GREENING GROUNDS
MAKING LANDSCAPING EFFORTS MORE SUSTAINABLE IN A COMMERCIAL SETTING
OVERVIEW

- Campus Landscape Overview
- Campus Landscape Plan
- Irrigation
- Mulching & Xeriscaping
- Bio-based Lubricants
- Commercial-Grade Electric Equipment
CAMPUS LANDSCAPE OVERVIEW

- 1,007 acres
  - 308 acres of ‘work area’ – excludes driving surfaces, bike paths, building areas, and street medians
  - 85 acres of turf
- Facilities Management – 19 groundskeepers, 3 operators, 2 grounds mechanics, 2 Irrigation technicians, 1 supervisor, 1 superintendent
- Residential Operations – 13 groundskeepers, 2 operators, 2 grounds mechanics, 2 irrigation technicians, 1 assistant superintendent, 1 superintendent
- Parking Services – 4 groundskeepers, 1 operator
- Campus is a mix of typical, thriving Southern California non-natives, legacy plants (Algerian ivy), new increasing presence of California natives, non-peninsular.
  - 65 different palm species
POTENTIAL TURF TO MULCH CONVERSION

Criteria

1. Irrigated with potable water
2. Lawns with a large perimeter to area ratio
3. Lawns without inherent value

Benefits (Annual)

1. Labor Savings: 350hrs mowing; 1,900hrs edging (93.75 days)
2. Fuel Savings: $350 in diesel

Total Project Cost - ~$450,000
POTENTIAL TURF TO MULCH CONVERSION SITES

Total Area = 649,400 ft² / 15 ac
Total Perimeter = 59,600 ft / 11 mi
CYCAD INSTALLATION

- Removed lawn and replaced with Cycad installation and mulch
- Reduces irrigation, mowing, edging, and blowing
- Plants were donated by community member and is considered a teaching species
BIO-BASED LUBRICANTS

- NV Earth Bar & Chain Bio-Based Oil
- Used to lubricate chain on chainsaw when operating
- Most B&C oil is left in the environment during/after work
- U.S. Forest Service recommends using bio-based bar and chain oil when possible
- 1 chainsaw in the field
BIO-BASED LUBRICANTS

- NV Earth 2-Cycle Bio-Based Engine Oil
ELECTRIC LANDSCAPING TOOLS

- STIHL BGA 85 Battery Blower
- STIHL AR 900 Battery Backpack
- Run-time: 10 mins w/ single battery, 40 mins w/ backpack (full power)
- Charges in 20 minutes
- Different weight distribution vs. traditional gas-powered backpack blower
- Groundskeepers can trade one of their gas-powered blowers in for an electric
- 10 in the field
ELECTRIC LANDSCAPING TOOLS

- STIHL FSA 90 R Battery Weed Eater
- Can attach to battery backpack
- Run-time: 15 mins w/ single battery, 60 mins w/ backpack (full power)
- Charges in 20 minutes
- Different weight distribution is different vs. traditional gas-powered weed eater
- 2 in the field
ELECTRIC LANDSCAPING TOOLS

Electric Self-Propelled Walk Behind

- Green Machine WBX-33/ 36 Volt LD
- Grant Funded by The Green Initiative Fund ($7,437)
- Run Time: ½ acre
- Benefits: Quieter vs. gas counterpart, less CO2 emissions
ELECTRIC LANDSCAPE EQUIPMENT (PROS & CONS)

Advantages
- Less noise pollution
- Fewer CO2 emissions associated with landscaping work
- Positive PR associated with equipment
- Reduces fuel consumption and storage of fuel
- No need to pull choke on equipment, less wear on shoulders

Challenges
- ‘Different’ than what staff are used to working with
- Battery run-time limits usability and use for certain projects
- Perhaps not a replacement for all traditional landscaping equipment
- When working remotely, must bring extra batteries or charger
Each Groundskeeper has an electric vehicle: Gator, E-Ride, GEM Cart

Gator carts have a dumping bed that allows for ease of use in subgrade greenwaste bins

Carts can operate quietly throughout campus, sometimes too quiet for students to hear
LOOKING AHEAD

- STHIL battery-powered small chainsaw
- McLane battery-powered edger
- Continuing with program to swap blowers out
- Looking at more bio-based oil products
FIELD TRIP & QUESTIONS!