SAN DIEGO COASTKEEPER

San Diego Stormwater 101

Resiliency Advisory Board

Presentation Objectives

To Better Understand the Following:

1. San Diego's Stormwater System (MS4)
2. Current Challenges: Pollution & Flooding
3. The Stormwater Department Funding Deficit Crisis
4. What Solutions Looks Like

About San Diego Coastkeeper

We believe in a strategic and multi-faceted approach.

Education

Outreach & Engagement

Science

Advocacy

Threats to Clean Water

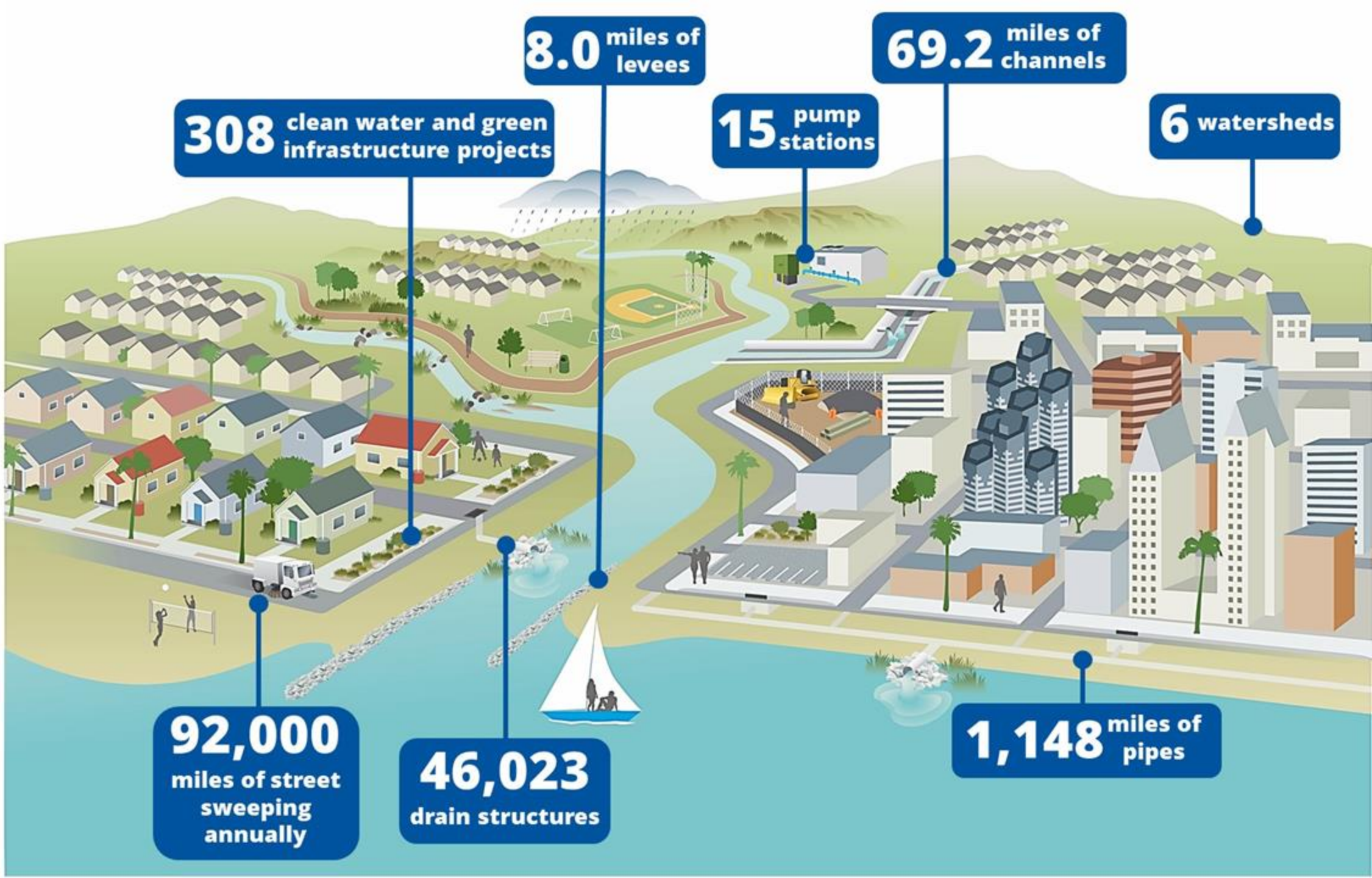
- Pollution
- Aging infrastructure
- Climate change
- Lack of funding

Stormwater

Water that originates from rain, including snow and ice melt as clean water. It picks up and transports pollutants.

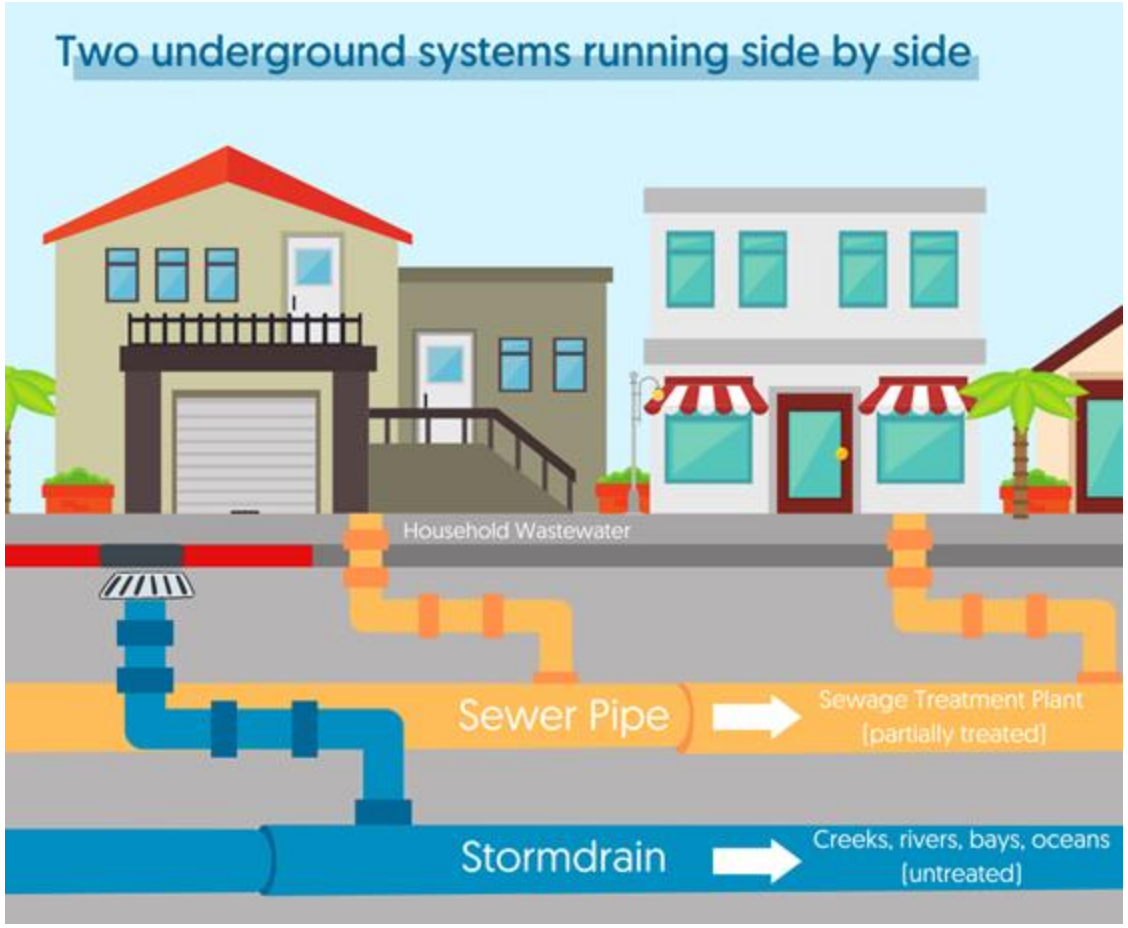
Stormwater is the leading contributor to pollution in San Diego's waterways and beaches.

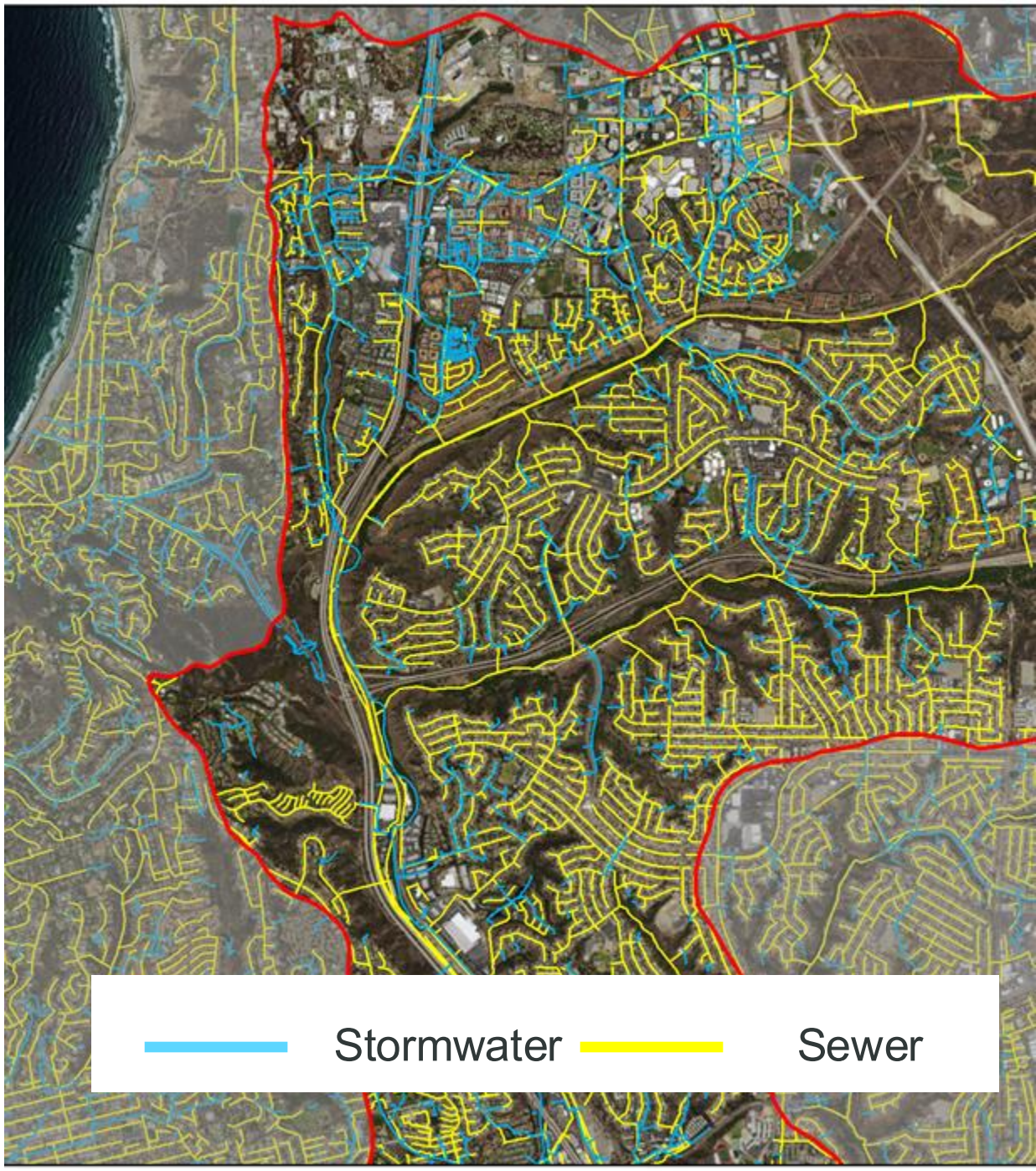
stormwater system.



Stormwater Infrastructure

Municipal Separate Storm Sewer System (MS4)





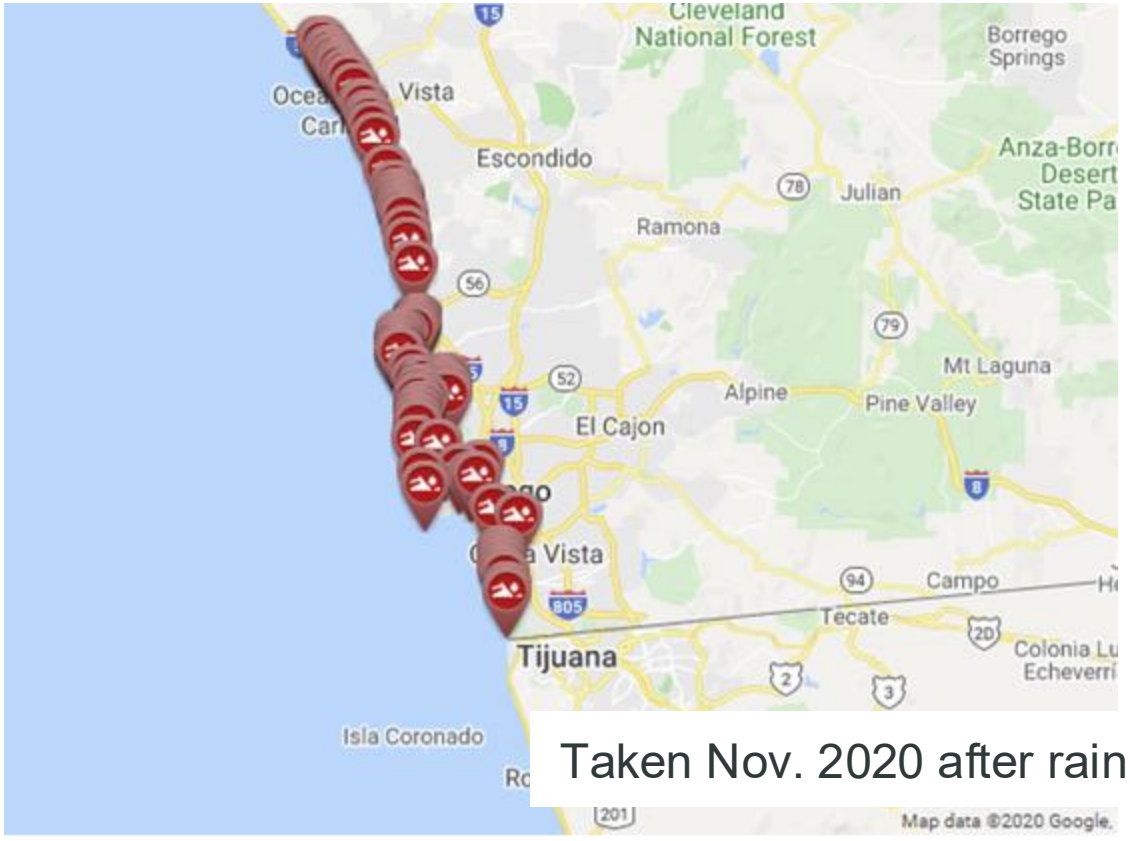
Stormwater Pollution

- Plastics
- Bacteria
- Car fluids
- Toxic metals
- Pet waste
- Oils & grease
- Pesticides & fertilizers

72-Hour Rule

Avoid contact with coastal waters at least 72 hours after rain.

Mission Bay

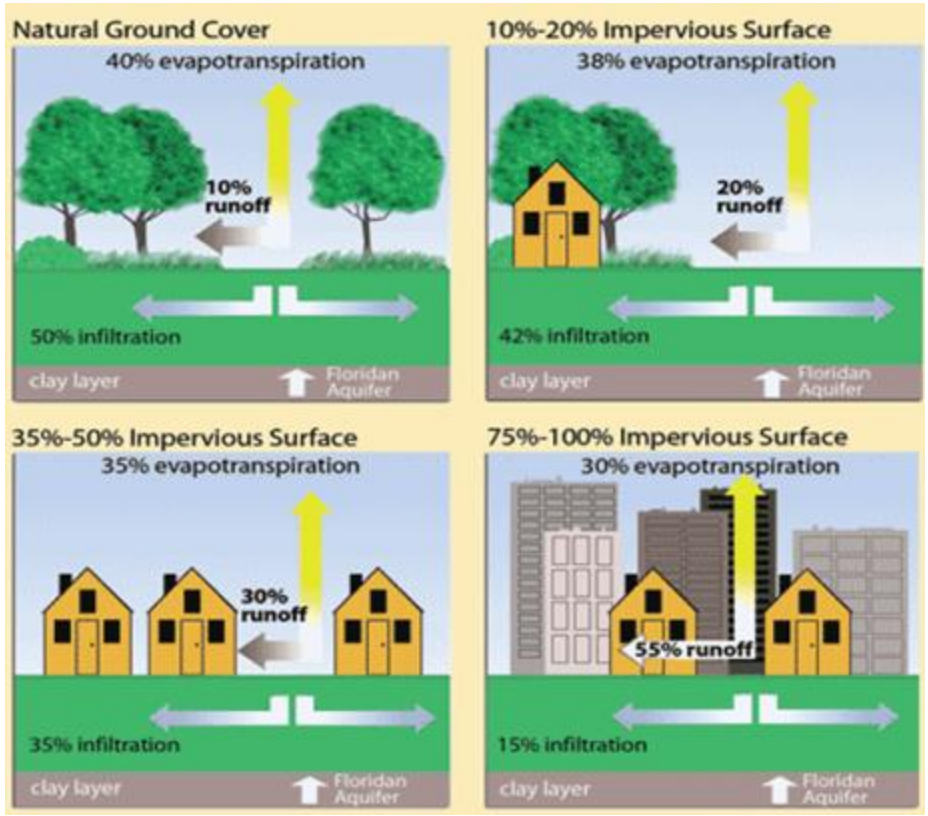


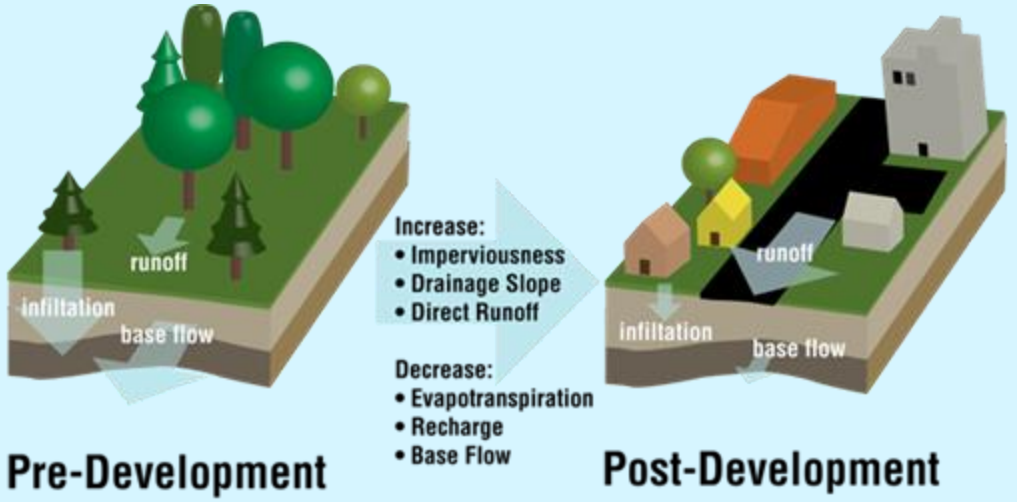
Taken Nov. 2020 after rain

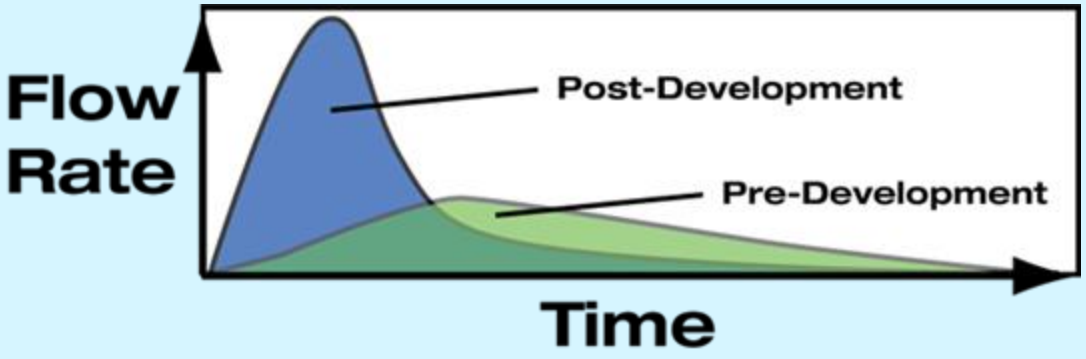
Flooding

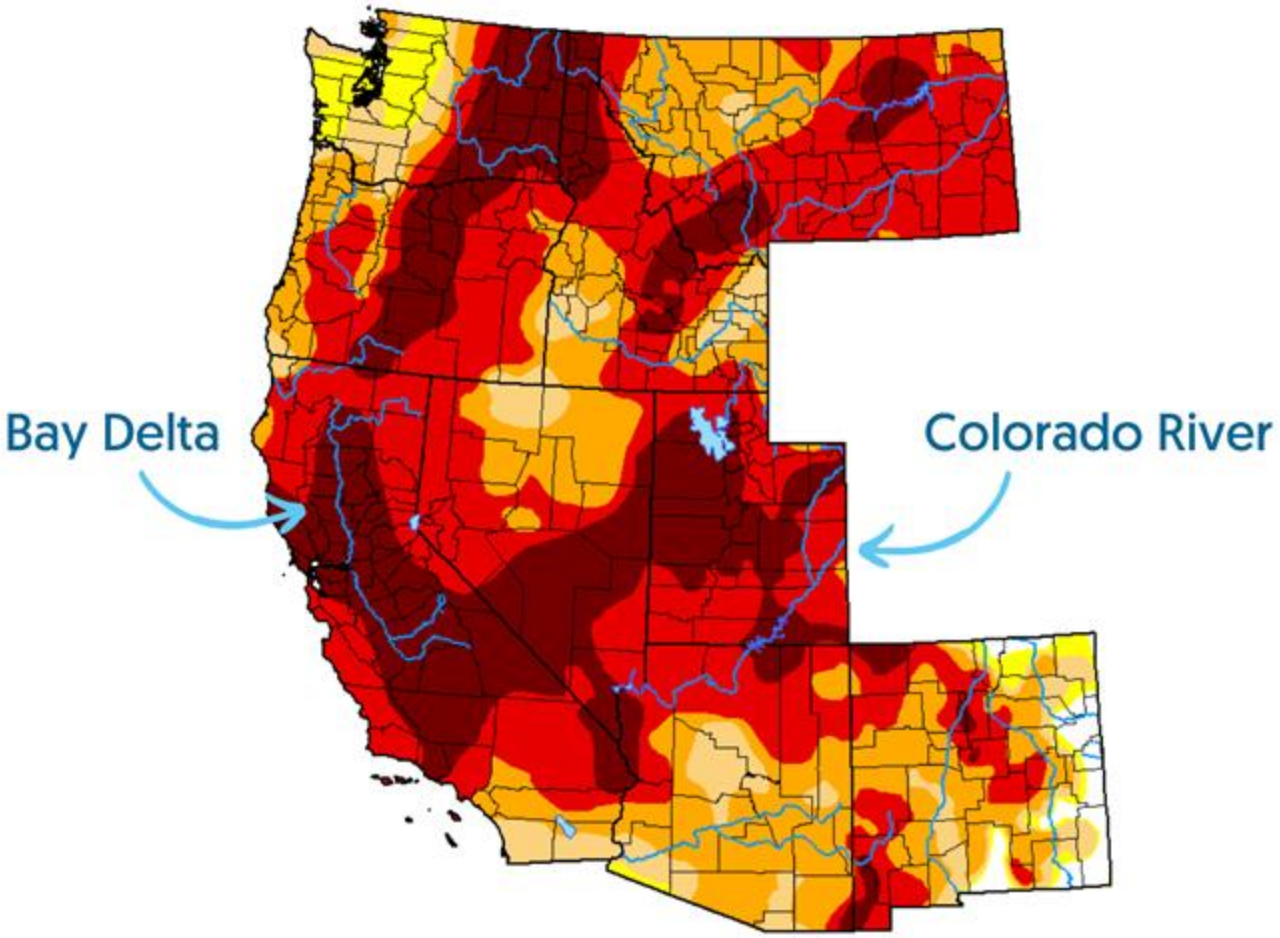
Urbanization

(Mo’ impervious surface mo’ problems)









Climate Change

- Expect heavier, flashier storms, with more precipitation happening at once.
- “1000-year storms” happen far more frequently.
- Our MS4 was designed for a climate that no longer exists.
- Opportunity: San Diego imports **over 80 percent** of our water supply from the Colorado River and the Sierra Nevada.
- Stormwater could provide the City with 22% of it’s potable water supply.

Aging Infrastructure

Most of San Diego's MS4 infrastructure is already well-past its intended lifespan

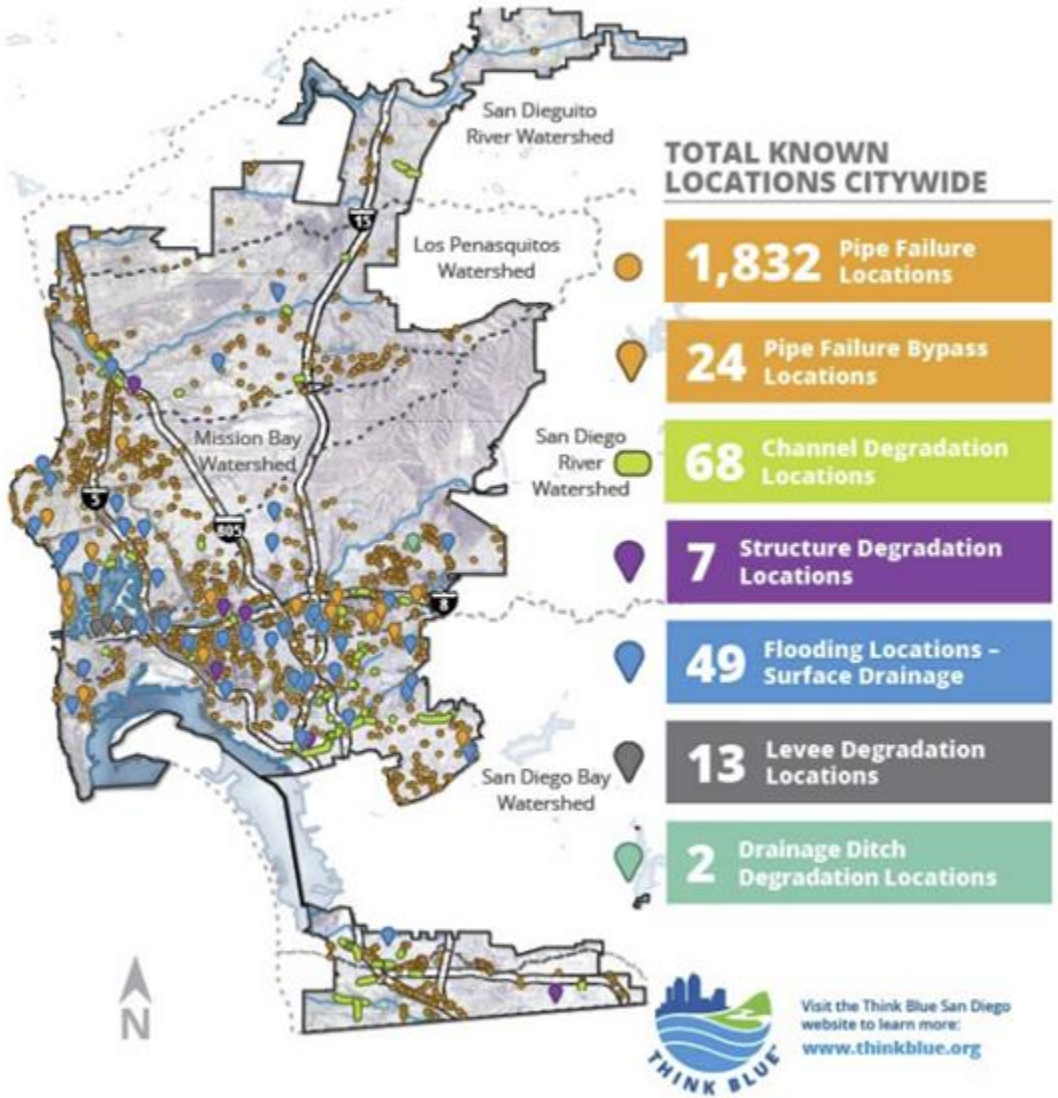
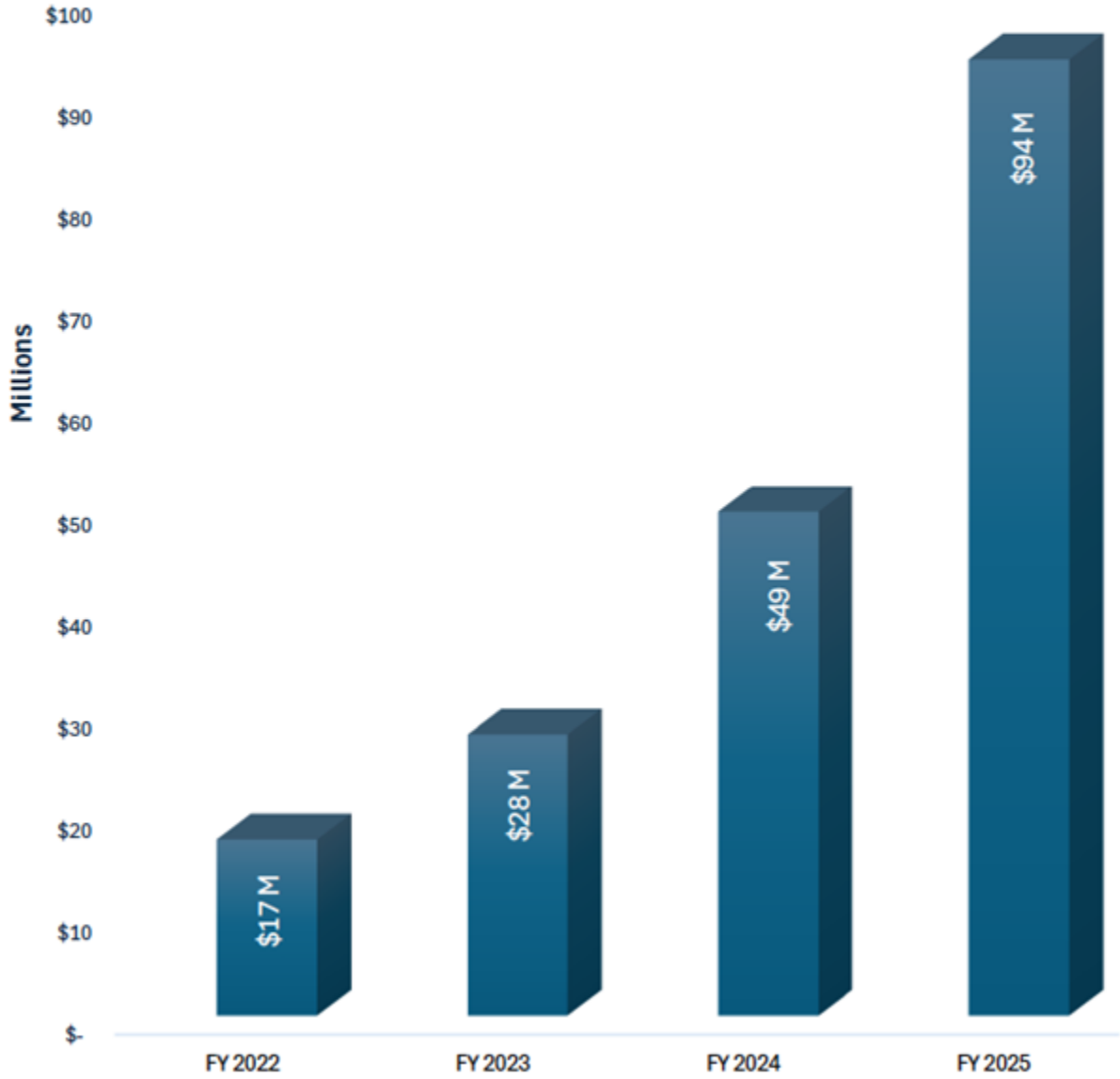


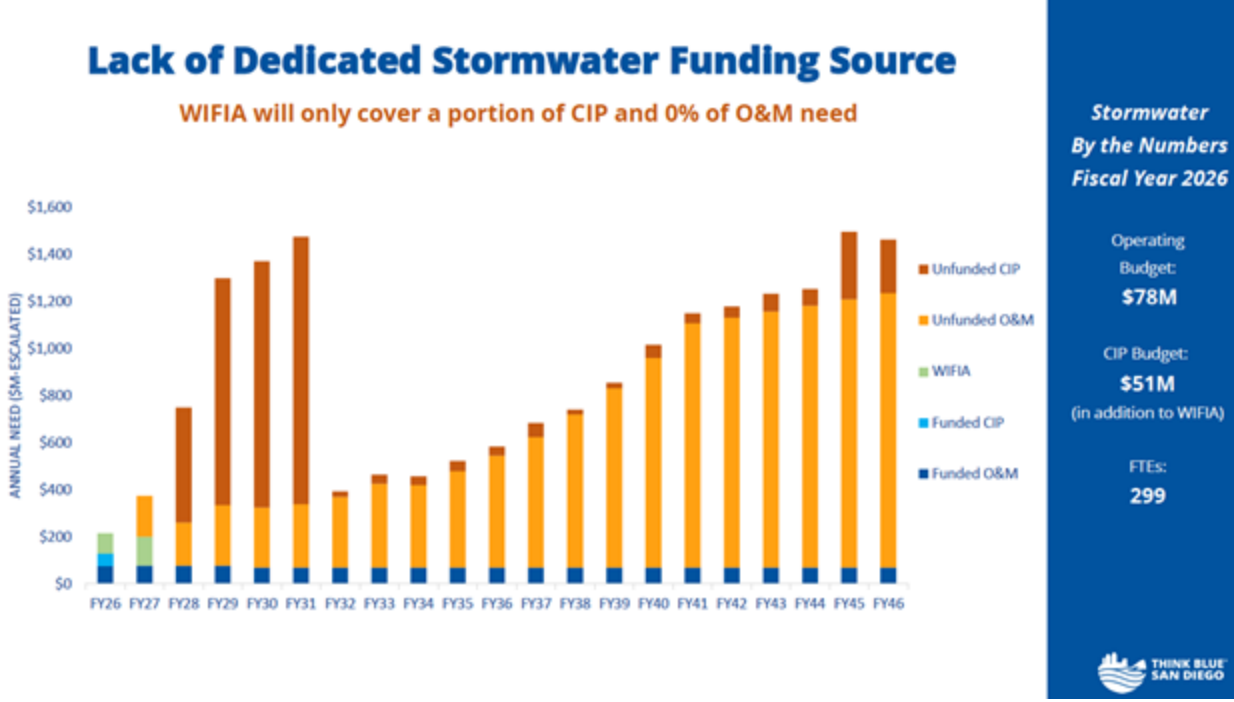
Figure 3-5. FY2021 known stormwater failure or degradation locations identified as part of the annual community flood risk assessment.

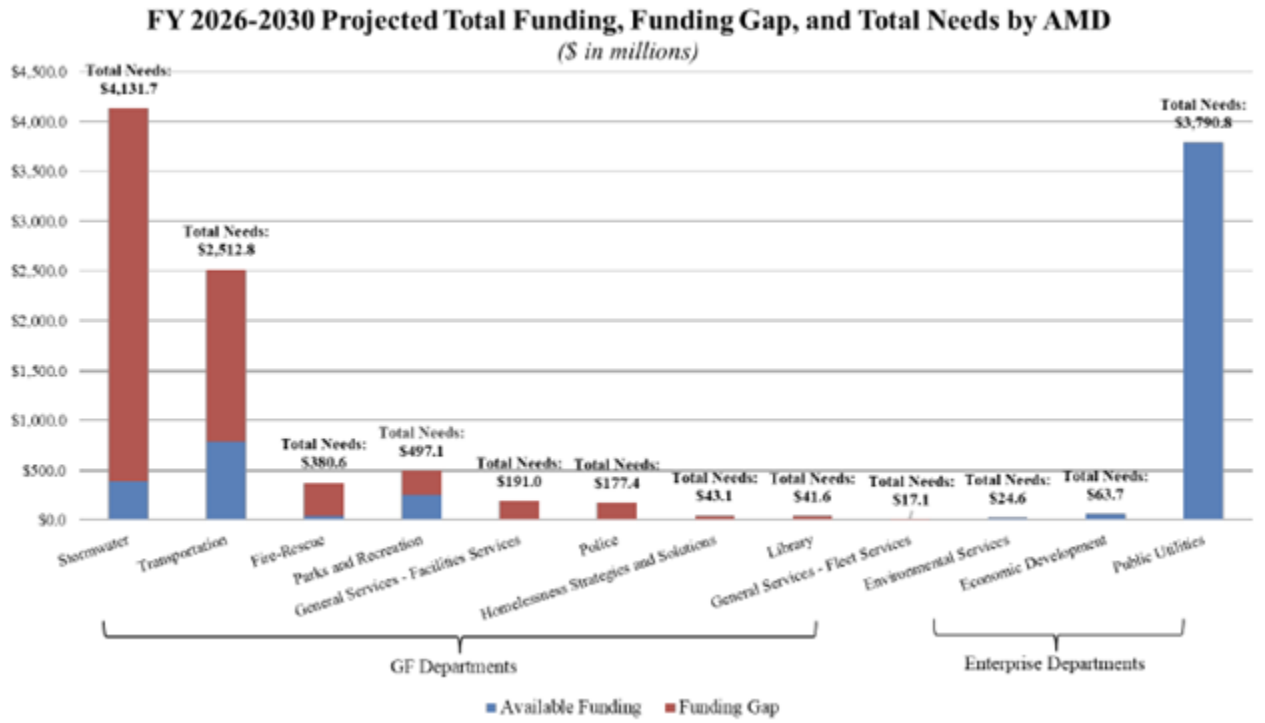
Allocated Budget to Emergency Projects



Stormwater Funding Crisis

- **Current Stormwater Department Deficit is $3.74 *BILLION* (2026-2030).**
- City Stormwater Fee: 95 cents a month per single-family home.
  - *Far* less than any other major western city.
  - Only generates $5.7 million per year.
  - Rest must come from General Fund.
- Prop 218: Stormwater Fee increase requires voter approval.
- City-run measure needs ⅔ vote.
  - Clean water, clean beaches, and flooding protection polls well, but only upper 50s/lower 60s. *Very* difficult to get ⅔ vote.
- Citizen-initiative need 50%+1.
  - Costs $3-4 million to do.





MEASURE W: PASSED NOV 2018 LA COUNTY

LA's "Safe, Clean Water" Program

- Parcel tax of 2.5 cents per square foot of impermeable surface area on private property within the LA County Flood Control District.
  - Publicly-owned parcels, including schools, are exempt.
- Raises up to $285 million per year for GI projects, clean water, water supply.
- Prioritizes projects benefiting "disadvantaged communities" alreading investing over $530 million into such communities.
- Includes local workforce job training and certification classes at community level, promotes living wage jobs, and promotes green job pathways.

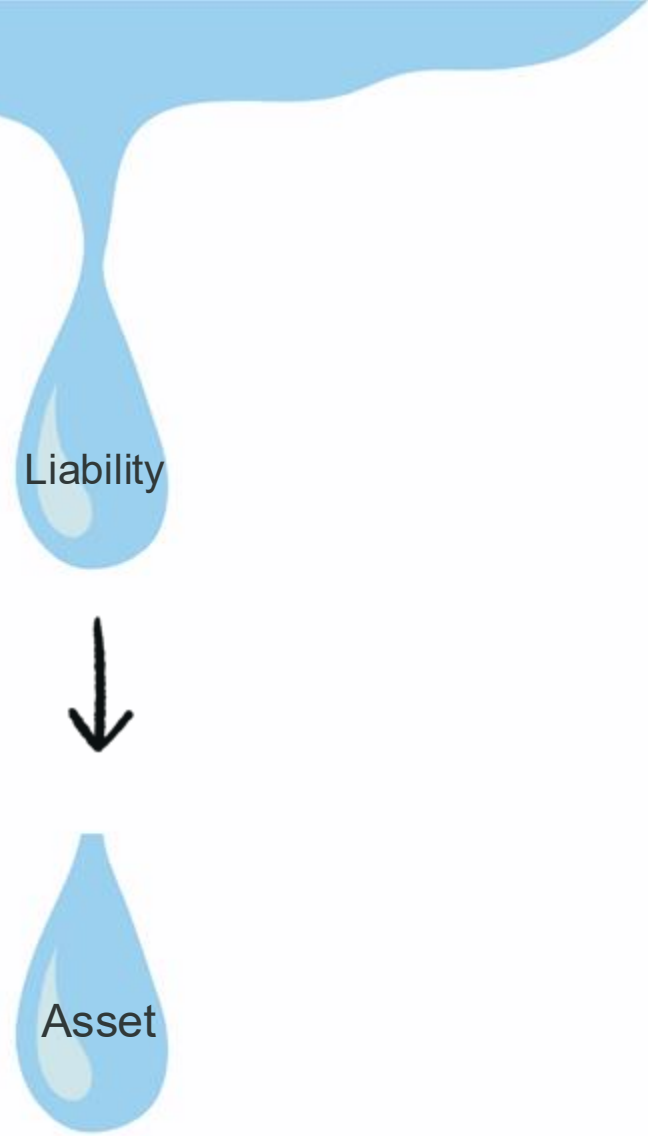
Would Would Funding Accomplish?

Multi-benefit solutions that address:

- Water quality
- Public health
- Flooding
- Disproportionate impacts
- Climate resilience & CAP compliance

And increase access to:

- Low carbon water supply
- Urban green spaces & cooling of heat islands
- Green jobs



What is Green Infrastructure?

Green infrastructure (GI) is an approach to water management that protects, restores, or mimics the natural water cycle.

Green infrastructure improves San Diego's:

- Water quality
- Biodiversity
- Climate resilience
- Quality of life
- Sense of community

Mimicking the Natural Hydrologic Cycle

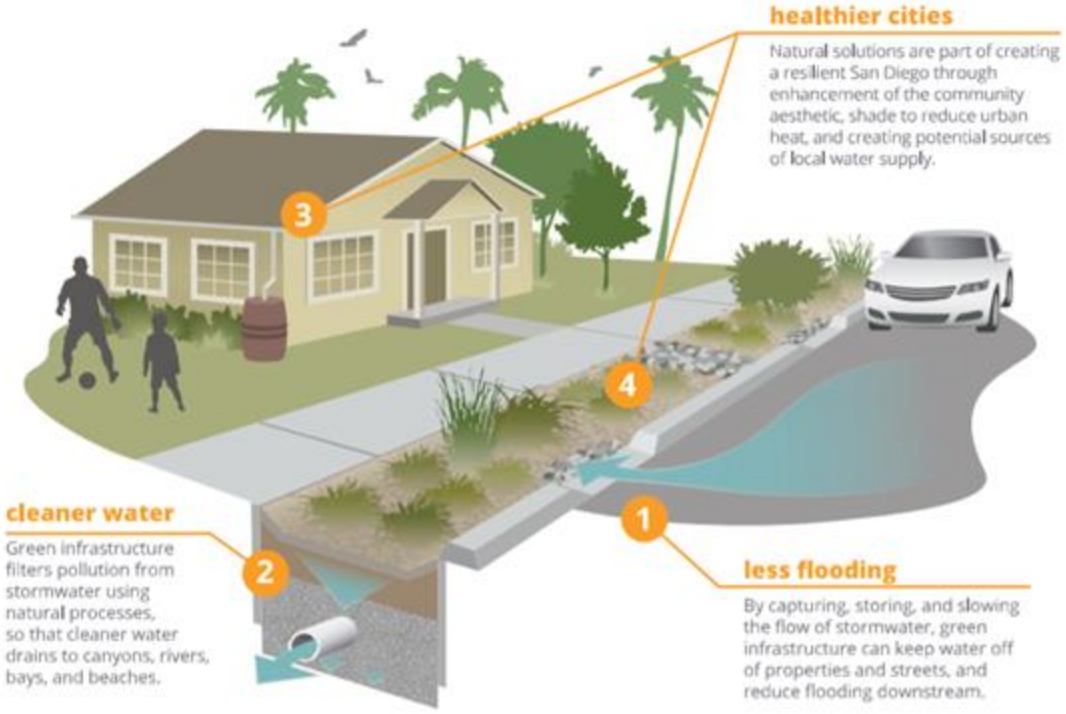


Figure 2-10. Conceptual schematic of GI and associated benefits.

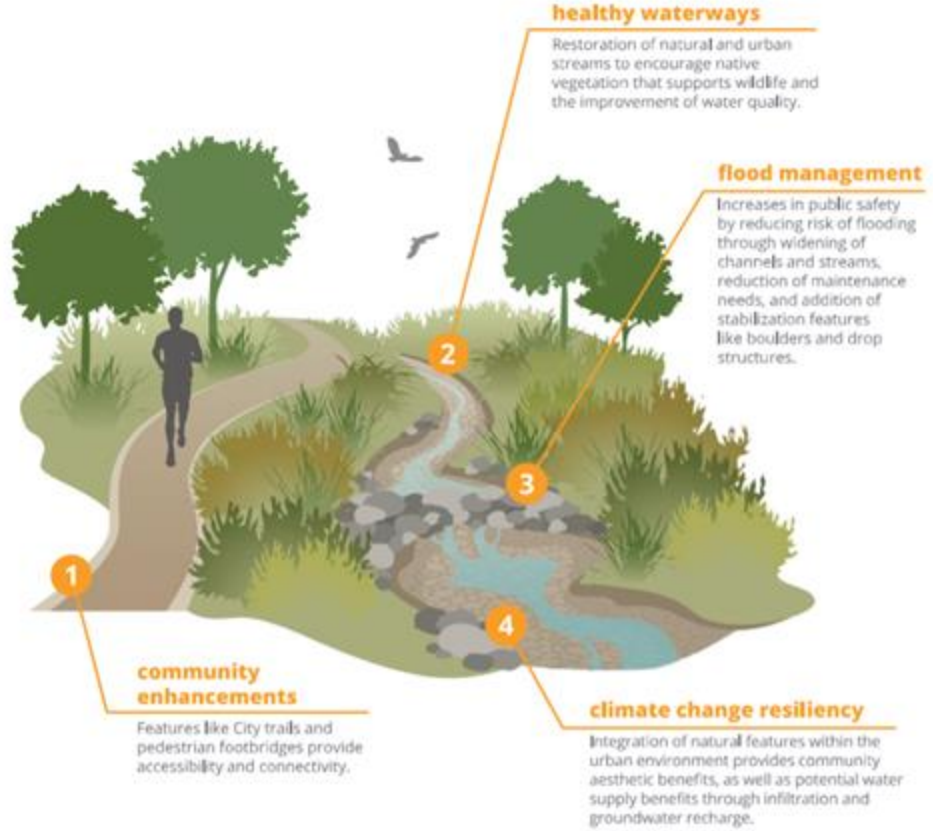


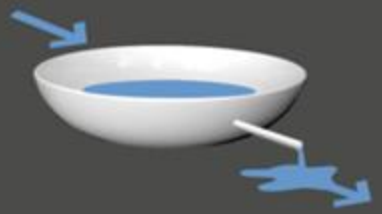
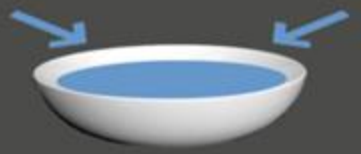
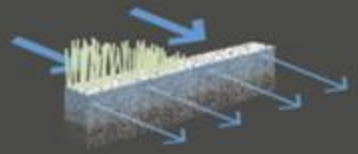
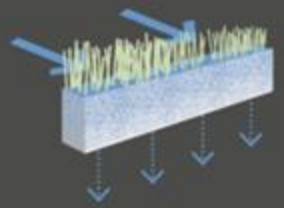
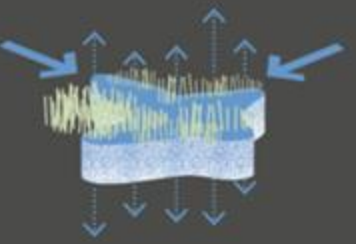
Figure 2-17. Conceptual schematic of stream revitalization.






mechanical

biological

flow control | detention | retention | filtration | infiltration | treatment

slow → spread

flow control: The regulation of stormwater runoff flow rates.

detention: The temporary storage of stormwater runoff in underground vaults, ponds, or depressed areas to allow for metered discharge that reduce peak flow rates.

retention: The storage of stormwater runoff on site to allow for sedimentation of suspended solids.

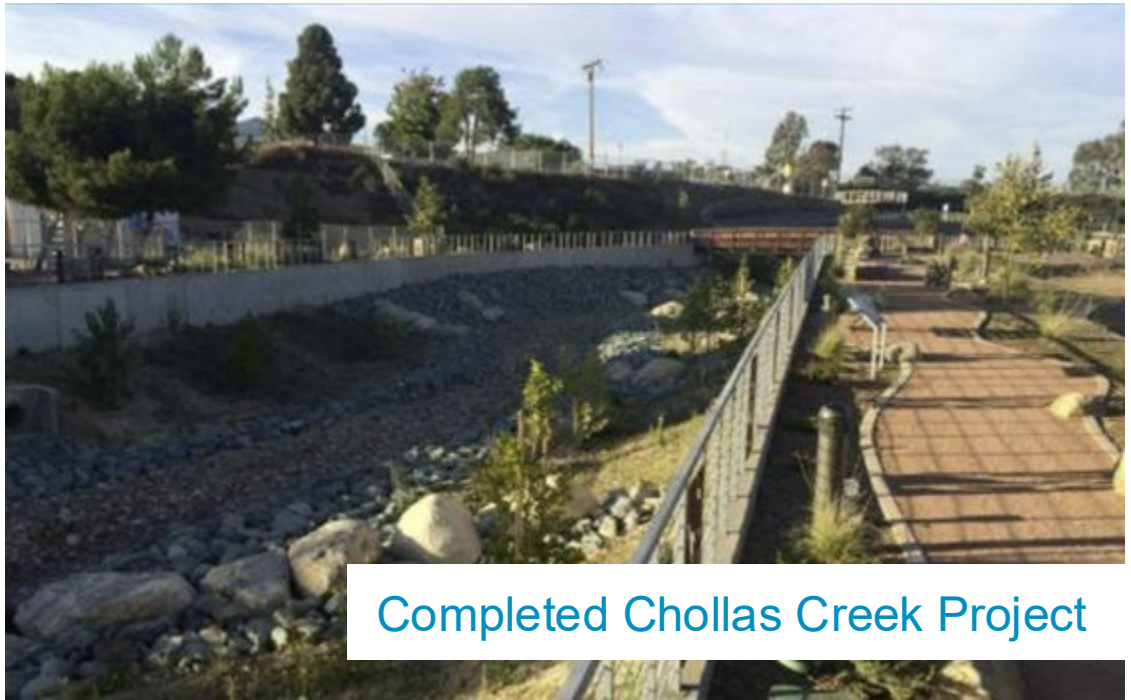
filtration: The sequestration of sediment from stormwater runoff through a porous media such as sand, a fibrous root system, or a man-made filter.

infiltration: The vertical movement of stormwater runoff through soil, recharging groundwater.

treatment: Processes that utilize phytoremediation or bacterial colonies to metabolize contaminants in stormwater runoff.

Chollas Parkway Stream Restoration

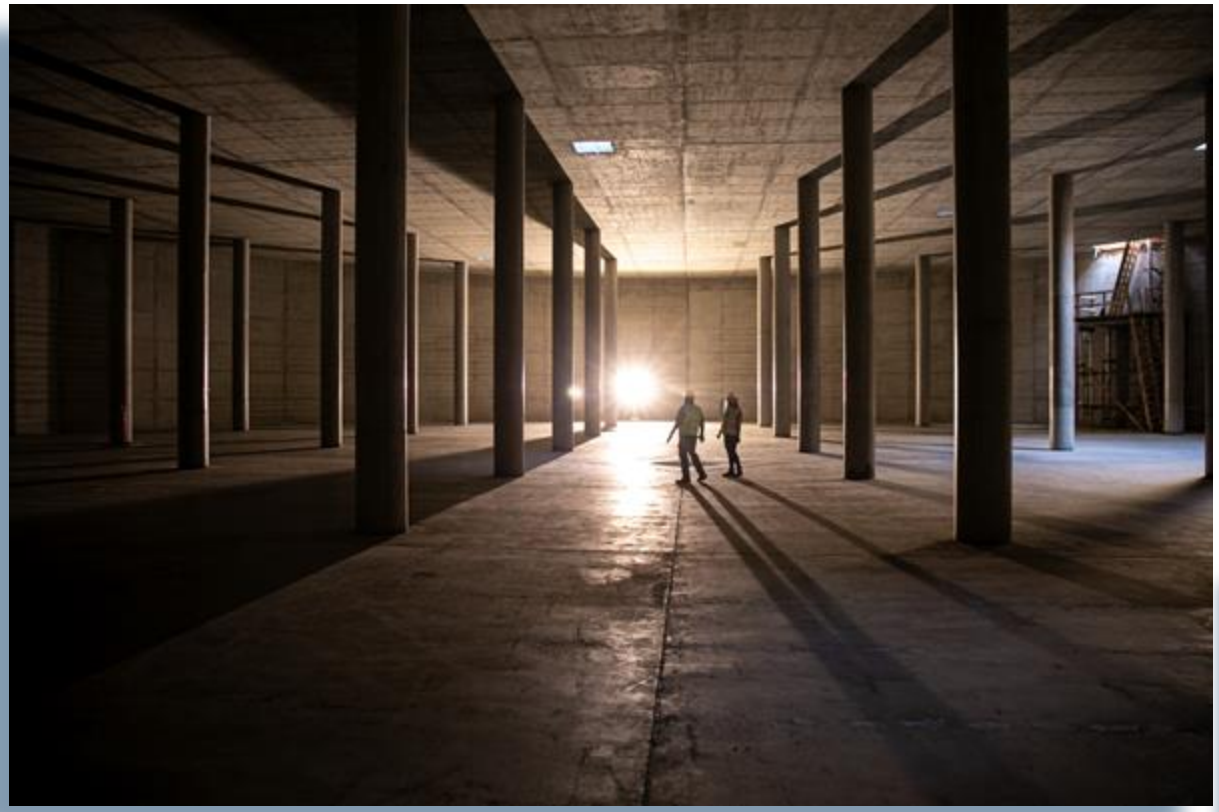
District 9 – Mid City



Completed Chollas Creek Project

Ashley Falls

District 1 – Los Peñasquitos



Large Stormwater Capture & Retention

San Diego Airport. Captured water is repurposed for cooling towers, dust control, and cleaning.

Large-scale stormwater vaults beneath areas like schools and parks have multiple benefits:

- Reuse decreases imported water needs
- Captures polluted runoff
- Reduces runoff volume and flooding
- Can be metered into Pure Water system

Questions?

Thank You!

SAN DIEGO COASTKEEPER

Website

sdcoastkeeper.org

Email

Patrick@sdcoastkeeper.org

Facebook

@sandiegocoastkeeper

Instagram

@sdcoastkeeper

YouTube

@sandiegocoastkeeper