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The State of Stormwater in the City of San Diego

American Public Works Association
April 11, 2024

The City of SAN DIEGO

Agenda

1. Historic storm hits San Diego
   - 1,000-year storm – response & recovery
   - Emergency channel maintenance & pipe repair
2. Funding needs & challenges
   - Financial outlook & priorities
3. Looking forward
   - Future projects in impacted neighborhoods
   - Proposed solutions for 2024 ballot

Historic Storm Hits San Diego

- **1,000-Year Storm Event on Jan. 22**
  - 4th wettest day in recorded SD history
  - 2.72 inches of rain in a few hours
  - 1 in 1,000 chance of occurring in any given year
  - $90M+ infrastructure damage countywide
  - 1,000+ properties damaged

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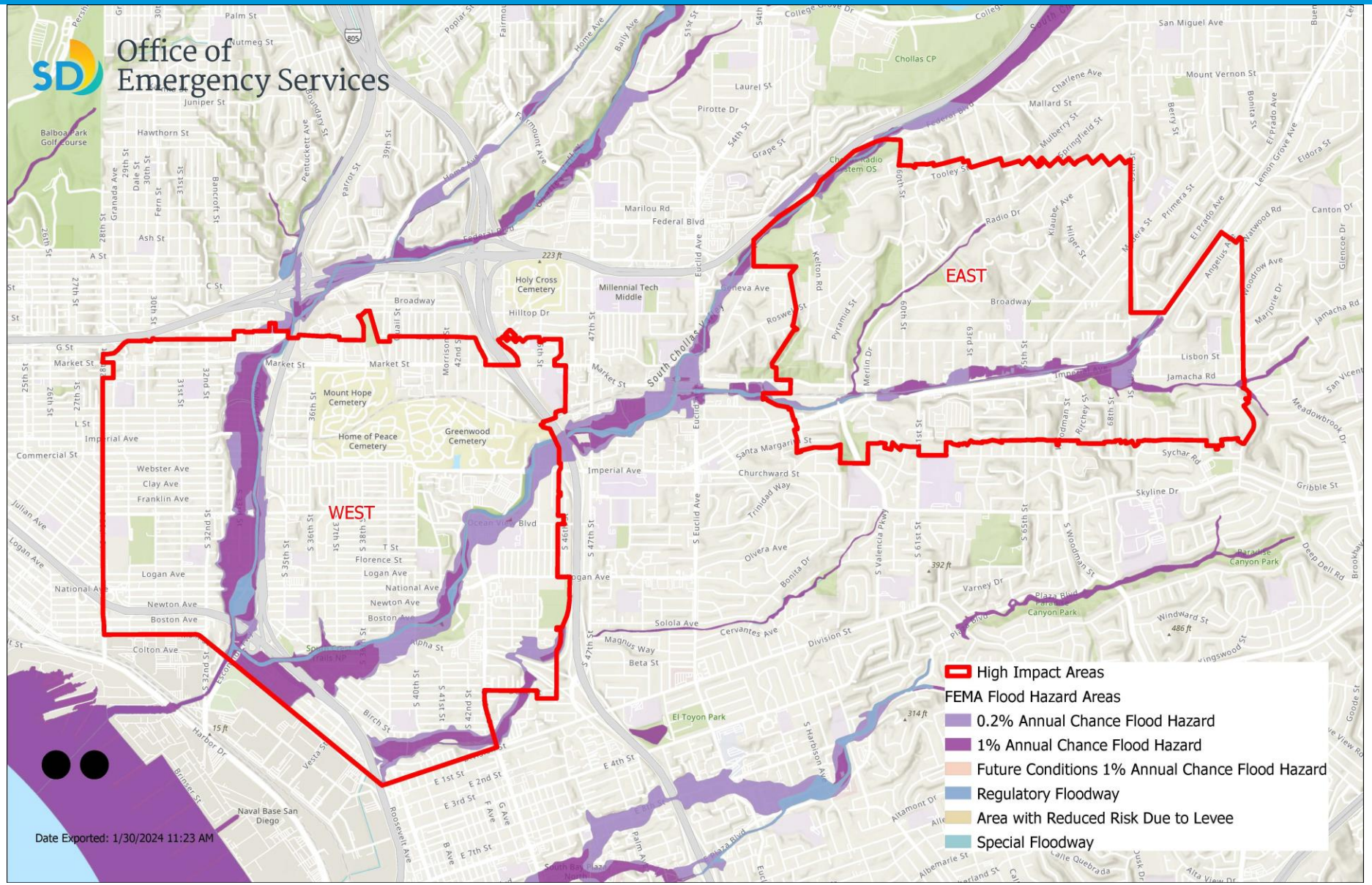
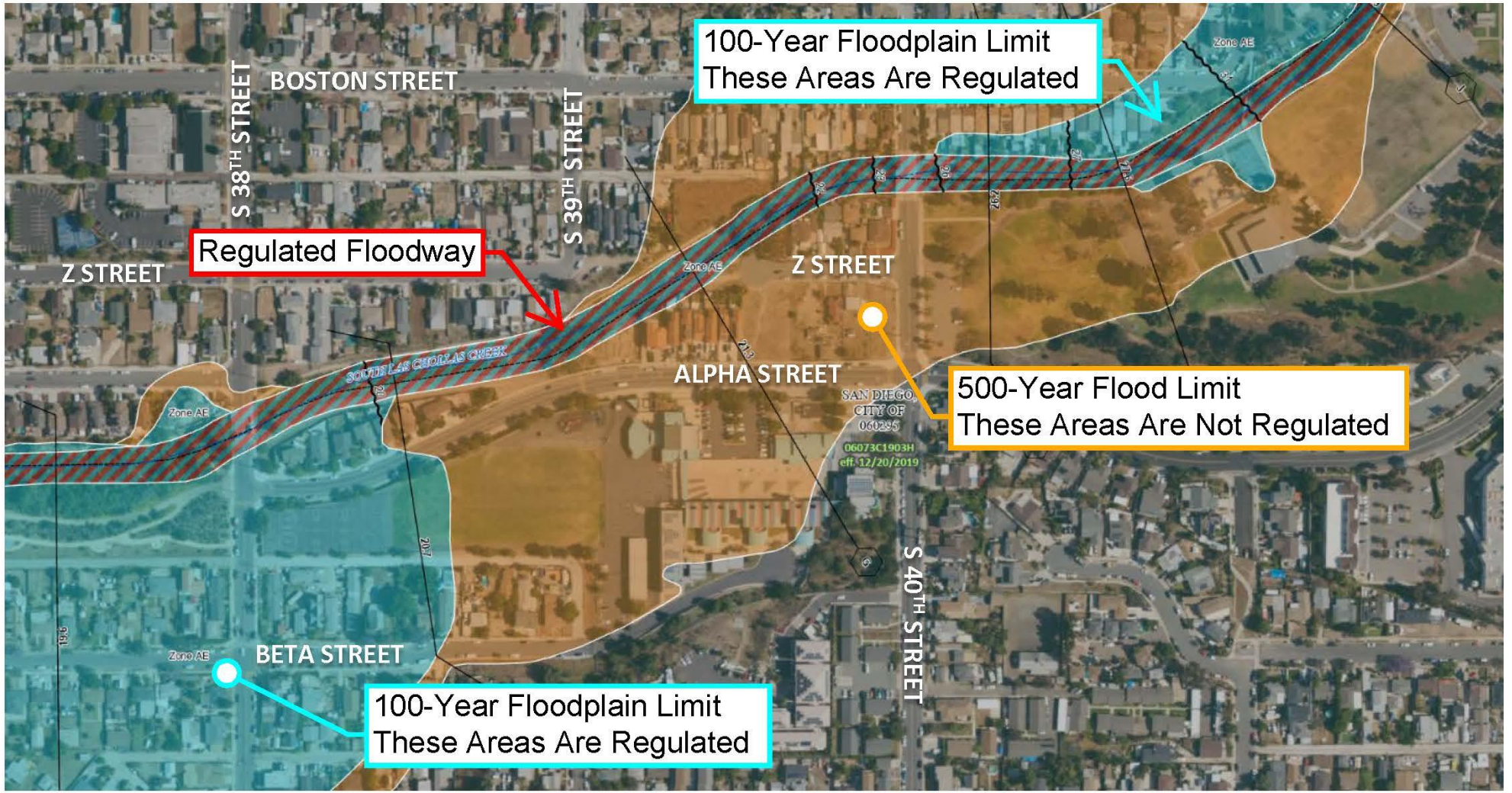
High Impact Areas from Jan. 22 Storm





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FEMA FIRM INUNDATION LIMITS

AS OF 01/23/2024

Based on: https://www.fema.gov/flood-maps/national-flood-hazard-layer

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Storm Response & Recovery

- **Day of Jan. 22**: swift water rescues/public safety
- Multiple departments coordinated street and neighborhood cleanups in the weeks after
- **Late January to Present**: 16+ miles of emergency channel maintenance

More than 9,800 tons of mud, vegetation, trash, debris and bulky items removed citywide since Jan. 22

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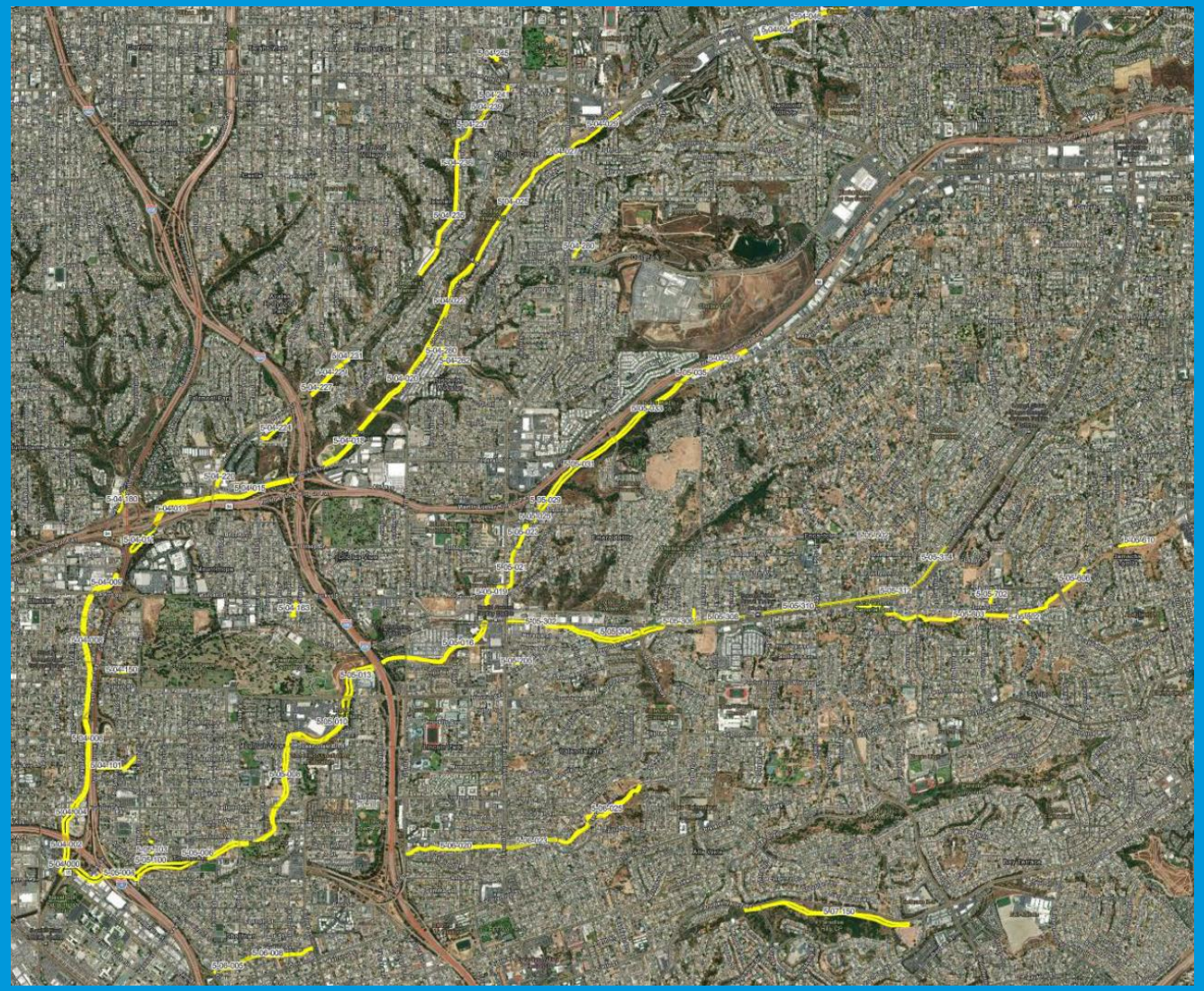
11 Miles of Emergency Maintenance in Chollas Creek Since Jan. 22



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Channel Maintenance History

- **Pre-2004:** As-needed basis without public review or regulatory permits
- **2004:** RWQCB mandates technical report pertaining to channel maintenance activities and practices
  - Directive issued to 18 cities and SD County
- **2011:** City sued while developing Master Storm Water System Maintenance Program (MMP) and reaches settlement that calls for EIR to expire in 2018
- **2013-2018:** MMP is in effect
- **2020:** City adopts Municipal Waterways Maintenance Program (MWMP) to replace MMP


Alvarado Channel - Before


Alvarado Channel – After

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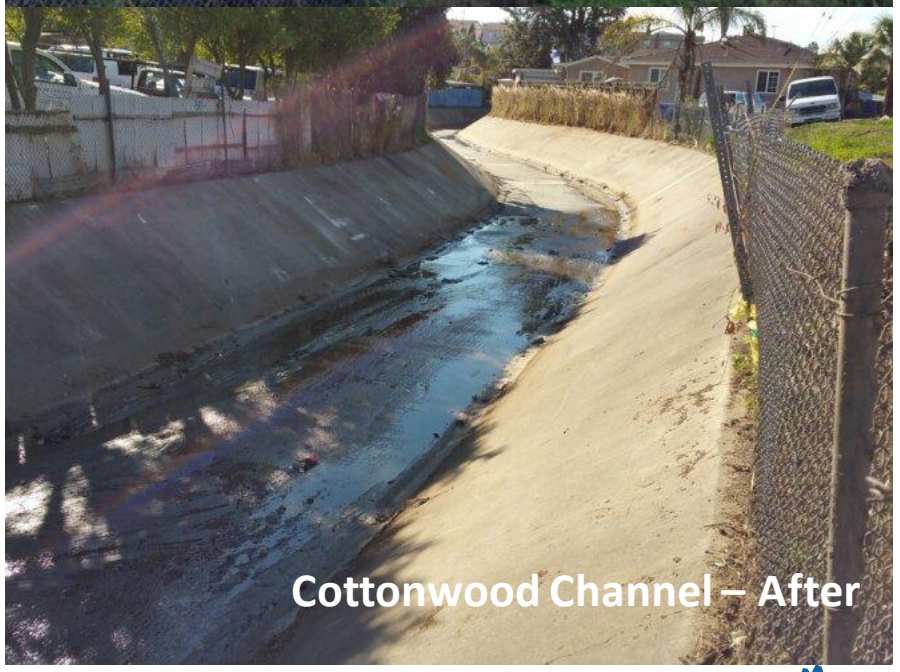
Hurdles to Proactive Maintenance

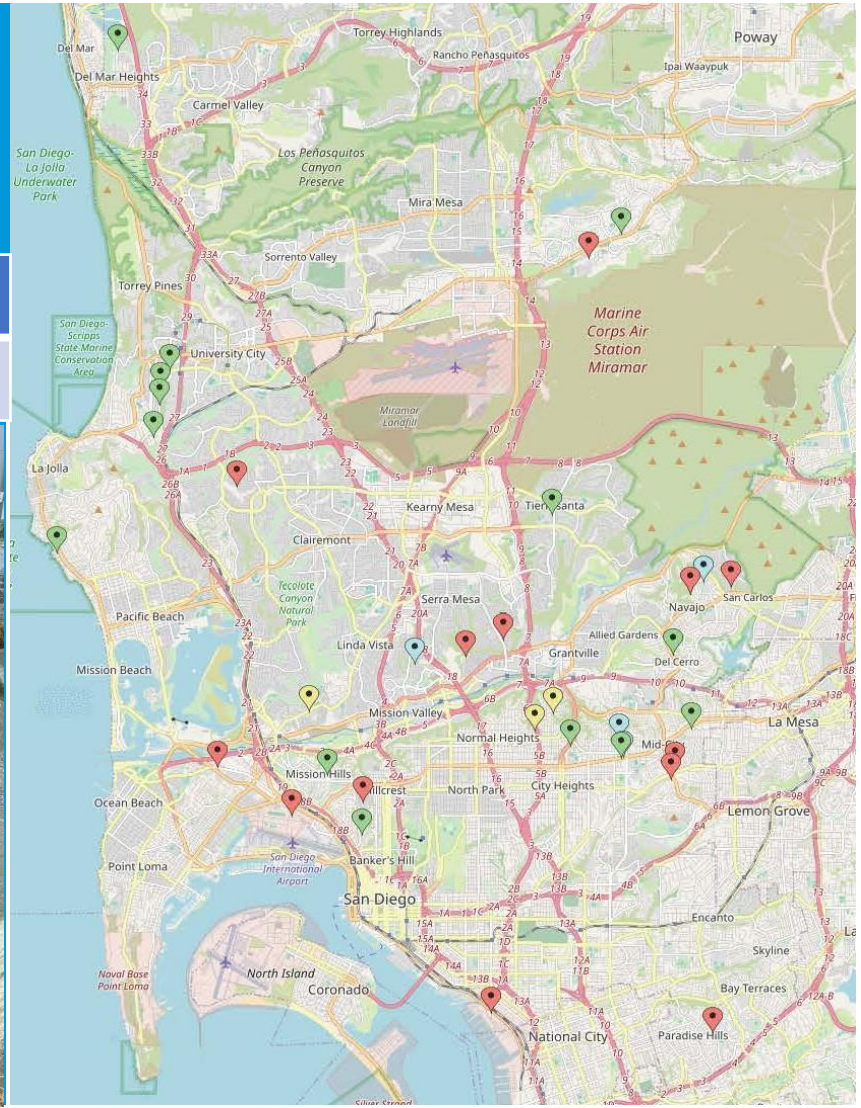
- **Lengthy Authorization Process**
  - Need approval from several agencies (ACOE, RWQCB, CA Fish and Wildlife, City, Coastal Commission, etc.)
  - Must include mitigation plan with application
- **Wetland Mitigation (Availability & Funding)**
  - Lack of suitable wetland restoration sites
  - Requires detailed hydrology and species surveys
  - Mitigation banks = $575K per acre of credit
  - If not in same watershed, mitigation ratios can be as high as 4:1


Cottonwood Channel - Before


Cottonwood Channel – After

Storm Response & Recovery

January 2024 Emergency Capital Projects	FY2024	FY2025
13 new collapsed pipes, sink holes & slope failures	$20.2M	$50M*



* Rough estimate of identified emergencies as of February 2024

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Storm Response – Lessons Learned

- Helpful to have all City departments in Emergency Operations Center
  - Able to leverage resources quickly
- Need to initiate Incident Management Teams more quickly
- Establish assistance center as soon as possible

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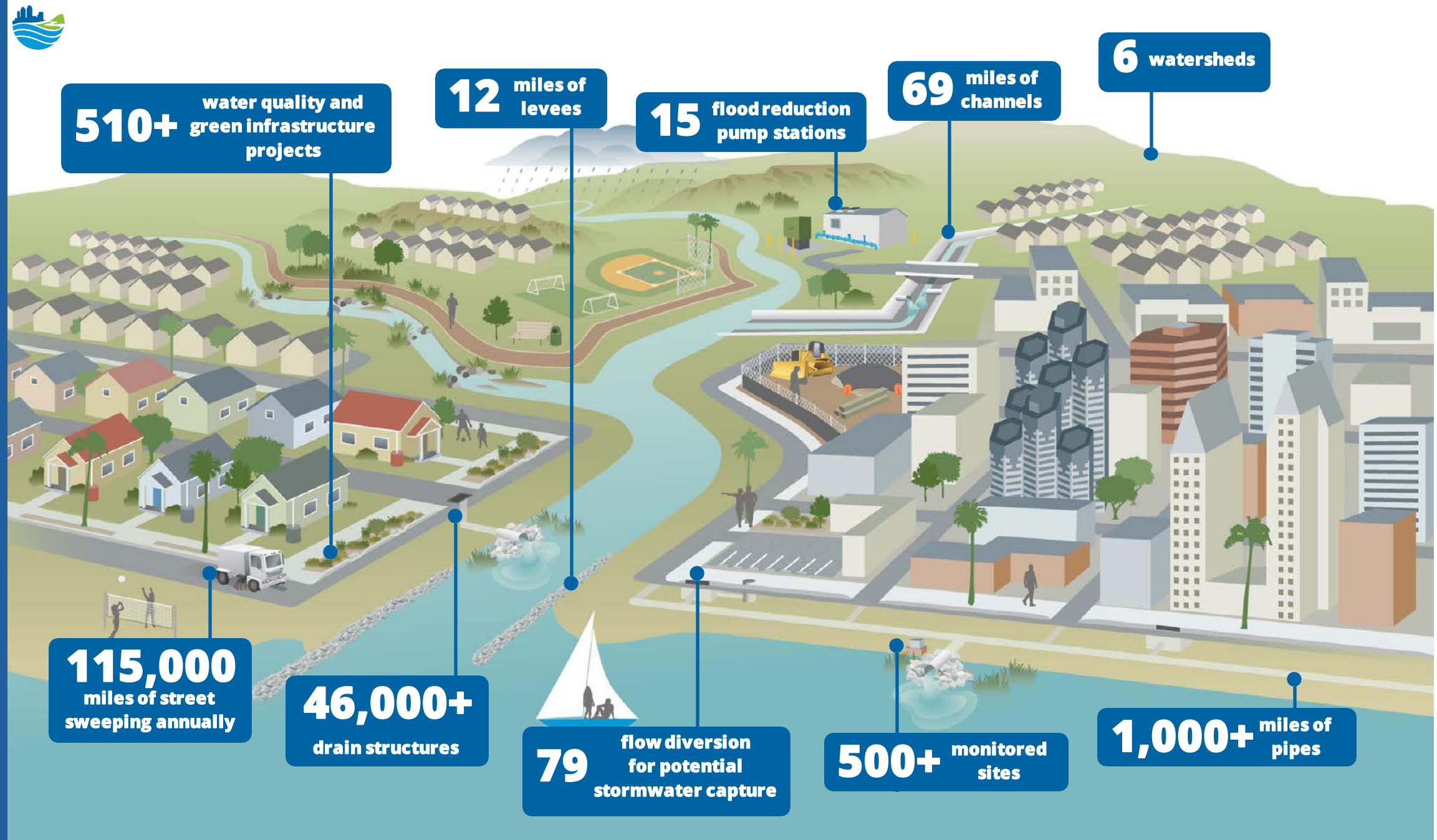
510+ water quality and green infrastructure projects
12 miles of levees
15 flood reduction pump stations
69 miles of channels
6 watersheds
115,000 miles of street sweeping annually
46,000+ drain structures
79 flow diversion for potential stormwater capture
500+ monitored sites
1,000+ miles of pipes

Stormwater Department Five-Year Strategic Plan

Ensure flood-safe communities

Protect clean water

Provide clean & green streets

Enhance our communities & protect our habitat

Capture stormwater for use

Prioritize education, outreach & engagement

An Aging & Undersized System

- **$1.6 Billion** in unfunded SW infrastructure needs
- **Beyond Useful Life** – common state of infrastructure
- **Undersized Channels** – many have max capacity of 1- to 10-year storm event
- **15 Pump Stations** – lack needed capacity, must be upgraded and modernized to prevent flooding
- **19+ Miles of Needed Pipe Replacement** – outdated corrugated metal pipe
- **Historical Lack of Investment** in SW infrastructure

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Key Challenges

- **Aging and failing infrastructure** exposes communities to flooding and unsafe conditions
- **Clean Water Act requirements** mandate water quality improvement
- **Continued urbanization** increasingly burdens ability to provide clean and green streets
- **Climate change** exacerbates all of the above

Overview: WIFIA Loan for Stormwater CIP

WIFIA Loan Structure

Master Agreement

- Total amount of $733M
- 5 Project Categories
- EPA provides 49% of loan ($359M)
- City matches 51% of loan ($374M)
- Allows for 3 Credit Agreements

First Credit Agreement

- Total amount is $459M
- 83 Potential CIP Projects
- Modified to 52 Projects
- EPA's share : $225M
- City's Match : $234M
- Interest Rate : 3.11%

Stormwater

By the Numbers

Fiscal Year 2024

Operating Budget:
$69M

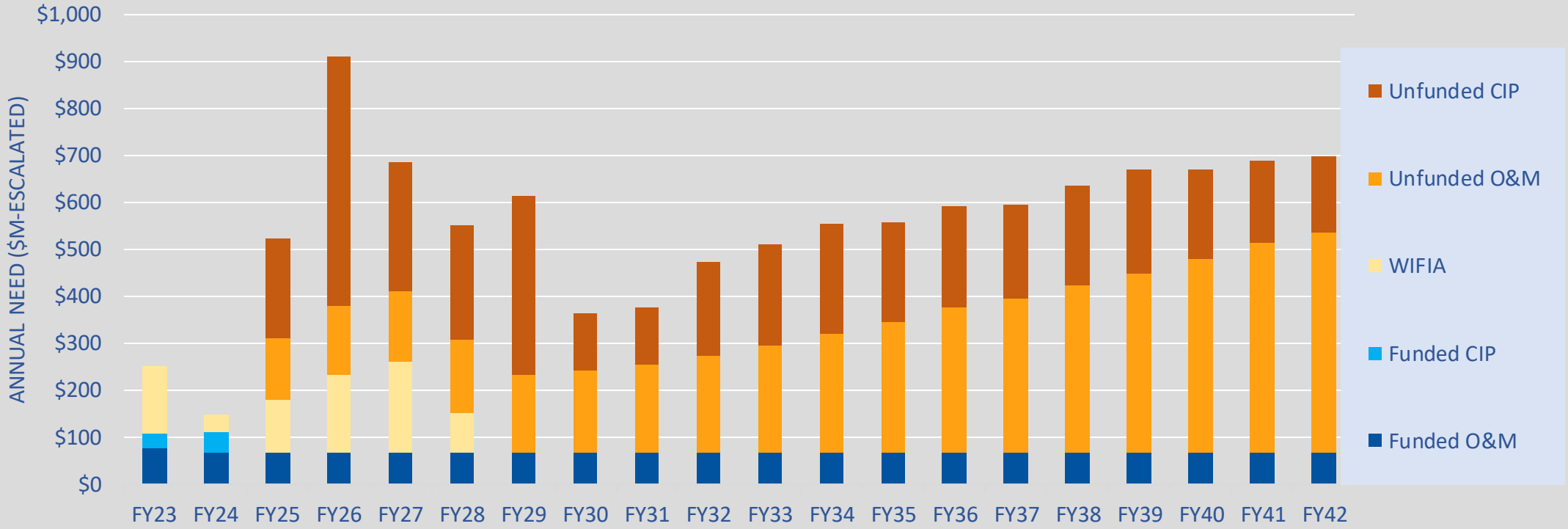
Funded CIP:
$41M

WIFIA CIP:
$40M

Total CIP:
$81M

SWD Ability to Address Challenges Limited by Funding

FY25 – FY29 WIFIA loan will only cover a portion CIP and 0% O&M funding needs



Costly Emergency Repairs Increasing

Summary of Stormwater Emergency CIPs

	FY20	FY21	FY22	FY23	FY24 [1]
Number of Emergencies	7	11	8	16	9 [2]
Current Year Budget Allocation	$17.2M	$4.62M	$8.68M	$20.33M	$12.92M
Prior Year Budget Allocattion	$9.96M	$2.88M	$8.57M	$7.3M	16.33M
Total Budget Allocation	**$27.0M**	**$7.5M**	**$17.3M**	**$27.6M**	**$29.3M**

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Impact of Emergency Repairs

- Prevents proactive infrastructure investment
- Takes funding away from planned SW projects
- Causes lengthy delays for shovel-ready projects
- Any costs the Stormwater Department can't cover must be paid out of the City's General Fund
- Leaves less funding to pay for other city priorities, including public safety, parks, libraries and homeless services

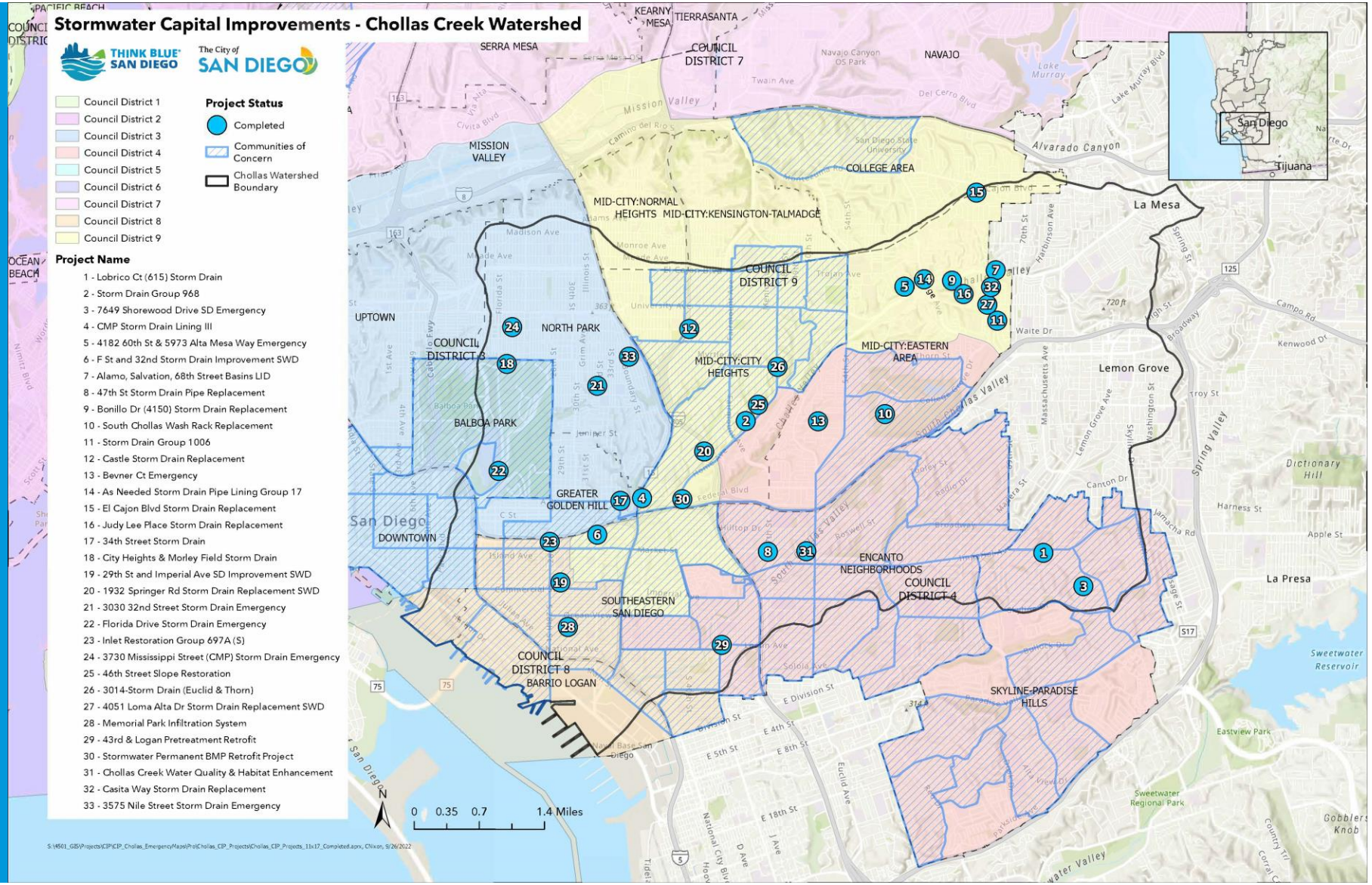
LOOKING FORWARD

- Investing in the Chollas Watershed
- Beta Street Drainage Project
- Rising Construction Costs
- Proposed Solutions for 2024 Ballot

Chollas Creek Watershed

Recently Completed Projects Neighborhoods Impacted:

- Barrio Logan
- City Heights
- College Area
- Encanto
- Golden Hill
- North Park
- Southeastern SD



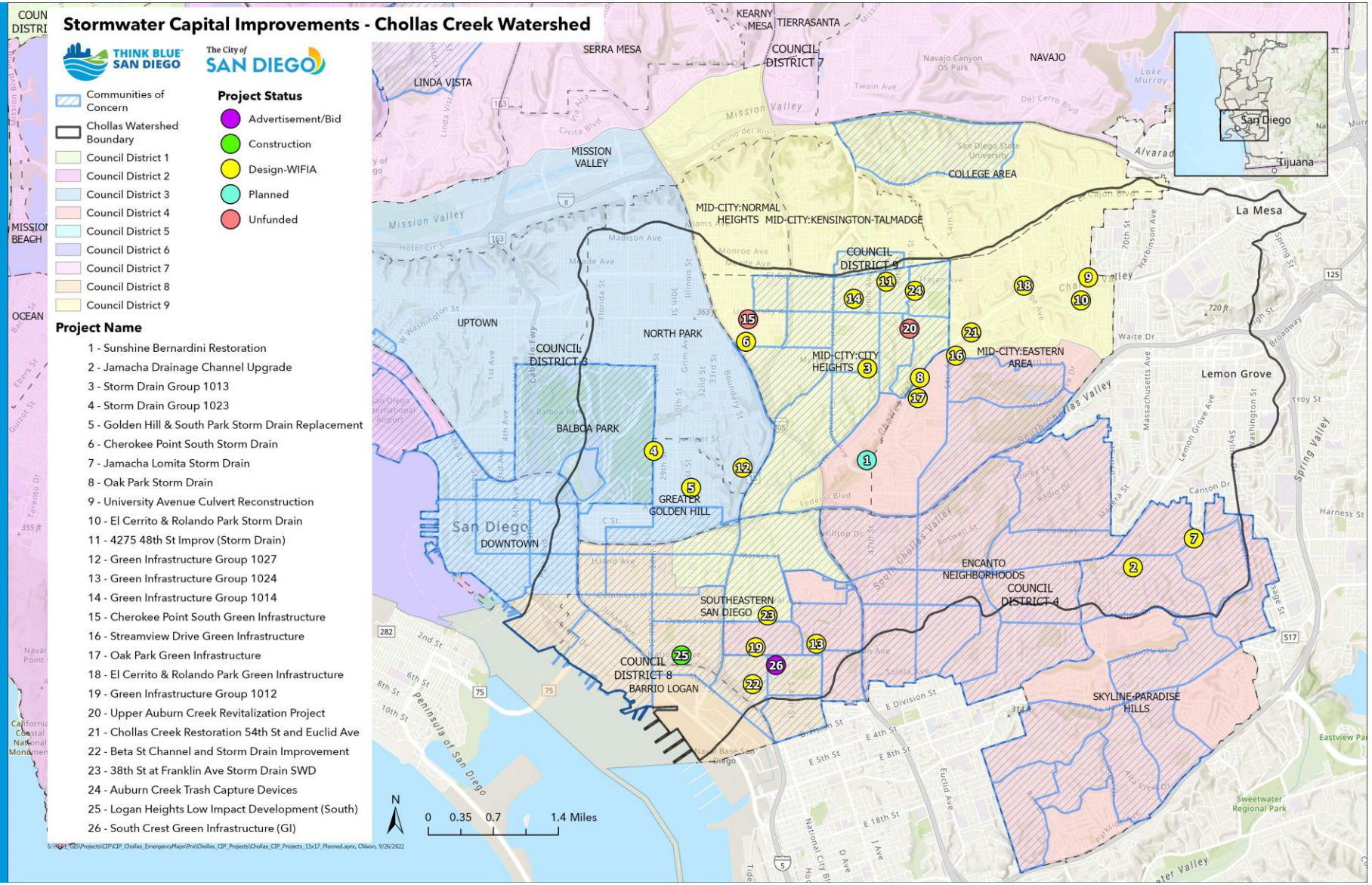
Chollas Creek Watershed

26 Ongoing & Future Projects

$235M in WIFIA investment

Project Types:

- Creek Restoration & Revitalization
- Culvert Reconstruction
- Channel Upgrade
- Green Infrastructure
- Storm Drain Replacement
- Trash Capture Devices



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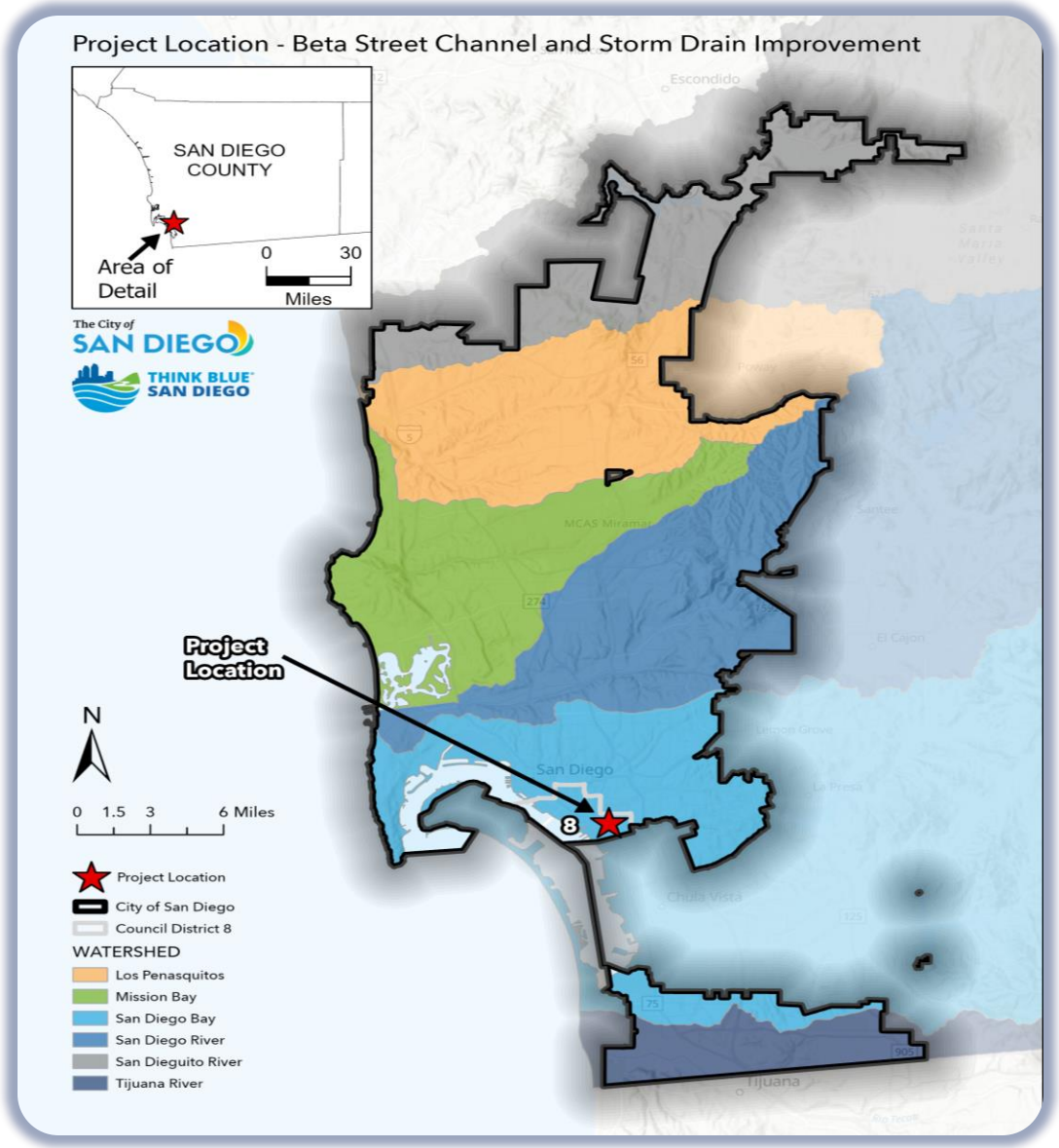
Beta Street Drainage Project

- **Location:** Southcrest
  - One of hardest hit neighborhoods during Jan. 22 storm
- **Project Goals:**
  - Mitigate neighborhood flooding
  - Enhance creek's capacity to reduce overtopping of channel
  - Improve drainage system
  - Modify the trail network



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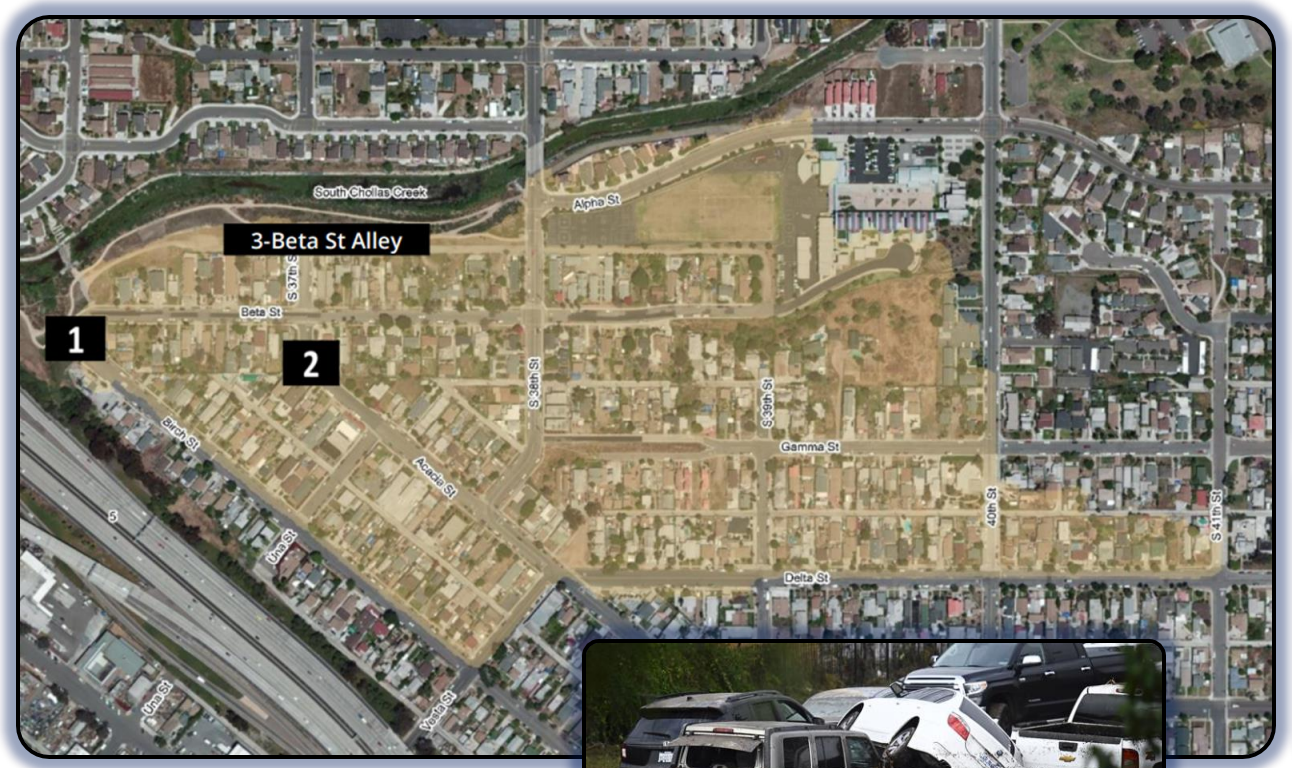
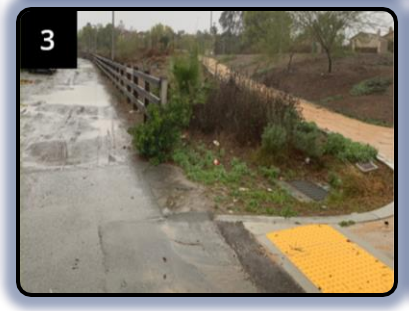
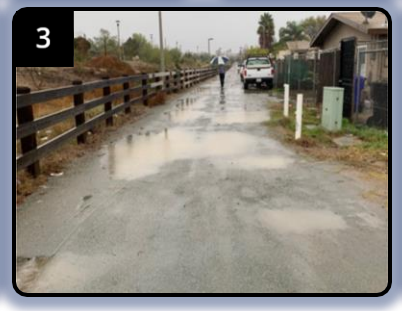
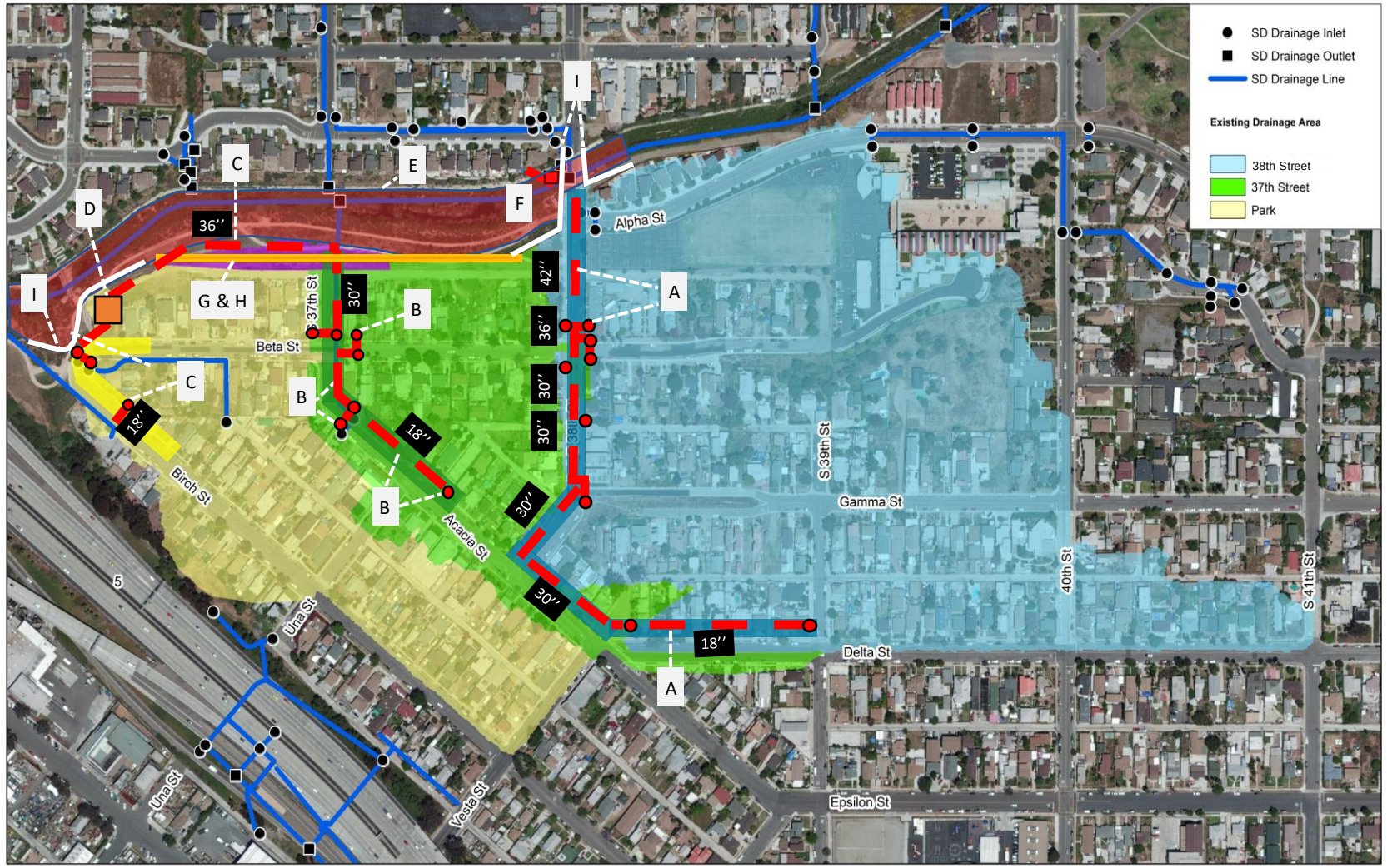
Known Flooding Issues







Project Approach



A – New storm drains and inlets.

B – New storm drains, inlets, and upsized existing storm drains.

C – New storm drains, inlets, and upsized existing storm drains.

D – Pump Station

E – South Chollas Creek channel widening.

F – Flap Gates

G, H – Concrete V-Ditch, and regrade the Alley.

I – Flood barrier and earthen berm.

Beta Street Project

Estimated Cost: $56 Million*

Planning and Design

Start: 2/2024
End: 2/2026*

Contract Bid / Award

Contract Bid End: 2/2026
Contract Award End: 8/2026

Construction

Start: 8/2026
End: 8/2028

Post-Construction

Start: 9/2028
End: 12/2029

*Rough cost estimate based on concept design. Will likely change as project advances through design stage.

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Rising Costs for Capital Projects

- **Recent Project Bids Higher Than Estimates**
  - Southcrest Green Infrastructure
    - Engineer's estimate: **$2.9M**
    - Lowest bid: **$4M**
  - South Mission Beach Green Infrastructure
    - Engineer's estimate: **$26.4M**
    - Lowest bid: **$65.8M**
  - La Jolla Farms Outfall Repair
    - Engineer's estimate: **$879K**
    - Lowest bid: **$997K**

Potential Solution for November 2024 Ballot

Sales Tax Increase

- 1% increase to 8.75% = $400M annually
- Requires 50% vote
- Funding would go to City's General Fund and could be used for any purpose
- Goal is to deliver core neighborhood services while reversing decades-long trend of underfunding infrastructure (stormwater, roads, etc.)
- Citywide infrastructure needs = $9.25B

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Questions?

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