

# UC Berkeley Resilient Water Plan 2023

WaterReuse Northern California Chapter

March 8, 2024



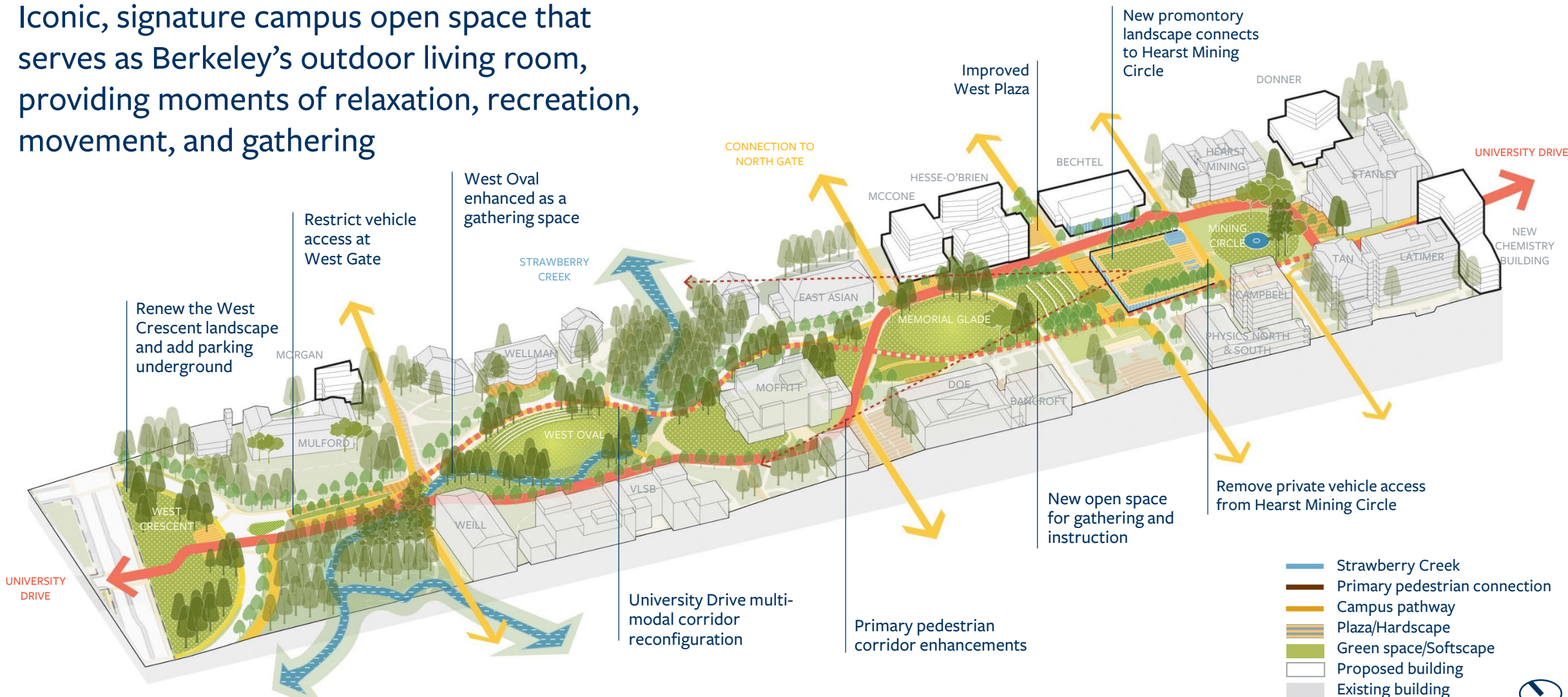
# Resilient Water Plan

- Companion to the Campus Master Plan
  - Develops on the Themes and frameworks from the Campus Master Plan
    - Celebrate and enhance the Glade as the central greenspace
    - Elevate Strawberry creek as a resilient and ecological connector
- Analysis based on future population and GSF assumptions established in the 2021 Long Range Development Plan (LRDP)



# Celebrate and enhance the Glade as the central green space

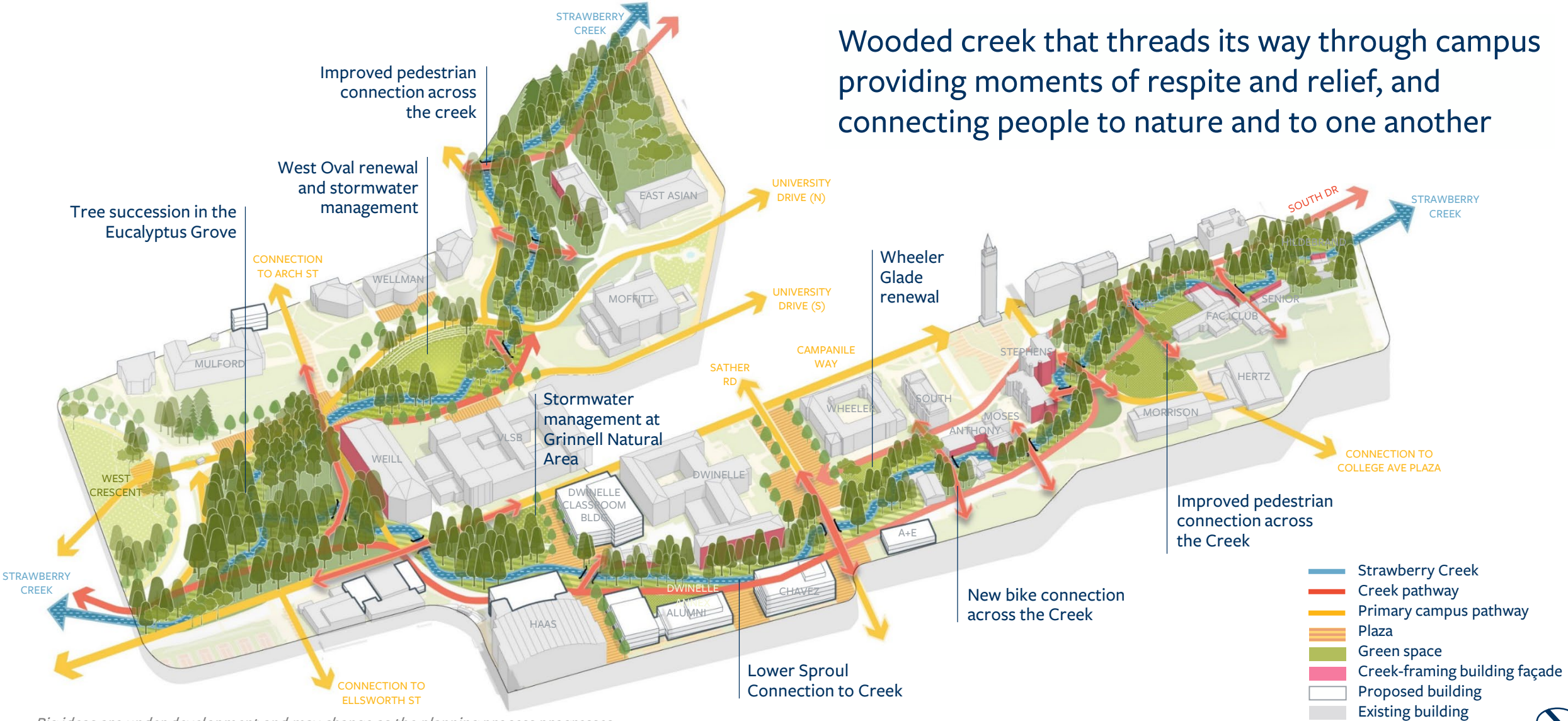
Iconic, signature campus open space that serves as Berkeley's outdoor living room, providing moments of relaxation, recreation, movement, and gathering



Big ideas are under development and may change as the planning process progresses.

# Elevate Strawberry Creek as a resilient ecological and people connector

Wooded creek that threads its way through campus providing moments of respite and relief, and connecting people to nature and to one another



Big ideas are under development and may change as the planning process progresses.

# Resilient Water Plan Goals

## Resilient Water Plan

### Sustainable Water

Identify short- and long-term strategies for reducing UC Berkeley's growth-adjusted potable water use and improving campus drought resilience:

### Stormwater & Green Infrastructure

Develop a proactive, flexible approach to campus-wide stormwater management that allows the campus to implement stormwater projects more efficiently relative to impact and cost.

# Sustainable Water

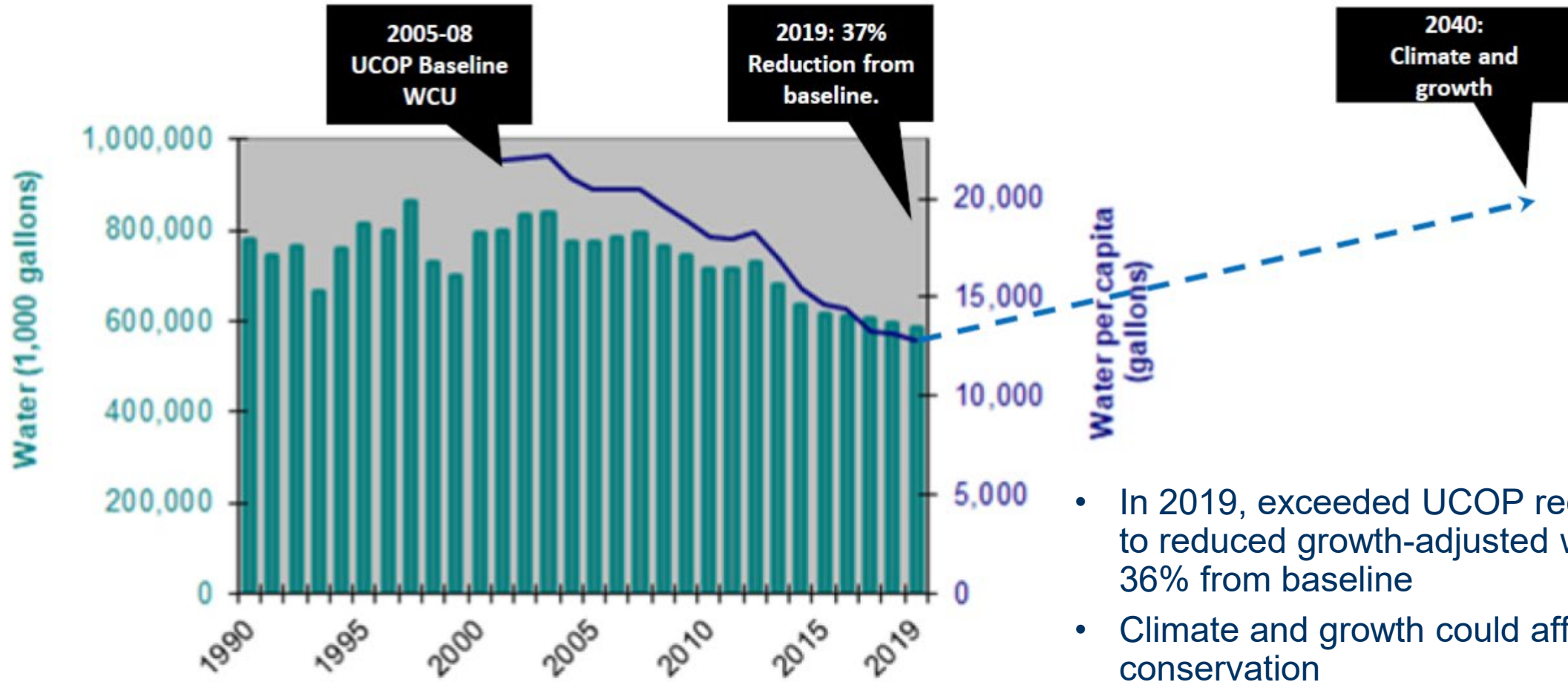
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# Sustainable Water Goals

- Conservation and Efficiency Opportunities
  - Identify high water users
  - Recommend WUI and/or LEED water use targets for new construction and large renovation projects
- Evaluate Water Reuse Opportunities
  - Evaluate water reuse opportunities
  - Identify potential location for a centralized water reuse facility and non-potable water distribution system to feed major demand points
  - Project evaluation for feasibility of greywater reuse for new construction
- Living Lab
  - Identify potential opportunities for the campus to serve as a living laboratory for sustainable water projects



# Campus Water Conservation



- In 2019, exceeded UCOP requirements to reduced growth-adjusted water use by 36% from baseline
- Climate and growth could affect future conservation

# How do we respond?

- Continue conservation efforts
- Design High performance buildings
- Serve non-potable demands with recycled water
  - Irrigation
  - Cooling
  - Toilet Flushing



# Water Conservation Strategy

## Identify High Water Users

- Lab equipment
- Cooling towers
- Mechanical equipment

## Set Standards & Guidelines

- Efficiency standards for equipment replacement
- Building performance standards: LEED Gold
- Water use intensity targets

## Incentivize Users

- Financial incentives for early equipment replacement
- Bundle improvements with energy projects and building renovations
- Water use awareness and education

# Water Reuse Strategy

Identify Reuse Opportunities

Identify non-potable demands and alternative water supplies, both existing and over LRDP/CMP planning horizon

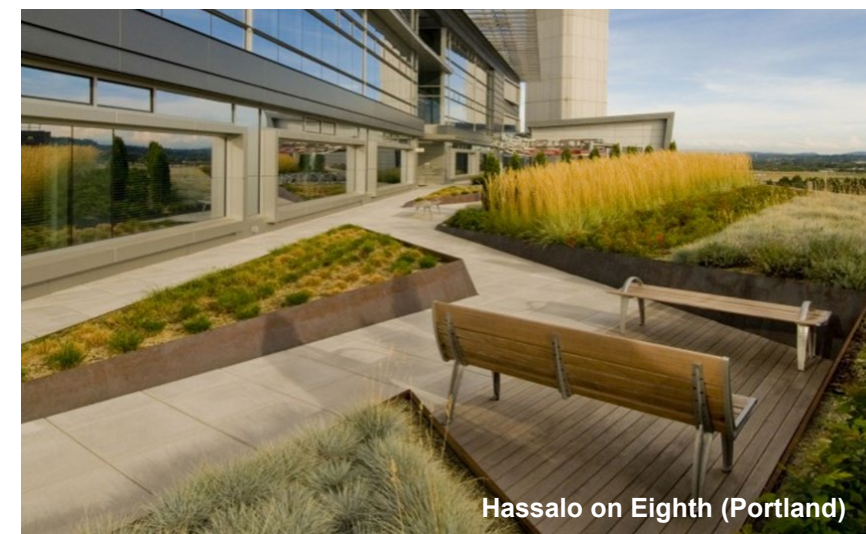
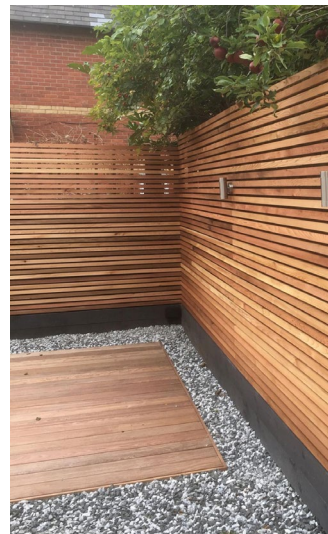
Set Standards & Guidelines

Set Standards and Guidelines to promote a future-ready campus that can maximize water reuse opportunities

Potential Project

Water Reuse Facility

# Potential Water Reuse Facility



# Water Reuse Facility Siting

## 1. Site

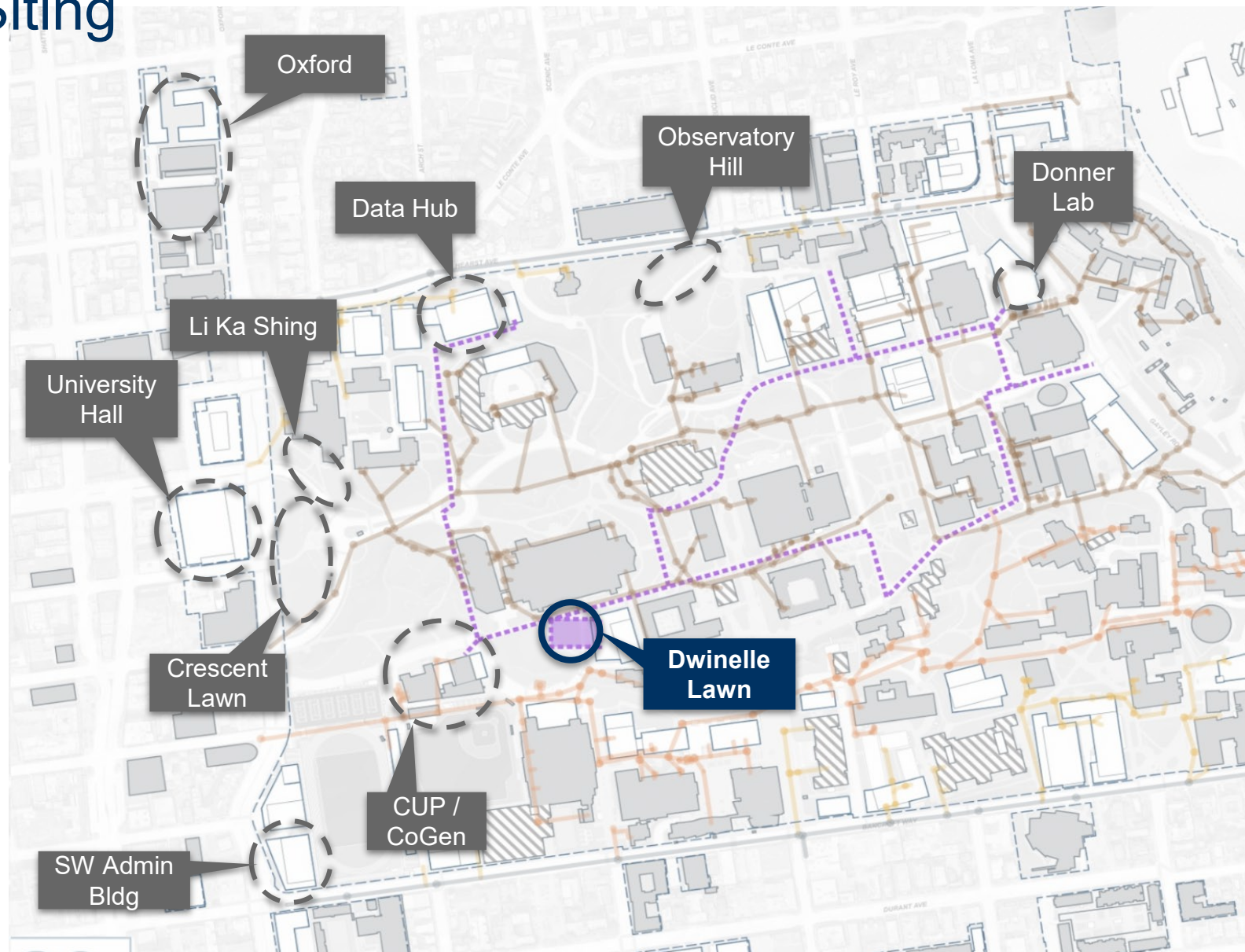
- a. Available sq-ft
- b. Slope
- c. Service/access
- d. Existing open space
- e. Visibility

## 2. Sewer Supply

- a. Elevation / pumping requirements
- b. Proximity to WW main
- c. City of Berkeley (easements/encroachments)

## 3. Phasing

- a. Tied to CIP construction
- b. Phase



# Stormwater & Green Infrastructure

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# Stormwater Management Principles

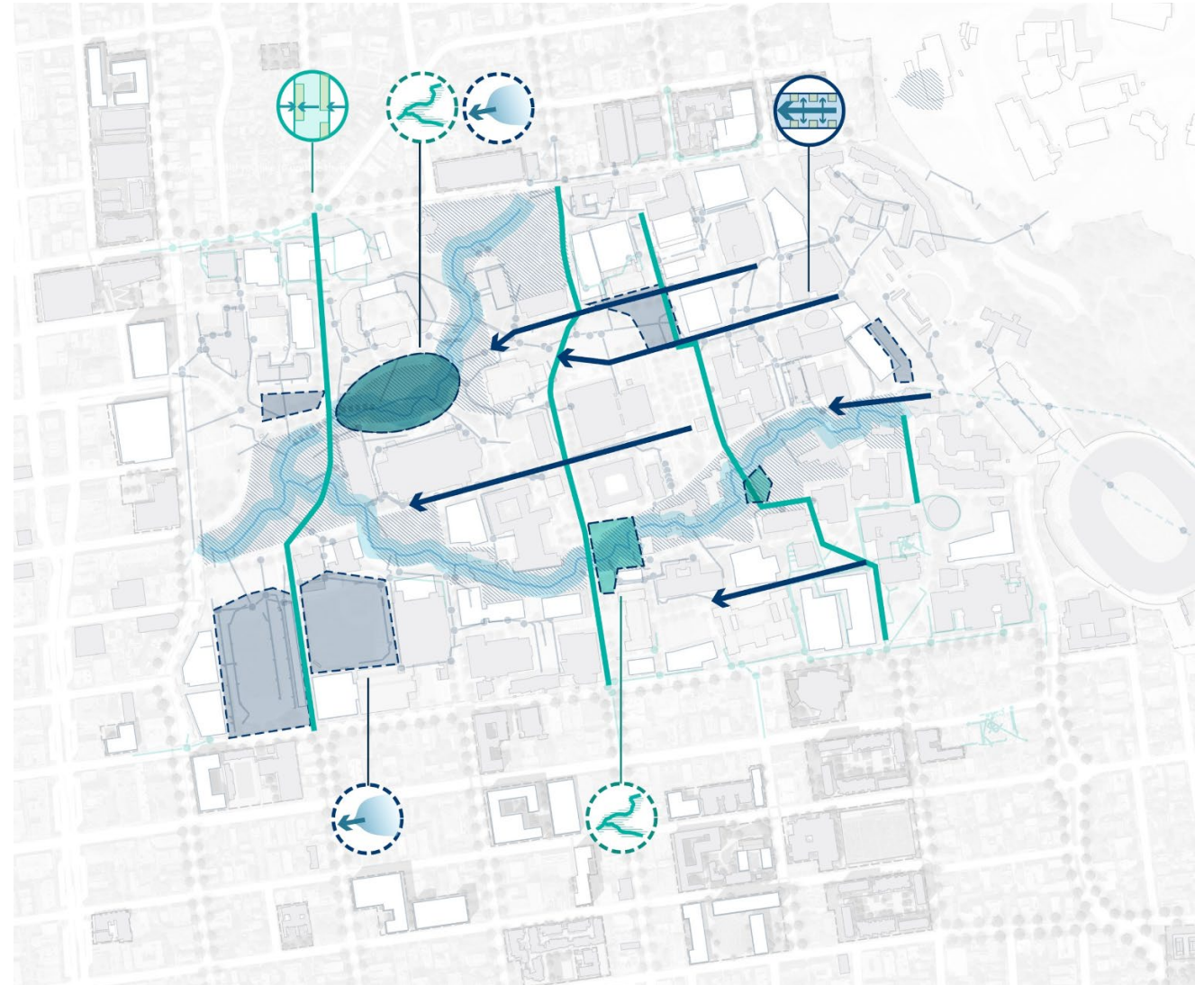
- Plan for the campus as a whole, across watersheds
  - Implement catalytic stormwater projects that maximize benefits to the entire campus, through a stormwater credit program
  - Continue to incorporate stormwater best management practices (BMPs) into individual projects
- Integrate green infrastructure into the public realm
- Plan for increased storm intensity, as well as longer periods of drought
- Design stormwater management projects to act as living labs



# Stormwater & Green Infrastructure Framework

## Typologies

-  Creek Interface
-  Upstream Tributaries
-  North-South Green Contours
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# Upstream Tributaries

## Objectives

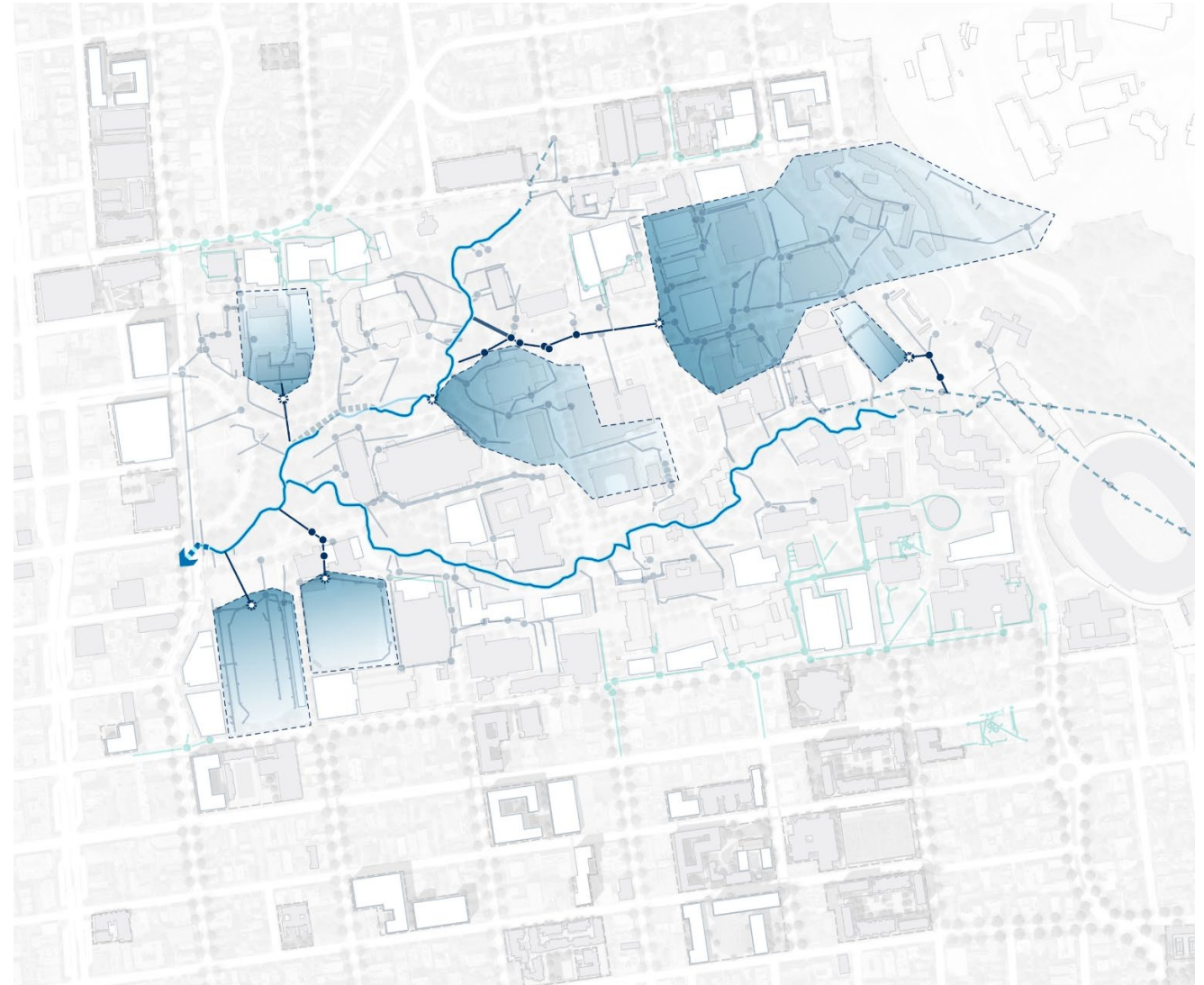
- Intercept stormwater from significant watersheds
- Add stormwater management BMPs to campus open spaces

## Strategies

- Improve water quality through naturalized biotreatment
- Maximize retention through infiltration
- Maximize detention

## Potential Projects

- Mulford Lawn
- Edwards Stadium
- Evans Diamond
- West Oval Glade Restoration
- Evans Hall Site



# Stormwater Quality Credit Program

## Who:

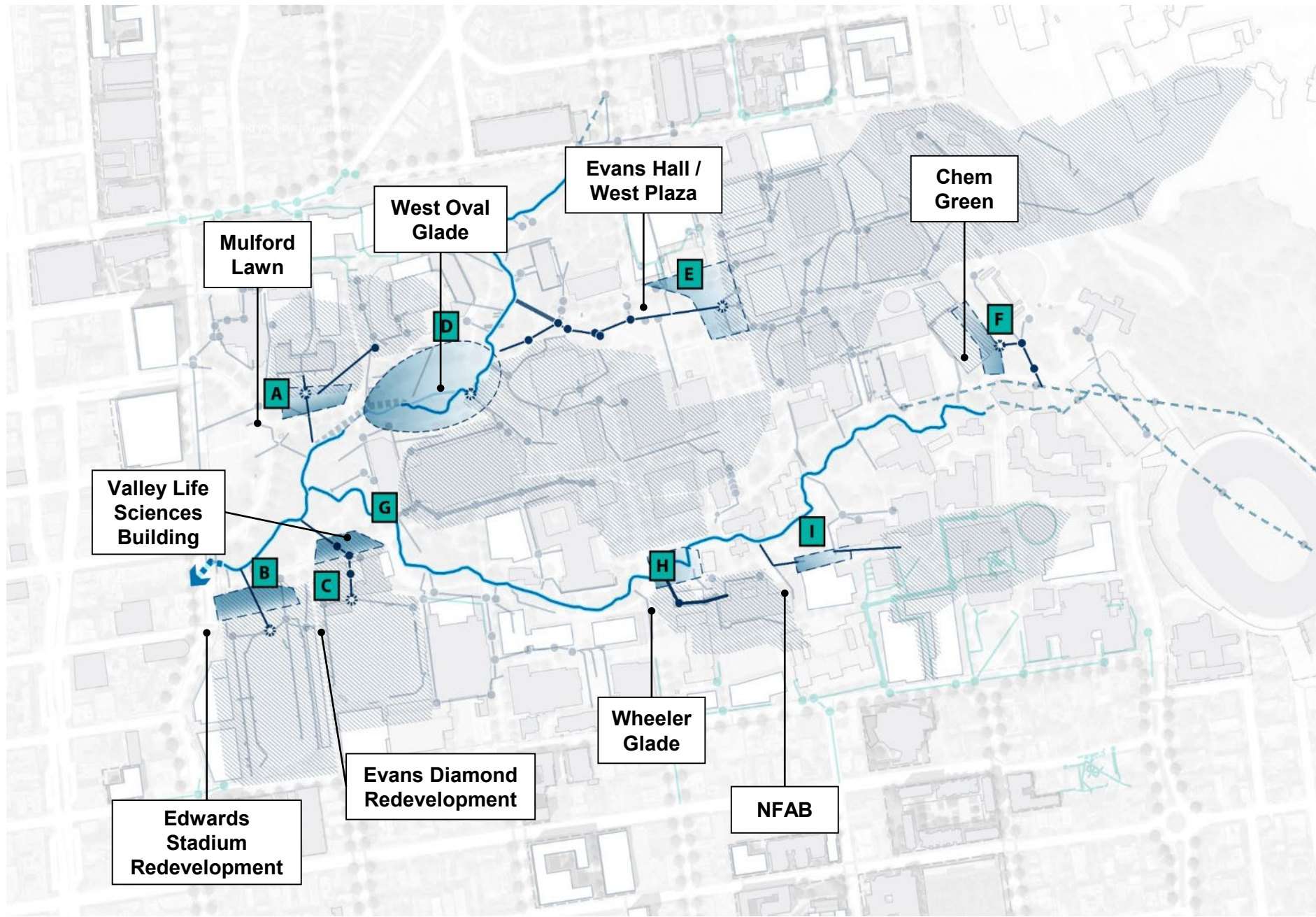
- Any new building within Campus Park, City Environs or CKC

## What does it cover?

- Water quality treatment (volume)

## What doesn't it cover?

- Storm drain pipe upsizing & relocation due to building footprint or runoff rates
- Peak mitigation within Strawberry Creek Campus Park watersheds only
- Detention requirements for any projects which discharge to the City SD system(s)
- Vehicular and high pollutant areas would not be applicable for credit swaps, to prevent poor water quality from discharging directly to Strawberry Creek

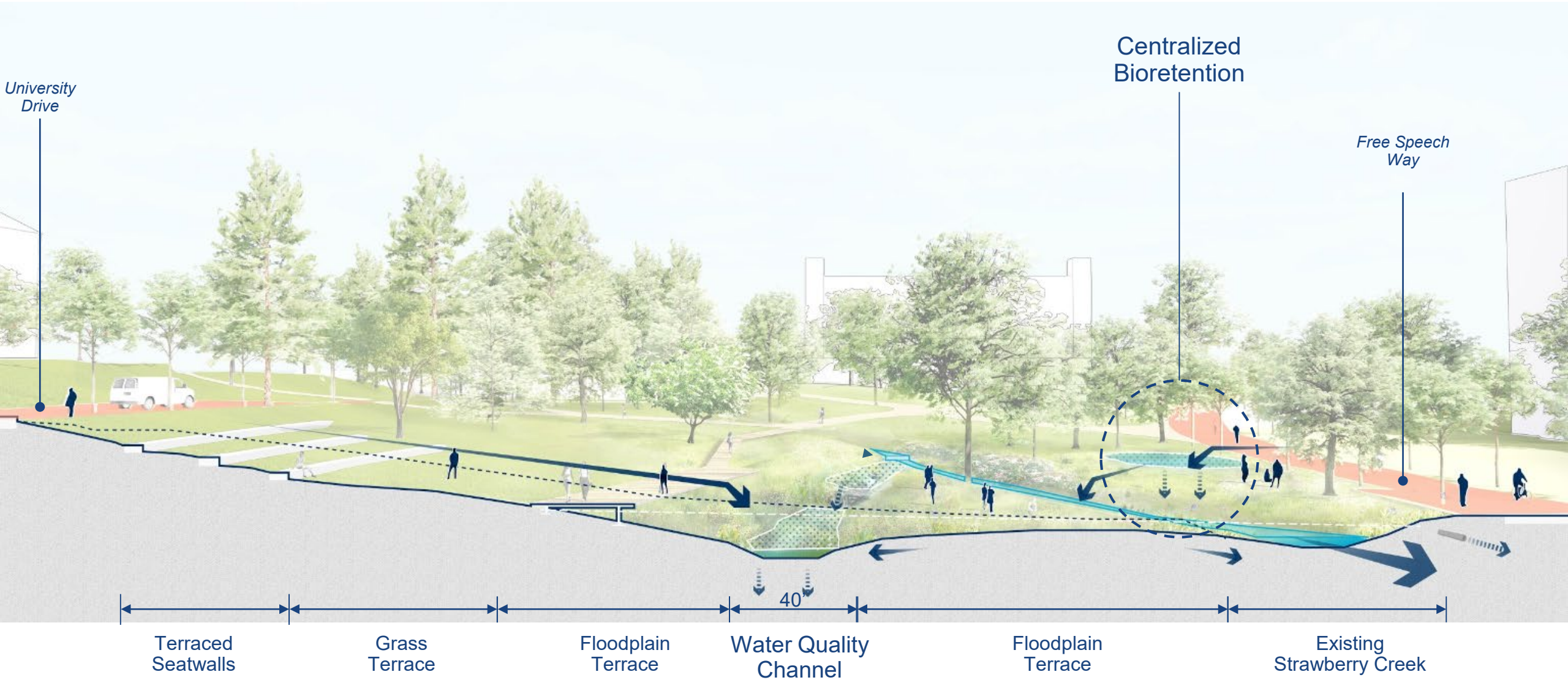


# West Oval Glade – Current Condition



VALLEY LIFE  
SCIENCES  
BUILDING

# West Oval Glade Concept



# West Oval Glade - Concept



# UC Berkeley Capital Strategies

[capitalstrategies.berkeley.edu](https://capitalstrategies.berkeley.edu)

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Under the direction of the Vice Chancellor of Administration, the integrated teams of Capital Strategies work together to bring planning, design, real estate, construction and development services to the UC Berkeley campus. We are architects, landscape architects, planners, engineers, construction specialists, and administrative personnel, all of whom work together to serve the campus community.