Groundwork San Diego & Blue-Green Infrastructure

San Diego Resiliency Advisory Board Meeting
April 20, 2026

Who is Groundwork San Diego-Chollas Creek?

1 Climate Science Education

- The EarthLab
- K-12 Climate Science Programming
- Green Team High School Internship

2 Climate Safe Neighborhoods

- Residential Tree Program
- Home Energy Kits
- EV Rebates
- Community Planning & Neighborhood Group Support

3 Blue-Green Infrastructure

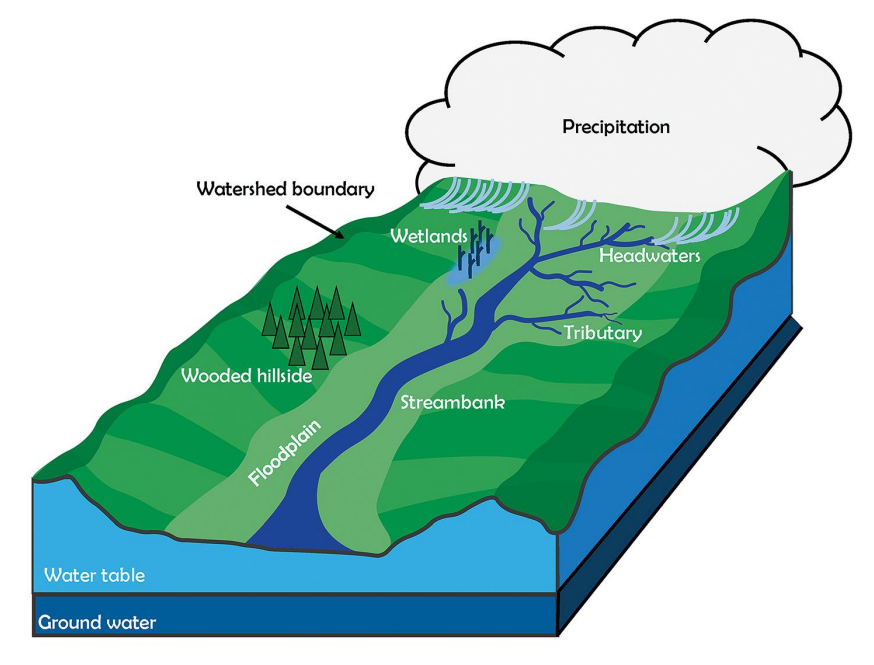
- Planning, building, and maintaining projects that make our neighborhoods safer places to live, work, and play

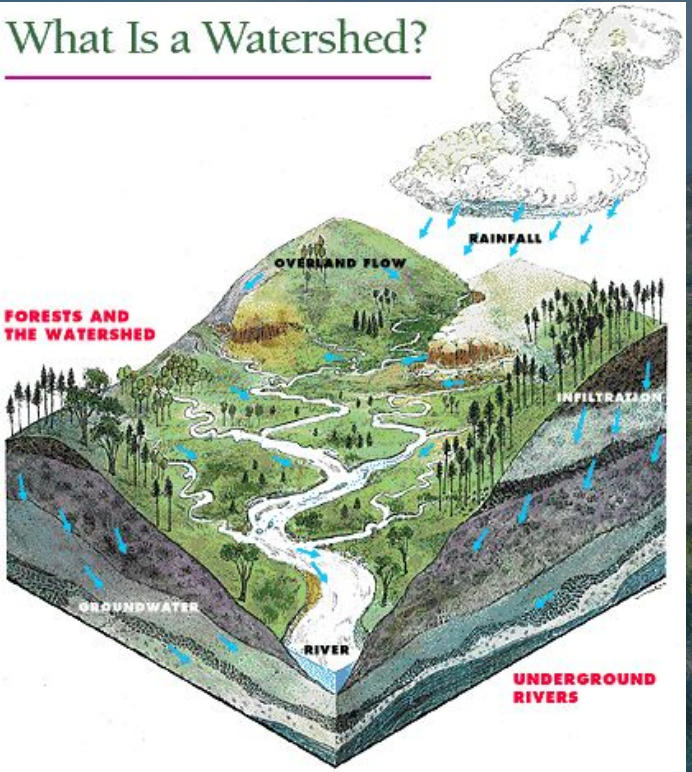
Resident Empowerment

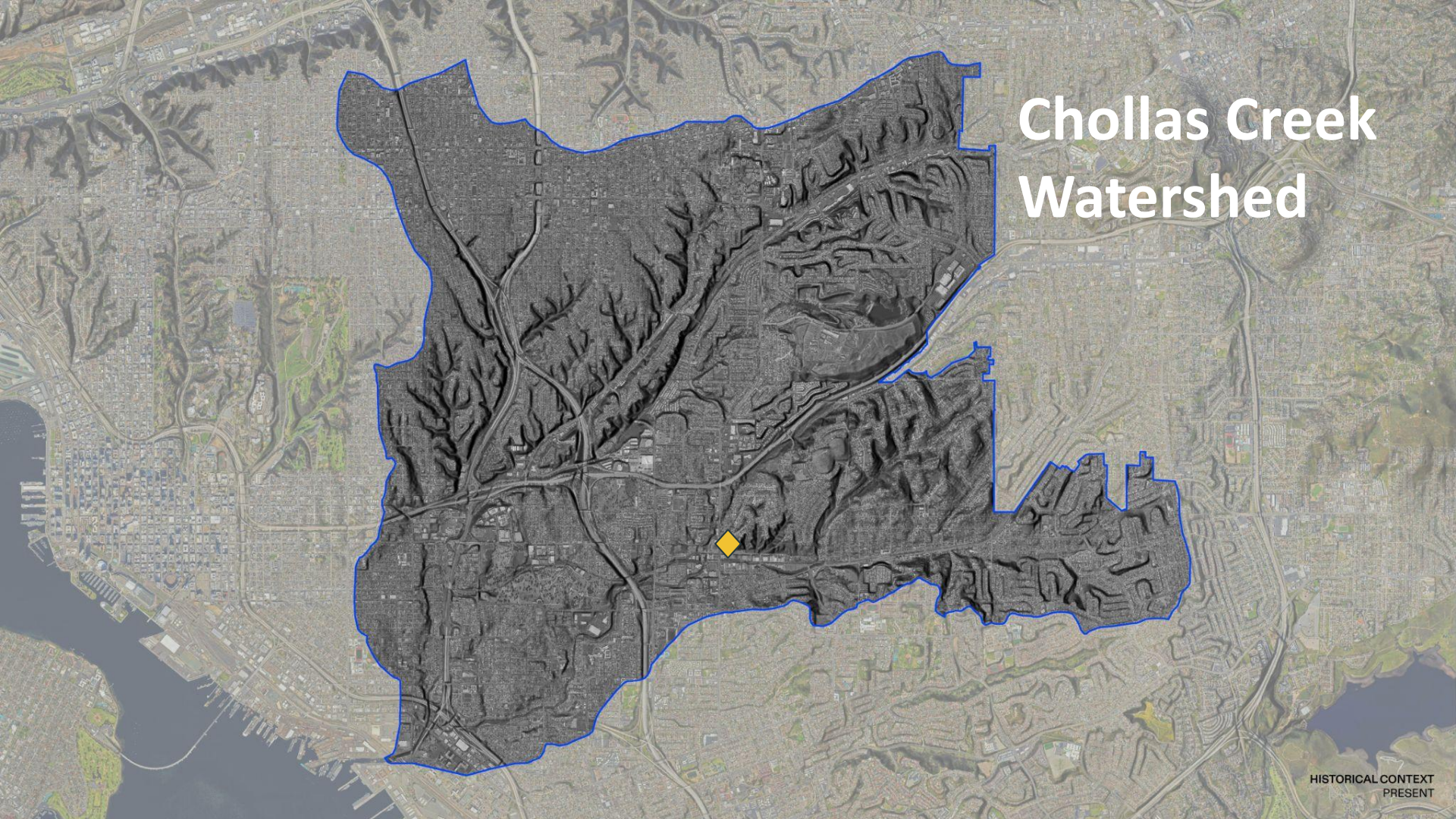
The foundation of everything we do.

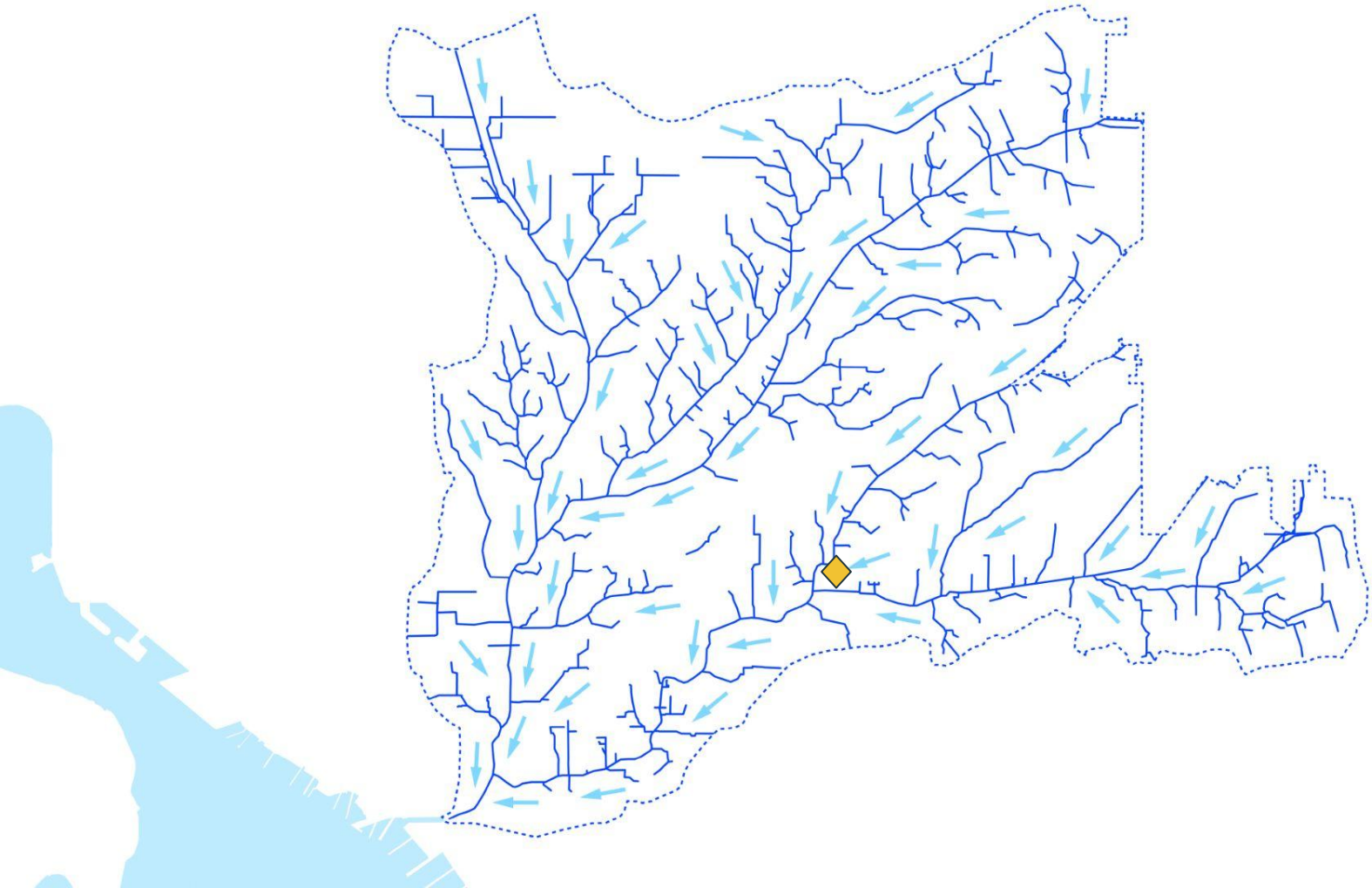
Watershed 101: How Water Works

Watersheds


Precipitation
Watershed boundary
Wetlands
Headwaters
Tributary
Wooded hillside
Streambank
Floodplain
Water table
Ground water

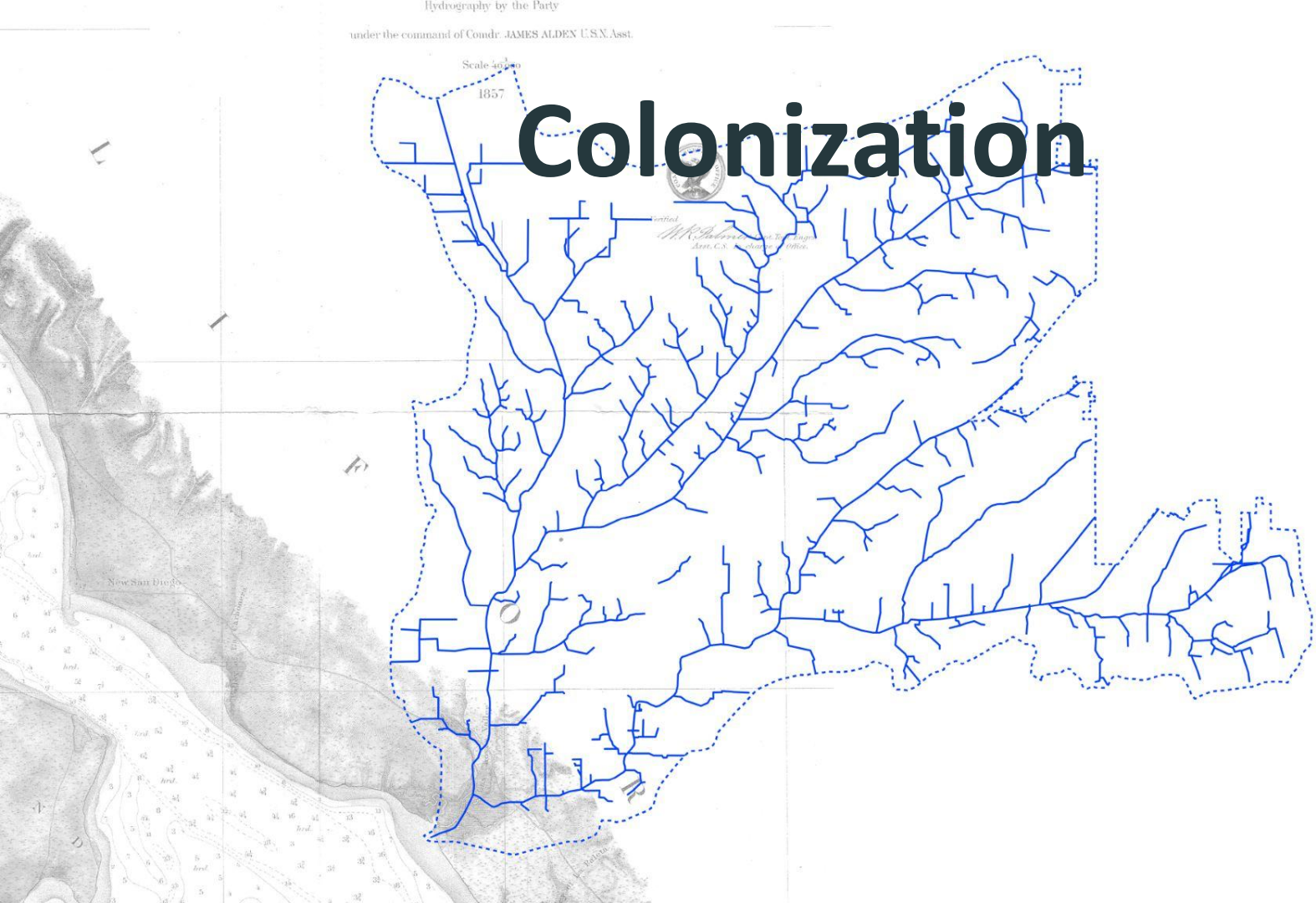

What Is a Watershed?
RAINFALL
OVERLAND FLOW
FORESTS AND THE WATERSHED
INFILTRATION
GROUNDWATER
RIVER
UNDERGROUND RIVERS


Chollas Creek
Watershed
HISTORICAL CONTEXT
PRESENT



WATERSHED OVERVIEW
FLOWLINES

History & Conditions

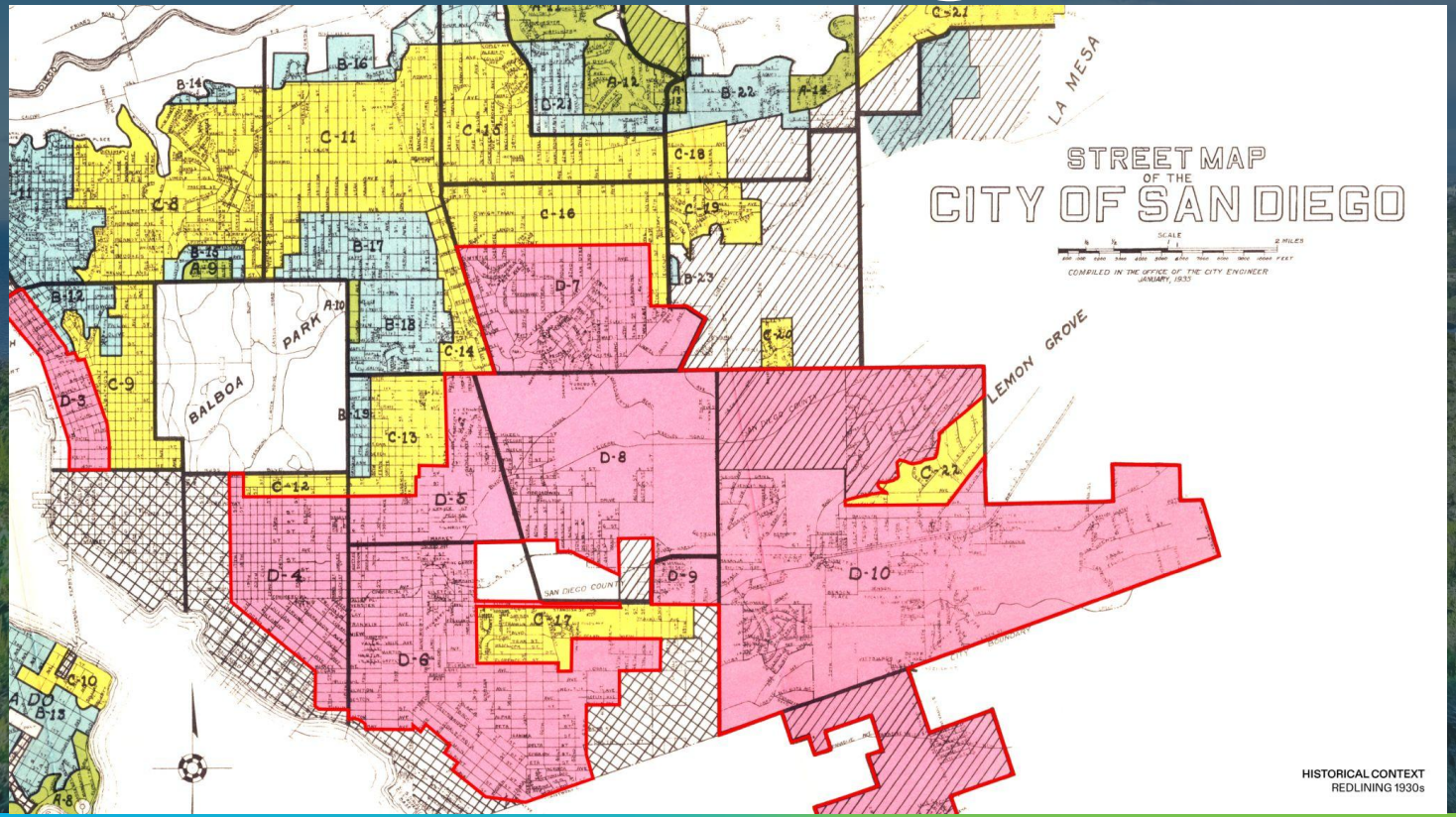


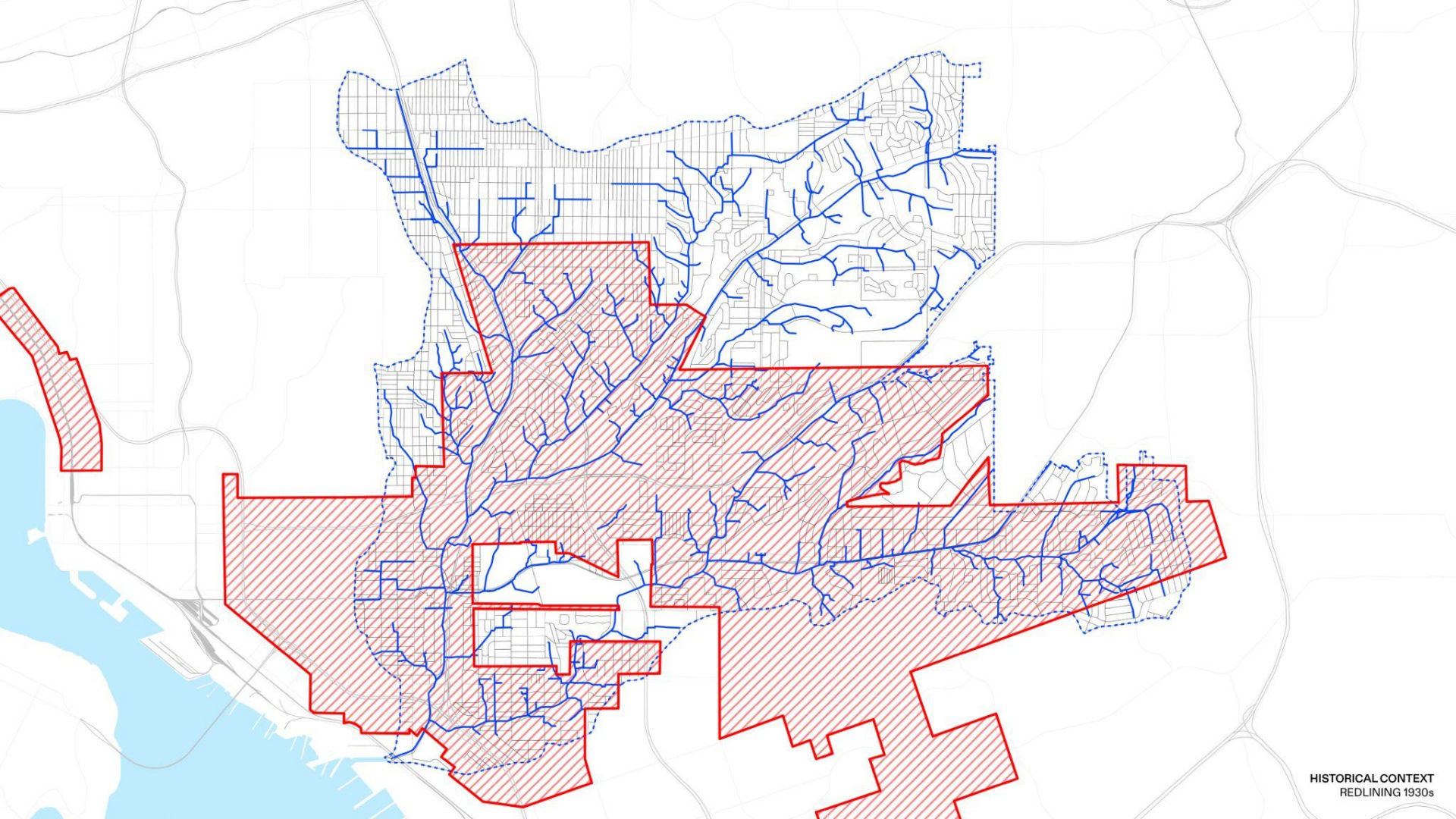
Colonization


Urbanization
SAN DIEGO
EX MISSION
SAN DIEGO
SAN DIEGO
Las Choyas Valley
Las Choyas
Valley
SAN DIEGO CUYAMACA AND EASTERN
South
Indian Pt.
SOUTHERN CALIFORNIA
La Paleta Valley
Valley
La Mesa
Spring Valley
Helix
Lemongrove
Valley
Aloha
Avondale
Sweetwater Reservoir
HISTORICAL CONTEXT
1904

Urbanization

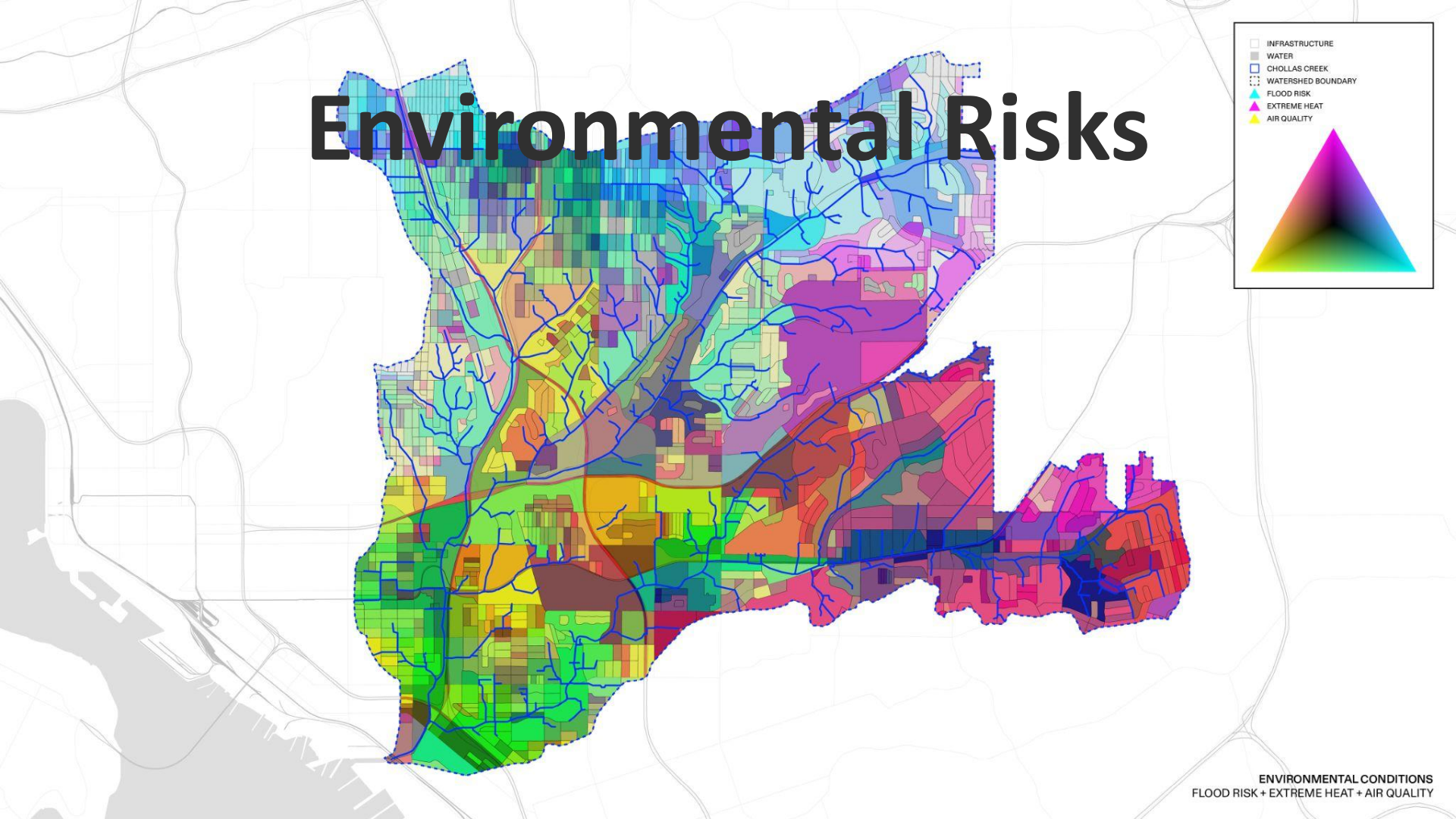
Redlining


STREET MAP
OF THE
CITY OF SAN DIEGO
SCALE
COMPILED IN THE OFFICE OF THE CITY ENGINEER
JANUARY, 1933
LA MESA
LEMON GROVE
BALBOA PARK
SAN DIEGO COUNTY
HISTORICAL CONTEXT
REDLINING 1930s



HISTORICAL CONTEXT
REDLINING 1930s

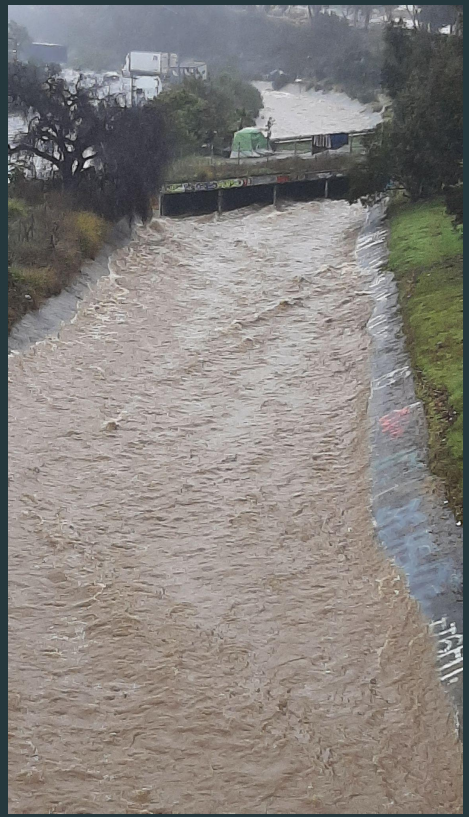
Environmental Risks

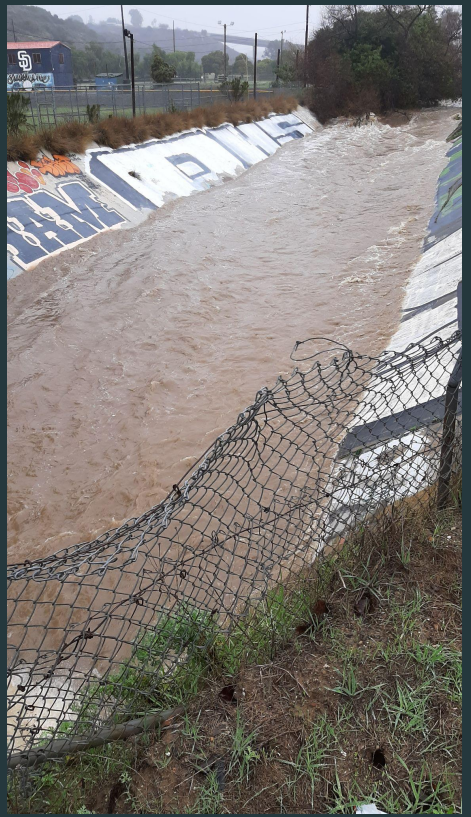


Paving Over the Creek


January 22, 2024

January 22, 2024





January 22, 2024

January 22, 2024

A New Opportunity: A Blue Green Vision for Chollas Creek

Blue Green Infrastructure (BGI)

Combines natural and large-scale semi-natural systems to mitigate climate impacts like flooding and elevated air temperatures. It goes beyond “green infrastructure” whose purpose is to reduce pollution from the first flush of rain.

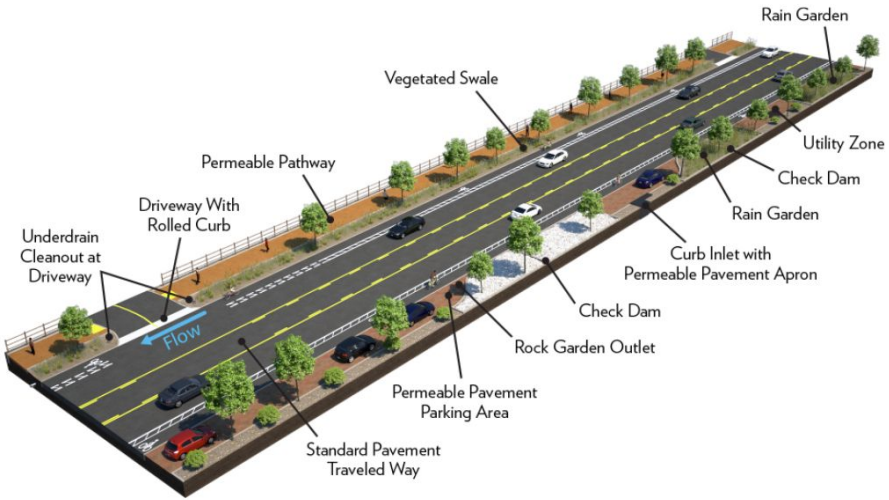
Blue Green Infrastructure (BGI)

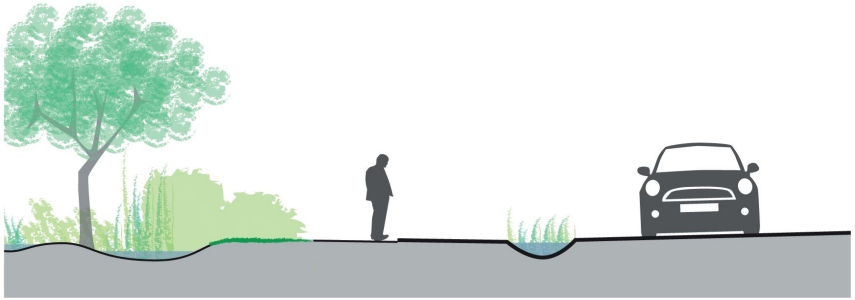
When implemented intentionally and across communities, it offers a holistic approach for **protecting and supporting abundance** for communities, improving:

- **flood resilience**
- water quality
- **air quality**
- biodiversity
- **physical activity**
- economic development & jobs
- **pedestrian + traffic safety**
- educational + social outcomes
- **and more!**

BGI Project Typologies

Green Streets





- Safe, Clean Waters

Secondary Co-Benefits

- Smaller-Scale Flood Reduction
- Heat Reduction
- Green Space Access & Recreation
- Beautification & Community Pride
- Diverse & Healthy Habitats

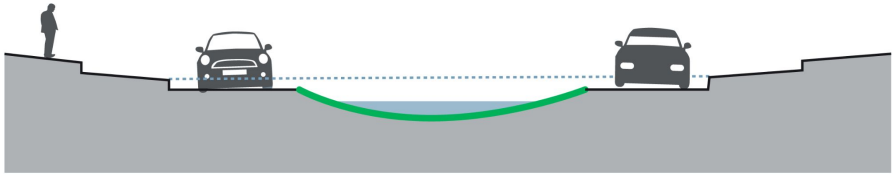
Description. Green streets are proposed as upstream connections to all conveyance or retention areas. The green streets should be established with a combination of small scale channels and stormwater planters or permeable paving. Stormwater should be collected, delayed, and then channeled toward conveyance (cloudburst) roads.

Sources: Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).

Stormwater Median

Source: NACTO Urban Street Stormwater Guide.

Sources: Retention Boulevard cross section from the Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).



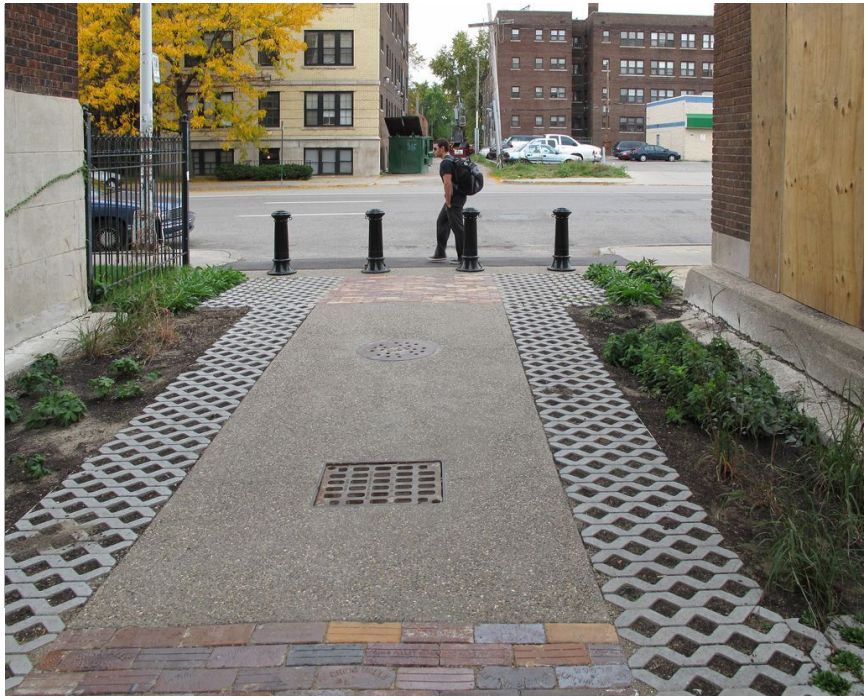
- Flood Resilience
- Safe, Clean Waters

Secondary Co-Benefits

- Smaller-Scale Flood Reduction
- Heat Reduction
- Beautification & Community Pride
- Diverse & Healthy Habitats

Description. Stormwater medians incorporate large, green, depressed areas that can detain and retain stormwater while allowing regular traffic use of the street. They require taking away space from existing roads, but can be very effective along larger urban arteries that are underutilized. Some large-scale versions can be considered retention boulevards.

Green Alleys



Sources: Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).

- Safe, Clean Waters

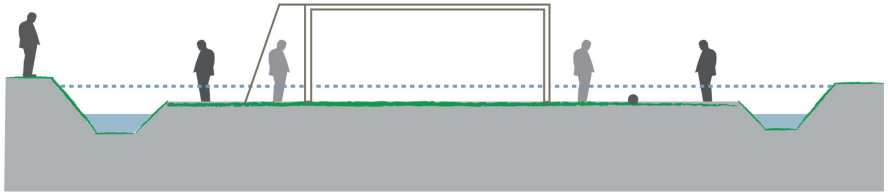
Secondary Co-Benefits

- Smaller-Scale Flood Reduction
- Green Space Access & Recreation
- Beautification & Community Pride

Description. Green alleys are typically located upstream of vulnerable low-lying areas. In these streets there should be a retention volume established and detention to slow the peak flow of water reducing flooding downstream. Detention streets allow slowed conveyance and possible retention through stormwater planters, hardscape channels, and permeable paving. These alley types often prioritize multimodal use or even prohibit cars.

Floodable Parks

Long's Park Wetland, Lancaster, PA



- Flood Resilience
- Safe, Clean Waters

Secondary Co-Benefits

- Smaller-Scale Flood Reduction
- Heat Reduction
- Green Space Access & Recreation
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Description. Floodable parks and recreation spaces present the greatest opportunity for large retention spaces within urban areas. They can be located throughout the watershed and receive stormwater conveyance systems or adjacent water bodies. They can provide a combination of hydrological services including water quality improvements via retention, detention, and infiltration.

Sources: Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).

Green Schoolyards

Conservatory Green (2), Denver, CO. Photo Credit: Design Concepts.

- Safe, Clean Waters

Secondary Co-Benefits

- Smaller-Scale Flood Reduction
- Heat Reduction
- Recreation & Green Space Access
- Beautification & Community Pride
- Diverse & Healthy Habitats

Description. Green Schoolyards combine green stormwater infrastructure engineering with research on how nature can foster cognitive development and physical and mental health to create benefit-rich outdoor spaces. Elements include nature-inspired play equipment, outdoor classrooms, vegetated rain gardens, etc.

Trailhead Pocket Park

Cul-de-sac overlooking Manzanita Canyon, San Diego. Source: Google Maps

Sources: Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).

- Flood Resilience
- Safe, Clean Waters

Secondary Co-Benefits

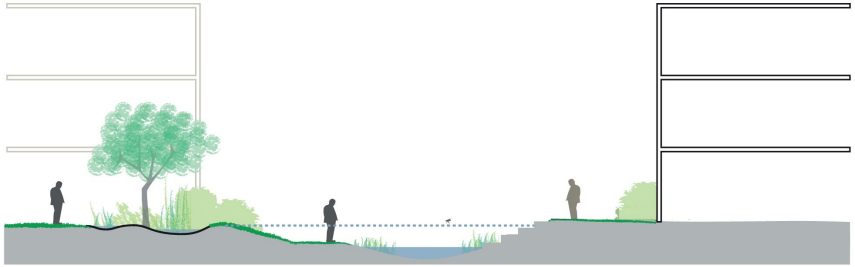
- Smaller-Scale Flood Reduction
- Heat Reduction
- Recreation & Green Space Access
- Beautification & Community Pride
- Diverse & Healthy Habitats

Description. Cul-de-sacs that dead-end into canyons provide unique opportunities to provide a park-like transition from developed areas to Open Space canyons, while slowing and treating stormwater that naturally flows from the roadway into the downstream canyon/streambed. Trailhead Pocket Parks can provide valuable areas for play and recreation where park space is scarce, and access and interpretive education for the nearby nature space.

Stream Restoration

Stream restoration of Slaughterhouse Run, Maryland

Sources: Blue Green Infrastructure: Cloudburst Management Strategies for the District of Columbia (2019).



- Flood Resilience
- Safe, Clean Waters

Secondary Co-Benefits

- ~~Smaller-Scale Flood Reduction~~
- Heat Reduction
- Recreation & Green Space Access
- Beautification & Community Pride
- Diverse & Healthy Habitats

Description. Urban creeks can involve daylighting historic streams, formalizing existing streams, or creating new streams as conveyance connections between other cloudburst elements. Typically smaller in scale, urban creeks can re-establish or create new neighborhood character and social spaces.

Places of Opportunity

Federal Blvd. Creek De-Channelization, Trail, & Pocket Park

Federal Blvd. Creek De-Channelization, Trail, & Pocket Park

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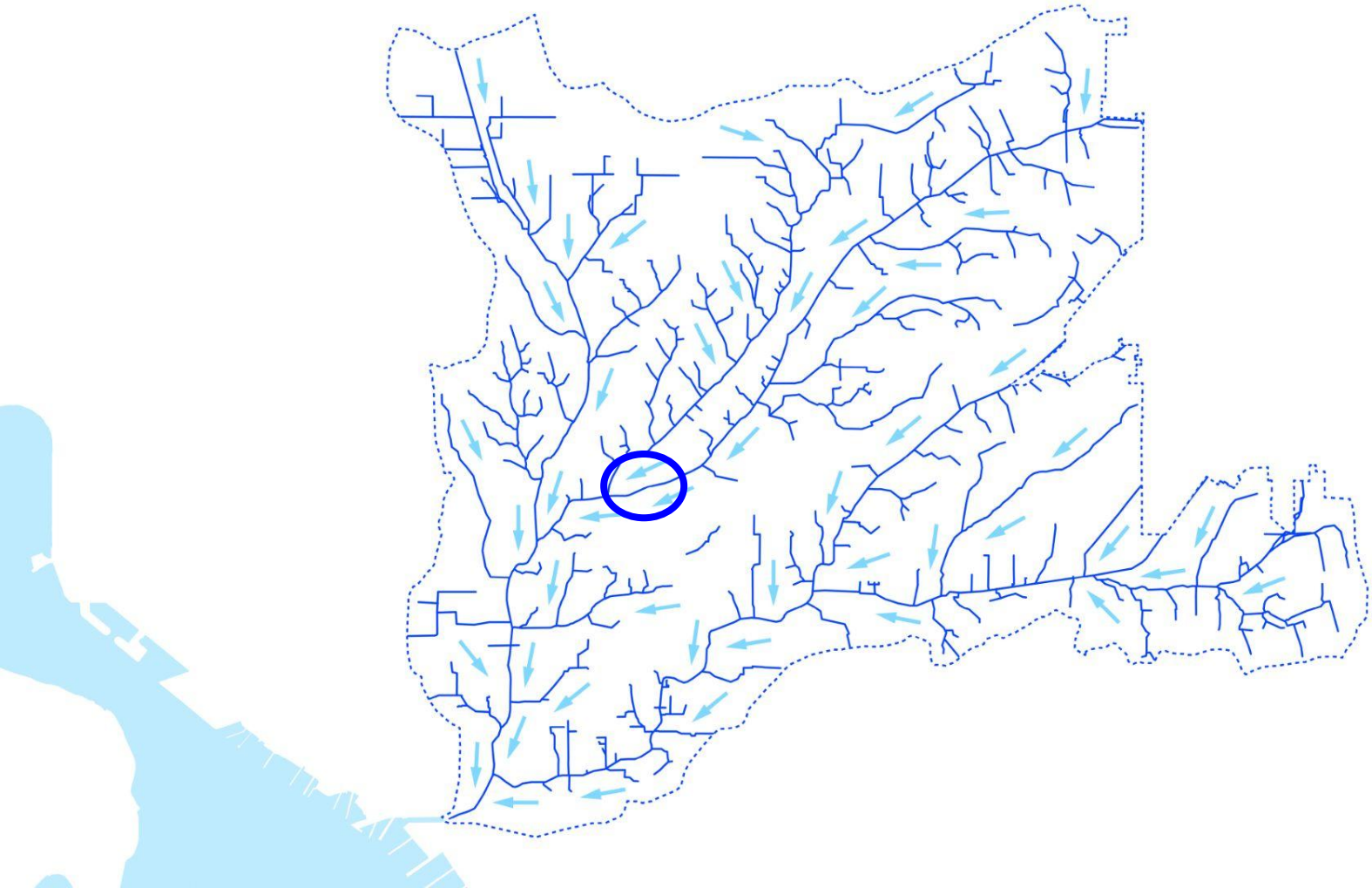
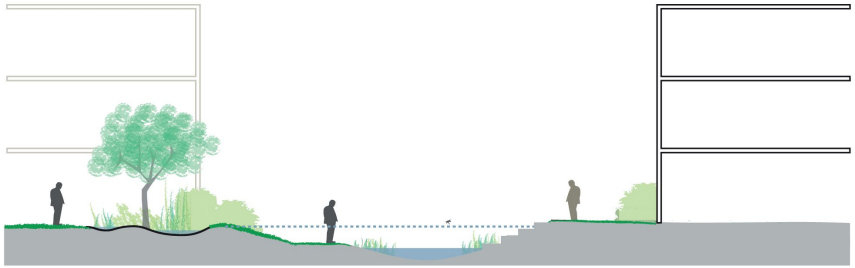
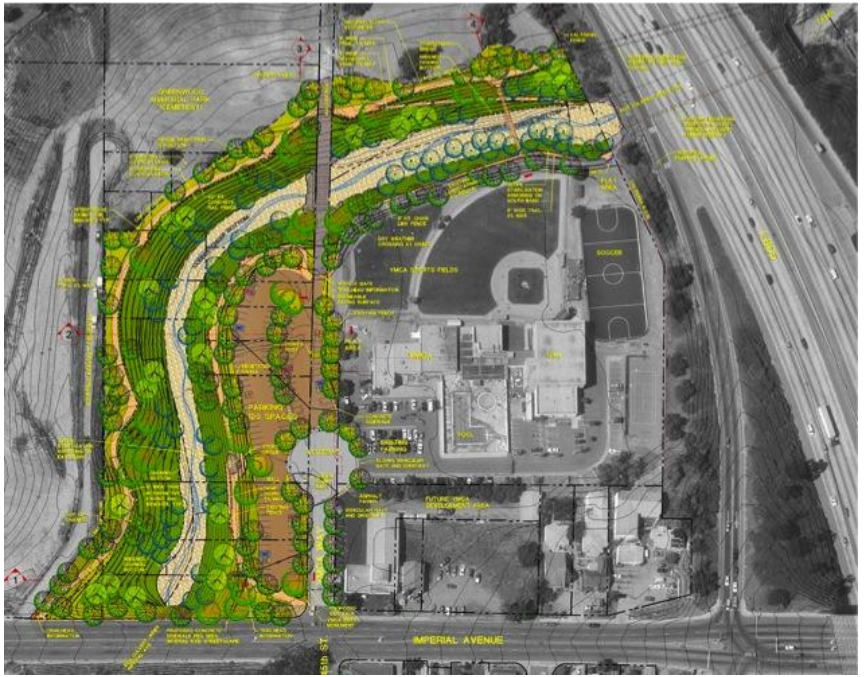
Federal Blvd. Creek De-Channelization, Trail, & Pocket Park

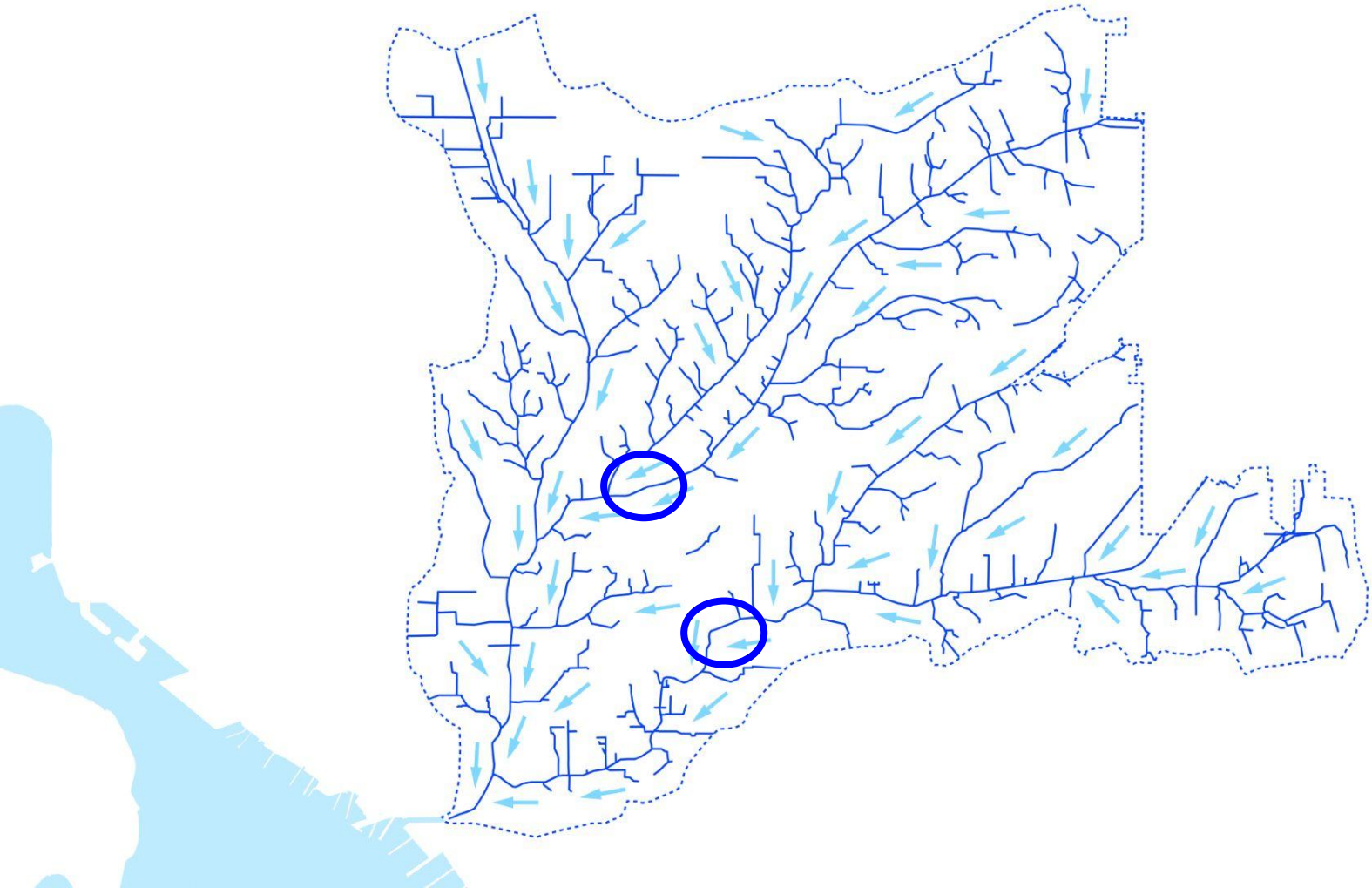


WATERSHED OVERVIEW
FLOWLINES

I-805 & Imperial Stream Restoration

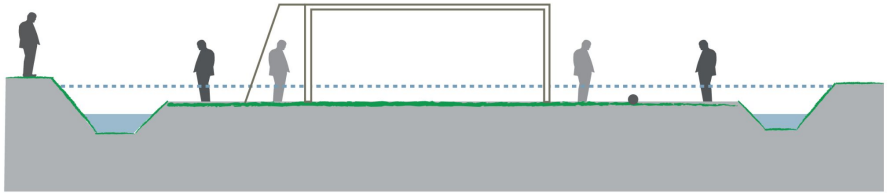


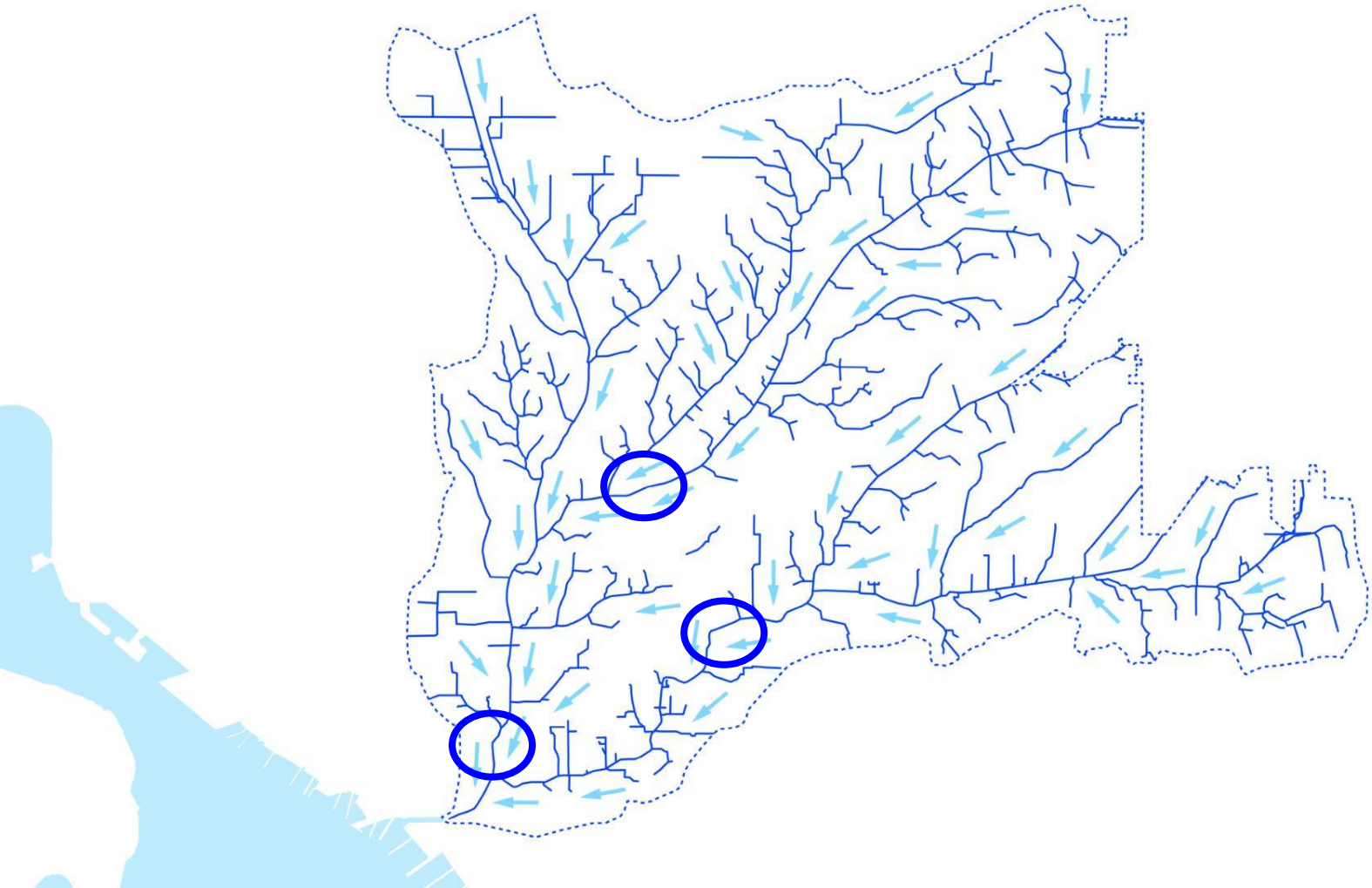




WATERSHED OVERVIEW
FLOWLINES

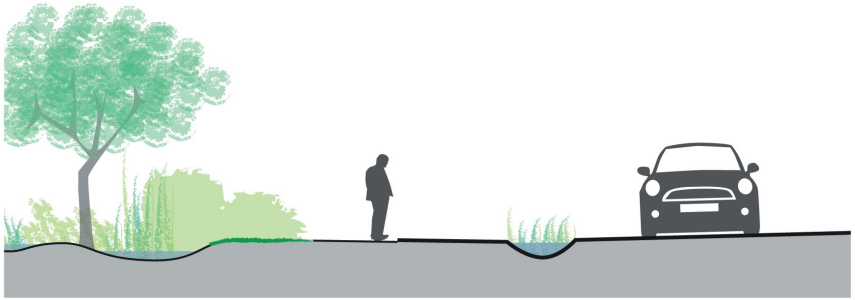
National Avenue Floodable Park

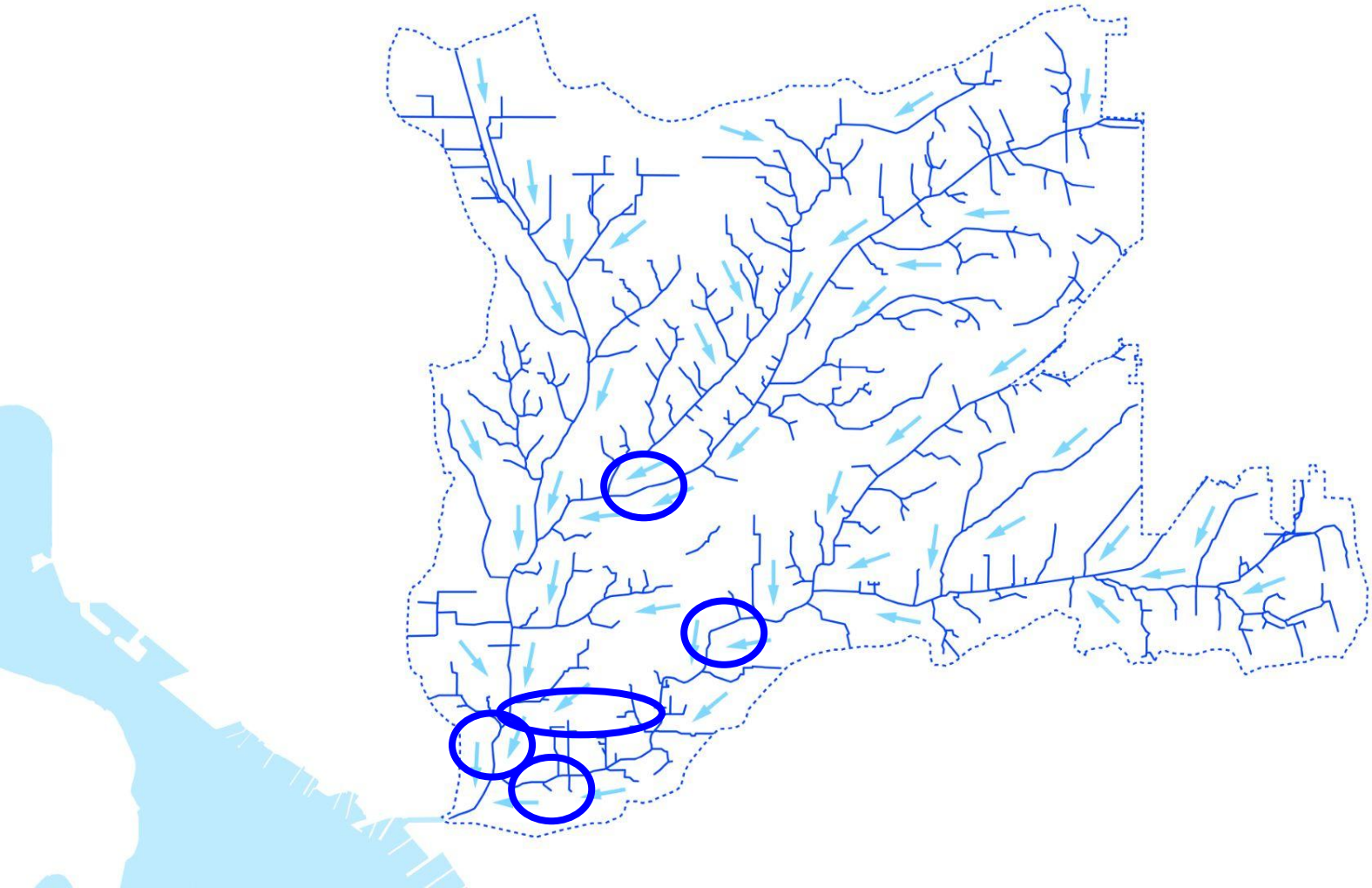




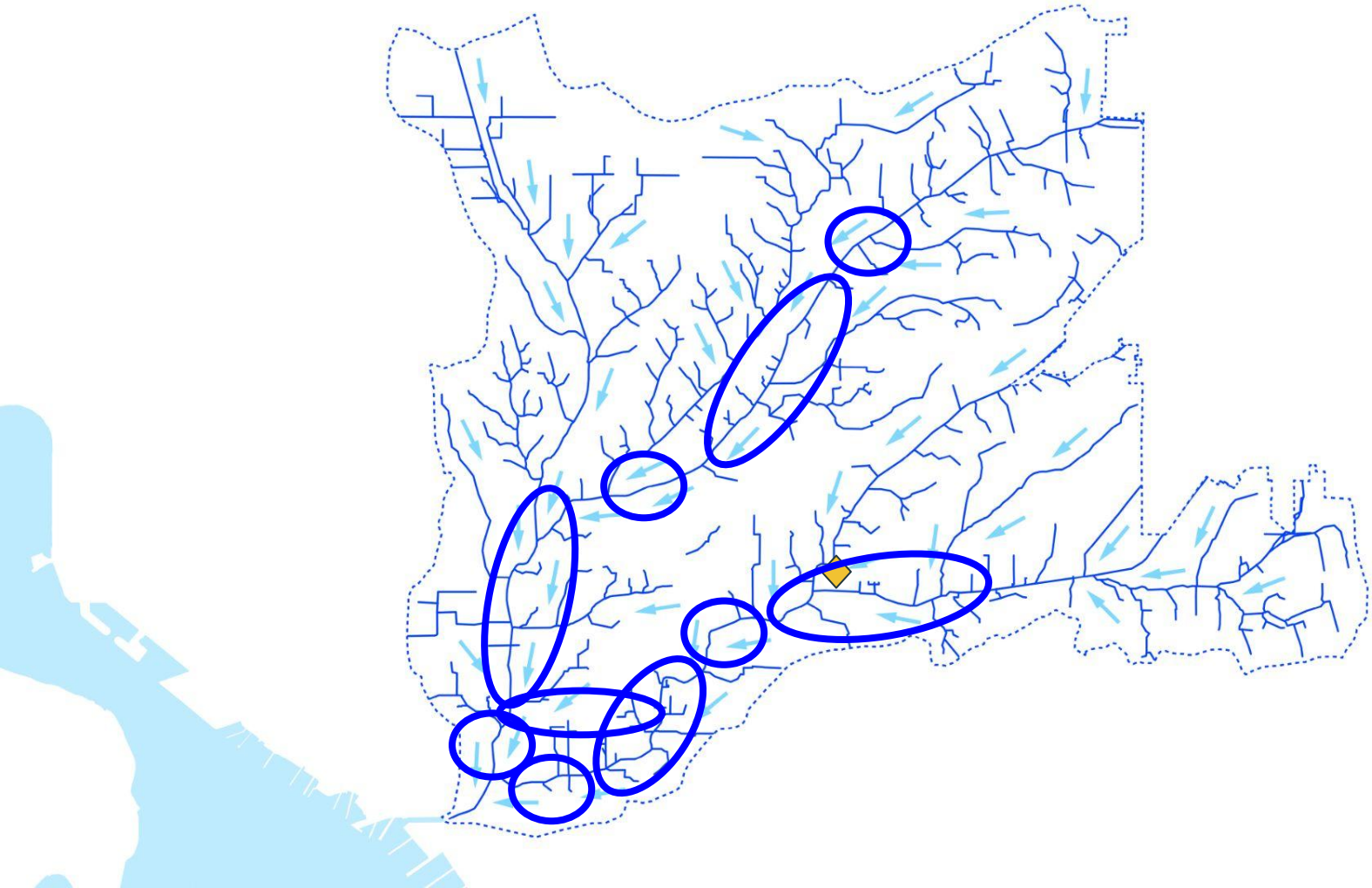
WATERSHED OVERVIEW
FLOWLINES

Ocean View Blvd Green Street

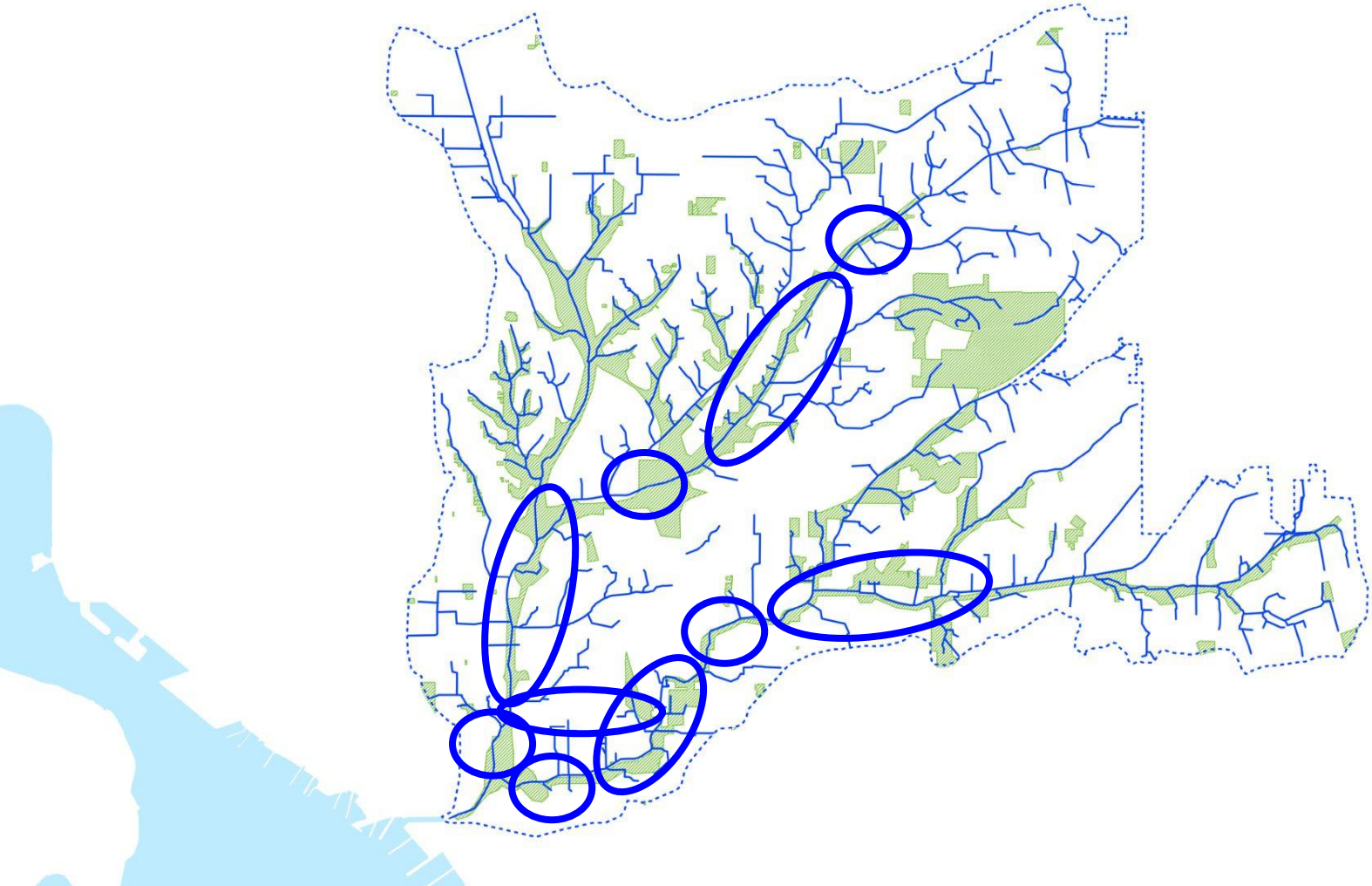




WATERSHED OVERVIEW
FLOWLINES



WATERSHED OVERVIEW
FLOWLINES

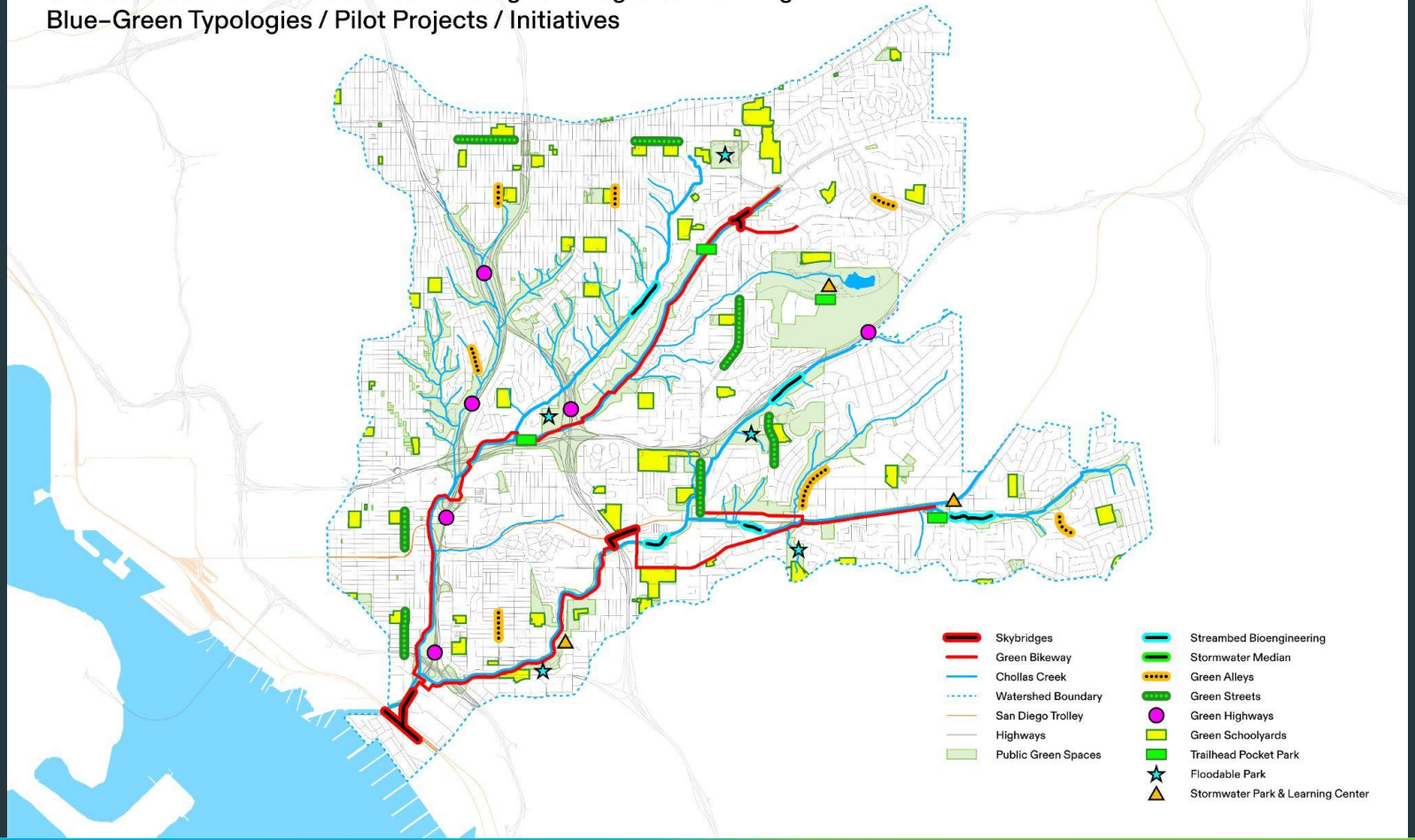


WATERSHED OVERVIEW
GREEN SPACES

Groundwork San Diego

Chollas Creek Watershed's Urban-Ecological Integrated Planning

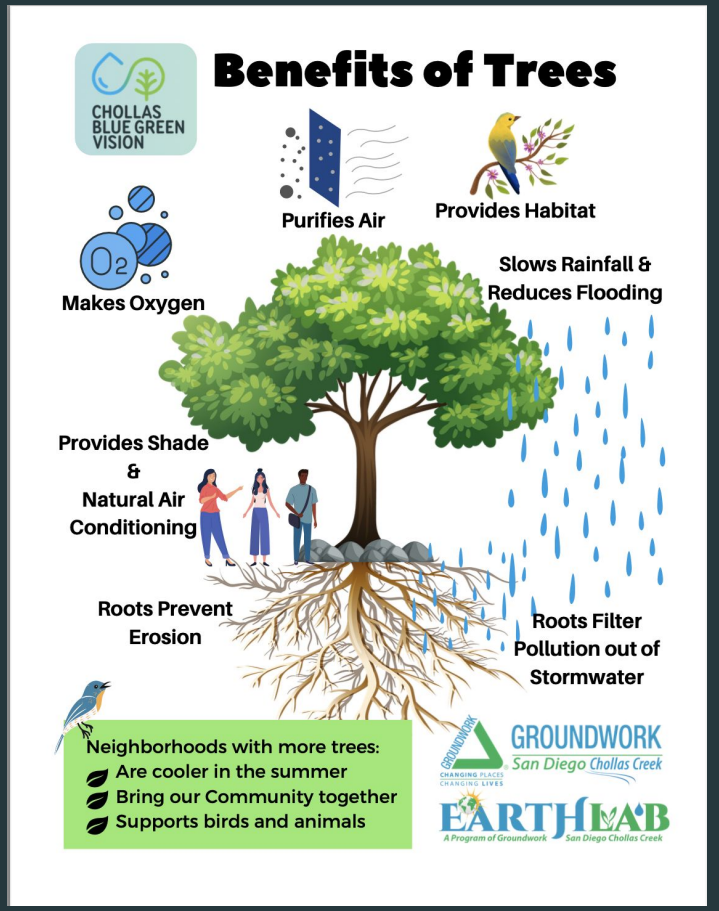
Blue–Green Typologies / Pilot Projects / Initiatives



Take Action

Taking Action: Planting Trees!

Request free trees today!



Taking Action: Learn More!

*Groundwork San Diego's

Resident Empowerment Training

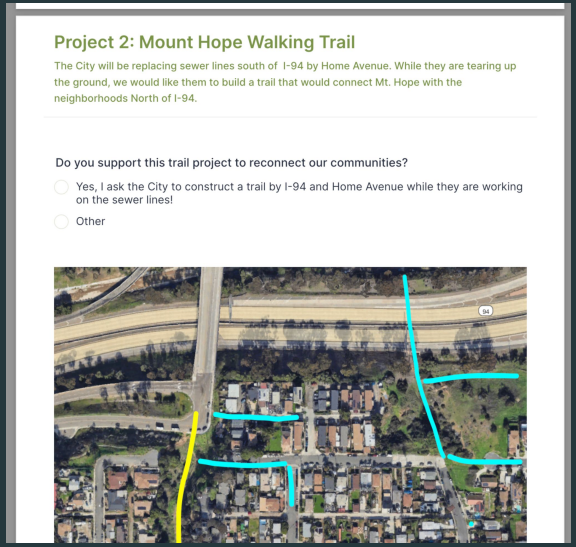
*Community activities

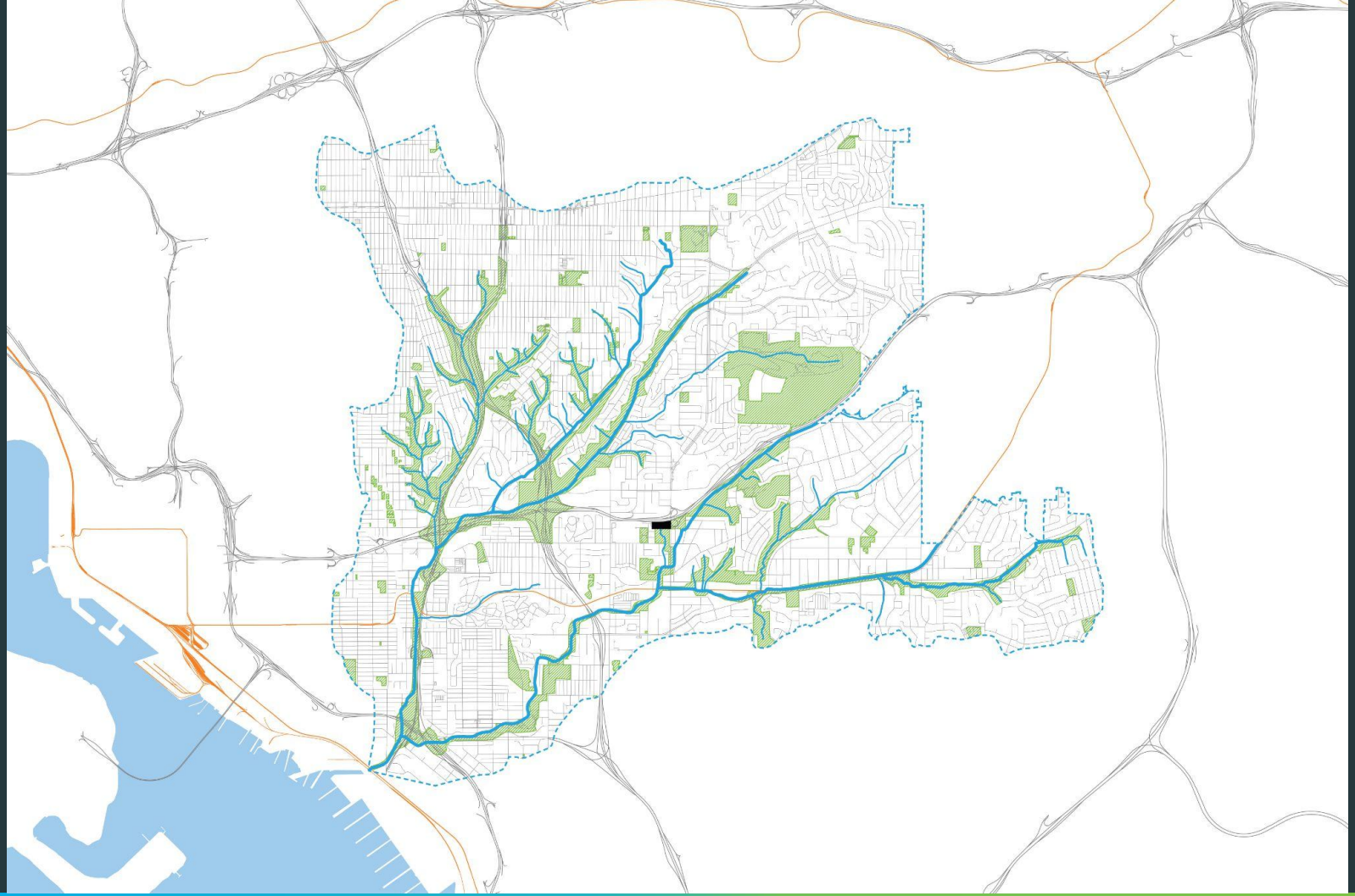
Taking Action: Advocate!

*Connect with a Groundwork Resident Fellow

*Attend your Community Planning Group

*Promote Blue-Green projects





Thank You!

Reach out if you want to connect!

thad@groundworksandiego.org
ozzy@groundworksandiego.org

GROUNDWORK
San Diego Chollas Creek