

# TABLE OF CONTENTS

## VOLUME I

Section	Page
1.0 INTRODUCTION.....	1.0-1
2.0 EXECUTIVE SUMMARY .....	2.0-1
3.0 PROJECT DESCRIPTION.....	3.0-1
4.0 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES .....	4.0-1
4.1 Aesthetics .....	4.1-1
4.2 Air Quality .....	4.2-1
4.3 Biological Resources .....	4.3-1
4.4 Cultural Resources.....	4.4-1
4.5 Geology and Soils.....	4.5-1
4.6 Greenhouse Gas Emissions.....	4.6-1
4.7 Hydrology and Water Quality .....	4.7-1
4.8 Land Use and Planning.....	4.8-1
4.9 Noise .....	4.9-1
4.10 Public Services and Recreation.....	4.10-1
4.11 Transportation and Traffic.....	4.11-1
4.12 Tribal Cultural Resources .....	4.12-1
4.13 Utilities and Service Systems.....	4.13-1
4.14 Energy.....	4.14-1
4.15 Other Resource Topics.....	4.15-1
5.0 ALTERNATIVES .....	5.0-1
6.0 OTHER CEQA CONSIDERATIONS .....	6.0-1
7.0 SUPPLEMENT TO THE 2005 LRDP EIR .....	7.0-1
7.1 LRDP Water Supply Impact Assessment.....	7.1-1
7.2 LRDP Population and Housing Impact Assessment.....	7.2-1
8.0 REPORT PREPARATION .....	8.0-1

## VOLUME II (On CD—See Back Cover)

### Appendices

1.0	Notice of Preparation and Scoping Comments
3.0	Student Housing Demand Final Report Student Housing Demand Analysis Findings Presentation
4.2	Air Pollutant and GHG Emissions Modeling and Construction Cancer Risk Assessment and CalEEMod

## **Appendices (continued)**

- 4.3 Lists of Special-Status Species with Potential to Occur on or in the Vicinity of the Project Sites
  - Hagar Site Plant Surveys
- 4.7 Post-Construction Stormwater Control Plan – Heller Site
  - Post-Construction Stormwater Control Plan – Hagar Site
  - Drainage Basin Area Rainfall Runoff & Recharge
  - SHW Recycled Water Model
- 4.9 Noise Technical Memorandum
- 4.11 Intersection Operations and Multimodal Site Access Evaluation Memorandum
  - Transit Analysis Memorandum
  - Construction Impact Analysis Memorandum
  - Historical On-Campus Traffic Count Summary Memorandum
  - Trip Generation Analysis Memorandum
- 4.14 Construction Diesel and Petroleum Fuel Consumption Tables
- 7.1 Water Supply Evaluation
  - Revised Potable and Recycled Water Demand Estimates Memorandum

## LIST OF FIGURES

Figure	Page
3.0-1 Regional Location.....	3.0-3
3.0-2 Project Locations.....	3.0-4
3.0-3 Project Vicinity – Heller Site .....	3.0-5
3.0-4 Project Vicinity – Hagar Site .....	3.0-6
3.0-5a Proposed Site Plan – Heller.....	3.0-11
3.0-5b On-Site Utilities – Heller Site .....	3.0-16
3.0-5c Off-Site Utilities – Heller Site .....	3.0-17
3.0-6a Proposed Site Plan – Hagar.....	3.0-24
3.0-6b On –Site Utilities – Hagar Site.....	3.0-27
3.0-7 Construction Phasing Plan.....	3.0-34
3.0-8 Porter College Dining Hall Expansion .....	3.0-43
3.0-9 Rachel Carson Dining Hall Improvements.....	3.0-44
4.0-1 Previous and Current Heller Site Plan .....	4.0-12
4.1-1 Key to Vantage Point Locations .....	4.1-38
4.1-2 Existing View from Porter Knoll [Viewpoint 1].....	4.1-39
4.1-3 View from Porter Knoll with Project .....	4.1-40
4.1-4 Existing View from West Entrance [Viewpoint 2] .....	4.1-41
4.1-5 View from West Entrance with Project .....	4.1-42
4.1-6 View from Music Center with Project [Viewpoint 3] .....	4.1-43
4.1-7 View from Cowell College with Project [Viewpoint 4].....	4.1-44
4.1-8 View from East Field with Project [Viewpoint 5] .....	4.1-45
4.1-9 Existing View from Hagar Drive and Village Road Intersection [Viewpoint 6] .....	4.1-46
4.1-10 View from Hagar Drive and Village Road Intersection with Project.....	4.1-47
4.1-11 Existing View from Northwest Corner of Hagar Site [Viewpoint 7] .....	4.1-48
4.1-12 View from Northwest Corner of Hagar Site with Project.....	4.1-49
4.1-13 Existing View from Ranch View Road and Coolidge Drive Intersection [Viewpoint 8].....	4.1-50
4.1-14 View from Ranch View Road and Coolidge Drive Intersection with Project.....	4.1-51
4.1-15 Existing View from Hagar and Coolidge Drive Intersection [Viewpoint 9] .....	4.1-52
4.1-16 View from Hagar and Coolidge Drive Intersection with Project .....	4.1-53
4.1-17 Existing View from Glenn Coolidge Drive [Northeastern Corner of Hagar Site – Viewpoint 10].....	4.1-54
4.1-18 View from Glenn Coolidge Drive with Project [Northeastern Corner of Hagar Site] .....	4.1-55
4.1-19 Existing View from Glenn Coolidge Drive [Southwestern Corner of Hagar Site – Viewpoint 11].....	4.1-56
4.1-20 View from Glenn Coolidge Drive with Project [Southeastern Corner of Hagar Site] .....	4.1-57
4.1-21 Views of Heller Site from Coastal Science Campus.....	4.1-58
4.1-22 Views of Hagar Site from the Wharf.....	4.1-59
4.1-23 Views of Hagar Site from Northbound Highway 1, Morrissey Bridge .....	4.1-60
4.1-24 Existing View of Heller Site from Koshland Way [Viewpoint 12].....	4.1-61
4.1-25 View from West Entrance with Project .....	4.1-62
4.3-1 Land Cover at the Heller Site.....	4.3-7
4.3-2 Land Cover at the Hagar Site.....	4.3-8
4.3-3 California Red-legged Frog Habitat at the Heller Site .....	4.3-19
4.5-1 Karst Hazard Levels at the Project Sites.....	4.5-7

## LIST OF FIGURES (CONTINUED)

Figure	Page
4.7-1 Off-site Springs .....	4.7-9
4.7-2 Jordan Gulch Watershed .....	4.7-40
4.8-1 LRDP Land Use Designations .....	4.8-7
4.9-1 Heller Site - Sensitive Receptors.....	4.9-17
4.9-2 Hagar Site – Sensitive Receptors .....	4.9-20
4.11-1 Glenn Coolidge/Hagar Drive Intersection Configurations and Volumes .....	4.11-17
4.11-2 Historical Morning Peak Hour Count .....	4.11-20
4.11-3 Historical Evening Peak Hour Count .....	4.11-21
4.11-4 Student Daily Vehicle Trip Rate (2005-2007) .....	4.11-22
5.0-1 Potential Housing Sites.....	5.0-5
5.0-2 Prior Project Concept .....	5.0-6
5.0-3 North Campus Sites .....	5.0-13
5.0-4 Reduced Project Alternative .....	5.0-26
5.0-5 Heller Site Only Alternative.....	5.0-32
5.0-6 Heller Site Plan under Alternative 4.....	5.0-38
5.0-7 Alternative 4 - North Remote Site Plan .....	5.0-41
5.0-8 Heller Site Plan under Alternative 5 .....	5.0-52
5.0-9 East Campus Infill Site Plan.....	5.0-53
5.0-10 Heller Site Plan under Alternative 6.....	5.0-64
5.0-11 Delaware Site Plan.....	5.0-65
5.0-12 Heller Site Plan under Alternative 7.....	5.0-76
5.0-13 Alternative 7 – North Remote Site Plan.....	5.0-65
7.1-1 Annual Water Consumption, 1986-2016 University of California, Santa Cruz (main campus only) (million gallons per year) .....	7.1-7
7.1-2 Illustration of the Conceptual Approach for In lieu Recharge.....	7.1-41
7.1-3 Illustration of the Conceptual Approach for ASR.....	7.1-42
7.2-1 Changes in City of Santa Cruz Housing Supply (Dwelling Units) .....	7.2-16
7.2-2 Changes in UC Santa Cruz Enrollment and Employment .....	7.2-24
7.2-3 Housing Development in Santa Cruz (2003-2014) .....	7.2-33
7.2-4 Projected Housing Development in Santa Cruz (2015-2023).....	7.2-34

## LIST OF TABLES

Table	Page
2.0-1 Summary of Impacts and Mitigation Measures for Student Housing West Project .....	2.0-18
2.0-2 Summary of Impacts and Mitigation Measures for Dining Facilities Project .....	2.0-37
2.0-3 Summary Comparison of Project Alternatives.....	2.0-41
3.0-1 Development Program Summary .....	3.0-9
3.0-2 Utility Demand .....	3.0-14
3.0-3 Student Housing West Residential and Staff Population Summary .....	3.0-33
3.0-4 Student Housing Projections .....	3.0-38
3.0-5 UC Santa Cruz Student Housing Summary .....	3.0-38
3.0-6 On-Campus Population Projections .....	3.0-40
3.0-7 Existing and Projected Building Space under the 2005 LRDP .....	3.0-41
4.0-1 Near-Term Cumulative Projects.....	4.0-6
4.0-2 Project Description Changes and Impact Analysis.....	4.0-8
4.1-1 2005 LRDP EIR Mitigation Measures .....	4.1-19
4.2-1 Ambient Air Quality Standards .....	4.2-5
4.2-2 Attainment Status of the North Coast Central Air Basin.....	4.2-6
4.2-3 Ambient Pollutant Levels Near the Project Site .....	4.2-7
4.2-4 MBARD Daily Construction Emissions Thresholds.....	4.2-13
4.2-5 MBARD Daily Operational Emission Thresholds .....	4.2-14
4.2-6 2005 LRDP EIR Mitigation Measures .....	4.2-18
4.2-7 Estimated Unmitigated Construction Emissions (Average Daily).....	4.2-20
4.2-8 Estimated Unmitigated Construction Emissions (Maximum Summer Day).....	4.2-20
4.2-9 Estimated Construction Emissions with Mitigation (Maximum Summer Day).....	4.2-22
4.2-10 Estimated Unmitigated Operational Emissions (Maximum Summer Day).....	4.2-23
4.2-11 Health Risk Parameters Used for Cancer Risk Calculations .....	4.2-27
4.2-12 Maximum Community Risks from Hagar Site Construction (Unmitigated and with Mitigation).....	4.2-28
4.3-1 Land Cover Types at the Heller Site .....	4.3-9
4.3-2 Land Cover Types at the Hagar Site .....	4.3-12
4.3-3 2005 LRDP EIR Mitigation Measures .....	4.3-29
4.4-1 Prior Cultural Resources documented within 0.5-miles of the Heller Site.....	4.4-8
4.4-2 Prior Cultural Resources documented within 0.5-miles of the Hagar Site.....	4.4-8
4.4-3 2005 LRDP EIR Mitigation Measures .....	4.4-22
4.5-1 2005 LRDP EIR Mitigation Measures .....	4.5-10
4.6-1 Global Warming Potential for Greenhouse Gases .....	4.6-4
4.6-2 Annual Project GHG Emissions (Metric Tons).....	4.6-26
4.7-1 Spring Base Flows (June through September).....	4.7-7
4.7-2 Water Quality Standards for Various Water Recycling Sites .....	4.7-18
4.7-3 Allowable Non- Potable Uses based on Title 22 Treatment Level.....	4.7-19
4.7-4 Beneficial Uses of Surface Water Bodies on or near UC Santa Cruz .....	4.6-22
4.7-5 2005 LRDP EIR Mitigation Measures .....	4.7-26
4.7-6 Hagar Site Pre-Development Infiltration Recharge and Runoff to Detention Basin/Sinkhole.....	4.7-37
4.7-7 Hagar Site Post-Development Infiltration Recharge and Runoff to Detention Basin/Sinkhole.....	4.7-37

## LIST OF TABLES (CONTINUED)

Table	Page
4.7-8 Changes in Jordan Gulch Watershed Peak Flows with Project.....	4.7-40
4.9-1 Definitions of Acoustical Terms.....	4.9-2
4.9-2 Outside to Inside Noise Attenuation (dB(A)).....	4.9-4
4.9-3 Noise Measurement Data Summary.....	4.9-6
4.9-4 2005 LRDP EIR Mitigation Measures.....	4.9-10
4.9-5 Calculated Traffic Noise Levels for Project Site Receptors.....	4.9-12
4.9-6 Calculated Traffic Noise Levels for Nearest Off-site Receptors.....	4.9-14
4.9-7 Calculated Typical Construction Noise Levels at Nearest Receptors -Heller Site.....	4.9-15
4.9-8 Calculated Worst-Case Construction Noise at Nearest Receptors – Heller Site.....	4.9-16
4.9-9 Calculated Typical Construction Noise Levels at Nearest Receptors – Hagar Site.....	4.9-18
4.9-10 Calculated Worst-Case Construction Noise Levels at Nearest Receptors - Hagar Site.....	4.9-19
4.9-11 Vibration Levels for Construction Equipment.....	4.9-21
4.11-1 Signalized Intersection LOS Criteria.....	4.11-6
4.11-2 Unsignalized Intersection LOS Criteria.....	4.11-7
4.11-3 Existing SCMTD Bus Routes on UC Santa Cruz Campus.....	4.11-8
4.11-4 Existing Campus Transit Shuttle Routes.....	4.11-9
4.11-5 Traffic-related Terms in the 2008 Settlement Agreement.....	4.11-13
4.11-8 On-Campus Student Housing and Population Summary.....	4.11-26
4.11-9 UCSC Campus Vehicle Trip Generation Estimates.....	4.11-27
4.11-10 2005 LRDP EIR Mitigation Measures.....	4.11-29
4.11-11 Hagar Site Trip Generation.....	4.11-34
4.11-12 2020 without Project Conditions and with Project Conditions Intersection Level of Service.....	4.11-36
4.11-13 Trip Generation Comparison.....	4.11-37
4.11-14 Heller Site Peak Construction Period Trip Estimates.....	4.11-39
4.11-15 Peak Construction Traffic and Gateway Volumes.....	4.11-40
4.11-16 Average Weekday Ridership Per Bus Trip without on-Campus Housing.....	4.11-46
4.11-17 Average Weekday Ridership Per Bus Trip with On-campus Housing.....	4.11-47
4.11-18 Estimated Load Factors.....	4.11-48
4.11-19 2020 Conditions Intersection Level of Service with New Crosswalk.....	4.11-51
4.13-1 UC Santa Cruz Solid Waste Generation and Recycling May 2017.....	4.13-6
4.13-2 2005 LRDP EIR Mitigation Measures.....	4.13-15
4.14-1 2005 LRDP EIR Mitigation Measures.....	4.14-10
4.14-2 Construction Period Diesel Fuel and Petroleum Fuel Consumption.....	4.14-11
5.0-1 Summary Description of Project Alternatives.....	5.0-17
5.0-2 Summary Comparison of Project Alternatives.....	5.0-85
7.1-1 Potable Water Demand Projections for UC Santa Cruz.....	7.1-11
7.1-2 City of Santa Cruz Projected Water Demand.....	7.1-11
7.1-3 City of Santa Cruz Existing and Projected Normal Year Water Supplies.....	7.1-12
7.1-4 City of Santa Cruz Projected Water Supplies.....	7.1-14
7.1-5 Water Demand associated with Remaining LRDP Projects.....	7.1-22
7.1-6 2005 LRDP EIR Mitigation Measures.....	7.1-23
7.1-7 Existing and Projected Potable Water Demand at Buildout of the UC Santa Cruz 2005 LRDP.....	7.1-29
7.1-8 UC Santa Cruz Current and Projected Water Demand.....	7.1-30

## LIST OF TABLES (CONTINUED)

Table	Page
7.1-9 Campus Water Demands included in the City of Santa Cruz 2015 UWMP .....	7.1-31
7.1-10 City of Santa Cruz Water Supply and Demand Normal Years, Single Dry Years and Multiple Dry Years .....	7.1-32
7.1-11 Environmental Impacts of the Regional Recycled Water Facilities Project .....	7.1-44
7.1-12 Environmental Impacts of the City Seawater Desalination Project .....	7.1-47
7.1-13 Estimated Off-Campus Water Demand within SCWD Service Area .....	7.1-51
7.2-1 UC Santa Cruz Population – Baseline and Projected .....	7.2-6
7.2-2 Historical, Existing, and Projected Population in the Study Area .....	7.2-7
7.2-3 UC Santa Cruz Housing Capacity and Occupancy Levels .....	7.2-9
7.2-4 Student Residence Patterns .....	7.2-11
7.2-5 Current and Historical Employee Residence Patterns .....	7.2-12
7.2-6 Existing and Projected Housing Supply in Study Area .....	7.2-13
7.2-7 City of Santa Cruz Historical and Projected Housing Supply .....	7.2-15
7.2-8 Student Population and Housing Demand Summary .....	7.2-18
7.2-9 Employee Population and Housing Demand Summary .....	7.2-20
7.2-10 2005 LRDP EIR Mitigation Measures .....	7.2-20
7.2-11 Change in Study Area Population Due to 2005 LRDP .....	7.2-23
7.2-12 Total Demand for Off-Campus Housing .....	7.2-27
7.2-13 UC Santa Cruz Total Off-Campus Housing Demand .....	7.2-28
7.2-14 Distribution of Off-Campus Housing Demand .....	7.2-29
7.2-15 City of Santa Cruz Housing Supply and UC Santa Cruz Incremental Demand .....	7.2-30
7.2-16 City of Santa Cruz Major Development Projects – Housing Projects .....	7.2-35