



**UCSB Sustainability**  
*Action Today for Tomorrow*

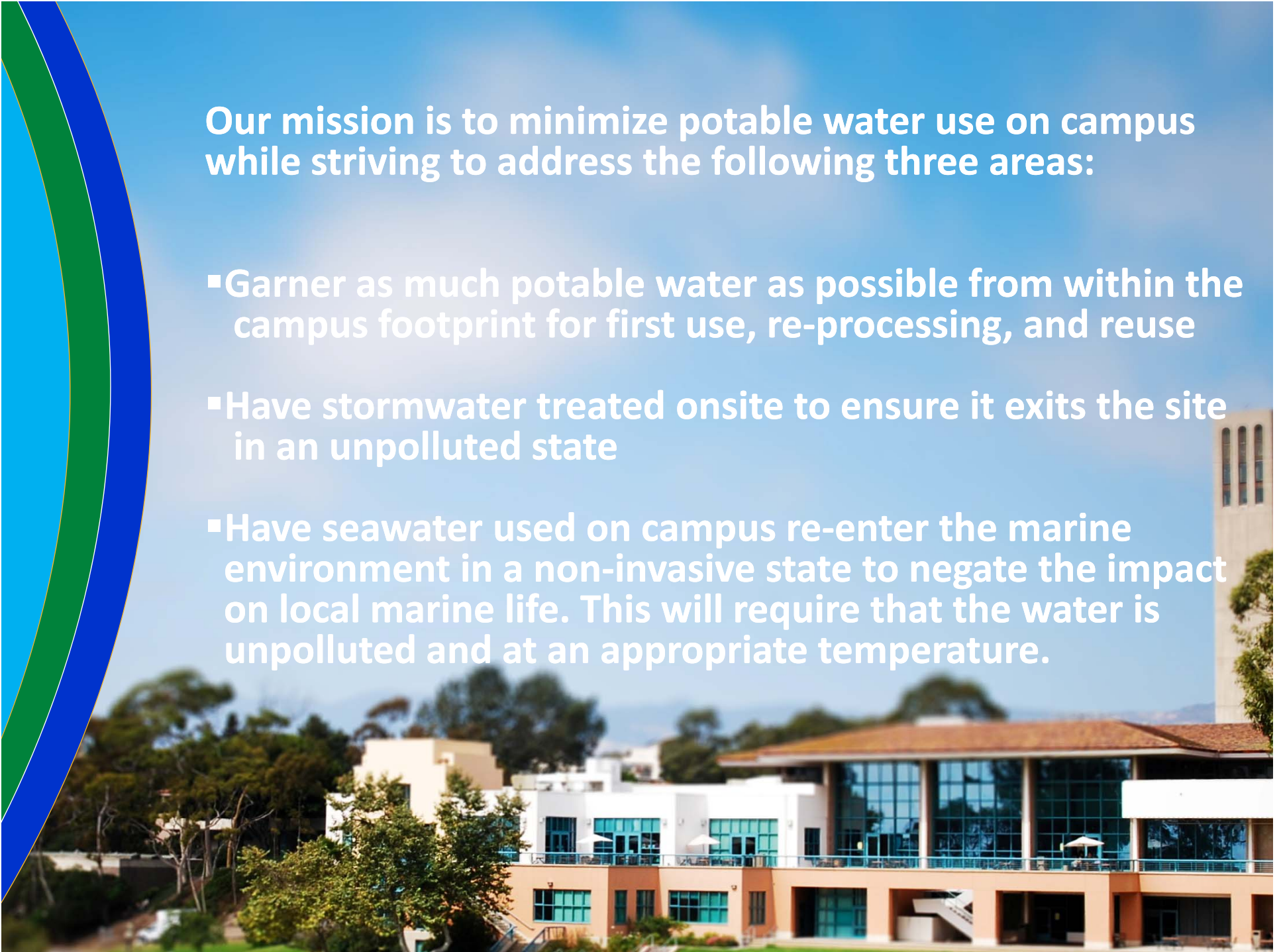
# UC Santa Barbara Chancellor's Sustainability Committee Subcommittee on Water Case Study





**Our mission is to minimize potable water use on campus while striving to address the following three areas:**

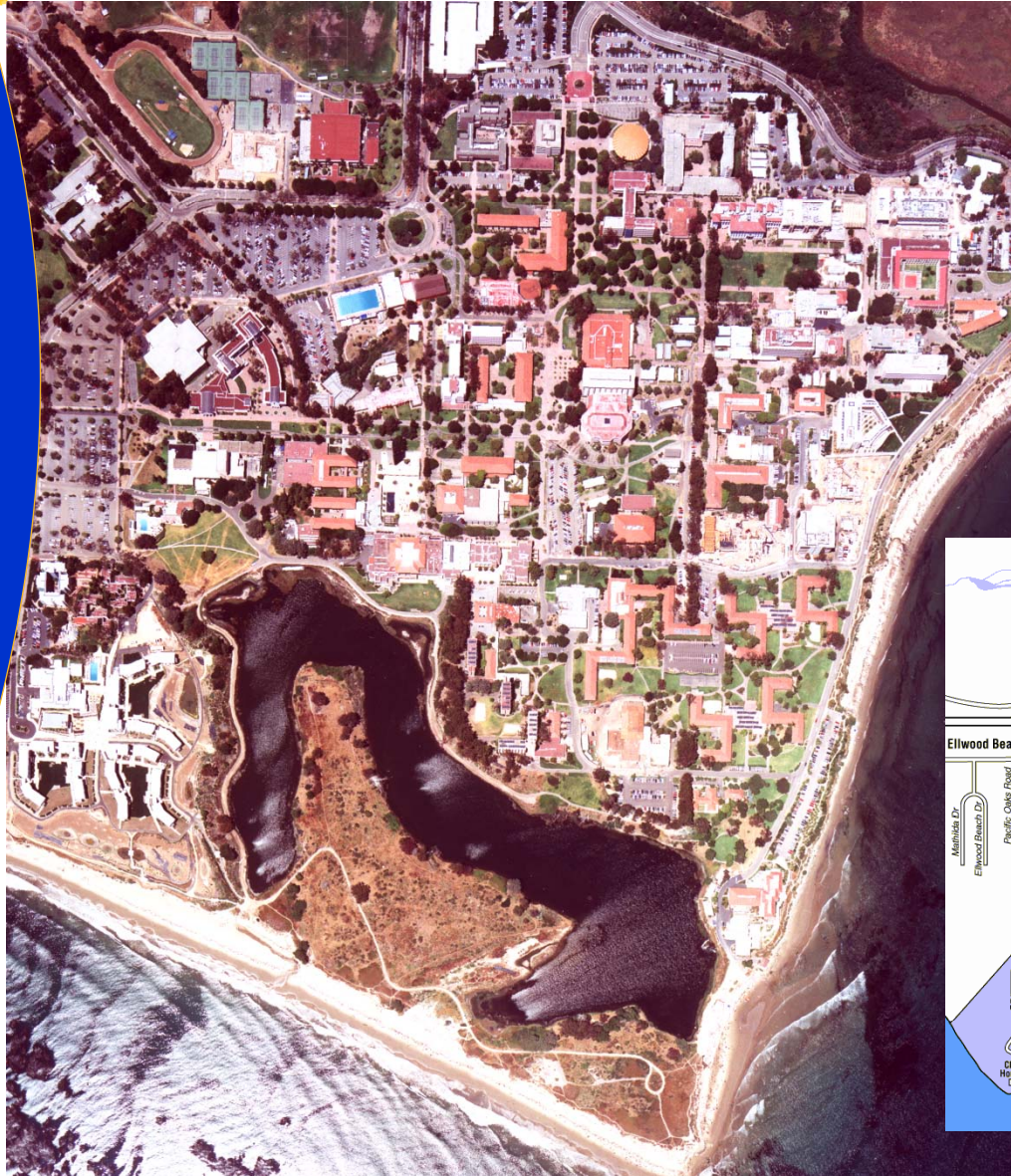
- **Garner as much potable water as possible from within the campus footprint for first use, re-processing, and reuse**
- **Have stormwater treated onsite to ensure it exits the site in an unpolluted state**
- **Have seawater used on campus re-enter the marine environment in a non-invasive state to negate the impact on local marine life. This will require that the water is unpolluted and at an appropriate temperature.**





**UCSB Sustainability**  
*Action Today for Tomorrow*

# UCSB Profile



UCSB is surrounded on three sides by water

Our water provider is the Goleta Water District

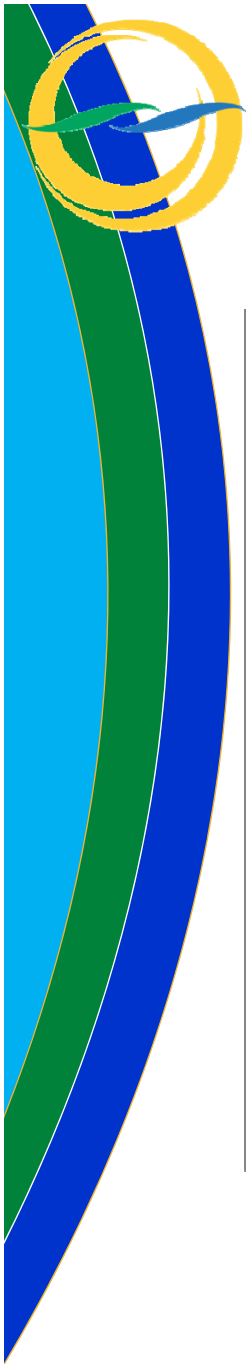
Our reclaimed water is provided by Goleta Sanitary District (billed through Goleta Water District)



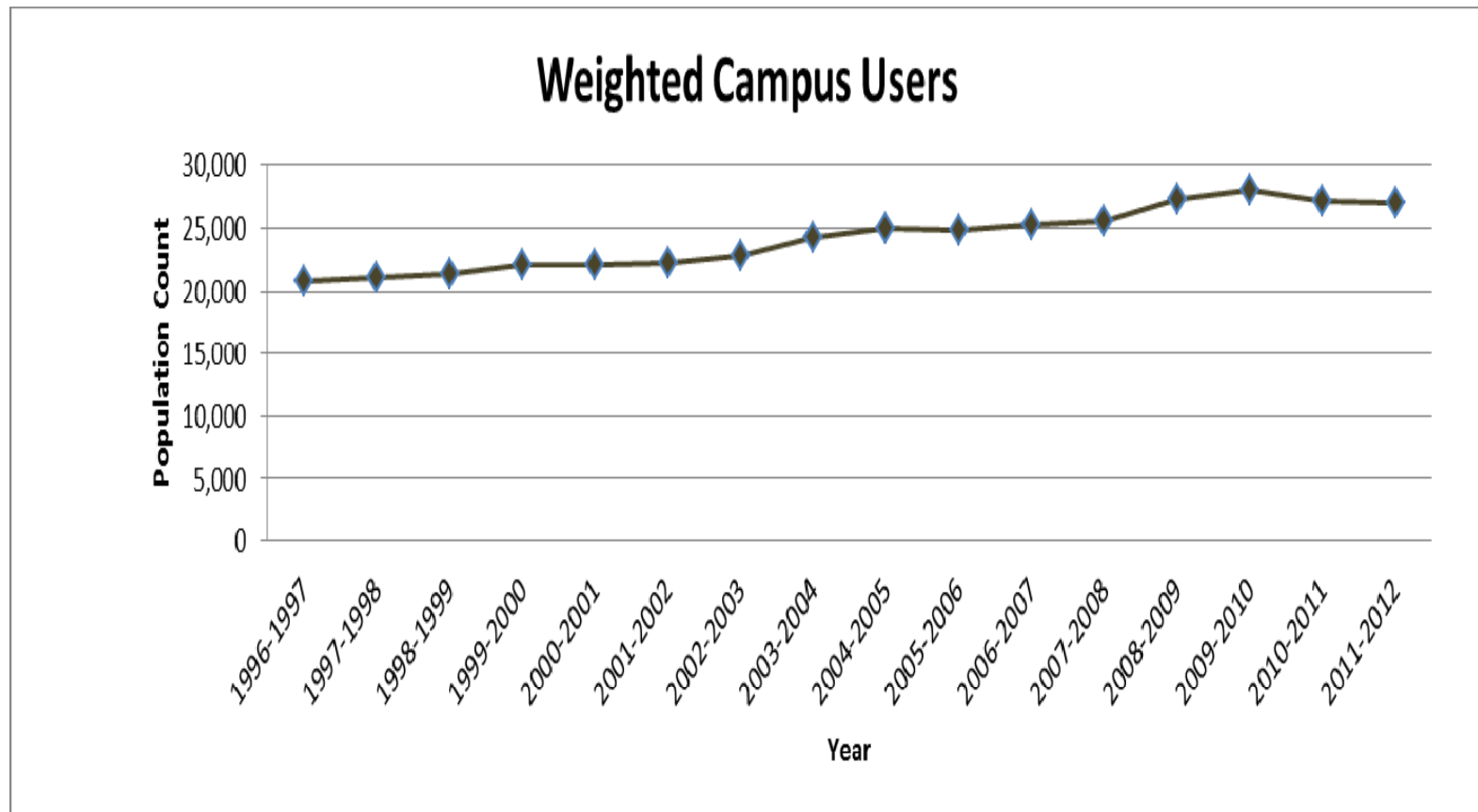


## Summary

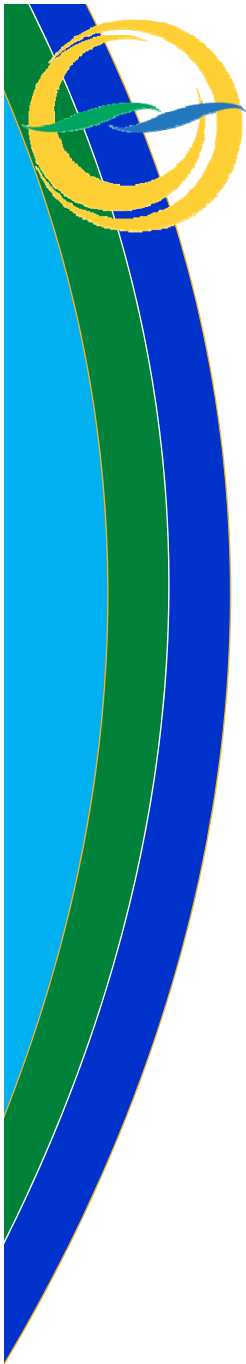
	Baseline	Current	Long Range Development Plan for 2025
Student Enrollment (three-quarter average headcount)	18,945 students	22,312 students	25,000 students (5,000 additional students at a rate of 1% per year)
Faculty and Staff Population	1,392 faculty 2,738 staff	1,905 faculty 3,202 staff	Anticipated totals to be: 1,400 faculty 5.031 staff
Instruction, Research and Support Space (California GSF, OGSC 50)	4,910,155	7,765,160	
		5,679 bedspaces 973 bedspaces	5,443 additional bedspaces
		553 student family units 151 student family units	293 additional student family units
Student, Faculty, and Staff Housing Units		65 faculty units 161 faculty units	1,874 additional faculty and staff housing units
Athletic/Recreational Fields		~26 acres of recreational fields	5 additional acres of recreational fields



## UCSB Profile



UCSB Weighted Campus User from 1996/1997-2011/2012  
(using STARS methodology to calculate weighted campus user).



## UCSB Profile

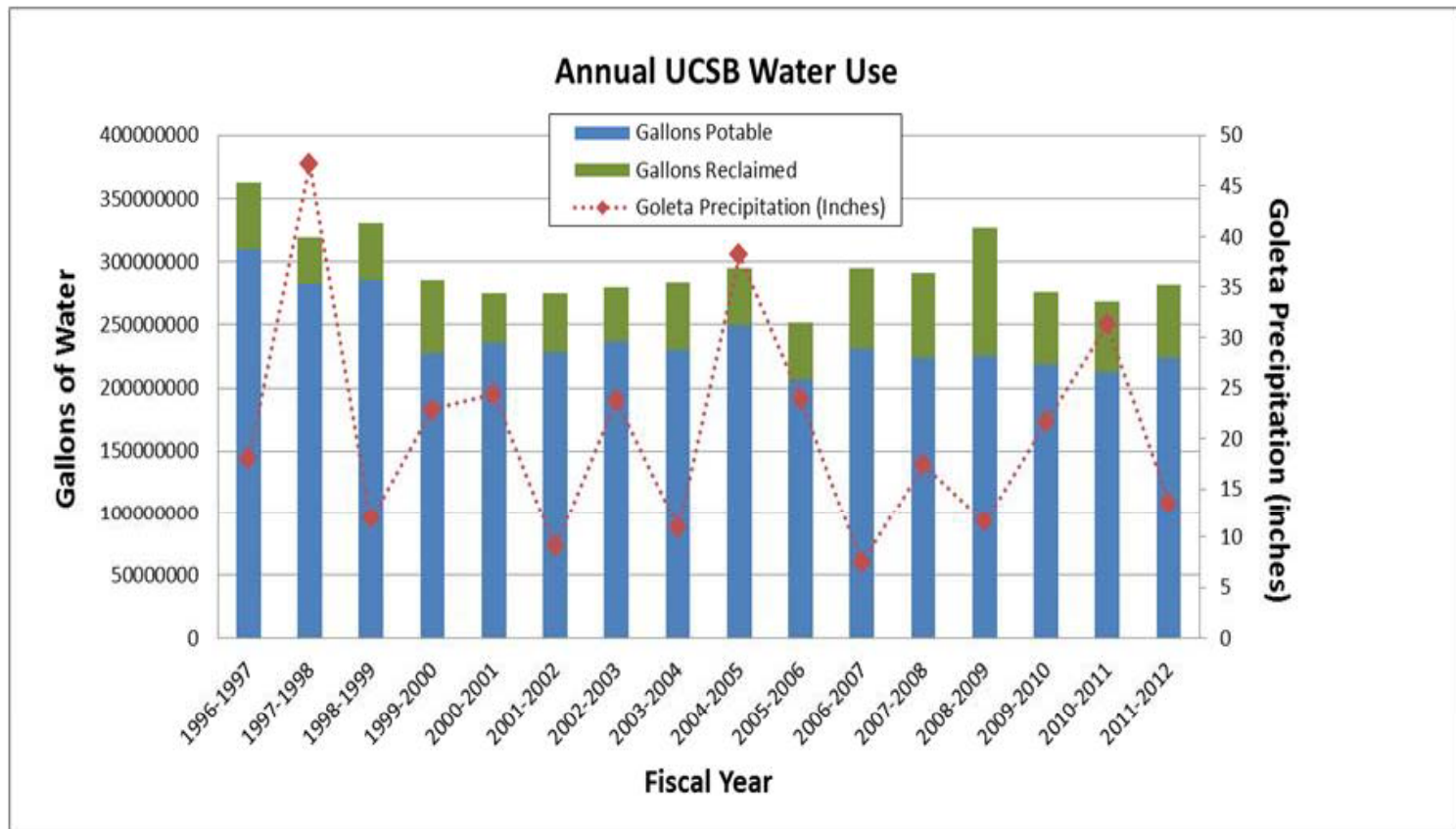
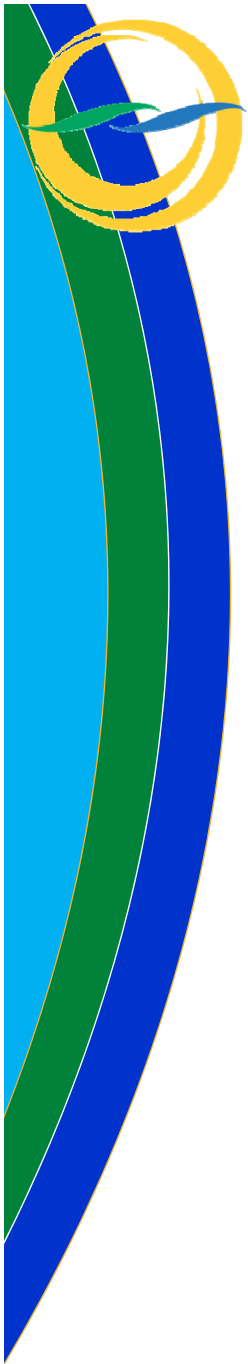


Figure 2. UCSB reclaimed and potable water use, and Goleta precipitation from 1996 to 2012.



## Reductions Achieved To Date

<b>Baseline → Benchmark</b>	<b>Water Reduction</b>
<b>Total potable Water</b>	<b>25%</b>
<b>Potable Water / WCU</b>	<b>43%</b>
<b>Potable Water / GSF</b>	<b>52%</b>



# What's Been Done to Achieve a 25% Reduction in Potable Water Usage

**Industrial:** Expansion of chilled water loop

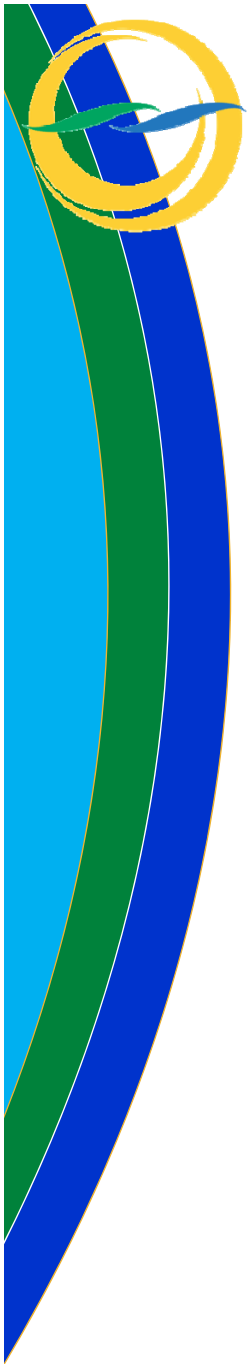
**Irrigation:** Potable to reclaimed + weather controlled irrigation systems + more efficient sprinkler heads



**Infrastructure Upgrades:** Bathroom retrofits (Aerators, Dual Flush Valves, No-Water Urinals)







**UCSB Sustainability**  
*Action Today for Tomorrow*

# Funding

## **The Green Initiative Fund**

**Recycling Partially Polished DI Water**  
**Sprinkler Heads**  
**Extending the Reclaimed Irrigation System**  
**Extending the Weather Control Irrigation System**  
**Aerators**  
**Dual Flush Valves/Low Flow Urinal Valves**  
**Hydration Stations**  
**Water Action Plan –funding for interns**

## **Partnerships with Physical Facilities**

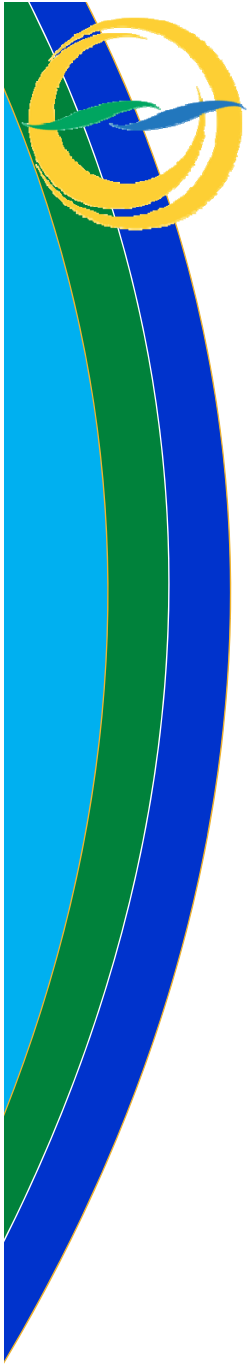
**Provided labor for many of the proposal above**

## **Partnerships with H&RS**

**Provide both parts and labor for irrigation system, hydration stations, upgrades to kitchens**

## **The Coastal Fund**

**Hydration Stations**



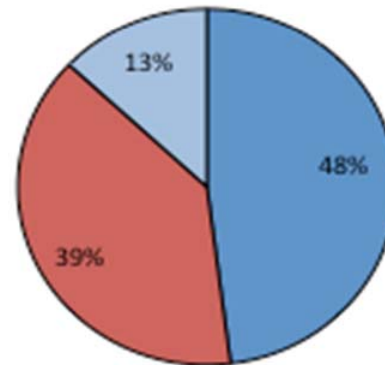
## Current Progress

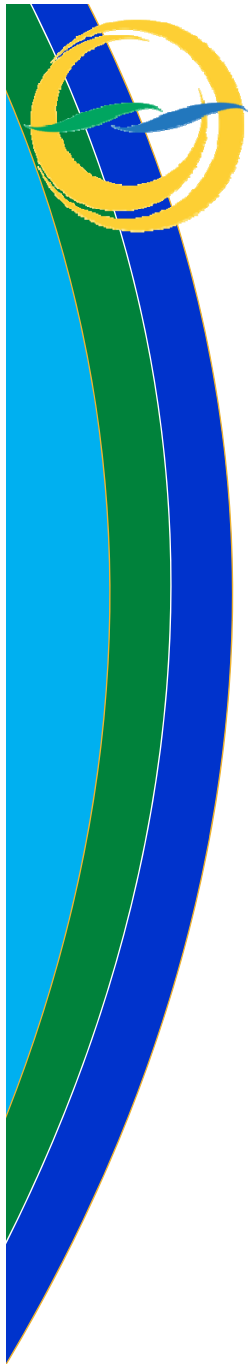
Data Collection: Quantitative and qualitative information on UCSB's water history (utilities statements, interviews, audits)

Audited all the restrooms on campus

### Faucet Aerators

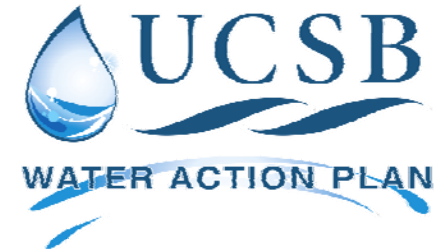
- Aerators (Above 0.5 GPM)
- No Aerators
- 0.5 GPM Aerators





**UCSB Sustainability**  
*Action Today for Tomorrow*

## Water Action Plan (WAP)



**(distilled version)**

Introduction/Background

Overall Importance

Regional Context (Role of Water in the Region)

UCSB Physical Context

Motivation Specific to UCSB

Definition of UCSB WAP Scope

Campus Water Use Baseline

Campus Historical Water Use & Water Reduction Progress

Reconstruction of historical UCSB water use and water actions that have led to reductions in potable and reclaimed water:

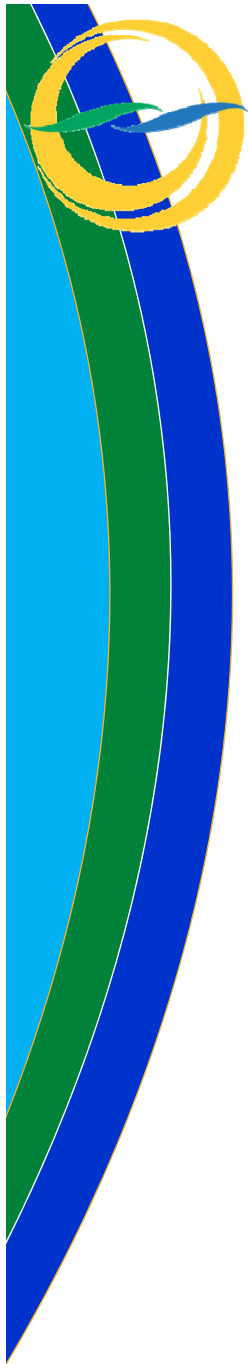
Data Collection

Total Reductions to Date

Campus Water Use Benchmark

Recommendations & Strategies for Achieving Future Potable Water Reduction

Financing Opportunities



**UCSB Sustainability**  
*Action Today for Tomorrow*

## Water Action Plan (WAP)



**(distilled version)**

Conclusions & Future Steps

- Specific reduction goal to encourage further reductions

- Annual reporting requirements

- Illustrative timeline/road-map guiding UCSB on future decisions in light of different growth patterns, water-cost, and water availability scenarios

Source Citations

Appendices

- Calculations & Methodologies for all Numbers and Metrics

- Cost-Benefit Analyses

- Assumptions/Caveats

- Summary Charts/Tables/Graphs

- Copy of UC System Wide Sustainable Water Systems Policy



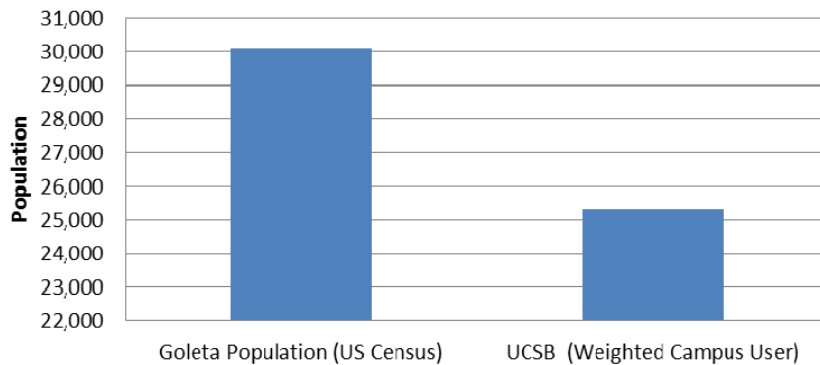
# Magnitude of UCSB Role in the Region/Local Watershed

## Geographic Scope of Water Use

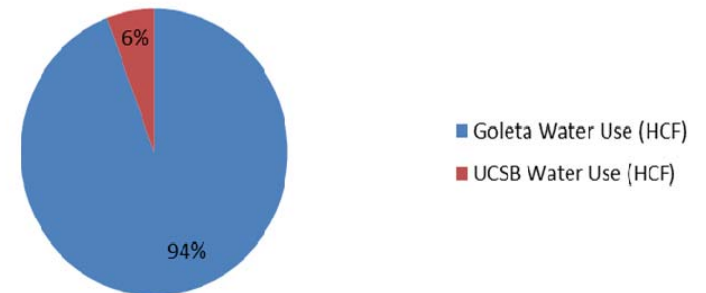
## Temporal Scope

## Water Scope

**UCSB vs. City of Goleta Population (2007)**



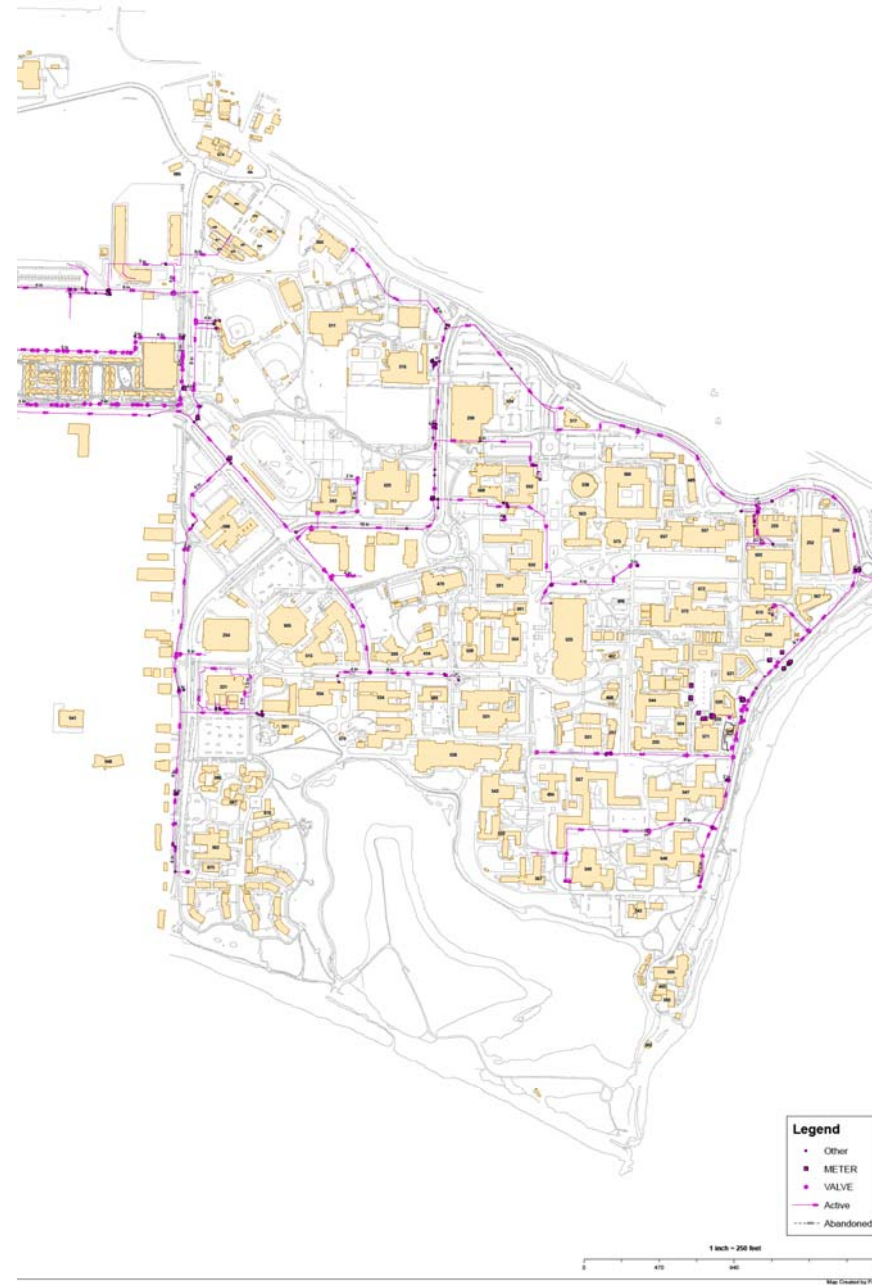
**UCSB vs. City of Goleta Water Use (2007)**

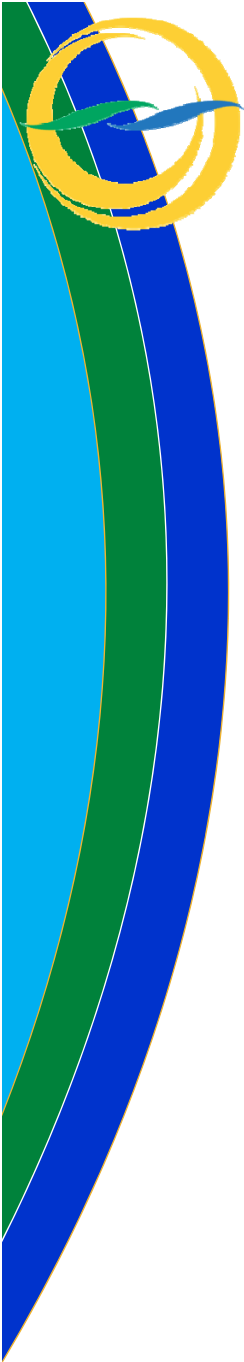


# Potable Water Overview



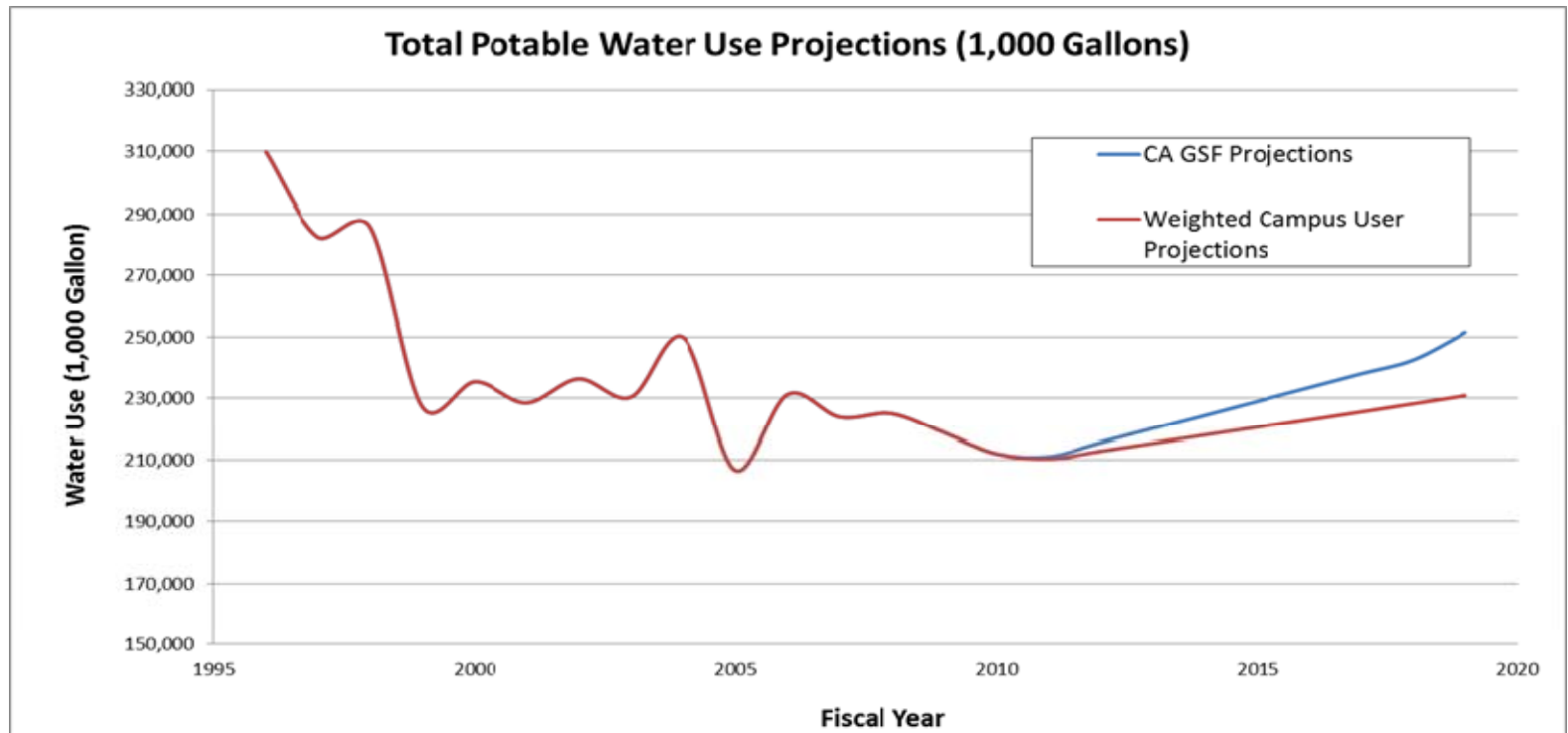
# Main Campus Reclaimed Water System

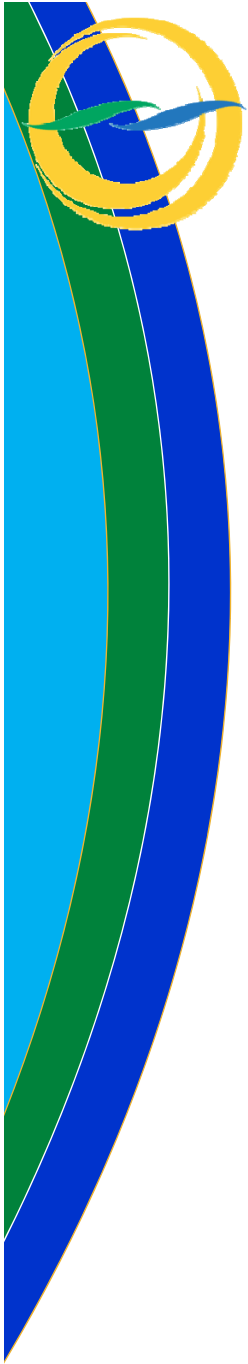




# Business As Usual

(with no further reductions/conservation efforts)





## **Additional Projects we are Pursuing at UCSB**

- **Bathroom/ Shower Retrofits**
- **Weather-Based Irrigation Controllers-extending to the final 15% of campus**
- **Matched Precipitation (MP) Rotators**
- **Xeriscaping Design**
- **Scheduled Maintenance**
- **Additional Metering**
- **Additional polishing of reclaimed water to use in industrial applications**





**UCSB Sustainability**  
*Action Today for Tomorrow*

## Future Challenges

- Increasing efficiency and conservation while also increasing on-site water demand (housing more faculty/staff/students)
- Reducing single use plastics—we have installed more than 40 hydration stations across the campus





**UCSB Sustainability**  
*Action Today for Tomorrow*

**Thanks!**

