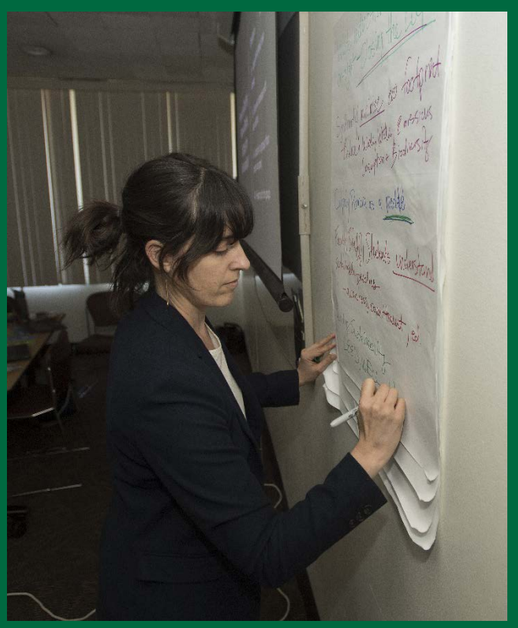
California State Polytechnic University, Pomona

Master Plan Update

Sustainability Open Focus Session

28 February 2018

AYERS SAINT GROSS



Sustainability Open Focus Session Images

AGENDA

Sustainability
Open Focus Session

Introductions and Overview

Sustainability

- *Within the Context of a Campus Master Plan*

Existing Conditions and Observations

- *Reporting, Tracking, and Stated Goals*
- *Academics Programs, Initiatives, and Projects*
- *Campus Operations, Current Plans and Projects*

28 February, 2018; 1pm - 4pm

Introductions

Linsey Graff
Ayers Saint Gross
Campus Planner

Carolyn Krall
Ayers Saint Gross
Project Manager

Melanie Bontusa
Brightworks Sustainability
Sustainability Consultant

Ayers Saint Gross: Firm Profile

PHILOSOPY

"We engage people and places to create designs that enrich the world."

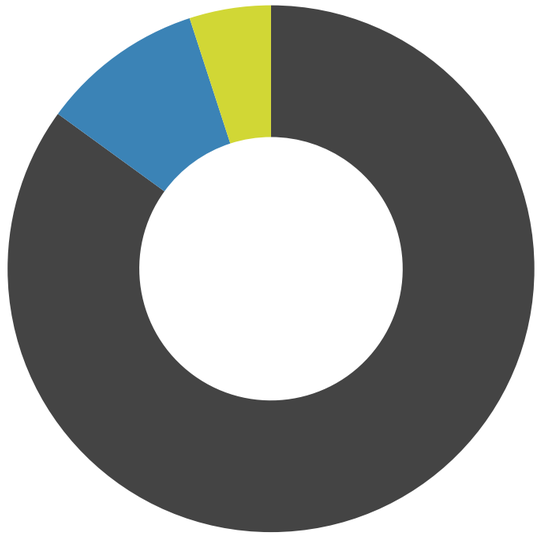
FOUNDED

1912

STAFF

160

FOCUS



All of our work is for mission-driven clients.

85%
Higher Education

15%
Cultural Institutions

5%
K-12 and Private Sector

Ayers Saint Gross Planning Philosophy

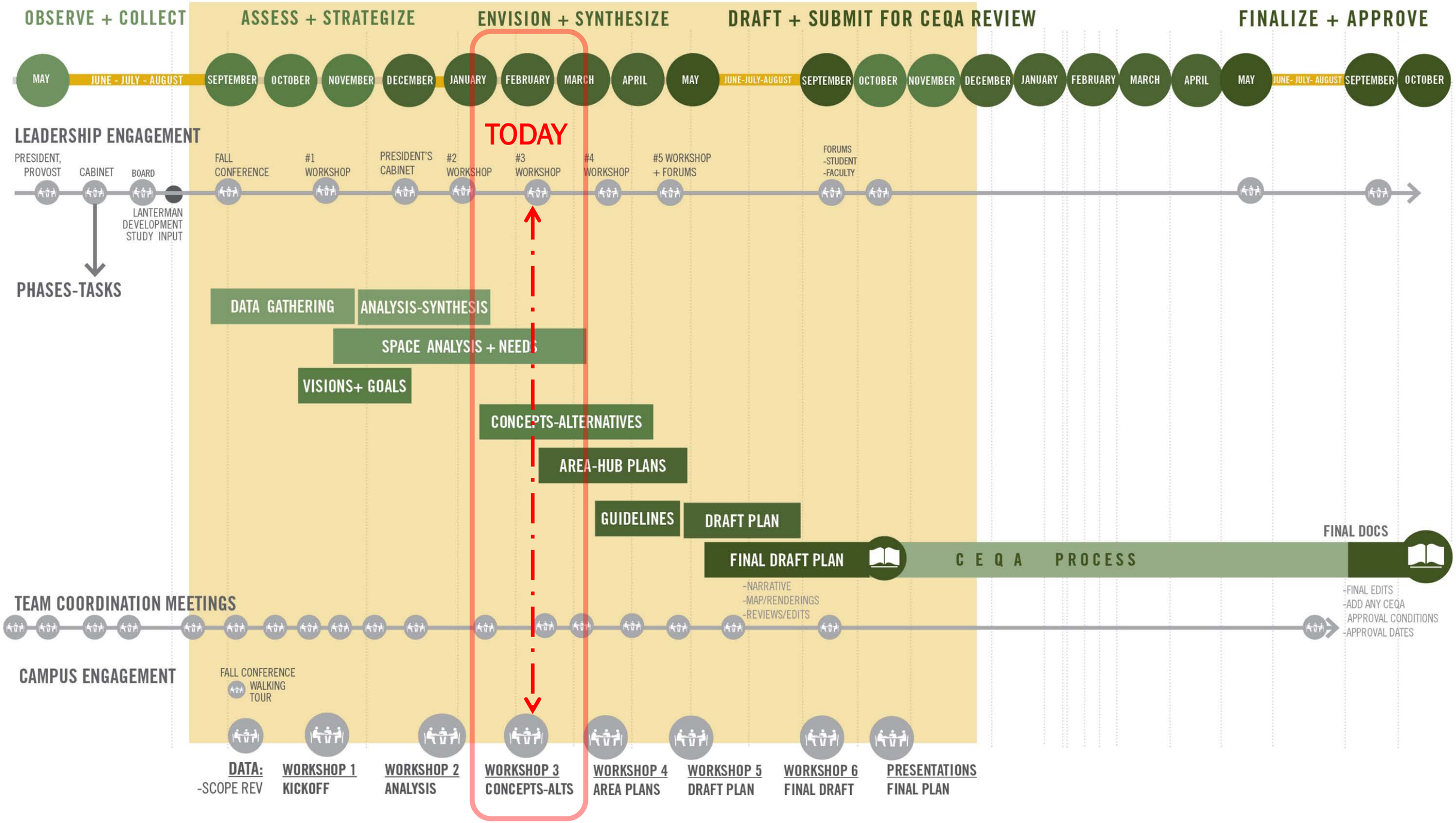
- Fact/Data and Research based
- Educational in process and approach
- Unique to Cal Poly Pomona's mission, vision, culture, and strategic plan
- Engaging and inclusive of multiple campus and community stakeholders
- Iterative, using analysis and planning to advance the plan and build consensus
- Narrative shapes the campus vision
- Supports informed decision-making
- Establishes the foundation for change

Brightworks Sustainability

- Master Planning
- Green Building Certification
- Healthy and Sustainable Materials
- Portfolio Sustainability Programs
- Energy Modeling + Daylight Analysis
- Infrastructure
- Regulatory Compliance
- Energy, Water, Waste, Carbon Analysis

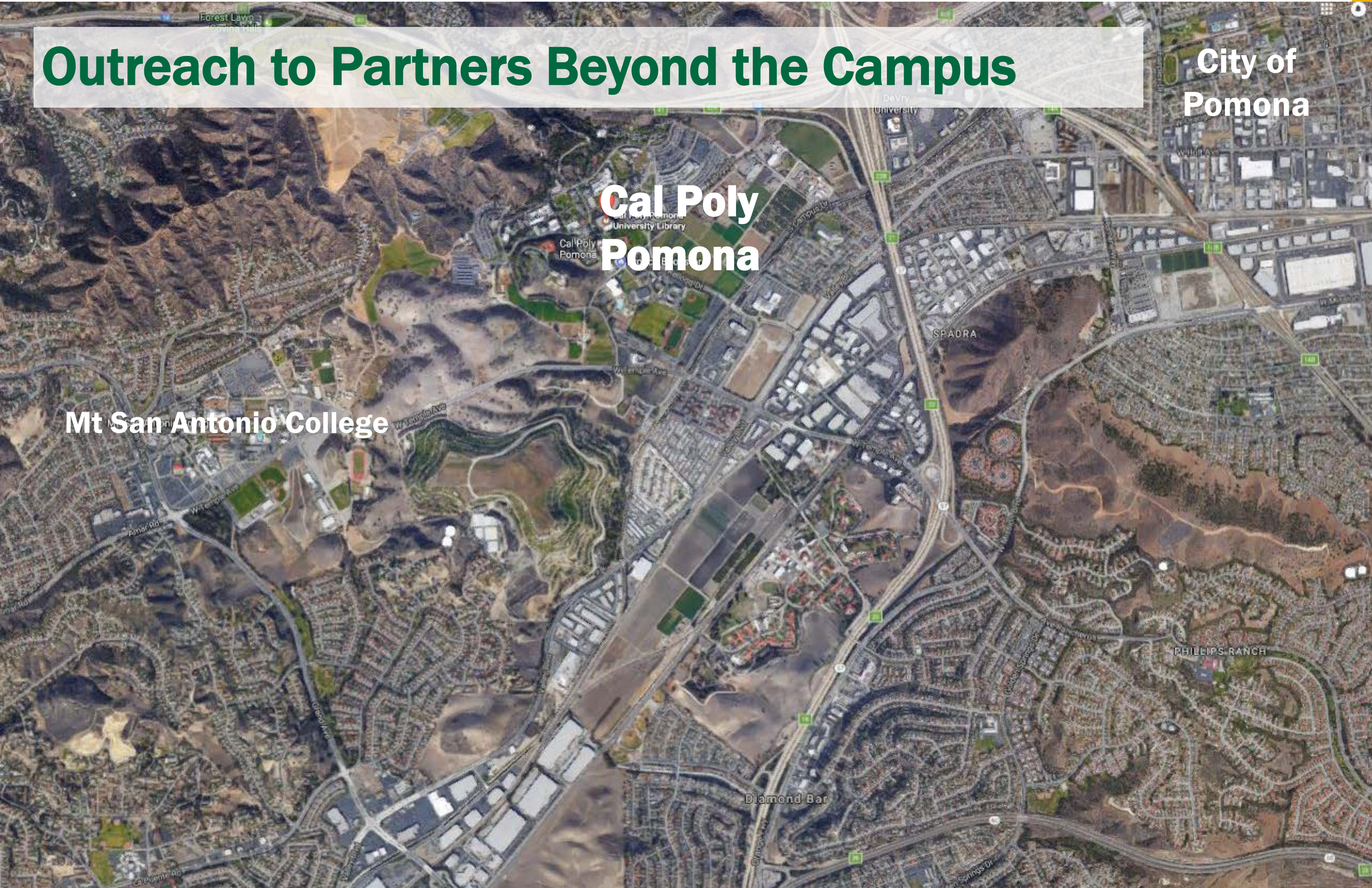
Schedule and Process

Project Timeline – Fall 2017 to Fall 2018

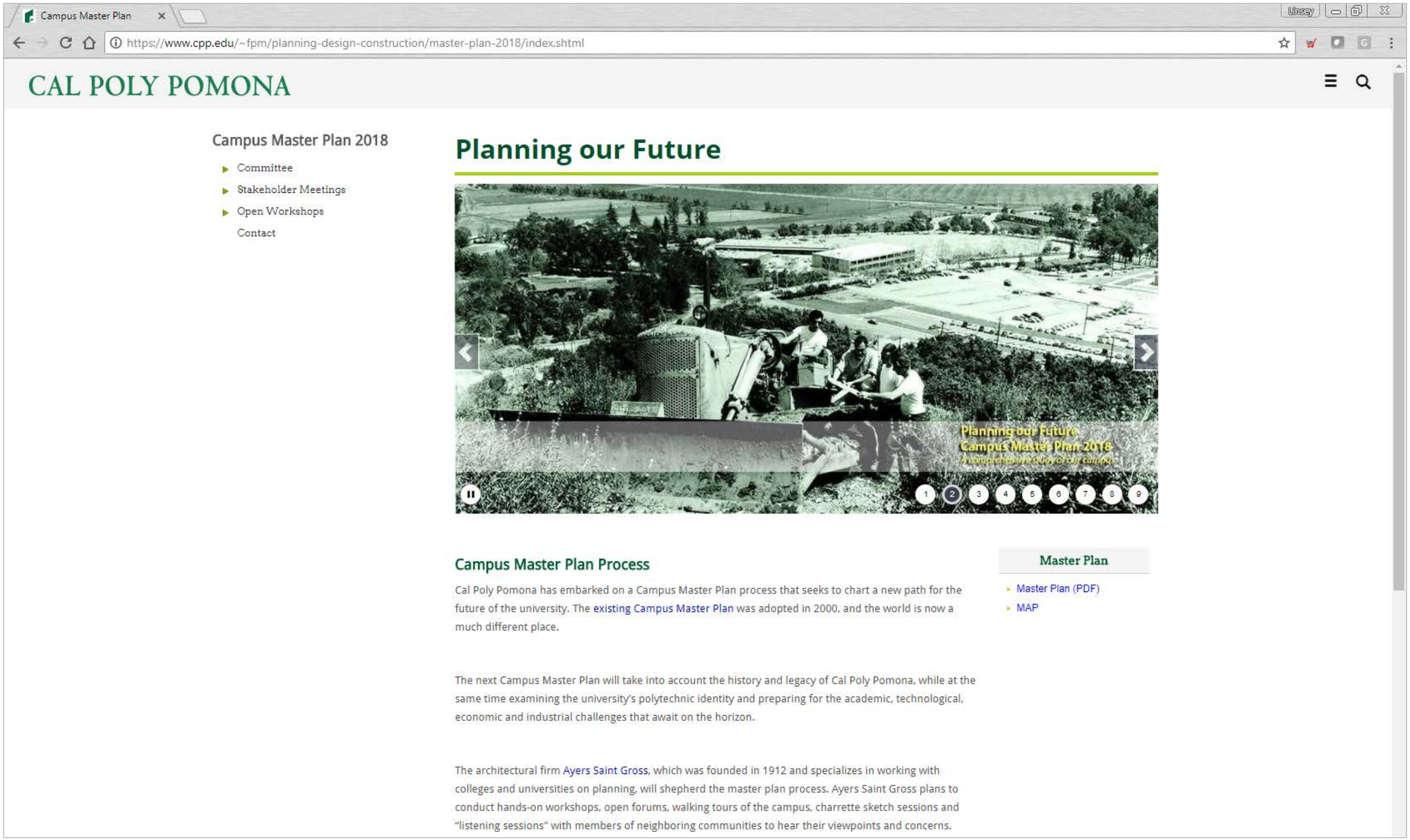


On-Campus Engagement

Outreach to Partners Beyond the Campus



Communications – Master Plan Website



Strategic Vision and Physical Planning

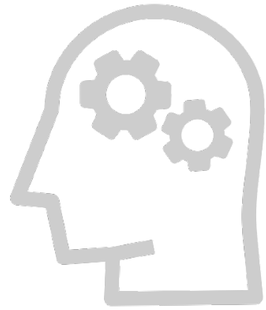
MASTER PLAN GOAL

The 2018 Cal Poly Pomona Master Plan Update will be comprehensive, broad, and intentional about furthering Cal Poly Pomona's place in the future of the country.

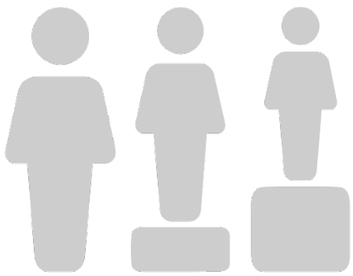
Cal Poly Pomona Values

STUDENT LEARNING AND SUCCESS

ACADEMIC EXCELLENCE

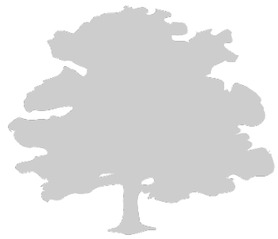


EXPERIENTIAL LEARNING



INCLUSIVITY

COMMUNITY ENGAGEMENT



SOCIAL AND ENVIRONMENTAL RESPONSIBILITY

All Values Align with Sustainability Concepts

STUDENT LEARNING AND SUCCESS

ACADEMIC EXCELLENCE

EXPERIENTIAL LEARNING

INCLUSIVITY

COMMUNITY ENGAGEMENT

SOCIAL AND ENVIRONMENTAL RESPONSIBILITY

Defining Sustainability

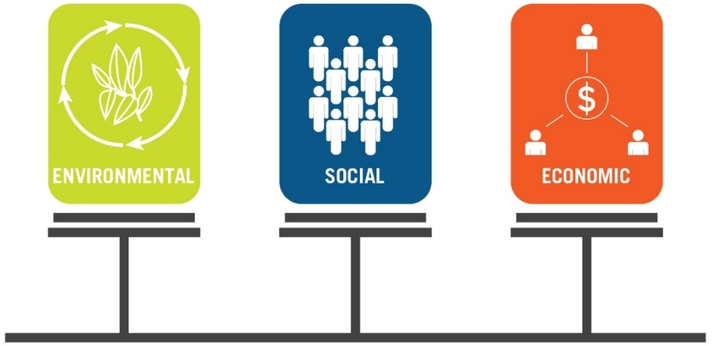
The Three Pillars of Sustainability

Sustainability is the simultaneous pursuit of human health and happiness, environmental quality, and economic well-being for current and future generations.

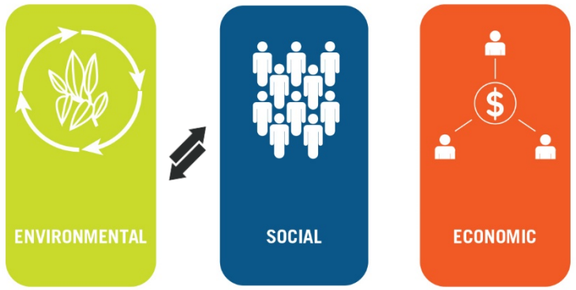
Sustainability: Comprehensive Approach

SILO

BALANCE



REACTIVE



INTERWOVEN

Sustainability: Theme Based

Operational Matters

Energy Use and Greenhouse Gas Reduction

Campus Mobility

Water and Stormwater

Built Environment/ Site Design

Included

in the Campus Master Plan

Sustainability: Theme Based

Operational Matters

Energy Use and Greenhouse Gas Reduction

Campus Mobility

Waste Management

Water and Stormwater

Built Environment/ Site Design

Included
in the Campus Master Plan

Supported
by the Campus Master Plan

Sustainability: Theme Based

Operational Matters

Energy Use and Greenhouse Gas Reduction

Campus Mobility

Water and Stormwater

Built Environment/ Site Design

Included
in the Campus Master Plan

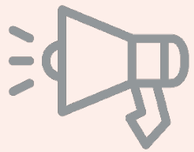
Waste Management

Supported
by the Campus Master Plan

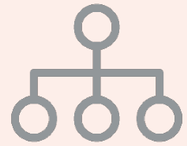
Non-Operational Matters

Social Sustainability

Outreach and Engagement



Administrative Support



Instruction and Innovation

Reinforced
by the Campus Master Plan

SUSTAINABLE STRATEGIES

Sustainability at Texas A&M is the efficient, deliberate, and responsible preservation of environmental, social, and economic resources to protect our earth for future generations of Texas Aggies, the Texas A&M University community, and beyond.

CREATE LARGE COMMUNITY GATHERING SPACE

Forums provide opportunity for the cultural and academic exchange.

STORMWATER MANAGEMENT

Achieving more successful stormwater management requires actions at the campus, character zone, and project scales that employ Low Impact Development strategies.

ENABLE SAFE MULTI-MODAL TRANSIT

Provide dedicated right-of-way width and landscape buffers in primary thoroughfares. In secondary streets provide sidewalks and unbuffered bike routes. Provide sharrow conditions or multi-use paths in tertiary streets.

PARKING LOT CONVERSION

Reed Arena is surrounded by over 2,600 parking spaces. This large land area is a major opportunity in the long-term to develop of administration, retail, and dining space and to shift parking into structures. The planned buildings will form new internal green spaces that will be ideal for large events and tailgating.

- INSTALL NATIVE LANDSCAPING
- MIXED-USE DEVELOPMENT
- DESIGN FOR EFFICIENCY
- REMOVE FOOD DESERTS
- PRESERVE HERITAGE BUILDINGS
- MAKE RECYCLING EASY
- CELEBRATE THE COMMUNITY
- PROVIDE ONGOING COMMISSIONING
- OPTIMIZE NIGHT SETBACK OPPORTUNITIES

TOWN/GOWN ROAD COMMUNITY EDGE

Healthy edge conditions promote a relationship to the surrounding community and will lead to improved branding and identity, local economic growth, better relationships with community partners, and safer travel conditions for university commuters.

WHITE CREEK PRESERVATION

Stormwater management improvements increase biodiversity and create spaces for education and recreation.

GRADE SEPARATION

Existing split-level connections have successfully linked the two sides of campus. Increasing their use will advance connectivity goals and increase multi-modal transit's safety.

Sustainability in the plan is a cross-cutting issue that manifests as both descrete interventions as well as collective action.

AREAS OF FOCUS
- MOBILITY
- STORMWATER MANAGEMENT
- EQUITABLE BUILT ENVIRONMENT
- ENERGY USE & GREENHOUSE GASES

Sustainability at Cal Poly Pomona– The Big Picture

<u>Operations</u>

E-waste recycling

67% Waste Diversion

“GreenSpace” certification

<u>Student Activities</u>

7 student orgs

The Green Initiative Fund

ASI Sustainability Committee

<u>Community Engagement</u>

Tours

Regenerative Communities Initiative

Center for Community Engagement

Project Blue

<u>Policies</u>

CSU Sustainability Policy

AASHE stars

<u>Planning</u>

LEED

CAP

Parksmart

<u>Academics</u>

Regenerative Studies Program

Princeton Review’s Top 50

Farm to Table

STEM

AiSA

Sustainability at Cal Poly Pomona– Mission Statement

"We hope to educate students, faculty, and staff about the various ways of embracing sustainability by incorporating it into the University's **planning**, **policies, academics, operations**, **student activities** and **community engagement."**

How does Cal Poly Pomona Define Success for Sustainability?

How does Cal Poly Pomona Define <u>Success</u> for Sustainability?

1 – 2 – 4 – All

(15 minutes)

How does Cal Poly Pomona Define <u>Success</u> for Sustainability?

Directions

1 – Write down your own answer.

2 – Share your answer with your neighbor.

4 – Discuss in a group of four people (two pair).

All – Report out to the group.

‘1 – 2 – 4 – All’ Activity Responses

CPP should strive to produce zero-waste. *Part of this challenge is to better define what waste is and different ways to address waste. ie. Food should be composted; Durable Goods can be managed through a more robust surplus property program, etc.*

Significantly reduce the carbon footprint of the entire University – in a holistic way.

Be viewed as a national leader or a model in sustainability.

All faculty, staff, and students understand and practice sustainability. *This comes with building knowledge and awareness to achieve commitment.*

Communicate efforts and success by setting goals and targets and tracking success regularly.

Be sustainable in more than just word.

All new buildings on campus should strive to be above the minimum LEED standard (silver) – Gold or Platinum. *Also look at other rating systems such as the Living Building Challenge.*

<u>Additional Comments</u>

How can more people access the Lyle Center? Additional Parking?, Shuttle Service?, Satellite Locations on the Main Campus?..

Major space issues on the campus today will affect enrollment growth – Master Plan is doing a Space Analysis alongside the master plan to address this

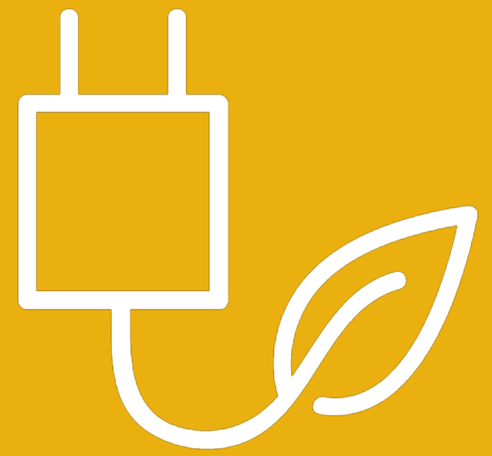
Collins School is doing a lot in the areas of sustainability

Instead of looking at the entire campus or University holistically when it comes to sustainability, there seem to be pockets where things are happening, this results in units competing internally for limited resources.

Sustainability Themes

Energy Use and Greenhouse (GHG) Emissions

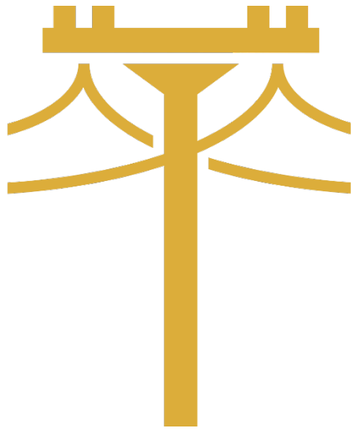
- The volume and types of energy the University uses
- Energy-efficient on-campus power generation
- Energy-efficient buildings
- Occupant behavior



First... Types of Emissions

Scope 1

Emissions from sources controlled by Cal Poly Pomona, primarily from building and campus scale energy equipment.



Scope 2

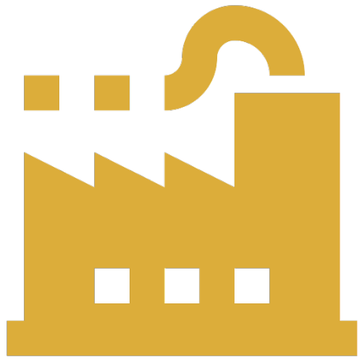
Emissions from the consumption of **purchased electricity,** steam, or other energy sources generated upstream.

Scope 3

Emissions that are a consequence of Cal Poly Pomona's operations that are not owned or controlled by the organizations, primarily commuting, University-related travel, and purchased goods.

First... Types of Emissions – Who's Responsible?

Cal Poly Pomona and/or CSU System



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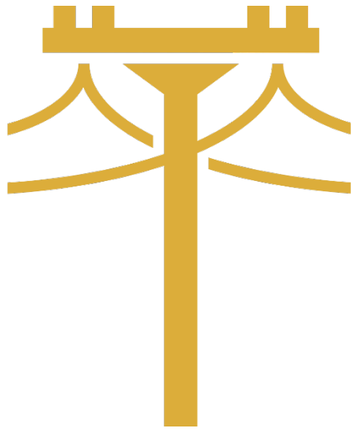

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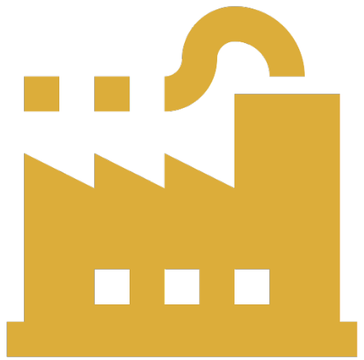

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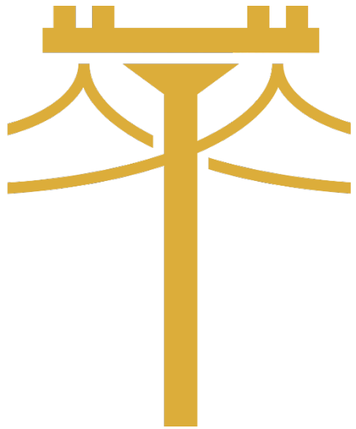


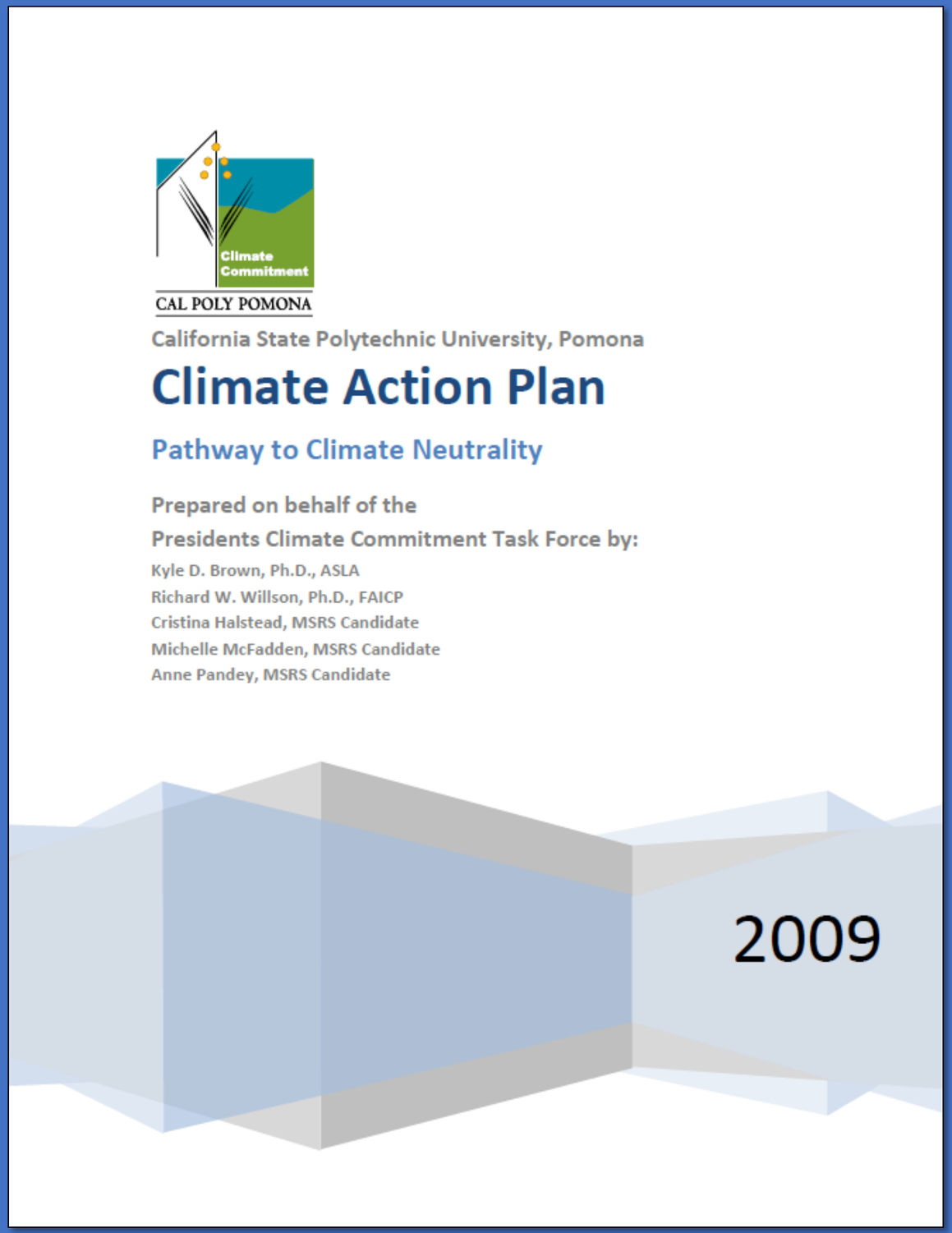
Scope 2

Emissions from the consumption of **purchased electricity,** steam, or other energy sources generated upstream.

The Campus Community

Scope 3

Emissions that are a consequence of Cal Poly Pomona's operations that are not owned or controlled by the organizations, primarily commuting, University-related travel, and purchased goods.



- Climate action plans provide a roadmap for how the campus will reduce greenhouse gas (GHG) emissions over the long term.

- CPP is 1 of 9 CSU campuses to develop a CAP

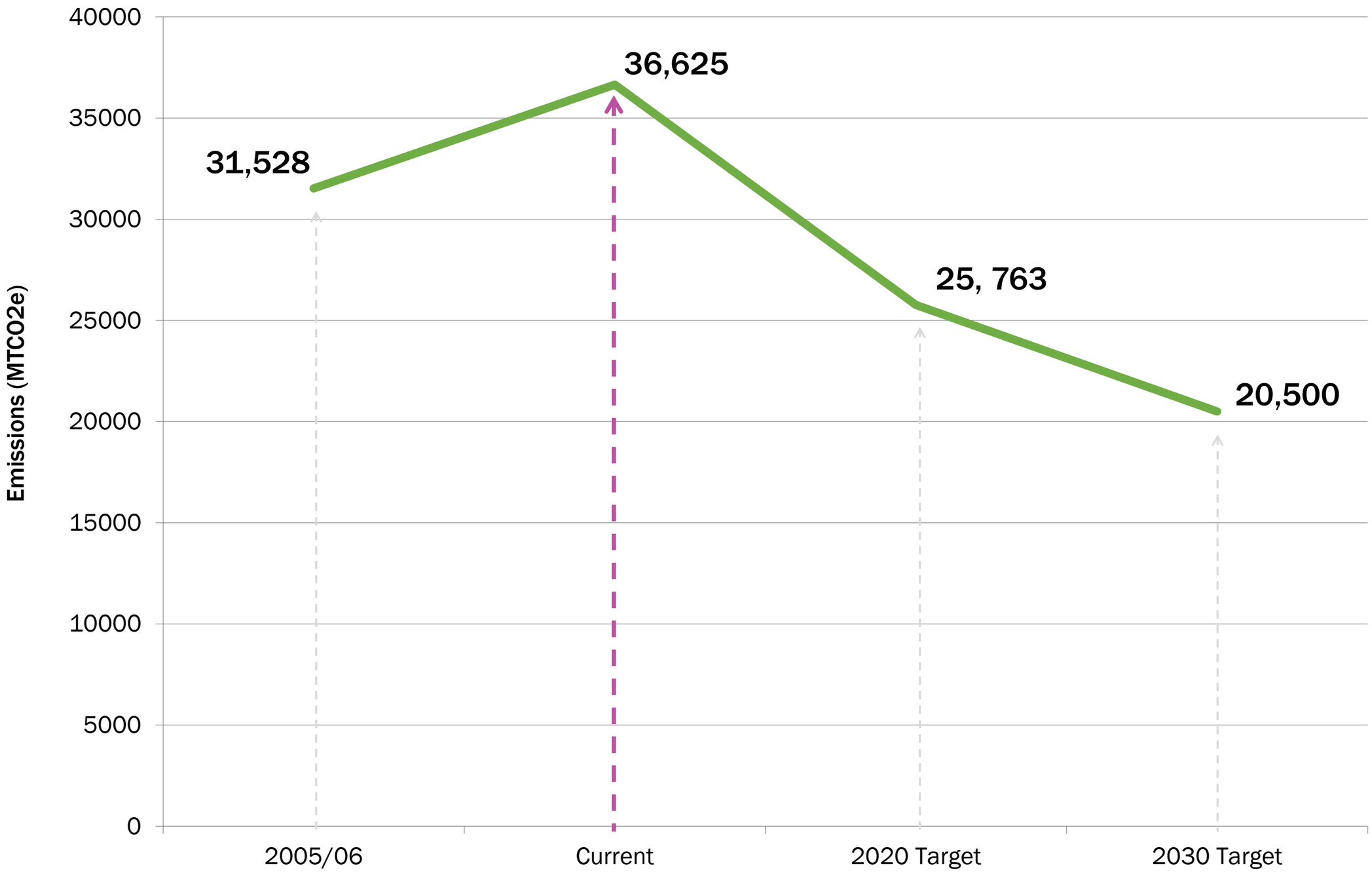
- Developed in 2009 by members of the Climate Commitment Task Force – co-chaired by:
  - Dr. Ed Barnes, Administrative Affairs
  - Dr. Kyle D. Brown, John T. Lyle Center for Regenerative Studies

The Climate Action Plan Goal for Emissions:

Climate Neutrality by 2030;
50% Reduction by 2020

2009 Climate Action Plan (CAP)

Scope 1 and 2 Emissions

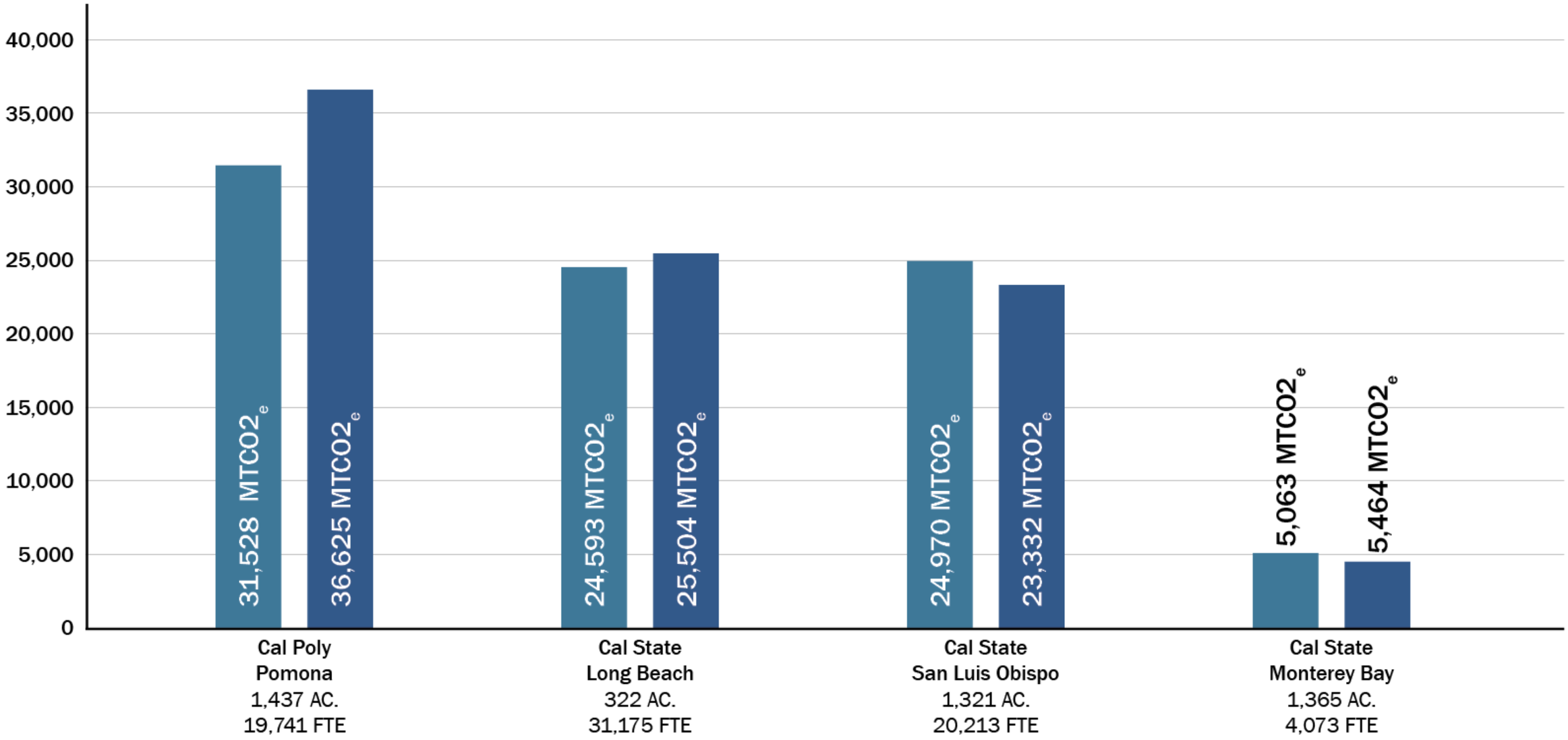


The Climate Action Plan Goals for Emissions:

1. 50% increase in carbon sequestration through landscaping

2. Zero emissions associated with refrigerant use

Peer Comparison – GHG Emissions Today vs. Baseline



What have we done? And what else can we do?

- Second Natures Carbon Commitment and CAP
- 6% of electricity is from Renewable sources (solar)/ 2.61% of all energy consumed
- Thermal Energy Storage
- 1 Carbon Neutral Building
- LEED Certified buildings
- Parksmart Certified Garage
- Logistics, Staffing, Resources

First… How do we measure Energy Use?

Energy Use Intensity (EUI) =

$$\frac{\text{Total gross energy consumed in 1 year kBTU (Kilo-British Thermal Units)}}{\text{Total GSF}}$$

What affects a campus's EUI?

First… How do we measure Energy Use?

Energy Use Intensity (EUI) =

$$\frac{\text{Total gross energy consumed in 1 year kBTU (Kilo-British Thermal Units)}}{\text{Total GSF}}$$

What affects a campus's EUI?

- Building Types
- Building Square Footage
- Volume of Energy Use
- Climate

First… How do we measure Energy Use?

The US Energy Information Administration (EIA) compiles information via the Commercial Buildings Energy Consumption Survey (CBECS) that supports comparative energy analysis based on building size and use.

EIA has set a 70% energy use reduction target for all building sizes and types by 2030.

According to CBECS:

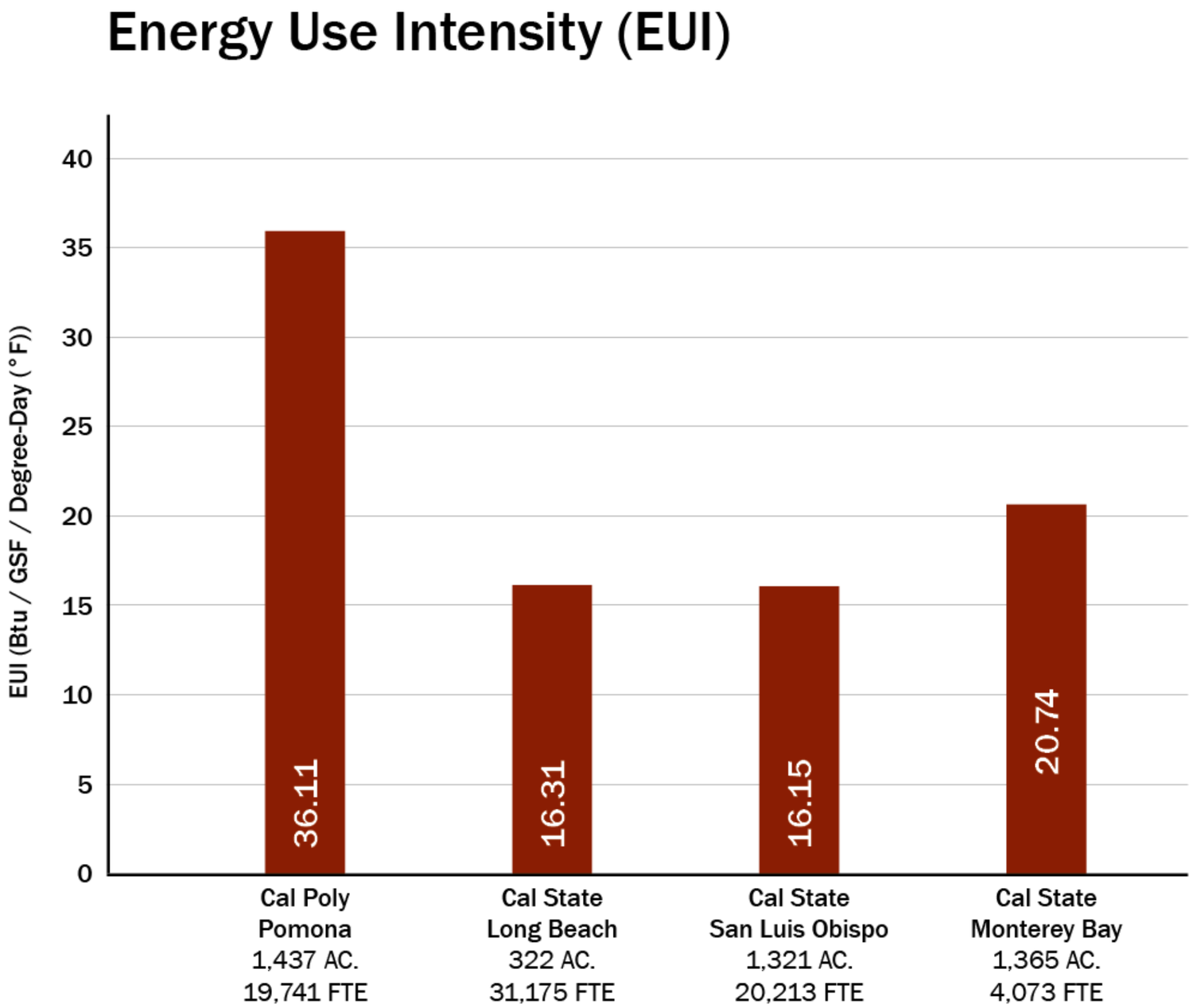
- **College/University Building = 120**
- **Laboratory = 370**
- **Residence Hall = 89**
- **Office = 74 – 104**
- **Assembly = 66**

The Climate Action Plan Goals for Energy Use:

1. 10% reduction in energy use of existing buildings
2. New Buildings are Net Zero
3. 5% Reduction in building plug loads
4. 100% Renewable for campus generated electricity
5. 50% reduction in emissions associated with natural gas

John T Lyle Center for Regenerative Studies – first carbon neutral building

Peer Comparison – Energy Use



Renewable Energy at CPP

Currently, 2.61% of campus energy is offset with renewables

PV (Solar) on Parking Structure 2, Kellogg Gym, BioTrek, Parking Lot M.

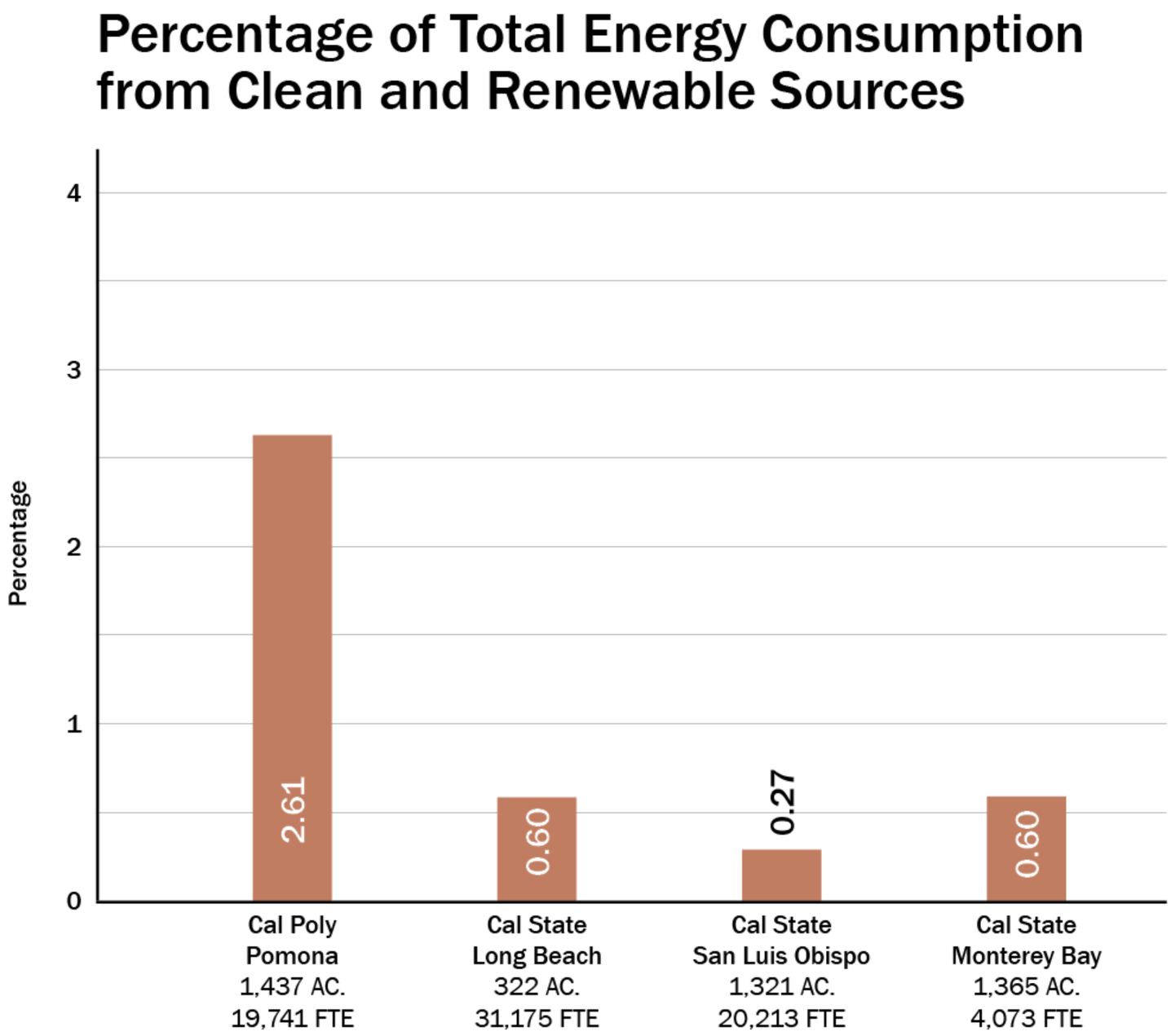
Plan to add additional solar at landfill site

Windmill and Solar Concentrator at Lyle Center

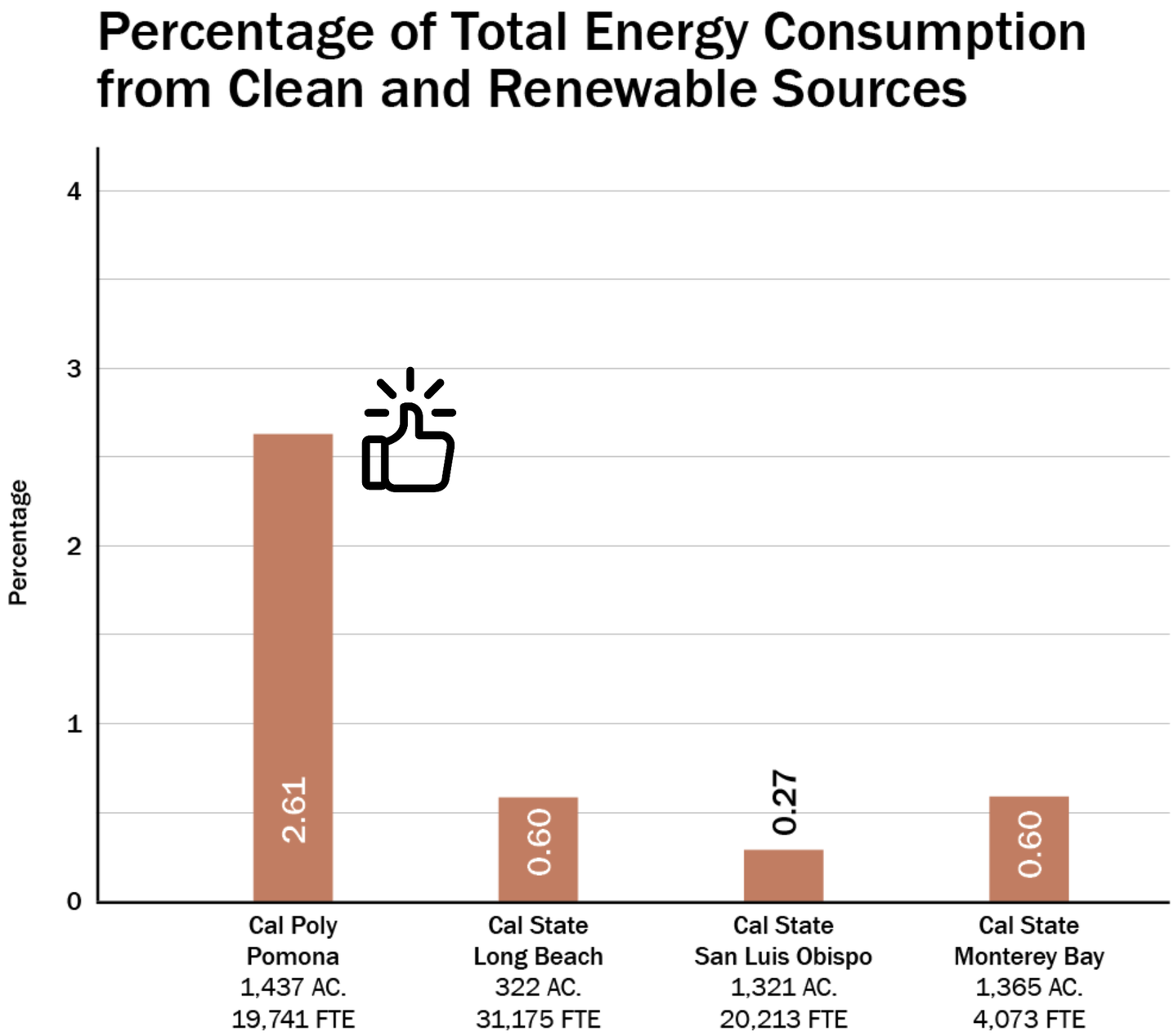
Thermal Energy Storage at Central Plant

Solar array at Parking Lot M

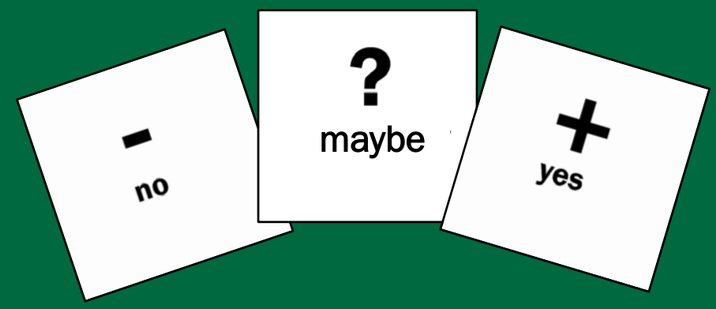
Peer Comparison – Renewable Energy Use



Peer Comparison – Renewable Energy Use

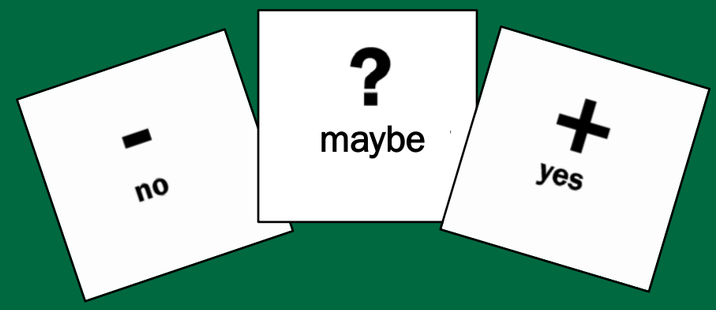


Would you support building designs that include the following innovations?



Occupancy sensors in offices and dorm rooms that automatically shut off lights and HVAC when unoccupied

Would you support building designs that include the following innovations?



Some outlets in your office or dorm room that are connected to occupancy sensors

Energy Use and GHG Emissions Comments

<u>Additional Comments</u>

Partnership with Edison may be why CPP's renewable energy percentage is so high – since the provider uses renewables as well. This is an example of a positive relationship.

Controls are great, but need to be managed well by facilities.

There was a motor replaced with variable speed in Building 8

Only some buildings have individual monitoring devices

The 4:10 schedule was an initiative for energy consumption, but didn't reduce energy use as planned

Water and Stormwater

- How rainfall events on campus impact campus lands and downstream communities
- Irrigation
- Potable Water usage

Campus Water Today (Service, Uses, and Notes)

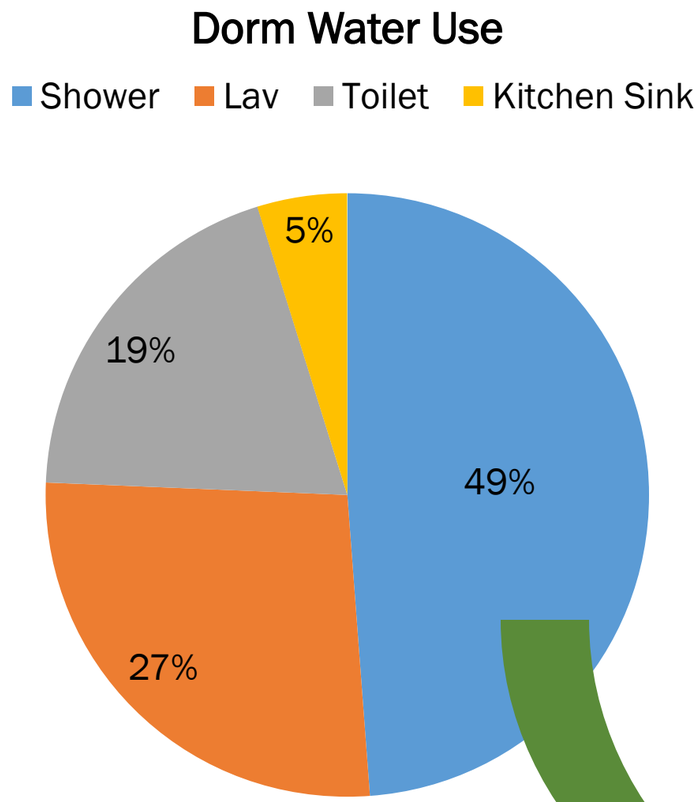
Domestic (Potable) Water

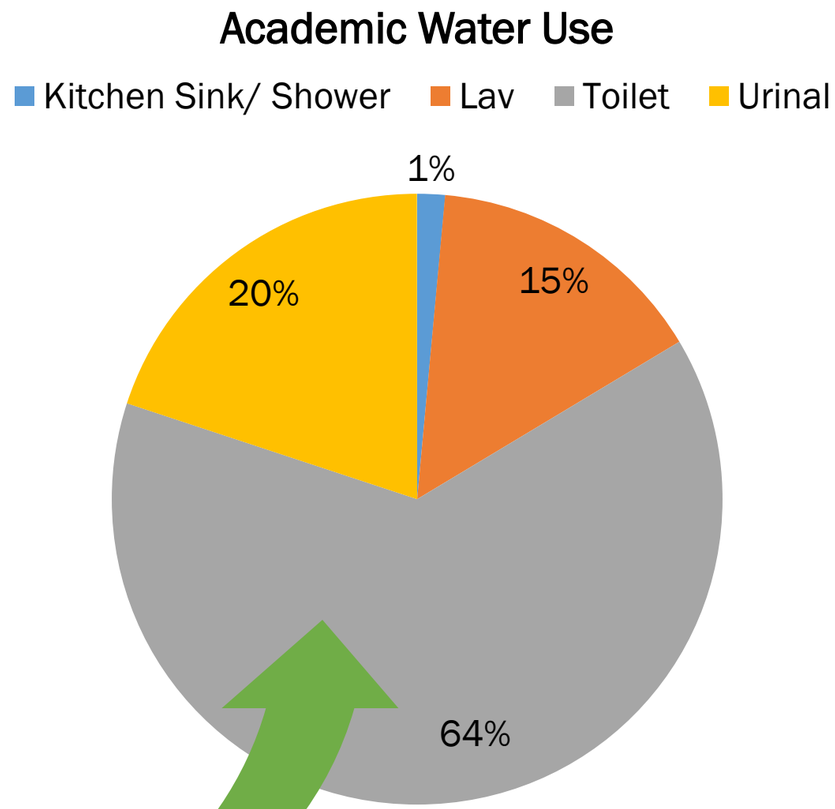
- Served from CPP off-campus well
- Treated at on-campus Water Treatment Plant
- Serves hydrants, human consumption, cooking, bathing
- Mixed with municipally supplied water
- Buildings are not typically metered

Campus Irrigation

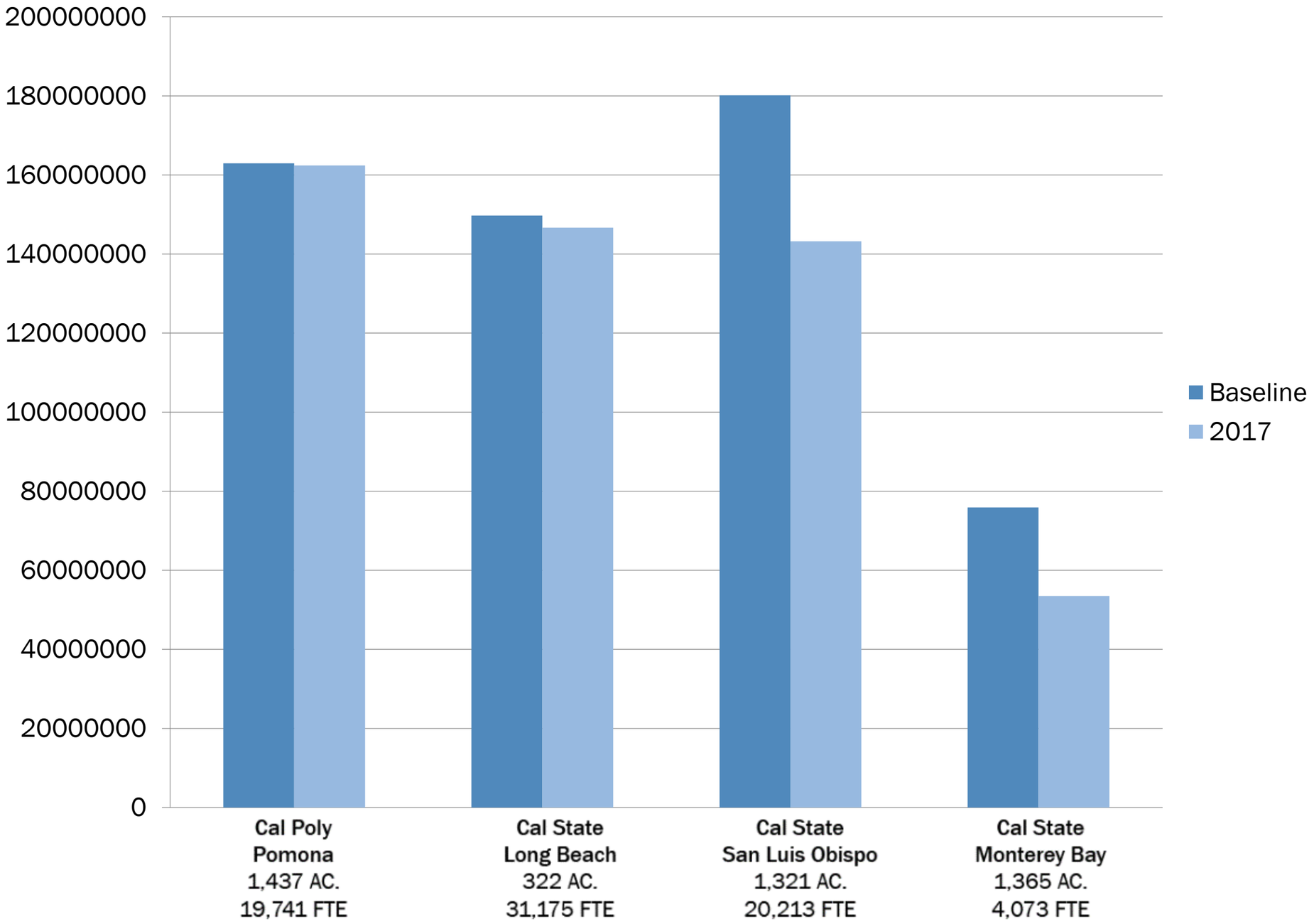
- 90% of irrigation demand is served with recycled water supplemented by LA County, and distributed by the City of Pomona
- Drought resistant plants are being selected with new buildings
- Target turf replacement areas to reduce water demand

Water Use


Dorm Water Use
Shower
Lav
Toilet
Kitchen Sink
5%
19%
49%
27%


Academic Water Use
Kitchen Sink/ Shower
Lav
Toilet
Urinal
1%
20%
15%
64%

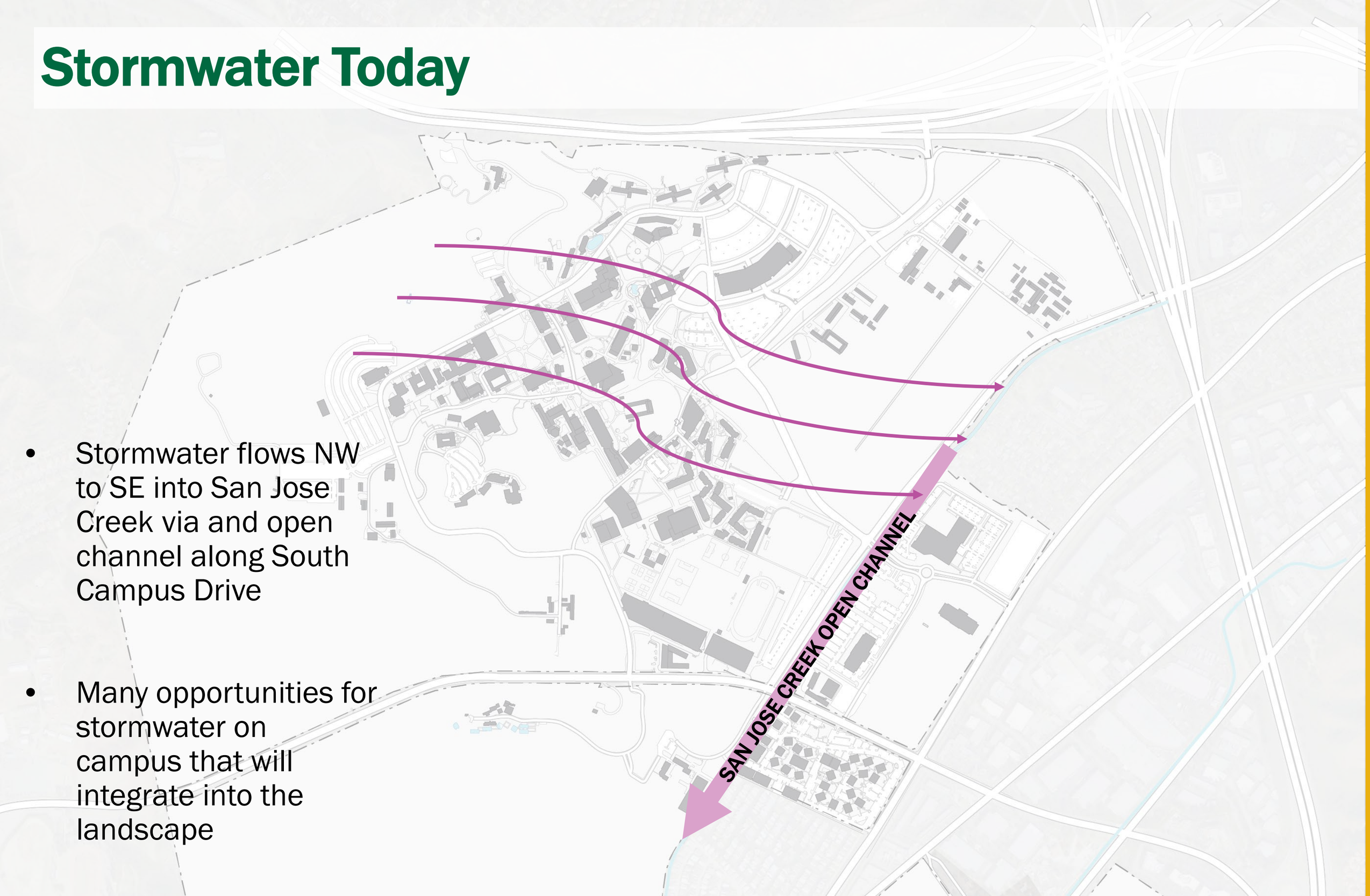
Peer Comparison - Water Reduction



Stormwater Today

- Stormwater flows NW to SE into San Jose Creek via and open channel along South Campus Drive

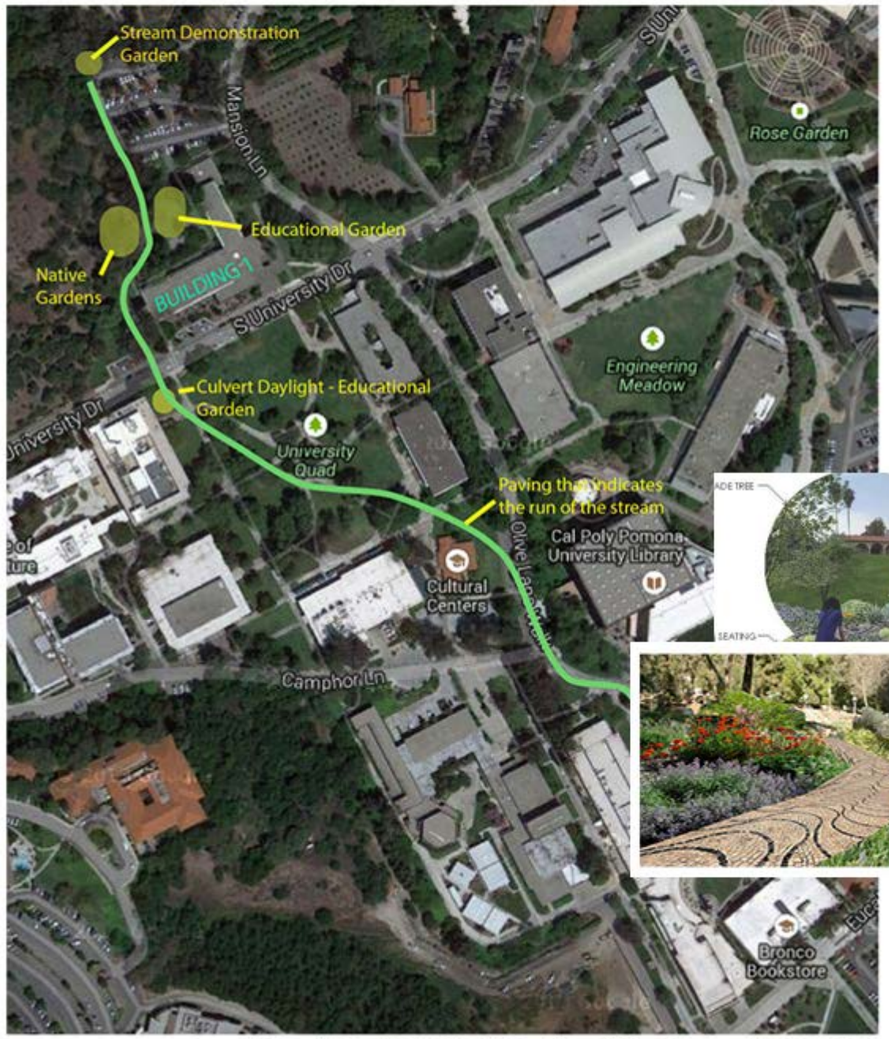
- Many opportunities for stormwater on campus that will integrate into the landscape



Project Blue

Phase I. Surface Flow - exploration of native stream dependent wildlife and vegetation (Riparian Habitat Learning Center)

Phase II. Subsurface Flow – visually represented by various hardscapes (e.g. paving, stones) and softscapes (e.g. grasses, shrubs)



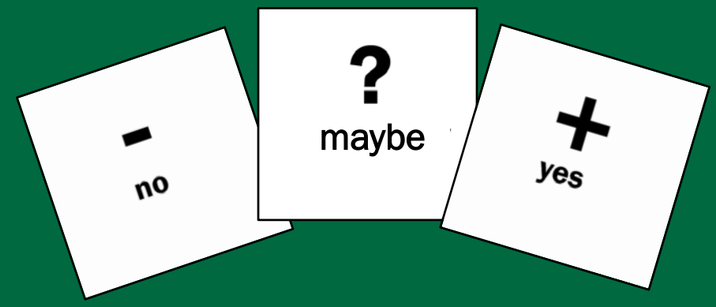
The Climate Action Plan Goals for Water Use:

1. 100% of stormwater is managed on-site

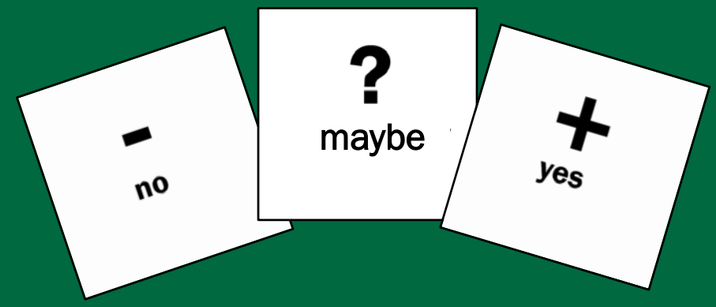
2. Reduce potable water use for landscaping by 100%

3. Reduce indoor water use by 45% in new buildings

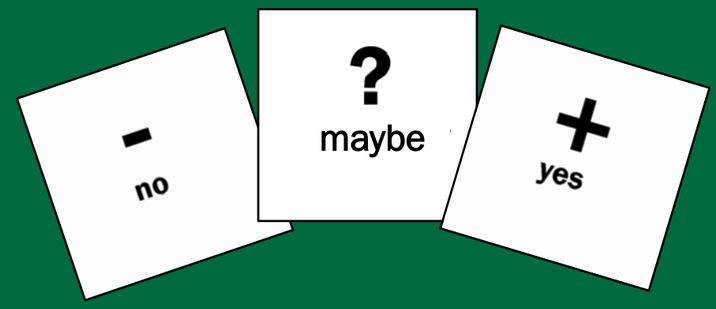
4. Reduce indoor water use in existing buildings by 35%



Composting Toilets



Graywater for flushing toilets



Should CPP be measuring/ monitoring water for individual buildings?

Water and Stormwater Comments

<u>Additional Comments</u>

Silos in jurisdiction when it comes to facilities maintenance (city, campus, etc.) – should be a holistic campus approach rather than your pipe your budget, expand facilities staff to be able to meet the demand

Difficult to measure water use because of the unique situation of piping and reservoirs (potable water and fire water in the same system)

Hot water vs. Cold water in restroom sinks

Greywater system for toilets – favorable, would have to be building by building

Composting Toilets – less favorable - see new models for this – concerns for maintenance, odor, etc.

BioTrek gardens and facilities provide educational experiences. These are funded through grants.

Project Blue will highlight Kellogg Creek by incorporating paths, learning platforms, and interpretive displays

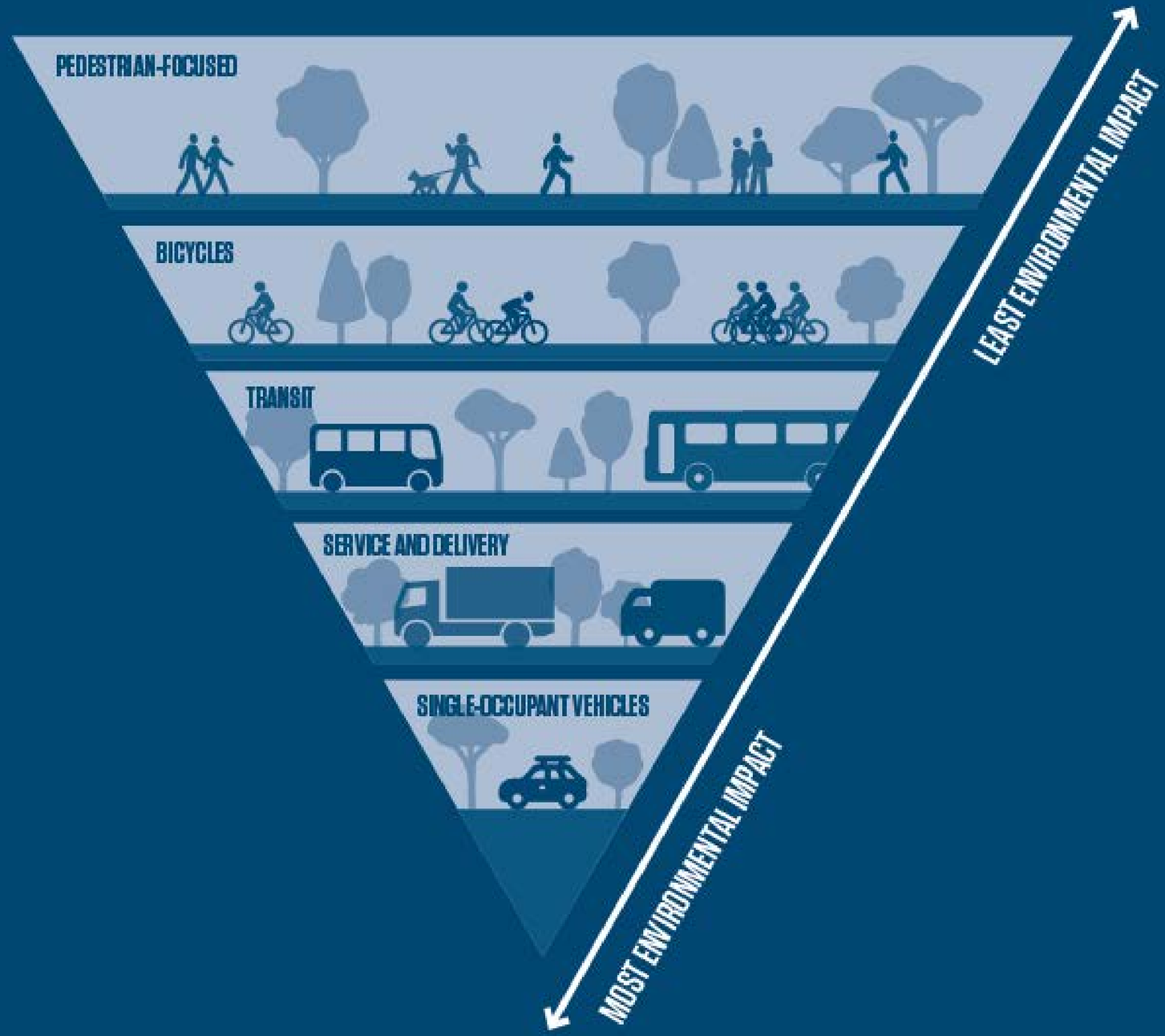
Campus Mobility

- Pedestrian safety
- Bicycle and transit infrastructure
- Single- and multi-occupant vehicles
- How people commute to and from campus
- How people navigate their daily campus activities

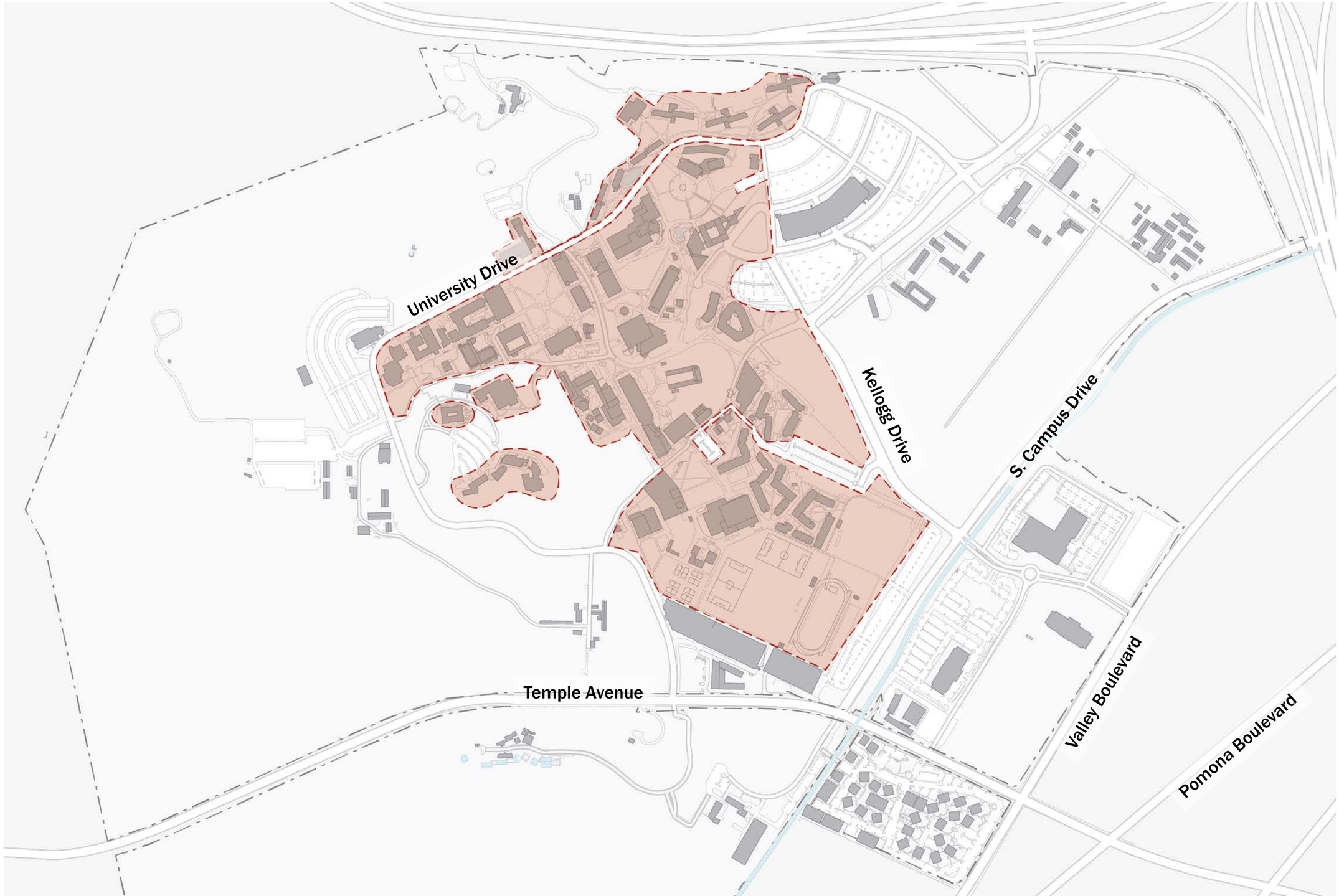
The Climate Action Plan Goals for Mobility:

1. Reduce student commuting population from 88% to 73%
2. Reduce faculty and staff commuting by 10%
3. 40% of population uses alternatives to a Single Occupancy Vehicles to commute

Mobility and the Environment



Pedestrian Priority Zone

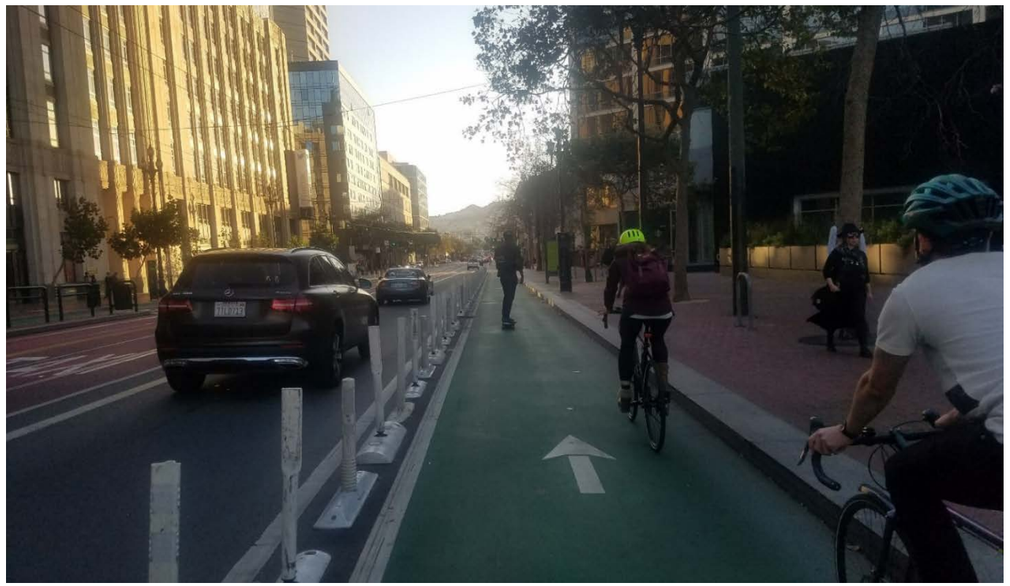


Types of Bicycle Lanes

Class I: Multiuse Path– Shared path between bikes and pedestrians

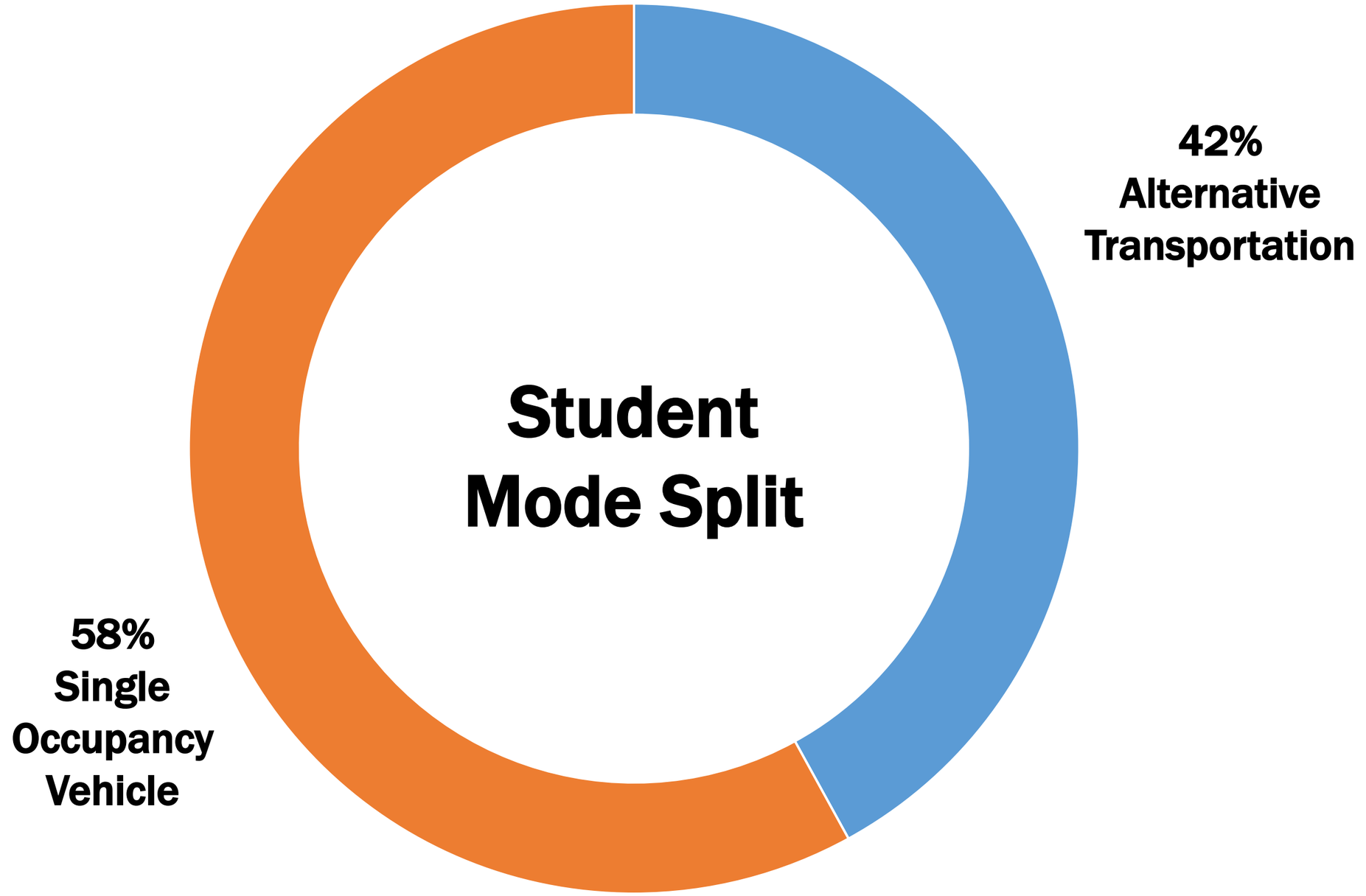
Class II: Bicycle Lane – Separated Lane on Roadway

Class III: Shared Lane– Shared path between bike and cars



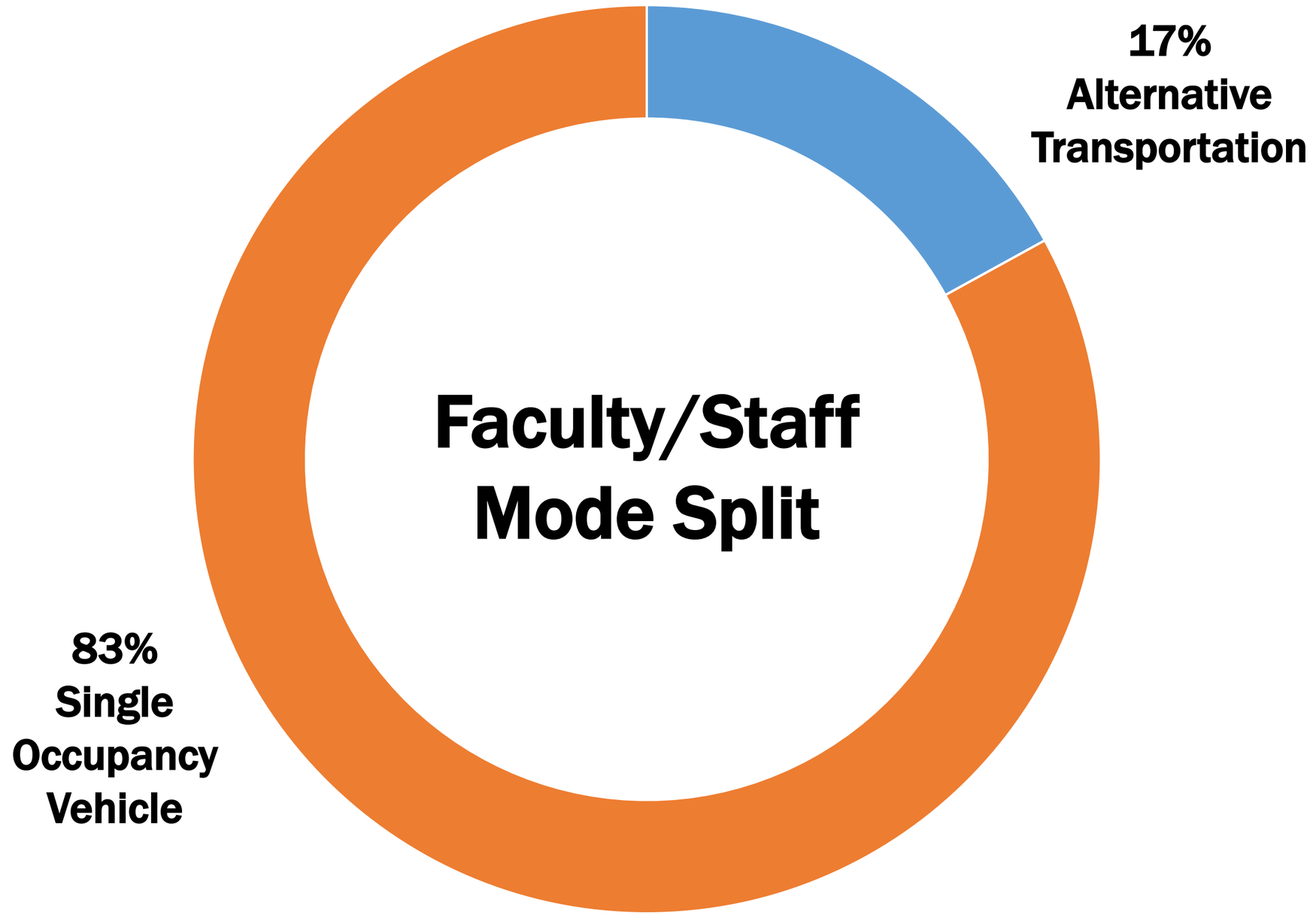
Class IV: Cycle Track– Separated Lane on Roadway with physical separation (curb, landscape, pilons, etc.)

Mode Split – More Sustainable Options



2016 DATA FROM AASHE STARS

Mode Split – More Sustainable Options



2016 DATA FROM AASHE STARS

What barriers keep you from using a more sustainable commuting option?

What incentives might encourage you to use a more sustainable commuting option?

Campus Mobility Comments

Additional Comments

Disability services – address needs of students, faculty, and staff ADA spaces as we push parking toward the perimeter of the campus

Bike routes have to tie to city (off-campus) routes in order to be successful

Improving students mode of travel –
Closer housing available to the campus
Expanded shuttle schedule
Lack of regional transit – ie. public transit would take 2.5 hours to get to campus

Great desire by students, faculty, and staff for the Foothills Transit Silver Streak to stop in the vicinity of, or on, the campus.

Campus users who do not drive to campus do not have a way to run errands, pick up children, etc. once they get to campus – maybe a car service could be available for these situations, further encouraging individuals to leave their cars at home

Expand partnerships with regional transit providers for affordable, seamless public transportation

Built Environment and Site Design

- Campus standards that ensure new construction and renovations are held to consistent requirements
- Creates a unified campus aesthetic regardless of when or by whom a project is developed

Frameworks & Tools

U.S. GREEN BUILDING COUNCIL
LEED
USGBC
TM

stars
a program of aashe

Parksmart

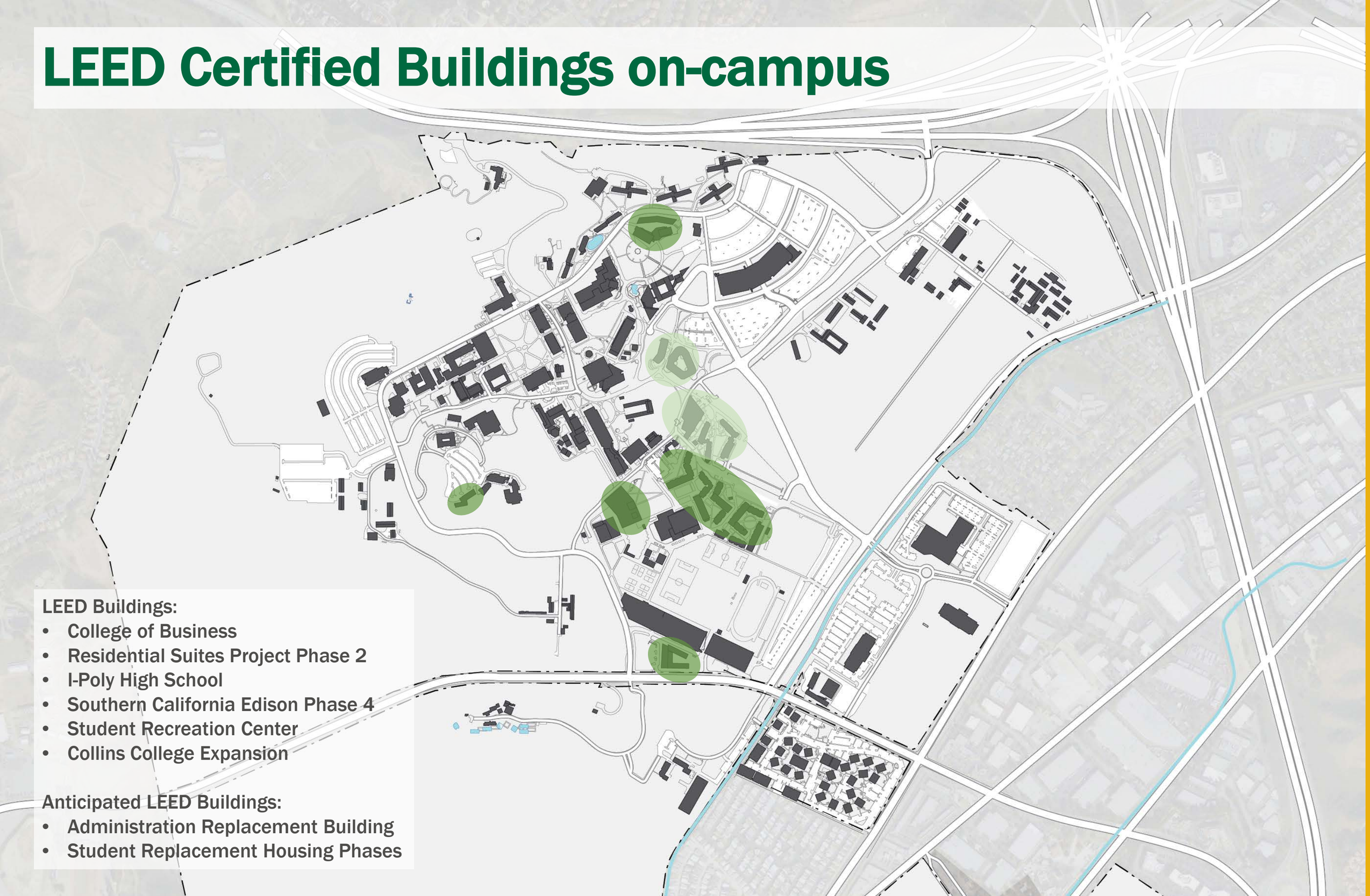
POWERSAVE CAMPUS
Greening the Campus, Building the Workforce
AN ALLIANCE TO SAVE ENERGY PROGRAM

THE PRINCETON REVIEW
GUIDE TO GREEN SCHOOLS

INTERNATIONAL WELL BUILDING INSTITUTE
WELL
TM

LIVING BUILDING CHALLENGE SM

LEED Certified Buildings on-campus



LEED Buildings:

- College of Business
- Residential Suites Project Phase 2
- I-Poly High School
- Southern California Edison Phase 4
- Student Recreation Center
- Collins College Expansion

Anticipated LEED Buildings:

- Administration Replacement Building
- Student Replacement Housing Phases

Resiliency

What are the major threats that CPP faces?

- Earthquake
- Fire
- Drought
- Mudslide
- Extreme Heat
- Infrastructure

How can they be addressed on campus?

Building Materials

- 80,000 Chemicals
- No Regulations/ Transparency
- Lots of data showing serious health affects

Building Materials

- Environmental Product Declarations
- Health Product Declarations
- Red List Free
- Cradle to Cradle

High Level Design Standards and Guidelines

INDOOR WATER USE

New construction and major renovations should demonstrate a reduction in indoor water usage by a minimum of 35% from a baseline.

Plumbing Fixtures

All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible should be EPA WaterSense labeled. Recommended flush and flow rates are:

Water Closet	1.28 gpf
Urinal	0.35 gpm or waterless
Public lav faucet	0.5 gpm
Kitchen faucet	1.5 gpm
Showerhead	1.75 gpm
Prerinse Spray Valves	1.3 gpm

OVMC should consider low-flow and/or dual flush water closets for all buildings, ultra low-flow urinals for acute care and waterless urinals for MOB's. Lavatory faucets should be sensor type with automatic on/off capabilities and consideration should be given to solar or turbine powered options. It is also recommended to limit the number of unisex single occupancy toilet rooms as these are typically fitted with water closets only which drives up the water usage for men who would typically use urinals.

Cooling Towers

The Co-gen Plant current system operates at full capacity at all times which requires a tremendous amount of water for cooling that equipment] Replacement of the co-gen facility would result in a tremendous amount of water savings for OVMC, however, because that system is not individually metered, the actual amount of water use for that system is not quantified. Cooling towers may also be cooled using recycled greywater which would reduce demand on municipal supplies while reducing operating costs.

Water Metering

Currently there are only a few water meters on campus but it is vital to be able to track water consumption and identify opportunities for additional savings. In addition to whole building water metering (for each individual building), it is recommended that the following subsystems be considered for metering as applicable:

- Irrigation
- Indoor plumbing fixtures and fittings
- Domestic hot water
- Boilers
- Process water
- Reclaimed water

High Level Design Standards and Guidelines

- Open Space
- Plumbing Fixture flush/ flow rates
- Net Zero Energy
- Healthy Materials
- Daylight & Views
- Acoustics
- Ventilation
- Stormwater
- Pedestrian/ Bicycle networks
- EV Charging Stations

Built Environment and Site Design Comments

<u>Additional Comments</u>

Living Building Challenge (LBC) – students from the ASI Student Government will be attending a conference and research if the LBC might be a good fit for the future Bronco Student Center rehabilitation project

Partnership with groups such as Cradle to Cradle can connect alumni back to the school, and provide a valuable resources to the students and campus.

Guidelines and standards that included in the master plan will reference back to building codes that are related to the topics.

Breaktime!

See you in 15-mins

Waste Management

- The total volume of campus's material waste stream, how that total volume is minimized, and how what's left is diverted from landfill
    - Recyclables
    - Hazardous Materials
    - Construction Waste
    - Organic Materials
    - Durable Goods

Waste Reduction vs. Waste Diversion

Waste Reduction

Less Stuff

- Avoid Single Use Items such as Disposable Plastic Containers, Coffee Cups, Plastic Flatware
- Print Double Sided
- Buy reused items
- Rehabbing Existing Buildings

Waste Diversion

Avoid the Landfill

- Recycling
- Composting
- Reusing or Fixing
- Divert Construction Waste

Net Zero Waste - 90% Diversion of ALL WASTE

0 + 0 + 0 + 0 + 0 = 0

Organic Materials

Recyclables

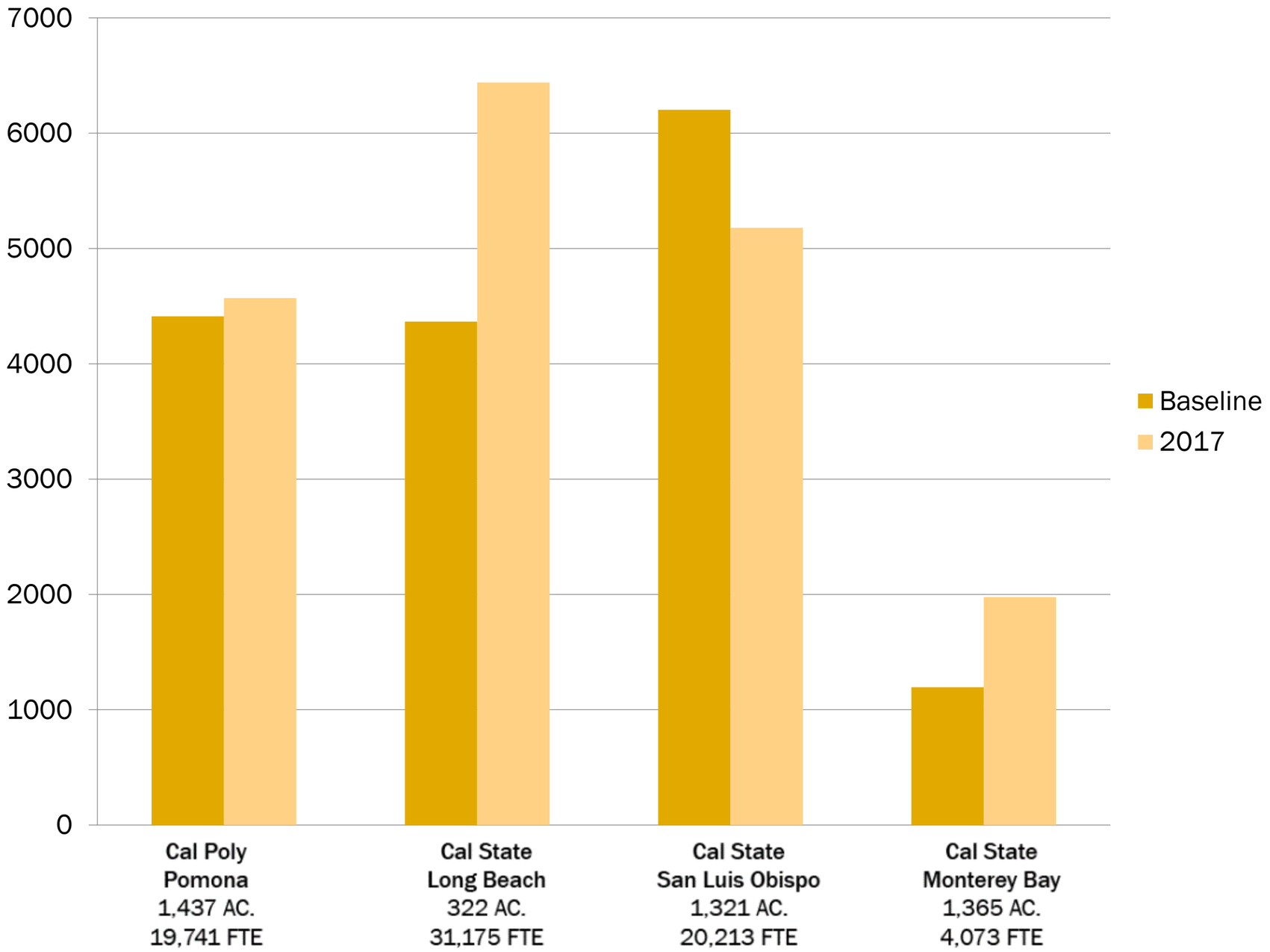
Durable Goods

Construction Waste

Hazardous Materials

NET ZERO WASTE

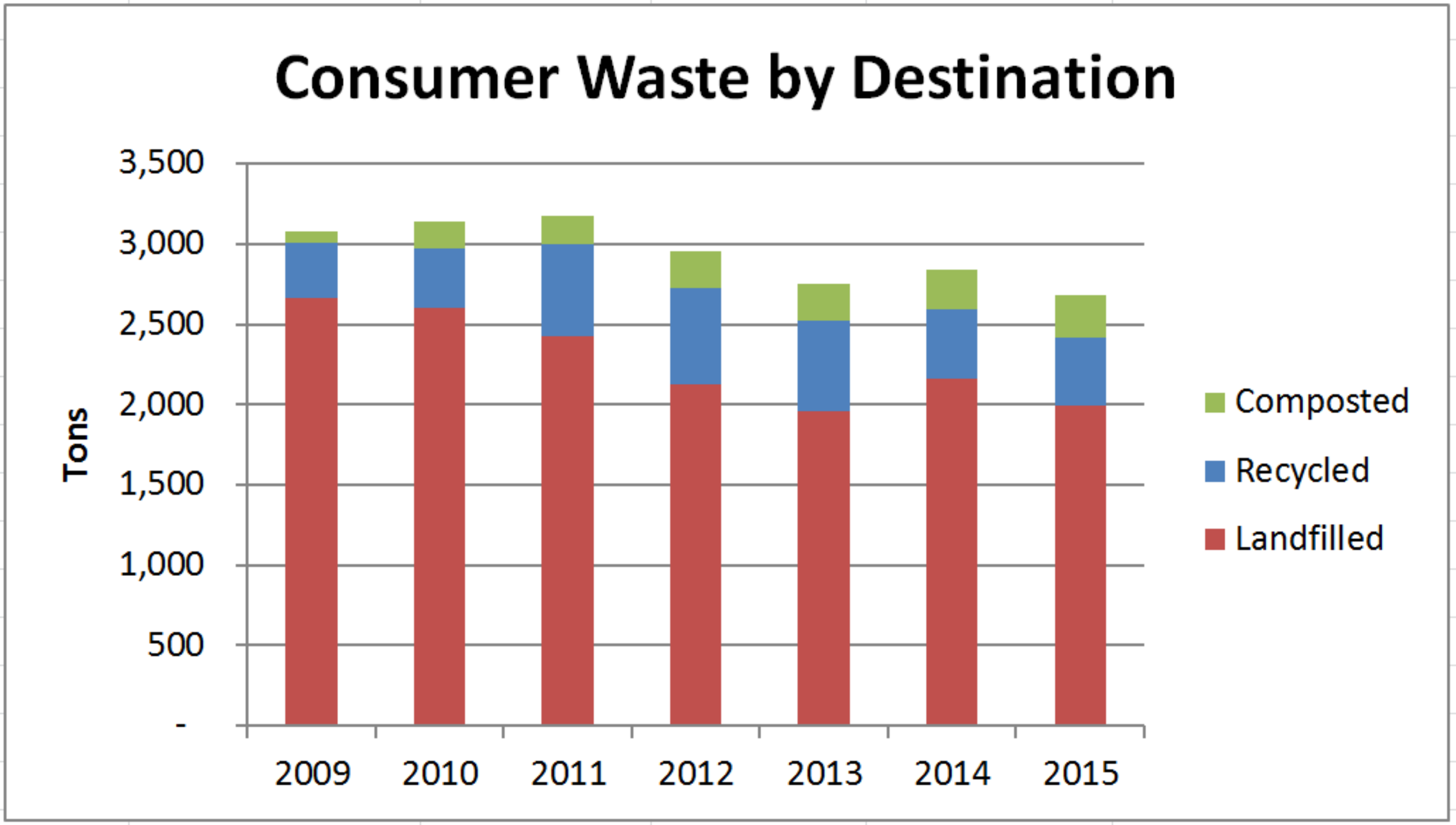
Waste Reduction



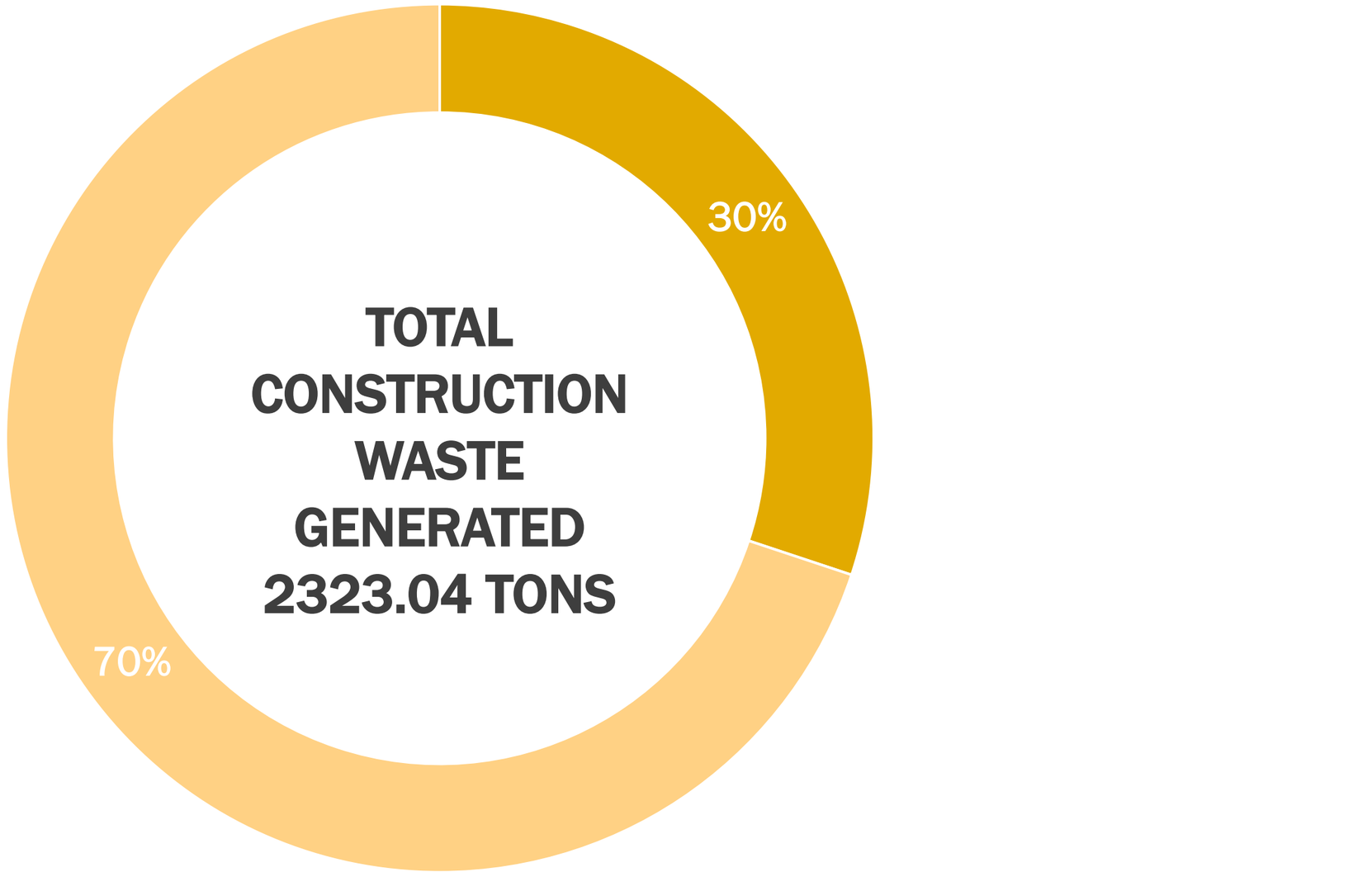
The Climate Action Plan Goals for Waste Reduction:

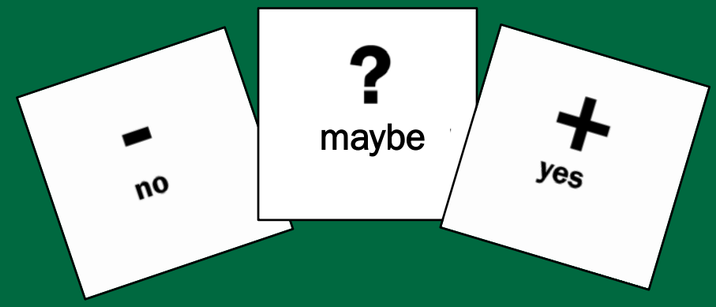
50% reduction in solid waste.

How are we doing?

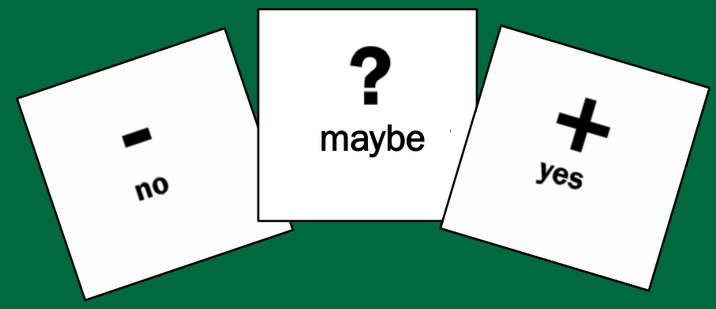


Construction Waste Generated and Diverted (2017)

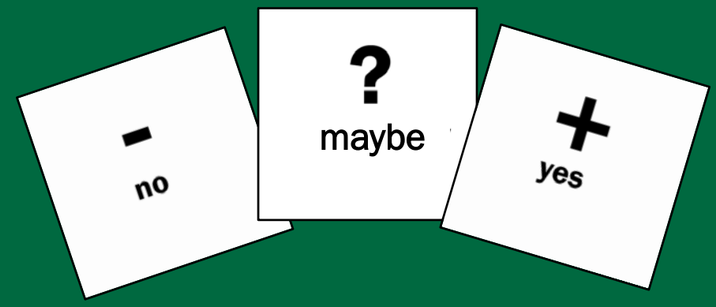




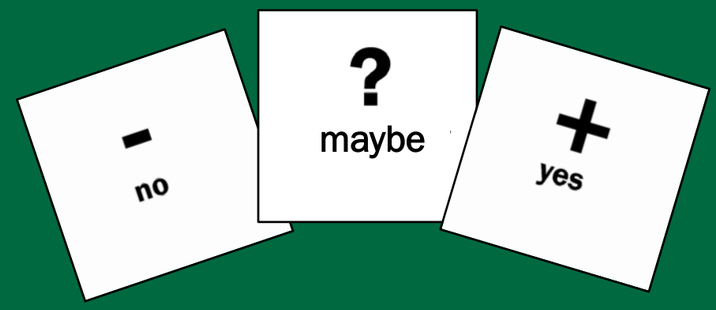
Multi-Stream Recycling



Compostable food containers



Campus-wide food-recycling program



What do you see as the barriers to reducing waste?

Waste Management Comments

Additional Comments

A good example happening now is that the campus brewery gives spent grain to beef unit

During move out, there is no pick up or donation station available – students are working to create a program or partnership.

"Leave one take one" program before or during move out.

Success in waste management comes from consistent and accurate tracking.

Waste Audits are a good place to start understanding what the needs are – some individual units have done them.

Recycling – single stream vs. multi stream
There are advantages to both. The relationship with the county indicated single stream is working.

Some on-campus single use food containers have changed to compostable, but many campus users did not know this.

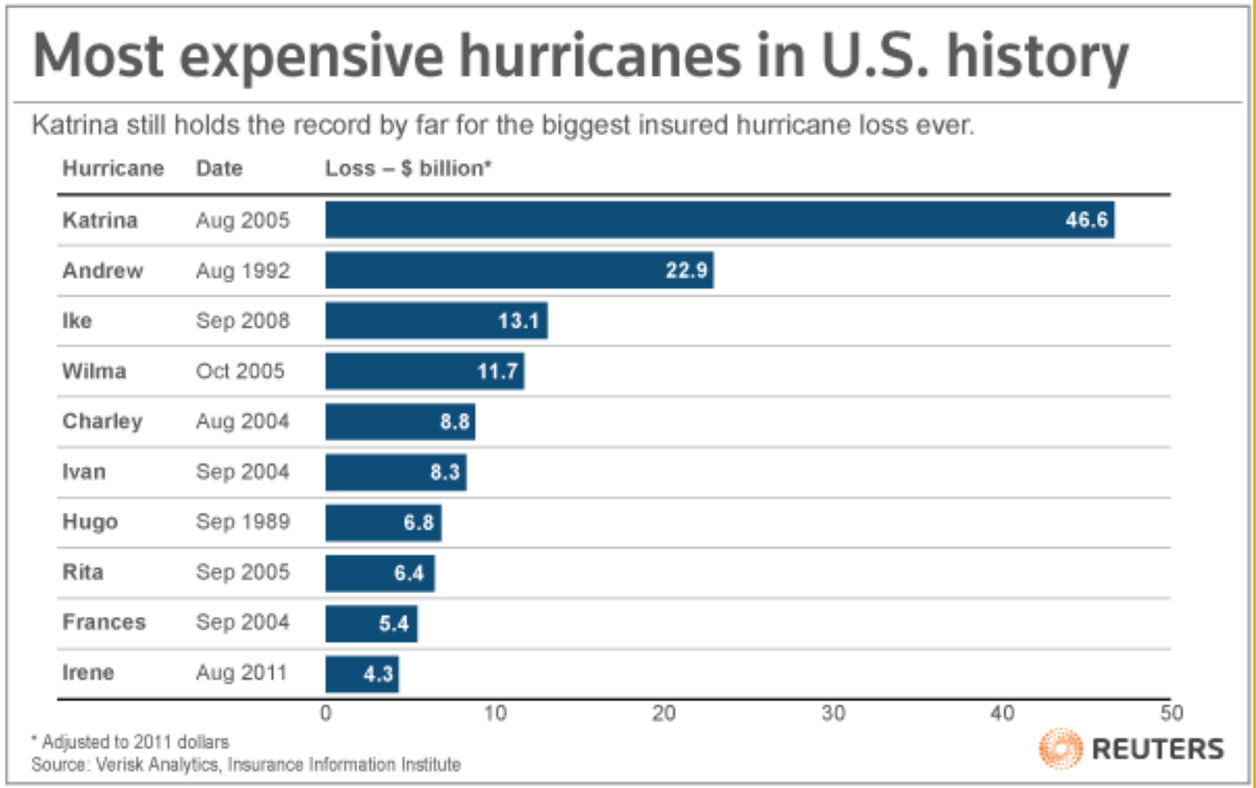
Lyle Center has provided waste audits to multiple units on the campus. ie. Collins School, Athletics, etc.

Social Sustainability

- Equity, diversity, and inclusion
- Health and wellness
- Connecting to leadership
- Community service

Sustainability – Three Pillars

Hurricane Katrina



Environmental

Economic

Sustainability – Three Pillars

Hurricane Katrina

Social

Diversity Initiatives ask:

“How can we create more access for diverse and non-traditional students to attend our University?”

Sustainability Initiatives ask:

“How can we get more of our students to use public transit to access the campus?”

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Both of these questions had the same solution.

Transportation is an access issue.

Diversity Initiatives ask:

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Sustainability Initiatives ask:

“How can we get more of our students to use public transit to access the campus?”

Both of these questions had the same solution.

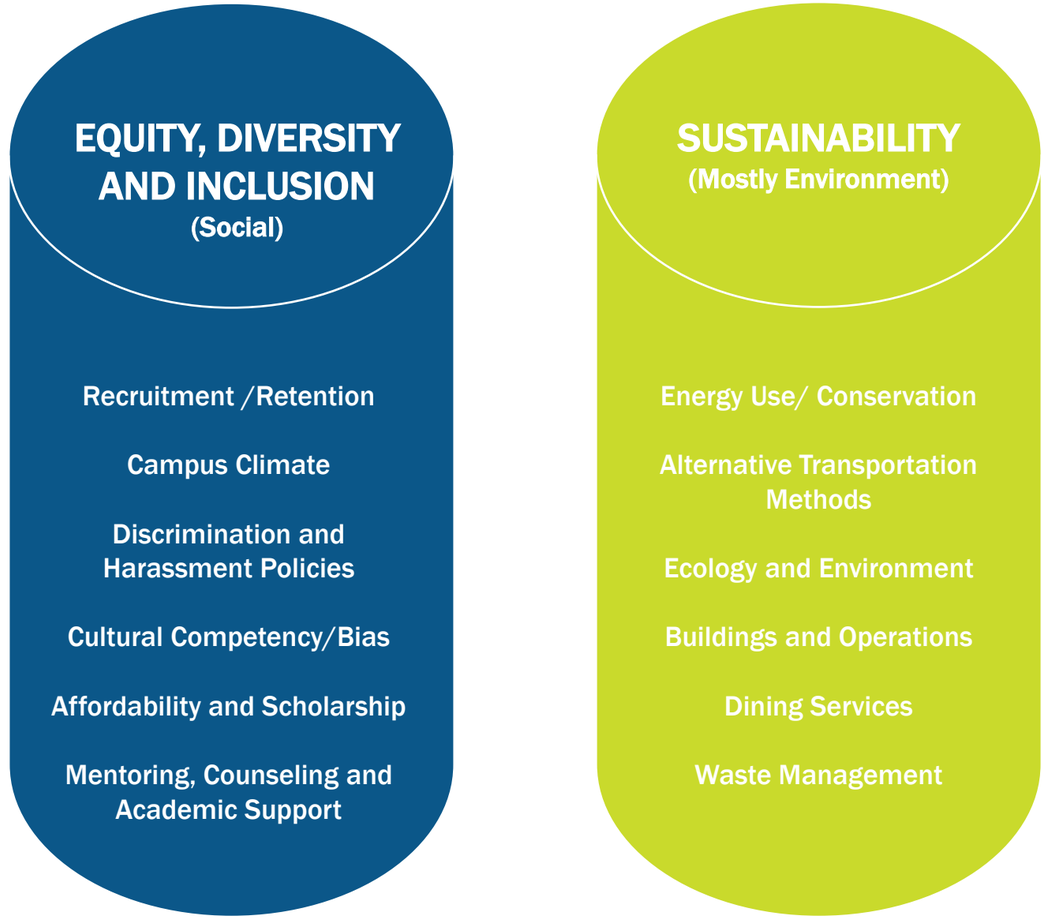
Social Sustainability within Higher Ed

At many institutions, Social Sustainability is an elusive concept and encompasses a broad range of ideas, attitudes, and initiatives.

- Few universities (so far) are defining Social Sustainability

- Generally is not integrated into Sustainability practices

- Most universities have established policy driven techniques in regards to Diversity, Equity, and Inclusion



▲ **Typical Structure of Sustainability Initiatives within Higher Education**

Components of Social Sustainability

Equity, Diversity, and Inclusion

Promotes equal access and opportunity to all populations (today and tomorrow).

Strives to mitigate/address social justice issues.

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Representation in decision-making on campus.

To create an equitable and just campus, there needs to be many voices at the table.

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External Engagement

Builds social capital and civic responsibility as an individual and as an institution.

Contributes to Community Wellness.

Ties to Service Learning, Learning by Doing.

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Health and Wellness

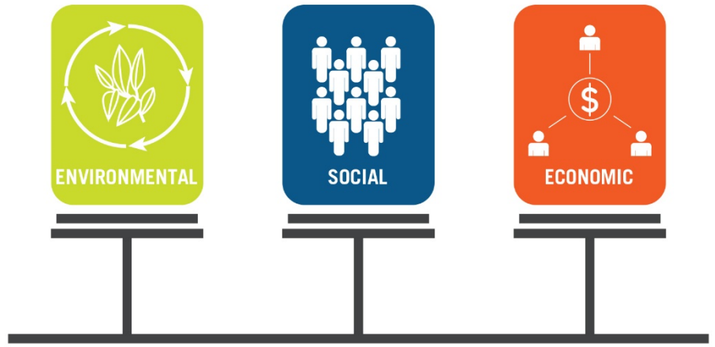
The vitality of a University depends on the health of its people.

Programs strive to enhance the health, productivity, and quality of life of campus users.

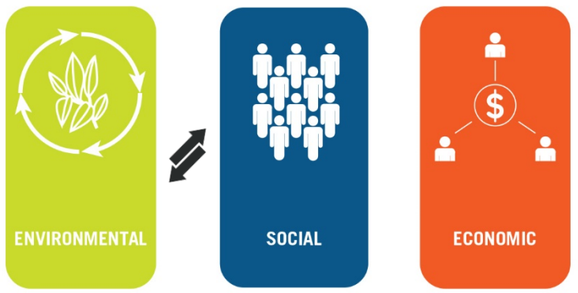
Components of Social Sustainability

SILO

BALANCE



REACTIVE



INTERWOVEN

Health & Wellness

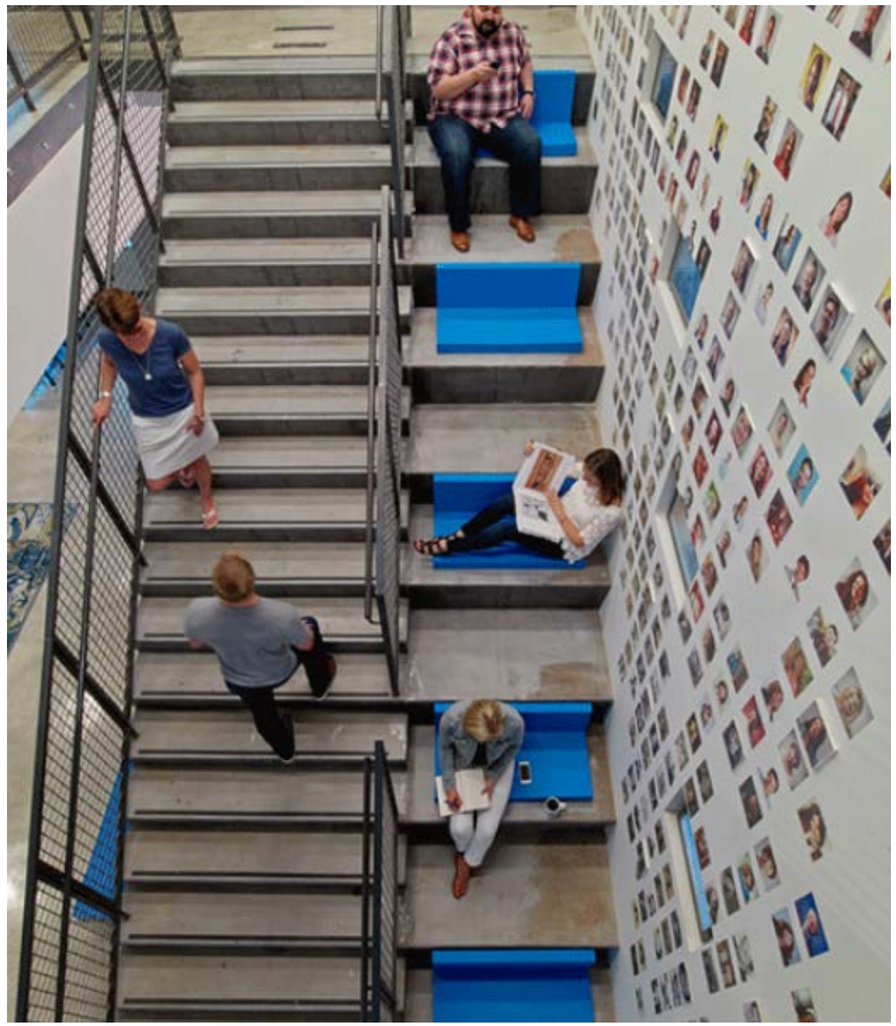
Indoor Space

1. Healthy materials for new buildings and renovations
2. Centralize stairwells
3. Maximize daylight where possible
4. Visually interesting design – biophilia?

Outdoor Space

1. Comfortable, inviting outdoor space
2. Shaded walkways
3. Bicycle network through campus
4. Visually interesting design
5. Interactive landscaping
6. Public art

How can the campus built environment facilitate health and wellness?



What makes you feel most healthy?

Is that supported on this campus?

Social Sustainability Comments

<u>Additional Comments</u>

“What makes you feel most healthy?”
Walking

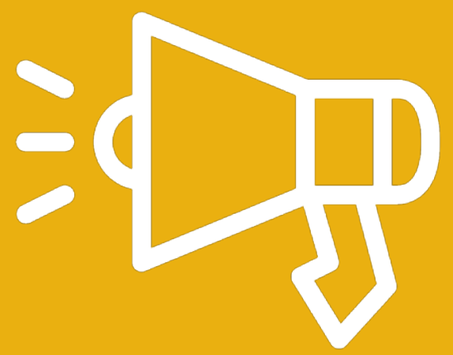
“Is that supported on the campus?”
Yes

“What makes you feel most healthy?”
Biking

“Is that supported on the campus?”
No

Outreach and Engagement

- Target audiences of events and information
- What events and information are made available, in what media, and how frequently
- Where events are held
- What communities those activities serve



Programs, Clubs, and Organizations

Sustainability Organizations on Campus

The Green Team	http://cppthegreenteam.weebly.com/
Institute of Transportation Engineers	http://itecpp.wordpress.com/
Lyle Center for Regenerative Studies	http://www.cpp.edu/~crs/
Food Justice Club	https://calpolypomona.collegiatelink.net/organization/foodjustice
American Planning Student Association (APSA)	http://apsacpp.weebly.com/
Solar Boat	http://www.cpp.edu/~engineering/research/facilities/solarboat.shtml
PowerSave Campus	http://powersavecampuscpp.weebly.com/

Sustainability Organizations Off Campus

Pomona Valley Bicycle Coalition	http://pvbike.wordpress.com/2012/10/07/ciclavia-is-coming-to-claremont-and-pomona/	Pomona Valley Bicycle Coalition
Bike San Gabriel Valley	http://www.bikesgv.org/	Bike San Gabriel Valley
Riding Green	http://www.ridinggreenla.com/	Riding Green
Sustainable Claremont	http://www.sustainableclaremont.com/	Sustainable Claremont
Incredible Edible Community Garden	http://www.iecgarden.org/	The Incredible Edible Community Garden
Tutor Pomona	-	Tutor Pomona

Campaign – Bronco Energy Competition

HOW CAN YOU CONSERVE?

UNPLUG VAMPIRE LOADS

(aka phantom loads) Chargers & game consoles draw energy when not used if left plugged in

TURN OFF THE LIGHTS

A must when leaving your room & try to use natural sunlight or common areas for light

SHORTEN YOUR SHOWER

Taking 1 or 2 less minutes in the shower can save up to 700 gallons/month

SUBMIT A WORK ORDER

Notice a leak or faulty light? Fill out a work order to get the problem fixed

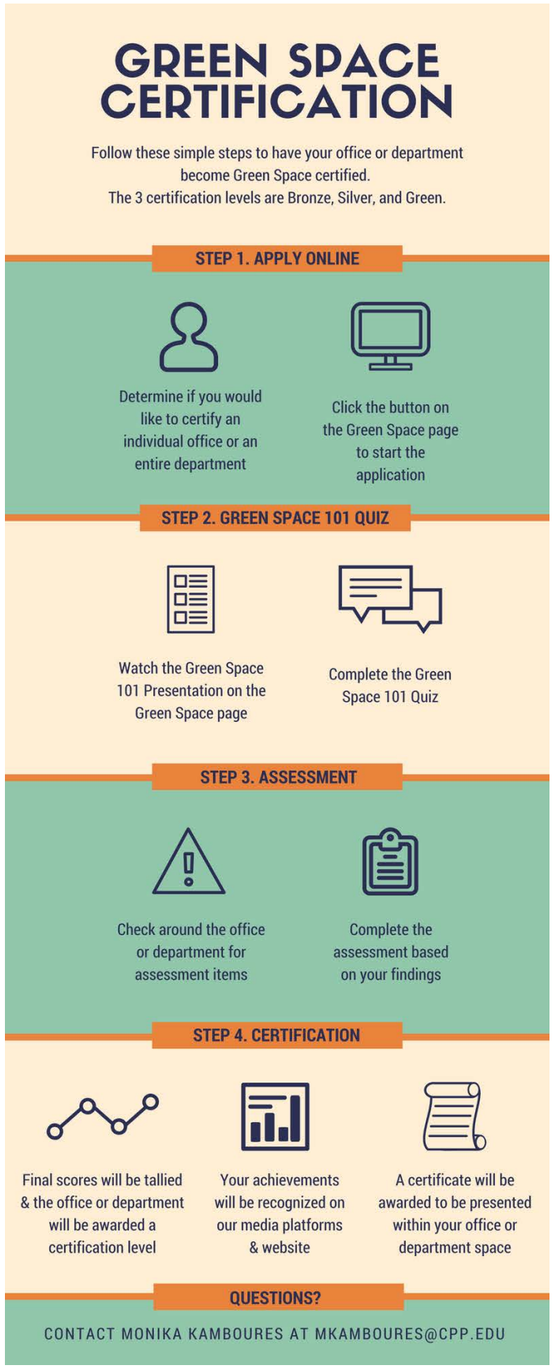
HOW IT WORKS

Technical assistants from the CPP Office of Sustainability frequently read the electricity and water meters attached to each building. Readings are entered into a program that calculates percent change versus baseline data. Baseline data is based on readings taken prior to competition starting.

A CULTURE OF SUSTAINABILITY

This competition hopes to make turning off the light when not in use or taking shorter showers the norm and a habit of participants. This generation is the leader of protecting tomorrow and the years to come. Sustainability is truly in our hands.

Green Space - Office and Department Certifications



green|SPACE
Sustainability Assessment + Certification

Green Space is a simple sustainability Assessment + Certification Program
for Offices and Departments on the Cal Poly Pomona campus

APPLY FOR GREEN SPACE CERTIFICATION

Top 50 Green College

Cal Poly Pomona was ranked #48 in the Princeton Review's Top 50 Green Colleges

6 LEED Certified Buildings

Green Space 101 Presentation

Watch this presentation to learn more about the Green Space Certification Program and how your Office or Department can showcase your outstanding sustainability efforts.

Educational and Interpretive Signage

Ties to Wellness – Mile Markers

Ties to Public Education

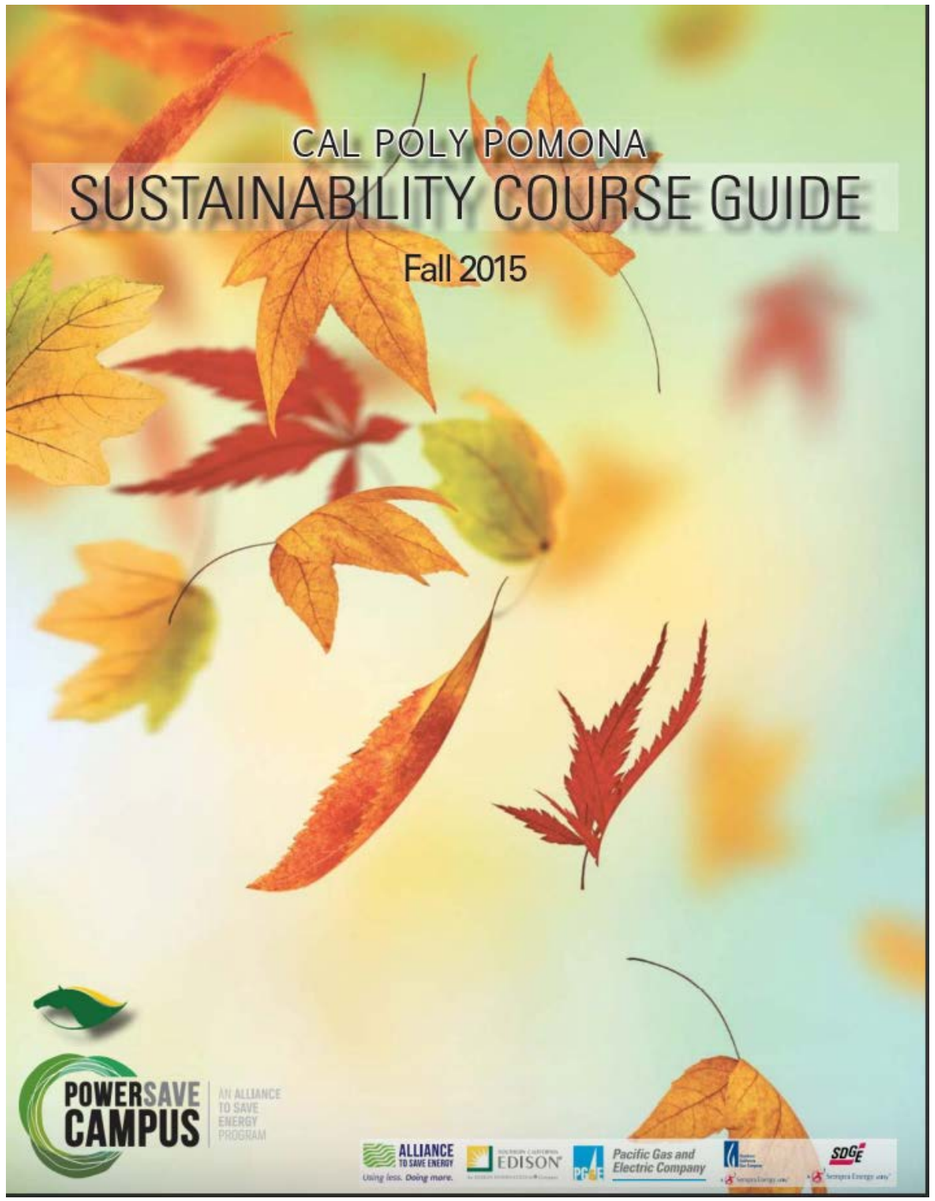
Educational and Interpretive Signage

Business Administration Courtyard

Instruction and Innovation

- Who is teaching and researching on sustainability and related subjects
- What is taught and researched
- How education is delivered and research conducted
- How campus behaves as a living laboratory

Academics



3,018 Undergraduate Courses, **143** Graduate Courses

4% of courses include a sustainability offering

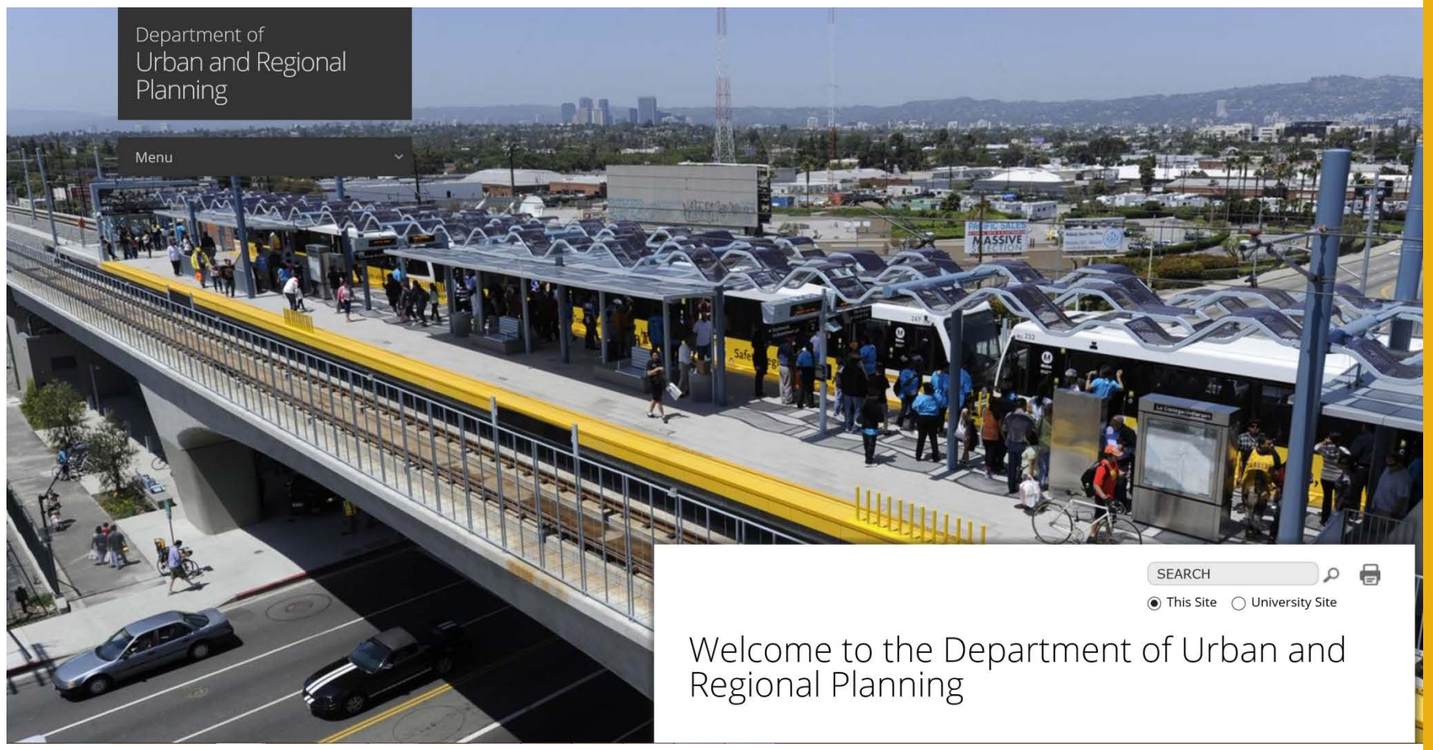
41 Academic Departments

61.7% have sustainable course offerings

Academics

Sustainability focused degree programs:

- Urban & Regional Planning
- Architecture
- Environmental Biology
- Landscape Architecture
- Civil Engineering
- Regenerative Studies
- Others?



Campus as a Living Lab

‘Campus as a Living Lab’ at Work

To date, 57 CALL projects have been developed, including two learning communities. Here are some examples:

Restoration Ecology
Sonoma State

Students collected data about the ecology around Copeland Creek, which runs through the campus, to help inform future restoration of the area.

Re-use of Green/Food Waste
CSU East Bay

This project assessed the feasibility of restoring the Hayward campus using green/food-waste-derived compost and other campus resources.

Building Energy Analysis
CSU Northridge

Students in civil engineering studied how ecologically efficient CSUN’s buildings are and identified ways to make them more efficient.

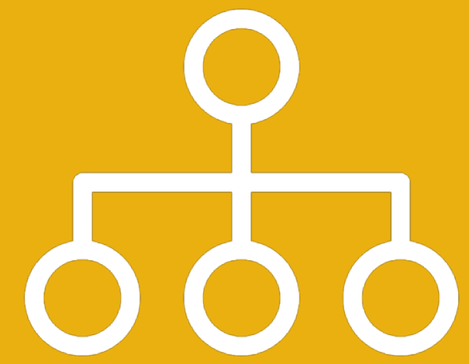
To Trash or Not to Trash
Cal Poly San Luis Obispo

Theatre and dance students looked at the waste created by theatre set and architectural model construction to make these processes more sustainable.

What are others academic programs or initiatives related to sustainability?

Administrative Support

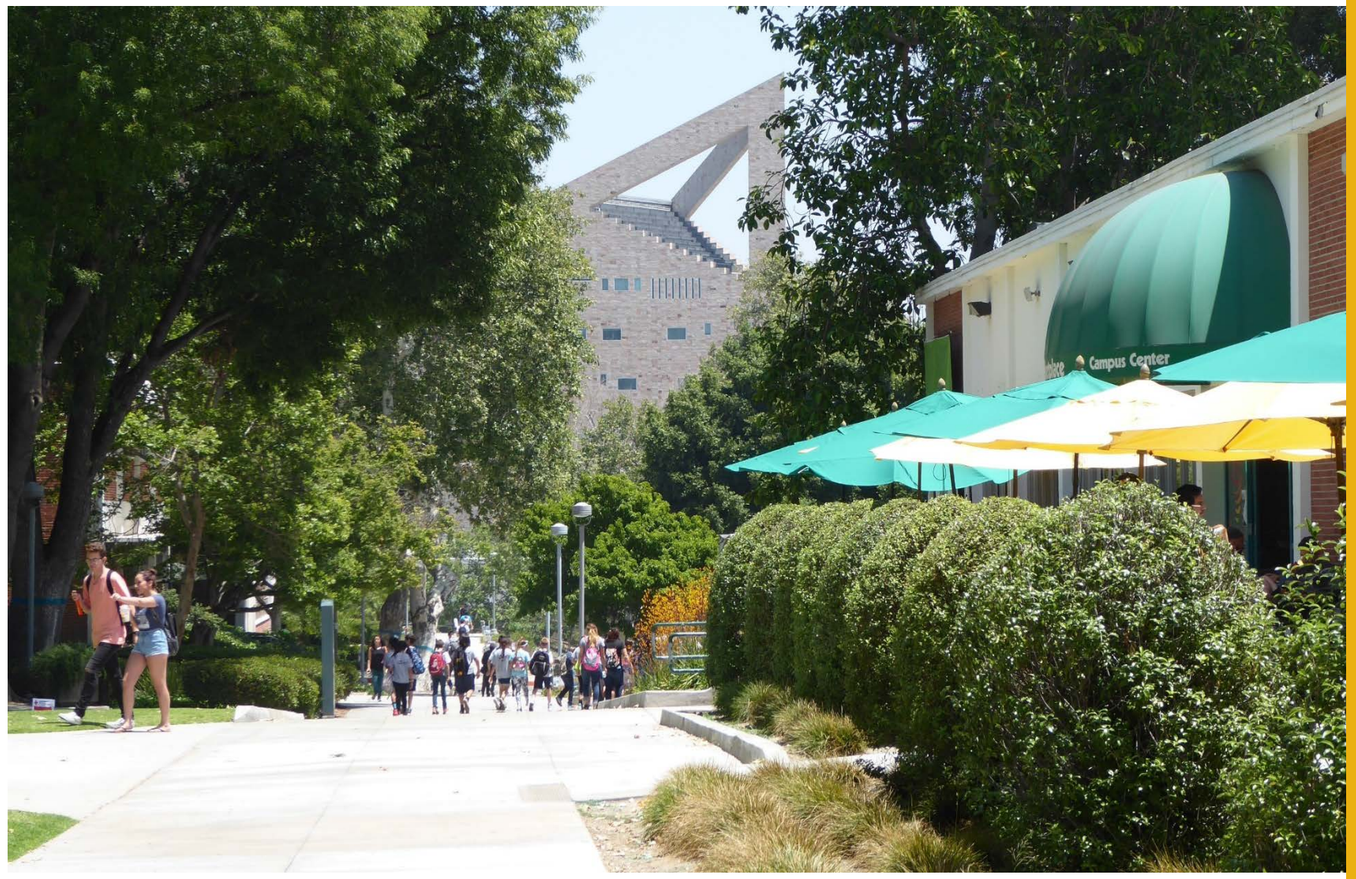
- Who is responsible for campus sustainability efforts
- What goods and services Cal Poly Pomona purchases
- From whom those purchases are made
- How campus sustainability efforts are reported out to the CPP community and beyond
- Funding for sustainability efforts



The Power of Purchasing

Inclusive and Local Purchasing:
Support for local businesses, and women and minority owned businesses

Business Guidelines:
Set minimum expectations about the social and environmental responsibility of business partners.



Equipment and Supplies:

- Green Cleaning Products
- Electronics (EPEAT)
- Paper

Green Initiative Fund

The Green Initiative Fund

The Green Initiative Fund (TGIF)

The Green Initiative Fund seeks to enable and empower Cal Poly Pomona students to take an active leadership role in making sustainable practices that would encourage environmental awareness and increase sustainability on campus. These projects must be involved with an ASI affiliated student organization on campus.

What projects can be funded?

Projects that encourage educational campaigns, workshops, research, projects, entrepreneurial ventures, conceptual pieces, art shows, zero-waste events, and other related to sustainability.

- Campus wide composting program
- Solar panel installations
- Bike share programs
- Healthier food options
- Waterless urinals
- Recycling
- Organic edible gardens
- Educational programs and campaigns

Questions?

See you next time!

AYERS
SAINT
GROSS