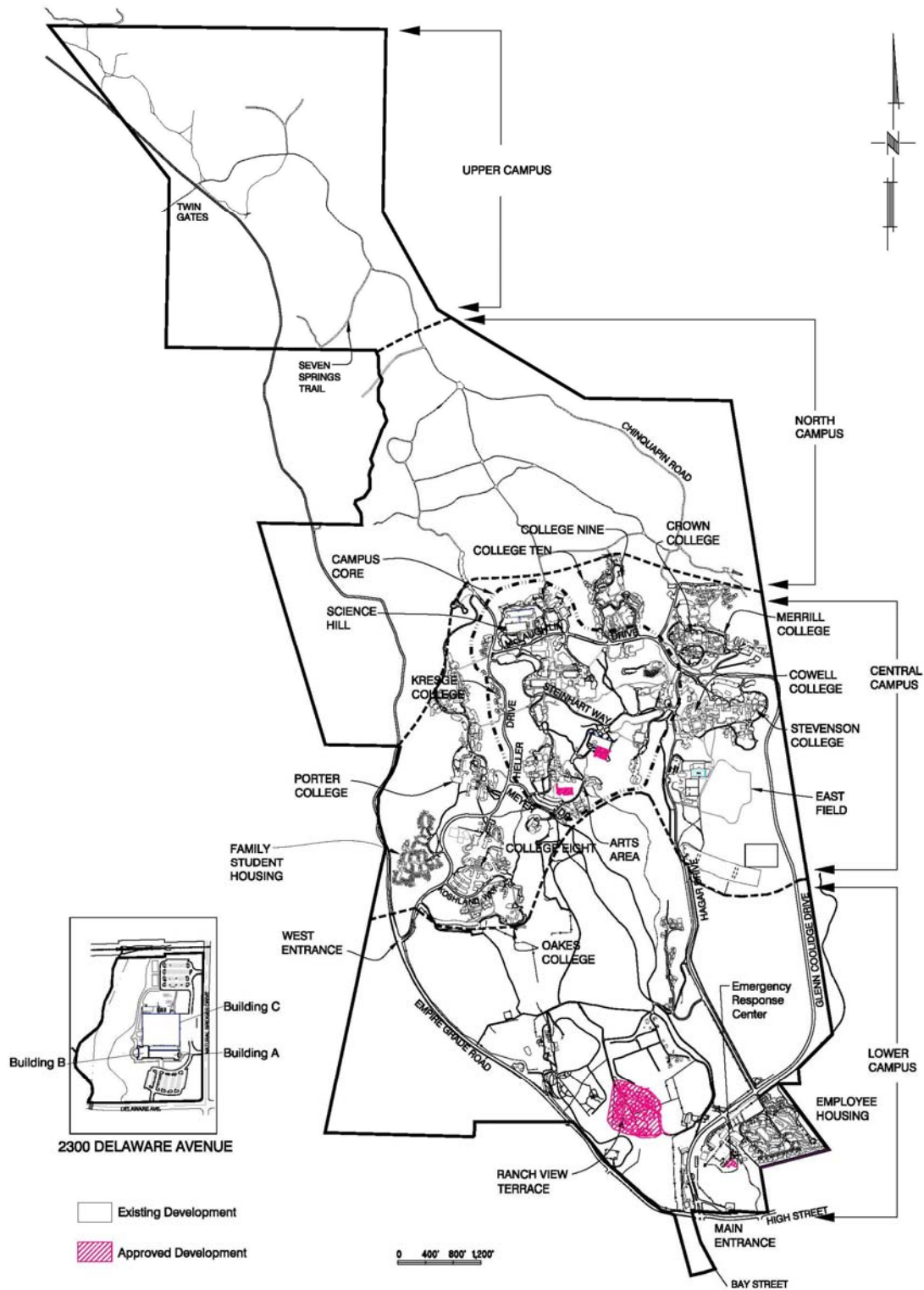




**FIGURE 3: Project Site**



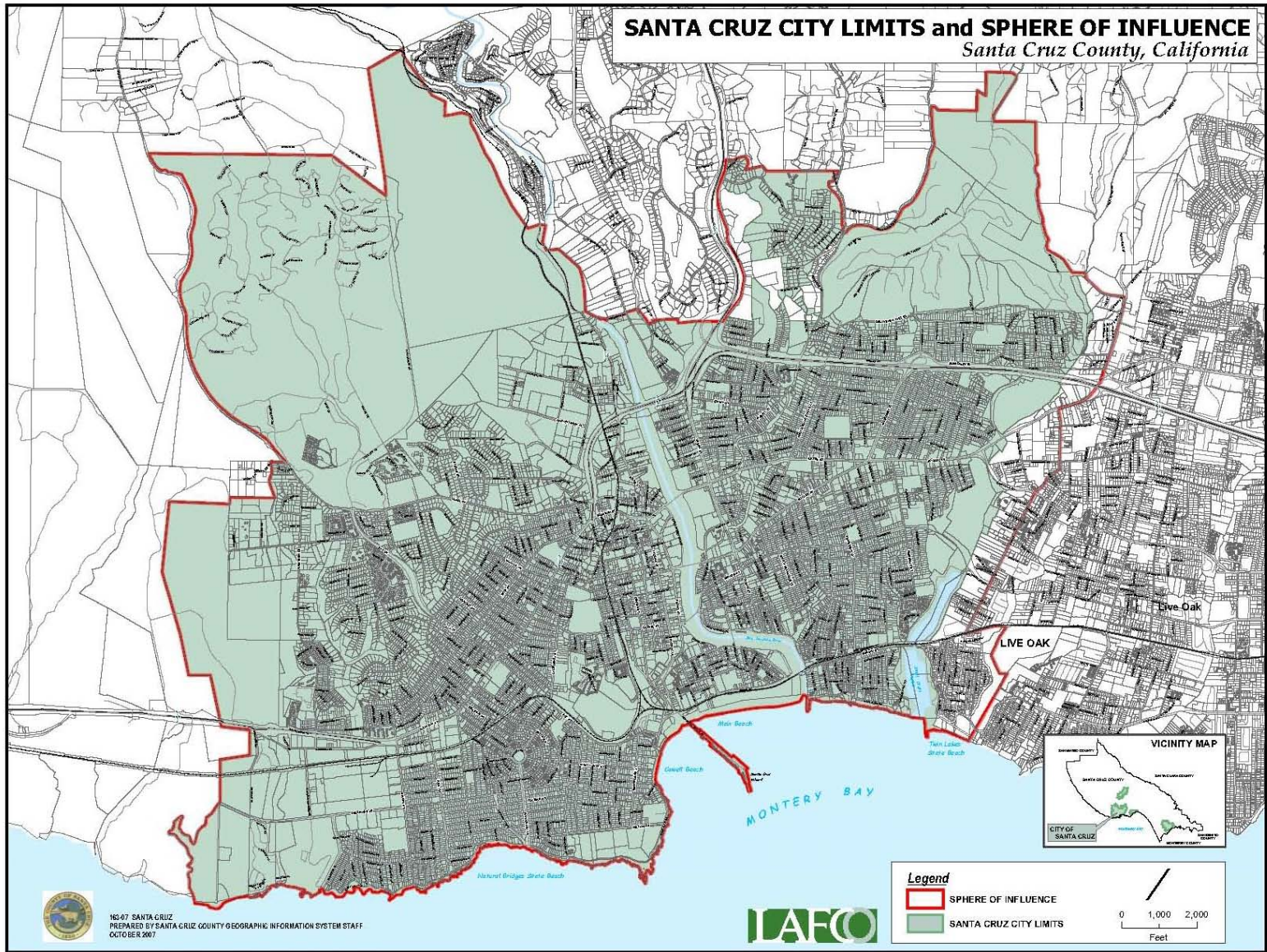
**FIGURE 4: UCSC Campus Areas & Development**



**SOURCE:** URS Corporation, 2005 LRDP EIR



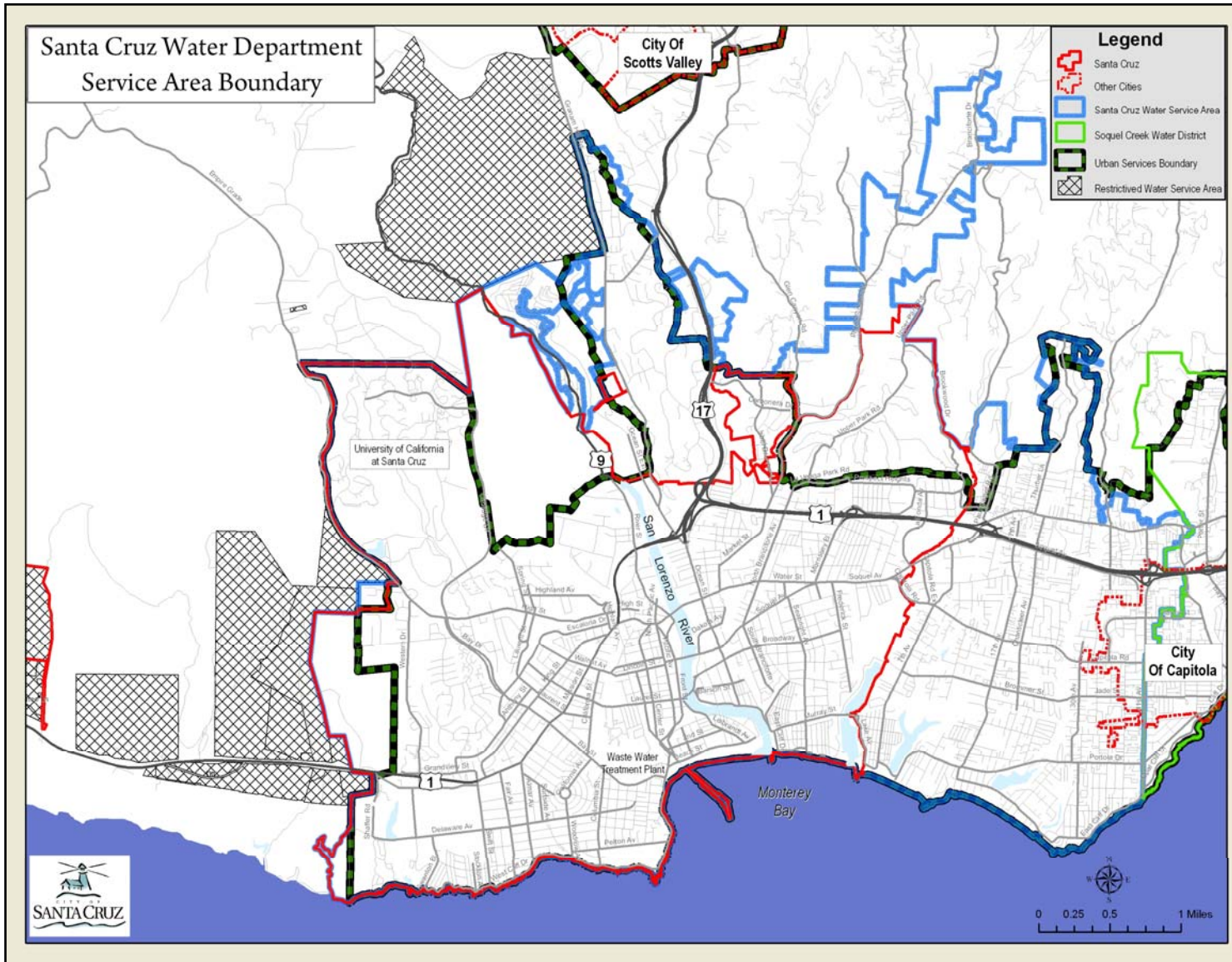
**FIGURE 5: City of Santa Cruz Sphere of Influence**



**SOURCE:**  
Santa Cruz  
LAFCO

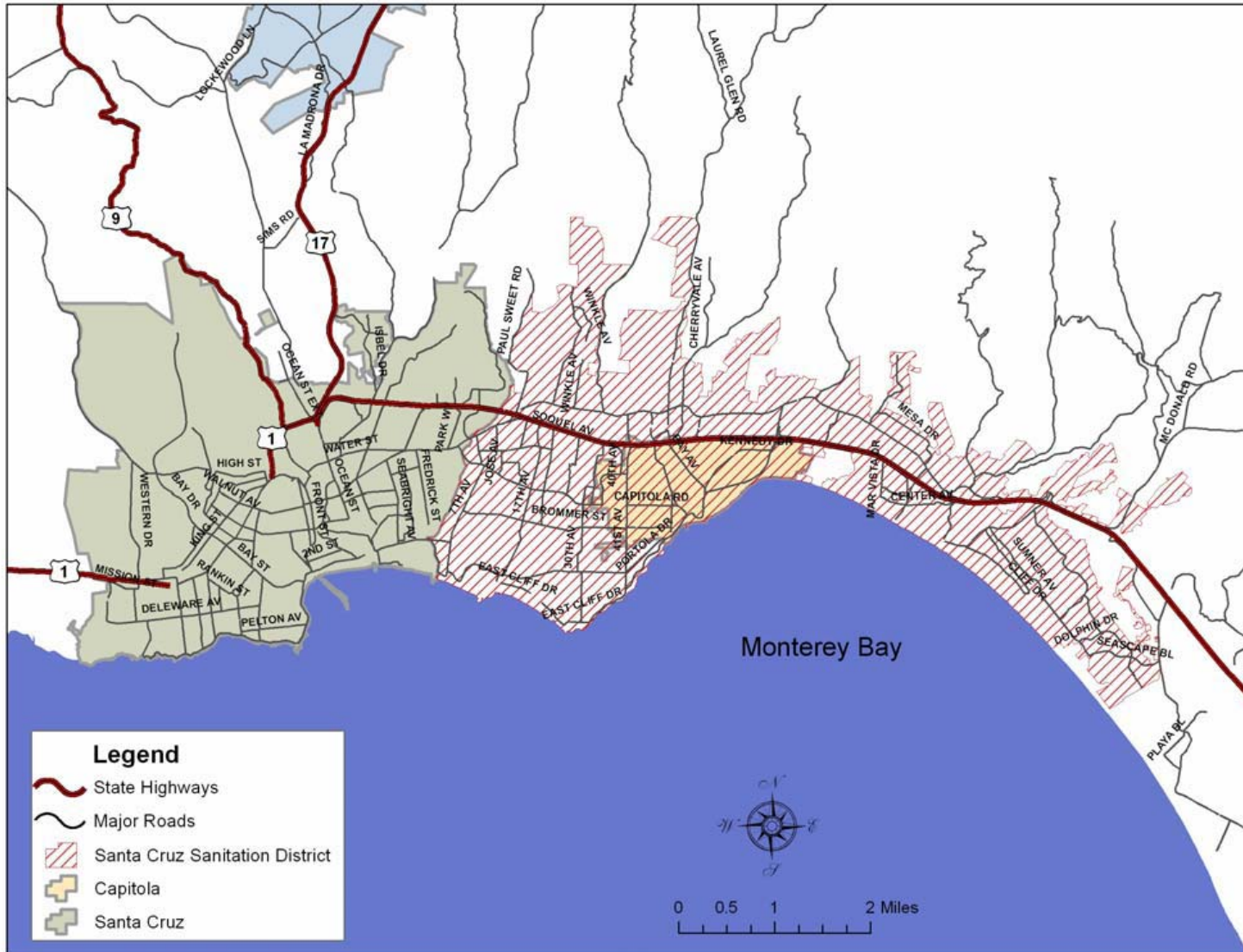


**FIGURE 6: City Water Service Area**



**SOURCE:** City of Santa Cruz

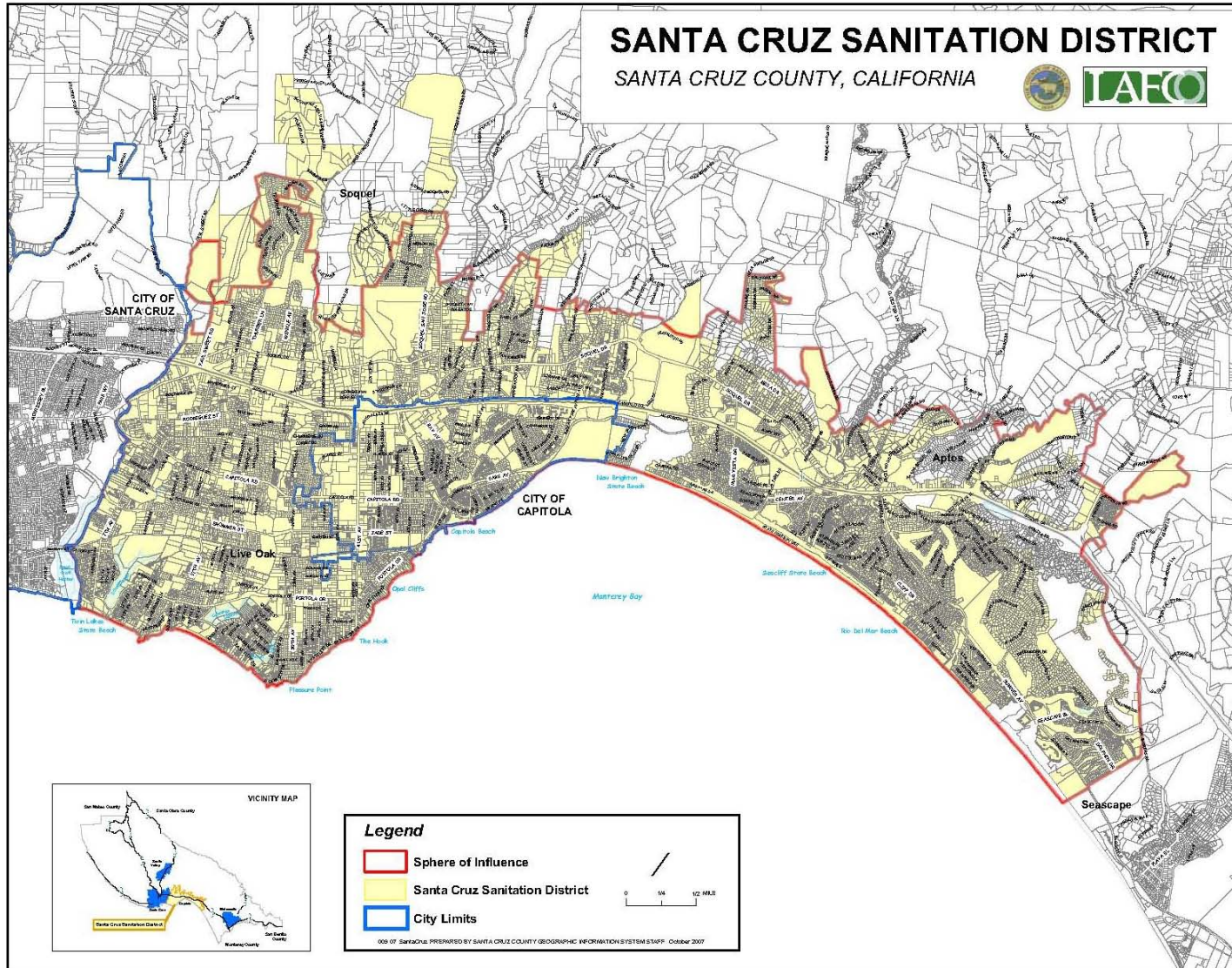
**FIGURE 7: Areas Served by the City Wastewater Treatment Plant**



**SOURCE:** City of Santa Cruz



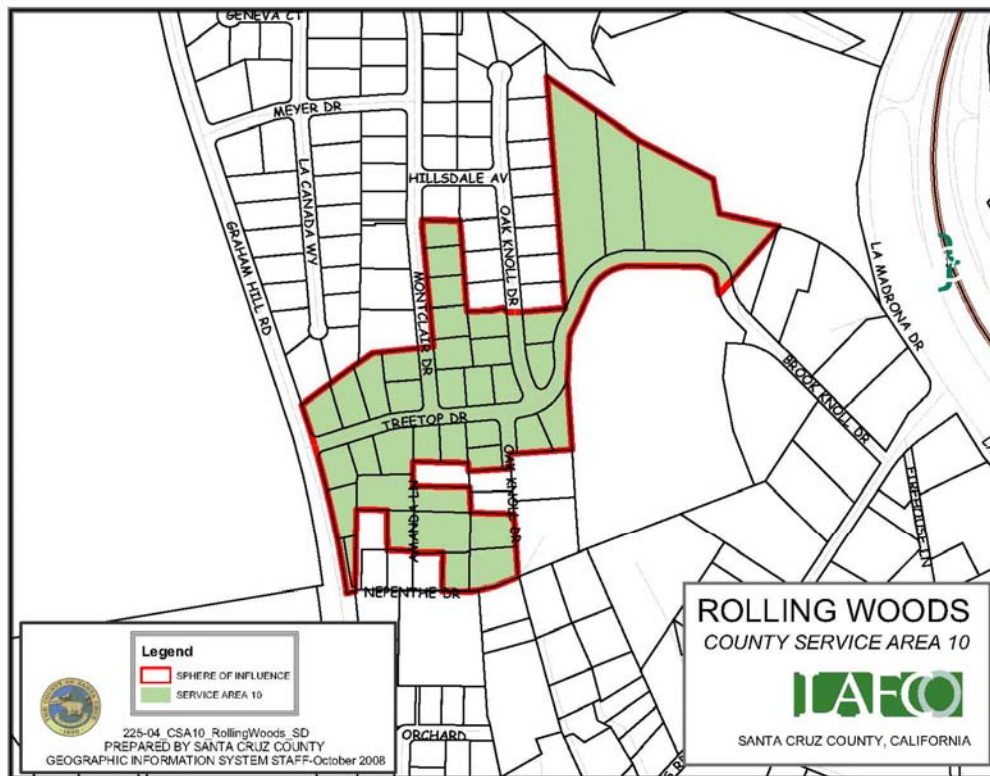
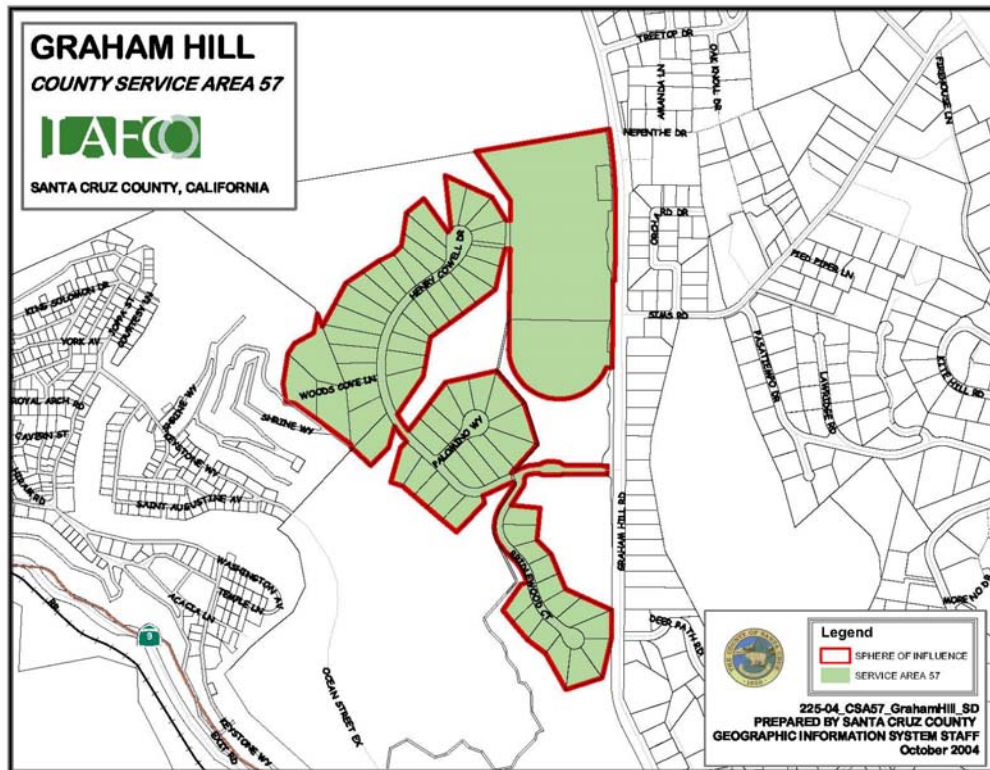
**FIGURE 8: Santa Cruz Sanitation District**



**SOURCE:** Santa Cruz LAFCO

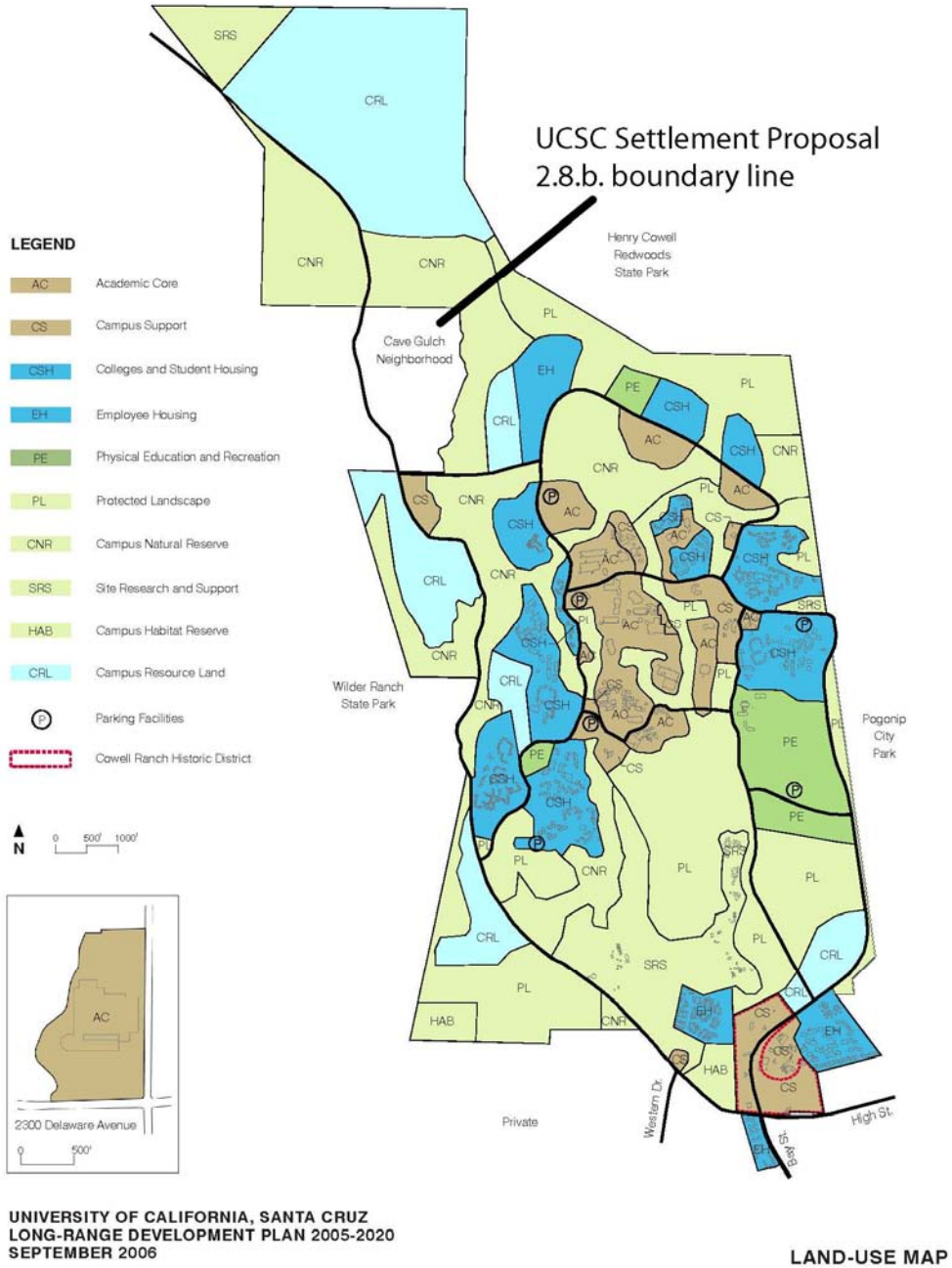


**FIGURE 9: County Service Areas**

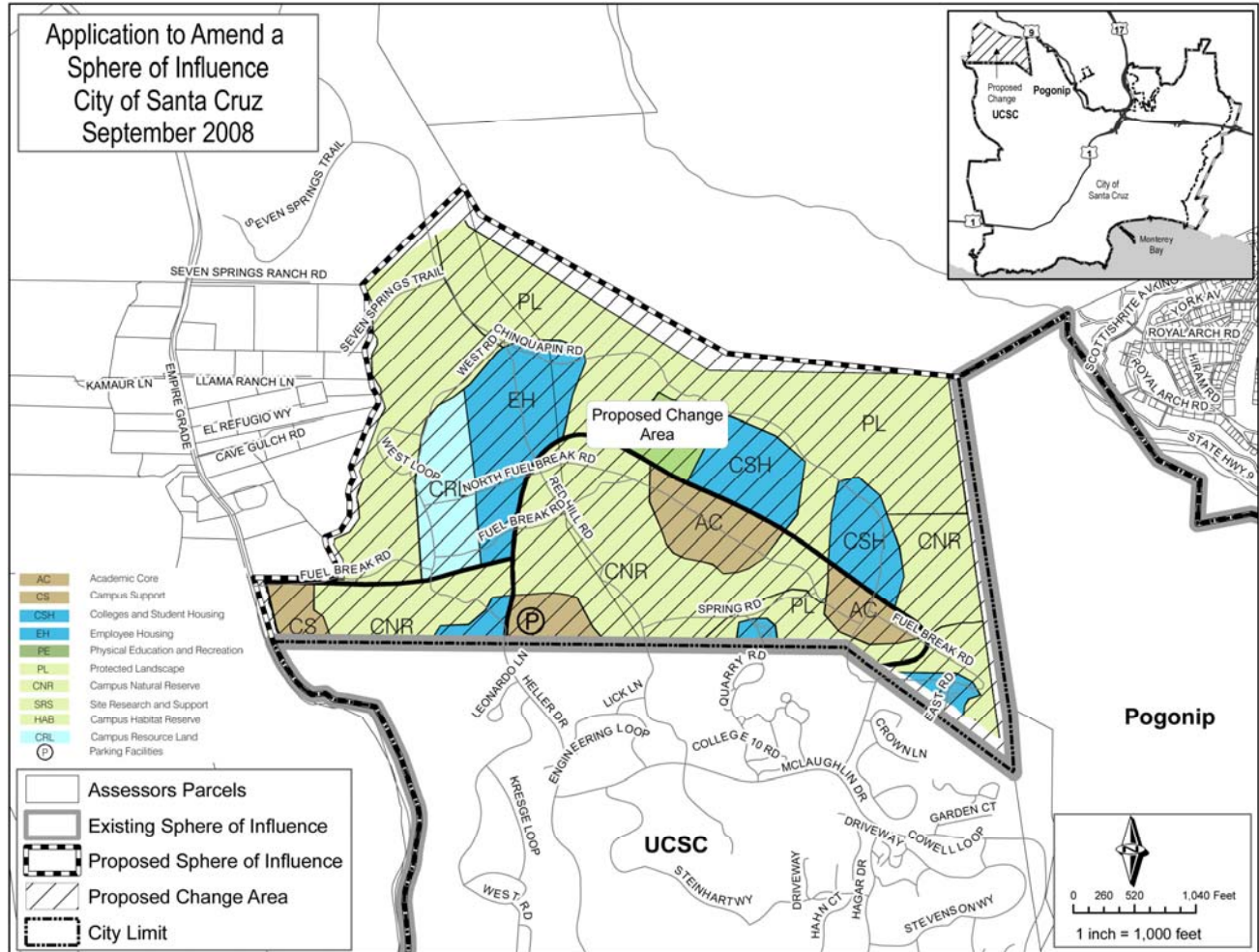


**SOURCE:** Santa Cruz LAFCO

**FIGURE 10: UCSC 2005 LRDP Land Use Map**



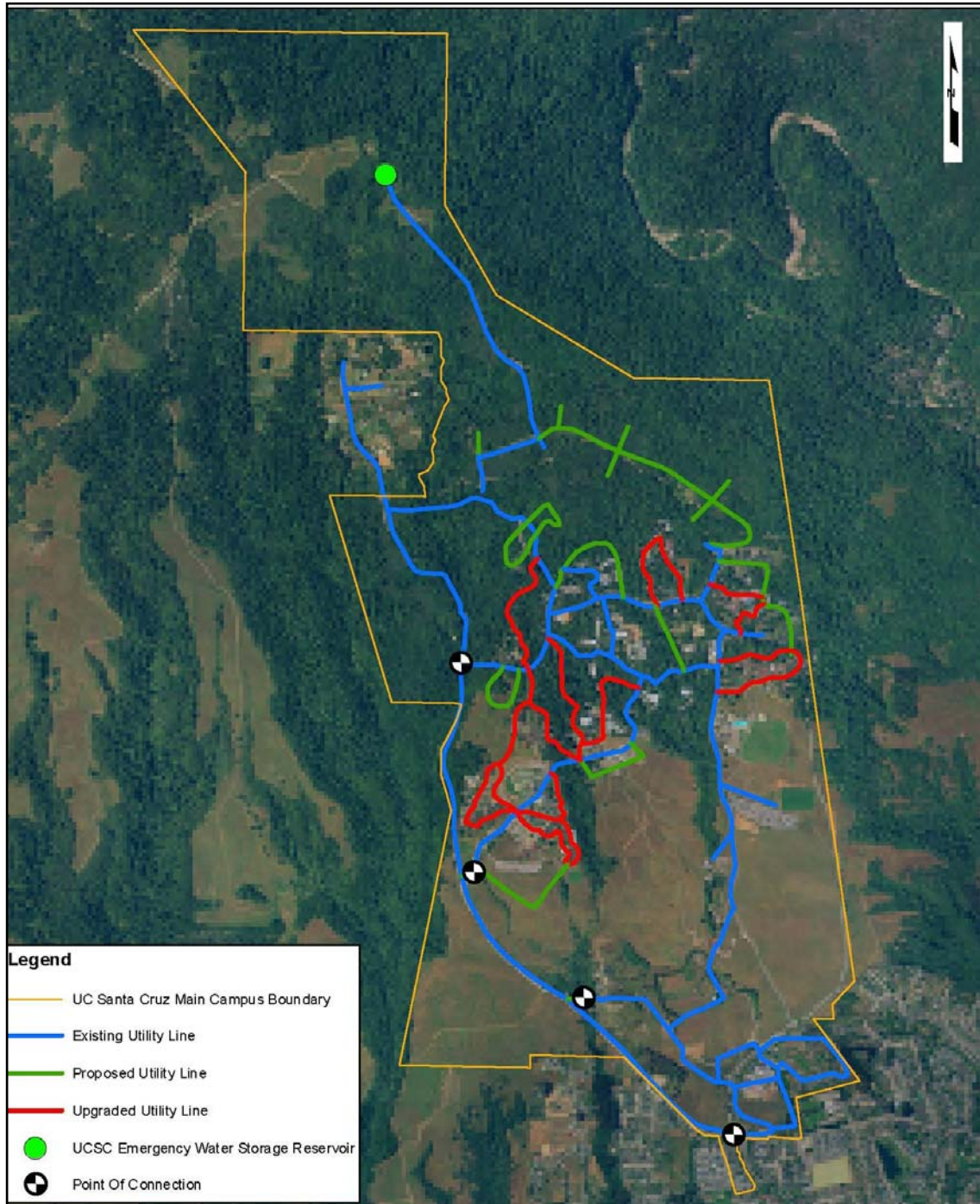
**FIGURE 11: Sphere of Influence Amendment Area  
With 2005 LRDP Land Use Map**





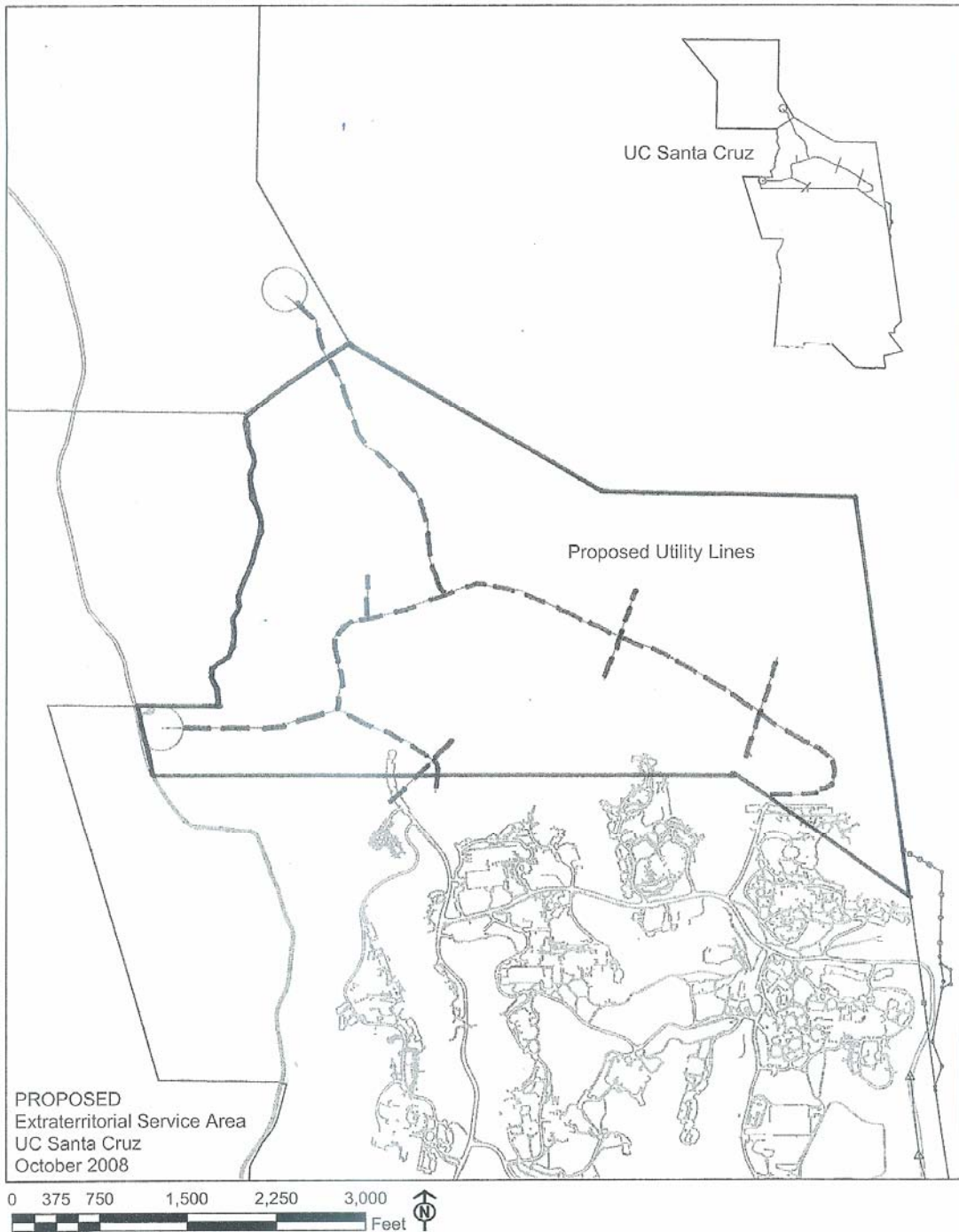
## FIGURE 12: UCSC On-Campus Domestic Water

### System Improvements



**SOURCE:** URS Corporation, 2005 LRDP EIR

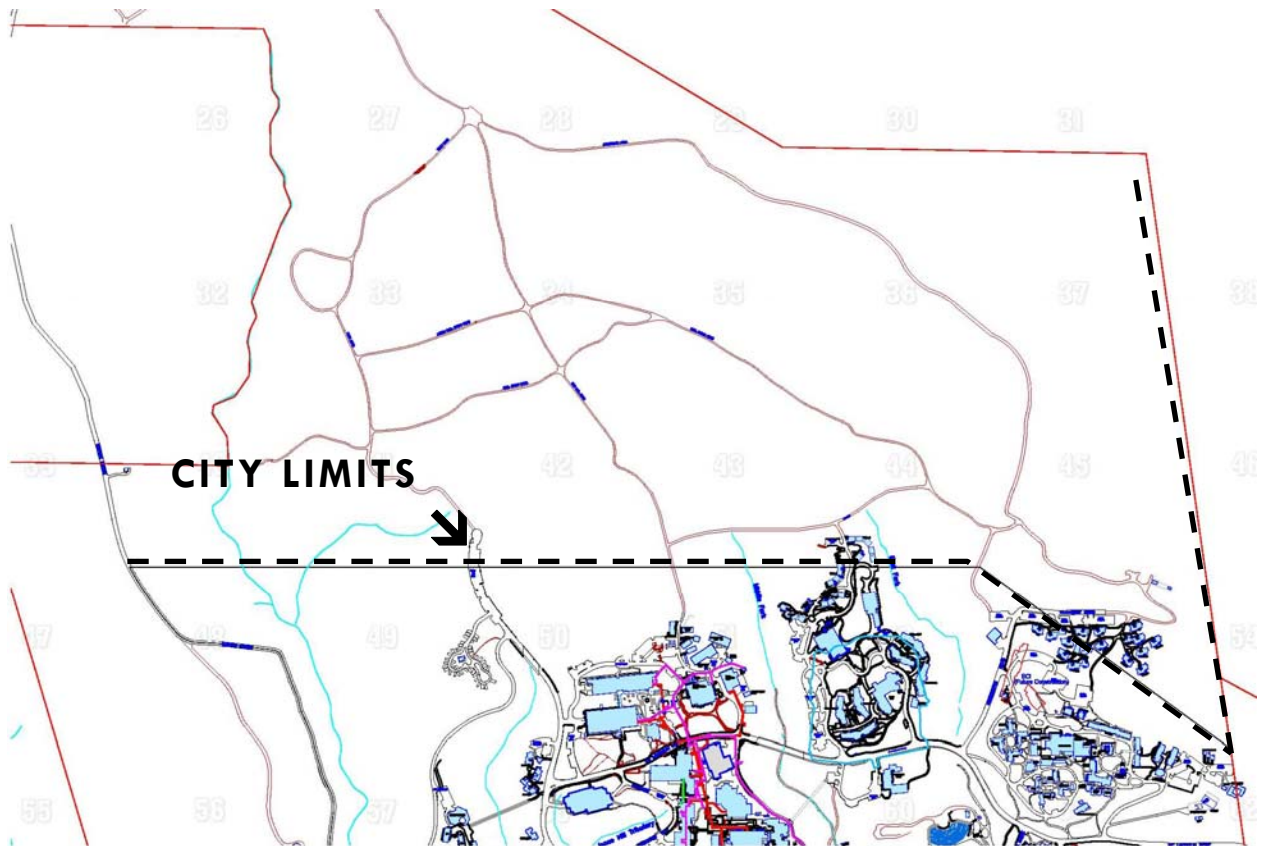
**FIGURE 13: Proposed Utility Line Extension**



**SOURCE:** University of California Santa Cruz

**FIGURE 14: Existing UCSC Development**

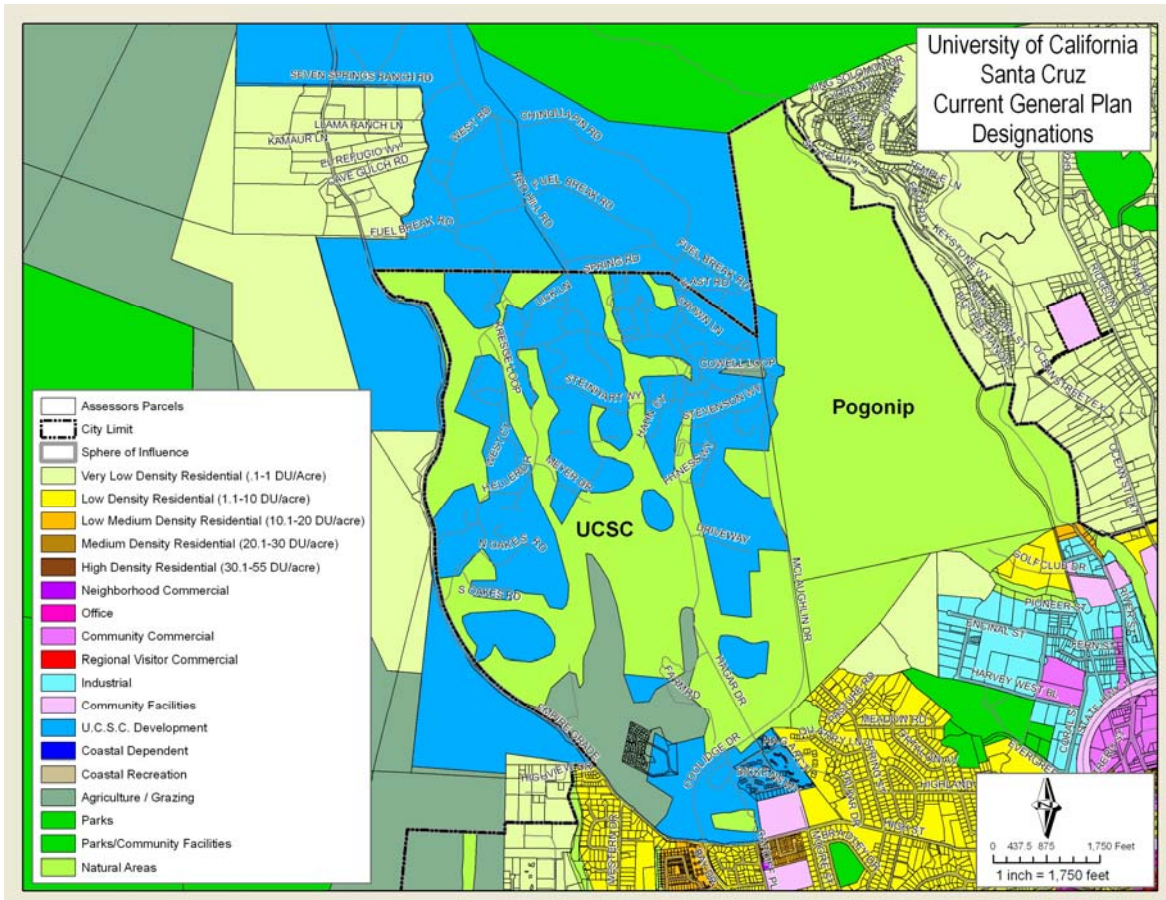
**Within Project Area**



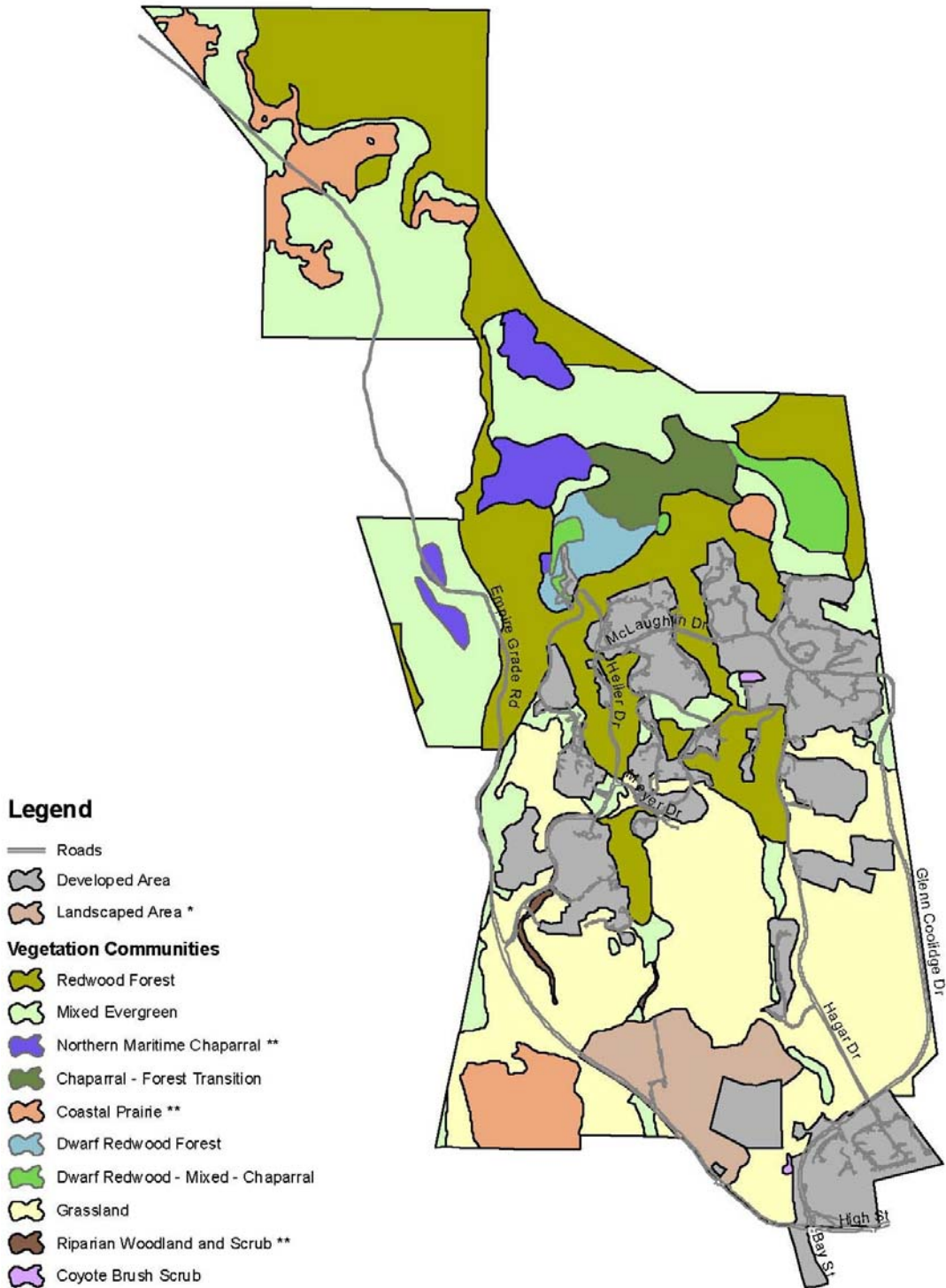


**FIGURE 15: City of Santa Cruz**

**General Plan Designations**

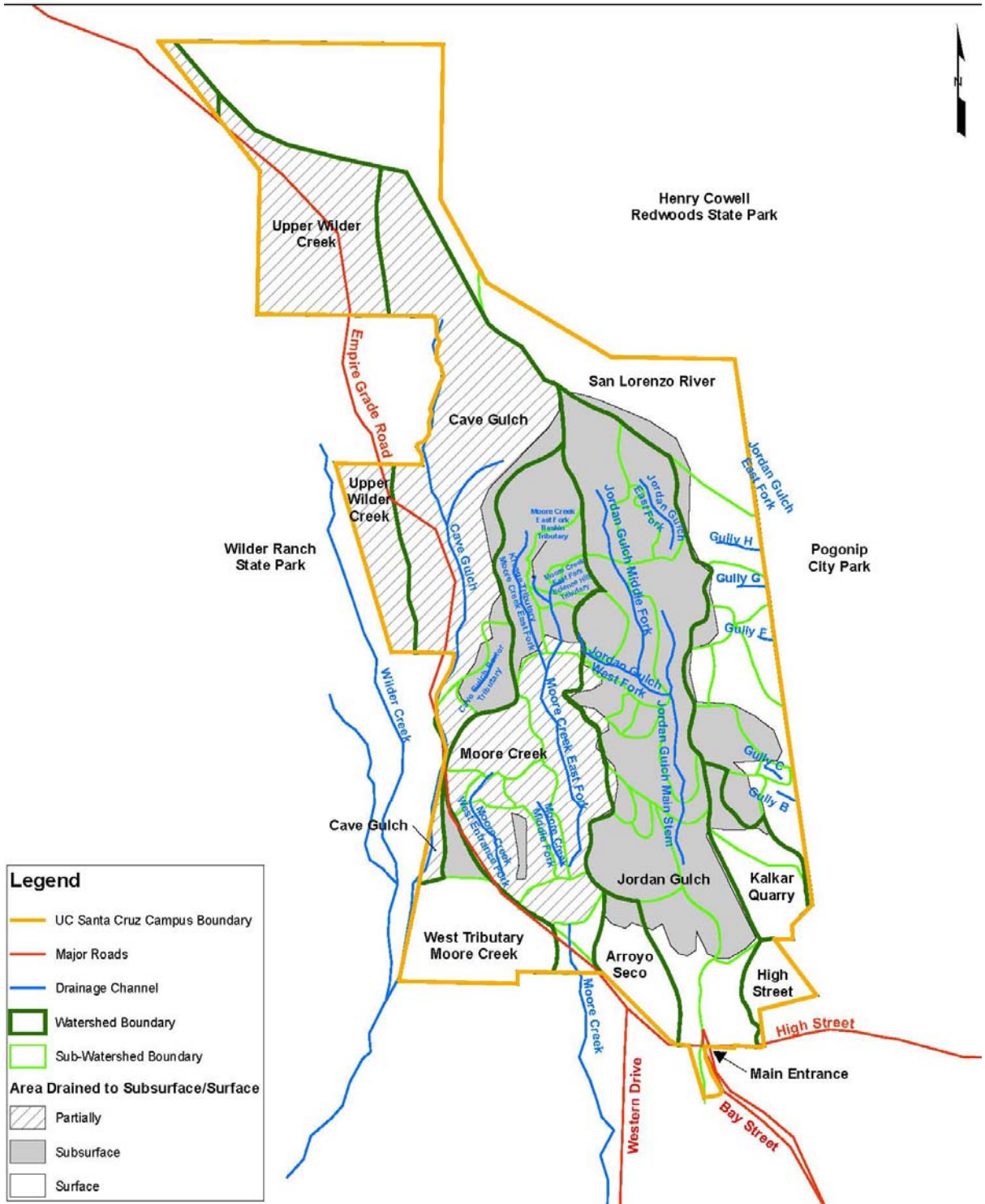


**FIGURE 16: UCSC On-Campus Habitats**



**SOURCE:** URS Corporation, 2005 LRDP EIR

**FIGURE 17: UCSC On-Campus Watersheds**

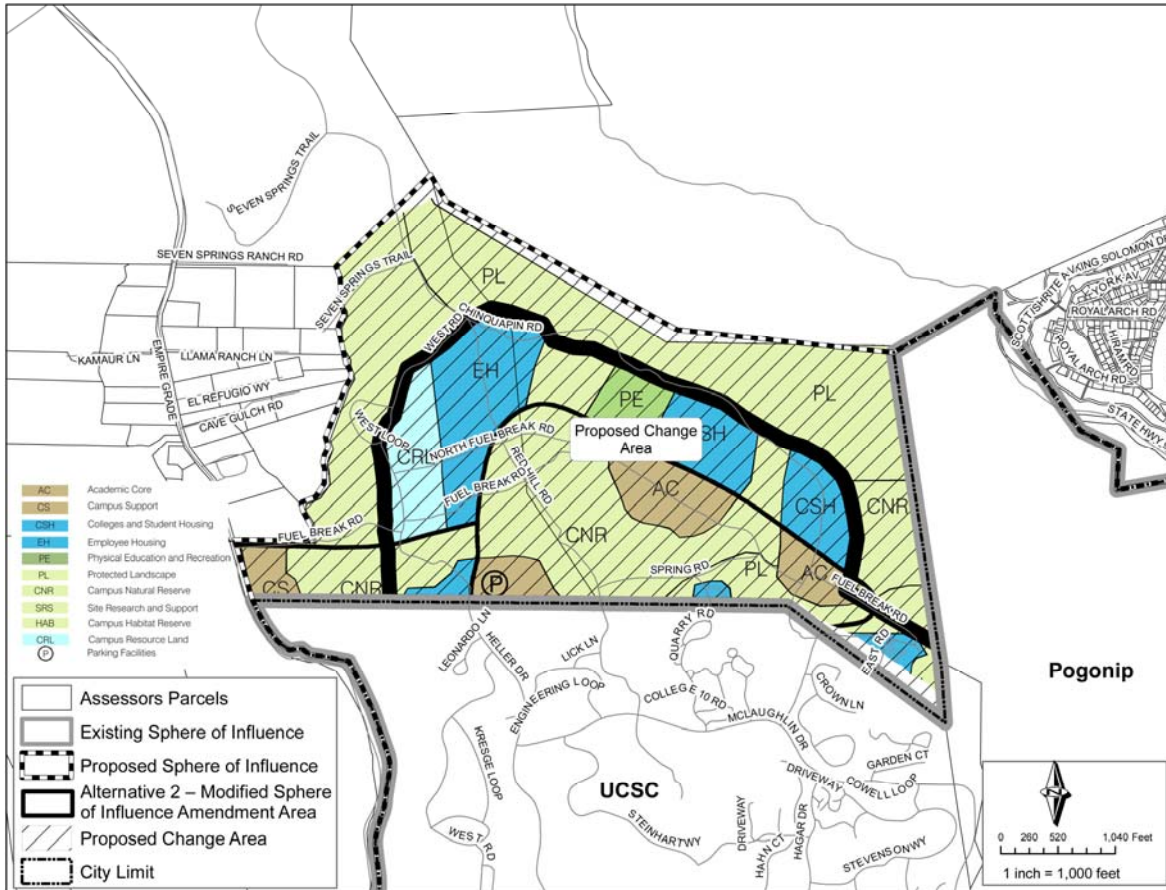


**SOURCE:** URS Corporation, 2005 LRDP EIR



**FIGURE 18: Alternative 2: Modified Sphere of**

**Influence Amendment Area**



**NOTICE OF PREPARATION  
And  
COMMENT LETTERS**

ZONING/PERMIT PROCESSING  
831/420-5100 • FAX 831/420-5101  
INSPECTION SERVICES  
831/420-5120 • FAX 831/420-5101



COMPREHENSIVE PLANNING,  
HOUSING AND  
COMMUNITY DEVELOPMENT  
831/420-6250 • FAX 831/420-6458

PLANNING DEPARTMENT  
809 Center Street • Room 206 • Santa Cruz, CA 95060 • cityplan@ci.santa-cruz.ca.us  
JULIANA REBAGLIATI, DIRECTOR

November 3, 2008

## NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

**RE: City of Santa Cruz Sphere of Influence Amendment**

To Interested Agencies and Persons:

The City of Santa Cruz will be the lead agency and will prepare an Environmental Impact Report on the project described herein. Please respond with written comments regarding the scope and the content of the EIR as it may relate to your agency's area of statutory responsibility or your areas of concern or expertise. Your agency may need to use the EIR prepared by our agency when considering your permit or other approval for the project, if any is required. Responses are due within 30 days of the receipt of this Notice, as provided by State law. The contact person's name and address are listed below. Please include the name and phone number of a contact person at your agency in your response.

The project description, location and potential environmental effects are presented below. An Initial Study has not been prepared. In accordance with State CEQA Guidelines section 15060(d), the City has determined that an EIR will be required for the project, and the probable environmental effects of the project that will be evaluated in the EIR are described in paragraph 4 below.

1. **Project Location.** The approximate 374-acre site is located on the University of California Santa Cruz (UCSC) campus north of the existing developed portion of the campus (see Figure 1). The site is located within the unincorporated area of Santa Cruz County contiguous to the City's jurisdictional limits. Known as the "North Campus" area, the site is primarily undeveloped with the exception of a network of UCSC constructed fire break gravel roads, underground water lines, a water system pump station, fire hydrants, and abandoned water tanks. In addition, portions of UCSC's Colleges 9/10 and Crown Merrill Apartment complex are located within the proposed sphere of influence area and are presently being served by the City's Water Department. Campus development and expansion is planned for this area in the University's 2005 Long Range Development Plan.
2. **Project Description.** The proposed project consists of an application to the Santa Cruz Local Agency Formation Commission (LAFCO) to amend the City of Santa Cruz's Sphere of Influence (SOI) to include the 374-acre portion of the UCSC campus as shown on Figure 1 for the purpose of providing extraterritorial water and sewer services. The



City of Santa Cruz has submitted an application to LAFCO for the SOI amendment. Upon completion of environmental review, LAFCO will consider the SOI request from the City as well as the request for provision of extraterritorial services concurrently submitted by UCSC to LAFCO. The City of Santa Cruz was determined to be the lead agency for environmental review. LAFCO and the University of California are responsible agencies.

3. **Background.** On September 21, 2006, the University of California Regents adopted the *2005 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 (see Figure 2). 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 approximately 8,242,400 gross square feet of development by academic year 2020-2021.

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 and that resolved the lawsuits. The Settlement Agreement was entered as a final judgment of the Court, thereby superseding the previous court ruling.

The following key provisions of the settlement agreement will be implemented by UCSC and the City in connection with development under the 2005 LRDP:

- **Enrollment:** Full-time equivalent (FTE) on campus 3-quarter average (fall-winter-spring) enrollment for undergraduates will not exceed 17,500, and total on-campus combined graduate and undergraduate enrollment is projected to not exceed 19,480 in academic year 2020-2021.
- **Housing:** UCSC will provide 7,125 beds for student enrollment up to 15,000 and will provide additional housing to accommodate 67 percent of new-student enrollment above 15,000, resulting in a total of 10,125 available beds for an enrollment of 19,500. The 2005 LRDP originally called for UCSC to provide housing for 50 percent of undergraduates and 25 percent of graduate students during the life of LRDP for a total of 9,190 beds.
- **Water and Sewer Services:** The City and UCSC will concurrently apply to the Santa Cruz Local Agency Formation Commission (LAFCO) for a Sphere of Influence amendment (City application) and for extraterritorial water and sewer services (University application) for an area identified as the North Campus (shown on Figure 1) to allow for the development of 3,175,000 gross square feet of additional building space as described in the 2005 LRDP. In addition, UCSC

will pay a fee for increased water use (equivalent to the City's "system development charges") to cover its proportional share of the City's development of new sources of water supply. Additionally, UCSC will comply with any service area-wide water restrictions and mandatory use curtailment imposed by the City in response to a declaration of water shortage emergency and/or if the City establishes a service area-wide moratorium on new connections because of a water shortage emergency.

- *Traffic*: UCSC will pre-pay its proportional share of roadway infrastructure improvements associated with the addition of 3,900 average daily trips (ADT) to the main campus (for a total of 28,700), generated by the 2005 LRDP. UCSC will also pay for existing ADT related to its 2300 Delaware Avenue property, and for new ADT at the Marine Sciences campus as ADT-generating development is approved at the rate then in effect. The ADT will be based on the City's Traffic Impact Fee program and will be equal to the fee paid by private developers.
- *2005 LRDP EIR*: UCSC will not rely on the 2005 LRDP EIR water or housing analyses for purposes of approving projects implementing the 2005 LRDP. (Because the housing-related concerns raised in the LRDP litigation involved only *off-campus* housing, the City understands this portion of the settlement only to prohibit reliance on the LRDP EIR housing analysis as it relates to off-site housing.) The adequacy of traffic mitigation is resolved by the Settlement Agreement.

4. **Probable Environmental Effects of the Project.** After completing a preliminary review of the project, as described in Section 15060 of the CEQA Guidelines, the City has determined that an EIR should be prepared to assess the potential environmental impacts of this project. Based on this preliminary review, the City has identified the following probable effects of the project, which will be addressed in the EIR, as described below: water supply, wastewater service, growth inducement and secondary impacts of development, as well as a review of project consistency with relevant LAFCO policies. The EIR will analyze these issues and provide a determination of impact significance. At present, the City lacks sufficient information to make conclusive determinations on significance. The City will consider the written comments received in response to this Notice of Preparation in determining the topics and scope to be assessed in the Draft EIR.

*Water Supply.* The EIR will analyze the impacts of project water demand on the City's water supply during normal and drought conditions. The analyses will draw from existing adopted City plans, including but not limited to the *Integrated Water Plan* and the *2006 Urban Water Management Plan*, and will take into account legal requirements set forth in recent court cases interpreting CEQA. The Cumulative Impacts section will consider other on-campus development, as well as off-campus UCSC development and other development/growth within the City's water service area.

*Wastewater Service.* The EIR will analyze the impacts of project wastewater generation associated with the project upon the City's wastewater treatment capacity.

*Land Use.* The EIR will include a review of project consistency with LAFCO policies as well as City policies, the 2005 LRDP, and the Settlement Agreement.

*Growth Inducement and Secondary Environmental Impacts.* Implementation of the proposed project would enable UCSC to move forward with plans to develop the North Campus as set forth in its adopted 2005 LRDP and as contemplated by the Settlement Agreement. Land use designations in the project area include: Colleges and Student Housing; Employee Housing; Physical Education and Recreation; Campus Support; Academic Core; Campus Resource Land; Campus Natural Reserve; and Protected Landscape (see Figure 2). As set forth in the Settlement Agreement, the project area would allow for development of 3,175,000 gross square feet of development as described in the 2005 LRDP. The secondary impacts of growth and development will be summarized for the topics listed below.

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazardous Materials
- Housing
- Hydrology and Water Quality
- Noise
- Public Services
- Transportation and Traffic

5. **Scoping Meeting.** The City of Santa Cruz will hold an EIR scoping meeting on November 19, 2008 to take oral comments on the EIR Scope of Work. The meeting will be held at 6:00 PM at the Santa Cruz Civic Auditorium, 307 Church Street, room ABC, Santa Cruz, CA 95060.

6. Contact Person Name and Phone Number.

Ken Thomas, City of Santa Cruz Planning and Community Development Department  
809 Center Street, Rm. 206  
Santa Cruz, CA 95060  
Phone: 831 420-5148

Responses to this Notice of Preparation are due by December 2, 2008.

Sincerely,

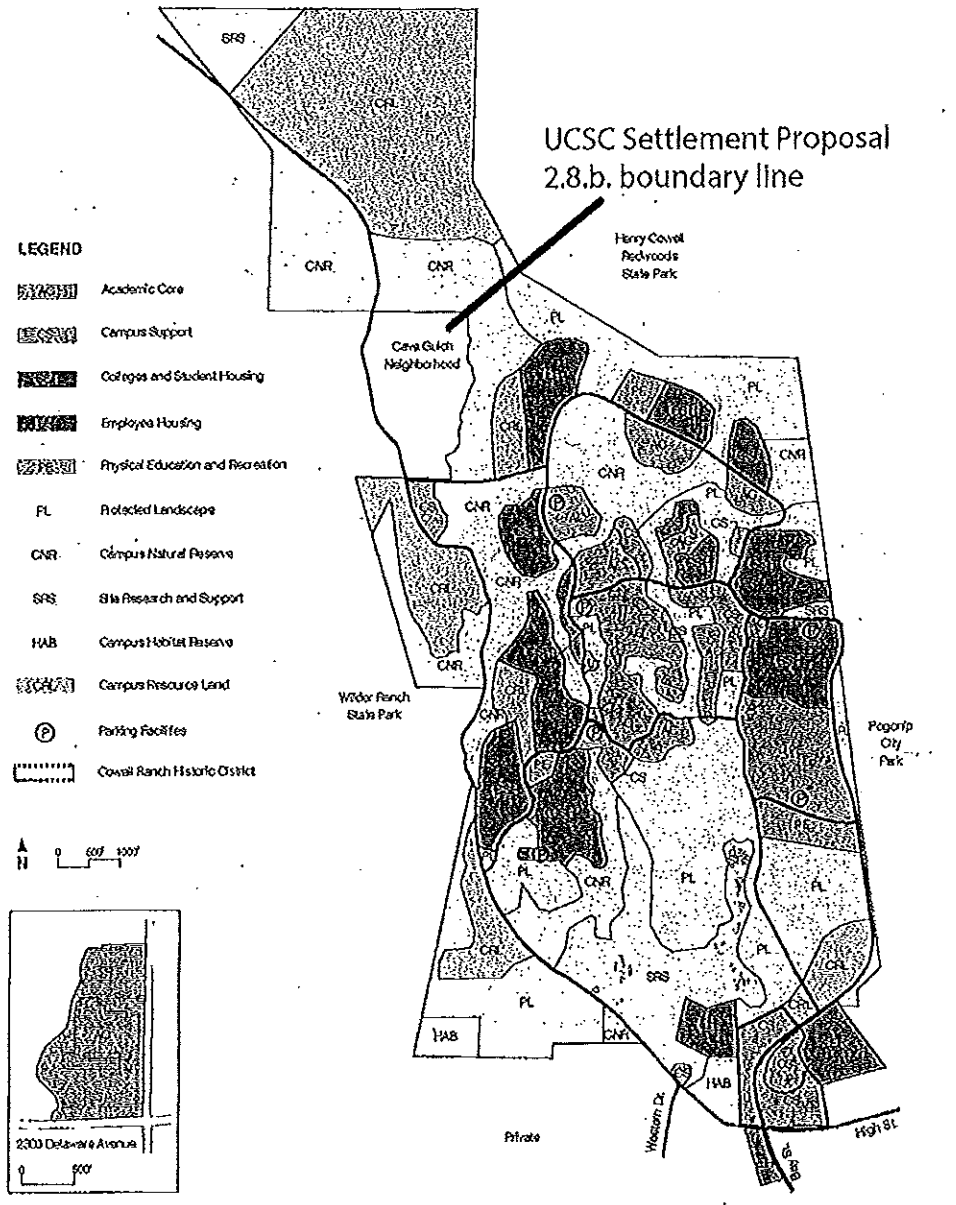


Ken Thomas  
Principal Planner

Attachment: Figures



FIGURE 2 -- UCSC 2005 LRDP LAND USE MAP



UNIVERSITY OF CALIFORNIA, SANTA CRUZ  
 LONG-RANGE DEVELOPMENT PLAN 2005-2020  
 SEPTEMBER 2006

LAND-USE MAP





**Stephanie Strelow**

---

**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Thursday, November 13, 2008 3:44 PM  
**To:** steph@strelowconsulting.com; Dean Fitch  
**Subject:** FW: UCSC Wetlands Delineation

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

---

**From:** D'Avignon, Mark R SPN [mailto:Mark.R.D'Avignon@usace.army.mil]  
**Sent:** Thursday, November 13, 2008 3:03 PM  
**To:** Ken Thomas  
**Cc:** don@bind.com; Kerns, Jack SPN; Brown, Gregory G SPN  
**Subject:** FW: UCSC Wetlands Delineation

Mr. Thomas,

It has come to my attention that the University of California at Santa Cruz is planning a Long Range Development of the UCSC campus. The intention of this email is to provide you with some guidance regarding Corps jurisdiction.

For planning purposes, we usually recommend that a wetland delineation be verified by the Corps for the entire project area. If the University is planning to develop and place fill material within wetlands or other waters of the U.S., they will require a permit from the Corps of Engineers. You can obtain information on our permit process from our website. It makes sense from a planning and environmental prospective to have the entire project area mapped so that jurisdictional areas can be identified and avoided if possible. It will also help us assess adverse effects and compensatory mitigation should a Corps permit be required for the proposed development.

If you have questions, feel free to call me at the numbers below. The links below are to our website.

Best regards,

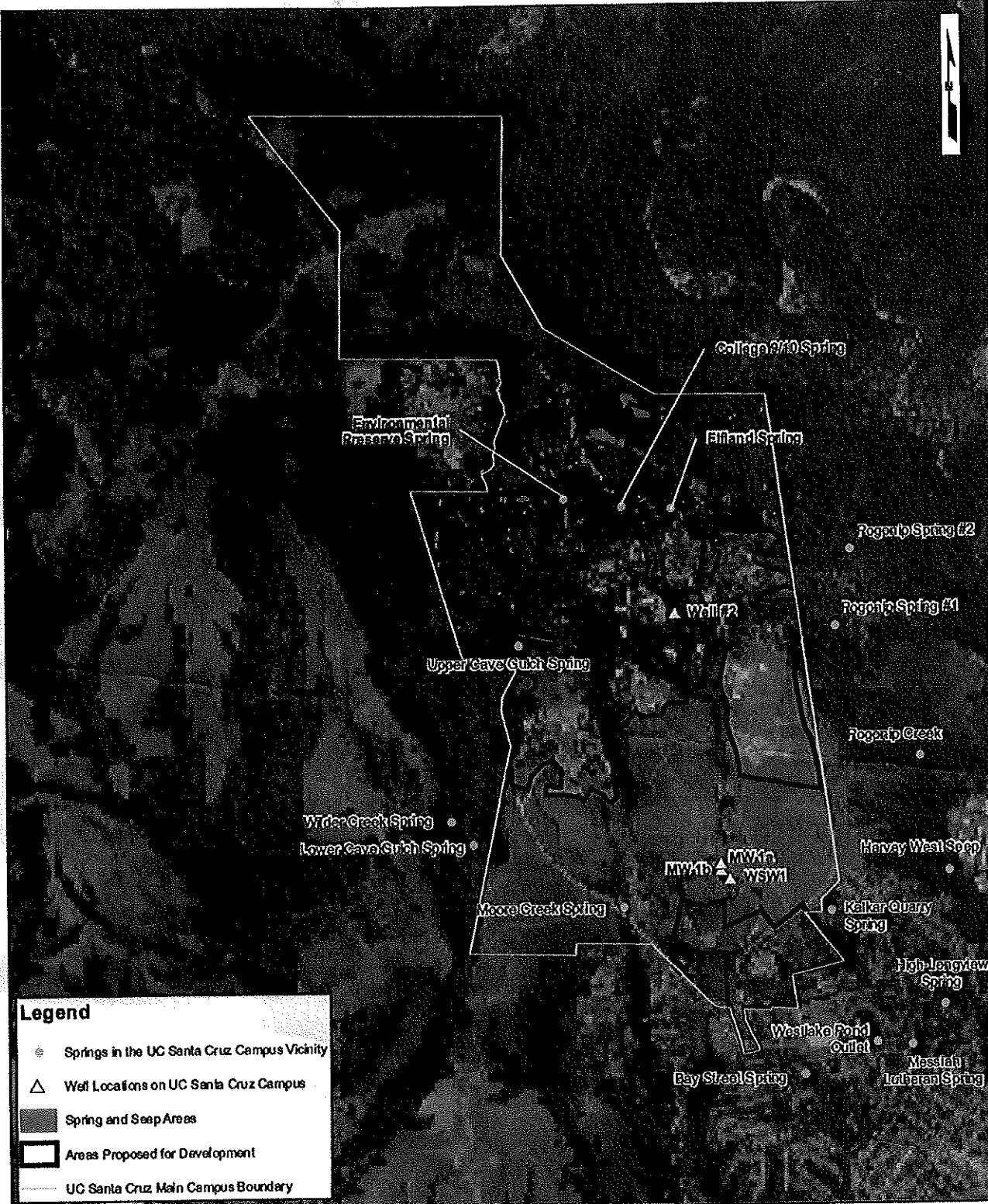
Mark

<http://www.spn.usace.army.mil/Permits/index.html>

Mark D'Avignon, South Branch Chief  
U.S. Army Corps of Engineers  
San Francisco District, Regulatory Division  
1455 Market Street, 16th Floor  
San Francisco, CA 94103  
phone: (415) 503-6773, fax: (415) 503-6690

<http://www.spn.usace.army.mil/regulatory/>

8/3/2009



**Legend**

- Springs in the UC Santa Cruz Campus Vicinity
- ▲ Well Locations on UC Santa Cruz Campus
- Spring and Seep Areas
- Areas Proposed for Development
- UC Santa Cruz Main Campus Boundary

**SPRINGS AND SEEPS ON AND SURROUNDING UC SANTA CRUZ AND ON-CAMPUS WELLS**

October 2005  
28649607

UC Santa Cruz LROP EIR  
Santa Cruz, California



**FIGURE 4.8-4**

URS Corporation L:\Projects\UC\_Santa\_Cruz\_28649607\MOI\Current Working Documents\10708\Figure\_4.8-4\_Springs\_&\_Seeps\_in\_the\_UCSC\_Campus\_Vicinity.mxd DataTime: 10/10/2005 4:06:57 PM Name: dhwright

1,000 0 1,000 2,000  
Feet



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, California 93003



IN REPLY REFER TO:  
81440-2009-TA-0072

December 2, 2008

Ken Thomas, Principal Planner  
City of Santa Cruz  
Planning Department  
809 Center Street, Room 206  
Santa Cruz, California 95060

**Subject:** Notice of Preparation of an Environmental Impact Report Regarding the City of Santa Cruz Sphere of Influence Amendment at the University of California Santa Cruz, Santa Cruz County, California

Dear Mr. Thomas:

This letter is in response to the Notice of Preparation of an Environmental Impact Report, dated November 3, 2008, and received in our office on November 20, 2008, requesting our comments regarding the scope and content of the proposed environmental impact report (EIR). The City of Santa Cruz (City) has submitted an application to the Santa Cruz Local Agency Formation Commission (LAFCO) to amend the City's Sphere of Influence (SOI) to include a 374-acre portion (project area) of the University of California Santa Cruz (UCSC) campus for the purpose of providing extraterritorial water and sewer services. Upon completion of the environmental review, LAFCO will consider the SOI request from the City as well as the request for provision of extraterritorial services concurrently submitted by UCSC to LAFCO. Lands adjacent to the project area are known to support habitat and populations of the federally endangered Ohlone tiger beetle (*Cicindela ohlone*) and the threatened California red-legged frog (*Rana aurora draytonii*). The project area is within proposed critical habitat for the California red-legged frog (73 FR 53492).

The U.S. Fish and Wildlife Service's (Service) responsibilities include administering the Endangered Species Act of 1973, as amended (Act), including sections 7, 9, and 10. Section 9 of the Act prohibits the taking of any endangered or threatened species. Section 3(18) of the Act defines take to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 CFR 17.3) define harm to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species.

In a letter from the Service on January 11, 2006 (attached), we commented on the Draft 2005 Long Range Development Plan (LRDP) Draft Environmental Impact Report (DEIR) for UCSC. We identified concerns in the DEIR which include: 1) underestimating the effects of various development projects on federally listed species, 2) UCSC land use designations regarding the conservation of federally listed species, and 3) the lack of a comprehensive management plan for listed species at UCSC. We believe that the issues illustrated in the attached letter are concurrently related to this project and are still valid; therefore, we recommend that the City take these concerns into account during the development of the EIR.

As stated earlier, California red-legged frogs and Ohlone tiger beetles occur in the vicinity of the project area. In order for the Service to determine if the proposed project would impact these species or their habitat, we recommend that protocol surveys be conducted. Additionally, the possibility exists that other listed species could potentially occur within the project area. If it is determined that additional species may occupy the project area, then additional surveys would be recommended. Information regarding listed species potentially occurring within the project area can be obtained through the California Department of Fish and Game's California Natural Diversity Database, as well as through the Service at your request.

Exemptions to the prohibitions against take in the Act may be obtained through coordination with the Service in two ways. If a project is to be funded, authorized, or carried out by a Federal agency and may affect a listed species, the Federal agency must consult with the Service, pursuant to section 7(a)(2) of the Act. If the proposed project does not involve a Federal agency, but may result in the take of a listed animal species, the project proponent should apply to the Service for an incidental take permit, pursuant to section 10(a)(1)(B) of the Act. To qualify for the permit, you would need to submit an application to the Service together with a habitat conservation plan (HCP) that describes, among other things, how the impacts of the proposed taking of federally listed species would be minimized and mitigated and how the plan would be funded. A complete description of the requirements for a HCP can be found at 50 CFR 17.32.

While it is recommended that surveys be conducted within the project area for the purposes of this EIR scoping, the Service also recommends that UCSC focus on developing a land management plan that takes into account the entirety of listed species located on UCSC property. The piecemeal approach that UCSC has taken in terms of implementing individual development projects over time makes it difficult for the Service to adequately assess cumulative impacts, which could delay or impede UCSC plans in regards to future development where take of listed species is involved. A campus-wide inventory of locations and habitat of listed species would provide UCSC, involved agencies, and the Service with a landscape level view of potential concerns.

Once an inventory of listed species within UCSC property is developed, the Service would be able to provide better recommendations on the appropriate course of action regarding the development of a HCP. We believe that UCSC, involved agencies, and the Service would benefit from the development of a campus-wide HCP by providing a streamlined and uniform approach to evaluating and permitting projects based upon the needs of UCSC and the City,

while providing needed protection for listed species. Therefore, we recommend that the City support the development of a campus-wide HCP.

Additionally, we offer the following information and recommendations that the Service believes should be thoroughly addressed in the EIR:

1. A complete discussion of the purpose and need for the project.
2. A description of the proposed project, including all feasible alternatives and the no action alternative. This alternatives analysis is important to the Service's evaluation of the project, as feasible alternatives often reduce effects to biological resources.
3. Specific acreage and detailed descriptions of the amount and types of habitat that may be affected by the proposed project or project alternatives. Of particular concern will be the acreage of wetland and riparian habitats to be affected. This number should be verified by the Army Corps of Engineers or Environmental Protection Agency. Maps and tables should be included to assist in the evaluation of project-related effects.
4. Quantitative and qualitative information concerning plant and animal species associated with each habitat type.
5. A list of sensitive species that are found at or near the project site including candidate, proposed, and federally listed species, State listed species, and locally declining or sensitive species. A detailed discussion of these species, focusing on their site-related distribution and abundance and the anticipated effects of the project on these species, should be included.
6. An assessment of the effects on biological resources, including those that are direct, indirect, and cumulative. All aspects of the project should be included in this assessment.
7. An analysis of the effects of the project on the hydrology of associated drainages and any other riparian or wetland communities within the sphere of influence of the project. The effects of alteration of natural flows within the affected creeks and rivers should be thoroughly examined.
8. Specific mitigation plans to offset project-related effects, including cumulative habitat loss, degradation, and modification resulting from the direct, indirect, and cumulative consequences of the action. The objective of the mitigation plan should be to offset qualitative and quantitative project-induced loss of habitat values. Avoidance of the effects through project modification is considered mitigation. In particular, the Service recommends that impacts to wetlands, riparian corridors, and grasslands, which provide an important habitat to many species of wildlife, be avoided.
9. Identification of construction methods to be employed to prevent soil erosion, along with specific erosion and sedimentation control plans to be carried out throughout the life of the project.



Ken Thomas

4

Thank you for the opportunity to participate in the scoping process for the EIR. We look forward to providing you with further technical assistance regarding the conservation and protection of listed species at UCSC. If you have any questions regarding these comments, please contact Chad Mitcham of my staff at (805) 644-1766, extension 335.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. M. Pereksta', with a long horizontal flourish extending to the right.

David M. Pereksta  
Assistant Field Supervisor



# California Regional Water Quality Control Board

## Central Coast Region



Linda Adams  
Secretary for  
Environmental  
Protection

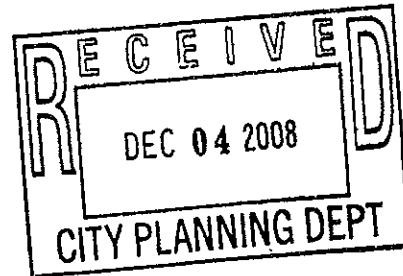
Arnold Schwarzenegger  
Governor

Internet Address: <http://www.swrcb.ca.gov/rwqcb3>  
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401  
Phone (805) 549-3147 • FAX (805) 543-0397

December 1, 2008

Mr. Ken Thomas  
City of Santa Cruz  
Planning and Community Development Dept.  
809 Center Street, Room 206  
Santa Cruz, CA 95060  
[KThomas@ci.santa-cruz.ca.us](mailto:KThomas@ci.santa-cruz.ca.us)

BY EMAIL AND REGULAR MAIL



Dear Mr. Thomas:

### **CITY OF SANTA CRUZ SPHERE OF INFLUENCE AMENDMENT, NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT**

Thank you for the opportunity to review and comment on the above referenced Notice of Preparation of an Environmental Impact Report (EIR). The Central Coast Regional Water Quality Control Board (Water Board) is a responsible agency under the California Environmental Quality Act (CEQA). Water Board staff understands that an EIR will be developed for the City of Santa Cruz's proposed amendment to its sphere of influence in order to include a 374-acre portion of the University of California, Santa Cruz (UCSC) North Campus for the purpose of providing extraterritorial water and sewer services.

Previous environmental analyses of UCSC's proposed development for the North Campus have not identified the anticipated size of impacts to wetlands and other waters expected to result from the proposed North Campus development. Instead, UCSC has stated that it will assess these resources on a project by project basis. However, such an approach could lead to inadequate assessment of cumulative impacts to these resources. To address this potential shortfall, the City of Santa Cruz should consider incorporating into the pending EIR a full assessment of the wetlands and other waters present at the North Campus, as well as an assessment of the size of impacts to these resources that could result from the proposed development. A wetland delineation of the proposed development area of the North Campus can be useful for such an assessment. Identification of the resources present and the potential impacts can also be beneficial for avoiding and minimizing impacts during planning processes.

Please note that the Water Board, under Clean Water Act section 401, must certify any permit issued by the U.S. Army Corps of Engineers pursuant to Clean Water Act section 404 for the discharge of dredge or fill material to waters of the United States. In addition, where the U.S. Army Corps of Engineers determines they have no jurisdiction, the Water Board may issue Waste Discharge Requirements or conditional waivers of

*California Environmental Protection Agency*



Recycled Paper

Waste Discharge Requirements to address discharges to waters of the State pursuant to the Porter-Cologne Water Quality Act.

We look forward to seeing and commenting on the Draft EIR and request we be contacted when the document is available. If you have questions, please contact Phil Hammer at (805) 549-3882 or Matt Thompson at (805) 549-3159.

Sincerely,

*M Thompson*

for Roger W. Briggs  
Executive Officer

S:\CEQA\Comment Letters\Santa Cruz County\UCSC Sphere of Influence Amendment Dec08.doc





# MONTEREY BAY

Unified Air Pollution Control District  
serving Monterey, San Benito, and Santa Cruz counties

AIR POLLUTION CONTROL OFFICER  
Douglas Quetin

24580 Silver Cloud Court • Monterey, California 93940 • 831/647-9411 • FAX 831/647-8501

DISTRICT BOARD MEMBERS

CHAIR:  
Reb Monaco  
San Benito County

VICE CHAIR:  
Simon Salinas  
Monterey County

-----  
Lou Calcagno  
Monterey County

Tony Campos  
Santa Cruz County

Dennis Donohue  
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San Benito County Cities

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Ellen Pirie  
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Ila Mattee-McCulchon  
Monterey County

Sam Storey  
Santa Cruz County Cities

George Worthy  
South Monterey County Cities

November 25, 2008

Mr. Ken Thomas  
City of Santa Cruz  
Planning and Community Development Department  
809 Center Street, Room 206  
Santa Cruz, CA 95060

Sent Electronically To:  
[cityplan@ci.santa-cruz.ca.us](mailto:cityplan@ci.santa-cruz.ca.us)  
Original Sent by First Class Mail

SUBJECT: NOP FOR SPHERE OF INFLUENCE AMENDMENT – UCSC  
NORTH CAMPUS

Dear Mr. Thomas:

The Air District submits the following comments for your consideration:

Project's Cumulative Air Quality Impact on Regional Ozone

The District uses consistency with the 2008 Air Quality Management Plan (AQMP) for the North Central Coast Air Basin to determine a project's cumulative impact on regional air quality (ozone levels). Please request a formal consistency determination from AMBAG and include it in the Draft EIR.

Project's Localized Air Quality Impact on Carbon Monoxide Levels

Localized impact is evaluated by determining if project build-out would create or substantially contribute to carbon monoxide "hotspots" (where federal or State ambient air quality standards are exceeded). If project or cumulative traffic would cause LOS to decline from D or better to E or F, dispersion modeling should be undertaken to determine if carbon monoxide concentrations would violate ambient air quality standards at sensitive receptor locations.

Odors, Nuisances and Sensitive Receptors

If the project might result in development of odors, nuisances on sensitive receptors in adjacent land uses, the Draft EIR should include an assessment of those impacts. District Rule 402, Nuisances, should be reviewed for applicable requirements. I have enclosed a copy for your reference.

Extension of City Sewer Service to UCSC North Campus

Please review Air District Rule 216, Permit Requirements for Wastewater and Sewage Treatment Facilities, which is attached for your reference. Any extension of wastewater or sewage treatment by the City would require a consistency determination from AMBAG. Please consult with David Roemer to discuss applicable requirements.

Projects Impacts

The District has established the following thresholds of significance for individual projects: 137 lbs/day for VOC or NO<sub>x</sub>, 82 lbs/day for PM<sub>10</sub>, 150 lbs/day for SO<sub>x</sub>, a significant decline in LOS, and a cancer risk greater than 10 per 1,000,000 people. (Please refer to Table 5-3 on page 5-6, and page 9-3 of the District's CEQA Air Quality Guidelines, February 2008).

The District's CEQA Air Quality Guidelines may be found on the District's website at [www.mbuapcd.org](http://www.mbuapcd.org) under "Air Quality Plan".

Mitigation Measures

Mitigation measures should be identified for any significant impacts on air quality. The Draft EIR should quantify the emission reduction effectiveness of each measure, identify the agencies responsible for implementation and monitoring, and determine whether mitigation measures reduce impacts to a less-than-significant level.

Thank you for the opportunity to review the document.

Sincerely,

Jean Getchell  
Supervising Planner  
Planning and Air Monitoring Division

cc: David Roemer, AMBAG

Attachment

MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT

**RULE 216 -- PERMIT REQUIREMENTS FOR WASTEWATER AND SEWAGE TREATMENT FACILITIES**

*(Adopted 10-29-86) (Revised 01-21-87, 06-14-89, and 10-16-02)*

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PART 1 GENERAL

1.1 Purpose

The purpose of this Rule is to provide that the projected served population of a Wastewater or Sewage Treatment facility is consistent with the Air Quality Plan as approved by the Monterey Bay Unified Air Pollution Control District Board of Directors for addressing the current State Implementation Plan requirements for attaining and maintaining federal ambient air quality standards and consistent with the Plan to attain and maintain the State Ambient Air Quality Standards.

1.2 Applicability



The provisions of this Rule shall apply to any person seeking to obtain an Authority to Construct or a Permit to Operate for a Wastewater or Sewage Treatment facility.

1.3 Exemptions

Reserved.

1.4 Effective Dates

This Rule, as most recently revised, is effective on October 16, 2002.

1.5 References

Other related or referenced District rules or regulations include: Rule 101 (Definitions); Rule 200 (Permits Required); Rule 201 (Sources not Requiring Permits); Rule 207 (Review of New or Modified Sources).

PART 2 DEFINITIONS

2.1 Anthropogenic Pollutant

Air pollution which results directly or indirectly from human activities.

2.2 Indirect Source

Any structure, building, facility, equipment, installation or operation (or aggregation thereof) which is located on one or more bordering properties within the District and which is owned, operated or under shared entitlement to use by the same person.

2.3 Modification

means any physical change in, change in method of, or addition to an existing facility, any change in the direct or indirect growth inducing capacity of the subject facility including, but not limited to, changes in population projections used in prior Nonattainment Plan consistency determinations, except that routine maintenance or repair shall not be considered to be a physical change

## 2.4 Population Projections

Population forecasts contained in the latest Air Quality Management Plan as approved by the MBUAPCD Board of Directors.

## PART 3 REQUIREMENTS

### 3.1 Permit

A governmental agency or district, including joint powers agencies or organizations shall not initiate, modify, construct or operate any wastewater or sewage treatment facility or conveyance mechanism or pipeline which will directly or indirectly through population or industrial growth inducement cause the emission of any anthropogenic air pollutant for which there is a State or national ambient air quality standard without first obtaining an Authority to Construct or a Permit to Operate from the Air Pollution Control Officer.

### 3.2 Application Content

Before granting or denying an Authority to Construct or a Permit to Operate for any new facility or modification thereto subject to the requirements of this rule, the Air Pollution Control Officer shall:

- 3.2.1 Require the applicant to submit information sufficient to specifically describe the nature and amounts of emissions, location, design, construction and operation of the facility, emitted directly or indirectly through population, industrial growth and/or the induced expansion of existing emission sources;
- 3.2.2 Require the applicant to submit the projected expansion plans for the facility for the ten-year period subsequent to the date of the application for the permit;
- 3.2.3 Require an analysis of the new facility or modification on air quality. Such analysis shall consider expected air contaminant emissions and the impact on air quality in the vicinity of the facility, or modification as well as within the total Air Basin; and
- 3.2.4 Require that the projected served population of the facility, or modification, related indirect growth of industry and induced growth external to the service area to be fully consistent with the Population Projections.

## PART 4 ADMINISTRATIVE REQUIREMENTS

### 4.1 Permit Denial

The Air Pollution Control Officer shall deny a permit for any new wastewater or sewage treatment facility or conveyance mechanism or pipeline or modification which he determines will cause a violation or contribute to the continued violation of any State or national ambient air quality standard.

### 4.2 Permit Conditions

The Air Pollution Control Officer shall impose conditions on the permit as necessary to ensure the subject facility or modification will be operated in the manner assumed in making analysis required by this rule.

\* \* \* \* \*



December 1, 2008

000560

Mr. Ken Thomas  
City of Santa Cruz  
Planning and Community Development Department  
809 Center Street, Room 206  
Santa Cruz, CA 95060

Subject: Notice of Preparation of an Environmental Impact Report

Dear Mr. Thomas:

Thank you for sending the Local Agency Formation Commission of Santa Cruz County (LAFCO) a Notice of Preparation of an Environmental Impact Report, dated November 3, 2008, regarding the City of Santa Cruz Sphere of Influence Amendment. LAFCO is a responsible agency since it has received two related applications. Application No. 928 is the City of Santa Cruz's application to amend its Sphere of Influence to include a portion of the North Campus. Application No. 929 is the University of California's application to receive water and sewer services from the City of Santa Cruz to a portion of the North Campus outside the City Limits.

LAFCO concurs that an environmental impact report is the proper document to prepare for this project in order to comply with the California Environmental Impact Report. As a responsible agency, LAFCO will use the EIR that the City is preparing to review the two pending applications: No. 928 Sphere Amendment and No. 929 Extraterritorial Water and Sewer Service. Thus, LAFCO's first comment is to request that the project description be clarified to include the extraterritorial water and sewer service application.

Operating under State law, LAFCO's principal authority is to regulate the boundaries and service areas of cities and special districts. In addition to the policies in the Local Government Reorganization Act, LAFCO will use the following local policies when reviewing the two pending applications:

- Sphere of Influence Policies and Guidelines (attached)
- Policies and Regulations for Agencies to Provide Services to Private Parties Outside Agency Boundaries (attached).

The EIR would be most useful to LAFCO if the data were arranged in a manner that quantifies impacts (amount of water usage, amount of sewage generated, traffic, etc.) both inside the current city and outside the current city limits. In that manner, LAFCO will have data specific the two applications pending at LAFCO.

LAFCO concurs with the list of probable environmental effects and secondary impacts as stated in the Notice of Preparation. Since LAFCO is not a resource agency, it will carefully consider the potential impacts and mitigations as identified by the resource agencies.

Looking forward to potential environmental impacts, policy issues, and mitigation measures, LAFCO requests consultation during the drafting of the EIR on the following matters:

1. Annexation of existing residential halls

The County Elections Office reports that the City boundary bisects student residential buildings at the northern tips of the Crown/Merrill Apartments and College 9. This requires extra work by the Elections Office to split each residential complex into different voting precincts, and inconveniences the voters who are separated from the rest of the UC precincts. The draft EIR should identify and evaluate one alternative of annexing the existing residential buildings.

2. Drought mitigations

As recognized in the Notice of Preparation, the City of Santa Cruz has a water supply problem during droughts. The Notice has identified potential mitigation measures that the University would pay certain water fees, would follow use restrictions, and abide by any drought-related connection moratoria. Another potential mitigation to consider concerns enrollment growth during any moratoria. Other possible mitigations should be considered that would prevent increases in off-campus water demand.

3. Coolidge Drive

Coolidge Drive, the arterial that runs from the main entrance on High Street up the east side of the campus is currently a County-maintained road. Since Coolidge Drive solely serves the University, and almost all of the drive is located beyond the UCSC guard station, another potential mitigation measure to consider is that the University take over maintenance of Coolidge Drive.

4. Forest loss

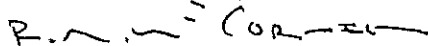
The Environmental Impact Report prepared for the Long Range Development Plan identified elimination of up to 73 acres of forest as potentially resulting from the full implementation of the Long Range Development Plan. The EIR should consider establishing either a threshold of significance for the cumulative loss of forest lands, or another means of addressing the cumulative loss of forest.

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I am sending these comments on behalf of LAFCO within the timeline specified in your Notice of Preparation. I will place this letter on the next LAFCO agenda (December 8, 2008; 9:30 a.m.; 809 Center Street, Santa Cruz) and will send a follow-up letter soon after that meeting if the LAFCO Commission wishes to revise LAFCO's comments.

Please contact me if you have any questions about this letter, and when you are ready for consultation during the development of the draft EIR.

Very truly yours,



Patrick M. McCormick  
Executive Officer

cc: Richard Wilson, Santa Cruz City Manager  
Thomas Vani, UCSC Chancellor's Office

Attachments





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# SANTA CRUZ LOCAL AGENCY FORMATION COMMISSION SPHERES OF INFLUENCE POLICIES AND GUIDELINES

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## I. Legislative Authority

The Knox-Nisbet Act of 1963 (former Government Code Section 54773 et seq.) established the Local Agency Formation Commission to promote the orderly development of local government agencies in the County and discourage urban sprawl. The law was subsequently combined with other laws regarding boundary changes and recodified as the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Sections 56000-57550).

Among its objectives, LAFCO is authorized to perform studies which will contribute to the logical and reasonable development of local governments to provide for the present and future needs of each county and its communities. (Government Code Section 56301). State law further provides that, in order to carry out its responsibilities for planning and shaping the logical and orderly development of local government agencies, the Local Agency Formation Commission shall develop and determine the sphere of influence of each local governmental agency within the county. (Government Code Section 56425). 'Sphere of Influence' means a plan for the probable physical boundaries and service area of a local government agency. (Government Code Section 56076).

In determining a sphere of influence, the Commission is required to consider and state its findings regarding at least eight factors, including:

- a. The maximum possible service area of the agency based upon present and possible service capabilities of the agency.
- b. The range of services the agency is providing or could provide.
- c. The projected future population growth of the area.
- d. The type of development occurring or

planned for the area, including, but not limited to, residential, commercial, and industrial development.

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e. The present and probable future service needs of the area.

f. Local governmental agencies presently providing services to such area and the present level, range, and adequacy of services provided by such existing local governmental agencies.

g. The existence of social and economic interdependence and interaction between the area within the boundaries of a local governmental agency and the area which surrounds it and which could be considered within the agency's sphere of influence.

h. The existence of agricultural preserves in the area which could be considered within an agency's sphere of influence and the effect on maintaining the physical and economic integrity of such preserves in the event that such preserves are within a sphere of influence of a local governmental agency."

Spheres of influence are to be adopted by the Commission following a public hearing and are to be reviewed and updated every five years. After adoption, the sphere of influence "shall be used by the Commission as a factor in making regular decisions on proposals over which it has jurisdiction. The Commission may recommend governmental reorganizations to particular agencies in the county, using the sphere of influence as a basis for such recommendations...(Government Code Section 56425)."

The purpose of a sphere of influence study is to provide the Commission information needed to determine an agency's sphere of influence and to make recommendations for local government reorganizations.

## II. Definitions

**1. Sphere of Influence** - "A plan for the probable physical boundaries and service area of a local government agency (Government Code Section 56076)." A sphere of influence will reflect the limits of

probable future growth of an agency during the applicable general plan period or twenty years, whichever is more appropriate. A sphere "plan" may also include recommendations for:

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- a. Annexation or detachment of territory, or both.
- b. Incorporation of a new city.
- c. Merger of a special district with a city.
- d. Consolidation of a special district with one or more districts.
- e. Formation of a new district.
- f. Dissolution of an agency.

**2. Urban Services** - Services necessary to support urban development, including such services as water, sewer, fire and police protection.

**3. Urban Service Area** - An area within a sphere of influence which is either (1) already urbanized and receiving a combination of urban services, or (2) designated by the applicable general plan for urban development and capable of being provided with urban services within the next five years. Such areas may be considered candidates for annexation within the next five years.

**4. Urban Area** - An area with residential development at a density which requires a combination of urban services, and commercial or industrial development which serves as a significant business or activity center.

**5. Factors to Determine a Sphere of Influence** - The eight factors enumerated in Government Code Section 56668, plus topography, street and road patterns, school and other jurisdictional boundaries, adopted policies to preserve agricultural lands and open space, and public comment from affected agencies, community groups, and interested citizens.

### III. Policy Guidelines

1. The Local Agency Formation Commission will use spheres of influence to discourage inefficient development patterns and to encourage the orderly expansion of local government agencies. Spheres of influence will be used to:

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- a. Provide long-range guidelines for the efficient provision of services and timely changes of governmental organization.
- b. Discourage duplication of services by two or more local government agencies.
- c. Guide the Commission in considering individual proposals for changes of organization.
- d. Identify the need for specific reorganization studies.

2. The Local Agency Formation Commission recognizes the planning accomplishments of local agencies in the County. In developing spheres of influence, the Local Agency Formation Commission will support those adopted plans, and policies of local governments which encourage staged, cost-effective development patterns and the efficient provision of services.

3. City and County general plans will be a significant factor in determining spheres of influence. Where a City's and the County's general plan for the same area are inconsistent, the Local Agency Formation Commission should encourage the affected agencies to resolve any inconsistencies. In the event the inconsistency cannot be resolved, by law the final decision for the Sphere of Influence must remain with LAFCO.

4. Because of the importance of general plans in determining a sphere of influence, the Local Agency Formation Commission will normally not allocate territory to a city sphere of influence which is not included in that city's adopted general plan. A Sphere of Influence may not include all territory within a city's general plan area which bears some relation to the city's planning but which at this time, is not anticipated to require a combination of urban services.

5. The Local Agency Formation Commission recognizes the limited usefulness of long-term projections. Spheres of influence will identify probable boundaries for an agency's expansion. Spheres will be periodically revised and updated to reflect changing conditions and circumstances.

6. Once established, an agency's sphere of influence will be a primary guide to the Commission in its decisions on individual proposals affecting that agency. Before the Commission may approve a change of organization inconsistent with the adopted

sphere of influence, the Commission shall amend the sphere of influence.

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7. Although an adopted sphere of influence is an important long-range guideline, annexation of territory within a sphere of influence is not automatic. The Commission will consider specific proposals for changes in organization on an individual basis as required by law.

8. The Local Agency Formation Commission will encourage the elimination or consolidation of small, single-purpose special districts when a more efficient alternative exists for providing the necessary services. Whenever a combination of urban services is required, general purpose governments or multi-services districts will be preferred to single-purpose districts.

9. When more than one agency could serve an area, the agencies' services capabilities, costs for providing services, and the desires of the affected community will be key factors in determining a sphere of influence.

10. An agency may be allocated a "zero sphere of influence" where the Local Agency Formation Commission determines that the service responsibilities and functions of the agency should be reassigned to another local government, and that the agency assigned a "zero sphere of influence" should be dissolved.

11. Proposals for urban development within a city's sphere of influence should first be considered for annexation to that city, unless such annexation would create a "leapfrog" pattern of expansion with respect to existing city boundaries.

12. In an effort to promote cooperation among the land use agencies with jurisdiction over lands in the Coastal Zone, any application to LAFCO for a sphere of influence amendment regarding land in the Coastal Zone shall contain the following information:

- (1) A statement that the staffs of the Coastal Commission and other land use agencies with jurisdiction over the land which is the subject of the application have reviewed and jointly discussed the sphere of influence amendment application with respect to consistency with applicable general plans, the Coastal Act, and local coastal programs. The statement should also memorialize the results of the review.

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(2) A preliminary review and comments from the Coastal Commission staff as to potential issues of Coastal Act consistency.

(3) Review and comments from any other land use agency with jurisdiction, through a Local Coastal Program or otherwise, over the land which is the subject of the application including an analysis of consistency of the proposed amendment with its general plan.

LAFCO will consider consistency with the Coastal Act and the relevant general plans in making its Sphere of Influence determination.

#### **IV. Procedural Guidelines**

1. The Local Agency Formation Commission will develop and determine a sphere of influence for each local government agency in the County.

2. Spheres of influence will be developed in the following order:

- a. Incorporated cities.
- b. Unincorporated, urbanized areas.
- c. Special districts serving non-urbanized areas of the County.

3. Local government agencies will be requested to provide information which will permit the Commission to consider the factors for determining a sphere of influence. Such information will include:

- a. The limits of the area viewed by the agency as its "sphere of influence" and the rationale.
- b. Information to identify and describe the agency's existing services and the agency's plans for providing services both within its existing boundaries and to any additional areas.
- c. Information to establish a need for the agency's services in additional areas, based upon anticipated population growth, land use plans, or other factors.
- d. Relationship of an agency's service



plans to the applicable city or County general plan.

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4. The Executive Officer will prepare a report to the Commission which provides the following:

- a. Description of existing services and service capabilities.
- b. Information on existing land uses, adopted land use plans and policies, and projected growth in the affected area.
- c. An analysis of the anticipated need for services and capability of the affected agencies to provide those services.
- d. Recommendations for spheres of influence.
- e. Recommendations for specific reorganization studies or proposals.

5. The Local Agency Formation Commission will adopt or amend a sphere of influence following a public hearing. The Executive Officer will provide the notice of hearing required by law to each affected local agency and the County, and to any interested person who has requested such notice. Notice of hearing will also be published in a newspaper of general circulation in the area affected by the proposed sphere of influence.

6. The Local Agency Formation Commission will periodically review and update adopted spheres of influence. Spheres of influence may be amended by the Commission on its own initiative or at the request of an affected agency by resolution of its legislative body. In either case, the Commission will consider amendment of a sphere of influence following a noticed public hearing held for that purpose.

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SANTA CRUZ LAFCO  
POLICIES AND REGULATIONS FOR AGENCIES TO PROVIDE SERVICES  
TO PRIVATE PARTIES OUTSIDE AGENCY BOUNDARIES

Adopted by Resolution No. 97-W, June 9, 1994  
Amended through Resolution No. 2007-1, February 8, 2007

1) AUTHORITY

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These regulations are authorized by Government Code Sections §56375 (i) and (k).

2) PURPOSE

The purpose of these regulations is to explain to the public, cities, and districts the procedures by which the Commission will review requests to authorize a city or district in Santa Cruz County to provide one or more services outside its jurisdictional limits pursuant to Government Code Section §56133.

3) COMMISSION APPROVAL REQUIRED FOR NEW OR EXTENDED SERVICES

Except for the specific situations exempted by Government Code Section §56133, a city or district shall not provide new or extended services to any party outside its jurisdictional boundaries unless it has obtained written approval from the Local Agency Formation Commission.

4) LIST OF PRE-EXISTING SERVICES

Upon adoption of these regulations, the executive Officer shall ask each city and district to provide a list or map of parcels to which it was providing extraterritorial service of the effective date of Government Code Section §56133. The Executive Officer subsequently shall file his report on these extraterritorial services with the Commission. The commission shall consider as a regularly agendized item and vote on confirming the list of "grandfathered" services. After confirmation, the Executive Officer shall maintain the list of "grandfathered" services as public information.

5) AREAWIDE APPROVALS

Upon the initiative of either a public agency or the Commission, the Commission shall consider an areawide approval as a regularly agendized item and may grant approval for subsequent services to be provided by a city or district within a mapped area as specified by the

Commission. The approval may include conditions. The Commission shall specify a time period not greater than ten years for which the areawide approval shall be valid. The Commission may, upon its own initiative or at the request of a public agency, renew with or without amendments, an areawide approval for a period not to exceed ten years.

Before granting an areawide approval, the Commission shall determine that the city or district is able to provide the service in a manner that does not negatively affect the services provided within the agency's boundaries and sphere of influence, and in a manner that does not negatively affect the resources in the area. Also, before granting an areawide approval, the Commission shall determine that the approval is consistent with the requirements of law and LAFCO policies.

#### 6) INDIVIDUAL REQUESTS

Individual requests for extraterritorial service shall be filed with the Executive Officer on a prescribed application form. The applicant shall pay the costs of processing the application as specified in the Commission's Schedule of Fees and Deposits. Upon adoption of these regulations, the application deposit is \$550; the deposit may be subsequently changed in future revisions of the Schedule of Fees and Deposits.

The Executive Officer shall not file the application unless the affected public agency has submitted a written endorsement indicating its willingness to provide the service if the Commission approves the request.

The Commission shall consider the request after it has been placed on an agenda of a Commission meeting.

#### 7) ENVIRONMENTAL REVIEW

All matters that are reviewable pursuant to these regulations are subject to the applicable provisions of the California Environmental Quality Act.

#### 8) COMMISSION ACTION

The Executive Officer shall prepare a report and place the request for extraterritorial service on the Commission's agenda. The Commission shall provide an opportunity for any interested individual or party to address it. The Commission may call a subsequent public hearing in

order to receive additional public testimony before acting upon a request. The Commission acts on the request by majority vote. Subsequently, the Executive Officer shall notify the applicant in writing of the Commission's action. If the Commission denies a request, a similar application cannot be re-filed for one year unless the Commission grants an exception to this rule.

9) POLICIES

The Cortese-Knox Local Government Reorganization Act of 1985 and this Commission's adopted policies to implement that act stress the primacy of spheres of influence in coordinating services and protecting resources. Therefore, the Commission intends to reinforce that the standard manner in which services will be extended is by annexation (and sphere of influence amendment, if necessary). The Commission shall limit its extraterritorial service authorizations to public health emergencies and circumstances where:

- a) Facilities are already in place, and
- b) Annexation would not be practical, and
- c) Extraterritorial service is determined by the Commission to be consistent with the policies adopted in and pursuant to the Cortese-Knox Act.

STEPHAN C. VOLKER  
JOSHUA A.H. HARRIS  
BRIDGET A. ROBERTS  
CAITLIN S. SISLIN

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December 2, 2008

*VIA EMAIL, FACSIMILE, AND U.S. POST*

email: [KThomas@ci.santa-cruz.ca.us](mailto:KThomas@ci.santa-cruz.ca.us)

Fax: (831) 420-5101

Mr. Ken Thomas  
City of Santa Cruz  
Department of Planning and Community Development  
809 Center Street, Room 206  
Santa Cruz, CA 95060

Re: Scoping comments of CLUE on City of Santa Cruz Sphere of Influence  
Amendment, Notice of Preparation of Environmental Impact Report

Dear Mr. Thomas:

On behalf of Coalition for Limiting University Expansion (CLUE), we submit the following comments on your Notice of Preparation of an EIR on the City's application to the Local Agency Formation Commission to provide extra-territorial water and sewer service to 374 acres within the North Campus area of UC Santa Cruz and to amend the City's sphere of influence boundary map accordingly. CLUE is a grass-roots organization of concerned citizens residing within the City and adjacent areas concerned about the adverse impacts on water supply, housing, traffic, and other environmental factors from continued expansion of the UC Santa Cruz campus. In accordance with the California Environmental Quality Act Guidelines (14 C.C.R.) sections 15082(b), 15083, and 15084(c), CLUE requests that the following issues and questions be studied and answered in the City's Draft EIR on this project:

1. As requested by the California Regional Water Quality Control Board for the Central Coast Region (Regional Board) by letter dated December 1, 2008, please conduct and include in the Draft EIR "a full assessment of the wetlands and other waters present at the North Campus, as well as an assessment of the size of impacts to these resources that could result from the proposed development." To this end, it will be necessary to prepare a wetland delineation of the North Campus which is integrated with a detailed survey of the surrounding lands and waters within the affected watersheds. These analyses are also necessary for the Regional Board and the U.S. Army Corps of Engineers (ACOE) to conduct the reviews required under the Clean Water Act (33 U.S.C.

§ 1251 *et seq.*) and the California Porter-Cologne Water Quality Act (Water Code §§ 13000 *et seq.*) on UC Santa Cruz's proposed development.

2. Please examine all cumulative hydrologic impacts of the proposed North Campus development, including the following:

a. Impacts on the hydrologic and biological resources of Wilder Creek, including its endangered species such as steelhead trout and red-legged frogs, as much of the North Campus area drains into Cave Gulch Creek, a major tributary to Wilder Creek.

b. The impacts of North Campus development on the City's present and future water supply. Please note that the City's application estimates that this project's total anticipated water demand will be 152 million gallons per year. The City's application reveals that this quantity is over half of the 300 million gallons per year of remaining water supply capacity of existing sources and operations during "normal rainfall years." According to the City's application, the City anticipates "a deficit of approximately 100 to 545 million gallons during a single dry year based on cumulative growth projections." Please provide a full examination of all current and projected water supply constraints as well as projected water demand for all foreseeable water year types, including multiple drought years equivalent to the most severe on record, that affect the water supply on which this project would depend.

c. Please provide a complete wetlands delineation for all areas that would be effected by the proposed North Campus development as requested by the Regional Board.

d. Please identify all potential reductions in water supply as a result of the pending Habitat Conservation Plan for endangered salmonids that is currently under negotiation between the City and the California Department of Fish and Game (CDFG), and assess how these reductions affect the supply on which this project would depend.

e. Please identify and discuss the relationship between the foreseeable water demand of the North Campus development and the City's 2005 Urban Water Management Plan, Integrated Water Plan and EIR, and General Plan.

f. Please address the possibility that UC Santa Cruz will be more likely to pump water from existing (or additional) wells in the Karst aquifer underlying the campus if the proposed 3.175 million square feet of new North Campus development is approved. In particular, please conduct studies as



necessary to assess how additional pumping of groundwater by the University might effect water supply both in existing City wells and wells in the Cave Gulch neighborhood, as well as on Karst-fed spring flows into both groundwater and surface waters on surrounding lands both within and outside the City.

g. Please identify and analyze the potential adverse impacts of the proposed North Campus development on the Monterey Bay Marine Sanctuary, including the potential adverse impacts of City reliance on desalination of Monterey Bay waters as well as reduced in-flow into Monterey Bay from streams and rivers effected by North Campus development.

h. Please identify and analyze the potential adverse impacts of North Campus development on flora and fauna within existing habitat in the North Campus and adjacent areas, directing your attention in particular to threatened, endangered, and special status species.

3. Please identify the potential adverse impacts on air quality from the North Campus development. Previously, UC Santa Cruz has stated that implementation of its Long Range Development Plan would violate the Monterey Bay Unified Air Pollution Control District's Air Quality Management Plan. Please consult with the MBUAPCD respecting the proposed North Campus development air emissions due to the transport of students, faculty, and staff, as well as construction and operation materials and water, from sea level to elevations of 750 to 950 feet above sea level. Please calculate the global warming impacts of this expenditure of energy, and propose mitigation measures and alternatives that would reduce the air emissions and global warming impacts of the proposed North Campus development.

4. Please identify all potential impacts of the North Campus development on global warming, and propose alternatives and mitigation measures (including less development, clustering, greater on-campus student housing, and relocation of proposed development to lower elevations) that would reduce the "carbon footprint" of the proposed North Campus development.

5. Please identify and analyze the potential adverse impacts of the North Campus development on police, fire, and other emergency services, including impacts on the existing road network within UC Santa Cruz as well as adjacent streets such as Empire Grade during an emergency such as wildfire or earthquake.

6. Please identify and analyze the potential adverse impacts on bicycle and pedestrian safety of the proposed North Campus development, both within the University's existing transportation network, and on adjacent roads such as Empire Grade.

Mr. Ken Thomas  
City of Santa Cruz  
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Page 4

7. Please examine the potential cumulative impacts of North Campus development, including growth induction in the Cave Gulch, Bonny Doon, and surrounding neighborhoods. Please examine these impacts on water supply, housing, traffic, wildlife habitat, hydrology and watershed resources, air pollution, noise, and public health and safety.
8. Please identify and analyze a reasonable range of project alternatives, including relocation of the proposed North Campus development to other sites including other campuses of the University of California, new University campuses, and infill development within the existing UC Santa Cruz campus facilities.
9. Please consult with all appropriate local, state, and federal agencies with expertise and regulatory authority regarding the resources potentially affected by the proposed North Campus development, including the County, U.S. Fish and Wildlife Service, ACOE, CDFG, MBUAPCD, Regional Board, and United States Environmental Protection Agency.
10. Please examine this project's consistency with all applicable regional, general, and specific plans.

We also incorporate herein by reference the comments submitted by members of CLUE.

Thank you for your consideration of our comments.

Very truly yours,



Stephen C. Volker  
Attorney for Coalition for Limiting University  
Expansion

SCV:taf

*VIA EMAIL*

email: [KThomas@ci.santa-cruz.ca.us](mailto:KThomas@ci.santa-cruz.ca.us)

Mr. Ken Thomas  
City of Santa Cruz  
Department of Planning and Community Development  
809 Center Street, Room 206  
Santa Cruz, CA 95060

Re: Scoping comments on City of Santa Cruz Sphere of Influence Amendment, Notice of Preparation of Environmental Impact Report

Dear Mr. Thomas:

On behalf of the Rural Bonny Doon Association,, we submit the following comments on your Notice of Preparation of an EIR on the City's application to the Local Agency Formation Commission to provide extraterritorial water and sewer service to 374 acres within the North Campus area of UC Santa Cruz and to amend the City's sphere of influence boundary map accordingly.

In accordance with the California Environmental Quality Act Guidelines (14 C.C.R.) sections 15082(b), 15083, and 15084(c), the RBDA requests that the following issues and questions be studied and answered in the City's Draft EIR on this project:

1. Please make a full assessment of the wetlands and other waters present at the North Campus, as well as the size of impacts to these resources that could result from the proposed development, by preparing a wetland delineation of the North Campus which is integrated with a detailed survey of the surrounding lands and waters within the affected watersheds.
2. Please examine all the cumulative hydrologic impacts of the proposed North Campus development, including:
  - a. Impacts on the hydrologic and biological resources of Wilder Creek, including its endangered species such as steelhead trout and red-legged frogs, as much of the North Campus area drains into Cave Gulch Creek, a major tributary to Wilder Creek.
  - b. Please provide a complete wetlands delineation for all areas that would be effected by the proposed North Campus development as requested by the Regional Board.
  - c. Please identify all potential reductions in water supply as a result of the pending Habitat Conservation Plan for endangered salmonids that is currently under negotiation between

the City and the California Department of Fish and Game (CDFG), and assess how these reductions affect the supply on which this project would depend.

- d. Please address the possibility that UC Santa Cruz will be more likely to pump water from existing (or additional) wells in the karst aquifer underlying the campus if the proposed 3.175 million square feet of new North Campus development is approved. In particular, please conduct studies as necessary to assess how additional pumping of groundwater by the University might effect water supply both in existing City wells and wells in the Cave Gulch and other Bonny Doon neighborhoods, as well as on Karst-fed spring flows into both groundwater and surface waters on surrounding lands..
  - e. Please identify and analyze the potential adverse impacts of North Campus development on flora and fauna within existing habitat in the North Campus and adjacent areas, directing your attention in particular to threatened, endangered, and special status species.
3. Please identify the potential adverse impacts on air quality from the North Campus development. Please consult with the MBUAPCD respecting the proposed North Campus development air emissions due to the transport of students, faculty, and staff, as well as construction and operation materials and water, from sea level to elevations of 750 to 950 feet above sea level. Please calculate the global warming impacts of this expenditure of energy, and propose mitigation measures and alternatives that would reduce the air emissions impacts of the proposed North Campus development.
  4. Please identify and analyze the potential adverse impacts of the North Campus development on police, fire, and other emergency services, including impacts on the existing road network within UC Santa Cruz as well as adjacent streets such as Empire Grade during an emergency such as wildfire or earthquake.
  5. Please identify and analyze the potential adverse impacts on bicycle and pedestrian safety of the proposed North Campus development on adjacent roads such as Empire Grade.
  6. Please examine the potential cumulative impacts of North Campus development, including growth induction in the Cape Gulch, Bonny Doon, and surrounding neighborhoods. Please examine these impacts on water supply, housing, traffic, wildlife habitat, hydrology and watershed resources, air pollution, noise, and public health and safety.
  7. Please consult with all appropriate local, state, and federal agencies with expertise and regulatory authority regarding the resources potentially affected by the proposed North Campus

development, including the County, U.S. Fish and Wildlife Service, ACOE, CDFG, MBUAPCD, Regional Board, and United States Environmental Protection Agency.

8. Please examine this project's consistency with all applicable regional, general, and specific plans.

Respectfully yours,  
Ted Benhari  
Chairman, Rural Bonny Doon Association

Ken Thomas, City of Santa Cruz Planning and Community Development  
Department  
809 Center Street, Rm. 206  
Santa Cruz, CA 95060  
email: [KThomas@ci.santa-cruz.ca.us](mailto:KThomas@ci.santa-cruz.ca.us)  
Fax: (831) 420-5101

December 2, 2008

Re: City of Santa Cruz Sphere of Influence Amendment

Dear Mr. Thomas,

Thank you for the opportunity to comment on the proposed EIR study that the City of Santa Cruz will be submitting to LAFCO in connection with the Sphere of Influence Amendment and the UCSC proposed development in the subject area. I am submitting this letter on behalf of Habitat And Watershed Caretakers (HAWC). HAWC is a grass-roots organization of citizens concerned about the health and protection of environmental resources, particularly sensitive species habitats and watersheds.

There are a number of issues that HAWC would like studied and questions answered that are of concern to us that I hope will be addressed in the EIR.

UCSC's 2005 EIR for the 2005-2020 LRDP concluded that there would be significant and unavoidable erosion and degradation of the water quality to all major watersheds, including Cave Gulch. Yet the Central Coast Regional Water Quality Control Board (CCRWQCB) commented on the UCSC EIR that significant degradation of the watersheds was not acceptable. We are very concerned that if the City of Santa Cruz changes its Sphere of Influence to enable the proposed UCSC development in the North Campus, it will harm the watershed. Please study/address the following questions and concerns in your EIR:

1. Is the City of Santa Cruz aware of the CCRWQCB comments and concerns? Please refer to the Water Boards previous 2005 EIR comment letters to UCSC, identify potential negative impacts of the proposed project on Cave Gulch Creek and, in light of those negative impacts, determine whether it is consistent with CCRWQCB policies and requirements. Please explain how any inconsistencies will be resolved.



2. How will the UCSC development impact the Cave Gulch watershed? Please identify and examine all adverse impacts.

3. Will the City request that UCSC conduct a supplemental EIR to resolve the contradiction between the UCSC EIR and the CCRWQCB comments before completing its own EIR?

4. Will the City be legally liable for degradation of the Cave Gulch watershed by applying for the Sphere of Influence Amendment with the knowledge that the UCSC 2005 EIR predicts significant degradation of the watershed? Please identify project alternatives that can minimize or eliminate such degradation and describes the feasibility and necessity of each.

5. Cave Gulch Creek is a major tributary to Wilder Creek that contains endangered species, including steelhead trout and red-legged frogs. Please study possible negative impacts to these species and their habitats.

6. The City should consult with appropriate government agencies such as US Fish & Wildlife Service, California DFG, USACOE, and CCRWQCB about impacts to the watershed and associated species and habitats.

We are concerned about potential impacts to the numerous wetlands in the North Campus area and their relationship to the overall water balance to springs, streams, and seeps that feed Cave Gulch and other watersheds and take note that the USACOE advised you in an 11-13-08 NOP email/letter:

*“For planning purposes, we usually recommend that a wetland delineation be verified by the Corps for the entire project area. If the University is planning to develop and place fill material within wetlands or other waters of the U.S., they will require a permit from the Corps of Engineers. You can obtain information on our permit process from our website. It makes sense from a planning and environmental prospective to have the entire project area mapped so that jurisdictional areas can be identified and avoided if possible. It will also help us assess adverse effects and compensatory mitigation should a Corps permit be required for the proposed development.”*

We agree with the USACOE and believe that a wetland delineation for the entire project area should be completed and verified before the approval of such a large project and believe that CEQA compliance requires it. Please note that when UCSC applied to the California Coastal Commission, which performs a CEQA equivalent review, for a 15-year development plan on

Terrace Point, UCSC was required to complete detailed wetland delineation for the entire project area before the CCC would consider the development application.

7. The City should require that UCSC complete a wetlands delineation and verification with USACOE before completing its own EIR in order for the EIR to be as complete as possible. This will enable a more focused assessment of the wetlands as well as a review of the University's wetlands delineation. Whether a UCSC wetlands delineation is done independently or not, a complete wetlands delineation and study all of the cumulative project impacts to wetlands of the entire project and consultation with USACOE to verify conformance to the current guidelines and requirements should be completed before the City's EIR can be adequately done.

8. Please address how the City and public will know the extent of impacts to wetlands if no delineation is completed.

We have concerns about water supply issues for this project. Since water supply is such a crucial issue in our area, please provide the most detailed answers possible to the following concerns:

9. Define the range of possible quantities of water from the City that the UCSC project will require. Define the degree of uncertainty in these estimates. Show the basis of the estimates and the sources of all data used.

10. What is the City's current remaining supply? Provide annual projections for the entire term of the LRDP – through 2021. Identify the major factors that can affect the estimates and either result in more or less available supply.

11. Identify the City's anticipated future reduction in its current total supply because of the pending Habitat Conservation Plan for endangered salmonids that is under negotiation between the City and CDFG? Provide the greatest possible specificity as to how this HCP will affect total remaining water supply. Identify the critical variables and the sources of all data.

12. Conduct an analysis of how global warming may affect future water supplies and update current assumptions about what the actual current annual water supply is. Provide the range of possible impacts of CC on future water supplies over the course of the LRDP and beyond and identify the critical variables. Describe the City's response to problems that may

occur under the worst-case scenarios and how the City will address the environmental issues associated with them.

13. Is the City committing to supply water for the entire UCSC project? If not, what is the City's commitment in terms of the project or in terms of water supply in quantities per unit time on an annualized and a seasonal basis.

14. What is the degree of certainty that the City will actually have such supply? What are the contingency plans in the event that the assumed or project supply falls short of the demand? Be specific as to the plans in the case of the City's current customers, future customers beyond the boundaries of the project, and the UCSC campus. Also, estimate the additional contribution to the City's greenhouse gas emissions as a result of more frequent or potentially constant use of the desalination plant and the economic impact of heavier reliance on desal water.

15. Will other future developments in the water district need to be restricted if UCSC is supplied with water for its development? To what extent are restrictions anticipated and how will they be implemented? What will be the environmental impacts of such restrictions? Analyze all of the impacts to the community including fiscal impacts to the tax base.

16. Was supplying water for this UCSC project considered in the 2005 Urban Water Management Plan? How will this Plan be affected by the Sphere of Influence Amendment? What is the status of the plan and when will it be updated to reflect the UCSC project? Describe likely impacts of the necessary amendments to that plan in the EIR.

17. Did the water supply assumptions used in the Urban Water Management Plan take into account global warming? Please study whether those assumptions should be revised in light of changing weather patterns and whether the definition of a "normal" rain year should be revised. Also, please study and review whether the Urban Water Management Plan relied on an accurate scientific definition of a "normal" rain year, whether it is consistent with State law, and whether the real water supply has been overestimated.

18. Will UCSC be more likely to pump water from existing wells in the karst aquifer as a result of new development? Please study how that might effect water supply in existing City wells and wells in the Cave Gulch neighborhood. Please identify the impacts on karst fed spring flows and the associated impacts on groundwater and surface water as well as water quality in the Monterey Bay including but not limited to its Marine Sanctuary and Neary's Lagoon.

Other questions/concerns for study:

19. It appears that the UCSC project will preclude the City from being able to comply with State Law AB32 related to carbon footprints. How will amending the Sphere of Influence affect the City's ability to comply with State Law AB32? Identify traffic-associated GHG emissions, water supply-associated impacts (pumping, withdrawal, seawater intrusion into wells in the local area and wider area of the Santa Cruz County, especially the north coast and the agricultural zone of the Pajaro River including northern Monterey County.)

20. UCSC states that their project will violate the Monterey Bay Unified Air Pollution Control District's Air Management Plan. Please study whether this is consistent with existing local and State laws and ordinances, including those of LAFCO. Consult with the MBUAPCD on the impacts of the development on the Upper Campus including transport of water, materials, and people from sea level to elevations of 750 to 950 feet above sea level. A simple calculation of the work required and the energy needed to perform that work, primarily by motor vehicles and pumping stations should be the basis of the analysis. Also identify mitigations that might be required by the MBUAPCD for the project including but not limited to the emissions associated with additional pumping of water an additional 150 to 350 feet in elevation, the motor vehicle exhaust of the additional vehicle trips to the upper campus with the energy penalty for climbing the additional elevation including but not limited to the construction and the long-term service and supply to facilities on the upper campus. Consider the alternative of development on the lower campus or within the area already highly developed for academic and housing facilities at 600 to 650 foot elevation and compare to the development at the higher altitudes of the Upper Campus in terms of net emissions of GHG and of other air pollutants including but not limited to VOCs and NOx and to the formation of ozone. Consider that ozone formation is enhanced by a warming climate and that the contributions of the development will contribute to a larger inventory of ozone emitting sources in the MBUAPCD.

21. Identify how the Sphere of Influence Amendment will affect traffic. Identify all negative impacts and proposed mitigations and consistency with CalTrans requirements.

22. Identify the impacts of the project on emergency and fire evacuation plans and impacts from the new proposed UCSC development in the North Campus. This should include traffic flow along Empire Grade during an emergency with all of the new UCSC traffic traveling toward and

onto Empire Grade over the proposed new bridge in Cave Gulch. Will safety of existing County residents be adversely affected? If so, how? What mitigations can be implemented to improve safety for the Cave Gulch neighborhood and the entire Bonny Doon region?

23. Will the City require UCSC to complete a Habitat Conservation Plan for the Sphere of Influence Amendment area as recommended by the US Fish & Wildlife Service before the City completes its EIR? If not, identify the impacts of the project and effectiveness of proposed mitigations to endangered species and whether they are consistent with existing federal and state laws and appropriate agency policies such as USFWS and CDFG. If so, review these studies and incorporate their findings into the baselines for the EIR.

24. Identify how the proposed bridge over Cave Gulch of the UCSC project will adversely impact wetlands or the Cave Gulch watershed. Identify the mitigations for these impacts and alternatives to the proposed bridge.

25. Identify the impact of additional traffic to and from the new bridge via Empire Grade. Study impacts to bicycle safety and road stability as well as to motor vehicle safety. Include vehicle trips by heavily loaded vehicles with lower travel speeds and with higher distance requirements for breaking in estimating accident rates and associated fatalities and morbidity. Also identify the travel time impact for northbound traffic with the addition of heavily loaded trucks during construction and of other delivery vehicles northbound to service the construction and the completed expansion.

26. The proposed UCSC development will be on property that is in the County of Santa Cruz, but is not consistent with County zoning laws. Please study impacts to the surrounding Cave Gulch neighborhood and explain why LAFCO should approve the City Sphere of Influence Amendment when the project does not conform to current County zoning laws.

27. Please identify project alternatives including one or more or various combinations of the following:

a) No project – this might involve redirecting qualified applicants for admission as either undergraduate or graduate students to other existing campuses of the University of California or construction of one or more new campuses to accommodate future UC system wide enrollment growth; and further review of project population growth and its relation to projected future demand;

b) Development of water resources on campus to provide for the increased demand in water resulting from the growth;

c) Development of rainfall water capture, storage, treatment and use to offset the need for additional water; and,

d) Development of graywater management and treatment and re-use to address increased water demand caused by the project.

e) Deepening the water conservation programs on the existing campus along with deep water conservation programs on new facilities for which the SOI is necessary

28. Revisit the rainfall data used in the UCSC EIR to determine the actual amounts on the North Campus for all purposes in preparing the EIR. Rainfall measured in the Cave Gulch area is approximately twice that in downtown Santa Cruz and considerably more than that measured on the lower campus or the existing developed parts of the campus. These rainfall differences can have major impacts on other aspects of the project and must be accurately estimate with a true range from the very wet years when rainfall in Cave Gulch neighborhood has exceeded 100 inches per year for three years running during the 1990s to the low end of the projections which would be closer to 35 to 40 inches per year in that area. Unless other validated data are available, these values should be used for rainfall on the Upper Campus

29. Please identify global warming impacts from the extensive logging required for the project.

30. Please consult with CalFire about whether UCSC has allowed for adequate buffer around anticipated projects. Our understanding is CalFire commented that 100-foot buffers around buildings are required, rather than much smaller and variable size buffers that UCSC indicated.

31. We are aware that the City has adopted Ordinance No. 2008-18 pertaining to expansion of water and sewer service areas and specifies that " ... the City Council shall not initiate an expansion of the City's water service area or sewer service area with the State of California Local Agency Formation Commission unless authorized to do so by the approval of a ballot measure to this effect by City voters at a general or special municipal election." We are concerned that no such vote has taken place. Please study and explain this apparent contradiction between the current application to LAFCO and the requirements of the new ordinance.

Thank you very much for your attention.

Sincerely,

Don Stevens  
Habitat And Watershed Caretakers  
320 Cave Gulch  
Santa Cruz, CA 95060



**Stephanie Strelow**

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**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 8:39 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: please don't provide resources to allow UC to expand

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

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**From:** Alex Anderson [mailto:h.alex.anderson@gmail.com]  
**Sent:** Friday, November 28, 2008 1:02 PM  
**To:** Ken Thomas  
**Cc:** City Council  
**Subject:** please don't provide resources to allow UC to expand

Dear Mr. Thomas and City Council,

Please follow the will of the voters of Santa Cruz and don't allow UC expansion. We don't have to provide services for a near doubling of the size of the University especially when the impact on people in town will be so significant. I really object that the the University wants to expand to relatively wild land when they could do more infill building on campus. Once the development is done there is no amount of money that can replace loss to the environment of the upper campus area and the impact on quality of life of the people in Santa Cruz. Please follow the will of the voters and to not provide additional service to the campus.

Thank you,

Alex Anderson  
231 John St.  
Santa Cruz

**Stephanie Strelow**

---

**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 8:39 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: UCSC expansion

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

---

**From:** Tony Aprile [mailto:tonyaprile@pacbell.net]  
**Sent:** Friday, November 28, 2008 11:05 AM  
**To:** Ken Thomas  
**Subject:** UCSC expansion

Hello Ken, I am strongly against this issue! Please consider this a vote against it.  
Sincerely,  
Tony Aprile

**Stephanie Strelow**

---

**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 1:20 PM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: UCSC development concerns

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

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**From:** onepushybroad@gmail.com [mailto:onepushybroad@gmail.com]  
**Sent:** Monday, December 01, 2008 11:10 AM  
**To:** Ken Thomas  
**Cc:** City Council  
**Subject:** UCSC development concerns

Please do not expand city services to the upper campus of UCSC. The expanded campus would be too much of a drain on city resources. Thanks, Winona Hubbard 231 John St, Santa Cruz

## Stephanie Strelow

---

**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 8:40 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: Upper CAMPUS

Ken Thomas  
Principal Planner  
Planning and Community Development Department City of Santa Cruz  
(831) 420-5148

-----Original Message-----

**From:** Jodi Koumouitzes-Douvia [mailto:jl\_kd@yahoo.com]  
**Sent:** Sunday, November 30, 2008 11:05 AM  
**To:** Ken Thomas  
**Subject:** Upper CAMPUS

Dear Sir,

I have plans to move back to Santa Cruz in the next 7-10 years, and I want it to look like some piece of what it was when I left in 1996 and this past summer of 2008.

Therefore, I strongly urge you to save Upper Campus.  
Let it be. If folks want to expand, send them elsewhere. This area is precious to me and I want to take my son hiking there when he is older.

Please look in the mirror, and do what you know is right.

Thank you for your time,  
Jodi Koumouitzes-Douvia

## Stephanie Strelow

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**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 8:38 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: EIR to expand City Services to upper UCSC campus

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

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**From:** Natasha Kowalski [mailto:tasha12123@yahoo.com]  
**Sent:** Friday, November 28, 2008 9:17 AM  
**To:** Ken Thomas  
**Cc:** City Council  
**Subject:** EIR to expand City Services to upper UCSC campus

I am very discouraged to hear that an EIR is being proposed to allow expansion on the upper campus of UCSC. I ask you to please follow the will of Santa Cruz City voters and do not expand city services to the upper campus of UCSC. 80% of voters approved Measure J, sending a very strong message about how we feel about UCSC growth.

If you continue with the proposed EIR, I believe it should study how 3 million square feet of development and logging in the Upper Campus will impact water supplies, erosion, wildlife habitats, increased traffic in westside neighborhoods as well as a county as a whole, and the bigger issue of global warming.

I was out of town on Nov. 18th for the public hearing, but would have attended and spoke if I had been in town.

Thank you for your time and consideration,  
Natasha Kowalski  
316 Alta Vista Dr.  
Santa Cruz, CA 95060

Ken Thomas  
City of Santa Cruz  
Planning and Community Development Department  
809 Center Street, Rm. 206  
Santa Cruz, CA 95060

December 2, 2008

Re: City of Santa Cruz Sphere of Influence Amendment

Dear Mr. Thomas,

Thank you for the opportunity to comment on the proposed EIR study that the City of Santa Cruz will be submitting to LAFCO in connection with the Sphere of Influence Amendment and the UCSC proposed development in the subject area.

I am very concerned that if the City of Santa Cruz changes its Sphere of Influence to enable the proposed UCSC development in the North Campus, it will harm the watershed, the air quality, exacerbate traffic and housing problems, increase greenhouse gas emissions, utilize energy and water resources unnecessarily and excessively, impose noise and aesthetic blight on the surrounding areas and the community at large, increase geological and groundwater problems, increase traffic on the very dangerous stretch of Empire Grade from the West Entrance to the north, and many other impacts that are cumulative on unmitigated impacts of growth from the developments under the 1988 LRDP. Please address the following questions and concerns in your Draft EIR:

There many issues that I believe need to be addressed including the above issues that are of concern to me.

How will the UCSC development impact the Cave Gulch watershed? The riparian rights of neighbors in the Cave Gulch neighborhood to the east of the project area who share boundaries with Cave Gulch Creek or the watershed will be adversely affected. Please delineate these impacts and the measures that are contemplated to mitigate these impacts.

The City should request that UCSC conduct a supplemental EIR to resolve the contradiction between the UCSC EIR and the Central Coast Regional Water Quality Control Board comments before completing its own EIR.

It appears that the City will be legally liable for degradation of the Cave Gulch watershed by applying for the Sphere of Influence Amendment with the knowledge that the UCSC 2005 EIR predicts significant degradation of the watershed. Please identify project alternatives that can minimize or eliminate such degradation and describes the feasibility and necessity of each and criteria for its successful implementation.

Cave Gulch Creek is a major tributary to Wilder Creek that contains endangered species, including steelhead trout and red-legged frogs and possibly others. Negative impacts to these species and their habitats must be fully addressed in the EIR.

The City should consult with appropriate government agencies such as US Fish & Wildlife Service and California DFG about impacts to the watershed and associated species and habitats. It should also seek a review from the Office of the Attorney General on the greenhouse gas emissions associated with the project in light of AB32 and the implementing regulations of the California Air Resources Board.

I am quite concerned about potential impacts to the numerous wetlands in the North Campus area and their relationship to the overall water balance to springs, streams, and seeps that feed Cave Gulch and other watersheds. The US Army Corps of Engineers (USACOE) has advised you that a wetlands delineation for the entire project area should be completed and I believe they should be fully verified before the approval of such a large project.

The City should require that UCSC complete a wetlands delineation and verification with USACOE before completing its own EIR. This will enable a more focused assessment of the wetlands as well as a review of the University's wetlands delineation. Whether a UCSC wetlands delineation is done independently or not, it a complete wetlands delineation and study all of the cumulative project impacts to wetlands of the entire project and consult with USACOE to verify conformance to the current guidelines and requirements.



Please describe the means by which the City and public will know the extent of impacts to wetlands if no delineation is completed.

Define the range of possible quantities of water from the City that the UCSC project will require. Define the degree of uncertainty in these estimates. Show the basis of the estimates and the sources of all data used.

Identify and describe the City's current remaining water supply. Provide annual projections for the entire term of the LRDP – through 2021. Identify the major factors that can affect the estimates and result in either more or less available supply.

Identify the City's anticipated future reduction in its current total water supply because of the pending Habitat Conservation Plan for endangered salmonids that is under negotiation between the City and CDF&G. Provide the greatest possible specificity as to how this HCP will affect total remaining water supply. Identify the critical variables and the sources of all data.

Conduct an analysis of how global warming may affect future water supplies and update current assumptions about what the actual current annual water supply is. Provide the range of possible impacts of CC on future water supplies over the course of the LRDP and beyond and identify the critical variables. Describe the City's response to problems that may occur under the worst case scenarios and how the City will address the environmental issues associated with them.

If the City is committing to supply water for the entire UCSC project, delineate the impact on the remaining water supply resources and the impact on other development proposals in the City during the next 15 years. If not, what is the City's commitment in terms of the project or in terms of water supply in quantities per unit time on an annualized and a seasonal basis? How will this impact other development proposals as well as existing customers?.

What is the degree of certainty that the City will actually have the assumed water supply? What are the contingency plans in the event that the assumed or project supply falls short of the demand? Be specific as to the plans in the case of the City's current customers, future customers beyond the boundaries

of the project, and the UCSC campus. Also, estimate the additional contribution to the City's greenhouse gas emissions as a result of more frequent or potentially constant use of the desalination plant and the economic impact of heavier reliance on desal water.

Will future developments in the water district need to be restricted if UCSC is supplied with water for its development? To what extent are restrictions anticipated and how will they be implemented? What will be the environmental impacts of such restrictions? Analyze all of the impacts to the community including fiscal impacts to the tax base.

Was supplying water for this UCSC project considered in the 2005 Urban Water Management Plan? How will this Plan be affected by the Sphere of Influence Amendment? What is the status of the plan and when will it be updated to reflect the UCSC project? Describe likely impacts of the necessary amendments to that plan in the EIR.

Did the water supply assumptions used in the Urban Water Management Plan take into account global warming? Please study whether those assumptions should be revised in light of changing weather patterns and whether the definition of a "normal" rain year should be revised.

Will UCSC be more likely to pump water from existing wells in the karst aquifer as a result of new development? Please study how that might effect water supply in existing City wells and wells in the Cave Gulch neighborhood. Please identify the impacts on karst fed spring flows and the associated impacts on groundwater and surface water as well as water quality in the Monterey Bay including but not limited to its Marine Sanctuary.

Other questions/concerns for study:

It appears that the UCSC project will preclude the City from being able to comply with State Law AB32 related to carbon footprints. How will amending the Sphere of Influence affect the City's ability to comply with State Law AB32? Identify traffic-associated GHG emissions, water supply-associated impacts (pumping, withdrawal, seawater intrusion into wells in the local area and wider area of the Santa Cruz County, especially the north coast and the agricultural zone of the Pajaro River including northern Monterey County.)

UCSC states that their project will violate the Monterey Bay Unified Air Pollution Control District's Air Management Plan. Please study whether this is consistent with existing local and State laws and ordinances, including those of LAFCO. Consult with the MBUAPCD on the impacts of the development on the Upper Campus including transport of water, materials, and people from sea level to elevations of 750 to 950 feet above sea level. A simple calculation of the work required and the energy needed to perform that work, primarily by motor vehicles and pumping stations should be the basis of the analysis. Also identify mitigations that might be required by the MBUAPCD for the project including but not limited to the emissions associated with additional pumping of water an additional 150 to 350 feet in elevation, the motor vehicle exhaust of the additional vehicle trips to the upper campus with the energy penalty for climbing the additional elevation including but not limited to the construction and the long-term service and supply to facilities on the upper campus. Consider the alternative of development on the lower campus or within the area already highly developed for academic and housing facilities at 600 to 650 foot elevation and compare to the development at the higher altitudes of the Upper Campus in terms of net emissions of GHG and of other air pollutants including but not limited to VOCs and NOx and to the formation of ozone. Consider that ozone formation is enhanced by a warming climate and that the contributions of the development will contribute to a larger inventory of ozone emitting sources in the MBUAPCD.

Identify how the Sphere of Influence Amendment will affect traffic. Identify all negative impacts and proposed mitigations and consistency with CalTrans requirements.

Identify the impacts of the project on emergency and fire evacuation plans and impacts from the new proposed UCSC development in the North Campus. This should include traffic flow along Empire Grade during an emergency with all of the new UCSC traffic traveling toward and onto Empire Grade over the proposed new bridge in Cave Gulch. Will safety of existing County residents be adversely affected? If so, how? What mitigations can be implemented to improve safety for the Cave Gulch neighborhood and the entire Bonny Doon region.

Will the City require UCSC to complete a Habitat Conservation Plan for the Sphere of Influence Amendment area as recommended by the US Fish & Wildlife Service before the City completes its EIR? If not, identify the

impacts of the project and effectiveness of proposed mitigations to endangered species and whether they are consistent with existing federal and state laws and appropriate agency policies such as USFWS and CDFG. If so, review these studies and incorporate their findings into the baselines for the EIR.

Is the City of Santa Cruz aware of the CCRWQCB comments and concerns? Please identify potential negative impacts of the proposed project on Cave Gulch Creek and, in light of those negative impacts, whether it is consistent with CCRWQCB policies and requirements. Please explain how any inconsistencies will be resolved.

Identify how the proposed bridge over Cave Gulch of the UCSC project will adversely impact wetlands or the Cave Gulch watershed. Identify the mitigations for these impacts and alternatives to the proposed bridge.

Identify the impact of additional traffic to and from the new bridge via Empire Grade. Study impacts to bicycle safety and road stability as well as to motor vehicle safety. Include vehicle trips by heavily loaded vehicles with lower travel speeds and with higher distance requirements for breaking in estimating accident rates and associated fatalities and morbidity. Also identify the travel time impact for northbound traffic with the addition of heavily loaded trucks during construction and of other delivery vehicles northbound to service the construction and the completed expansion.

The proposed UCSC development will be on property that is in the County of Santa Cruz, but is not consistent with County zoning laws. Please study impacts to the surrounding Cave Gulch neighborhood and explain why LAFCO should approve the City Sphere of Influence Amendment when the project does not conform to current zoning laws.

Please identify project alternatives including one or more or various combinations of the following:

a) no project – this might involve redirecting qualified applicants for admission as either undergraduate or graduate students to other existing campuses of the University of California or construction of one or more new campuses to accommodate future UC systemwide enrollment growth; and further review of project population growth and its relation to projected future demand;

- b) development of water resources on campus to provide for the increased demand in water resulting from the growth;
- c) development of rainfall water capture, storage, treatment and use to offset the need for additional water; and,
- d) development of graywater management and treatment and re-use to address increased water demand caused by the project.
- e) deepening the water conservation programs on the existing campus along with deep water conservation programs on new facilities for which the SOI is necessary

Revisit the rainfall data used in the EIR to determine the actual amounts on the North Campus for all purposes in preparing the EIR. Rainfall measured in the Cave Gulch area is approximately twice that in downtown Santa Cruz and considerably more than that measured on the lower campus or the existing developed parts of the campus. These rainfall differences can have major impacts on other aspects of the project and must be accurately estimate with a true range from the very wet years when rainfall in Cave Gulch neighborhood has exceeded 100 inches per year for three years running during the 1990s to the low end of the projections which would be closer to 35 gto 40 inches per year in that area. Unless other validated data are available, these values should be used for rainfall on the Upper Campus

Thank you very much for your attention.

Sincerely,  
Hal Levin  
2548 Empire Grade  
Santa Cruz, CA 95060

## Stephanie Strelow

---

**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 8:40 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: upper campus expansion

Ken Thomas  
Principal Planner  
Planning and Community Development Department City of Santa Cruz  
(831) 420-5148

-----Original Message-----

**From:** Tom Maimon [mailto:tmaimon@ucsc.edu]  
**Sent:** Sunday, November 30, 2008 2:05 PM  
**To:** Ken Thomas  
**Subject:** upper campus expansion

dear ken,  
it is my understanding that the city is moving to expand infrastructure in the upper campus forest against the expressed wishes of students and community members who have made their voice heard loud in the courts, on ballots, and in the trees. our environment is already stressed. we do not need 5000 more students. we already have no water. please, consider others. grow a soul. look forward to future generations not just your pocketbooks.  
we cannot keep working this way. stop tearing up our forest.

thanks,  
Tom Maimon  
santa cruz  
california

**Stephanie Strelow**

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**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Monday, December 01, 2008 1:21 PM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: EIR

*Ken Thomas*

Principal Planner  
Planning and Community Development Department  
City of Santa Cruz  
(831) 420-5148

---

**From:** Fred Mc Pherson [mailto:fredwood@mail.cruzio.com]  
**Sent:** Monday, December 01, 2008 12:11 PM  
**To:** Ken Thomas  
**Subject:** EIR

Dear Mr. Thomas:

I am concerned about the proposed expansion of the City's water and sewer service area with an application to the Local Agency Formation Commission (LAFCO) to amend their Sphere of Influence area for City services and the concurrent UCSC application to LAFCO for permission to get these services.

I understand that the City is the lead agency and will conduct an Environmental Impact Report (EIR) for both applications. I want to express my concerns about water issues and ask that they be addressed in the up coming EIRs.

Please address the following issues:

1. Is their adequate water supply. If the water for this project(s) will come from local ground water sources, how will that affect the local aquifer that supplies water to local water districts and private wells? How will it affect the year round flow of water in local creeks? If the water will be taken from the city of Santa Cruz present water sources, will there be enough water available to supply this project and other city and San Lorenzo River Watershed needs in extended drought years like the ones predicted with increasing pressures from global climate change?

2. Sewage disposal. Will waste water from the project be put back into the ground on sight or elsewhere on campus? If so how will it be treated and could it affect the water quality of the local ground water aquifer?

I am a member of the San Lorenzo Valley Water District Board of Directors and our Board has not taken up this issue in time to present official written input, but I want to assure you that I and other board members and local citizens are concerned about these issues. I ask, as a local concerned citizen, living within the proposed affected watershed, that my concerns be thoroughly addresses.

8/3/2009



Thank you,

Fred Mc Pherson

Box 544  
Boulder Creek, CA 95006

338-2097

## Stephanie Strelow

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**From:** Ken Thomas [KThomas@ci.santa-cruz.ca.us]  
**Sent:** Wednesday, December 03, 2008 7:45 AM  
**To:** steph@strelowconsulting.com  
**Subject:** FW: Notice of Preparation/EIR, City of Santa Cruz Sphere of Influence Amendment

Ken Thomas  
Principal Planner  
Planning and Community Development Department City of Santa Cruz  
(831) 420-5148

-----Original Message-----

From: Celia Scott [mailto:twinks2@cruzio.com]  
Sent: Tuesday, December 02, 2008 4:41 PM  
To: Ken Thomas  
Subject: Notice of Preparation/EIR, City of Santa Cruz Sphere of Influence Amendment

Ken Thomas, Principal Planner  
City of Santa Cruz Community & Planning Development Dept.  
809 Center St., Rm. 206  
Santa Cruz, CA 95060

December 2, 2008

Re: Comments on NOP/EIR, City of Santa Cruz Sphere of Influence Amendment

Dear Ken,

Thank you for the opportunity to comment on the Notice of Preparation for the EIR on the City of Santa Cruz Sphere of Influence Amendment Application to the Local Agency Formation Commission and the concurrent application by the University of California Santa Cruz (UCSC) for extraterritorial services to the 374 acre portion of the UCSC north campus now outside the City limits, Sphere of Influence, and water/sewer service areas of the City of Santa Cruz.

1. The EIR should address consistency with the current adopted City of Santa Cruz General Plan (1990-2005) and impacts on adjacent public open space lands, such as the Pogonip, Henry Cowell State Park, and Wilder Ranch State Park, in addition to the probable environmental effects listed in Section 4 of the NOP. Impacts on these open space resources from the UCSC Campus already exist, are significant, and should be reduced or eliminated, not increased.

2. The EIR should address, in addition to the No Project Alternative, a reasonable range of alternatives to the proposed SOI, such as:

a. A reduced project alternative (less than 374 acres) that excludes from an expanded SOI those lands designated in the UCSC 2005 LRDP as Campus Resource Land, Campus Natural Reserve, and Protected Landscape, caps the amount of development that can occur on the North Campus to a level that reduces all environmental impacts to a less than significant level, and provides a permanent no-extension limit to any further extension of services from the City.

b. A revised project alternative that limits extraterritorial services to water only, and requires the use of alternative sewage disposal systems, such as the Living Machine system now in use at various US educational facilities (such as the Adam J. Lewis center at Oberlin College in Ohio, and the Marine Environmental Research and Training Station campus in Oregon) as described in the August/Sept. 2008 issue of Planning (Journal of the American Planning Institute).

c. A reduced project alternative that limits the proposed SOI expansion and provision of extraterritorial services from the City to the UCSC upper campus to those

areas proposed for development that are immediately contiguous to the existing City limits, and excludes services that must physically pass through (skip out over) lands designated in the 2005 LRDP as Campus Natural Reserve and Protected Landscape.

3. The EIR should clarify the role of the City of Santa Cruz as lead agency, inasmuch as the City does not have the independent authority to approve the proposed project, i.e., expansion of its current Sphere of Influence. The Settlement Agreement between UCSC and the City of Santa Cruz is not binding on LAFCO, nor is the UCSC LRDP. The EIR should reflect the independent authority of LAFCO to approve, modify or disapprove the City's application for expansion of its Sphere of Influence, and the UCSC application for extraterritorial services from the City outside the City limits, and fully analyze all applicable LAFCO policies, including Resolution No. 97-W (1994), as amended by Resolution No. 2007-1 (2007), relating to provision of services outside agency boundaries.

Thank you for consideration of these comments. Please acknowledge receipt by Dec. 2, 2008.

Yours truly,

Celia Scott  
1520 Escalona Drive  
Santa Cruz, CA 95060

**WATER SUPPLY ASSESSMENT  
And  
CITY COUNCIL RESOLUTION**

**NOTE:** The WSA technical appendices are available for review at:

- The City of Santa Cruz Planning Department at 809 Center Street, Room 107, Santa Cruz, California.
- The City of Santa Cruz Water Department at 212 Locust Street, Santa Cruz, California.
- The City's website – the Draft EIR will be posted online at:  
<http://www.ci.santa-cruz.ca.us/index.aspx?page=1>.

**NOTE: THE WATER SUPPLY ASSESSMENT IS NOT INCLUDED IN THIS FILE,  
BUT IS INCLUDED AS A SEPARATE PDF FILE (APPENDIX B2) IN THE LIST OF  
DRAFT EIR CHAPTERS SHOWN BELOW.**

## RESOLUTION NO. NS-28,130

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA CRUZ  
APPROVING THE WATER SUPPLY ASSESSMENT FOR THE  
SPHERE OF INFLUENCE AMENDMENT

WHEREAS, in the 2005 University of California Santa Cruz (UCSC) Long Range Development Plan (LRDP) and subsequent settlement agreement (Settlement Agreement) to litigation involving that LRDP it was agreed that the City would amend its Sphere of Influence to allow utility service to an area of the north campus not currently located in the City's Water Service area; and

WHEREAS, pursuant to Settlement Agreement, the City has expressed its intent to provide municipal and industrial water service to said north campus; and

WHEREAS, The City is currently in the process of preparing an Environmental Impact Report as required by California Environmental Quality Act for the Project described as an amendment to the City's Sphere of Influence for provision of extraterritorial water and sewer service to the North Campus of UCSC that would allow development including up to 3,175,000 gross sq ft of development and approximately 3,400 new housing units / beds; and

WHEREAS, section 21151.9 of the Public Resources Code and section 10910 et seq. of the Water Code require the preparation of a water supply assessment ("WSA") by the public water system responsible for serving the North Campus; and

WHEREAS, a WSA was prepared for the Project on behalf of City of Santa Cruz in accordance with section 10910 et seq. of the Water Code and will be included as an Appendix to the Project Draft Environmental Impact Report; and

WHEREAS, the City Council of the City of Santa Cruz has independently reviewed and analyzed the WSA and considered information contained therein prior to approving this resolution and recommending action on the WSA;

WHEREAS, the WSA reflects the independent judgment and analysis of the City of Santa Cruz City Council; and

WHEREAS, the City Council acknowledges that numerous substantive comments relative to the WSA from members of the public have been received by the Council and further acknowledges that the City Council's approval and acceptance of the WSA authorizes its incorporation as an appendix into the afore-referenced Project Draft Environmental Impact Report and that said comments should therefore be deemed comments upon the Project Draft Environmental Impact Report for purposes of the California Environmental Quality Act;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Santa Cruz as follows:

1. The foregoing recitals are true and correct and this Council so finds and determines.
2. Council makes the following findings, based on the entire record:

RESOLUTION NO. NS-28,130

- (a) The WSA satisfies all requirements of sections 10910 et seq. of the Water Code;
  - (b) This WSA concludes that in a normal year the City's supplies are sufficient to meet the demands of the Project and the City's existing and planned future uses through at least the year 2025.
  - (c) The evaluations presented in this WSA indicate that if water demand increases as is projected in an *Updated UWMP Scenario 1*, which anticipates a 0.8% annual increase in the City's three largest customer classes and is consistent with general plans for the City's service area, the City will not be able to meet the demand of the Project and the City's existing and planned future uses beyond 2025 in a normal year.
  - (d) If water demand increases as is projected in *Updated UWMP Scenario 2*, which anticipates a 0.4% annual increase in customer classes, and is consistent with historical trends in growth, the City will be able to meet the demands of the Project and other existing and planned future uses through the year 2030 (i.e., the 20 year evaluation horizon for this WSA).
  - (e) This WSA concludes that the City does *not* have sufficient water to meet current or future projected water demand during dry years, irrespective of development of the Project. This finding is consistent with the 2005 UWMP findings and the conclusions presented in the 2003 Integrated Water Plan ("IWP"), which state that: "*The City's water system is grossly inadequate to meet current demand under drought conditions.*"
  - (f) In those drought conditions, the demand of this Project would increase the City's 2030 water supply shortfall by up to 2% of the total demand (100 mgd out of 4,356 mgd).
  - (g) In 2003, the City produced an IWP that evaluated potential water supply strategies for managing the City's water supply and demand to address the current supply deficit during dry years. These strategies include: (1) water conservation, (2) curtailment of water demand up to 15% during drought conditions, and (3) desalination of seawater.
  - (h) Implementation the curtailment plan is completed; implementation of the water conservation is over 50% complete; the desalination investigation work is well underway.
  - (i) If the preceding measures to implement the IWP materialize as planned, then the total sources of water supply identified to serve the Project would be sufficient to meet demand from the Project through 2025 or beyond in normal rainfall years, in addition to existing and planned future land uses and in single dry and multiple dry water years, for that same period.
3. The Council hereby approves the WSA for the Project.

RESOLUTION NO. NS-28,130

4. The Council hereby further directs that the afore-referenced public comments on the WSA shall be deemed to constitute comments upon the afore-referenced Project Draft Environmental Impact Report and shall be treated as such by City staff in preparing responses to comments on that document in connection with staff's preparation of the Final Environmental Impact Report for the Project. The Council further directs City Water Department staff, when forwarding the WSA to City Community Development Department for its inclusion in the Draft EIR, to also forward its responses to the afore-referenced WSA comments.

PASSED AND ADOPTED this 27<sup>th</sup> day of October, 2009, by the following vote:

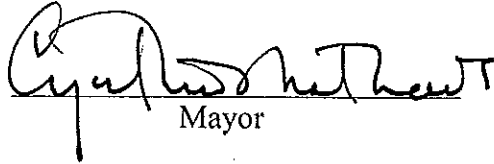
AYES: Councilmembers Coonerty, Robinson, Lane, Madrigal, Beiers, Vice Mayor Rotkin; Mayor Mathews.

NOES: None.

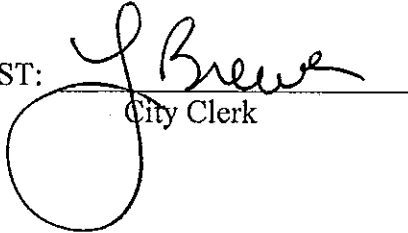
ABSENT: None.

DISQUALIFIED: None.

APPROVED:

  
Mayor

ATTEST:

  
City Clerk



13 October 2009

To: City of Santa Cruz

From: Erler & Kalinowski, Inc.

Subject: **City of Santa Cruz Sphere of Influence Amendment Project Water Supply  
Assessment**  
Santa Cruz, California  
(EKI A90033.00)

Erler & Kalinowski, Inc., ("EKI") has prepared this memorandum to issue an errata sheet for the *City of Santa Cruz Sphere of Influence Amendment Project Water Supply Assessment*, prepared by EKI dated 15 September 2009. The errata sheet is included as Attachment A and described below.

1. On page 34 the report states that "Johnson et. al. (2004) estimates that total pumping from the Purisima Formation likely exceeds the sustainable yield of the aquifer by approximately 1,200 mgd (400 AFY)." This page should be replaced with the attached errata sheet, which has been corrected to exclude reference to the sustainable yield of the Purisima Formation. The conversion between acre-feet and millions of gallons is incorrect.

hydrostratigraphic units as defined by Johnson et. al (2004) are shown on Figure D-4 of Appendix D.

Beneath the City's water service area, the Purisima Formation is relatively shallow and dipping to the southeast, becoming deeper and thicker towards Capitola and Aptos and outcropping along the Monterey Bay shoreline. Groundwater produced by the City's wells is extracted from hydrostratigraphic units "A" and "AA" (see Figure D-5). The SqCWD also operates production wells within units A and AA within the Soquel Valley Groundwater Basin (DWR Basin No. 3-1).

#### 6.2.3.2 Groundwater Production

The volume of groundwater produced from the Purisima Formation by the City, SqCWD, and CWD between 1986 and 2005 is summarized on Figure D-6 (SqCWD and CWD, 2007). Total groundwater production from the Purisima Formation by these agencies has ranged from a high of 1,530 mgd (4,700 AFY) in 1988 to a low of 1,140 mgd (3,500 AFY) in 2005 (SqCWD and CWD, 2007). Current annual extraction from the Purisima Formation by all pumpers is estimated to be 1,988 mgd (6,100 AFY). Of this total, the City currently produces about 167 mgd (8%), SqCWD produces approximately 1,075 mgd (54%), CWD pumps 18 mgd (1%) and private well production is estimated at about 728 mgd (37%) (Santa Cruz, 2006).

#### 6.2.3.3 Groundwater Levels

Historical water levels reported by Johnson et. al. (2004) between 1998 and 2004 show fluctuations water levels throughout the Purisima Formation as a result of the seasonal and annual variations in groundwater production. Figure D-9a through 9c show water levels in SqCWD Purisima well SC-9 (screened in multiple water bearing units, including Unit A) and Figure D-10a through D-10c shows water levels in the City's Beltz wells over this period. These records show significant fluctuations in groundwater water levels as a result of variable groundwater production, indicating the ability of the aquifer to rebound from short term increases in production.

Water levels in the Purisima Formation near the neighboring SqCWD are characterized by a broad and persistent pumping trough surrounding the SqCWD production wells. Piezometric maps for the A unit of the Purisima Formation during Spring and Fall 2005 are shown on Figures D-7 and D-8. These two figures demonstrate that a drawdown trough persists in the A unit of the Purisima Formation throughout the year, centered approximately in the middle of the SqCWD service area (SqCWD and CWD, 2007).

Groundwater levels consistently below sea level in SqCWD wells (particularly in Unit B/C but also in Unit A) suggest that production may be "mining" freshwater in the deeper Purisima units offshore and exceeding the sustainable yield of the aquifer (SqCWD and CWD, 2007). Johnson et. al. (2004) estimates that total pumping from the Purisima Formation likely exceeds the sustainable yield of the aquifer. Although the positions of the freshwater-saltwater interfaces for the individual Purisima aquifers are largely unknown, Johnson et. al. (2004) concludes that these interfaces have probably moved inward in response to historical pumping.

**COMPREHENSIVE SETTLEMENT AGREEMENT**

# COMPREHENSIVE SETTLEMENT AGREEMENT

This Settlement Agreement (“Agreement”) is entered into this 15<sup>th</sup> day of August 2008, by and between the City of Santa Cruz (“City”), the County of Santa Cruz (“County”), The Regents of the University of California (“Regents”) and the University of California, Santa Cruz Campus (the “Campus”) (collectively, the “University”), Coalition for Limiting University Expansion (“CLUE”); Don Stevens, Peter L. Scott, Hal Levin, Jeffrey M. Arnett, Harry D. Huskey, Kaye Beth, Eric M. Grodberg, Sigrid McLaughlin, John C. Aird, Russell B. Weisz, Helen B. Dowling, and Rural Bonny Doon Association.

## RECITALS

WHEREAS, the City, County and University are governmental agencies that have distinct jurisdictions with overlapping property boundaries in Santa Cruz County, California; and

WHEREAS, CLUE is a non-profit organization of City and County residents interested in and concerned with University growth plans; and

WHEREAS, on September 21, 2006, The Regents approved the 2005 Long Range Development Plan (“LRDP”) for the Santa Cruz Campus (the “2005 LRDP”) and in conjunction therewith, also certified a Final Environmental Impact Report (the “2005 LRDP EIR”), thereby superseding and replacing the Campus’ LRDP approved by The Regents in 1988; and

WHEREAS, on October 23, 2006, petitions for writ of mandate challenging the 2005 LRDP and 2005 LRDP EIR were filed in Santa Cruz Superior Court by the City and County (Case No. CV155571), and Don Stevens, Peter L. Scott, Hal Levin, Jeffrey M. Arnett, Harry D. Husky, Kaye Beth, Eric M. Grodberg, Sigrid McLaughlin and John Aird (Case No. CV155583) (collectively, “Stevens, et al.”)(collectively Case No. CV155571 and Case No. CV155583 are referred to herein as the “LRDP Actions”); and

WHEREAS, on January 16, 2007, The Regents approved the Biomedical Sciences Facility Project (the “Biomed Project”), and in conjunction therewith, adopted a Mitigated Negative Declaration tiered from the 2005 LRDP EIR (the “MND”); and

WHEREAS, on February 20, 2007, petitions for writ of mandate challenging the Biomed Project and MND were filed in Santa Cruz Superior Court by the City and County (Case No. CV156366, and Coalition to Limit University Expansion, Don P. Stevens, Peter L. Scott, Hal Levin, Jeffrey M. Arnett, Harry D. Huskey, Kaye Beth, Eric M. Grodberg, Sigrid McLaughlin,

# COMPREHENSIVE SETTLEMENT AGREEMENT

John C. Aird, Russell B. Weisz, Helen B. Dowling, and Rural Bonny Doon Association (Case No. CV156371) (collectively, “CLUE, et al.”) (collectively Case No. CV156366 and Case No. 156371 are referred to herein as the “Biomed Actions”);

WHEREAS, the Santa Cruz Superior Court granted in part and denied in part the petitions in the LRDP Actions and the Biomed Actions; and

WHEREAS, the City, County, University, CLUE, et al., and Stevens, et al. desire to settle all disputes between them with respect to the LRDP Actions and the Biomed Actions on the terms set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants, agreements, representations, and warranties contained in this Agreement, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the City, County, University, CLUE, et al., and Stevens, et al. agree as follows:

## AGREEMENT

For as long as the 2005 LRDP is in effect:

### 1.0 ENROLLMENT

1.1 Full-time equivalent (FTE)<sup>1</sup> on-campus 3-qtr average (fall-winter-spring) enrollment (hereinafter referred to as “enrollment”) for undergraduates will not exceed 17,500. In addition, for purposes of planning implementation of infrastructure development to accommodate enrollment growth, UCSC projects the following on-campus combined graduate and undergraduate enrollment levels:

- a. 16,360 in academic year 2011-2012;
- b. 17,615 in academic year 2015-2016; and
- c. 19,480 in academic year 2020-2021.

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<sup>1</sup> An FTE student is defined as (1) an undergraduate student who enrolls for 45 credit hours per academic year; or (2) a graduate student (master’s level or doctoral student not yet advanced to candidacy) enrolled in 36 hours per year; or (3) a graduate doctoral student who has been advanced to candidacy. This does not include students at locations other than the City and County of Santa Cruz, including, but not limited to, UCSC’s MBEST, Silicon Valley Campuses, UC programs in DC or Sacramento, or Education Abroad Programs.

# COMPREHENSIVE SETTLEMENT AGREEMENT

1.2 In recognition that campus population growth may outpace implementation of infrastructure improvements contemplated under this Agreement and that UCSC's ability to meet its housing commitment is dependent on enrollment growth, the parties agree that upon execution of this Agreement:

- a. UCSC will immediately initiate planning for on-campus housing on the west Campus;
- b. The City and UCSC will immediately comply with the traffic commitments in Section 4.13 of this Agreement; and
- c. UCSC has targeted new freshman enrollment growth until at least the commencement of the Fall 2009 Quarter to not exceed the Fall 2007 entering freshman class (3,730) (exclusive of transfer students).

1.3 As a means of enforcing UCSC's housing and water commitments herein, UCSC will adjust enrollment in the next Fall admissions cycle so as not to exceed, within a margin of error defined in Section 1.5 of this Agreement, the enrollment levels of the previous Fall admissions cycle, in the event of one or more of the following:

- a. UCSC's housing commitment, described in Section 2.1 of this Agreement, is not met;
- b. UCSC increases its water demands on the City water system during a City service area-wide moratorium on new connections because of a water supply emergency declared consistent with State Water law, as described in Section 3.2(a) of this Agreement.

1.4 If the traffic commitment in Section 4.1 is exceeded, the commitment will be enforced by requiring UCSC to reduce ADT by one or more of the following measures: adjusting enrollment, adjusting on-campus workforce, or through implementation of ADT reducing measure(s). The choice will be determined from this list by The Regents or its delegate. When UCSC main campus trips are within 1,500 of the applicable traffic commitment in Section 4.1, UCSC will hold a meeting to solicit public input regarding the choices listed above for the reduction of ADT. Within 90 days of the meeting, UCSC will initiate the process necessary to gain approval from The Regents or its delegate of its selected choice(s) for reduction of ADT. In addition, to further effectuate compliance and enforce the traffic commitment in Section 4.1,

# COMPREHENSIVE SETTLEMENT AGREEMENT

UCSC agrees to a penalty payment in an amount equal to three times the City's citywide Traffic Impact Fee (TIF) then in effect for every average daily trip (ADT) in excess of the commitment (i.e., if the City's current citywide TIF were applied the penalty amount would be \$1,098 per trip (3x \$366)). Penalty payments will be made annually until such time as the ADT is equal to or below the traffic commitment in this Agreement. For purposes of calculating the penalty, ADT will be measured per 4.1 below. Penalty funds will be deposited into a dedicated account for use by the City and UCSC to reduce ADT to UCSC. UCSC and the City will work cooperatively to identify appropriate and effective trip reduction programs, including, but not limited to, increased SCMTD transit service to the UCSC campus, with the expenditure of funds being subject to approval by the City.

1.5 For purposes of 1.2(c) and 1.3, enrollment will be calculated within a 2% margin of error averaged prospectively over three years to account for the fact that the University admits students approximately six months prior to the start of the new fall term based on a projected "take rate" (i.e., the percentage of students that accept an offer of admission). In addition, retention/graduation rates fluctuate. Accordingly, enrollment may fall slightly above or below UCSC's projections within a 2% margin of error. Enrollment levels will be calculated based on the Fall third-week census. UCSC's commitment in 1.3 will take effect the next Fall admissions cycle and all subsequent Fall admissions cycles until the applicable commitment is met.

## 2.0 HOUSING

2.1 UCSC will provide housing capacity as follows:

- a. For enrollment up to 15,000, UCSC will provide 7,125 beds.
- b. Additional beds will be available to accommodate 67% of enrollment above 15,000, which equates to 3,000 new beds above the 7,125 beds if enrollment reaches 19,500. New beds will be provided by on-campus new construction, by remodeling or re-assignment resulting in a net increase in new on-campus beds, or through off-campus purchase or lease. An existing room designed as a double will not be converted to an unfilled triple room for the sole purpose of meeting the housing commitment under this Agreement. Except as provided in Section 2.1(d), beds will be available within four years of enrollment in excess of 15,000 until 2018 (i.e., housing in fall 2012 will be available for



## COMPREHENSIVE SETTLEMENT AGREEMENT

67% of 2007-08 enrollment above 15,000). After 2018 and for as long as the 2005 LRDP is in effect, new beds will be available within 2 years of new enrollment growth.

c. UCSC's housing capacity commitment in Section 2.1(b) will be suspended (and its housing capacity commitment as reflected in the 2005 LRDP will be reinstated) for future projects (i.e., approved projects will be completed) in the event of one or more of the following:

i. UCSC's annual room and board rate is the highest and exceeds by 10% all other UC campuses as determined by the "UC On Campus Housing Rate Comparison", published annually by UC's Office of the President which presents a standardized systemwide comparable analysis sheet that presently reflects the cost at each campus for a residence hall room, double occupancy, 19 meals per week board plan, or equivalent;

ii. A legal action, or inaction by an agency, delays a proposal by UCSC for housing development in the North Campus, including, but not limited to, an action challenging a final decision by any agency with approval or permit authority necessary to construct the housing. UCSC commits to make reasonable efforts to expeditiously resolve the litigation.

d. The parties agree that UCSC will not be in violation of Section 2.1(b) or subject to the penalty in Section 1.3 in the event of, and for the time period of, any legal action, or inaction by an agency, including, but not limited to, an action challenging a final decision by any agency with approval or permit authority necessary to construct the housing, that delays a proposal by UCSC to timely fulfill its housing commitment. UCSC commits to make reasonable efforts to expeditiously resolve the litigation.

e. In the event UCSC's housing capacity commitment is suspended as provided for in Section 2.1(c), UCSC will provide written notification within 30 days to the City and County that (1) identifies the date on which the suspension commenced, and (2) the reason(s) for the suspension. On an annual basis following the initial notice of suspension and for as long as the suspension is in effect, UCSC will provide a report identifying the status of the suspension and any efforts by UCSC to end the suspension.

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Further, UCSC will provide notification within 30 days of termination of the suspension period.

2.2. UCSC will annually provide, through public posting, its 5 year capital plan and a report on the status of construction and occupancy rates of student housing.

2.3. There will be an annual meeting to review UCSC, County, and City housing plans and capacity for the community workforce and campus affiliates.

2.4. UCSC housing may be accommodated on or off campus (in UC leased or owned property) provided that:

a. For purposes of satisfying the housing commitment in Section 2.1(b) UCSC will limit the number of new off-campus beds created in the City of Santa Cruz after the effective date of this Agreement to no more than 225 beds, which are in addition to the existing off-campus leased beds at UCSC Inn and University Town Center. The number of beds at UCSC Inn and University Town Center may be replaced by UCSC in the City of Santa Cruz without counting against the 225 if, upon expiration of the current lease period, UCSC does not renew the leases. Nothing in this subsection shall be construed to limit the University's ability to build more than 225 off-campus beds in the City of Santa Cruz provided that (i) the additional beds shall not be used to off-set UCSC's housing commitment in Section 2.1(b); (ii) the project is consistent with City zoning; (iii) UCSC first obtains the concurrence of the City; and (iv) UCSC arranges for alternative transportation modes from the project to the campus, if necessary. In the event the project is already readily served by public or other UCSC arranged transportation, no further transportation arrangements as provided for in (iv) shall be required; otherwise such alternative transportation shall be provided.

b. For each UCSC-owned or leased, off-campus student bed that results in a tax revenue loss to the City, the University will contribute funds/per bed to a Housing Impact Fund (HIF) (for July 2008 - June 2009 the HIF will be \$199/bed, and in each subsequent University fiscal year will increase by 2%). Funds deposited into the HIF will be used by the City to directly support services serving UCSC's off-campus population, including, but not limited to, public safety, parks and recreation. Payments under this

# COMPREHENSIVE SETTLEMENT AGREEMENT

Section will be made on or before October 1 of the first fiscal year in which UCSC adds new off-campus beds. UCSC will provide the City with an annual accounting of new off-campus beds for purposes of calculating the HIF.

2.5 UCSC will consult with the City, and after consultation, will provide the City with written notification of any intent to purchase property in the City.

2.6 UCSC agrees not to construct high-density off-campus housing in the City of Santa Cruz unless consistent with the City's zoning.

2.7 To assist UCSC in achieving its on-campus housing capacity commitment, the parties agree to the following:

a. The City currently provides water service to UCSC through five (5) connections, the most northern of which is north of the City's limits and was installed by the City in 1973. The City will continue to provide water service to the Campus through the five existing connections, and UCSC may use the water to support development implementing the 2005 LRDP, including the development of housing in the North Campus, consistent with the other provisions of this Agreement.

b. The parties will not oppose housing development west of Porter College as analyzed in the Draft 2005 LRDP EIR (necessary to timely achieve new housing commitment). Housing development in the area west of Porter College shall be initiated before development of new bed spaces in the North Campus Area.

c. The City agrees to propose and enforce City-wide ordinance(s) or municipal code(s) to regulate residential rental properties including, but not limited to, boarding, lodging, or rooming houses. In the event the City does not enact such legislation within two years of the approval of this agreement, UCSC's housing capacity commitment set forth in Section 2.1b above shall be reduced by 450 beds. The City, in consultation with UCSC, further agrees to review within three years of the effective date of this Agreement any such City-wide ordinance(s) or municipal code(s) for effectiveness in regulating residential rental properties and, if necessary, to consider revisions.

2.8 UCSC will apply to LAFCO for extraterritorial water and sewer services (for the development of 3,175,000 gross square feet of additional building space under the 2005 LRDP for

## COMPREHENSIVE SETTLEMENT AGREEMENT

the service area below the line identified on the map attached hereto as Exhibit A) from the City of Santa Cruz on the following conditions:

a. The City, County, CLUE, et al. and Stevens, et al., do not object to UCSC's reliance on the 2005 LRDP EIR except as provided in subsection 2.8(b), 2.8(d), 2.8(e), and 2.8(f), below, and/or the City's Integrated Water Plan EIR, or on any applicable CEQA exemption, in support of its LAFCO application, if necessary; and

b. Pursuant to the requirements of Government Code Section 56425, et seq., the City's Sphere of Influence is amended to include the areas designated in the 2005 LRDP presently exclusively within the County limits (as identified in the map attached hereto as Exhibit A), concurrently with the University's application to LAFCO. Pursuant to Government Code Section 56425, et seq., the City and County will negotiate an agreement for the Sphere of Influence amendment to include the area below the line identified on the Exhibit A map. This agreement shall be submitted as part of the City's proposed Sphere of Influence amendment concurrent with UCSC's LAFCO application. UCSC shall initiate its LAFCO application concurrently with the City's proposed Sphere of Influence amendment on or before October 28, 2008, unless an extension of the application date is mutually agreed to by the City and UCSC. In the event the City's Sphere of Influence is not amended or a legal action challenging the amendment is filed, UCSC retains the ability to assert any and all rights or legal positions regarding its ability to develop the North Campus including, but not limited to, the applicability of an exemption or immunity from LAFCO's jurisdiction. Notwithstanding the foregoing, all parties retain the right to assert any and all legal claims or positions regarding any LAFCO decision or UCSC's ability to develop the North Campus; and

c. The City and County provide UCSC with all documentation identified or required by LAFCO as necessary to complete UCSC's application, including, but not limited to, a will serve letter, and will communicate to LAFCO that they do not oppose UCSC's application; and

d. CLUE, et al. and Stevens, et al. reserve the right to participate in the LAFCO proceedings (including raising all issues they feel appropriate), and to file a legal

## COMPREHENSIVE SETTLEMENT AGREEMENT

action challenging any final LAFCO decision. The parties agree and acknowledge that UCSC's application to LAFCO shall not be construed as an admission, presumption or inference of admission, or concession by UCSC that it is subject to LAFCO's jurisdiction and that UCSC retains the right to assert any and all legal claims or positions regarding the applicability of an exemption or immunity from LAFCO's jurisdiction over UCSC, or to assert any other defenses, in the event LAFCO denies UCSC's application, conditionally approves the application on terms that are unacceptable to UCSC, or a legal action against LAFCO approval of the application is filed. Likewise, the City, the County, CLUE, et al. and Stevens, et al. retain their rights to assert that the University is subject to LAFCO's jurisdiction for any development outside the City's boundaries irrespective of the outcome of the University's application to LAFCO; and

e. In the event a legal action challenging LAFCO's decision is filed, UCSC's housing commitments shall be suspended during the time it takes for the legal action to be resolved and UCSC may assert its rights to develop the area north of the main campus and outside the City's jurisdictional limits (North Campus). Notwithstanding the foregoing, all parties retain the right to assert any and all legal claims or positions regarding UCSC's ability to develop the North Campus including, but not limited to, LAFCO's decision. If a final judicial determination upholds a LAFCO approval or reverses a LAFCO denial of the application, the housing commitment, if suspended, will be reinstated, and the provisions of Section 2.1(d) shall apply. If a final judicial determination upholds a LAFCO denial or reverses a LAFCO approval of the application so that the University is unable to develop in the North Campus area identified in the attached map, UCSC is excused from the housing commitment in this Agreement and its housing capacity commitment in the 2005 LRDP will be reinstated. The housing commitment will be reinstated if the University is able to obtain legislative or any other legal authority to develop in the North Campus area, irrespective of the LAFCO approval process, and the provisions of Section 2.1(d) shall apply.

f. In the event LAFCO denies UCSC's application, conditionally approves the application on terms that UCSC determines in good faith are unacceptable, delays more than 18 months from the date UCSC makes its initial application in making a decision, the

# COMPREHENSIVE SETTLEMENT AGREEMENT

City fails to amend its Sphere of Influence, or LAFCO otherwise terminates UCSC's application, the City, County, CLUE, et al. and Stevens, et al. agree that UCSC may assert its rights to develop in the North Campus. Notwithstanding the foregoing, all parties retain the right to assert any and all legal claims or positions regarding UCSC's ability to develop the North Campus including, but not limited to, LAFCO's decision.

g. The parties further agree that Section 2.8 of this Agreement does not change, alter, amend, or otherwise supersede the 1962 and 1965 contracts for water and sewer service between the City and County and The Regents.

2.9 In recognition of City-wide zoning, building and municipal code violations in the City's residential neighborhoods attributable to deficient landlord oversight of rental housing (UC and non-UC affiliated), the City and UCSC agree to jointly and equally fund through 2013 a pilot program for two City Code enforcement positions as a means of improving rental property safety and standards. The pilot program will be reviewed after the first 3 years. After review and mutual agreement, the program may be modified. UCSC's commitment to fund its 50% share of the program will not accrue until the City enacts and enforces City-wide ordinance(s) or municipal code(s) consistent with Section 2.7(c), above.

2.10 The City agrees to incorporate the housing elements of this agreement in its 2008-2009 Housing Element update and the City's update to the General Plan.

## 3.0 WATER

3.1 For every increment of 85,000/gallons of water used over 206 MGY (2005 LRDP baseline year for the UCSC main campus, each incremental payment resets the baseline), UCSC will contribute funds to the City as follows:

a. The University will pay a fee equivalent to the City's System Development Charges ("SDC's") for Equivalent Residential Units ("ERU") in its service area at the rate in effect on the date of payment (currently \$6,530 per ERU (85,000 gallon increment)). The parties acknowledge that the SDC rate is adjusted by the City from time to time in accordance with the procedural and substantive requirements of the Mitigation Fee Act, California Government Code Sections 66000 et seq. It is the intention of the parties that the amount of UCSC's SDC equivalent payments will be proportionate to UCSC's share of

## COMPREHENSIVE SETTLEMENT AGREEMENT

use of City developed new water source capacity. The parties acknowledge that this SDC payment term was negotiated and agreed to pursuant to Government Code Section 54999.3(b) and was based on the factors identified in the document entitled “Water Assumptions”, attached hereto as Exhibit B and incorporated by reference into this Agreement.

b. The parties agree that UCSC’s payment of the fee does not change, modify, or alter the 1962 and 1965 Contracts. UCSC’s payment commitment under Section 3.1(a) will remain in effect until such time as a new LRDP is approved for UCSC.

c. The parties agree that payment constitutes UCSC’s contribution to finance construction of public facilities needed to serve UCSC’s water demands in non-drought years on the main campus (Marine Science Campus payments are governed by the Water System Connections/Construction Agreement, dated May 1997). UCSC pays existing water rates which include development of water supply for drought conditions.

d. The parties acknowledge the City’s intention to implement its Integrated Water Plan, including additional water conservation, use curtailment in droughts, and construction of a desalination plant.

3.2 City agrees to treat UCSC as it would any other developer with regard to the remaining excess water supply capacity (300 MGY as estimated by City in 2007) as follows:

a. Except with regard to any UCSC housing projects under development, if the City establishes a service area-wide moratorium on new connections because of a water shortage emergency condition under State Water law, UCSC will not increase its water demands on the City water system from any University-owned properties, including the main campus, 2300 Delaware, and the Marine Sciences Campus, while the moratorium remains in effect. Leased properties will abide by regulations that affect property owners.

b. UCSC will comply with any service area-wide water restrictions or mandatory use curtailment imposed by the City in response to a declaration of water shortage emergency condition under State Water law on the following terms:

i. The City agrees that its Water Conservation staff will meet with University staff to discuss the University’s water allocations prior to the effective



# COMPREHENSIVE SETTLEMENT AGREEMENT

date of any use curtailment set in accordance with an approved final City Use Curtailment Plan and will accurately correlate the campus uses as much as possible (e.g., campus use allocations for student, faculty and staff housing will reflect the same use curtailment set by the City for its multi-family residential water customers, etc.)

ii. The parties recognize that UCSC's existing and future water demand is for (a) domestic and sanitation uses related to on-campus student and faculty/staff residences, classrooms, and business and support buildings; (b) research facilities; (c) fire protection; and (d) irrigation, and acknowledge that UCSC's unaccounted for water use (e.g., from submeter error, unmetered use, etc.) was less than 7.5% in 2006.

3.3 UCSC agrees that within 5 years of execution of this Agreement it will have implemented all high priority conservation measures recommended by the 2007 engineering audit of campus water use. UCSC's high priority conservation measures are identified in Table 19 of UC Santa Cruz's Water Efficiency Survey (12/2007), attached hereto as Exhibit C.

3.4. For infrastructure improvements required to serve the campus and not included in the City's SDC program, UCSC will contribute its proportionate share of the non-rate funded costs for those improvements according to the previously negotiated 1998 cost-sharing agreement.

3.5 There will be an annual meeting to review the City's plans for implementing additional water supply projects.

3.6 The City will review with UCSC the basis for its sewer service charge.

## 4.0 TRAFFIC

4.1 UCSC agrees to not exceed 28,700 ADT to the main campus (24,800 ADT 2005 LRDP baseline + 3,900 new ADT) for as long as the 2005 LRDP is in effect. Compliance will be monitored by arriving at an ADT through weekday (Monday – Friday) traffic volume counts at the two campus entrances for at least two weeks beginning on the fourth week of Fall and Spring quarter (when school is in session for the entire week) of each corresponding calendar year.

# COMPREHENSIVE SETTLEMENT AGREEMENT

a. The parties agree that the traffic commitment in Section 4.1 will be increased by 1,300 ADT to a total of 30,000 ADT and that the penalty provisions of Section 1.4 will not apply in the event UCSC is prohibited from developing the North Campus area as identified in the attached map (e.g., a final judicial determination prohibits North Campus development) or the City fails to amend its Sphere of Influence. UCSC agrees to make additional ADT payments associated with an ADT increase of 1,300 under this section based on the citywide TIF fee schedule then in effect (currently \$377/trip). The parties acknowledge and agree that 30,000 main campus ADT is 100 ADT lower than estimated by the City for UCSC in its current TIF program.

b. The parties further agree that UCSC will not be in violation of the applicable traffic commitment or subject to the penalty provisions in Section 1.4 in the event of, and for the time period of, one of more of the following:

i. a legal action, or inaction by an agency with approval or permit authority necessary to construct the housing project delays a proposal by UCSC to timely fulfill its housing commitment pursuant to Section 2.1. UCSC commits to make reasonable efforts to expeditiously resolve the litigation;

ii. implementation of an ADT-reducing project not identified in this Agreement is delayed as a result of a legal action or inaction by an agency with approval or permit authority necessary to construct the ADT-reducing project, upon the concurrence of the City.

c. The parties agree that UCSC's ability to meet the applicable traffic commitment in this Section 4.1 requires the City, County and SCMTD to continue existing services and provide transportation enhancements.

d. Should temporary conditions arise that result in anomalous or erroneous weekday ADT measurements (i.e, bus strike, hose counter failure, etc.), as described in Section 4.1, then efforts will be made to re-collect reliable and appropriate data within one month of the initial traffic counts.

e. Should SCMTD transit service to the main campus (excluding Supplemental

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services provided under the “guaranteed cost” clause of the UCSC/SCMTD contract) be reduced from 2007-08 service hours or capacity, then the commitment in Section 4.1 will be suspended until regular transit service levels to the main campus are restored.

f. In the event UCSC’s traffic commitment is suspended as provided for in Sections 4.1(b) and 4.1(e), UCSC will provide written notification within 30 days to the City and County that (1) identifies the date on which the suspension commenced, and (2) the reason(s) for the suspension. On an annual basis following the initial notice of suspension and for as long as the suspension is in effect, UCSC will provide a report identifying the status of the suspension and any efforts by UCSC to end the suspension. Further, UCSC will provide notification within 30 days of termination of the suspension period.

g. Should SCMTD transit service to the main campus (excluding Supplemental services provided under the “guaranteed cost” clause of the UCSC/SCMTD contract) not increase in proportion to campus population growth such that it accommodates at least 25% of all trips to and from UCSC (reflective of 2007-2008 conditions) and UCSC continues to pay the cost of its SCMTD ridership, the applicable ADT commitment will be increased by applying an ADT credit. The ADT credit will be equivalent to 50% of the difference between a calculated 25% UCSC SCMTD mode split (measured in person trips) and the actual UCSC SCMTD mode split (measured in person trips).

h. The parties acknowledge and agree that alternative transportation modes and/or transit services may change over time as a result of technological, financial or other conditions, and to the extent such changes result in a significant shift in current modes, and as such the parties agree that elements of this proposal, by written notice by any party to this agreement, will be revisited and revised, as necessary, and subject to the mutual agreement of the City and UCSC. The parties will attempt to resolve disputes arising pursuant to this section by mediation.

i. The parties agree that the commitments in Section 4.1 are made for the sole and exclusive purpose of settlement and in recognition of access constraints unique

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to the UCSC main campus. These constraints include: campus access dependence upon two arterial roadways (Bay Street and Empire Grade) and two collector roads (High Street and Western Drive) traversing residential neighborhoods; an incomplete roadway network as envisioned in the original campus planning; the absence of any direct campus access route from State Route 9 or Highway 1; reliance on only two entrance gates to the main campus; State and City parklands and open space adjacency that surrounds the main campus on three sides; and the geographic and topographic distance of the main campus from commercial service areas within the City.

4.2 Within three months from the approval of this Agreement, UCSC agrees to contribute funds in an amount equal to the City's TIF in three consecutive annual payments for off-site traffic improvements for the 3,900 new ADT in Section 4.1, above. UCSC acknowledges that the TIF is revised annually on July 1, based on the Engineering News Record Cost of Construction index, and that as a result, each annual payment will be calculated by the current TIF rate at the time of payment. At its discretion, UCSC may make a one-time payment of \$1,427,400 within 15 days of entry of the Agreement as a final judgment, as provided for in Section 7.1. Funds contributed to the City under this section will constitute UCSC's share of the cost of improvements to the Bay Corridor between Mission and High, including improvements to the Bay/Mission and Bay/Escalona intersections and any other intersections identified in the City's TIF program to which UCSC contributes traffic. UCSC's payment is based on the City's 2007-2008 TIF and traffic model.

$$3,900 \text{ ADT} \times \$366/\text{trip} = \$1,427,400$$

Within three months of executing this Agreement, the City and UCSC will meet to identify TIF projects for immediate implementation. Identified and agreed upon improvements will be initiated by the City within one year.

4.3 The parties agree that UCSC's payment as set forth in Section 4.2 fulfills UCSC's "fair share" commitment in 2005 LRDP mitigation measure TRA-2A and the portion of TRA-5A that relies on TRA-2A for off-campus traffic impacts associated with campus ADT of 28,700.

4.4 UCSC agrees to make additional ADT payments associated with UCSC's 2300 Delaware property based on the City's methodology (20 trips per 1000 building gross square feet

## COMPREHENSIVE SETTLEMENT AGREEMENT

based on office use) and citywide TIF fee schedule (currently \$366 per trip). UCSC's payment for existing occupied gross square footage (gsf) at 2300 Delaware (Buildings A and B) is based on the City's 2007-2008 TIF and traffic model as represented by the following calculation:

$$57,223 \text{ gsf @ } 20 \text{ ADT/1,000 sf} = 1,144.45 \text{ ADT} \times \$366/\text{ADT} = \$418,868.70$$

If UCSC converts Buildings A and B to non-office use resulting in a higher trips per square foot rate, a further ADT payment will be made by UCSC provided that UCSC receives a credit for the above-payment towards any additional calculated TIF associated with the change in use. Payment for buildings A & B will be in addition to, and paid at the same time as, the amount to be paid in Section 4.2, above. Payment for ADT associated with building C or any other development on the 2300 Delaware site will be paid based on the City's methodology and citywide TIF fee schedule in effect at the time of occupancy. The City's TIF accounts for 2,068 total ADT from 2300 Delaware and UCSC's CEQA documentation for the project projected 1,780 total ADT at full build-out and occupancy of buildings A, B, and C.

4.5 UCSC agrees to make additional ADT payments associated with UCSC development at the Marine Science Campus, based on the City's methodology and citywide TIF fee schedule in effect at the time new development receives all required approvals. The City's TIF accounts for 3,120 total ADT from the Marine Science Campus and the University's CEQA documentation projected 2,600 total ADT at full implementation of the CLRDP. UCSC does not anticipate the first major trip generating project to be occupied until 2012.

4.6 The parties agree to the following to reduce peak hour traffic impacts and to reduce overall traffic volumes:

a. The City and UCSC will continue to work cooperatively with other Bus Rapid Transit Task Force members to develop BRT improvements and other alternative transit systems that have the greatest feasibility of reducing peak hour impacts and greatest potential to be funded and implemented. UCSC further agrees to:

i. Continue to fund the current study of BRT opportunities between the campus and downtown Pacific Station; this existing study to be completed in Fall 2008. This study will provide the information to prepare the operational analysis portion of an FTA application by SCMTD for "Very Small Starts"

## COMPREHENSIVE SETTLEMENT AGREEMENT

funding corridor improvements.

ii. Commit to include its share of development and construction costs of an on-campus transit hub and related on-campus BRT improvements when calculating the total share/match for the FTA “Very Small Starts” application.

b. UCSC and the City will begin work immediately to mitigate existing and future peak hour traffic demand from UCSC facilities including signal synchronization studies and implementation, to be funded pursuant to Section 4.14, below.

c. UCSC will continue to work with the City and SCMTD to expand and enhance existing public transit service to UCSC facilities in advance of the BRT process (described in (a), above). Enhancements may include pilot projects, evaluated regularly for their effectiveness, such as:

i. “Limited Express” SCMTD service to the campus from downtown and outlying areas of Santa Cruz County funded under UCSC’s “guaranteed cost” agreement with SCMTD;

ii. Implementation of electronic boarding passes for UCSC affiliates using SCMTD transit;

iii. On-going GIS analysis of UCSC residential patterns to identify opportunities for new or expanded SCMTD transit routes to and from the campus;

iv. Working with Caltrans to coordinate signal synchronization improvements to the Bay and Mission corridors.

d. UCSC will continue to implement and expand its existing Transportation Demand Management programs with the objective of increasing sustainable transportation modes (use of modes other than single-occupant vehicles) above 55% and to reduce peak hour traffic volumes and address increases in traffic overall.

4.7 UCSC will work cooperatively with the City to review, revise and maintain the City’s traffic model following completion of the City’s General Plan update. Based on the traffic model adopted as part of the City’s General Plan update, UCSC’s trip generation rates and distribution will be updated every three years. UCSC agrees to, at intervals of no more than

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three years or increments of no more than 1,000 students in enrollment growth (whichever occurs first), conduct traffic counts at a mutually agreed number of intersections for the purpose of updating the City's traffic model and Traffic Impact Fee, because the model and additional TIF specified projects are required to accommodate the projected traffic demand.

4.8 UCSC agrees to contribute to the cost of implementing an Off-Campus Parking Permit Program (Upper Westside or potential programs on the lower Westside) in an amount up to \$50,000 per year for a pilot period of three years, to be continued, revised, or reallocated by mutual consent.

4.9 UCSC has contributed \$216,500 to the Mission Street widening project and agrees to contribute an additional \$107,500 to the City, which has been in dispute. Payment will be made within 90 days of execution of this Agreement and the parties agree that the University's obligation under University Assistance Measure 7 is satisfied with this payment.

4.10 UCSC will pay 100% of the cost of Heller/Empire Grade Intersection Improvements at the UCSC west entrance. If UCSC develops an additional entrance/exit to/from the campus along Empire Grade, related intersection improvements will be funded 100% by UCSC. The scope of those improvements will be informed by the project and a CEQA analysis of the associated traffic impacts.

4.11 UCSC will pay 40% of the bid costs of Bay Street Repair project. If, during the term of the 2005 LRDP, Bay Street requires re-surfacing (asphalt over-lay) in addition to the repair described above according to industry standards, UCSC agrees to pay 40% of the re-surfacing costs only. Either party may initiate a study and propose an alternate percentage.

4.12 UCSC will pay 100% of the cost of improvements to the Marine Science Campus entrance at the intersection of Shaffer Road and Delaware Avenue, as well as improvements to Shaffer Road on UCSC property up to the new driveway to Upper Terrace development zone when development occurs in that zone. As identified in implementation measure 5.1.7 of the Marine Science Campus Coastal Long Range Development Plan, UCSC "will collaborate with the City of Santa Cruz on the construction of an emergency grade crossing" over the tracks.

4.13 Within ninety days of execution of this Agreement, the City and UCSC will meet to identify for immediate implementation transportation improvements that are not included in



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the City's current TIF program or an integrated sequence of transportation studies to explore alternative transportation solutions. Identified and agreed upon improvements will be initiated, and studies will be commissioned, by the City within one year. For purposes of this Section, UCSC and the City each commit up to \$500,000 (over a 3 year period) for a total of \$1,000,000. Specific milestones and deliverables with which the phasing of funding will be tied will be agreed to by the City and UCSC. Study funds are to be used for appropriate consultant(s) to assist in defining realistic transportation solutions and trip reduction improvements. The City and UCSC have identified the following projects for implementation/study as a starting point for discussion:

- a. A signal timing analysis and plan for Bay/Mission corridors;
- b. Integration of signal pre-emption for SCMTD to allow SCMTD buses to move more quickly through intersections;
- c. Expand SCMTD service to the campus including Express Bus service;
- d. On-going GIS analysis of UCSC residential patterns to identify opportunities for new or expanded SCMTD transit routes to and from the campus;
- e. Locate "Park and Ride" opportunities around/within City of Santa Cruz for UCSC Commuters;
- f. Locate long-term "storage" parking areas for UCSC students; and
- g. Expand existing ZipCar carshare programs.

4.14 UCSC and the City and CLUE shall make their best effort to jointly plan and implement a public transportation system capable of reducing the use of City streets and traffic congestion on City streets. Specific tasks of this planning effort (as far as financially feasible with available funds under this Section) will include, but not be limited to, identification of preferred technologies, routes and rights of way, and identification of probable ridership and financing. UCSC and the City will each commit \$50,000 towards this effort.

## 5.0 FUTURE LRDP PROPOSALS

5.1 In recognition of the purpose and intent of Measures I and J, as adopted in November 2006, UCSC agrees that the next major amendment to the 2005 LRDP will include a

# COMPREHENSIVE SETTLEMENT AGREEMENT

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 housing.

## 6.0 IMPLEMENTATION OF THE 2005 LRDP

6.1 UCSC will continue to fund all warranted University Assistance Measures ("UAMs") from the 1988 LRDP. The 1988 LRDP EIR and subsequent CEQA documents based on the 1988 LRDP adopted 12 traffic-related UAMs – 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, and 19, six utility-related UAMs – 1, 2, 3, 4, 5, and 6, and one UAM related to baseline analysis – UAM 15. With regard to UAM implementation, all parties acknowledge and agree that:

- a. UCSC has fulfilled its commitment to implement UAMs 2, 3, 4, 8, 11, 12, 13, 15, 17, and 18;
- b. UAM 7 (Mission Street widening), UAM 12 (Heller/Empire signal) and UAM 14 (Bay Street resurfacing) are warranted and will be satisfied by Sections 4.9 through 4.11 of this Agreement, respectively;
- c. UAMs 9 and 10 commit UCSC to contribute funds towards the development of an Eastern Access road and are not warranted;
- d. UAM 1 (water system improvements) will be satisfied pursuant to Section 3.1 of this Agreement; UAM 16 and UAM 19 (fair share towards signalization of Storey/King and Bay/Escalona, respectively) are warranted, included in the City's TIF program, and will be satisfied upon UCSC's payment in Section 4.2 of this Agreement;
- e. UAM 5 (sewer line upgrade) and UAM 6 (waste water plant upgrade) will be satisfied upon payment by UCSC of its proportional share of the cost of the upgrades necessary to serve the main campus, to be negotiated once final cost estimates are completed.

6.2 Except as provided for in this Agreement, for future projects under the 2005 LRDP, UCSC will not "tier" from or otherwise rely on the water or housing analysis in the

# COMPREHENSIVE SETTLEMENT AGREEMENT

LRDP EIR invalidated by the Santa Cruz Superior Court to obtain CEQA compliance. All parties acknowledge that the Santa Cruz Superior Court did not invalidate the LRDP EIR's traffic analysis and that the Superior Court's decision regarding the adequacy of the LRDP EIR's traffic mitigation is resolved by this Agreement. Notwithstanding, UCSC agrees to perform additional traffic analysis, as set forth in Section 4.7.

6.3 UCSC agrees not to locate a Corporation Yard in the "Campus Support" designated area along Empire Grade north of the West Entrance (see Map from 2005 LRDP, attached as Exhibit A). If and when there is a proposal by UCSC for a bridge over Cave Gulch, UCSC commits to perform additional CEQA review and consider limiting the access to egress and emergency access only.

## 7.0 ENFORCEABILITY/EFFECT OF SETTLEMENT

7.1 The University, City, County, CLUE, et al., and Stevens, et al. agree to take all necessary actions to ensure that the Agreement will be made fully enforceable through its entry as a final judgment.

7.2 The University, City, County and CLUE, et al., agree that all legal challenges to the validity of the Biomed project and associated Mitigated Negative Declaration are fully and finally resolved to the satisfaction of the parties; that additional CEQA review is not required for the Biomed project approval; that the Biomed project approval is deemed final and effective; and that all legal challenges will be resolved and judgment entered consistent with Section 7.1.

7.3 The University, City, County, and Stevens, et al. agree that all legal challenges to the validity of the 2005 LRDP and associated LRDP EIR are fully and finally resolved to the satisfaction of all parties; that additional CEQA review is not required for the 2005 LRDP; that the 2005 LRDP approvals are deemed final and effective; and that all legal challenges will be resolved and judgment entered consistent with Section 7.1.

7.4 The parties agree that the purpose and intent of Measures I and J, as adopted by the City in November 2006, will be satisfied and fulfilled upon finalization of this fully executed settlement agreement for development consistent with the 2005 LRDP. The parties further agree that any additional action to effectuate the intent and purpose of Measures I and J is unnecessary provided that the parties fulfill their commitments under this Agreement.

# COMPREHENSIVE SETTLEMENT AGREEMENT

7.5 The University agrees to dismiss, without prejudice, its legal challenge against the City and LAFCO regarding the 1962 and 1965 water contracts (Santa Cruz Superior Court Case No. CV155995). The University will also dismiss, with prejudice, its currently pending appeal on the issue of attorneys' fees in the Measures I and J litigation (Santa Cruz Superior Court Case No. 155136; Sixth District Court of Appeal Case No. H032405).

7.6 The County Board of Supervisors will rescind its resolution of June 26, 2007, authorizing staff to appeal UCSC THP/Conversion #1-07-062 SCR, and agrees not to appeal or file a legal action challenging any determination by the California Department of Forestry and Fire Protection regarding UCSC THP/Conversion #1-07-062 SCR. CLUE, et al. and Stevens, et al. agree not to file a legal action challenging any determination by the California Department of Forestry and Fire Protection regarding UCSC THP/Conversion #1-07-062 SCR.

7.7 Notwithstanding any determination of "prevailing party" or "successful party", UCSC has agreed to pay reasonable attorneys' fees and costs to the City in the amount of \$350,000; to the County in the amount of \$50,000; and to CLUE, et al. and Stevens, et al. in the amount of \$375,000. The City further commits to pay CLUE, et al. and Stevens, et al. \$15,889. Payment under this Section 7.7 will be made within 15 days of entry of the Agreement as a final judgment, as provided for in Section 7.1.

7.8 On or before November 1, 2008, the parties will agree to a format and mechanism for reporting compliance under this Agreement.

## 8.0 CITY/UCSC PARTNERSHIPS

8.1 UCSC obtained in 1964 a Use Tax Direct Payment Permit from the State of California [7/1/1964 SR ARE 26117705] and regularly prepares the required self-assessment report.

8.2 UCSC will, to the extent feasible and under applicable laws, request its construction contractors to allocate the local sales and use tax derived from construction contracts of \$5 million or more to the local jurisdiction where the job site is located. Toward that end, the University will annually invite the City and its consultant(s) to provide materials for linking from a UCSC website as an informational resource for contractors engaged in projects at UCSC.

8.3 UCSC agrees not to renew its lease on the UCSC Inn when it expires in 2011.

# **COMPREHENSIVE SETTLEMENT AGREEMENT**

UCSC does not intend to lease additional hotel bed space during the term of the 2005 LRDP. Should conditions change that intention, UCSC shall inform the City in writing and will obtain the City's consent prior to Master Leasing additional hotel bed space.

8.4 UCSC will discuss with the City the collection and payment by UCSC of Transient Occupancy Tax and an admissions tax on specified UCSC-sponsored events.

8.5 UCSC and the City will meet on a regular basis to explore opportunities for cooperation in the following areas: economic development, grants, public safety, parks and recreation, and neighborhood issues relating to UCSC.

## **9.0 GOOD-FAITH OBLIGATIONS**

9.1 The City, County, University, CLUE, et al., and Stevens, et al. agree to cooperate fully, expeditiously, reasonably, and in good faith in the implementation of this Agreement; to execute any and all supplemental documents, and to take all additional lawful and reasonable actions, which may be necessary or appropriate to give full force and effect to the terms and to fully implement the goals and intent of this Agreement. The City, County, University, CLUE, et al., and Stevens, et al., also agree to exercise good faith, individually and through counsel, to work out any issues, misunderstandings, or disagreements that may arise with respect to the terms of this Agreement.

## **10.0 COMPREHENSION OF AGREEMENT**

10.1 The City, County, University, CLUE, et al., and Stevens, et al. represent that in entering into this Agreement they have relied upon the legal advice of their attorneys, who are the attorneys of their own choice, and that the terms of the Agreement are fully understood and voluntarily accepted. This Agreement has been jointly drafted by the parties, and its provisions shall not be construed against either party on the basis of authorship.

## **11.0 GOVERNING LAW**

11.1 This Agreement shall be construed and interpreted in accordance with the laws of the State of California.

# **COMPREHENSIVE SETTLEMENT AGREEMENT**

## **12.0 NO ADMISSION OF LIABILITY**

12.1 This Agreement is not an admission of liability by any party to this Agreement to the any other party or to any third party. It is the intent of the parties that this Agreement is a compromise of disputed claims.

## **13.0 AUTHORIZATION**

13.1 The City, County, University, CLUE, et al., and Stevens, et al., hereby represent and warrant that the execution, delivery, and performance of this Agreement has been duly authorized by all necessary actions, and that the individuals who execute this Agreement on each party's behalf are duly authorized to do so.

## **14.0 ENTIRE AGREEMENT**

14.1 This Agreement constitutes the entire understanding between the City, County, University, CLUE, et al., and Stevens, et al. Any other terms, promises, provisions, obligations or agreements by or between the parties shall be enforceable only as set forth in any other applicable written agreement. If any provision of this Agreement is held to be illegal, invalid or unenforceable, each party agrees that such remaining provisions shall be enforced to the maximum extent permissible so as to effect the intent of the parties, and the validity, legality and enforceability of the remaining provisions of this Agreement shall not in any way be affected or impaired thereby.

## **15.0 EFFECTIVENESS**

15.1 This Agreement shall become effective upon full execution by the City, County, University, CLUE, et al., and Stevens, et al., which may occur in counterparts such that one or more signatures may appear on separate pages. The signatures of counsel may be provided through facsimile transmission.

# COMPREHENSIVE SETTLEMENT AGREEMENT

IN WITNESS WHEREOF, the City, County, University, CLUE, et al., and Stevens, et al., have caused this Agreement to be executed as of the date last written below.

## CITY OF SANTA CRUZ

By: 154- ( )

Date: 8.13.08

Approved as to form:

[Signature] 8-12-08  
Counsel to the City of Santa Cruz

## THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to The Regents

## RURAL BONNY DOON ASSOC.

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Rural Bonny Doon Assoc.

## PETER L. SCOTT

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_

## COUNTY OF SANTA CRUZ

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Santa Cruz County Counsel

## COALITION FOR LIMITING UNIVERSITY EXPANSION

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to CLUE

## DON STEVENS

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Don Stevens

## HAL LEVIN

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_



**COMPREHENSIVE SETTLEMENT AGREEMENT**

IN WITNESS WHEREOF, the City, County, University, CLUE, et al., and Stevens, et al., have caused this Agreement to be executed as of the date last written below.

**CITY OF SANTA CRUZ**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to the City of Santa Cruz

**COUNTY OF SANTA CRUZ**

By: Allen Kline

Date: 8/12/08

Approved as to form:

Christy Cleburne  
Santa Cruz County Counsel

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to The Regents

**COALITION FOR LIMITING UNIVERSITY EXPANSION**

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to CLUE

**RURAL BONNY DOON ASSOC.**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Rural Bonny Doon Assoc.

**DON STEVENS**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Don Stevens

**PETER L. SCOTT**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_

**HAL LEVIN**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_

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## CITY OF SANTA CRUZ

By: 154-07

Date: 8.13.08

Approved as to form: \_\_\_\_\_

[Signature]  
Counsel to the City of Santa Cruz

## THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: 8/15/08

Approved as to form: \_\_\_\_\_

Kelly L. [Signature]  
Counsel to The Regents

## RURAL BONNY DOON ASSOC.

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_  
Counsel to Rural Bonny Doon Assoc.

## PETER L. SCOTT

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_

## COUNTY OF SANTA CRUZ

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_  
Santa Cruz County Counsel

## COALITION FOR LIMITING UNIVERSITY EXPANSION

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_  
Counsel to CLUE

## DON STEVENS

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_  
Counsel to Don Stevens

## HAL LEVIN

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form: \_\_\_\_\_

\_\_\_\_\_

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Date: 8.13.08

Approved as to form:

[Signature] 8-12-08  
Counsel to the City of Santa Cruz

## THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: \_\_\_\_\_

By: George R. Blumenthal

Date: 8/15/08

Approved as to form:

[Signature]  
Counsel to The Regents

## RURAL BONNY DOON ASSOC.

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Rural Bonny Doon Assoc.

## PETER L. SCOTT

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_

## COUNTY OF SANTA CRUZ

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Santa Cruz County Counsel

## COALITION FOR LIMITING UNIVERSITY EXPANSION

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to CLUE

## DON STEVENS

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Don Stevens

## HAL LEVIN

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_

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By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to the City of Santa Cruz

## COUNTY OF SANTA CRUZ

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Santa Cruz County Counsel

## THE REGENTS OF THE UNIVERSITY OF CALIFORNIA

By: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to The Regents

## COALITION FOR LIMITING UNIVERSITY EXPANSION

By: [Signature] 8/5/08

By: [Signature] 8-5-08

Date: \_\_\_\_\_

Approved as to form:

[Signature]  
Counsel to CLUE

## RURAL BONNY DOON ASSOC.

By: [Signature]

Date: Aug. 5, 2008

Approved as to form:

[Signature]  
Counsel to Rural Bonny Doon Assoc.

## DON STEVENS

By: [Signature]

Date: 8-5-08

Approved as to form:

[Signature]  
Counsel to Don Stevens

## PETER L. SCOTT

By: [Signature]

Date: 8/5/08

Approved as to form:

[Signature]

## HAL LEVIN

By: [Signature]

Date: 5 August 2008

Approved as to form:

[Signature]

**COMPREHENSIVE SETTLEMENT AGREEMENT**

**KAYE BETH**

By: Kaye Beth  
Date: August 11, 2008  
Approved as to form:  
Stephen C. Volk  
Counsel to Kaye Beth

**ERIC M. GRODBERG**

By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Approved as to form:  
\_\_\_\_\_  
Counsel to Eric M. Grodberg

**SIGRID McLAUGHLIN**

By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Approved as to form:  
\_\_\_\_\_  
Counsel to Sigrid McLaughlin

**JOHN C. AIRD**

By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Approved as to form:  
\_\_\_\_\_  
Counsel to John C. Aird

**RUSSELL B. WEISZ**

By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Approved as to form:  
\_\_\_\_\_  
Counsel to Russell B. Weisz

**HELEN B. DOWLING**

By: \_\_\_\_\_  
Date: \_\_\_\_\_  
Approved as to form:  
\_\_\_\_\_  
Counsel to Helen B. Dowling

# COMPREHENSIVE SETTLEMENT AGREEMENT

**KAYE BETH**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Kaye Beth

**ERIC M. GRODBERG**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to Eric M. Grodberg

**SIGRID McLAUGHLIN**

By: Sigrid McLaughlin

Date: 8-10-08

Approved as to form:

Stephen C. Volk  
Counsel to Sigrid McLaughlin

**JOHN C. AIRD**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

\_\_\_\_\_  
Counsel to John C. Aird

**RUSSELL B. WEISZ**

By: Russell B. Weisz

Date: 8-11-08

Approved as to form:

Stephen C. Volk  
Counsel to Russell B. Weisz

**HELEN B. DOWLING**

By: Helen B. Dowling

Date: 8-11-08

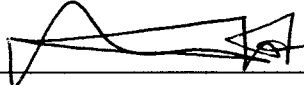
Approved as to form:

Stephen C. Volk  
Counsel to Helen B. Dowling

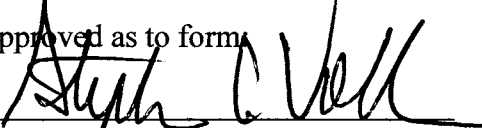
# COMPREHENSIVE SETTLEMENT AGREEMENT

Counsel to Peter L. Scott

**JEFFREY M. ARNETT**

By: 

Date: 8/05/2008

Approved as to form:  


Counsel to Jeffrey M. Arnett

Counsel to Hal Levin

**HARRY D. HUSKEY**

By: 

Date: 8/5/08

Approved as to form:  


Counsel to Harry D. Huskey

**KAYE BETH**

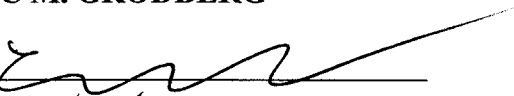
By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

Counsel to Kaye Beth

**ERIC M. GRODBERG**

By: 

Date: 8/5/08

Approved as to form:  


Counsel to Eric M. Grodberg

**SIGRID McLAUGHLIN**

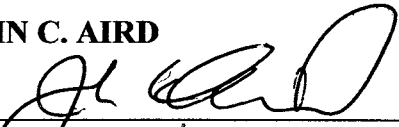
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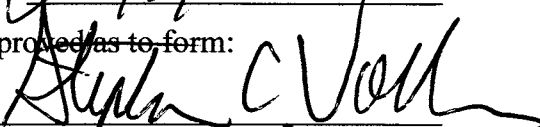
Approved as to form:

Counsel to Sigrid McLaughlin

**JOHN C. AIRD**

By: 

Date: 8/5/08

Approved as to form:  


Counsel to John C. Aird

**RUSSELL B. WEISZ**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

Counsel to Russell B. Weisz

**HELEN B. DOWLING**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:








Counsel to Helen B. Dowling

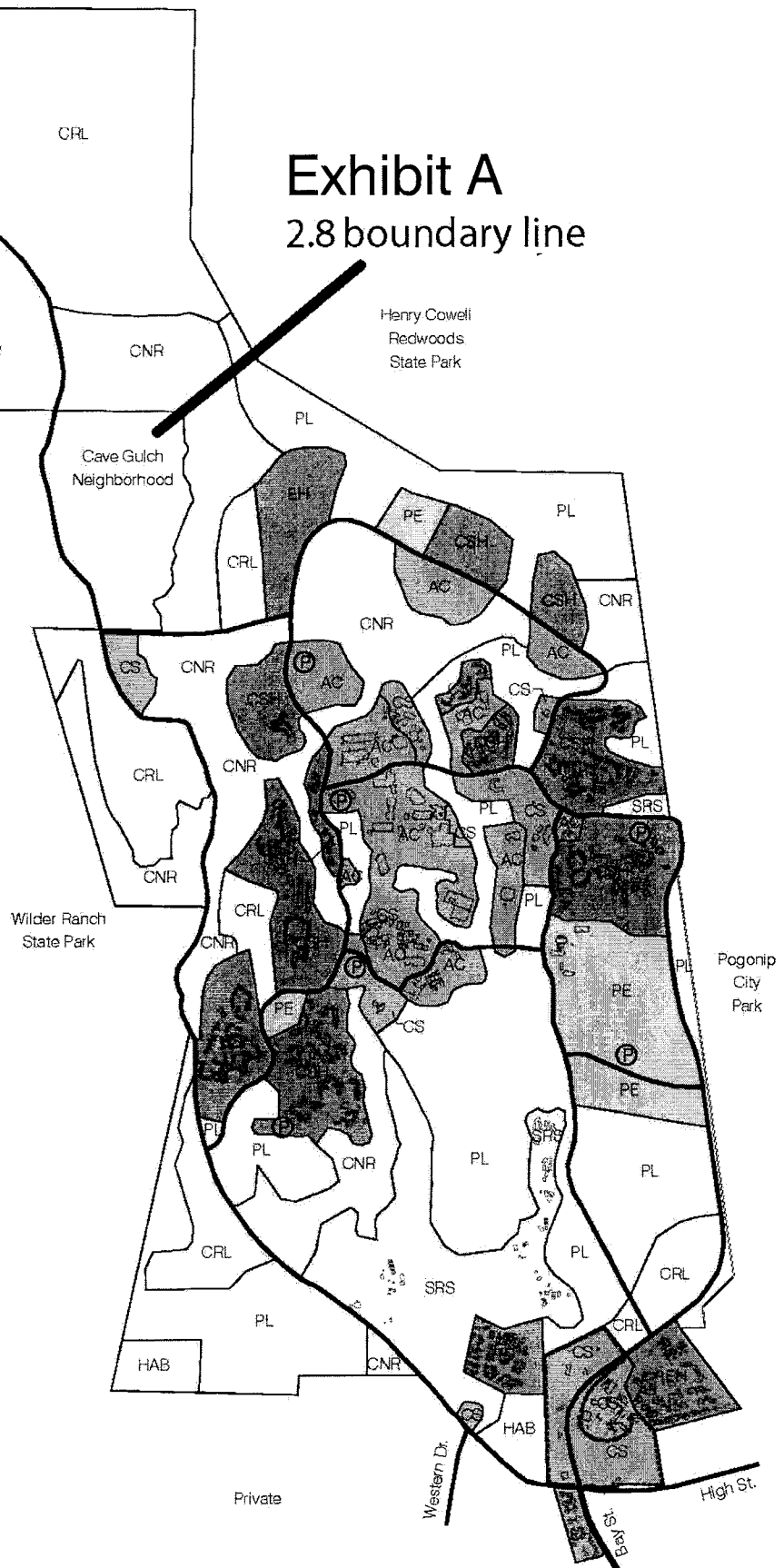
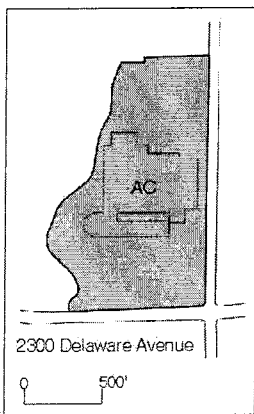
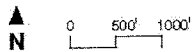


# Exhibit A

## 2.8 boundary line

### LEGEND

-  Academic Core
-  Campus Support
-  Colleges and Student Housing
-  Employee Housing
-  Physical Education and Recreation
- PL Protected Landscape
- CNR Campus Natural Reserve
- SRS Site Research and Support
- HAB Campus Habitat Reserve
- CRL Campus Resource Land
-  Parking Facilities
-  Cowell Ranch Historic District



## **EXHIBIT B**

### **Water Assumptions**

The parties agree that the provisions of section 3.1a are based on the understanding that at the conclusion of the pilot study phase of the desalination plant, the Santa Cruz City Water Department (SCCWD) intends to pursue the phased incremental implementation of a desalination plant on the Westside of Santa Cruz. The parties further agree that the assumptions related to the scope and nature of all phases of the desalination plant are as follows:

#### **Phase One**

1. The design of Phase One is presently contemplated to provide water during drought conditions as follows:
  - a. roughly 90 % to accommodate existing demand (subsequent to imposed conservation restrictions);
  - b. and roughly 10 % to accommodate foreseeable growth between now and when the plant is complete.
2. Water rates from existing customers will fund roughly 90 % of system improvements, including Phase One, related to existing demand.
3. System Development Charges (SDC) from future developers and UCSC will fund roughly 10 % of the costs related to foreseeable growth.
4. Future SDCs may be increased to cover escalation in construction costs and other water system improvements necessary to accommodate growth in demand.
5. SCCWD's existing water rates and SDCs have been set on a suite of system improvements that includes, among other things, a desalination plant with a budget forecast of around \$40 million for Phase One and project soft costs, including financing.
6. The water rates and SDCs may be adjusted upwards to reflect refinements to the scope and escalating cost of Phase One. It is unlikely that construction costs for Phase One would escalate more than double the current budget forecast.
7. SCCWD anticipates a cost sharing agreement with the Soquel Water District at about a 50% share of the cost of Phase One. In the event the Phase One budget is double the forecast this cost sharing agreement would help offset the increased cost and current rate and SDC charges could be maintained at roughly their current levels.

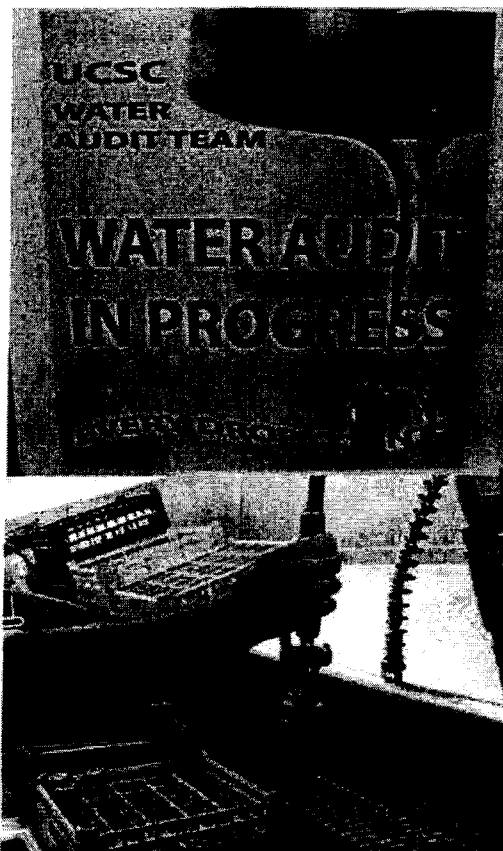
**Phase Two** (and subsequent phases)

1. Phase Two and subsequent phases would be implemented to accommodate future growth in system demand.
2. Phase Two expansion (and potential future phases) would be accommodated by adding pumps and modular filtration membranes to the then existing Phase One facility.
3. SDCs would likely be adjusted upward to reflect the cost of future phases and other system improvements.
4. If Phase Two were sized to produce 1 mg/day, the projected construction cost in today's dollars would likely be less than \$4 million.

EXHIBIT C

**UC SANTA CRUZ  
WATER EFFICIENCY SURVEY**

**FINAL REPORT**



December 2007

Prepared By  
**Maddaus Water Management  
and  
UC Santa Cruz**



UC SANTA CRUZ



Pressure regulators – to help reduce high pressures on drip systems lower part of campus

### 5.3 Water Conservation Project Costs

A summary matrix of the high priority projects and rough estimates of costs, assuming contractor labor and retail prices, is shown in Table 19. The labor rate for all projects is \$85 per hour as provided by Physical Plant staff. Because some of the projects have not been fully designed and detailed cost estimates have not been completed, initial project costing includes a 20% contingency for those projects identified that would require further cost analysis or project management. In addition to the 20% contingency, the \$100,000 cost to perform this water efficiency study was spread among all the high priority projects.

**Table 19 – High Priority Water Conservation Projects for UC Santa Cruz**

Project Number	Potential Water Conservation Project	Number of units to be Replaced or Installed	Unit Cost	Unit Labor hours	Labor Cost	Total Project Cost
	<b>IRRIGATION</b>					
8	Install ET controllers for selected high-water-use areas.	9	\$ 2,000	1.0	\$ 765	\$ 26,683
9	Implement water budgets for individual connection points that appear to be over watering that are not connected to the Central control system	12	\$ 500	1.0	\$ 1,020	\$ 8,578
10	Add wireless rain sensors on existing controllers	70	\$ 80	2.0	\$ 11,900	\$ 24,885
	<b>FARM</b>					
13	Add 10 new PRVs to Farm irrigation system.	10	\$ 200			\$ 2,444
	<b>ARBORETUM</b>					
14	Use battery-operated timers to shut water off on drip systems.	40	\$ 80			\$ 3,910
15	Install Arboretum PRVs to reduce water pressure to drip	100	\$ 9			\$ 1,100

Project Number	Potential Water Conservation Project	Number of units to be Replaced or Installed	Unit Cost	Unit Labor hours	Labor Cost	Total Project Cost
	lines.					
16	Add campus submeters for large un-metered irrigated areas use at Arboretum.	1	\$ 3,900			\$ 5,546
	<b>FIXTURES</b>					
17	Replace high flow toilets in "high-use" areas with 1.6 gpf or 1.28 gpf toilets.	204	\$ 400	3.0	\$ 52,020	\$ 190,004
19	Replace Flapper Valves and Diaphragms on 1.6 gpf Toilets that tested with high flush volumes.	850	\$ 10	0.5	\$ 36,125	\$ 63,455
20	Install waterless urinals in "high use" restrooms. <sup>A</sup>	65	\$ 400	3.0	\$ 16,575	\$ 60,540
22	Conduct pilot test 1.0 gpm aerators on "high use" restroom faucets.	318	\$ 5	0.5	\$ 13,515	\$ 18,458
23	Replace faucet aerators in non high use restrooms.	2,137	\$ 5	0.5	\$ 90,823	\$ 124,039
24	Replace existing showerheads in "high use" housing and athletic facilities.	40	\$ 55	1.0	\$ 3,400	\$ 6,843
25	Replace existing showerheads in "non high use" housing and athletic facilities.	310	\$ 55	1.0	\$ 26,350	\$ 53,034
26	Replace 9 inefficient spray valves in kitchens, cafes, and restaurants.	9	\$ 50	2.0	\$ 1,530	\$ 2,420
27	Replace hose in College 9/10 Dining Hall kitchen with low flow spray valve.	1	\$ 450	8.0	\$ 680	\$ 1,381
	<b>LABORATORIES</b>					
30	Replace 2 spray valves in steam sterilizer room of Earth and Marine Sciences.	2	\$ 50	2.0	\$ 340	\$ 538
31	Remove Steam Sterilizer from DI Water System in Marine Sciences Building.	1	\$ 100	4.0	\$ 340	\$ 538

Project Number	Potential Water Conservation Project	Number of units to be Replaced or Installed	Unit Cost	Unit Labor hours	Labor Cost	Total Project Cost
	<b>COOLING TOWERS</b>					
48	Change operating procedure of CT-5 from conductivity set point of 1200 to 2000.	0	\$ -	80.0	\$ 6,800	\$ 8,309

A = Does not include cost of replacement cartridges for waterless urinals

#### 5.4 Estimated Water, Sewer, and Energy Savings and Paybacks

Table 20 shows the projected water savings and the associated paybacks for the high priority projects. Projects were identified to be high priority if they had a payback of less than 5 years. The payback is defined as the number of years for the UC Santa Cruz to recover its investment in a given water conservation project, based on the projected water and sewer bill savings associated with implementation of that project. In this case, nineteen water conservation projects identified for the UC Santa Cruz have paybacks which are equal to or less than five years and are recommended.

The value of the saved water for all recommended water conservation projects is an estimated reduction in water, sewer, and energy costs of \$542,000 per year (2009 rates). Savings will increase when the UC Santa Cruz's water, sewer and energy rates increase in the future.

Table 20 shows the estimated annual savings achieved by the completion of the recommended water conservation projects. In terms of priorities, projects should be implemented in the order of increasing payback. The total cost to implement the nineteen recommended water conservation projects is estimated to be approximately \$603,000. The overall payback for these projects is estimated to be 1.1 years. The cost estimates presented in this report are planning level costs, sufficiently accurate to identify projects with attractive paybacks. The exact costs to the UC Santa Cruz to implement these water conservation projects will depend on the specific number and type of fixtures. In addition, MWM recommends that the UC Santa Cruz adjust the estimates contained herein based on estimates provided by plumbing contractors and engineering staff.

**Table 20 - Annual Water, Sewer, Irrigation And Energy Bill Savings for High Priority UC Santa Cruz Projects**

Project Number	Project	Annual Water Savings (gpd)	Annual Water Bill Savings, (\$/year)	Annual Sewer Bill Savings, (\$/year)	Annual Irrigation Bill Savings, (\$/year)	Annual Energy Savings (\$/year)	Total Savings, (\$/year)
	<b>IRRIGATION</b>						
8	Install ET controllers for selected high-water-use areas.	2,613	\$ -	\$ -	\$ 5,355	\$ -	\$ 5,355



**GREENHOUSE GAS EMISSIONS CALCULATIONS**

**Donald Ballanti**  
*Certified Consulting Meteorologist*

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## **MEMORANDUM**

To: Stephanie Strelow

From: Don Ballanti

Date: September 24, 2009

Subject: Santa Cruz SOI Greenhouse Gas Analysis

### **Background**

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as a driving force for global climate change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and anthropogenic activities which alter the composition of the global atmosphere.

California State law defines greenhouse gases as:

Carbon Dioxide (CO<sub>2</sub>)  
Methane (CH<sub>4</sub>)  
Nitrous Oxide (N<sub>2</sub>O)  
Hydrofluorocarbons  
Perfluorocarbons  
Sulfur Hexafluoride

The overall approach to the GHG calculation is based upon the technical advisory of the

Governor's Office of Planning and Research (OPR) embodied in the document *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*. According to the Governor's Office of Planning and Research, the most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. The last 3 of the six identified GHGs are primarily emitted by industrial facilities. For this analysis, only carbon dioxide, methane and nitrous oxide emissions will be considered. These primary greenhouse gases are described below.

#### Carbon dioxide (CO<sub>2</sub>)

Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of carbon dioxide in the atmosphere has increased 35 percent. Carbon dioxide is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining GWPs for other GHGs.

#### Methane (CH<sub>4</sub>)

Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.

#### Nitrous Oxide (N<sub>2</sub>O)

Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.

### **Greenhouse Gas Effects**

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more

drought years.<sup>1</sup> Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

### **Statewide Greenhouse Gas Programs**

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gases (GHG) would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.<sup>2</sup>

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32), which requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

AB 32 establishes a timetable for the CARB to adopt emission limits, rules, and regulations designed to achieve the intent of the Act. CARB staff is preparing a scoping plan to meet the 2020 greenhouse gas reduction limits outlined in AB 32. In order to meet these goals, California must reduce their greenhouse gases by 30 percent below projected 2020 levels, or about 10 percent from today's levels.

### **Sources of Greenhouse Gas Emissions**

Anthropogenic GHG emissions worldwide as of 2005 totaled approximately 30,800 CO<sub>2</sub> equivalent million metric tons (MMT CO<sub>2</sub>e).<sup>3</sup> The United States was the top producer of greenhouse gas emissions as of 2005. The primary greenhouse gas emitted by human activities in the United States was CO<sub>2</sub>, representing approximately 84 percent of total greenhouse gas emissions. Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 80 percent of US

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<sup>1</sup> California Air Resources Board (ARB). 2006. Climate Change website. (<http://www.arb.ca.gov/cc/120106workshop/intropres12106.pdf>).

<sup>2</sup> California Air Resources Board (CARB), *Climate Change Draft Scoping Plan: A Framework for Change*, October 2008.

<sup>3</sup> The CO<sub>2</sub> equivalent emissions are commonly expressed as "million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e)". The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated Global Warming Potential (GWP).

GHG emissions.<sup>4</sup>

The primary contributors to GHG emissions in California are transportation, electric power production from both in state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions are presented in Table 1.

### **Greenhouse Gas Emission Estimate Methodology**

OPR's technical advisory states that "the most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide." The calculation presented below discusses existing and future operational emissions in terms of CO<sub>2</sub>e emissions from vehicular traffic, area sources, and energy consumption.

#### Construction Emissions

The URBEMIS-2007 program (Version 9.2.4) was used to calculate construction emissions of carbon dioxide. The project would result in the construction of 3,175,000 gsf of new building on 73 acres over a roughly 10 year period. Since no specific building information is available, the calculation of annual emissions was based on assumed construction of 10% of the forecast square footage on 10% of the projected area to be disturbed, or 317,500 of new building on 7.3 acres each year.

Since no specific building information is available, the analysis used URBEMIS-2007 default estimates for the phasing of construction activities, equipment usage and construction travel. The URBEMIS-2007 output is attached.

Emissions of methane and nitrous oxide were estimated separately based on the URBEMIS-2007 estimates of carbon dioxide from diesel construction vehicles and equipment. Published methane and nitrous oxide emission factors were utilized to estimate project emissions of these gases based on the estimated carbon dioxide emissions.<sup>5</sup> Because these gases are more powerful global warming gases the emissions were multiplied by a correction factor to estimate "carbon dioxide equivalents". Methane was assumed to have a Global Warming Potential of 21 times that of CO<sub>2</sub>, while nitrous was assumed to have a Global Warming Potential of 310 times that of CO<sub>2</sub>. A spreadsheet is attached that shows the adjustment of the

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<sup>4</sup> US Environmental Protection Agency, *Inventory of US Greenhouse Gas Emissions and Sinks 1990-2006*, 2008.

<sup>5</sup> Bay Area Air Quality Management District, *Source Inventory of Bay Area Greenhouse Gas Emissions*, December 2008.

construction emissions to account for methane and nitrous oxide emissions, with the result reported as CO<sub>2</sub>e.

### Direct Emissions

Estimates of carbon dioxide generated by project traffic and area sources were made using URBEMIS-2007. URBEMIS-2007 is a program used statewide that estimates the emissions that result from development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial facilities. URBEMIS-2007 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2007 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Trip rates were calculated so that new traffic would be 3,900 daily trips, which is the allowable increase in traffic per the UCSC 2005 LRDP Settlement Agreement. Average trip lengths and speeds for Santa Cruz County were used. The analysis was carried out assuming a 2020 vehicle mix.

Area source emissions of carbon dioxide were also quantified by the URBEMIS-2007 program. The URBEMIS program identifies 5 categories of area source emissions, but only the following result in emissions of carbon dioxide and would be present within the project:

- Natural Gas Combustion
- Landscaping Emissions

Natural gas emissions result from the combustion of natural gas for cooking, space heating and water heating. Estimates are based on square footage of new construction.

URBEMIS calculates emissions from fuel combustion and evaporation of unburned fuel by landscape maintenance equipment. Equipment in this category includes lawn mowers, rotor tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used in residential applications.

The URBEMIS-2007 results for carbon dioxide are attached. The output shows annual emissions of carbon dioxide.

Emissions of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) were estimated separately based on the URBEMIS-2007 estimates of carbon dioxide from vehicles and natural gas combustion. CH<sub>4</sub> and N<sub>2</sub>O emission factors from Table B in BAAQMD's *Source*

*Inventory of Bay Area Greenhouse Gas Emissions* were utilized in a spreadsheet to estimate project emissions of these gases.<sup>6</sup> The attached spreadsheet output shows the calculation of CH<sub>4</sub> and N<sub>2</sub>O carbon dioxide equivalents and the calculation of total estimated CO<sub>2</sub>e emissions for the project from all identified sources.

### Indirect Emissions

Indirect emissions are related to secondary emissions of global warming gases emitted away from the site and not directly related to project activities. For example, a portion of the electricity used by the project will be generated by fossil-fueled power plants that generate global warming gases.

#### *Electricity*

Global warming gas emissions related to electricity use were estimated using average annual electrical consumption estimates recommended by the California Energy Commission. Emission rates for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O per megawatt hour were taken from the California Climate Action Registry General Reporting Protocol, Version 3.0. Project electrical usage factor was multiplied by the emission rates per megawatt hour to obtain annual emissions for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O. These emissions were converted to CO<sub>2</sub> equivalents. The calculation is shown in the attached spreadsheet output.

#### *Water Treatment/Delivery*

The treatment and delivery of drinking water is another indirect source of greenhouse gases. It was estimated by using an emission factor created by dividing current estimated greenhouse gas emissions for the Santa Cruz municipal water system of 2119 metric tons per year (CO<sub>2</sub> equivalent) by the system's annual throughput of 39 billion gallons.<sup>7</sup> This per-gallon factor was then doubled to account for the additional energy required to pump water uphill to the project site, then multiplied by the estimated annual project water demand of 100 million gallons. The resulting emission is 108.67 MT CO<sub>2</sub>e/year.

#### *Tree and Vegetation Removal*

On-site vegetation currently reduces GHG emissions by sequestering carbon dioxide. GHG emissions would therefore increase as on-site vegetation is replaced with

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<sup>6</sup> Bay Area Air Quality Management District, *Source Inventory of Bay Area Greenhouse Gas Emissions*, 2008.

<sup>7</sup> City of Santa Cruz, *City of Santa Cruz Greenhouse Gas Emissions Inventory 2005 Municipal and Community Emissions*, 2008.



developed urban surfaces. These emissions are due to the loss of future sequestration by the existing trees. The project would remove an unknown number of trees and other vegetation, which would be partly offset by the planting of new trees.

The EIR for the East Campus Infill Project included a detailed inventory of trees to be removed by that 2-acre development, and an estimate of the net reduction in carbon dioxide sequestration resulting from the removal of trees. It is not possible to identify trees to be removed as part of the Santa Cruz Sphere of Influence Project since development sites and building footprints are not available. The results of the East Campus Infill Project have been utilized to make a conservative estimation of project effects. The East Campus Infill Project site is mostly redwoods, while the north campus development areas are mostly chapparal, mixed evergreen, chapparal/forest transition, with some dwarf redwood forest. Therefore, the GHG emissions per acre for the East Campus Infill Project site would most likely be higher than for the north campus.

Tree removal for the 2-acre East Campus Infill Project was estimated to result in the emission of 1,182.53 MT CO<sub>2</sub>e. The construction of the proposed project would require tree removal on about 7.3 acres per year for a period of about 10 years. The resulting annual GHG emission is 4,316.23 MT CO<sub>2</sub>e.

#### *Wastewater Treatment/Solid Waste Disposal*

Wastewater treatment and solid waste disposal in landfills are sometimes considered to be indirect sources of GHG emissions that can be linked to new development. The breakdown of organic materials at wastewater treatment facilities and solid waste landfills generates methane, a GHG with a Global Warming Potential (GWP) 21 times that of CO<sub>2</sub>, so methane emissions associated with the wastewater and solid waste generated by a project could be calculated.

However, methane is captured at the Santa Cruz city landfill and wastewater treatment plant and used to generate electricity. The City of Santa Cruz *Greenhouse Gas Emissions Inventory* estimates that capture of methane at the city landfill and wastewater treatment plant and its use to generate electricity results in an avoided emission that exceeds actual emissions.<sup>8</sup> This is accomplished by converting methane emissions into CO<sub>2</sub> emissions (with a much lower Global Warming Potential) and by creating electricity that offsets production of GHG emissions at power plants. Since, at least in Santa Cruz, the net effect of wastewater treatment and landfill operations is to

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<sup>8</sup> City of Santa Cruz, *City of Santa Cruz Greenhouse Gas Emissions Inventory 2005 Municipal and Community Emissions*, 2008.

result in avoided emissions, the project has not been considered as generating new emissions from these sources.

## **Results**

The project's incremental increase in GHG emissions by component is shown in Table 2. Table 2 shows the maximum GHG emission, which would occur at the year of project completion. Once construction is completed, construction emissions and tree removal sources would be eliminated, and project GHG emissions would then be 17,005.80 MT CO<sub>2</sub>e per year.

Table 1: GHG Sources In California, 2004

<b>Source Category</b>	<b>Annual GHG Emissions (MMT<sub>CO<sub>2</sub>E</sub>)</b>	<b>Percent of Total</b>
Agriculture	27.9	5.8
Commercial Uses	12.8	2.6
Electricity Generation	119.8	24.7
Forestry (Excluding sinks)	0.2	0.0
Industrial Uses	96.2	19.9
Residential Uses	29.1	6.0
Transportation	182.4	37.7
Other	16.0	3.3
<b>Totals</b>	<b>484.4</b>	<b>100.0</b>

*Source: California Air Resources Board, California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, 2007.*

Table 2: Project Greenhouse Gas Emissions, in CO<sub>2</sub> Equivalent

<b>Source</b>	<b>GHG Emission (Metric Tons/Year)</b>
Construction	454.74
Transportation	2,870.12
Area Sources	798.74
Electricity	13,228.27
Water Treatment/Delivery	108.67
Tree Removal	4,316.23
<b>Total</b>	<b>21,776.77</b>

Project: Santa Cruz SOI  
 Spreadsheet to Calculate Greenhouse Gases

<b>CONSTRUCTION EMISSIONS</b>			CH4 EMISSIONS	N2O EMISSIONS
CONSTRUCTION CO2 EMISSIONS FROM URBEMIS:	497.55	TONS/YEAR	TONS/YEAR CO2e	TONS/YEAR CO2e
			2.49	1.33
CONSTRUCTION CO2 EQUIVALENT	501.36	TONS/YEAR CO2e		

**TRANSPORTATION EMISSIONS**

PROJECT INFORMATION:

Residential Units	0.00	Dwelling Units
Office	0.00	
Restaurant	0.00	
Retail	0.00	
Grocery	0.00	
Ref. Warehouse	0.00	
Warehouse	0.00	
Schools	0.00	
Colleges	3,175,000.00	
Hospitals	0.00	
Lodging	0.00	
Misc. cmrcl.	0.00	
	3,175,000.00	Sq. Ft.

**TRANSPORTATION EMISSIONS**

ANNUAL TRANSPORTATION CO2 EMISSIONS FROM URBEMIS:

3,152.58	TONS/YEAR	CH4 ANNUAL EMISSIONS	N2O ANNUAL EMISSIONS
		TONS/YEAR CO2e	TONS/YEAR CO2e
3,164.41	TONS/YEAR CO2e	1.86	9.97

**AREA SOURCE EMISSIONS**

ANNUAL AREA SOURCE CO2 EMISSIONS FROM URBEMIS:

876.69	TONS/YEAR	CH4 ANNUAL EMISSIONS	N2O ANNUAL EMISSIONS
		TONS/YEAR CO2e	TONS/YEAR CO2e
880.64	TONS/YEAR CO2e	0.25	3.70

Sources:

CH4 and N2O emission factors from Table 3 in BAAQMD's "Source Inventory of Bay Area Greenhouse Gas Emissions", December 2008.  
 CH4 assumed to have a Global Warming Potential of 21 times that of CO2.  
 N2O assumed to have a Global Warming Potential of 310 times that of CO2.

**ELECTRICITY CONSUMPTION**

LAND USE	SQ.FOOTAGE	RATE kwh/sq. ft/year	ANNUAL USAGE (mWH)
College/University	3,175,000.00	10.44	33,147.00

Total 33,147.00

Rate (lbs./mWH)	Pollutant	TONS/YEAR	TONS/YEAR CO2e
878.71	CO2	14,563	14,563
0.0067	CH4	0.1110	2.33
0.0037	N2O	0.0613	19.01

14,584.6 TONS/YEAR CO2e

Sources:

Electrical use rate from CEC: <http://www.consumerenergycenter.org/pv4newbuildings/downloads/II-6A.pdf>  
 Emissions rates for CO2, CH4 and N2O taken from CCAR General Reporting Protocol, Version 3.0, April 2008, Tables C-2 and C-3

**SUMMARY OF EMISSIONS**

	Tons/Year CO2e	Metric Tons/Year CO2e
Construction	501.36	454.74
Transportation	3,164.41	2,870.12
Area Sources	880.64	798.74
Electrical Usage	14,584.64	13,228.27
<b>Total</b>	<b>19,131.05</b>	<b>17,351.86</b>

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Don Ballanti\Application Data\Urbemis\Version9a\Projects\santacruzsoioperation.urb924

Project Name: City of Santa Cruz SOI

Project Location: Santa Cruz County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	876.69

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	3,152.58

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	4,029.27

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	876.44
Hearth	
Landscape	0.25
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	876.69

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
University/college (4 yrs)	3,152.58
TOTALS (tons/year, unmitigated)	3,152.58

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
University/college (4 yrs)		0.87	students	4,500.00	3,915.00	18,674.55
					3,915.00	18,674.55

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	44.9	0.0	99.8	0.2
Light Truck < 3750 lbs	17.8	0.0	97.8	2.2
Light Truck 3751-5750 lbs	20.3	0.0	100.0	0.0
Med Truck 5751-8500 lbs	7.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.2	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.1	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.1	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	5.1	41.2	58.8	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	92.3	7.7

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4



Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	11.8	8.3	7.1	11.8	4.4	4.4
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
University/college (4 yrs)				5.0	2.5	92.5

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: Santa Cruz SOI Construction

Project Location: Santa Cruz County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

CO2

2010 TOTALS (tons/year unmitigated) 497.55

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2

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2010	497.55
Mass Grading 01/01/2010-02/12/2010	36.47
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	34.83
Mass Grading On Road Diesel	0.00
Mass Grading Worker Trips	1.64
Asphalt 02/15/2010-02/28/2010	8.10
Paving Off-Gas	0.00
Paving Off Road Diesel	6.36
Paving On Road Diesel	0.68
Paving Worker Trips	1.06
Building 03/01/2010-12/31/2010	448.79
Building Off Road Diesel	178.33
Building Vendor Trips	34.48
Building Worker Trips	235.98
Coating 12/01/2010-12/31/2010	4.19
Architectural Coating	0.00
Coating Worker Trips	4.19

Phase Assumptions

Phase: Mass Grading 1/1/2010 - 2/12/2010 - Default Fine Site Grading Description  
Total Acres Disturbed: 7.3  
Maximum Daily Acreage Disturbed: 1.82  
Fugitive Dust Level of Detail: Default  
20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/15/2010 - 2/28/2010 - Default Paving Description

Acres to be Paved: 1.82

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 3/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2010 - 12/31/2010 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 100

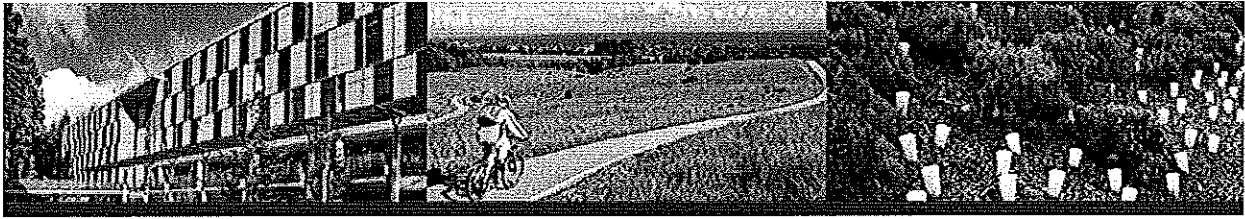
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

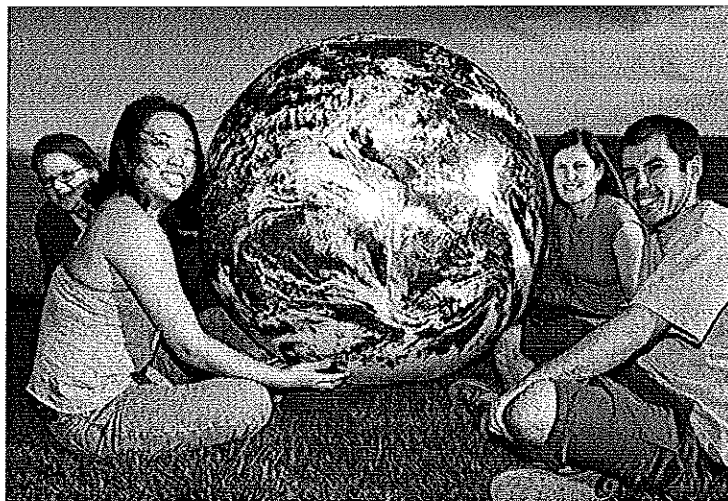


**UNIVERSITY OF CALIFORNIA POLICY  
ON SUSTAINABLE PRACTICES  
And  
2008 UCSC SUSTAINABILITY UPDATE**

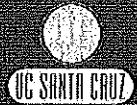


**The University of California Santa Cruz is a committed partner in the regional Climate Action Compact.** The campus has made significant progress on climate protection and campus sustainability. Here are examples:

- Energy efficiency projects completed since 2004 have lowered annual campus CO<sub>2</sub> emissions by approximately 1,600 metric tons. These projects reduced CO<sub>2</sub> emissions by reducing annual campus electrical consumption by 2.8 million kWh, and campus natural gas consumption by 113,000 therms. This CO<sub>2</sub> footprint is equivalent to the annual emissions of 293 passenger vehicles or approximately 160 single family residential buildings.
- UCSC has been recognized by the national environmental publication, *Plenty Magazine*, for having the "greenest" student dining among U.S. universities, thanks to innovative local, organic food sourcing and waste reduction programs.
- UCSC has set aside 55% of its nearly 2,000-acre campus as natural habitat.
- The campus has reduced per capita water consumption by 40 percent, and has plans under development to reduce total annual use by another 20 to 30 million gallons.
- Thanks to aggressive, innovative trip-reduction programs, nearly six in ten people traveling regularly to and from the campus (vs. three in ten throughout the Santa Cruz community) use alternatives to single-occupancy vehicles.
- UCSC is committed to becoming even "greener" and more sustainable, and to a long-term collaborative relationship with the city and county that further reduces the region's collective carbon footprint.



# 2008 UCSC Sustainability Update



## Energy and Climate:

### UC Policy on Sustainable Practices Systemwide Goals<sup>1</sup>:

#### Greenhouse Gas Emission Reduction:

- By 2014, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050 reduce 80% below 1990 levels

#### Renewable Energy:

- By 2010, strive for 20% of power to be generated by renewables
- By 2014, generate approximately 10 MW of onsite renewable energy (throughout the UC system)



### UCSC Campus Activities:

- UCSC has a history of energy efficiency and an ongoing slate of efficiency-related projects.
- Over 2.8 million KWh, equivalent to 1600 tons of CO<sub>2</sub> are avoided due to energy efficiency measure implemented since 2004.
- The institution offsets 100% of its electrical load with Renewable Energy Credits (making it the sixth largest renewables purchaser in higher education nationwide).
- University Housing Services replaced 1,100 light fixtures in the student residential buildings with energy saving fixtures in the summer of 2008 for an annual savings of about 90,000 KWH.
- In addition to signing the Climate Action Compact, UCSC is a signatory to the American College and University Presidents Climate Commitment (ACUPCC).
- UCSC has completed a GHG inventory and is registered with the California Climate Action Registry.

## Green Building:

### UC Policy on Sustainable Practices Systemwide Goals:

- All new buildings will achieve a minimum of LEED "Silver" and strive for "Gold" or the equivalent and will outperform Title 24 by 20%.



### UCSC Campus Activities:

- UCSC has submitted for LEED – Existing Building "Silver" certification for Engineering 2, leading to annual energy savings of 900,000 KWH and 93,000 therms of natural gas savings.
- UCSC has several new construction and renovation LEED certification projects underway.



<sup>1</sup> UC "Presidential Policy on Sustainable Practices" sets systemwide goals. Full policy can be found: [www.ucop.edu/facil/sustain/](http://www.ucop.edu/facil/sustain/)



# 2008 UCSC Sustainability Update



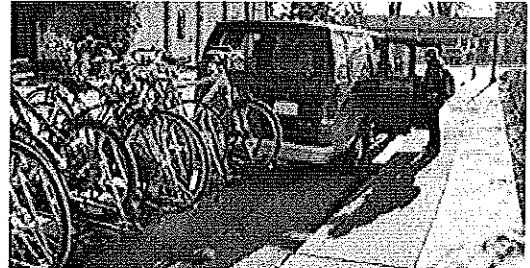
## Transportation:

### UC Policy on Sustainable Practices Systemwide Goals:

- By 2010 UCSC will strive to increase the number of alternative energy fleet vehicles by 20% from the 2005 baseline and/or convert 50% of vehicles to non-carbon fuels.

### UCSC Campus Activities:

- The campus fleet began using 20% biodiesel (B-20) in all vehicles in 2007.
- Last year UCSC launched the most successful university-based car-sharing program in the United States through a multi-year relationship with Zipcar. Membership now totals more than 630 participants—500 of whom are UCSC students, 65 are faculty or staff, and 65 are non-UCSC affiliates (community members).
- Nearly 60% of commuters reach campus by means other than single-occupancy vehicles (compared to only 28% by alternative vehicle use by county residents).
- Spring 2008 traffic volumes through the two campus entrances declined more than 16% from their high in Spring 2005—to the lowest levels seen since spring 1998.
- This October counts revealed more than 1,200 bicycle riders per day—an increase of more than 50% over bike ridership just last spring.
- Bike Shuttle service was extended to the UCSC Inn, ridership increased to 250 and 300 passengers daily.



## Recycling and Waste Management:

### UC Policy on Sustainable Practices Systemwide Goals:

- By 2012, achieve 75% diversion rate.
- By 2020, achieve Zero Waste.

### UCSC Campus Activities:

- Increased overall recycling stream from 32% to 45% in FY 07-08.
- Implemented Zero Waste event programs serving thousands of participants.
- Installed Multibins in residence halls to collect electronic and universal waste.
- Implemented battery recycling program.
- Partnered with the County of Santa Cruz to divert food scraps to the county's compost program.



## Purchasing:

### UC Policy on Sustainable Practices Systemwide Goals:

- Minimum standard of 30% PCW paper for office supplies and uncut paper.
- Computer equipment purchases will achieve Bronze or higher under EPEAT.
- Purchase Green Seal Certified cleaning products.
- Purchase Energy Star rated products when available.

### UCSC Campus Activities:

- Educational programs are being put in place for UCSC staff and a pilot program to achieve Zero Waste in offices is underway.
- A proposal is being considered to increase from 30% PCW paper to 100% PCW in basic office paper.

## Land, Habitat, and Watershed:

- 55% of campus land is dedicated as protected natural landscape.

## Food Systems:

- UCSC has been recognized as having the “greenest cafeterias” nationwide by Plenty Magazine for efforts to buy local and reduce waste.
- Trayless Initiative in UCSC Dining--saving over 30,000 gallons of water monthly, reducing food waste by 25-35%, and creating a less energy intensive infrastructure in the kitchen.
- Approximately a quarter of UCSC Dining Services’ produce is organic, much provided through an innovative local sourcing arrangement with a local farmers cooperative.
- UCSC Dining Services has achieved “Green Certification” for 9 of 14 Dining Halls (through the City of Santa Cruz and Monterey Green Business Program)

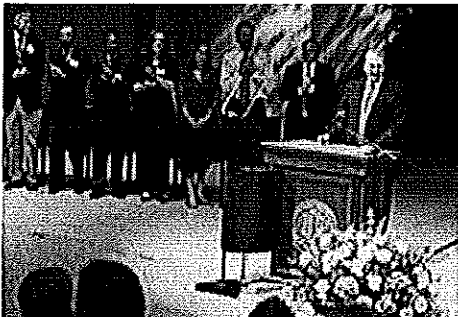


## Water Use and Conservation:

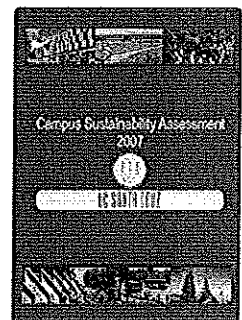
- Water consumption has risen only modestly since the 1980s: despite a 72.7% rise in enrollment since 1986-1987, annual campus water consumption increased only 4.2% (185.2 to 192.9 million gallons).
- Annual per capita water usage fell 40% since the 1980's (from 22,022 to 13,282 gallons per student).
- UCSC undertook a comprehensive water efficiency survey in 2007 that suggests a number of possible conservation projects that could result in a 10-15% reduction in total annual water use (saving 20 to 30 million gallons per year).

## Governance and Decision-Making Structures:

- The Chancellor's Council on Climate Change was established in February 2008.
- In 2007, a two-year pilot Sustainability Office with a Coordinator position was created.



- UCSC completed a Campus Sustainability Assessment and launched a campus sustainability website: <http://sustainability.ucsc.edu>





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September 1, 2009

**CHANCELLORS  
INTERIM LAB DIRECTOR – LAWRENCE BERKELEY NATIONAL LABORATORY**

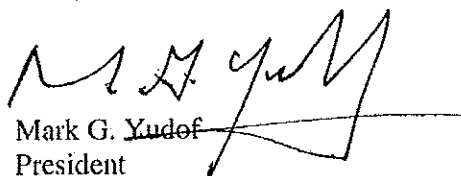
**Policy on Sustainable Practices**

The University of California is committed to minimizing its impact on the environment and reducing its dependence on non-renewable energy. As directed by The Regents in July 2003, the President adopted the Policy on Sustainable Practices, which has been updated in January 2006 and March 2007. In March 2008, The Regents adopted a Statement on University of California Sustainability Programs that recommended building upon the University's record of environmental stewardship and requested an assessment of several policy areas for potential updating or expansion.

Accordingly, the enclosed *Policy on Sustainable Practices* and *Guidelines* for implementation include the addition of a section on sustainable foodservices, as well as revisions and updates in the areas of green building design, climate protection practices, and sustainable transportation practices.

These policy updates and revised guidelines were approved by the Sustainability Steering Committee, consisting of administrators from all campuses and the Office of the President, and faculty members with expertise in these disciplines. They are based on the recommendations from topical working groups comprised of representatives from all campuses.

The expansion and updating of goals in these areas strengthens implementation of evolving best practices on sustainability, for which the University continues to receive extensive recognition.

  
Mark G. Yudof  
President

Enclosures

cc: Members, President's Cabinet  
Principal Officers of The Regents  
Associate Vice President Bocchicchio  
Universitywide Policy Office

September 1, 2009

UNIVERSITY OF CALIFORNIA  
POLICY ON SUSTAINABLE PRACTICES

Resource sustainability is critically important to the University of California, the State of California, and the nation. Efficient energy use is central to this objective, and renewable energy and energy-conservation efforts provide a means to save money, foster environmental awareness, reduce the environmental consequences of University activities, and provide educational leadership for the 21st century.

The University is committed to stewardship of the environment and to reducing the University's dependence on non-renewable energy sources. With this commitment in mind, we will regularly review initiatives and best practices and share successes by augmenting the existing University guidelines. These guidelines currently recommend that University operations:

- Incorporate the principles of energy efficiency and sustainability in all capital projects, renovation projects, operations and maintenance within budgetary constraints and programmatic requirements.
- Minimize the use of non-renewable energy sources on behalf of the University's built environment by creating a portfolio approach to energy use, including the use of local renewable energy and purchase of green power from the grid as well as conservation measures that reduce energy consumption.
- Incorporate alternative means of transportation to/from and within the campus to improve the quality of life on campus and in the surrounding community. The campuses will continue their strong commitment to provide affordable on-campus housing, in order to reduce the volume of commutes to and from campus. These housing goals are detailed in the campuses' Long Range Development Plans.
- Track, report and minimize greenhouse gas emissions on behalf of University operations
- Minimize the amount of University-generated waste sent to landfill.
- Utilize the University's purchasing power to meet its sustainability objectives.

The Office of the President will annually report to the Regents on the Policy's impact on capital and operating costs, and overall campus sustainable practices.

CHANGES APPROVED BY THE SUSTAINABILITY STEERING COMMITTEE  
SEPTEMBER 2008, AND JUNE 2009

September 1, 2009

UNIVERSITY OF CALIFORNIA  
POLICY GUIDELINES FOR SUSTAINABLE PRACTICES

SCOPE/AUTHORITY

The Regents have delegated authority to the President for promulgating policy promoting sustainable new capital projects, existing University facilities, and campus transportation resources. The President has delegated authority to the Executive Vice President, Business Operations for further definition of measures to implement University policy regarding sustainability. Chancellors are responsible for implementation in the context of individual building projects, facilities operations, and transportation projects and programs.

These Policy Guidelines are intended to provide specific scope, direction, and expectations underlying from the Presidential Policy on Sustainable Practices. They also identify best practices to facilitate compliance and provide additional background relevant to this policy.

Supplementary to, and embedded within, these Policy Guidelines are Implementation Procedures that are intended to provide specific course of action, standardized methods, and/or consistent series of steps to implement the Presidential Policy on Sustainable Practices and these Policy Guidelines. The Implementation Procedures denoted in italics, follow applicable Policy Guidelines.

BACKGROUND

Resource sustainability is critically important to the University of California, the State of California, and the nation. Efficient energy use is central to this objective, and renewable energy and energy-conservation projects provide a means to stabilize campus budgets, increase environmental awareness, reduce the environmental consequences of University activities, and provide educational leadership for the 21st century.

On July 17, 2003, the Regents of the University expressed their support for a Presidential policy to promote "...the principles of energy efficiency and sustainability in the planning, financing, design, construction, renewal, maintenance, operation, space management, facilities utilization, and decommissioning of facilities and infrastructure to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements." At their September 2005 meeting, the Regents authorized the President to incorporate sustainable transportation practices into this Policy. Transportation to, from, and within a campus has a significant impact on air quality and affects both the campus landscape and relations with surrounding communities. It is desirable, therefore, to manage transportation demand, provide transportation options, and encourage the use of low-impact vehicles, non-fossil fuels, and creative modes of transport, while ensuring maximum campus access and preserving lifestyle features. This approach to transportation services is a necessary component of the University's sustainability efforts.

In October 2006, in response to the requirement that this policy guideline document be re-examined every three years, sections of the Policy were clarified and new sections were added specifically in the areas of renovation policy, climate change practices, green building operations and maintenance, recycling and waste management, and environmentally preferable procurement.

The University of California is committed to improving the University's effect on the environment and reducing the University's dependence on non-renewable energy. Guidelines for implementing practices in support of Green Building Design, Clean Energy Standards, and Sustainable Transportation Practices are explained in detail in the following plan for achieving these goals.

## POLICY GUIDELINES

### I. Green Building Design

#### New Buildings

- a. Given the importance of energy efficiency to green building design, the University has set a goal for all new building projects, other than acute-care facilities, to outperform the required provisions of the California Energy Code (Title 24) energy-efficiency standards by at least 20 percent.
- b. Campuses will strive to design buildings that outperform Title 24 energy efficiency standards by 30 percent or more, whenever possible within the constraints of program needs and standard budget parameters.
- c. Standards for energy efficiency for acute care facilities will be developed in consultation with campuses and medical centers.
- d. The University of California will design and build all new buildings (except for laboratory and acute care facilities that are addressed separately below) to a minimum standard equivalent to a LEED™-NC "Silver" rating, according to the version of LEED-NC that is current at the time of design approval.
- e. Campuses will strive to achieve a standard equivalent to a LEED™-NC "Gold" rating or higher, whenever possible within the constraints of program needs and standard budget parameters.
- f. Given the importance of specifically addressing sustainability in laboratory facilities, the University of California will design and build all new laboratory buildings to a minimum standard equivalent to a LEED™-NC "Silver" rating and the Laboratories for the 21st Century (Labs21) Environmental Performance Criteria (EPC), as appropriate. The design process will include attention to energy efficiency for systems not addressed by the California Energy Code (Title 24).
- g. Because of regional water scarcity, all new building projects will achieve at least two of the available credits in LEED™-NC's Water Efficiency category. Campuses will also cooperate with local water districts in efforts to conserve water and to meet reduced water use goals of the local districts.

- h. All privatized development projects on Regents' land where the project is to be used for a programmatic or auxiliary purpose (i.e., a University-related purpose) must comply with the Green Building Policy provisions listed herein. Campuses may decide if projects built on Regents' land pursuant to a ground lease by a private, institutional or government entity ("Lessee") for the Lessee's own use (whether in support the University's mission or to generate income for the University) must also abide by the University's Green Building Policy. The Policy shall also apply to build-to-suit buildings to be used for University-related purposes on land not owned by the Regents. The provisions of this subsection apply regardless of the business relationship between the parties (i.e., whether a gift, acquisition, ground lease and/or lease).
- i. In consultation with the campuses, the Office of the President will develop an internal evaluation and certification standard based on the LEED™ and Labs21 measures.
- j. The measures required by these Policy Guidelines will be incorporated into all new building projects, other than acute care facilities, submitted for first formal scope and budget approval as of July 1, 2009. Privatized projects for which a request for proposal (RFP), or equivalent, is issued after July 1, 2009 shall be governed by these Policy Guidelines.
- k. Further study will be conducted before a similar sustainable design policy for new acute-care facilities is adopted.

#### Building Renovations

Significant renovation projects will apply sustainability principles to the systems, components and portions of the buildings being renovated as follows:

- a. At budget approval, all renovation projects should include a listing of sustainable measures under consideration. Design and specification of renovation components such as mechanical, electrical and plumbing components, lighting, finishes, materials, etc., must meet or exceed associated Campus Green Building Baseline points.
- b. Renovation of buildings that require 100% replacement of mechanical, electrical and plumbing systems and replacement of over 50% of all non-shell areas (interior walls, doors, floor coverings and ceiling systems) should at a minimum comply with a UC equivalent to a LEED™-NC 2.1, or most current version of the LEED NC program, certified rating. Subject to life cycle cost analysis, such projects should outperform Title 24, Part 6, that is currently in effect, by 20% and register with the Savings by Design program.
- c. Renovation projects with a project cost of \$5 million or greater (CCCI 5000) that do not fall under item b above should at a minimum comply with a UC equivalent to a LEED™-Commercial Interiors certified rating and register with the Savings by Design program, if eligible.
- d. The green building requirements described in items a through c above applies to renovation projects that receive budget approval after July 1, 2007.

- e. For all improvement projects in spaces leased or licensed by the Regents to be used for University-related purposes for a term of greater than 12 months, campuses shall strive to comply with the requirements in a and c above as appropriate.

#### General/Miscellaneous

- a. Policy guidelines for Sustainable Operations of existing buildings previously addressed by this section are now found in Section V of this document.
- b. Policy guidelines which previously indicated that the University will use its purchasing power to promote the availability of products that are resource-efficient, energy-efficient, water-efficient, and of recycled and rapidly renewable content for building materials, subsystems, components, equipment, and supplies are now found in Section VII, Environmentally Preferable Purchasing Practices.
- c. The University will work with regulatory agencies and other entities to speed the development, approval, and implementation of products and technologies that improve energy efficiency and support sustainable design, construction, and operating practices.
- d. The University will develop a program for sharing best practices.
- e. The University will incorporate the Green Building Design policy into existing facilities-related training programs, with the aim of promoting and maintaining the goals of the policy.

#### Implementation Procedures for Green Building Design – General/Miscellaneous:

- Any proposed exception from standards listed in the Policy Guidelines may be requested administratively during preparation of the Project Planning Guide (PPG). Any exception proposed after approval of the PPG will be treated as a scope change and processed in accordance with standard University procedures.
- Projects that cannot meet UC's minimum standard of LEED™-NC "Silver" (or equivalent) should strive to achieve a LEED™-NC "Certified" rating. Projects that are unable to achieve a LEED™-NC "Certified" rating should submit a LEED™-NC scorecard and supporting documentation to the Office of the President, showing the credits that the project did achieve.
- Campuses may choose to pursue external certification through the LEED™ process, augmented with Labs21 criteria as appropriate for laboratory systems, in lieu of the internal process for a given project.
- The University planning and design process will include explicit consideration of lifecycle cost along with other factors in the project planning and design process, recognizing the importance of long-term operations and maintenance in the performance of University facilities.
- The University will work closely with the U.S. Green Building Council, Labs21, the Department of Energy, the U.S. Environmental Protection Agency, State government, and other organizations to facilitate the improvement of evaluation methodologies to better address University requirements.



Additionally, the University will work with the U.S. Green Building Council to develop a self-certification tool for University use.

## II. Clean Energy Standard

- a. The University will implement a systemwide portfolio approach to reduce consumption of non-renewable energy. The portfolio will include a combination of energy efficiency projects, the incorporation of local renewable power measures for existing and new facilities, green power purchases from the electrical grid, and other energy measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. The appropriate mix of measures to be adopted within the portfolio will be determined by each campus. Since each campus's capacity to adopt these measures is driven by technological and economic factors, the campus will need to reevaluate their energy measures mix on a regular basis. The portfolio approach will provide valuable analytical information for improving energy efficiency, resulting in an overall improvement in the University's impact on the environment and reduced reliance on fossil fuels during the next decade of capital program growth.
- b. The University will strive to achieve a level of grid-provided electricity purchases from renewable sources that will be similar to the State's Renewable Portfolio Standard, which sets a goal of procuring 20 percent of its electricity needs from renewable sources by 2010.
- c. With a goal of providing up to 10 megawatts of local renewable power by 2014, the University will develop a strategic plan for siting renewable power projects in existing and new facilities. The plan will include demonstration projects for photovoltaic systems and other renewable energy systems, such as landfill gas fueled electricity generation or thermal energy production. The strategic plan will include criteria for evaluating the feasibility of a variety of projects, such as incorporating photovoltaic systems in replacement roofing projects and in new buildings, as well as forecasting the accommodations necessary for eventual installation of photovoltaic systems. The University will assess the progress of renewable energy technology improvements, both in terms of cost and technical efficiency. To achieve the renewable power goal, the University will maximize the use of available subsidies and negotiate pricing reductions in the marketplace, and will develop funding sources for financing the costs of renewable energy measures.
- d. With a goal of reducing systemwide non-renewable energy consumption, the University will develop a strategic plan for implementing energy efficiency projects for existing buildings and infrastructure to include operational changes and the integration of best practices. The University will monitor industry progress in energy retrofits and implement technical improvements as they become available. As with renewable energy projects, the University will develop funding sources and establish a program for financing retrofit projects. The initial goal for energy efficiency retrofit projects will be to reduce systemwide growth-adjusted energy consumption by 10 percent or more by 2014 from the year 2000 base consumption level. The University will strive to achieve even greater savings as additional potential is identified and funding becomes available.
- e. The University will continuously evaluate the feasibility of other energy-saving measures with equivalent demonstrable effect on the environment and reduction in fossil fuel usage. In particular, campuses will strive to implement the Sustainable Transportation Practices described in Section IV, below.

- f. The University will develop a variety of funding sources and financing alternatives for energy efficiency, renewable energy, and clean energy projects that will enable campuses to be flexible in addressing their energy needs.
- g. The University will pursue marketing of emissions credits as a means to bridge the cost-feasibility gap for green power projects.

#### Implementation Procedures for Clean Energy Standard:

- The University will initiate progress towards a level of grid-provided electricity purchases in 2004 by purchasing 10 percent of grid-supplied electricity from renewable sources, subject to funding availability, and will track progress annually toward achievement of the year 2010 goal.
- Campuses will provide strategic plans for implementing energy efficiency projects by identifying opportunities to incorporate energy retrofit projects into major building renovations as funding is available, and to initiate standalone retrofit projects as justified by future energy savings.

### III. Climate Protection Practices

- a. With an overall goal of reducing greenhouse gas (GHG) emissions while maintaining enrollment accessibility for every eligible student, enhancing research, promoting community service and operating campus facilities more efficiently, the University will develop a long term strategy for voluntarily meeting the State of California's goal, pursuant to the "California Global Warming Solutions Act of 2006" that is, by 2020 to reduce GHG emissions to 1990 levels. In addition, consistent with the Clean Energy Standard sections a., b. and c. of this document, the University will pursue the goal of reducing GHG emissions to 2000 levels by 2014 and provide an action plan for becoming climate neutral as specified in the Implementation Procedures below.

#### Implementation Procedures for Climate Protection Practices:

- Each UC campus will pursue individual membership with either the California Climate Action Registry (CCAR) or The Climate Registry (TCR). The Senior Vice President, Business and Finance<sup>1</sup>, in coordination with campus administration, faculty, students and other stakeholders will form a Climate Change Working Group that will develop a protocol to allow for growth adjustment and normalization of data and accurate reporting procedures. The Climate Change Working Group will monitor progress toward reaching the stated goals for GHG reduction, and will evaluate suggestions for programs to reach these goals.
- By September 15, 2008, each UC campus will complete a greenhouse gas emissions inventory. To comply with CCAR (or TCR) and ACUPCC requirements, inventories should contain emissions from the six Kyoto greenhouse gasses, including: direct and indirect emissions outlined in the ACUPCC implementation guide and CCAR or TCR general reporting protocol; air travel paid for

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<sup>1</sup> This position became the *Executive Vice President – Business Operations* in May 2007.

by or through the institution; and commuting to and from campus on a day to day basis by students, faculty, and staff. As ACUPCC member institutions, all UC campuses will report their updated emissions inventories through the ACUPCC on-line reporting tool at least once every other year.

- By December 2008, the University will develop an action plan for becoming climate neutral which will include: a feasibility study for meeting the 2014 and 2020 goals stated in the Policy Guidelines, a target date for achieving climate neutrality as soon as possible while maintaining the University's overall mission, and a needs assessment of the resources required to successfully achieve these goals. Climate neutrality means that the University will have a net zero impact on the Earth's climate, and will be achieved by minimizing GHG emissions as much as possible and using carbon offsets or other measures to mitigate the remaining GHG emissions.
- By September 15, 2009, each UC campus will implement two of the seven tangible actions to reduce greenhouse gas emissions that are outlined in the ACUPCC.

#### IV. Sustainable Transportation Practices

##### Metrics and Benchmarking

- a. In implementing a most efficient and effective economic and environmental strategy for campus fleets, campuses shall implement practicable and cost-effective measures, including, but not necessarily limited to, the purchase of the cleanest and most efficient vehicles and replacement tires, the use of alternative fuels, and other conservation measures.
- b. Campuses will be encouraged to collect data on Average Vehicle Ridership (AVR) of commuters.
- c. The Senior Vice President, Business & Finance<sup>2</sup> has made a written request to major automobile manufacturers expressing both the University's commitment to work with industry to provide vehicle and fuel choice, and the expectation that industry will provide these choices to the fullest extent possible.
- d. Section III of these Guidelines addresses Climate Protection Practices. To comply with Section III, campuses will prepare inventories of campus GHG emissions for their Climate Action Plans (by December 2008). The inventories include GHG emissions from fleets, commuting and business air travel. Each campus will develop emission reduction goals for transportation, in each of areas listed below (fleet, commute, and business travel) and report annually on progress toward achieving the goals.
- e. Optional mechanisms for reducing transportation emissions:
  - Mechanisms for reducing fleet emissions include:
    - replacing vehicles with low or no emission vehicles
    - rightsizing fleets (determining the appropriate fleet size, revising business practices to reduce need for travel)
    - reducing fleet fuel consumption
    - reducing fleet vehicle miles traveled

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<sup>2</sup> This position became the *Executive Vice President – Business Operations* in May 2007.

- increasing use of fuels with lower GHG emissions.
  - Mechanisms for reducing commute emissions include:
    - constructing additional on-campus housing
    - expanding Transportation Demand Management programs: carshare, carpool (rideshare), vanpool, buspool, campus shuttles, transit, bicycle circulation system, pedestrian circulation system, emergency rides home, telecommuting, flexible schedules, parking management, etc.
  - Mechanisms for reducing to reduce business air travel emissions include:
    - remote conferencing, such as teleconferencing, videoconferencing, and webconferencing.
- f. The University will work with regulatory agencies and other entities (e.g., regional transit agencies, air quality management districts) to speed the development, approval, and implementation of programs and technologies that support the goals of sustainable transportation as related to the increased use of biodiesel or other alternative fuel sources.

#### Implementation Procedures for Sustainable Transportation Practices:

- With the goal of measuring all campus fleet vehicles fuel consumption reduction, campuses will collect and report fuel consumption annually to the Office of the President beginning in 2005-06.
- AVR is defined as the number of trips to campus divided by the number of automobiles used for those trips ( $AVR = \text{trips}/\# \text{ automobiles}$ ). Campuses may use this data to set goals for reduction of fuel consumption. AVR data may also be used in conjunction with transportation mode split data to develop maps of distance “zones” surrounding the campus, and to model each zone’s proportionate share of various commuting modes (e.g., percentage of bicycle or single-occupancy vehicle trips within 0-2 miles from the central campus core).
- The Sustainable Transportation Working Group will continue to work with State agencies to facilitate the purchase and use of Low Emission Vehicles (LEV), Zero-Emission Vehicles (ZEV), and alternative fuel vehicles by the campuses, and to find solutions for increasing the availability of an affordable supply.

#### Transportation Programs

- a. The University will continue to facilitate the sharing of best practices within the University and among other educational institutions.
- b. The University will develop a mechanism for ongoing involvement of undergraduate and graduate students in efforts toward achieving sustainable campus transportation. The means may include, but are not limited to, undergraduate and graduate internships and/or scholarships for relevant conference attendance.
- c. By January 2009, each campus will implement a pre-tax transit pass program to facilitate the purchase of transit passes by University employees, or will establish a universal access transit pass program for employees.

- d. The University will pursue the expansion of Transportation Demand Management (TDM) programs and projects to reduce the environmental impacts from commuting. TDM programs may include: carshare, carpools (rideshare), vanpools, buspools, campus shuttles, transit, bicycle circulation system, pedestrian circulation system, emergency rides home, telecommuting, flexible schedules, parking management (amount, access, fees), etc. In conjunction with this effort, campuses will engage in advocacy efforts with local transit districts to improve routes in order to better serve student and staff ridership.
- e. To the extent practicable, campuses will develop a business-case analysis for any proposed parking structure projects.

#### Implementation Procedures for Transportation Programs:

- The University will continue to participate in Transportation Sessions at the annual UC/CSU/CCC Campus Sustainability Conference.
- The Office of the President will begin funding an internship for one to two students in Academic Year 2005-06 and continuing until Academic Year 2009-10 or longer. At that time, the program's results will be reviewed and the Senior Vice President, Business and Finance,<sup>3</sup> or other delegated administrator, will determine whether or not to extend the program.

#### V. Sustainable Operations

- a. For existing buildings, the University will explore the development of a standard methodology for sustainable practices and standards for facilities management, by assessing the LEED for Existing Buildings Operations and Maintenance (LEED™-EBOM) evaluation tool as described in b. through g. below.
- b. For existing buildings, the University of California will develop a plan to operate and maintain all scope eligible campus buildings at a minimum standard equivalent to a LEED for Existing Buildings Operations and Maintenance (LEED™-EBOM) "Certified" rating. The implementation for certification will be carried out in a comprehensive campus approach vs. an individual building basis, except for exceptions noted below.
- c. The University will incorporate these Sustainable Operations Policy Guidelines into existing facilities-related training programs, with the aim of promoting and maintaining the goals of the Policy.
- d. The University will work closely with the U.S. Green Building Council (USGBC) to address the needs and concerns of campuses in the further development of the LEED™-EBOM rating system and the USGBC's "Portfolio Program." As information and requirements are determined from the USGBC's "Portfolio Program," the University will update this policy as appropriate.
- e. Campuses will explore ways to connect the buildings it certifies through LEED™-EBOM with the University's educational and research mission, using the buildings as living, learning laboratories.

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<sup>3</sup> This position became the *Executive Vice President – Business Operations* in May 2007.

- f. Eligible scope buildings for the purpose of this policy will be all buildings on-site at the ten campuses; except the following buildings or building types: acute care and patient care facilities; buildings scheduled for demolition, replacement, or major renovation; any building not located on the main campus; and any building less than 50,000 maintained gross sq. ft.
- g. A timetable for full campus implementation will be further evaluated after completion of the interim milestones listed in Implementation Procedures below.

#### Implementation Procedures for Sustainable Operations:

- Each campus will submit for certification one pilot building at a LEED™-EBOM “Certified” level or higher by July 1, 2008
- To facilitate the implementation steps for the policy, campuses will develop an inventory of buildings that meet the scope eligibility requirements above, and then group these eligible buildings into categories of buildings with similar operational and maintenance needs.
- Campuses will submit proposed core credits for one of the building type groupings identified above and any campuswide core credits to the U.S. Green Building Council by July 1, 2010. A core credit is a credit that will be sought for either all scope eligible buildings on a campus, or for all buildings within a building type group.
- By July 1, 2010, the University will evaluate efforts to date and develop an implementation plan and funding strategy toward a goal of achieving campus wide LEED™-EBOM certification.

#### VI. Recycling and Waste Management

- a. In response to Public Resources Code Section 40196.3 which states that the Regents of the University of California are encouraged to comply with Code Chapter 18.5, the “State Agency Integrated Waste Management Plan” and in support of the California Integrated Waste Management Board’s goal for a “zero waste California,” the University voluntarily adopts the following waste diversion goals:
  - 50% by June 30, 2008
  - 75% by June 30, 2012
  - Ultimate goal of zero waste by 2020
- b. All campuses will develop an Integrated Waste Management Plan (IWMP) and funding mechanism by June 30, 2007.
- c. Waste reduction and recycling elements shall be integrated in Green Building Design and Sustainable Operations implementation goals and into campus operations as they are developed.
- d. The University will seek to develop funding sources for financing waste reduction projects.

## Implementation Procedures for Recycling and Waste Management:

- The IWMP will include current and future programs, dates of implementation, funding, and exact diversion numbers intended to meet goals
- For purposes of reporting, the Medical Centers (and other traditionally exempted entities such as satellite locations) will be required to report solid waste and recycling tonnage to the campus entity collecting data for the report. Medical Centers and other exempted facilities are also required to meet diversion requirements. Exceptions will be considered for those entities which represent less than 1% of the overall campus solid waste tonnage.

## VII. Environmentally Preferable Purchasing Practices

### Sustainable Economy

- a. The University will utilize its purchasing power and academic and research excellence to advance the development of sustainable technologies by pressing markets to continually improve resource productivity.
- b. For products and services that do not currently offer environmentally preferable alternatives, the University will work with its existing and potential suppliers to develop options.
- c. "Cradle to cradle" is the preferred purchasing standard and is defined as accountable, responsible, and environmentally preferable supply chain management from material extraction, production, marketing, sale, use, disposal, collection, re-use and the web of closed loop cycles and processes.
- d. The University will continue to transition all locations toward electronic and paperless processes and utilize web-based catalogs and programs.
- e. The University will incorporate the credit requirements set forth by LEED™ (Leadership in Energy and Environmental Design) into product and service sourcing and procurement.
- f. The University evaluates total cost of ownership including purchase price, operating cost, maintenance, collection and disposal, and recycling costs when selecting suppliers.

### Energy and Water

- a. For product categories that have ENERGY STAR® rated products available, the University will focus its procurement efforts only on products with an ENERGY STAR® rating, consistent with the needs of UC researchers.
- b. For all electronic equipment, the supplier will deliver the items to the University with energy efficiency and conservation features enabled.

- c. The University will utilize its strategic purchasing program to negotiate better pricing for rated commodities.
- d. The University of California shall establish an ongoing partnership with the ENERGY STAR® Program administered by the EPA, and continually press the market for greater energy efficiency for the products and services regularly purchased by the University.
- e. For products and services requiring the use of water, the University will give preference to technologies that ensure the efficient use of water resources.

#### Implementation Procedures for Energy and Water:

- For those goods already in use across the system, available energy conservation features shall be ENERGY STAR® enabled by a designated party (e.g. IT, department MSO).

#### Recycled Content

- a. The University will phase out the use of virgin paper and adopt a minimum standard of 30% Post Consumer Waste (PCW) recycled content paper for all office supplies.
- b. For uncut paper uses, including but not limited to janitorial supplies, the University will adopt a standard of 100% PCW recycled content paper.
- c. The University will utilize its strategic purchasing program to negotiate better pricing for commodities with recycled content as compared to commodities without recycled content.
- d. The University will continually work towards increasing the procurement of products with high recycled content.
- e. Outside suppliers and consultants shall be encouraged to print proposals and reports on both sides, using recycled content paper. Furthermore, the documents shall be clearly marked to indicate that they are printed on recycled content paper.

#### Green Seal Certified Products

- a. The University will work to phase in Green Seal certified products, as specified in the Implementation Procedures.

#### Implementation Procedures for Green Seal Certified Products:

- The University will work to phase in Green Seal certified products through its Strategic Sourcing and local campus procurement programs in coordination with EH&S, Facilities Management, and Housing and Residential Services.



## Reduction of Hazardous Electronic Waste

- a. All desktop computers, laptops, and computer monitors purchased by the University are required to have achieved Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT).
- b. Additional consideration will be provided for electronics products that have achieved EPEAT Silver or EPEAT Gold registration. The registration criteria and a list of all registered equipment are provided at <http://www.epeat.net>.
- c. The University will recycle all electronic waste in a responsible manner, as specified in the Implementation Procedures.

### Implementation Procedures for Reduction of Hazardous Electronic Waste:

- The University will require all recyclers of the University's electronic equipment to have signed the Electronics Recyclers Pledge of True Stewardship, agreeing to a rigorous set of environmental criteria. The Pledge, and a list of recyclers who have signed, is available at [http://www.e-stewards.org/local\\_estewards.html](http://www.e-stewards.org/local_estewards.html). In cases where the University has established recycling "take-back" programs, the University will ensure that the manufacturer adheres to similarly high standards of responsible recycling.

## Environmentally Responsible Packaging

- a. Packaging for electronics products should be designed, produced, and managed in an environmentally sustainable manner, as specified in the Implementation Procedures.
- b. The University will specify that all packing materials abide by at least one of, and preferably all of, the criteria listed in the Implementation Procedures.
- c. The University will work with its suppliers to ensure effective waste management and recycling programs are in place for all business operations.

### Implementation Procedures for Environmentally Responsible Packaging:

- The University requires that a take-back program be offered for packaging of electronics products and will give preference to take-back programs that are provided free of charge. The University will also give preference to packaging that is reusable, contains a minimum of hazardous and non-recyclable materials, and meets or exceeds the recycled material content levels in the US EPA Comprehensive Procurement Guidelines for Paperboard and Packaging.
- Specify that all packing materials abide by at least one of and preferably all of the criteria listed below:
  - Made from 100% post-consumer recycled materials and be recyclable, reusable, or
  - Be non-toxic,
  - Be biodegradable,

- Be produced with the minimum of resources and sized as small as possible, while still maintaining product protection during shipping. Where feasible, packaging materials should be eliminated, if unnecessary.
- The University will work with its suppliers to ensure effective waste management and recycling programs are in place for all business operations.

#### Effective Recycling and Manufacturer Take-Backs

- a. The University will work to incorporate effective end-of-life recycling programs into each commodity as applicable.
- b. The University will work with its suppliers to establish re-use or recycling “take-backs” at no extra cost to the University, and in compliance with environmental standards that abide by Federal, State, and local legislation regarding waste disposal.

#### Supply Chain Environmental Responsibility

- a. The University will encourage suppliers to demonstrate environmental stewardship through their Environmental Management Programs.

#### Evaluating Environmental Claims

- a. Suppliers citing environmentally preferred product claims shall follow requirements specified in the Implementation Procedures below.

#### Implementation Procedures for Evaluating Environmental Claims:

- Suppliers citing environmentally preferred product claims shall provide proper certification or detailed information on environmental benefits, durability, and recyclable properties.

#### Training and Annual Plan and Report

- a. The University will incorporate the Environmentally Preferable Purchasing Policy into existing strategic sourcing and other training programs, with the aim of promoting and maintaining the goals of the policy. The University shall provide training seminars, supplier fairs, and workshops on purchasing environmentally preferred products and establish educational programs and materials for faculty, staff, and students.
- b. An annual plan and report shall be completed by each campus to define their environmental purchasing plan and report their efforts.

## Implementation Procedures for Training and Annual Plan and Report:

- UC campus Sustainability Committees will be responsible for reporting to the Sustainability Steering Committee on an annual basis. The Sustainability Steering Committee and the Sustainable Purchasing Working Group will maintain responsibility for determining the format and data to be submitted in the annual report, and the form for the annual plan.

## VIII. Sustainable Foodservices Practices

### Campus Foodservice Operations:

The following Sustainable Foodservices Policy guidelines have been developed for the University of California Campus Foodservice Operations that are self-operated or contract operated:

- a. With the overall goal of reducing the environmental impact of food purchases and dining operations while maintaining accessibility and affordability for all students, the University has set a goal of procuring 20% sustainable food products by the year 2020 for Campus Foodservice Operations.
- b. Each campus is responsible for providing student patrons sustainable food options as well as access to educational materials that will help support their food choices.
- c. Campus departments, organizations, groups, and individuals are encouraged to engage in activities with their surrounding community that support common goals regarding sustainability.
- d. The University will encourage dining operations to explore the use of third-party "green business" certifications for sustainable dining operations. If cost effective, each campus will certify one facility by December 2010 through one of the following: (1) City or county's "green business" program, (2) Green Seal's Restaurants and Food Services Operations certification program, or (3) the Green Restaurant Association certification program.
- e. By December 15, 2009, each campus will submit a report to the Office of the President that addresses how each campus plans to achieve their Sustainable Foodservices Practices goals. Campuses will provide an annual progress report on these goals starting August 15, 2010.

### Franchised Foodservice Operations:

Campuses which have Franchised Foodservice Operations which are self-operated or contract operated will be encouraged to perform a feasibility study on implementing the Sustainable Foodservice Practices goals for these operations. This study should be submitted to the UC Sustainability Steering Committee by May 15, 2010.

### Medical Center Foodservice Operations:

Medical Centers will be encouraged to perform a feasibility study on implementing the above Sustainable Foodservice Practices Policy Guidelines for the Medical Center Foodservice Operations which are self-

operated, contracted, or Franchised Foodservice Operations. This study should be submitted to the UC Sustainability Steering Committee by May 15, 2010.

#### Implementation Procedures for Sustainable Foodservices Practices:

- With the goal of achieving 20% sustainable food purchases, all Food Service Operations<sup>4</sup> should track and report the percentage of total food budget spent on sustainable food yearly beginning with the August 15, 2010 report. At least annually, the goal of 20% sustainable food purchases, and other metrics and guidelines included in this policy will be reviewed, and suggestions for updates provided to the UC Sustainability Steering Committee.

Sustainable Food is defined as food purchases that meet one or more of the following criteria. This list of criteria will be reviewed annually by the UC Sustainable Foodservices Working Group:

- Locally Grown<sup>5</sup>
  - Fair Trade Certified
  - Domestic Fair Trade Certified
  - Shade-Grown or Bird Friendly Coffee
  - Rainforest Alliance Certified
  - Food Alliance Certified
  - USDA Organic
  - AGA Grassfed
  - Pasture Raised
  - Grass-finished/100% Grassfed
  - Certified Humane Raised & Handled
  - Cage-free
  - Protected Harvest Certified
  - Marine Stewardship Council
  - Seafood Watch Guide “Best Choices” or “Good Alternatives”
  - Farm/business is a cooperative or has profit sharing with all employees
  - Farm/business social responsibility policy includes (1) union or prevailing wages, (2) transportation and/or housing support, and (3) health care benefits
  - Other practices or certified processes as determined by the campus and brought to the Sustainable Foodservices Working Group for review and possible addition in future policy updates.
- Campuses and Medical Centers are encouraged to participate in intercollegiate and national programs that raise awareness on dietary health, wellness and sustainability (e.g. the MyPyramid.gov Corporate Challenge and the Real Food Challenge).

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<sup>4</sup> For Franchised Foodservice Operations and Medical Center Foodservice Operations, this reporting will be consistent with the recommendations that result from the feasibility studies conducted to determine how best to apply these guidelines to those operations.

<sup>5</sup> Resulting from regional constraints, campus definitions of “Locally Grown” may vary; however, Locally Grown cannot be defined as over 500 miles

- Campuses and Medical Centers are encouraged to develop health and wellness standards for food service operators, including eliminating the use of trans-fat oils or products made with trans-fat.
- Campuses and Medical Centers are encouraged to undertake additional initiatives that encourage healthy and sustainable food services operations. Examples include tray-less dining, beef-less or meat-less days, and preservative minimization programs.
- Annual reports should include the individual campus and Medical Center's goals as well as the progress and timelines for the programs being implemented to reach those goals.
- Campuses and Medical Centers are encouraged to form a campus foodservices sustainability working group to facilitate the campus goal setting and implementation process.
- The stakeholders who are involved with the implementation of this Sustainable Foodservice Policy will participate in a working group to meet, network and to discuss their goals, best practices, and impediments to implementation.

#### IX. Authority and Report Schedule

On an annual basis, the President will provide a report to the Regents detailing the impact of the University's sustainability efforts on the overall capital program, University operating costs, energy use, greenhouse gas emissions, solid waste diversion, campus environmentally preferable purchasing, campus transportation practices, and foodservices. The University's sustainability guidelines will be subject to continuous review. The Policy Guidelines for Sustainable Practices and Implementation Procedures will be reviewed at a minimum every three years, with the intent of developing and strengthening implementation provisions and assessing the influence of the guidelines on existing facilities, new capital projects, plant operating costs, fleet and transportation services, and campus accessibility, mobility, and livability. The University will provide means for the ongoing active participation of students, faculty, administrators, and external representatives in further development and implementation of the Policy on Sustainable Practices.

## PUBLIC COMMENTS ON WATER SUPPLY ASSESSMENT

**NOTE:** Letters of comment submitted to the City Council regarding the Water Supply Assessment (see Appendix B) are included in this appendix pursuant to the Council's directive. Preliminary responses have been provided by the City Water Department to general comments. However, all comments received on the WSA will be considered and responded to as part of the Final EIR and response to all comments received on the Draft EIR.



**WATER DEPARTMENT  
MEMORANDUM**

DATE: November 16, 2009  
TO: Stephanie Strelow  
FROM: Bill Kocher, Water Director  
SUBJECT: Comments on the Water Supply Assessment (WSA)

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At its October 27, 2009 meeting, Council received several written and several oral comments or questions from the public regarding what they perceived as flaws with the WSA that Council should address if the document is to accurately inform the Sphere of Influence (SOI) dEIR.

Council directed that staff offer general written responses to the comments to be transmitted to you at the time the WSA is forwarded to you.

This memo intends to group common comments/questions and provide responses to them. To the extent more thorough responses are warranted in response to the dEIR, staff will gladly work with you to develop those responses.

General Comment: There are unresolved Ongoing Planning Issues identified in the City's 2005 Urban Water Management Plan that threaten the City's current water supplies, i.e. negotiations over a Habitat Conservation Plan; water rights conformance issues; the potential for seawater intrusion in the City's Live Oak Wells. Until all those outstanding issues are resolved, the City should not be making judgments about how much water it will have available in the future.

Response: *All of those Planning issues are mentioned in the both the Urban Water Management Plan and in the WSA and it is true that all of them have the potential to impact the City water supply at some time in the future. It is also true to say that all of them can potentially be resolved without significant dry season loss of supply, making it speculative to try to time the potential impacts, let alone quantify them. All of them have been ongoing issues for some length of time with the water rights matters the subject of discussions with the State Water Resources Control Board as far back as 1995 and the Habitat Conservation Plan discussions underway more than six years ago. The uncertainty of timing, quantification of impact, and even the uncertainty of any impact makes it unreasonable to wait for resolution in the face of State Water Code that stipulates the WSA must be completed within 90 days of the request from the land use agency.*

General Comment: The use of two different growth scenarios, i.e. a 0.4% and 0.8% growth rate create uncertainty regarding the extent to which current supplies are adequate to meet the projected demand of this project in addition to the water system's existing and planned uses.

*Response: No one can predict exactly what future water demand will be. The two future water scenarios give a reasonable range of possible demands the City could experience going forward. It is only under normal water conditions, and only in the last five-year period, 2025-2030, in which the two demand scenarios result in a different conclusion as to whether supplies are considered to be adequate and, even then, the difference is relatively small. Otherwise, the use of two demand scenarios does not change the basic findings or conclusions of the water supply assessment.*

General Comment: The WSA ignored the fact that SLV has an unused entitlement to some of the Newell Creek Reservoir water.

*Response: The WSA did not need to address this fact because the City's water supply planning accounts for the fact that the approximately 103 million gallons per year of the capacity of Newell Creek Reservoir that is reserved for the San Lorenzo Water District is not included in the calculation of annual water supply available to the City from that facility.*

General Comment: Climate change could change everything that the WSA concludes and for that reason, estimates of future supply should be very conservative.

*Response: It is true that climate change may well impact City water supplies that are largely dependent on surface water flows. To the extent that rain events are more intense but less frequent would likely change the baseflow in streams and rivers the City diverts from. Like the "Ongoing Planning Issues" previously discussed, the timing and quantification of impact make it too speculative to include in this analysis.*

General Comment: The supply assumed to be available in the WSA relies on drawing down the Newell Creek Reservoir by the maximum allowable amount each year and that is bad public policy.

*Response: The City's water supply model is based on the statistical reality that in 7 of 10 years, the reservoir fills to overflowing. The three years that it does not are generally classified as below average rainfall years and those types of hydrologic years, the City's curtailment planning puts operations into effect in the spring that are aimed at maximum protection of the storage in the lake. Those operations will not change whether this project goes forward or not.*

General Comment: Council needs to be sure that the provision of water to this project does not deteriorate the City's drought protection.

*Response: Any amount of additional demand on the system will have some impact on the City's drought supply. The extent of the additional impact is accurately discussed in the WSA because of the requirement that it consider total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year timeframe. The discussion of whether or not the additional drought year demand represents a significant impact is not the job of the WSA, but rather the dEIR.*

General Comment: There is a 52 million gallon difference in reporting the University's new demands between the SOI application and the University's application for extraterritorial service.

*Response: Comment noted. The figures presented in the Water Supply Assessment representing additional university water demand which is to accompany the SOI amendment were based on changes that occurred between the draft and final EIR for the 2005 LRDP and changes that occurred as a result of the settlement agreement. Additionally, estimated water demands for buildings that are either planned or under construction were separated out if they were known to*



*be located on the existing campus in order to arrive at an estimate of the maximum potential water demand in the SOI area. It is not known exactly what figures were used in the application to LAFCO for extraterritorial service. LAFCO has been advised of this discrepancy.*

General Comment: The WSA conclusion of adequacy relied on a “Phase 1” desalination plant be built. If avoiding worse curtailment relies on that, it is flawed.

*Response: The conclusion of the WSA that adequate supply was available through at least year 2025 did not rely on the construction of a desalination facility.*

General Comments: The amount to which this project would worsen curtailment requirements to all customers is understated in the WSA.

*Response: In comparing supply and demand under various water conditions, the WSA expresses the magnitude of the estimated supply deficiency as a percentage of average annual demand, which does understate the amount of curtailment to all customers that would be required. However, the report acknowledges and clarifies all throughout the document that “the analysis reflects the annual average supply deficiency and does not reflect peak season deficits, which are likely to be significantly greater during peak seasons.”*

General Comments: The City should not proceed unless and until it quantifies the “maximum acceptable level of shortage.

*Response: The commenter is referring here to a statement in a separate report about a possible approach to quantifying the City’s water supply capacity that was never adopted or used. This subject was actually addressed and resolved in the City’s Integrated Water Plan, which concluded that the highest level of peak season shortfall that is tolerable for Santa Cruz water customers is 25 percent. The eventual planning decision to select 15 percent as part of the preferred strategy was based mainly on the fact that, while there was only a slight difference in overall cost between the 15 and 25 percent strategies, the impacts and hardship to residential and business customers of a 25 percent cutback, which would require rationing water, was much more substantial. The decision also recognized that water use per-capita is already very conservative, and that the ability of customers to make such cutbacks would become more difficult or costly over time because of the increase in efficiency achieved through additional conservation efforts. No part of this decision, however, called for stopping or suspending additional water service connections or demand growth while implementing the Integrated Water Plan.*

General Comments: Table one of the WSA appears to contain a mistake that appears to understate the projects demands by 16 million gallons.

*Response: To estimate the potential water demand attributable to the SOI area, the WSA used the University supplied figure of 122 million gallons in additional water demand for the entire main campus in 2020, and then made a downward adjustment for those projects that are either under construction or planned to be located on the existing developed part of the campus. It then made other adjustments reflecting the changes in the settlement agreement to arrive at a 100 million gallon project demand. Figures representing water demand on the lower half of the table are intended to show the total projected increase in University water use, not only on the main campus (which includes the 16 million gallons due to projects underway or planned on the developed portion of the main campus), but also at other UC-owned facilities.*

General Comment: There appears to be a mistake in the numbers reported in 6.2.3.3 regarding groundwater production.

*Response: The comment is correct. There is an error in reporting total pumping from the Purisima Aquifer. That error will be corrected with an errata sheet that replaces page 34 of the WSA with a corrected page.*

From: Andy Schiffrin [mailto:BDS030@co.santa-cruz.ca.us]  
Sent: Sunday, October 11, 2009 5:18 PM  
To: Bill Kocher  
Subject: WATER SUPPLY ASSESSMENT COMMENTS

Hi Bill -

I've now had a chance to read over the Water Supply Assessment that's on the upcoming Council agenda. First let me say that I found it a useful and relatively clearly written document. However, I do have a number of questions and comments that I'd like to bring to your attention.

- Page 1, first paragraph - The report states that the project "includes all new development proposed by UCSC within the SOI amendment area." This can be misleading and I think the language on page 9 should be substituted here. There, the report states that the project "includes all development planned for the North Campus area in the current version of the 2005 LRDP." This makes it clearer that the project is tied to the 2005 LRDP.

- Page 5 - Alternative Water Supplies - The discussion of the IWP consideration of the desalination plant is somewhat misleading. From reading the second paragraph one would assume that the IWP only included consideration of a drought related desal facility. I think it should be clarified that the IWP included both a drought related project and an expansion to serve future growth.

- Page 11 - Of course any attempt to summarize the Settlement Agreement is fraught with perils. My concern is that the summary doesn't refer to the language that the City would not oppose the UCSC application and gives the impression that the City and University are moving forward as partners, which was not the intention of the Agreement. On the other hand, my sense is that University people might be concerned that the summary does not include all the outs that the Settlement gave them if they don't like the LAFCO outcome. Rather than to refer to the summary as the "key provisions" of the agreement, it might be better to state that the following are important provisions of the Agreement.

- Page 13 - Section 3.1 - The project here is defined as the provision of extraterritorial water and sewer service to the North Campus area, rather than the City's Sphere of Influence Amendment. The report should make clear and be consistent that the project includes both.

- Page 20 - Updated Scenarios - As I understand it, Updated Scenario 1 assumes a growth rate of .8% a year, while Updated Scenario 2 assumes a growth rate of .4% a year. What isn't clear to me is why scenario 1 assumes a higher per capita water use (114gpd/capita) than scenario 2 (108 gpd/capita). What was the intention here? Also, what is the current per capita use?

- Page 22 - first paragraph, last sentence - The report here refers to "these savings" but it isn't clear to me what savings are meant. The sentence doesn't seem to fit with the sentences before it which concern increases to the assumptions used for including UCSC water demand in the scenarios.

- Page 23, Table 1, Table 2 - Projecting Water Demand for the Project - I think I understand the logic for determining the project's water demand at 100 mgd. However, I have the following concerns regarding the treatment of non-project UCSC demands:

First, I don't understand how the overall campus demand increase can be 122 mgy while development in the area outside of the North Campus (the project) will only be 16 mgy. Certainly a good portion of the growth under the 2005 LRDP will be on the existing developed campus. What is the basis for this 16 mgy projection?

Second, the total net increase in campus water demand in 2020 is projected to be 126 mgy, of which 100 mgy is allocated to the project. Why isn't the remaining 26 mgy added to the total City demand depicted on Table 2? The demand projections there are based on the updated scenarios estimating annual off campus growth rates. Shouldn't the on campus water demand growth, which will include office and recreational facilities, be added to this total?

Third, the report assumes that there will be no new LRDP in 2020 and that any future growth can simply be included in the annual growth projections. This seems quite unrealistic to me. I think that the report should assume that the University will attempt to grow from 2020 to 2030 at the same rate and with the same on-campus water demand as is projected with the project.

- Page 34 - Groundwater Production - I wonder if the estimates here are correct. In Section 6.2.3.2, the report states that the total annual extraction from the Purisima Formation is estimated to be 1,988 mgy. In Section 6.2.3.3 the report states that the estimated pumping exceeds the sustainable yield by 1,200 mgy. Does this mean that the estimated sustained yield is only 800 mgy?

- Page 44,52, Table 8 - Additional Potential Water Supplies - While the report does a good job showing the current water problems during dry years and projecting these out under the two growth scenarios, I think it should have include a chart that included the effect of the City's IWP strategy in future years. The report indicates that even with the 2.5 mgd desal plant and curtailment, there will be insufficient water in 2030, but a table should have been provided calculating this out. Based on my off the cuff calculations, with desal and 15% curtailment, there would be sufficient water for a single dry year and the first year of a multiple year drought in 2030, but not the second year. Is this correct? In my view, figures should be added to Table 8 showing the effects of desal under supply and curtailment under demand. It would be helpful to know how much additional curtailment would be needed in 2030 under the IWP approach.

- Page 48 - first paragraph - The report refers to the Program EIR for the desal plant. This is incorrect. The Program EIR was prepared on the entire IWP, which included the desal plant as one component.

I hope these comments are helpful.

Also, I think the Water Commissioners should see a copy of the report (at least the basic report and the tables). Were you planning to put it on the next agenda?

Andy

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**From:** Gary A. Patton [mailto:gapatton@wittwerparkin.com]  
**Sent:** Tuesday, October 13, 2009 12:54 PM  
**To:** City Council; Cynthia Mathews; Don Lane; Katherine Beiers; Lynn Robinson; Mike Rotkin; Ryan Coonerty; Tony Madrigal  
**Cc:** Patrick McCormick; Bill Kocher; 'Ellen Pirie'; 'John Leopold'; 'Mark Stone'; 'Neal Coonerty'; 'Tony Campos'  
**Subject:** Agenda Item #16 - October 13, 2009 Agenda  
**Importance:** High

Dear Council Members:

Attached is a letter from the Community Water Coalition, commenting on the Water Supply Assessment you will consider on your agenda today.

We are asking you to continue the item to a future City Council meeting, since the public (including the CWC) has not really had an adequate opportunity to review and comment on this important document. I do apologize for the lateness of this letter, but I have tried to provide at least some preliminary comments on behalf of the CWC, and in view of the size of the WSA document, and the scant time available for review, I was not able to get even these preliminary comments to you before this time.

Thank you for considering our preliminary comments, and continuing the item to allow a more thorough review by the CWC and other interested members of the public.

**Gary A. Patton, Of Counsel**  
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147 South River Street #221  
Santa Cruz, CA 95060  
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Jonathan Wittwer  
William P. Parkin  
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SANTA CRUZ, CALIFORNIA 95060  
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OF COUNSEL  
Gary A. Patton

October 13, 2009

Mayor Cynthia Mathews and Council Members  
Santa Cruz City Council  
809 Center Street  
Santa Cruz, CA 95060

RE: October 13, 2009 City Council Agenda - Agenda Item #16  
Implementation of the UCSC Settlement Agreement  
Water Supply Assessment

Dear Mayor Mathews and Council Members:

This office represents the Community Water Coalition (CWC), and this letter is written on behalf of the CWC, commenting on the Water Supply Assessment (WSA) scheduled for consideration on the Council's October 13, 2009 agenda.

The CWC is deeply concerned about the balance between the City's available water supplies and current and future demand, particularly as the City contemplates making significant new commitments for water service. Available information indicates that the City has probably already reached or exceeded the limits of the water supplies that will be reasonably necessary to serve current customers in future years (and this is certainly true with respect to so-called "drought" years). Thus, the City-initiated action of asking for an expansion of the City's Water Service Area, to permit the construction of over 3,000,000 square feet of new development on the UCSC North Campus, raises many important policy questions. Addressing these important policy questions is one of the primary purposes of the Water Supply Assessment you will have before you on October 13<sup>th</sup>.

**Request For Continuance**

Preliminarily, this letter requests that the Council continue consideration of Agenda Item #16 to a subsequent Council meeting, so that interested and affected members of the public can have a reasonable opportunity to read the voluminous Water Supply Assessment document and comment on it in an intelligent way.

The online materials that are part of the City Council agenda packet were available to the public late Thursday afternoon, October 8<sup>th</sup>. These materials state that the Water Supply Assessment is available for public review at the Water Administration Office. Unfortunately, that City Office was closed on Friday October 9<sup>th</sup>, due to the severe budget constraints facing the City. No ordinary member of the public could possibly be expected to obtain a copy of the WSA on the morning of Monday, October 12<sup>th</sup>, pretty much the earliest time it was available to the public, and then have time to review it, and be prepared to comment by 3:00 p.m. on the very next day. In other words, the City has provided no real opportunity for meaningful public review

of the very important Water Supply Assessment you are scheduled to consider (and are being asked to approve) at your October 13<sup>th</sup> meeting.

As you may remember, the very first communication made to your Council by the CWC was in the form of a letter dated February 24, 2009. That letter noted that a perilous water future confronts those dependent on water service from the City of Santa Cruz, and urged the Council to “start getting our community involved.” Council members made comments to me individually, and made comments at the Council meeting on February 24<sup>th</sup>, to the effect that the public was well informed about water policy matters, and was fully involved, and that the Council had been making many efforts to make sure that the public did fully understand the City’s current water situation.

In order to maintain its commitment to keep the public fully informed and involved on critical water policy matters, the Council should continue Agenda Item #16, to allow interested persons to read the Water Supply Assessment, absorb what it says, and then have a fair opportunity to provide comments to the Council before the Council acts on the staff recommendation.

### **Comments On The Water Supply Assessment And Proposed Resolution**

I have been able to review the staff report and proposed resolution (both of these documents *were* available online to the general public), and I was also been able to obtain a full copy of the Water Supply Assessment and its extensive attachments. Because of the very short time available for review of the Water Supply Assessment, I can only make preliminary comments here. Nonetheless, I do have some preliminary comments on the Water Supply Assessment, as well as comments on the staff report and the proposed resolution, as follows:

1. The City Council Agenda Report says that the water demand associated with the proposed expansion of the City’s Sphere of Influence is 100 million gallons per year by the year 2020. The City’s Sphere application to LAFCO is intended to complement the simultaneous LAFCO application made by the University for authority to receive extraterritorial water service from the City. That UCSC application says that the water demand for the project is 152 million gallons per year, significantly different from the figure cited in the recent Water Supply Assessment. Since the Water Supply Assessment is intended to be included in an Environmental Impact Report (EIR) covering both the UCSC and City applications, the project analyzed must be the project applied for. The Water Supply Assessment should demonstrate the source of its water demand figure, and analyze the source of the 152 million gallon per year figure, and inform the ultimate decisionmakers what is going on with this apparent attempt to “redefine” the project in midstream.
2. The Council Agenda Report recites the conclusion (also found in the resolution presented for Council approval) that “in a normal year the City’s supplies are sufficient to meet the demands of the Project and the City’s existing and planned future uses through at least the year 2025.” As will be explained below, the WSA does not analyze or take into account various reductions to the City’s normal water supply that can be expected to occur during the period from today to the year 2020. Thus, the “conclusion” cited above is not actually supported by an analysis that can demonstrate that its rather optimistic predictions are correct.

3. On Page 2, the Council Agenda Report talks about an “Updated Urban Water Management Plan.” In fact, I do not believe that the City has “updated” its 2005 Urban Water Management Plan since its adoption. The WSA did note that it “updated” various numbers contained in the Urban Water Management Plan, but that is quite different from an official City Update of the Urban Water Management Plan itself, which would require public participation and review and official Council action.
4. The Council Agenda Report quotes the WSA as concluding that “the City does *not* have sufficient water to meet current or future projected water demand during dry years... (emphasis added).” Because that is true, residents and businesses located within the current Water Service Area are subject to significant curtailments during the normal course of events, since “dry” years (as well as “normal” or “wet” years) are part of the normally expected hydrologic regime that affects the City’s water supplies. There is no “legal” requirement that the City refrain from putting current customers at greater risk of ongoing and “normal” water curtailments, which is what the City would be doing by expanding the area within which the City must deliver water. However, as a matter of public policy, the CWC questions the wisdom of placing everyone dependent on the City’s water supplies in greater risk of water curtailments, by deciding voluntarily to expand the area in which customers have a legal right to receive water from the City. In this case, of course, the area into which the City is proposing to expand its water service is an area where the University proposes to construct 3,175,000 square feet of new residential and other structures, and this proposal, the CWC believes, is the largest single expansion of the City’s Water Service Area ever proposed. Again, the CWC questions the policy wisdom of expanding the area in which the City is legally required to deliver water when existing customers are being subjected to continuing water curtailments in the normal course of events (i.e. in the “dry” years that can be expected to occur on a periodic basis). The Council Agenda Report acts like this isn’t really an issue, saying that there is insufficient water to meet current and future water demands “irrespective of development of the Project.” This suggests that since there is already a problem in “dry” years, making the problem worse isn’t anything to be concerned about. The CWC respectfully disagrees. We imagine that most of the City’s current water customers would also disagree, if they understood the approach that the City is apparently proposing to take.
5. Paragraph (h) in the City Council Agenda Report, and Paragraph (i) in the proposed resolution state, “if the ... measures intended to implement the City’s IWP [Integrated Water Plan] materialize as planned, then the total sources of water supply identified to serve the Project would be sufficient to meet demand from the Project through 2025 or beyond in normal rainfall years, in addition to existing and planned future land use and in single dry and multiple dry years, for that same period.” The “planned” measures include a Phase I desalination plant (that is not intended to do anything to increase water supply in normal rainfall years) and also includes subsequent phases of such a desalination plant, to meet future increases in system demand. While the construction and operation of a multi-phase desalination plant may be “planned,” it may or may not actually be possible to carry out this strategy for an increased water supply. The CWC believes that the City should not increase the area in which the City is legally obligated



to provide water service unless and until it is clear that the desalination proposal is actually possible, both in terms of regulatory approvals and necessary financing. Expanding the legal demands on the City's current water supplies at a time when they are already inadequate to meet demands normally expected to occur during "drought" years, is obviously risking increased water curtailments to current customers. If all the City can rely upon for its future water supplies is a "plan" to provide water through desalination, then that definitely puts current business and residential customers in greater jeopardy of water supply curtailments. Again, the CWC does not believe that this is the right public policy approach.

6. The City Council Agenda Report indicates that the cost of the consulting services for the preparation of the WSA was approximately \$24,000. As indicated in several earlier communications to the Council, the CWC believes the Council should be carrying out its implementation of the UCSC Settlement Agreement based on legally enforceable contracts approved by the Council. The CWC is not aware of any legal agreement requiring the University to pay half the cost of work done on the WSA and/or other work to be carried out in connection with the environmental review of the proposed Sphere of Influence expansion. As noted in the attached email exchanges between City staff and several consulting firms, it is likely that responses to comments on the WSA will require additional work by the consultants, and it is likely that the sums expended so far are not the final figure.
7. The proposed resolution states, in Paragraph (f), "In ... drought conditions, the demand of this Project would increase the City's 2030 water supply shortfall by up to 2% of the total demand (100 mgd out of 4,356 mgd)." As the CWC understands it, even assuming that the real water demand associated with the proposed Sphere expansion is only 100 mgd, as opposed to the 152 mgd figure specified in the UCSC application to LAFCO, the quoted statement understates the impact that the water service expansion would have on current customers within the City Water Service Area during drought periods. In the first stage of drought curtailments, as specified in the City's Water Shortage Contingency Plan, customers are cut back by 15%, or by 362 million gallons (see Page ES-5 of the Water Shortage Contingency Plan). 100 million gallons is about 27% of this cutback figure. In other words, if the City expands its water service area as is proposed, and takes on an obligation to deliver an additional 100 mgd, which then is in fact actually delivered, and is therefore not kept on reserve in the Loch Lomond Reservoir to reduce the amount of water curtailments which other customers must bear during periods of drought, the impact on the other customers is quite significant, not a relatively insignificant 2%.
8. The WSP indicates on Page 3 that the City has the following four sources of water supply:
  - Surface water diversions from creeks and natural springs on the North Coast.
  - Surface water diversions from the San Lorenzo River.
  - Surface water from Loch Lomond Reservoir (which is used primarily to collect and store water from the Newell Creek watershed, but also stores water from the San Lorenzo River).

- Groundwater produced by the Live Oak Wells (which is extracted from the Purisma Formation).

The WSP assumes, implicitly, that the average past annual yields from these sources will continue into the future. The “conclusion” of the WSA that the City’s supplies are “sufficient to meet the demands of the Project and the City’s existing and planned future uses through at least the year 2025” [during a “normal” year] is based on this premise. In fact, the WSA is deficient in not evaluating possible (and in fact likely) reductions to these sources. Please note that all of the following factors should be analyzed:

- Stream flows (and consequently storage) will have to be reduced to meet the requirements of resource agencies like the California Department of Fish and Game (see the attached letter). There is virtually no doubt that withdrawals from the San Lorenzo River, and maybe from the North Coast streams, will have to be reduced to meet Endangered Species Act protection requirements. This impact should be quantified prior to an expansion of the area in which the City is legally obligated to provide water.
  - The San Lorenzo Valley Water District actually has water rights superior to the City’s rights in certain flows in the San Lorenzo River now going to the City. The chance of the District claiming those flows needs to be analyzed and quantified.
  - The Live Oak Wells are currently drawing from an overdrafted aquifer. The only long term water supplies that should be counted are those which do not lead to overdraft. Again, this number needs to be quantified.
  - The proposed CEMEX quarry expansion, if approved by the County of Santa Cruz, may lead to significant reductions from one of the City’s water sources on the North Coast. Some quantification of the risk factor that this will occur should be undertaken in connection with the Water Supply Assessment.
  - Some analysis and/or quantification of the possible impacts of global warming on rainfall in Santa Cruz County should also be included within the WSA.
9. On Page 8, the WSA notes that the issue of the “maximum acceptable level of shortage” was not resolved as part of the *Adequacy of Municipal Water Supplies to Support Future Development in the City of Santa Cruz Water Service Area*. The CWC believes that this issue should be resolved in connection with the WSA, since the “conclusion” that there is sufficient water available in normal years, even after the expansion of the City’s water service area, is not reliable unless the “maximum acceptable level of shortage” issue has been resolved.
10. Table 1, included in the WSA, is unclear and apparently in error. The first part of Table 1 subtracts 16 mgd of increased water use allocated to the “Main Campus (outside of SOI amendment area),” presumably because that water use is not associated with the Project. However, the same amount is then added into the second part of Table 1, since the “bottom line” of Table 1 is a “Total Projected Increase in UCSC Water Use by 2020.” The effect is to eliminate *any* projected water use for the Main Campus (outside of SOI amendment area), since the addition and the subtraction cancel each other out. This appears to be an error. It appears that the item should simply be

“removed” from the first part of Table 1, without “deducting” the 16 mgy, and the last item should be retained, in the portion of the Table dealing with projected water use outside of the SOL amendment area. Table 1, then would show a net increase in total UCSC water use that is 16 mgy more than the “bottom line” figure currently found in Table 1.

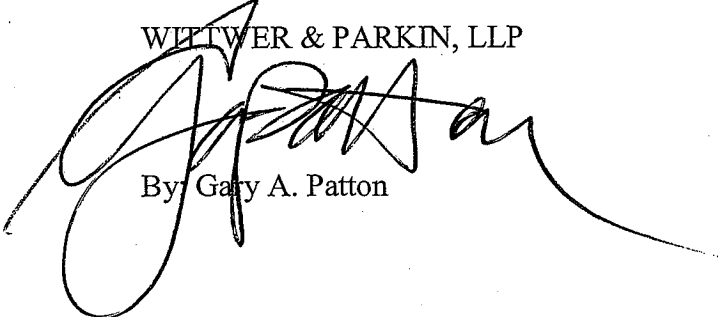
11. By a letter from this office to the City Water Director dated September 24, 2009 (to which no response has been received), the CWC has requested all writings relating to the preparation of the WSA, to the extent that any such materials were shared with the University or any other person who is not either a member of the City staff or a consultant to the City. The California Public Records Act requires the City to produce these records, upon request. The CWC reiterates its request here.

In conclusion, this letter is only a “preliminary” set of questions and concerns prompted by the WSA that the Council will consider at its October 13, 2009 meeting. Because the WSA is lengthy, and was not readily available for public review, the CWC and other members of the public have not had an adequate opportunity to review and comment. The CWC reiterates its request for a continuance.

In addition, the CWC urges the Council to take seriously the deficiencies’ in the WSA noted in this preliminary set of comments. It appears to the CWC that the “conclusion” reached by the WSA is not supported by the information and analysis contained within the document in its current form, and we urge the City not to approve the Water Supply Assessment unless and until the document has been revised to respond adequately to the comments in this letter, and any other comments received by the Council on the WSA.

Thank you for your consideration of our comments.

WETTER & PARKIN, LLP

  
By Gary A. Patton

cc: Water Director  
County Board of Supervisors  
Local Agency Formation Commission

## Ken Thomas

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**From:** Juliana Rebagliati  
**Sent:** Monday, January 26, 2009 9:27 AM  
**To:** Ken Thomas  
**Subject:** FW: Water Supply Assessment

*Juliana*

Juliana Rebagliati  
Director of Planning and Community Development  
City of Santa Cruz  
831.420.5103

---

**From:** Toby Goddard  
**Sent:** Monday, January 26, 2009 9:23 AM  
**To:** Juliana Rebagliati; 'steph@strelowconsulting.com'  
**Cc:** Linette A Almond  
**Subject:** Water Supply Assessment

Good morning:

As requested, I contacted 4 firms to obtain a ballpark estimate for conducting a WSA for the LACFO application to amend the City's sphere of influence. All have experience doing water supply assessments. I received 3 responses; I expected the final one Friday, January 23, but have not heard back yet, and all are interested in the project.

Here is what they quote:

Erler & Kalinowski, Inc (EKI): \$20-50,000  
Winzler & Kelly: \$50,000  
Brown and Caldwell: \$25-50,000  
Montgomery Watson: still waiting to hear

I have copied their responses below, and will forward you the fourth when they respond.

1)EKI

Hi Toby –

Nice to speak with you this morning. Based on our understanding of the project, EKI would estimate that a WSA could be prepared for the project for between \$20,000 and \$50,000, depending on the level and complexity of new analysis that may be required.

To the extent that: (1) the Project-specific and regional water demand estimates included in the WSA can rely directly on the estimates provided by the University, and included in the City's 2005 UWMP, and other recent EIRs prepared by the City that estimate future projected demand, and (2) the water supplies can be based directly on the 2005 UWMP and recent information about new supplies developed by the City since 2005 (e.g., desalination), the WSA should be fairly straightforward, and can likely be done for approximately \$20,000.

However, if extensive revisions to the prior water demand and supply analyses is required, for example because of the requirements of the settlement agreement, recent CEQA-related litigation, or opinion of the City's legal council, this would increase the level of effort and cost of the document. Much of this will depend on the actual agreements made as part of the City's settlement with the University and the opinion of the City's legal council regarding whether or not the City can rely on the water analysis conducted for the University and the supplies projected in the City's 2005 UWMP.

Hope this helps. Please feel free to call with any additional comments and let us know when you decide to move forward. We would be happy to put together a proposal or discuss it in more detail when the time comes.

Best,  
Elizabeth

Elizabeth A. Flegel  
Erler & Kalinowski, Inc.  
1870 Ogden Dr.  
Burlingame, CA 94010  
ph: (650) 292-9100  
fax: (650) 552-9012

2) Winzler & Kelly  
Hi Toby,

Thank you for introducing me to this project. Winzler & Kelly would be very interested in proposing on this work and we'd like to work for Santa Cruz again (we had the pleasure of working with the City on the Pacific Garden Mall reconstruction).

Because you have so much information available, including some great groundwater modeling information from the Soquel Water District, I think the analysis could be accomplished for about \$50,000. Because it is going through the CEQA process, you might want to have some contingency funding available so that your WSA consultant could attend public hearings on the DEIR and respond to comments.

I think your challenge is a little different than Rohnert Park's. That City needed a WSA that demonstrated enough water as currently available to serve build out of the General Plan under all hydrologic conditions. Your City seems to have already concluded that you have a water supply challenge and you are taking actions to increase your supply. The challenge will be to make sure the WSA consultant works closely enough with the CEQA consultant to really satisfy the requirements that the Supreme Court laid out in the Vineyards v. Rancho Cordova decision which means will need to make good ties between the your integrated water plan and the University's master plan buildout.

Let me know if we can be of any additional help.

mg

3) Brown and Caldwell:

Dear Toby,

Thank you for supplying more information about the Water Supply Assessment (WSA) needed by the City of Santa Cruz for the University expansion project. Brown and Caldwell is very interested in performing the WSA for you. As I mentioned on the phone, we have recently completed similar projects for the City of Vallejo as well as assisting other agencies in California in the past. I spoke with both Bill Faisst and Paul Selsky about this opportunity and asked for a cost range based on the scope. Apparently the WSA is a concise report of 15 – 20 pages that follows the state guidelines. The consulting cost ranges from \$25,000 - \$50,000. Bill suggested that you should estimate a mid-range figure for budget purposes.

We would welcome the opportunity to discuss this further.

Sincerely,  
*Judith Millard, Business Development Associate*  
**Brown and Caldwell**  
201 North Civic Drive  
Walnut Creek, CA 94596-3864  
[jmillard@brwncald.com](mailto:jmillard@brwncald.com)  
925.210.2545 (phone) – 925.937.9026 (fax) – 510.506.9495 (cell)

I also wanted to let you know that I will probably not be closely involved in this project as long as the weather remains dry. Most likely it will be assigned to an associate engineer.

Toby  
Toby Goddard  
Water Conservation Manager



State of California - The Resources Agency

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME

<http://www.dfg.ca.gov>

POST OFFICE BOX 47  
YOUNTVILLE, CALIFORNIA 94599  
(707) 944-5500

REC'D JAN 17 2006



January 12, 2006

Sally Morgan, Senior Environmental Planner  
UCSC Physical Planning and Construction  
University of California, Santa Cruz  
Santa Cruz, CA 95064  
Via Fax (831) 423-7346  
E mail: lrdp-eir@ucsc.edu

Dear Ms. Morgan:

University of California Long-Range Development Plan  
SCH # 2005012113

The Department of Fish and Game (DFG) has reviewed the long range development plan (LRDP 2005-2020). The 2005 LRDP has been prepared to accommodate an increase in student enrollment from approximately 14,000 (2003-2004 levels) to 21,000, and an increase of approximately 1,500 faculty and staff from approximately 4,500 at 2003-2004 levels. This expansion will require the development of an additional 2.6 million gross square feet (gsf) of academic and support space on campus, and the development of 1.5 million gsf of housing, which would provide housing for more than 3,400 additional students and employees.

Please be advised this project may result in changes to fish and wildlife resources as described in the California Code of Regulations, Title 14, Section 753.5(d)(1)(A)-(G). Therefore a de minimis determination is not appropriate, and an environmental filing fee as required under Fish and Game Code Section 711.4(d) should be paid to the Santa Cruz County Clerk on or before filing of the Notice of Determination for this project.



1

DFG would like to urge caution in your planning effort in the context of ensuring sufficient water supply for the proposed expansion. UCSC relies on the water supplied by the City of Santa Cruz (City). Currently, DFG and NOAA Fisheries are working with the City to develop a Habitat Conservation Plan in compliance with State and Federal Endangered Species Acts. Sufficient bypass and passage flows for two listed species, steelhead trout (*Onchorhynchus mykiss*) and coho salmon (*Onchorhynchus kisutch*) are at the core of these negotiations. Although the City is currently developing their Integrated Water Plan (IWP) (which the LRDP uses as a basis for projections of sustaining the campus expansion), their plan failed to account for the possibility of needing to curtail their withdrawals from North Coast streams and the San Lorenzo River in response to new restrictions that may be necessary to mitigate existing impacts to listed species.



2

*Conserving California's Wildlife Since 1870*



Ms. Sally Morgan  
January 12, 2006  
Page 2

The campus peak water demands in October and November coincide with the critical periods of water availability for fish in the streams and river that are currently being diverted from, and this potential conflict is likely to be exacerbated during drought years. DFG commends the planned emphasis on conservation and curtailment during drought and normal years.

3

The DEIR indicates that California Endangered Species Act (CESA) Permits must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to California Environmental Quality Act (CEQA) documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. Under the preferred alternative, no impacts to the plants listed under CESA that are present on the UCSC campus are currently proposed. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

4

The LRDP describes a current list of approximately 94 individual improvement projects in the campus watercourses of Cave Gulch, Moore Creek, Jordan Gulch, and the Pogonip drainage. DFG staff had responded to an earlier query from your office about early consultation, and remain willing to provide more detailed review of your existing plans prior to your submittal of notifications of lake and streambed alteration. Please note that Section 1602 of the Fish and Game Code applies to lakes as well as streams. Any work to be done on the Arboretum Pond also warrants notification. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a stream or lake, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of SAAs is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. In the sections that defer the specific restoration of impacted stream features to a future effort, DFG may not be able to use the existing EIR to fulfill its obligations under CEQA. Such projects may therefore require UCSC to prepare additional CEQA documents as a lead agency. To obtain further information about the SAA notification process, please access our website at [www.dfg.ca.gov/1600](http://www.dfg.ca.gov/1600); or to request a notification package, please contact the Streambed Alteration Program at (707) 944-5520.

5

Ms. Sally Morgan  
January 12, 2006  
Page 3

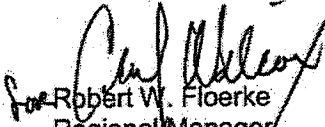
The thresholds proposed as triggers for riparian mitigation, 300 linear feet of permanent impact or 600 feet of temporary impact, may not be considered adequate by DFG in cases of moderate or high quality sites. Because of their importance as wildlife corridors and California red-legged frog habitat on campus, DFG anticipates developing mitigation requirements on a site- or reach-specific basis.



6

If you have any questions about these comments, please contact Serge Glushkoff, Environmental Scientist, at [sglushkoff@dfg.ca.gov](mailto:sglushkoff@dfg.ca.gov) or (707) 944-5597; or Scott Wilson, Habitat Conservation Supervisor, at (707) 944-5584.

Sincerely,

  
for Robert W. Floerke  
Regional Manager  
Central Coast Region

cc: State Clearinghouse



-----Original Message-----

From: Lorrie Brewer On Behalf Of City Council  
Sent: Tuesday, October 13, 2009 1:05 PM  
To: Ryan Coonerty; Tony Madrigal; Don Lane; Cynthia Mathews; Lynn Robinson; Katherine Beiers; Mike Rotkin  
Cc: John Barisone; Bill Kocher  
Subject: FW: Comprehensive Settlement Agreement-Water Supply-Agenda Report

-----Original Message-----

From: Don Stevens [mailto:don@bind.com]  
Sent: Tuesday, October 13, 2009 11:32 AM  
To: City Council  
Cc: Katherine Beiers; Tony Madrigal; Don Lane; Aldo Giachino Aldo Giacchino  
Subject: Comprehensive Settlement Agreement-Water Supply-Agenda Report

I am sending this again to remove a typo, please excuse me)

Dear Council Members,

I am writing to urge you to delay approving the Water Supply Assessment (WSA) prepared for the Sphere of Influence Amendment because it lacks adequate information and discussion about the effects of potential future supply reductions. There also has not been adequate time for the public (or for Council Members) to thoroughly review and discuss the WSA and make informed comments considering it was just released a few days ago and is intended to support the allocation of much of the remaining water supply, assuming there will be an remaining supply, for a Project that is currently not in the water district.

Each of the system reliability issues mentioned in Section 7.3 has the potential to dramatically effect peak season supply, year-round supply, and the ability of the water department to supply the UCSC Project.

In section 7.3.1 mentions the Section 10 Permit the City is undertaking to develop an HCP for the federally and state endangered coho salmon and steelhead trout and the possibility that it would effect system supplies, but provides no detailed analysis.

According to the California Department of Fish and Game (CDFG) and the National Oceanic and Atmospheric Administration (NOAA) it is very likely that the City will have to significantly reduce water diversions from North Coast streams and the San Lorenzo River. The supply reduction is likely to be in the range of hundreds of millions of gallons per year which would mean the City would have no more remaining supply to allocate to new projects and could even find itself with a situation of normal rain year demand exceeding supply. It is likely that this supply reduction will be required sometime in the next year or two with the adoption of an HCP.

I quote from the CDFG comments to the UCSC 2005 DEIR which I believe applies now as well:

"Although the City is currently developing their Integrated Water Plan (IWP) (which the LRDP uses as a basis for projections of sustaining the campus expansion), their plan failed to account for the possibility of needing to curtail their withdrawals from North Coast streams and the San Lorenzo River in response to new restrictions that may be necessary to mitigate existing impacts to listed species."

CDFG is also protesting the City's petition for time extension for the City's permit to divert water at Felton for storage in Loch Lomand. The City's appropriative rights for more water from Felton than it has currently been putting to beneficial use may not be granted by the SWRCB and thus the City could find its annual water supply reduced by almost 500 million gallons per year.

While the WSA also notes that the Live Oak Wells system reliability is at risk, it again does not discuss in any quantifiable way implications to future water supply projections. The Live Oak Wells are currently in an overdraft situation and arguably will not be able to be relied upon in the future as in the past.

The issues mentioned above are simply not addressed in an adequate way by the WSA and thus the supply projection conclusions are highly unreliable. Please delay voting for approval until you have more information and more reliable conclusions.

Thank you for your attention and concern.

Sincerely,  
Don Stevens



**SIERRA  
CLUB**  
FOUNDED 1892

**SANTA CRUZ COUNTY GROUP**

-----Of The Ventana Chapter-----  
P.O. Box 604, Santa Cruz, CA 95061 phone (831) 426-4453  
www.ventana.org e-mail: scscrg@cruzio.com

October 22, 2009

COUNCIL  
AGENDA  
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# 11  
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Mayor and Councilmembers  
City of Santa Cruz  
850 Center Street  
Santa Cruz, CA 95060

Re: Water Supply Assessment for the Sphere of Influence Amendment, and  
Resolution approving the WSA

Dear Mayor and Council:

Please consider the following comments in your evaluation of the Water Supply Assessment (WSA) and the related Resolution approving and adopting the conclusions of the WSA.

One of the major flaws of the WSA is that, although it identifies quite clearly the federal and state law requirement for the preparation by the City of a Habitat Conservation Plan (HCP) for our watersheds, this Assessment completely sidesteps the urgent necessity to complete such a plan and, furthermore, completely evades the issue of how much water would have to be removed from the supply now used for human consumption in order to redirect it to sustain adequately animal and plant life in our watersheds.

Compliance with the laws requiring an HCP is urgently required for the health of our local environment; and the impact of such compliance on the quantity of water available to us must be assessed and measured. We must stress that it is illogical to recognize that the HCP will have an adverse impact on our water supply, as the WSA does (p. 40), and then fail to measure the impact and its consequences. The WSA cannot be considered complete and reliable without correcting this glaring shortcoming.

In addition, we find that there are many other serious questions raised by the Assessment's analysis and conclusions about the future supply of water available to the current water customers in our district.

Statistical issues:

The WSA states that the total water supply in a normal hydrological year through 2030 is 4,314 mgd (p.38, and in Table 3.) The source given for this figure is in a different, older report, i.e. Table 5-2 of the 2005 Urban Water Management Plan (Santa Cruz, 2006). There is no summary, abstract, or footnote in the current Assessment to explain how this figure was derived.

Re: Item #11

"...to explore, enjoy and protect the wild places of the earth."

The statistical information actually provided in the current WSA gives quite a different result and places into question the validity of the figure from the prior study.

Table 4 (Historical Water Supply Production) in the Assessment shows water supply for each year from 1985 through 2004, with a supply range that has a low point of 3,389 mgd in 1990 and a high point of 4,475 mgd in 2000. The Median supply (not shown in the Table 4) calculates to 3,932 mgd, or about 9% less than the 4,314 mgd supply availability figure from the earlier report and used as the basis of the analysis in the WSA.

Table 4 shows the "Average" water supply from 2000 to 2004 to be 4,206 mgd, without explaining why these particular 5 years were selected. In fact, a calculation of the actual arithmetic average (or Mean) supply for the entire 20 year period shown in Table 4 (1985-2004) gives a result of only 4,038 mgd. This is substantially below the benchmark supply figure used in the Assessment of 4,314 mgd through the year 2030.

In addition, there is no explanation why the figures for Water Supply Production in Table 4 stop at 2004. It seems reasonable to assume that the Water Department has the information for the more recent years since 2004. It is important to examine whether the annual supply figures have declined after 2004. That would contribute to lowering the projected average supply figures even more, exacerbating the negative disparity between supply and consumption.

Lack of quantification of major issues that may adversely affect water supply in the future:

Although the Assessment identifies and describes a number of significant and probable circumstances that may reduce water supply in the future, it completely sidesteps any attempt at analyzing and quantifying how much water supply would actually be lost as these circumstances materialize.

These issues are:

1. At p. 30, the WSA explains that the San Lorenzo Valley Water District is entitled to 104 mgd of Loch Lomond Reservoir supply that the City is currently using and that could be lost in total or in part if and when the SLVWD claims its entitlement
2. At p. 40, the WSA explains that federal and state law require the City to implement an HCP (Habitat Conservation Plan) to minimize the effects on endangered and sensitive species caused by the City's taking practically all the water from the watercourses in our watersheds, leaving only a scant amount for plants and wildlife. Although the WSA clearly identifies this problem, it makes no attempt whatever at estimating the quantity of water now drawn for human consumption that would have to remain in the watercourses in order to properly sustain our natural habitat.
3. At p. 40, the WSA also identifies the water rights violations, i.e. excessive taking of water by the City, at Newell Creek and Felton Water Diversion. These potential and likely reductions of the City's current water supply are described in the WSA as issues that are "currently being

protested" by the pertinent regulatory agencies, but the WSA makes no attempt to quantify the impact on future water supply of these potentially adverse regulatory decisions.

4. The Assessment makes no provision whatever for any potential reduction in surface water supply that may result as a consequence of climatic changes caused by the current and ongoing global warming between now and 2030.

5. The principal remedy proposed in the WSA for the supply deficiency is a water desalination plan that is not expected to conclude the planning/design phase until 2012. (p.49). There are absolutely no guarantees that the proposed desalination project can overcome the environmental, technical, and financial obstacles that it must overcome. The costs just for planning/design are given as \$15.5 Million between now and 2012. (p.49). Most disturbing, however, is the complete lack of any estimate of construction and operation costs beyond 2012, making it impossible to give any credence to the eventual realization of this solution. At the moment, the supply envisioned from the desalination project falls in the category of "paper water" (as defined by the Courts), or figment of the imagination.

#### Summary:

The deficit between supply projection, based on historical average, and consumption is much greater than indicated because the historical averages (both median and mean) are lower than the supply figure used in the WSA, and because various factors will take away some significant portion of the City's current water entitlements.

The historical water supply production data in the WSA based on the 20 year period 1985-2004 fail to take into account the results of the more recent years since 2004.

The supply data presented is entirely contained in Table 4. It shows a 20 year Median supply of 3,932 mgd and a Mean supply of 4,037 mgd. Both figures are substantially below the WSA stated supply of 4,314 mgd.

The projected water demand in 2015, i.e. in the immediate future, ranges between a low of 3,980 mgd and a high of 4,104 mgd (Table 6). Both demand/consumption figures exceed the historical (1985-2004) supply averages. Therefore, there is no foundation to the contention that the City has sufficient water to meet the demand in a normal hydrological year.

Furthermore, the proposed Resolution recognizes in paragraph (e) that: "The City's water system is grossly inadequate to meet current demand under drought conditions."

Several major factors that will reduce water supply in the near future have purposefully been sidestepped in projecting a supply of 4,314 mgd that will remain unchanged from now through the year 2030. These include the effects of global warming, regulatory requirements that will force a reduction in the amount of water taken out of streams in our watersheds, a reduction of entitlements, and saltwater intrusion in the groundwater supply.

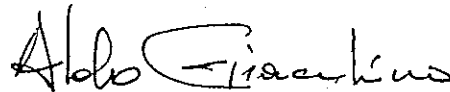
Conclusions:

1. The City does not have adequate supply to meet even the normal year demand in the immediate future (2015).
2. The lack of data on water supply production in the years after 2004 raises some serious questions about the accuracy of the supply projections.
3. The projected supply is deemed to remain constant between now and the year 2030, even though the WSA admittedly sidestepped the quantification of several significant factors that will reduce the current supply.
4. The supply vs. demand equation is in a razor-thin balance even in wet years, and reaches gross inadequacies in dry years. It seems illogical and reckless to propose a service area expansion under such conditions.
5. The principal remedy proposed is a water desalination plan that, at least for the next few years, will remain in the category of "paper water".

We must conclude that the omissions and inaccuracies outlined above substantially vitiate the conclusions in WSA and do not support the City's ability to expand the water service area without creating harm to the current users/customers of the water district and to the natural environment that produces our water supply. For these reasons we recommend that you do not approve the draft Resolution approving the WSA, and request instead a re-evaluation of the water supply conclusions to take into account all of the issues that have been sidestepped or omitted.

Thank you for your consideration of these comments.

Sincerely,



Aldo Giacchino  
Chair, Executive Committee  
Sierra Club-Santa Cruz County Group

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**From:** Lorrie Brewer **On Behalf Of** City Council  
**Sent:** Thursday, October 22, 2009 2:07 PM  
**To:** Ryan Coonerty; Tony Madrigal; Don Lane; Lynn Robinson; Katherine Beiers; Mike Rotkin; Cynthia Mathews  
**Cc:** Bill Kocher; Juliana Rebagliati  
**Subject:** FW: WATER SUPPLY ASSESSMENT, Council Agenda October 27, 2009

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**From:** Reed Searle [mailto:hrsearle@sbcglobal.net]  
**Sent:** Thursday, October 22, 2009 1:38 PM  
**To:** City Council  
**Subject:** WATER SUPPLY ASSESSMENT, Council Agenda October 27, 2009

Dear Mayor Mathews and Councilmembers,

I appreciate that the Council has continued the WSA matter in order to permit additional input.

My comments attempt to make two points: first, the WSA fudges its response to the inescapable shortage of water; second, desal phase 3 is the only way to obtain more water, and phase 3 is not even near the drawing board.

The operative language of water Code #10910 is that the WSA "...shall include a discussion with regard to whether the total projected water supplies...will meet the projected water demand...". (Water Code 10910 (b) (4)). The WSA discusses this issue but hedges its conclusion. The City does not need to show that water supply is adequate; it must only prepare a thorough discussion and approve the assessment. #10911 requires the city to determine adequacy of water supply for the project (#10911 c). If the supply is inadequate, the city "...shall include that determination...". The proposed council resolution repeats the hedging. What is required is a specific finding of sufficiency or insufficiency. What LAFCO does with the result is up to LAFCO.

Water Code section 10910 (c) 3 requires that the City assess whether the water system's total projected water supplies will meet the projected water demand associated with the project in addition to existing and planned future uses. Offering a range of possibilities does not fulfill this requirement. A specific answer is required and that answer is surely negative. "...At some time between 2015 and 2020, the City's water demand was expected to exceed the system's capacity". ( WSA page 18)

When the supply is inadequate, Water Code # 10911 requires the City to discuss how additional supplies will be obtained, including total costs, required permits, time frame etc all be provided. Desal is conceded to be the only way to supply additional water. Although there is some confusion in the desal discussion (WSA 47 et seq), the term "full-scale desalination plant" refers to phase 2 only and the cost estimates etc are for phase 2. (WSA, page 47) The only reference to using desal for growth is on page 49: "...it could conceivably be expanded in the future if additional supplies are needed in the future". "Conceivable" is not something that can be relied on to help alleviate a shortage. The Code section must be complied with and has not been--because it cannot be. This fact should be acknowledged---the efficacy of desal to solve our problems simply cannot be shown.

The issues raised in Gary Patton's letter regarding events which could reduce our available water supply in coming years (page 5 of his letter dated Oct 13) require discussion as part of the WSA. Any possible reductions in supply should be quantified in order that LAFCO may have a more complete understanding of the effect of committing much of our (temporarily) remaining water supply to the University.

The demand issue requires further elucidation. The WSA says that whether there is enough water in a normal year depends on whether our growth rate is .4% (historic) or .8% (general plan). This small difference in the amount of annual growth translates into a substantial amount of growth and hence of water demand over 20 years. I think LAFCO needs a closer estimate.

The .4% growth rate is just not the historic rate: it is the actual growth including an estimate "...that water use at UCSC would increase at half the rate predicted in the Draft 2005 LRDP." (WSA, page 17) Although the University is (heroically) conserving water, it is not reducing usage by 50%. The WSA (page 2) estimates that "...water demand associated with other development planned within the City's service area (i.e. not including the Project) is expected to increase by between 222 mgd and 356 mgd by 2030." I assume these numbers are based on the .4 or .8 estimates of growth. At any rate, there is a total supply of 4,314 in a normal year (WSA page 3) . Total estimated demand in 2030 is 4,222 mgd to 4,356. Even at the lower number, there would be a surplus of only 92 mgd, or .02% of capacity. That is most certainly not adequate wiggle room, particularly in view of the issues raised in Mr. Patton's letter.

I think the resolution before the Council should be amended to reflect the above. Please note that (i), the last finding, is based on a purely hypothetical increase in available water flowing from desal. The inescapable implication of the WSA is that without the phase 3 desal, we will have inadequate water even in normal years.

H Reed Searle  
114 Swift St  
Santa Cruz, Ca. 95060  
phone and fax 831-425-8721



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**From:** Lorrie Brewer **On Behalf Of** City Council  
**Sent:** Monday, October 26, 2009 12:37 PM  
**To:** Ryan Coonerty; Tony Madrigal; Don Lane; Cynthia Mathews; Lynn Robinson; Katherine Beiers; Mike Rotkin  
**Cc:** Juliana Rebagliati; Bill Kocher  
**Subject:** FW: Water Supply Assessment Report Comments -- October 27 City Council meeting

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**From:** Bill Malone [mailto:billmalone@pacbell.net]  
**Sent:** Thursday, October 22, 2009 4:16 PM  
**To:** City Council  
**Subject:** Water Supply Assessment Report Comments -- October 27 City Council meeting

*Council Members--*

*I will not be able to attend your October 27 meeting. Below and attached are some comments and concerns with the **Water Supply Assessment Report**.*

*(The following is the same as in the attached document)*

*--Bill Malone*

October 22, 2009  
Santa Cruz City Council  
Water Supply Assessment Report  
Bill Malone

The Water Supply Assessment's analysis and conclusions, while thorough, are based on a few critical, but dubious assumptions. Even based on these assumptions, the WSA concludes the City will run out of water both in normal years and dry years.

To support the UCSC project, the City will have to develop new water sources. Current Water Service customers will have to accept increased cutbacks or increased water costs.

If Global Warming and the "Uncertainties" mentioned in the WSA (WSA,p. 39) decrease our water supply by about 7%, we may face water rationing. With or without the UCSC project – of course, the UCSC project would cause the rationing sooner.

The most critical and vulnerable assumption is that ***"the City has approximately 300 million gallons per year (mgy) of remaining capacity to support future development"*** (WSA,page 7). The WSA points out that this amount is actually inadequate: ***"Water demand associated with other development planned within the City's service area (i.e., not including the Project) is expected to increase by between 222 mgy and 356 mgy***

**by 2030”(WSA,p. 2).** Obviously that increase can use up the City’s capacity reserve.

While the 300 mgy probably is a reasonable estimate based on historical data, the main concern is how reliable is this estimate for future years, specifically, for the UCSC project, the next 20+ years.

The precise, exact capacity of the current system cannot be determined, but it is finite. There is a limit. With Santa Cruz’s historical slow growth rate, the 300 mgy estimate of capacity reserve has been adequate to alleviate growth concerns. But the UCSC project will take a significant portion of that capacity.

Prudent water management by the City should maintain a reserve capacity. 300 mgy is about 7-8 % of the City’s annual use. The UCSC project is estimated to use 100 mgy. That cuts the City’s reserve to less than 5%. OK, but not very good. A very small margin for error.

#### Some Questions:

- What if the 300 mgy estimate is wrong?
- What about the affects of Global Warming on system capacity?
- What about HCP and other impacts on our reserve?
- Has the 300 mgy “reserve” estimate factored in these impacts?
- How soon will our 300 mgy capacity reserve dry up?

Global Warming. Since we are concerned about the future, how will global warming affect our remaining capacity? Global warming predicts that we should expect less rainfall which would lower our system capacity. An analysis of stream flow and rain fall should be done and any changing trends could be projected into the future to estimate decreased system capacity. This would help predict when any capacity reserve will be gone.

Several Uncertainties. The WSA also states that “***there are several uncertainties regarding water rights and entitlements facing the City’s existing water supply sources that have the potential to reduce the City’s water supply***”(WSA,p. 39). The potential could be drastic. The WSA describes these “uncertainties” but does not go further to quantify the resulting reduction in the City’s system capacity. Are these “uncertainties” sufficient to wipe out our 300 mgy reserve?

Desalination Plant 1. The proposed desalination plant is also not a certainty. The proposed UCSC project relies on it happening. Is that appropriate for planning purposes? The desal plant may be turned down by the Coastal

Commission. Or rejected for some other reason. Should the UCSC Project be deferred until the desal plant is more certain? What is “Plan B”?

Desalination Plant 2. The proposed desal plant is insufficient to provide dry year drought relief for the UCSC project. “...***the City will need to develop new dry year water supplies or accept increased cutbacks during dry years***”(WSA p 52). If the desal plant has to be expanded, how much will that cost? And how much will existing water customers have to pay for it?

Desalination Plant 3. Also, regarding the proposed desalination plant: The Settlement Agreement (and some other documents) make the claim that the desal plant will be enlarged to provide water for growth. City officials and the IWP state that the desal plant will only be used during extreme drought situations. The City Council needs to make a definitive statement on how the plant will be used. If the plan is to use desal to supply water for growth, the citizens need to be informed and given an opportunity to weigh in on that change.

Before approving or accepting the WSA, the City Council should:

- Determine the reliability of the 300 mgd reserve for the future.
- Determine what affect Global Warming will have on system capacity.
- Determine what affect the “Uncertainties” will have on system capacity.
- Decide whether it is wise to proceed with the UCSC project before the desal plant has been approved.
- Determine the backup plan if there is no desal plant.
- Determine the Project’s impact on current Water Service customers: What will be the resulting increased water costs and/or increased water cutbacks?
- Clear up the confusion or misstatements that the Desal plant will be used to supply water for future growth.

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-----Original Message-----

From: Lorrie Brewer [mailto:LBrewer@ci.santa-cruz.ca.us] On Behalf Of City Council  
Sent: Monday, October 26, 2009 11:31 AM  
To: Ryan Coonerty; Tony Madrigal; Don Lane; Cynthia Mathews; Lynn Robinson; Katherine Beiers; Mike Rotkin  
Cc: Juliana Rebagliati; Bill Kocher  
Subject: FW: Comprehensive Settlement Agreement-Water Supply-Agenda Report

-----Original Message-----

From: Gary A. Patton [mailto:gapatton@wittwerparkin.com]  
Sent: Friday, October 23, 2009 11:17 AM  
To: 'Don Stevens'; City Council  
Subject: RE: Comprehensive Settlement Agreement-Water Supply-Agenda Report

Terrific, Don!!

Gary A. Patton, Of Counsel  
Wittwer & Parkin, LLP  
147 South River Street #221  
Santa Cruz, CA 95060  
Website: [www.wittwerparkin.com](http://www.wittwerparkin.com)  
Email: [gapatton@wittwerparkin.com](mailto:gapatton@wittwerparkin.com)  
Telephone: 831-429-4055, Ext. 13  
Cell Phone: 831-332-8546  
FAX: 831-429-4057

-----Original Message-----

From: Don Stevens [mailto:don@bind.com]  
Sent: Thursday, October 22, 2009 4:18 PM  
To: [citycouncil@ci.santa-cruz.ca.us](mailto:citycouncil@ci.santa-cruz.ca.us)  
Subject: Comprehensive Settlement Agreement-Water Supply-Agenda Report

Please find my comment letter to the Water Supply Assessment attached and copied below for your convenience.

Thank you,  
Don Stevens

October 22, 2009

To: Mayor Cynthia Mathews and City Council Members City of Santa Cruz  
809 Center St.  
Santa Cruz, CA 95060

Re: Comprehensive Settlement Agreement-Water Supply-Agenda Report

Dear Mayor Mathews and Council Members,

I am writing to you concerning the Water Supply Assessment (WSA) prepared for the Sphere of Influence Amendment currently under consideration by the Council.

The major fault with the WSA that should preclude you from adopting it at this time is that it reaches a misleading and erroneous conclusion about the likelihood of there being enough water supply to support all anticipated future development until 2025 or 2030 that includes the UCSC Project anticipated in the Sphere of Influence Amendment and other anticipated growth.

While two different growth rate assumptions were made for calculating likely demand on water supply into the future, there was almost no discussion and analysis of the near certainty of a supply reduction in the near future that will be necessitated as a consequence of the HCP being developed by the City of Santa Cruz to protect the endangered species coho salmon and steelhead trout.

While the specific amount of this supply reduction is unknown at this time, the WSA could have and should have at least made some assumptions about the magnitude of possible supply reductions and analyzed the likely implications to available water supply. The WSA concluding sentence in Section 7.3.1 pertaining to the Section 10 Permit is particularly misleading because it gives the impression that this may turn out to be a minor issue, if at all:  
<sup>3</sup>The effects of these permits and the HCP, if any, are yet to be determined and may not be known for several years.<sup>2</sup>

The reason this is so misleading and critical to the erroneous conclusion of the WSA, is that it is virtually certain that water supply will need to be reduced by potentially hundreds of millions of gallons of water per year and potentially leaving almost no additional water supply for future growth. I refer you to the very real numerous problems and issues that have been created by the restriction of water diversions necessitated for the protection of the Sacramento-San Juaquin Delta smelt.

I have had several informative discussions with Water Department Director Bill Kocher and with a staff member working on the HCP studies over the past couple of years and both have told me that there is almost no doubt that water supply reductions will be required and are likely to be substantial.

Thus, the conclusion reached by the WSA is a very low probability of being an accurate future projection. The WSA should be sent back for more analysis of all the risks to current water supply levels including quantitative assumptions and projections and the probabilities of such. In fact, the conclusion reached by the WSA is ve

Other important issues not addressed by the WSA that should have been are global warming implications for possible changing weather patterns and a complete and updated analysis and definition of what a <sup>3</sup>normal<sup>2</sup> rain year is now. While the WSA also notes that the Live Oak Wells system reliability is at risk, it again does not discuss in any quantifiable way implications to future water supply projections. The Live Oak Wells are currently in an overdraft situation and arguably will not be able to be relied upon in the future as in the past.

Thank you so much for your time and attention to this important issue.

Sincerely,  
Don Stevens

-----Original Message-----

From: Lorrie Brewer [mailto:LBrewer@ci.santa-cruz.ca.us] On Behalf Of City Council  
Sent: Monday, October 26, 2009 11:30 AM  
To: Ryan Coonerty; Tony Madrigal; Don Lane; Cynthia Mathews; Lynn Robinson; Katherine Beiers; Mike Rotkin  
Cc: Juliana Rebagliati; Bill Kocher  
Subject: FW: Comprehensive Settlement Agreement-Water Supply-Agenda Report

-----Original Message-----

From: Don Stevens [mailto:don@bind.com]  
Sent: Friday, October 23, 2009 11:48 AM  
To: City Council  
Subject: Comprehensive Settlement Agreement-Water Supply-Agenda Report

Dear Council Members,

Please accept my apologies for a couple of typos in the comment letter submitted to you yesterday. Attached is the corrected version.

Sincerely,  
Don Stevens

October 22, 2009

To: Mayor Cynthia Mathews and City Council Members  
City of Santa Cruz  
809 Center St.  
Santa Cruz, CA 95060

Re: Comprehensive Settlement Agreement-Water Supply-Agenda Report

Dear Mayor Mathews and Council Members,

I am writing to you concerning the Water Supply Assessment (WSA) prepared for the Sphere of Influence Amendment currently under consideration by the Council.

The major fault with the WSA that should preclude you from adopting it at this time is that it reaches a misleading and erroneous conclusion about the likelihood of there being enough water supply to support all anticipated future development until 2025 or 2030 that includes the UCSC Project anticipated in the Sphere of Influence Amendment and other anticipated growth.

While two different growth rate assumptions were made for calculating likely demand on water supply into the future, there was almost no discussion and analysis of the near certainty of a supply reduction in the near future that will be necessitated as a consequence of the HCP being developed by the City of Santa Cruz to protect the endangered species coho salmon and steelhead trout.

While the specific amount of this supply reduction is unknown at this time, the WSA could have and should have at least made some assumptions about the magnitude of possible supply reductions and analyzed the likely implications to available water supply. The WSA concluding sentence in Section 7.3.1 pertaining to the Section 10 Permit is particularly misleading because it gives the impression that this may turn out to be a minor issue, if at all: "The effects of these permits and the HCP, if any, are yet to be determined and may not be known for several years."

The reason this is so misleading and critical to the erroneous conclusion of the WSA, is that it is virtually certain that water supply will need to be reduced by potentially hundreds of millions of gallons of water per year and potentially leaving almost no additional water supply for future growth. I refer you to the very real numerous problems and issues that have been created by the restriction of water diversions necessitated for the protection of the Sacramento-San Juaquin Delta smelt.

I have had several informative discussions with Water Department Director Bill Kocher and with a staff member working on the HCP studies over the past couple of years and both have told me that there is almost no doubt that water supply reductions will be required and are likely to be substantial.

Thus, the conclusion reached by the WSA has a very low probability of being an accurate future projection. The WSA should be sent back for more analysis of all the risks to current water supply levels including quantitative assumptions and projections and the probabilities of such.

Other important issues not addressed by the WSA that should have been are global warming implications for possible changing weather patterns and a complete and updated analysis and definition of what a "normal" rain year is now. While the WSA also notes that the Live Oak Wells system reliability is at risk, it again does not discuss in any quantifiable way implications to future water supply projections. The Live Oak Wells are currently in an overdraft situation and arguably will not be able to be relied upon in the future as in the past.

Thank you so much for your time and attention to this important issue.

Sincerely,  
Don Stevens



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**From:** Lorrie Brewer [mailto:LBrewer@ci.santa-cruz.ca.us] **On Behalf Of** City Council  
**Sent:** Monday, October 26, 2009 11:28 AM  
**To:** Ryan Coonerty; Tony Madrigal; Don Lane; Cynthia Mathews; Lynn Robinson; Katherine Beiers; Mike Rotkin  
**Cc:** Bill Kocher; Juliana Rebagliati  
**Subject:** FW: Water supply assessment

---

**From:** Rick Longinotti [mailto:longinotti@baymoon.com]  
**Sent:** Friday, October 23, 2009 4:54 PM  
**To:** City Council  
**Subject:** Water supply assessment

Dear City Council Members,  
Attached is a letter regarding the Water Supply Assessment on your agenda. I hope it contributes to your process.

Best wishes,  
Rick

*Rick Longinotti, MFT*  
<http://www.findingharmony.org>  
831 425-0341

To: City Council  
From: Rick Longinotti  
Re: Water Supply Assessment

The City Council is being asked to pass a resolution making the following finding;  
“This WSA concludes that in a normal year the City’s supplies are sufficient to meet the demands of the Project and the City’s existing and planned future uses through at least the year 2025.”

The letter from Community Water Coalition legal counsel, Gary Patton, has questioned the WSA conclusion that water supplies are adequate for new growth (University or otherwise). I will not repeat the arguments in his letter, other than to mention that it includes:

- the likely reduction in water diversion from North Coast streams and the San Lorenzo River mandated by a Habitat Conservation Plan
- the overdraft of the Purisima aquifer affecting the Live Oak wells
- the State Fish and Game challenges to SC Water Dept. water rights at Felton and Loch Lomond.

The purpose of this letter is to question the WSA conclusion on another point: *The WSA figure for water capacity during normal rainfall years is based on maximum legally allowable depletion of Loch Lomond. Such a depletion of the lake would reduce drought protection for subsequent years to an intolerable level.*

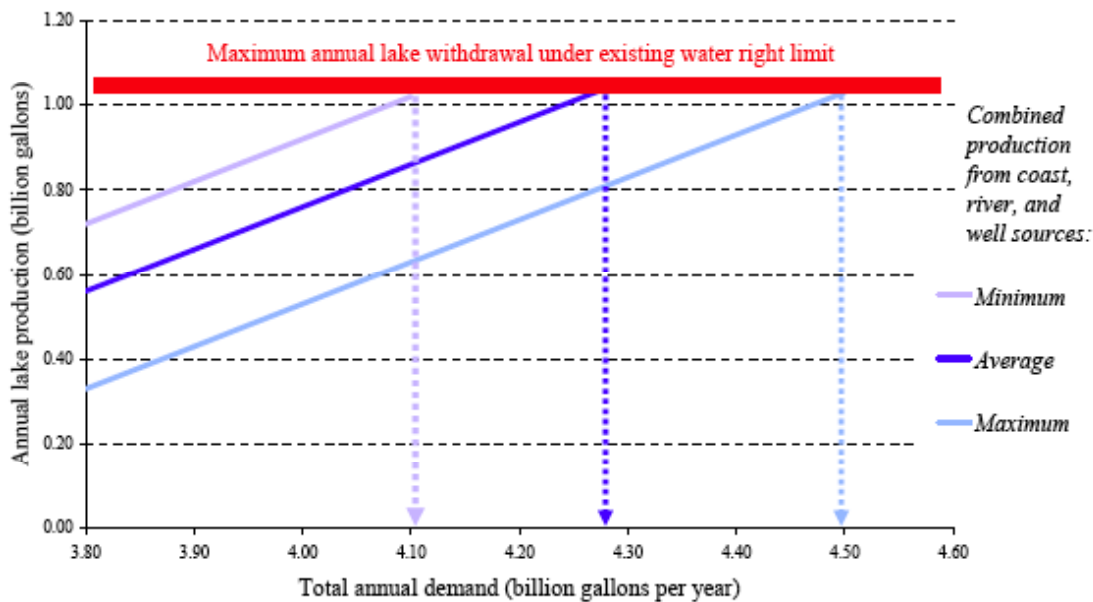
Under its current water rights, the City is legally limited to withdrawing no more than 1.04 billion gallons of water from Loch Lomond Reservoir each year. That represents 37% of the lake’s total capacity of 2.8 billion gallons.

It is instructive to consider the data from 1975, the year before the worst-case drought years of 1976-1977. According to the Water Shortage Contingency Plan (2009), “Reservoir capacity at the beginning of April 1976 measured 1.6 billion gallons or 57% of capacity”. That means that the lake was significantly lower on Oct 1, 1975, prior to winter recharge. It is noteworthy that 1975 was a “normal” rainfall/runoff year according to Water Department classification. Even allowing for evaporation and Newell Creek stream flow, a lake level of 57% of capacity in April, 1976, leads us to conclude that the City in 1975 allowed close to the maximum water allocation from Loch Lomond. The result was unnecessarily severe curtailments of water to customers in the following two years.

The practice of allowing maximum allocation from Loch Lomond in normal years is in dramatic contrast with the Water Department’s current management practice, which resulted in a lake level on October 1, 2009 of 90% of capacity, after three years of drier than normal winters. The Water Department’s current careful stewardship of the water in the city’s only reservoir reflects a shift in management practice over the years. This shift needs to be reflected in the WSA and the City’s Urban Water Management Plan. It is not acceptable for the WSA to report that, “These four water supplies provide the city with approximately 4,314 mgd during normal hydrologic years”, when that figure is based on maximum allowable allocation from Loch Lomond. Using the maximum allocation from Loch Lomond would subject city water users to even more drastic curtailment than was in effect in 1977, due to the increase in demand on the system.

There exists a gap between the Water Department’s current prudent stewardship of Loch Lomond reserves and the written policy of allowing all legally available stored water to be used in normal years. The chart below from the 2004 document, *Adequacy of Municipal Water Supplies To Support Future Development In the City of Santa Cruz Water Service Area*, portrays a policy of meeting system demand even up to the legal limit of lake withdrawals *in normal years*.

**Figure 5. Relationship Between System Demand and Lake Production**



A far more effective policy for coping with critical droughts, and the one that the Department has been pursuing *de facto* in the last three years could be expressed as follows:

*“During normal years, allocations from Loch Lomond shall not produce a lake level lower than 89% of capacity at the end of the season (Oct 1).” [89% is our estimate of the level at which the lake can recharge to 100%, even in the driest winter. The Dept. can produce a more accurate figure] “In dry years (but not critically dry years), the Department shall set curtailments to achieve the same goal of 100% recharge of the lake over the course of the next winter, which shall be assumed to be a worst-case dry winter.”*

The following excerpts from the City’s Water Shortage Contingency Plan (2009) support such a policy change. The first excerpt explains the consequences of cutting back on water allocations from Loch Lomond during the first year of a drought:

*“[Smaller allocations] would mean customers would be required to cut back more in the current year, but would preserve storage enabling the City to withstand more prolonged drought before running out of stored water”.*

And:

*“Prudent management dictates that the long-term welfare of the City and its residents outweighs the short-term benefit to the community and higher revenues that would be realized by setting a higher allocation” [from Loch Lomond during dry years]*

### Water-Neutral Development

In addition to enacting a policy change on management of stored water, the Council needs to act to ensure that the existing level of drought protection does not deteriorate through growth.

Growth in water customers means more people sharing the same amount of scarce water during a drought. There is widespread agreement that at some point Santa Cruz will need to follow the lead of communities such as Monterey and Soquel Creek Water District and require that new development be water-neutral. We believe that such a requirement is best enacted *as soon as possible*, so as to prevent even larger water curtailments in critical drought years. The following chart from the Integrated Water Plan (2003) demonstrates how growth increases the probability of higher curtailments during drought years.

**Table II – 4  
EXPECTED BASE CASE PEAK-SEASON CURTAILMENTS**

	2003	2010	2015	2020	2030
<b>% Worst-Year Peak-Season Curtailment</b>	45%	39%	42%	44%	46%
<b>FREQUENCY OF:</b>					
<b>No Curtailment</b>	41 in 59	42 in 59	35 in 59	19 in 59	4 in 59
<b>&lt;10% Curtailment</b>	11 in 59	10 in 59	16 in 59	31 in 59	44 in 59
<b>10-20% Curtailment</b>	3 in 59	6 in 59	7 in 59	3 in 59	5 in 59
<b>20-30% Curtailment</b>	3 in 59	0 in 59	0 in 59	5 in 59	5 in 59
<b>&gt;30% Curtailment</b>	1 in 59	1 in 59	1 in 59	1 in 59	1 in 59

The Soquel Creek Water District requires that developers offset 125% of the projected water use of their new development by installing water saving toilets, showerheads, etc. in existing buildings. This requirement is not onerous for developers and it is quite popular with existing building owners. (There is now a 2 year waiting list for free toilet installations.)

#### *Conclusion:*

- *In order to ensure greater drought protection, the City needs to enact a policy reducing its allocation from Loch Lomond in normal rainfall years and in sub-critical dry years to allow the lake to fully recharge over the subsequent winter (assuming the winter to have the minimum rainfall).*
- *Santa Cruz needs to initiate a water-neutral development policy.*
- *The WSA should be revised to reflect such policy changes.*

Our proposed policy changes would put Santa Cruz into conformity with state law which requires:

*“Sufficient water shall be available from the water sources and distribution reservoirs to supply adequately, dependably, and safely the total requirements of all users under maximum demand conditions before agreement is made to permit additional service connections to a system.”*



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**From:** Lorrie Brewer **On Behalf Of** City Council  
**Sent:** Monday, October 26, 2009 1:01 PM  
**To:** Juliana Rebagliati  
**Subject:** FW: Water Supply Assessment Re Proposed Expansion of the City's Sphere of Influence

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**From:** Gary A. Patton [mailto:[gapatton@wittwerparkin.com](mailto:gapatton@wittwerparkin.com)]  
**Sent:** Monday, October 26, 2009 12:54 PM  
**To:** City Council; Cynthia Mathews; Don Lane; Katherine Beiers; Lynn Robinson; Mike Rotkin; Ryan Coonerty; Tony Madrigal  
**Cc:** Bill Kocher; Patrick McCormick; 'Ellen Pirie'; 'John Leopold'; 'Mark Stone'; 'Neal Coonerty'; 'Tony Campos'  
**Subject:** Water Supply Assessment Re Proposed Expansion of the City's Sphere of Influence

Dear Council Members:

Attached is a supplemental letter, following up on our earlier correspondence about the proposed Water Supply Assessment that the Council will consider on its Agenda tomorrow. Thank you for continuing the item from your last meeting, to allow interested members of the public more opportunity to comment.

Yours truly,

**Gary A. Patton, Of Counsel**  
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OF COUNSEL  
Gary A. Patton

October 26, 2009

Mayor Cynthia Mathews and Council Members  
Santa Cruz City Council  
809 Center Street  
Santa Cruz, CA 95060

RE: October 27, 2009 City Council Agenda - Agenda Item #11  
Implementation of the UCSC Settlement Agreement  
Water Supply Assessment

Dear Mayor Mathews and Council Members:

This letter is written on behalf of the Community Water Coalition (CWC), commenting on the Water Supply Assessment (WSA) scheduled for consideration on the City Council's October 27, 2009 agenda. We have written an earlier letter, dated October 13, 2009, which was previously submitted to the Council. This letter is intended to supplement, not supplant, that earlier correspondence.

The City is urging the Santa Cruz County Local Agency Formation Commission (LAFCO) to expand the City's Sphere of Influence to include the UCSC "North Campus" area. The University of California is simultaneously urging LAFCO to permit the City to provide "extraterritorial" water service to that part of the UCSC campus. If (and only if) both of these applications are approved by LAFCO, the City will be authorized to provide water service to the UCSC "North Campus" area.

The simultaneous applications by the City and the University, if approved by LAFCO, would authorize the City to provide water service for over 3,000,000 square feet of new residential and academic structures. This level of new development could have many significant and adverse environmental impacts generally, and on the UCSC "North Campus" area in particular, and the City is preparing an Environmental Impact Report to assess those impacts. One of the most obvious impacts is the impact that this proposed new development would have on the City's water system and water supplies.

Because local government agencies, in the past, have often given approval for new development projects when there was not, in fact, an adequate water supply to serve the proposed new development, the State Legislature enacted Water Code §10910. That state law has required the preparation of the Water Supply Assessment that the Council will consider on October 27<sup>th</sup>. Water Code §10910 specifically states:

...The water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal,

single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

The CWC does not believe that the WSA before you complies with the requirements of Water Code §10910. As noted in our earlier comments, the problem is largely on the “supply” side of the equation. While legitimate questions can certainly be raised about how the WSA has handled the water supply “demands” that will be facing the City over the next twenty years, it is very clear that the WSA has not properly evaluated the “supply” side. Because it hasn't, the WSA does not include an adequate discussion of “whether the public water system's total projected *water supplies* ... will meet the projected water demand....”

The WSA is deficient in that it assumes that the City's current groundwater use, and its current use of flows from the San Lorenzo River and in the City's North Coast surface sources can continue to be used in the same amounts during the next twenty years. Information within the WSA, and otherwise available to the City, demonstrates that this is not true:

1. There is *no doubt* that the City will have to reduce its use of San Lorenzo River and North Coast stream surface flows during the next twenty years, to meet the requirements of the federal and state Endangered Species Acts. The WSA should seek to quantify this reduction in future water supply.
2. It is *clear* that the WSA assumes the availability of water supplies from the Newell Creek Reservoir that cannot be produced if the Reservoir is operated in a prudent manner (and as it is currently operated) to meet the contingencies of multiple dry year water supply reductions. The WSA should be based on a correct set of figures.
3. It is *clear* that the City is relying on new water supplies from a proposed desalination plant to provide both drought protection supplies and supplies to meet new system demand, including demand generated by new development in the “North Campus” area of the University of California at Santa Cruz. At this time, the actual availability of any such new supply is speculative, and the analysis in the WSA should state this very clearly, and outline what the situation would be if this new source of water supply does not materialize as the City hopes it will.
4. It *may* be that the City will need to reduce its current use of surface flows in the San Lorenzo River, since the San Lorenzo Water District has a prior claim to waters now being used by the City, and which the WSA counts as being “certainly available” to the City over the next twenty years. The WSA should include an analysis of what would happen if this, in fact, occurred.
5. It *may* be that the City will need to reduce its current use of groundwater from the Live Oak wells, since these wells are drawing from an overdrafted aquifer and appear to be causing seawater intrusion. The WSA should include an analysis of



what the City's water supply situation would be if these groundwater supplies were not available.

6. It *may* be that the approval of the expansion of the CEMEX quarry, located on the North Coast, will lead to a significant reduction in useable water supplies from one of the City's most important North Coast sources. The WSA should evaluate what the City's water supply situation would be if that, in fact, occurred.

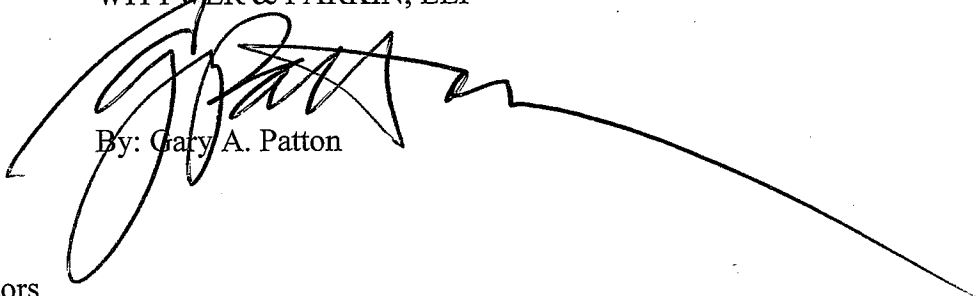
In summary, because the WSA does not incorporate into its analysis various certain, and possible, water supply reductions about which the City has information, it does not provide an adequate "discussion with regard to whether the public water system's total projected water supplies ... will meet the projected water demand associated with the proposed project."

If the Council were to approve the staff recommendation, the Council would be certifying that it has "independently reviewed and analyzed the WSA" and that it finds that the WSA "satisfies" all requirements of sections 10910 et seq. of the Water Code." Because of the analytical deficiencies outlined above, the CWC doesn't believe that the Council can properly make this finding.

The CWC urges the Council to direct its staff and consultants to revise the WSA to do a more thorough assessment of future water supply constraints, and then to reevaluate the conclusions currently proposed in the WSA, in light of that more thorough assessment.

Thank you for your consideration of our comments.

WITTWER & PARKIN, LLP

  
By: Gary A. Patton

cc: Water Director  
County Board of Supervisors  
Local Agency Formation Commission