

# UC Santa Cruz 2005 LRDP EIR

## Annual Mitigation Monitoring Report, 2014-15

### Introduction and Summary

The California Environmental Quality Act (CEQA) requires that a Lead Agency establish a program to monitor or report on mitigation measures adopted as part of the environmental review process to avoid or reduce the severity and magnitude of potentially significant environmental impacts associated with project implementation. CEQA (Public Resources Code Section 21081.6 (a) (1)) requires that a mitigation monitoring or reporting program be adopted at the time that the agency determines to carry out a project for which an EIR has been prepared to ensure that mitigation measures identified in the EIR are implemented.

The Regents of the University of California (The Regents) certified the UC Santa Cruz 2005 Long Range Development Plan (2005 LRDP) Environmental Impact Report (EIR) and approved the 2005 LRDP in September 2006; a Mitigation Monitoring Program (MMP) for the 2005 LRDP EIR was adopted at the same time (<http://lrpd.ucsc.edu/Final2005EIR/2005feir-IV-4.0-mmp.pdf>). The Mitigation Monitoring Program (MMP) for the UC Santa Cruz 2005 LRDP is presented as a table that includes the full text of the mitigation measures identified in the Final EIR. The Campus may modify the means by which it will implement a mitigation measure, as long as the alternative means of implementing the measure ensures compliance during project implementation. The MMP includes the following information:

**Mitigation Number:** The number assigned to the mitigation measure in the Final 2005 LRDP EIR.

**Applicability/ Project Type:** The applicability of the mitigation, whether to general campus operations, to certain types of projects (e.g., only housing projects), or to all development projects under the 2005 LRDP.

**Location:** The specific parts of campus to which the mitigation measure applies (e.g., in or near the Cowell Lime Works Historic District).

**Mitigation Measure:** The full text of the mitigation measure as given in the Final EIR.

**Mitigation Procedure:** A summary of the steps to be taken to implement the mitigation measures.

**Responsible Party:** Assignment of responsibility for implementation of the mitigation measure to a specific campus unit.

**Mitigation Timing:** For general campus mitigations, when the mitigation must be implemented (e.g., an event that triggers the mitigation, intervals at which implementation is required, or a deadline for completion). For project-specific mitigations, the stage(s) of project development during which the mitigation action will be taken.

**Monitoring and Reporting Procedure:** Procedures for documenting and reporting mitigation activities.

Mitigations are divided into two categories: *general campus measures*, which are implemented by the campus on an ongoing basis, and *project-specific measures*, which are implemented in conjunction with the development of individual campus construction projects. Examples of general campus mitigation measures are: 1) changes to campus operations and retrofitting existing facilities to reduce campus water use, and 2) the campus' transportation demand (TDM) program, which is designed to reduce the number of vehicle trips to the campus. Examples of project-specific mitigation measures are: 1) the protection of specific biotic resources or cultural resources during construction of a building, and 2) specific notice of anticipated construction noise for nearby residents. A few mitigations have both general and project-specific elements. The mitigation monitoring program for a development project may include both project-specific measures identified in the LRDP EIR, and mitigation measures identified in the project-level CEQA document, which applies only to that project.

The responsibilities of mitigation implementation, monitoring and reporting extend to numerous UC Santa Cruz departments and offices. The unit director or department lead officer of the identified unit or department is directly responsible for ensuring that the responsible party complies with the mitigation. Physical Planning and Construction is responsible for the overall administration of the program and for assisting other campus staff with their responsibilities, to ensure that they understand their charge and complete the required procedures accurately and on schedule.

In addition to overseeing the specific procedures for implementation of each mitigation measure, Physical Planning and Construction is responsible for preparing this Annual Mitigation Monitoring Report. The purpose of the Annual Mitigation Monitoring Report is to report on progress in implementation of general campus mitigation measures (that is, those measures that are not tied to specific development projects) and, for each project under development during the preceding period, to identify applicable mitigation measures and document the status of compliance for each project. The Annual Mitigation Monitoring Report is available for review by appointment at the office of Physical Planning and Construction on campus and posted on the campus website (<http://lrdp.ucsc.edu/mitigation-monitoring.shtml>).

For each general campus measure, a representative of the responsible campus unit completes a report form each year for compiling into the report. For each project, a checklist is prepared for all 2005 LRDP EIR and project-level mitigations applicable to the project. Reporting on the status of project-specific mitigations is the responsibility of each project manager, who updates the checklist on a quarterly basis.

Note that more than one campus unit may be assigned responsibilities for implementation of a given mitigation measure. In some cases, several units may be responsible for the same action (e.g., Colleges Housing and Educational Services [CHES] - (formerly Colleges and University Housing Service [CUHS]), Physical Plant Grounds Services, the Arboretum and the Center for Agriculture and Sustainable Food Systems are all required to comply with mitigations that regulate landscape irrigation). In other cases, implementation of the mitigation measure requires multiple actions, each of which may

be the responsibility of a different unit. Each unit reports annually on each of its mitigation responsibilities; therefore, there may be multiple reports on annual compliance with a given mitigation measure, and more than one status category may be assigned to a single mitigation in any particular year.

The annual report also provides a description of activity undertaken by each responsible department relative to each mitigation measure and, if applicable, links to detailed reports or other supporting documentation of mitigation activity.

### ***Explanation of Terms Used in Annual Mitigation Monitoring Report***

The status of each mitigation measure is assessed each year, as: **Completed-No Further Action, Complete-Ongoing, In Progress, Not Triggered, or Other** (see definitions, below).

**Completed – No Further Action:** The mitigation commitment has been fulfilled, either in the current reporting year or previously, and no further action is required in future years. These are generally one-time actions that were to be completed within a certain period of time after approval of the 2005 LRDP.

**Completed-Ongoing:** Mitigation commitments were implemented or monitored during the current reporting year, and additional actions are required in future years to fulfill the commitment. Mitigations in this category are generally measures that are to be implemented on an ongoing basis through the life of the 2005 LRDP, or measures that may take several years to complete.

**In Progress:** Ongoing or one-time mitigation commitments that have been partially implemented during the current reporting year. The "Summary of Mitigation Activities" section of this report further describes the campus's progress in implementing such mitigation measures.

**Not Triggered:** The need to take action to fulfill the mitigation commitment did not occur during the reporting year. Mitigations in this category may apply only after a certain time period has elapsed, only when the campus begins to develop a particular part of the campus, or only under particular circumstances, such as a drought emergency.

**Other:** The status of one mitigation (LRDP Mitigation AES-6E) is described as "Other." In previous years this measure was listed as a general campus mitigation as well as a project-specific mitigation, although it is implemented only on a project-by-project basis. Beginning in the 2009-10 reporting year, the mitigation is monitored only at the project level.

### ***Summary of 2014-15 Mitigation Activities***

#### **General Campus Mitigation Measures**

In 2014-15, the Campus fulfilled its mitigation commitments by implementing and/or monitoring the 61 general campus mitigation measures adopted by The Regents in connection with its approval of the 2005 LRDP. These 61 mitigation measures contain a total of 76 individual mitigation commitments. In addition, the Campus implemented

and/or monitored ten mitigations adopted by The Regents in connection with its approval of the 2300 Delaware Avenue Project in February 2007. This brings the total number of individual mitigation commitments to 86.

Ten of these commitments were completed during the 2014-15 reporting period or in a previous year and require no further action in future years, 64 ongoing mitigation commitments were implemented, three were in progress but not completed during the reporting period, and eight were not triggered. As explained above, one mitigation previously listed as a general campus mitigation is now monitored at the project level.

Table 1, Mitigation Status Summary

[\[http://lrpd.ucsc.edu/MonitoringReports/MMP\\_Table1\\_2014-15.pdf\]](http://lrpd.ucsc.edu/MonitoringReports/MMP_Table1_2014-15.pdf) lists all of the general campus mitigations and their status for the 2014-15 reporting year. A complete description of general campus mitigation activities conducted during this reporting year is presented below, under the heading *Complete Description of 2014-15 General Campus Mitigation Activities*.

The status of each mitigation measure that was not implemented completely during this reporting year is described in the following paragraphs:

**REC-2D-PP** requires that the Campus coordinate with City on volunteer trail maintenance days. There were no volunteer trail maintenance days planned with the City due to Grounds Services staffing reduction of hours for Site Stewardship activities.

**LRDP Mitigation TRA-4F** requires that the Campus 1) develop a pedestrian plan for the campus within two years of 2005 LRDP approval; 2) annually, evaluate existing way-finding systems, identify need for improvements, and prioritize improvements for implementation; and 3) implement systems as needed according to priority. Preliminary work for a Campus Pedestrian Plan started in Winter 2011. The Campus has identified the key elements of an improved way-finding system, adopted revised official street names for all on-campus streets and roadways, and installed new road signs on all roadways. Staff from TAPS and PP&C have worked with an Environmental Studies faculty member to develop a senior seminar called “Developing a Pedestrian Plan.” The seminar is being held during Winter 2016, and will provide research and student feedback that will be incorporated into the campus Pedestrian Plan.

**LRDP Mitigation UTIL-9H** requires the Campus to complete the retrofit of 3.5-gallon-per flush (gpf) toilets in all on-campus student housing within five years of approval of the 2005 LRDP in September 2006. This mitigation has been completed at most student housing facilities. However, at Merrill, Kresge, and Oakes colleges, the retrofits have triggered major accessibility improvements, which has delayed completion of the mitigation. CHES Capital Planning completed Flushometer upgrades to housing facilities in Merrill College in summer 2014. Replacement of toilets at Kresge College will be included in an upcoming major capital renewal project, the schedule of which has not yet been determined. CHES is currently developing a plan for replacement of toilets at Oakes College Apartments as part of a capital renewal project that will include code-required accessibility improvements.

## Project Mitigation Monitoring

In 2014-15, the Campus monitored project-specific and LRDP EIR mitigation measures for the following projects, which were in planning, design or construction:

**Infrastructure Improvements, Phase 2.** This project includes improvements to the Campus electrical distribution system and the heating hot water system, and additional storm water drainage improvements. Design was completed in 2011-12. Approval of the storm water drainage improvements in July 2008 included adoption of a mitigation monitoring and reporting program. The heating hot water, electrical, and natural gas system improvements were approved in November 2012. Construction began in Summer 2013 and was completed in August 2015.

**Cogeneration Plant Replacement Phase 1 Project.** The Cogeneration Plant Replacement Phase 1 Project was approved in December 2011. The design process continued through the summer of 2012. Construction began in summer 2012 and was completed in August 2015.

**Merrill Residence Halls Capital Renewal Project.** This project was approved in January 2013. The first phase of construction began in June 2013 and was completed in Fall 2013. The second phase began in Winter 2014 and will be completed in early 2015.

**Telecommunications Infrastructure Improvements Phase A.** The Telecommunications Infrastructure Improvements Phase A project was approved in July 2013. Construction began in Fall 2013 and was completed in 2015.

**Great Meadow Bike Path.** The Great Meadow Bike Path Project was approved in April 2015. Construction is planned for the summer of 2016.

Table 2, *Project Implementation of LRDP EIR Mitigation Measures*

[[http://lrdp.ucsc.edu/MonitoringReports/MMP\\_Table2\\_2014-15.pdf](http://lrdp.ucsc.edu/MonitoringReports/MMP_Table2_2014-15.pdf)] lists the LRDP EIR mitigations incorporated into each of the projects approved under the 2005 LRDP EIR.

Table 3, *Project-Specific Mitigation Summary*

[[http://lrdp.ucsc.edu/MonitoringReports/MMP\\_Table3\\_2014-15.pdf](http://lrdp.ucsc.edu/MonitoringReports/MMP_Table3_2014-15.pdf)] lists and briefly describes the project-specific mitigation measures identified in project-level CEQA documents. These tables also report the status of each mitigation measure as of the date of this report.

## **Complete Description of 2014-15 General Campus Mitigation Activities**

**AES-5D: Continue Site Stewardship Program.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The Site Stewardship Program had a total of 5 volunteer days with 62 volunteers for a total of 193 hours. 13 interns logged 391 hours of stewardship activity. We also had a Provosts Sustainability Intern for 350 hours. Another drought year limited the amount of

restoration work done. Invasive weed management included broom and fennel removal, meadow monitoring in the spring and fall.

**AES-6B: Minimize light pollution in new development projects.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Campus standards for lighting have not changed during the past year. They include the lighting design requirements specified in the mitigation, for both path and street lighting. General Building Requirements Part II F and Campus Standards Handbook Section 16530 require that lighting be installed for safety only and that decorative lighting may be used only under certain circumstances and upon approval of Campus Architect. Site Requirements Part III H states that lighting with non-glare downlighting characteristics is preferred for all areas around buildings.

**AES-6D: Turn off field lights at 11 PM.**

**Responsible Unit: OPERS**

**Status: Not Triggered**

**Description of Status for 2014-15**

OPERS does not have any field lights at this time.

**AES-6E: DAB review outdoor lighting**

**Responsible Unit: PP&C**

**Status: Other**

**Description of Status for 2014-15**

This mitigation is now implemented and monitored at the project level

**AIR-1: Construction dust control.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C's template for Division 1 of the construction contract includes this requirement. For each project, the Project Manager reviews the template, selects the applicable measures, and reports on the selected measures and their implementation in the project mitigation monitoring report.

**AIR-4A: Work with AMBAG on regional population forecasts.**

**Responsible Unit: PP&C**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

This mitigation was completed in 2008-09. AMBAG issued a new consistency determination for the 2005 LRDP in April 2009 stating that the 2005 LRDP is consistent with the 2008 regional forecasts and Air Quality Management Plan. No further action is required.

**AIR-4B: Work with MBUAPCD on campus growth-related emissions.**

**Responsible Unit: PP&C**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

This mitigation was completed in 2008-09. AMBAG issued new consistency determination for the 2005 LRDP in April 2009 stating that the 2005 LRDP is consistent with the 2008 regional forecasts and Air Quality Management Plan. No further action is required.

**AIR-5A: Generator testing schedule.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The generators are tested per the mitigation measure and Physical Plant is abiding by Draft LRDP EIR Table 4.3-22. See preventative maintenance records as needed.

**AIR-5B-PP: Cogeneration system emissions**

**Responsible Unit: Physical Plant**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

The Delaval engine (old cogeneration system) was permanently shutdown in February of 2014. A new cogeneration with lower emissions is in place. This mitigation measure will need no further entries in future years.

**AIR-6: Minimize construction air pollutant emissions.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C's template for Division 1 of the construction contract includes this requirement. For each project, the Project Manager reviews the template, select the applicable measures, and reports on the selected measures and their implementation in the project mitigation monitoring report.

**AIR-7: Reduce toxic air contaminant emissions.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Campus Standards Handbook Section 16600 specifies the use of natural gas and/or propane for emergency and stand-by generators.

**BIO-15: Arboretum fencing allow mammal movement**

**Responsible Unit: Arboretum**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The extent of the existing temporary fencing was reduced in 2014-15. Currently, many areas are unfenced and there is plenty of access for wildlife; deer fencing is installed around individual plantings. The Arboretum is planning for a permanent deer fence, which will be designed to allow corridors around the planted areas for the deer and allow most smaller mammals through the fence. Plantings within the area are being developed with large tracts of open grassland vegetation linked to one another to provide continuity of grassland from the area west of Empire Grade to the Great Meadow.

**BIO-7A-Police: Ohlone tiger beetle protection in Marshall Field.**

**Responsible Unit: Police**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

Additional patrolling of Marshall field during the Ohlone tiger beetle's active season is not required at this time. See BIO-7A-PP for details.

**BIO-7A-PP : Ohlone tiger beetle protection in Marshall Field.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

During December 2005, Physical Plant successfully petitioned USF&WS for a minor amendment to the UCSC RVT HCP to discontinue the temporary fencing and revert to only using the permanent OTB signs. In addition to the RVT HCP affected grasslands, the temporary fences were also discontinued in Marshall Field. In previous years, the patrolling by Physical Plant was to maintain the temporary OTB fences and signs. In the absence of these temporary measures, formal Physical Plant patrols have been discontinued.

**BIO-7B: USFWS consultation on Arboretum fencing**

**Responsible Unit: Arboretum**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

Mitigation was completed in 2006-07. UCSC staff consulted informally with USFWS staff, who said that agency had no concerns with any fencing in the area with respect to special-status species identified under the Endangered Species Act.

**BIO-8A-CNR : Cave signs and educational material.**

**Responsible Unit: CNR**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

During summer 2014, a new and larger (2' x 4') Empire Cave sign was created and installed by UCSC Campus Natural Reserve staff. In addition to including information about the cave's geologic history, unique features, and rare wildlife, large letters stating "You can help protect this cave" encourage people visiting the cave's interior and exterior to be better stewards. Specific suggestions include packing out everything packed in; avoiding smoking, fires, and spray painting; and choosing not to enter the cave. Nevertheless, as the cave is located right alongside Empire Grade, it receives many visitors from the local community, as well as UCSC students. The cave sign was cleaned of spray paint graffiti and made legible at least once per Quarter by Campus Natural Reserve staff (summer 2014, Fall Quarter 2014, Winter Quarter 2015, and Spring Quarter 2015). The new sign will have an acrylic cover to facilitate cleaning and maintenance and to protect the more expensive sign beneath.

Trash was hauled from the exterior and interior of Empire Cave once during summer 2014, twice during Fall Quarter 2014, twice during Winter Quarter 2015, and twice during Spring Quarter 2015. Approximately 100 pounds of trash were removed by student volunteers, interns, and Campus Natural Reserve staff. During FY 2014-15, 117 students in two courses (ENVS 167, ENVS 179, EART 5) visited the outside entrance of Empire Cave during on-campus field trips. These students learned about the formation of the cave, the rare sensitive species found within, and how to avoid impacting them (with



an emphasis on staying out of the cave). In addition, Campus Natural Reserve staff led the UCSC Sustainability Office staff on a hike to the cave to learn about its unique and rare fauna.

**BIO-8B-PPC : Consult with agencies on cave barrier design.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C staff consulted with USFWS staff in 2007, as described above, under mitigation BIO-7B. PP&C staff requested a consultation with CDFG staff in 2007, but CDFG staff did not respond to this request.

**CULT-1B-PP : Archaeological resource training for campus employees.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

A training was conducted on 9/30/2015 by Alisa Klaus, Environmental Planner, PP&C. Thirty three staff attended.

**DA-HYD-2: Prevent off-site migration of landscape chemicals (2300 Delaware)**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Grounds Services Integrated Pest Management (IPM) practices have entailed a very few 'spot sprayings' of low toxicity pesticides. Any herbicides or chemical fertilizers were applied in a manner as to prevent migration off site.

**DA-REC-1A: Trash and litter collection at Antonelli Pond.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

UC Santa Cruz Grounds Services continued to provide trash and litter collection services for a container on the east side of Antonelli Pond.

**DA-REC-1B: Contribute toward providing and maintaining picnic and trail facilities at Antonelli Pond.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

In October 2014 Grounds Services provided and serviced 20-yd rolloff boxes for the Land Trust to place greenwaste generated by a cleanup they did along the RR right of way, around Antonelli Pond, and a portion of UCSC property on 2300 Delaware. In April 2014 Grounds staff cut back brush growing into the trail along east side of the pond. Due to the drought, the brush along the pond side of the trail was not cut in the spring of 2015. Dave Roe, area supervisor Robert Wilson and gardener John Palochak met with the new Land Trust steward for Antonelli Pond, Ginger Wojceichowski, and Conservation Land Manager Cameron Chabre, on 11/10/15 to discuss current issues in the area. Land Trust appreciates UCSC's support with police patrols of the Antonelli vicinity.

**DA-REC-2D: Coordination of volunteer activities at Antonelli Pond.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

There were no volunteer activities this year. Land Trust informs us of upcoming events so we can coordinate activities. This year there were none.

**DA-TRA-1A: Campus contribution to cost of intersection improvements (2300 Delaware).**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

UCSC paid the City of Santa Cruz \$419,000 in 2008-09 as mitigation for trips related to existing levels of traffic generated by activities at the 2300 Delaware facility. Pursuant to Section 4.4 of the 2008 Comprehensive Settlement Agreement, the University made an additional payment of \$14,755 in September 2011 to mitigate trips related to the Thin Films and Materials Lab Project in Building C of that facility. Additional payments will be made with future development of space within Building C.

**DA-TRA-1B: TDM measures (2300 Delaware).**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

A Travel Survey was conducted during Spring 2014. However, only eight respondents (all of whom were students) reported the 2300 Delaware facility as their primary work site.

Employees of 2300 Delaware are eligible for the same TDM programs provided for other UCSC staff and faculty, including:

- Subsidized SCMTD Faculty/Staff bus passes;
- Commuter Vanpool program;
- Emergency Ride Home program (for participants in other TDM programs);
- Zipcar ridesharing program; and
- Zimride ridematching services.

**DA-TRA-2: Parking monitoring and management (2300 Delaware).**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Parking utilization surveys were conducted mid-morning and mid-afternoon on five weekdays in Spring 2015, finding an overall utilization rate of 74.6%.

**DA-TRA-3: Public transit to serve 2300 Delaware.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

SCMTD continued to provide supplemental Route 20D transit service via the UCSC service agreement during 2014-15. While SCMTD implemented service reductions throughout Santa Cruz County in September 2011, UCSC's supplemental Route 20D continued to operate. Two additional Route 20 runs were implemented weeknights at 9:20pm and 10:20pm during the Winter 2014 and remained in operation during 2014-15.

Discussions began with the SCCRTC to locate a Westside rail station along the recently acquired rail right-of-way. TAPS is advocating a location north of the 2300 Delaware facility to provide easy access to the SCMTD Route 20 and 20D service operating along Natural Bridges Drive. Pedestrian and bike paths would adjoin the rail corridor, providing new circulation routes to UCSC facilities at 2300 Delaware and the Coastal Science Campus.

**DA-UTIL-1A: Water conservation at 2300 Delaware.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The irrigation system at 2300 Delaware is responsive to daily weather data, as well as automated leak detection and shut down. Under its preventative maintenance program, Grounds Services tests and adjusts the sprinkler system to reduce overspray and maximize distribution efficiency. Irrigation technicians respond quickly to any reports of suspected undesirable water flows.

Twenty toilets at 2300 Delaware were replaced with 1.6 gpf fixtures, and four urinals were replaced with 1/8 gpf urinals in conjunction with LRDP Mitigation UTIL-9E (implementation of the high-priority recommendations of the 2007 campus water audit). All restroom faucet aerators were replaced with 0.5-gpm aerators in summer 2010.

In 2014 and 2015, in response to the City's water shortage emergency declaration, the Campus reduced peak season water use at 2300 Delaware by 78 percent and 75 percent, respectively, relative to the 2012-2013 baseline. The reduction was achieved largely by eliminating watering of the turf, which is gradually being replaced by low-water-use landscaping.

The buildings at 2300 Delaware were included in the survey of restroom fixtures conducted in 2014 and 2015 by the student water team from the Sustainability Office.

**DA-UTIL-1C: Evapotranspiration irrigation system (2300 Delaware).**

**Responsible Unit: Physical Plant**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

The irrigation system is responsive to daily weather data (RainMaster Evolutions Central Irrigation System), as well as automated leak detection and shut down. An annual Preventative Maintenance program tests and adjusts the sprinkler system to reduce overspray and maximize distribution efficiency. Irrigation technicians respond quickly to any reports of suspected undesirable water flows.

**HAZ-10A: Annual/biennial building inspections**

**Responsible Unit: Emergency Management**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

All Campus buildings are inspected annually..

**HAZ-10B : Develop and implement Vegetation Management Plan**

**Responsible Unit: Physical Plant**

**Status: Not Triggered**

**Description of Status for 2014-15**

Development on north campus was not under construction during the reporting year. The Campus has developed a Northeast Campus Area Plan that identifies a potential site for a new Social Sciences building north of the existing Fire Station but design of this building has not commenced. No action was required.

**HAZ-10C : Wildland fire prevention signage.**

**Responsible Unit: Physical Plant**

**Status: Not Triggered**

**Description of Status for 2014-15**

Development on north campus was not under construction during the reporting year. No action was required.

**HAZ-2: Enhance hazardous waste minimization program.**

**Responsible Unit: EH&S**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

EH&S transported and managed 23.5 tons of hazardous waste, collecting it from the point of generation for recycling or disposal. This number does not reflect lead, asbestos or universal waste generation. EH&S and Grounds staff collected several boxes of Kimberly Clark Glove Nitrile Gloves and periodically shipped them throughout the year, under a recycling program initiated in 2012-13. EH&S also continues to implement the mercury thermometer exchange program.

This year 251 faculty, staff and students took the online Hazardous Waste Management Training Class, a web-based training accessed through the campus Learning Management System.

**HAZ-9A: Construction road closure procedures.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C's template for Division 1 of the construction contract section 01 50 00 includes the requirements specified in the mitigation.

**HAZ-9B: Test and update EOP.**

**Responsible Unit: Emergency Management**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The Campus Emergency Response Plan can be viewed at <http://emergency.ucsc.edu/emergency-management/plans/ucsc-emergency-response-plan.pdf>. No update to the plan was completed in 2014-15. The plan was tested in 2014-15.

**HAZ-9C: EOPs for 2300 Delaware and north campus.**

**Responsible Unit: Emergency Management**

**Status: Not Triggered**

**Description of Status for 2014-15**

Construction of the north loop road has not begun. Renovation of a portion of Building C at 2300 Delaware was completed in summer 2011. The Campus Emergency Response Plan covers all UC Santa Cruz facilities, including 2300 Delaware.

**HAZ-9D: Secondary emergency egress route for north campus.**

**Responsible Unit: PP&C**

**Status: Not Triggered**

**Description of Status for 2014-15**

North campus development was not under construction during 2012-13.

**HYD-2B: Erosion controls for grading on hillsides.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The State General Construction Permit requires sediment control measures to be included in the Storm Water Pollution Prevention Plan which must be prepared for all projects disturbing more than 1 acre of land. For smaller projects, sediment control measures are included in the Campus' Erosion and Sediment Control Standards for Projects Under One Acre.

**HYD-3A-PP: Signs and public education about importance of staying on paved roads and approved paths.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

No new signs were installed or public education Conducted by Site Stewardship or Grounds. Existing signs and fences were maintained. A student intern built a prototype multisided sign for undesignated trails. Next year's intern will finish the project.

**HYD-3A-PPC: Signs and public education about importance of staying on paved roads and approved paths.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Both the Upper Campus Map (downloadable PDF available at [maps.ucsc.edu](http://maps.ucsc.edu)) and the Campus Walking Map (hardcopy brochure distributed to all new students) contain the following text: "Please stay on roads or established trails. The creation of unofficial pathways can destroy both natural groundcover and the underlying soil." Large versions of the Campus Walking Map, which include this text, are distributed to Resident Assistance for posting on residence hall bulletin boards.

**HYD-3B-PP : Erosion control measures for fire roads.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

In January 2015, Grounds staff drove all of the fire roads, inspected the silt fences at the water bars to make sure they were in place and functioning, checked culverts for function and watched out for any other erosion issues.

**HYD-3D: Low-impact development measures for new development.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

These requirements are implemented as part of UCSC's Storm Water Management Program, Post Construction Requirements (PCR). The PCR's have been included in the Campus Standards.

**HYD-5C: Aquifer monitoring.**

**Responsible Unit: PP&C**

**Status: Not Triggered**

**Description of Status for 2014-15**

Campus did not use the well to supply water in the reporting year. Therefore, this mitigation has not been triggered.

**NOIS-1 : Construction noise controls.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C's template for Division 1 of the construction contract includes this requirement. For each project, the Project Manager reviews the template, select the applicable measures, and will continue to report on the selected measures and their implementation in the project mitigation monitoring report.

**NOIS-2: Contractors use City-designated truck routes.**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

PP&C's template for Division 1 of the construction contract includes this requirement. For each project, the Project Manager reviews the template, select the applicable measures, and will continue to report on the selected measures and their implementation in the project mitigation monitoring report.

**POP-3A: Campus housing accommodate 50 percent of undergraduates and 25 percent of graduate students.**

**Responsible Unit: CHES**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The total housing capacity in 2014-15 exceeded 50% of undergraduate student enrollment and 25% of graduate student enrollment.

**POP-3B: Housing collaboration study.**

**Responsible Unit: CHES**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

Campus Housing and Market Study Report was completed in September 2008 by consultant group Brailsford and Dunlavey. This mitigation is complete and no further action is required.

**POP-3C: Housing market study.**

**Responsible Unit: CHES**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The campus completed employee and student housing market studies in July 2014. The studies are located online at: <http://ppc.ucsc.edu/planning/planningstudies.html>

**REC-2C-PP : Discourage illegal bicycle use on Pogonip trails.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Preventative maintenance of the signs was performed in October 2015. All four signs depicting bicycle laws were legible and in good physical condition. The fence was repaired and new posts installed.

**REC-2C-TAPS: Discourage illegal bicycle use on Pogonip trails.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The Campus Bike Plan was completed in Fall 2008 and approved as an amendment to the City Bike Plan by the Santa Cruz City Council in December 2008. The campus bike map in the Bike Plan shows the campus/Pogonip boundary but does not show the Pogonip rules regarding bicycle use. The next update to the campus bike map that is posted on the TAPS website or printed will include these rules.

**REC-2D-PP: Coordinate with City on volunteer trail maintenance days.**

**Responsible Unit: Physical Plant**

**Status: In Progress**

**Description of Status for 2014-15**

There were no volunteer trail maintenance days planned with the City due to Grounds Services staffing reduction of hours for Site Stewardship activities.

**REC-4: Recreational facilities available to public**

**Responsible Unit: OPERS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Recreational amenities are available for public use. These include the track, outdoor exercise spaces (Park Course) and fields located at the East Field House complex. The public can also purchase a community Wellness Card to access all other facilities at OPERS (pool, Wellness Center, etc.). Information about public access to our facilities is available on the OPERS website: <http://opers.ucsc.edu/memberships/index.html>

**TRA-1: Monitor and improve campus intersections.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Turning movement counts were conducted at Hagar/McLaughlin and Heller/Meyer intersections during Fall 2010. The data was not processed through the City of Santa Cruz's TRAFFIX model to calculate current level of service. However, the average daily number of weekday vehicle trips to/from campus was lower in 2014-15 than the LRDP EIR baseline (2003-04).

**TRA-2A-TAPS: Monitor and contribute to improvements to City intersections.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Turning movement counts were conducted at 35 locations on- and off-campus in Fall 2010. Two weeks of traffic volume data were collected during November 2014 and May 2015 at 12 on-campus and 5 and 8 off-campus locations. The off-campus locations included three locations at the Marine Science Campus, two at the entrances to the 2300 Delaware facility, and the three off-campus legs of the Bay/High intersection (Spring 2015). Annual school-term weekday average daily trips (ADTs) through the two campus entrances totaled 20,755. The data was not processed through the City of Santa Cruz's TRAFFIX model to calculate current level of service. However, the average daily number of weekday vehicle trips to/from campus was lower in 2014-15 than the LRDP EIR baseline (2003-04).

The Campus has fulfilled the requirement to contribute its fair share of the cost of intersection improvements by making payments to the City for projected new 2005 LRDP-related trips through 2020, under the 2008 Comprehensive Settlement Agreement.

**TRA-2B: Expand TDM programs.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

UCSC's TDM programs continued to help reduce traffic volumes to/from campus during 2014-15. The Commuter Vanpool program operated on 21 routes using 12-passenger vans serving more than 200 participants. The Zipcar car-sharing program, currently in its 8th year at UCSC, grew in popularity and utilization, with 11 cars accommodating approximately 1,700 active members and average 24/7 utilization exceeding 32%. Zimride, an on-line ridesharing application, gained more than 2,000 new users during the 2014-15 fiscal year.

The Spring 2015 Mode Split Study indicates that 61.0% of all person-trips to the campus are made via alternative transportation. Primary among these was SCMTD public transit (23.6%), followed by Multi-Occupant Vehicles (22.5%), and "Other TDM Services" including Commuter Vanpools, the Bike Shuttle, and some Day Shuttle ridership (11.6%). Biking and walking comprise 2.9 % and 0.3%, respectively. Single-occupant autos account for only 35.8% of all person-trips. The remaining 3.3% of trips were by Service/Construction/Delivery vehicles and motorcycles.

Traffic volumes through the two campus entrances in the Fall quarter rose 4.0% from the previous reporting year (20,248 ADT in Fall 2014 vs. 19,463 ADT in Fall 2013) while Spring quarter counts rose 7.5% (21,262 ADT in Spring 2015 vs. 19,782 in Spring 2014).

**TRA-3B: Parking monitoring and construction.**



**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

No changes were made to the parking zone definitions during 2014-15.

The Spring 2015 Parking Utilization Survey is on file at UCSC Physical Planning & Construction.

Projects completed during 2014-15 that generated temporary or permanent parking impacts include:

- Merrill Housing Renovations continued to generate temporary impacts on moderately utilized parking lots near Merrill and Crown Colleges;
- In-Fill Housing Repair projects will impact parking at Kresge College;
- Storm water management improvements had major impacts to Lots 109 and 110 in the Cowell/Stevenson area with the “Gully G” project commencing in June 2014 and continued into Winter 2015.

Based on Spring 2015 parking utilization survey, adequate parking capacity exists in underutilized campus lots to accommodate the increase resulting from loss of parking supply plus projected growth in parking demand. However, these projects create substantial inconvenience to regular commuter parking and require additional planning for event parking.

Revisions to the CEQA Guidelines published in 2010 eliminate the provision of adequate parking as a significance criterion for traffic impacts, with the intent that use of alternative transportation is more protective of environmental quality. The Campus includes facilities supportive of alternative transportation in each of its new projects, rather than increased close-in parking.

**TRA-3C: Parking management systems.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Use of one mobile changeable message sign has helped direct visitors to specific areas of campus during major campus events.

The campus completed installation of new street name signs throughout the campus in Summer 2013—a critical step toward improving on-campus wayfinding.

Numerous campus staff are working to improve the quality and availability of web-based campus maps, including updates to Google Maps. Additionally, in Spring 2012 TAPS implemented a new “smart-card” system for use with campus parking meters and pay stations to provide improved customer service (unused time returned to user’s card at end of stay) with lower operating costs (reduced cash handling and coin processing).

TAPS is also in the process of identifying and procuring a new Point-Of-Sale/Parking Management System for the campus. An early phase of this effort under consideration for implementation during 2016 may include the purchase and implementation of networked, hand-held units for sale of Event parking permits in the field.

**TRA-4A: Monitor transit efficiency.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

While on-campus traffic volumes have remained constant or declined (as indicated by semi-annual hose counts), large numbers of pedestrians crossing roadways within the central campus have resulted in longer transit cycle times during class break periods. Although Campus Transit and SCMTD buses continue to provide adequate transit cycle times, in Spring 2010 TAPS implemented a new “Traffic Control” program at selected crosswalks to manage pedestrian and vehicle traffic during class breaks. Studies conducted during Spring 2011 indicate a 20% improvement in Day Shuttle travel times between Oakes College and Cowell College when Traffic Control measures are in place: a 15-minute trip dropped to only 12-minutes with Traffic Control staff in place at three locations. The Traffic Control program has expanded to include five intersections. TAPS continued to test an automated vehicle locations system for use on Campus Transit vehicles which was developed by graduate students in the School of Engineering for use via a web browser or smartphone. Testing continued through 2014-15 and is anticipated to migrate to an ITS-managed server for on-going operation during 2016. SCMTD’s billable ridership by UCSC affiliates grew by 6.4% during 2014-15.

**TRA-4B: Improve transit efficiency.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

As noted under TRA-4A, UCSC’s billable SCMTD ridership grew by 6.4% during 2014-15.

UCSC began operating Night Owl service in September 2011 to maintain late-night transit access between Downtown Santa Cruz and the campus. Night Owl ridership during 2014-15 totaled more than 38,000 passengers.

In addition to participating in service reduction planning, TAPS staff also continued to work with representatives of the City of Santa Cruz, SCMTD and community representatives on a Public Transportation Alternatives work group as required under the 2008 Comprehensive Settlement Agreement. TAPS staff served on two additional technical advisory work groups concerning public transit: an AMBAG project to develop a Public Transit element of the regional traffic model; and a sustainable transportation effort (STARS) under the SCCRTC.

**TRA-4D-TAPS: Campus roadway and circulation improvements.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

No new roadway or circulation improvements were implemented during 2014-15.

**TRA-4E: Bicycle circulation improvements.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The UCSC Bike Plan was finalized during Fall 2008 and approved (as an amendment to the City of Santa Cruz Bike Plan) by the City Council in December 2008. The plan may be downloaded at: <http://www2.ucsc.edu/taps/bicycleprograms.html>. An update of this plan was anticipated during 2012-13, in conjunction with the City’s Bike Plan update;

however, the City postponed their update until at least 2015-16 as part of their Active Transportation Plan.

An uphill Class II bike lane was constructed along Chinquapin Drive between McLaughlin Drive and Crown College in Summer 2009. An uphill Class II bike lane was added to Heller Drive during a two-phase roadway rehabilitation project. The section between Empire Grade and College Eight was completed in Summer 2009, and the section between College Eight and Core West Parking Structure entrance road was completed in Summer 2011. While not involving additional Class II bike lanes, three campus roadways were resurfaced during Summer 2014: Heller Drive between College Eight and Meyer Drive, Hagar Drive between OPERS and McLaughlin Drive, and Oakes Road. All three benefit bicyclists by improving the condition of the road surface. In August 2014 TAPS was awarded a California Active Transportation Program grant for \$383,000 to improve the UCSC Great Meadow Bike Path near the Village Road Crossing. Design work is planned for 2015-16 with construction possible as early as Summer 2016.

**TRA-4F: Wayfinding systems.**

**Responsible Unit: TAPS**

**Status: In Progress**

**Description of Status for 2014-15**

Preliminary work for a Campus Pedestrian Plan started in Winter 2011. Recently, staff from both TAPS and PP&C have worked with an Environmental Studies faculty member to develop a senior seminar called “Developing a Pedestrian Plan.” The seminar is being held during Winter 2016, and will provide research and student feedback that will be incorporated into the campus Pedestrian Plan.

The Campus has identified the following elements of an improved way-finding system:

- Standardized street names and signage;
- Consistent sign standards for streets, buildings, and supporting infrastructure;
- A hierarchy of area-based directional systems, including but not limited to “You Are Here” informational kiosks at key locations;
- Revisions and updates to Google Maps to reflect both new street names and field-checking.
- Agreement on standards and procedures for defining new street addresses for all campus facilities to better accommodate emergency response wayfinding.

In 2010-11, preliminary work was started on modifying the campus signage standards to improve wayfinding, including review and approval of names for all on-campus streets and roadways. Funding was approved to fabricate and install new road signage following adoption of revised official street names, and a new road sign standard. Installation of the new street signs began in Spring 2012 and was completed during 2012-13.

An ad hoc wayfinding subcommittee was created in 2011 to assess existing wayfinding tools and recommend both short-term and long-term improvements. The subcommittee was made permanent in March 2014; the scope of work includes creating a campus signage policy, conducting a “gap assessment” of signs, creating a dweb page with wayfinding resources (including best practices on guiding visitors to campus events), and expanding pilot projects developed during the ad hoc phase.

**TRA-5B: Special event parking management.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Based on records collected by the Events Parking coordinator, the campus hosted 1,450 events during 2014-15, attracting approximately 283,000 attendees. This represents a 2% increase in the number of events and a 2% increase in attendance since 2013-14.

Event sponsors are not currently required to list their events in the online campus calendar. Campus units that don't list their events often impact the events of others (parking, traffic). Work began in 2007-08 to improve the campus calendar, making it easier to use, and triggering notification of the TAPS Event Parking Office for events over a certain size. However, "rogue events" continue to create problems when multiple events occur simultaneously.

Several work groups continue to meet to plan on-going major events (Commencement, Fall Move-In) and to address access impacts associated with campus construction and maintenance projects.

**TRA-5C: On-line parking permit sales and information.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

During 2014-15 TAPS and ITS staff maintained an on-line Guest Parking Permit program for departmental use by the Arts Division. TAPS is also researching new communications tools for notifying permit purchasers when and where their parking permits are available for pick-up at the start of each academic quarter.

Discussions have continued with Parking Enforcement, University Police, ITS, and Purchasing regarding identification, acquisition and implementation of a new integrated Point Of Sale (POS) and Parking Management system. While discussions are underway to allow systemwide adoption of T2 Systems (a vendor), UCSC continues to review other vendors. A first phase will likely include improved an enhanced Citation/Enforcement module that allows hand-held units to interface with pay-station equipment, as well as acquisition of new hand-held permit sales devices for use with Event Parking activities.

**TRA-5D: Campus Events Calendar System for traffic and parking management.**

**Responsible Unit: TAPS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Enhancements have been made to the Campus Events Calendar system that a) improve the stability of the software and operating system, and b) enhance the user interface for visitors. As these "Phase 1" improvements have been developed, implemented and tested, additional improvements have been identified for "Phase 2" that enhance the user interface and effectiveness for event management staff and sponsors. No progress was made on "Phase 2" during 2014-15.

Phase 1 improvements have incorporated a system that notifies TAPS of the proposed scheduling of large events on the Campus Calendar. However, as noted elsewhere, the campus administration does not yet require sponsors to post their events to the Calendar system; TAPS is not notified of events not posted to the Calendar system. Additional work is underway to enhance the collection and management of event-related information using both the Campus Calendar and TAPS' Events Parking Management website.

TAPS Events staff have devised traffic and parking management plans on an as-needed

basis for large events (including Move-In and Commencement), as well as for occurrences of multiple, simultaneous event of moderate size. These have included: Move-In, Commencement, Spring Spotlight, an annual Scholarship Dinner, and Reunion Weekend.

**TRA-6B-TAPS: Fair share contribution to freeway facility improvements.**

**Responsible Unit: TAPS**

**Status:**

**Description of Status for 2014-15**

There is no mechanism within Santa Cruz County for establishing and collecting fair share payments from projects that contribute to the need for freeway improvements. Therefore, this mitigation commitment has not been triggered. This mitigation was not required in 2014-15.

**UTIL-4: Improve recycling and waste reduction.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Efforts to recover recyclables at student move in and move out continue. Grounds Services maintained a CRV License and increased CRV tonnage hauled. CRV materials are recovered using a sorting line. Substantial efforts are being made to develop a collection system for compostable materials. A pilot project was initiated in McHenry Library with collection systems for paper, containers, compost, and trash. The McHenry Library project diversion rate including Global Village Cafe is 80%. The diversion percentage as reported to UCOP for the entire campus was 65.6 % without construction waste and 65.8 % with construction. An informative website: [recycling.ucsc.edu](http://recycling.ucsc.edu) was created and launched.

**UTIL-9A-CHES: Water efficient washing machines in student housing.**

**Responsible Unit: CHES**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The University entered into a Laundry Services Agreement on July 1, 2009 for a term of three years. In July, 2012 the term was extended through July 1, 2014. In 2014 the Agreement was extended through June 30, 2016.

Equipment specifications of the equipment provided by vendor per Agreement meet Mitigation requirements: "All machines must be water saving and energy efficient and certified by the Consortium on Energy Efficiency to have a water factor of 5.5 or less and a Modified Energy Factor (MEF) of 2.15 or greater."

**UTIL-9A-OPERS: Water-efficient washing machines.**

**Responsible Unit: OPERS**

**Status: Not Triggered**

**Description of Status for 2014-15**

OPERS did not purchase washing machines in the past year.

**UTIL-9A-PP: Leak detection and repair.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

Physical Plant continues to implement the leak detection program. On a monthly basis, the Campus Energy Manager provides a chart showing water usage from all the points where city water entering Campus. The Campus water specialist and plumbing staff compare the usage on a month by month basis. If there is an unexplained increase in any of the zones a visual inspection of the zone is conducted. If Campus plumbers cannot locate the leak, a leak detection contractor is called in to do an electronic sounding survey. After a leak is found, repairs are immediately scheduled and completed by an underground utility repair contractor.

In addition, the Campus has installed Beacon Cellular End Point System devices on 97 percent of Campus submeters. This is a web-based water management system that allows individual campus users to view water usage on an hourly basis on the web for the areas they manage. The system also provides alarms for continuous flows, which may indicate a leak, which individual users also have access to.

**UTIL-9B-PP: Pilot test high-efficiency plumbing fixtures.**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

See UTIL-9B-PP&C

**UTIL-9B-PPC: Pilot test high-efficiency plumbing fixtures**

**Responsible Unit: PP&C**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The Campus is pilot-testing in the Hay Barn American Standard Flowise 1.28 GPF / 1.1 GPF dual flush valves on the toilets and 0.35 GPM flow restrictors on the lavatory faucets. These fixtures have lower uses than fixtures previously installed on the campus.

**UTIL-9C: Water conservation education program for campus residents.**

**Responsible Unit: CHES**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

- 1) CHES provided educational material to residents, including posters, table-tents, flyers and cling-on conservation reminders installed or renewed in residential bathrooms over the last year. The Conservation coordinator has held conservation tabling events at colleges and all-campus recreational events and new-student orientations. The Conservation Coordinator worked with the Student Environmental Center to roll out the "Drop Your Own Drip" water conservation residential competition.
- 2) The CHES Facilities Resource Conservation, Training, and Safety Coordinator, Silas Snyder, has been designated as a water conservation educator. His work is supported by the CHES Student Sustainability Assistant program, whose staff of resident educators has made water conservation the prime focus of its outreach and educational program in 2014-2015.

**UTIL-9E CHES: Implement water audit recommendations.**

**Responsible Unit: CHES**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

Completed in 2010-11.

**UTIL-9E-PP : Implement water audit recommendations.**

**Responsible Unit: Physical Plant**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

Completed in 2010-11

**UTIL-9F: Update water audit**

**Responsible Unit: Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

The Campus began work on an update of the 2007 Campus water use efficiency study in 2012-13. The update included an assessment of the results of the “high-priority” projects identified in the 2007 study and other water-use reduction projects that the Campus has implemented since 2007, and compiling a list of potential future projects. In 2013-14, a Water Working Group that included representatives from all Campus units with some responsibility for water use, compiled a list of proposed water conservation measures with estimates of water savings and cost. The Campus provided funding for a number of these measures, some of which were implemented in 2014-15; the remainder will be implemented in 2015-16. The measures include: additional restroom fixture retrofits, additional sub-meters for irrigation connections and other irrigation system improvements, a pilot study of a water-saving product for autoclaves, water-saving improvements to the mechanical and seawater systems at Long Marine Lab, removal of turf, and an evaluation of the irrigation system at the Arboretum.

In addition, 2014-15, a team of students working in the Sustainability Office completed a survey of restrooms in all State-supported buildings to identify remaining high-use fixtures, leaks, and fixtures in need of repair. The students generated work orders for Physical Plant for leaks and other malfunctions.

**UTIL-9G: Water re-use feasibility study.**

**Responsible Unit: PP&C**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

The water re-use study was completed in May 2009. No further action is required.

**UTIL-9G: Water re-use feasibility study.**

**Responsible Unit: PP&C**

**Status: Completed - No Further Action**

**Description of Status for 2014-15**

The water re-use study was completed in May 2009. No further action is required.

**UTIL-9H-CHES: Retrofit plumbing fixtures in student housing within 5 years following approval of 2005 LRDP.**

**Responsible Unit: CHES**

**Status: In Progress**

**Description of Status for 2014-15**

No plumbing fixture retrofit projects were completed in 2014-2015.

Replacement of low priority toilets at Kresge and Oakes (Apartments) cannot be completed without major code-required accessibility improvement. CHES is addressing this in the following plan:

Replacement of toilets at Kresge College will be included in an upcoming major capital renewal project. Project date to be determined.

CHES is currently developing a plan for replacement of toilets at Oakes College Apartments as part of a capital renewal project that will include code-required accessibility improvements. Work is tentatively planned for 2018.

**UTIL-9I: Water conservation in drought emergency**

**Responsible Unit: Arboretum, CASFS, CHES, OPERS, Physical Plant**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

In January 2014, the Campus developed a staff working group to respond to the Stage 3 Water Shortage Emergency declared by the Santa Cruz City Council in February 2014. That group met monthly through the 2014 peak water use season, and reconvened in April 2015 to coordinate the Campus' response to the continuation of the Stage 3 emergency.

The working group includes staff from campus units that provide educational material and monitor and manage indoor and outdoor water use: Physical Plant, including Grounds Services; Colleges, Housing, and Educational Services (CHES); the Center for Agroecology and Sustainable Food Systems (CASFS); Sustainability Office; Student Environmental Center; the Arboretum; the Office of Physical Education and Recreation and Sports (OPERS), Physical Planning and Construction; facilities staff from the Physical and Biological (PBSci) and Social Sciences divisions; and Marine Science Campus - Long Marine Lab.

In 2015, as in 2014, the Campus developed monthly water use targets for specific use categories (residential, mechanical, laboratory, landscape irrigation, etc.). A use reduction target for each category was created in order to achieve the overall campus reduction goal of 20 percent. Physical Plant provided monthly reports in several formats that included the target and actual use for each category and a history of actual usage for each building by month in tabular and graphic formats. This reporting was used to focus conservation activities. The working group compiled a list of immediate actions that each unit planned to take to reduce water use in compliance with the City's water rationing program. Monthly meetings were scheduled to monitor the effectiveness of the campus' actions and to identify additional actions if necessary.

The Campus achieved a 17.7 percent reduction from its baseline for the months of May through October.

In addition to continuation of water conservation education and operational measures implemented in 2014, the Campus installed Beacon Cellular End Point System devices on 97 percent of Campus submeters. This is a web-based water management system that allows individual campus users to view their water usage on an hourly basis. A team of student interns with the Sustainability Office completed an update of the Campus' 2007 water efficiency study. They inventoried and tested plumbing fixtures in all of the State buildings on the campus, flagged leaking fixtures and others requiring repairs, and sent



them to Physical Plant. The Campus funded several water use reduction projects proposed by staff in 2014, including adding submeters for irrigation water in several locations, removing turf, replacing high-flow toilets with low-flow toilets, and pilot testing a water-saving system for lab autoclaves. CHES implemented additional irrigation efficiency projects and the Arboretum undertook a study to evaluate its irrigation system.

**UTIL-9I-CASFS: CASFS reduce use of potable water for irrigation if City implements drought emergency measures.**

**Responsible Unit: CASFS**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

To ensure that all hoses are equipped with shutoff nozzles and plumbing leaks are corrected, CASFS continuously inventories leaks and hoses without shutoffs for all three of its locations.

In addition, CASFS has continued to follow its existing water conservation practices:

1. Extensive use of drip irrigation (>80% of all irrigation)
2. Careful monitoring to determine water use frequency and application rates
3. Very limited use of summer cover crops
4. Limited use of pre-irrigation as a weed control strategy
5. Dry farming crops where appropriate
6. Blocking greenhouse crops in close quarters so that water delivery is focused on as small a footprint as possible

CASFS has continued an irrigation-monitoring program to read and record water use figures from ten sub-meters throughout the farm system on a weekly basis. Reports from these meter reads are entered into a report that compares usage against calculated water replacement rates using CIMIS ET data to identifying any excess use in the system.

These reports are sent to the 5 separate land managers on the CASFS sites, as well as the 9 assistant managers for these sites.

In addition to our weekly meter readings, CASFS also quickly utilized the new Beacon metering system to identify leaks greater than 5 g/hr with email alerts. When leak alerts are received they are forwarded on to all the land managers to determine whether there was actually a leak or an irrigation set was left on. Utilizing the real time reporting from Beacon we've been able to quickly identify at least a dozen times when irrigation sets have been left on and quickly turn them off.

To reduce domestic water use, CASFS has added a class slot for its residential program so that the participants, many of whom have not lived in California, can understand the severity of the drought and what practices can help the campus meet our collective goals.

**UTIL-9I-CHES: Require reduction in residential water use on campus if the City implements drought emergency management measures.**

**Responsible Unit: CHES**

**Status: Completed - Ongoing**

**Description of Status for 2014-15**

- The City enacted a Stage 3 water usage reduction during the period of this report. Physical Plant Grounds and CHES staff adjusted landscape irrigation schedules to reduce water usage. CHES Facilities and Physical Plant Energy Management staff monitored usage and constant-flow warnings on a regular basis using the new Beacon Cellular End Point System, and repaired leaks detected.