UC MERCEDE
Water Efficiency Practices
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Presentation Snapshot

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Background

- Campus opened in 2005 and sits on 104 acres of land.

- Three schools include:
  1. School of Engineering
  2. School of Natural Sciences
  3. School of Humanities and Arts

- Population (2015-2016)
  1. Students: 6,836
  2. Faculty & Staff: 1,454
UC Systemwide Policy Goal

- UC System has a Sustainable Practices Policy that established goals in nine areas for sustainable practices, one of which is sustainable water systems.

  Goal

  Reduce growth-adjusted potable water consumption of 20% by 2020 and 36% by 2025 compared to a three-year average baseline of FY 2005/2006-FY 2007-2008 for weighted campus user (WCU).

  Status

  UC Merced has met and exceeded the 2020 and 2025 water goal.
  Baseline 29,980 gallons per WCU
  Achieved 11,119 gallons per WCU (FY15-16)
The campus also has a Water Action Plan intended to identify water systems and processes that maximize campus water use conservation and efficiency efforts.

Campus convened a water working group committee earlier this year tasked with updating the Water Action Plan.
Total of seventeen (17) buildings on campus. All are certified under Leadership Energy Environmental Design NC:
1. Platinum (8)
2. Gold (8)
3. Silver (1)
Buildings

- All building's incorporate low-flow fixtures which support the campus water efficiency and conservation goal.

Faucets
.5-1 (gpm) compared to conventional 2.2 (gpm) system.

Toilet System
1.28 (gpf) compared to conventional 1.6 (gpf) system.
LEED Lab Course

- LEED Lab Course: Multidisciplinary course that spans over two semesters where students work on the certification of buildings under LEED Existing Buildings: Operations & Maintenance (LEED EBOM)

- This course assists the campus with identifying and ensuring that equipment and technology in buildings are functional and maintain efficiency capabilities.
Green Labs Program

- Reduces environmental impacts of laboratory buildings. Laboratories are the largest consumers of energy, water and chemicals on campuses. The program works to increase energy/water efficiency of labs while also providing special attention to meet research and safety requirements.
Report a Leak Program

Using a smartphone quick response (QR) code sticker, smartphone users can use a bar-code scanner app to automatically generate a work order request, notifying facilities management of restroom leaks.
Grounds/Landscape

- **Evapotranspiration (ET) System**: Weather based controlled irrigation system that waters grounds and landscape based on local weather conditions. The system has reduced watering times by 28%.

- **Sprinkler Heads**: The campus is also using sprinkler heads with more directed streams instead of wide spray sprinkler heads.

- **Plants**: Incorporated drought-tolerant native plant species throughout the campus.
The Hydrogel was deployed in April 2016 at UC Merced. They Hydrogel is an environmentally sound, non-toxic, biodegradable gel that increases moisture-retention capabilities and acts as a water and nutrient reservoir. It holds the moisture of water until the root system needs it.

The texture is similar to the consistency of hand sanitizer and is injected approximately 1" below existing root zones.
Hydrogel

- Quad (110,000 sq.ft.)
- Amphitheater (35,000 sq. ft)
- The Bowl (206,000 sq. ft.)
- Soccer Fields (101,000 sq. ft)
Soccer Field (101,000 sq.ft.)
Saved 271,000 gallons of water
The Amphitheater (35,000 sq.ft.)
Saved 494,000 gallons of water
Hydrogel

The Bowl (206,000 sq.ft.)
(Came Offline)
The Quad (110,000 sq.ft.)
Saved 1.6 millions gallons
Through observations grounds management found that locations where the Hydrogel System was deployed had significantly healthier and greener grass. For example in times past the soccer field had large patches of dirt. Since the deployment of the Hydrogel System grounds management found that patches of dirt have declined dramatically with less water usage.
Hydrogel System

- Total Water Savings: From April 2016 the campus has saved 2.3 million gallons of water.
- Total Water Cost Savings: Approximately $13,341
- Total Project Cost: $116,000
- Hydrogel lasts between 5-7 years.
Thank You!