



Stormwater Presentation

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SPEAKERS

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Agenda

- 1 Stormwater Department Goals
- 2 Stormwater Department Financial Situation
- 3 Stormwater Program Drivers
- 4 Stormwater Quality Requirements
- 5 Lesson Learned



Introduction

Stormwater Department primary functions:

- Enhance San Diego's water quality
- Protect communities from flooding



Purpose:

Provide clean waterways and flood-safe communities



Vision:

Create vibrant, sustainable communities



Mission:

Build and maintain efficient stormwater infrastructure





Stormwater Department Goals



encouraging public partnership



safeguarding communities from flood



providing community benefits



protecting clean, safe water



using stormwater as a resource



restoring the environment



Underfunding Stormwater has Serious Consequences That Will Only Get Worse

- Livability of San Diego declining**
- Polluted, unsafe water is harmful**
- Closed beaches impact residents & tourists**
- Lost opportunity to capture water for drought preparedness**
- Fines, claims, litigation**
- Clean Water Act violations**



Erosion and mud slide during 2020 rain event due to stormwater pipe failure near 163



Near-term Funding and Financing Options



CWSRF & State Budget Allocations

Other Grants

Cost Recovery:

- Street Sweeping Citations
- Stormwater Inspections
- Stormwater Enforcement

Water Infrastructure Finance and Innovation Act (WIFIA)



WIFIA Loan

- Programmatic loan application submitted to fund \$733 million of Stormwater Capital Improvement Program needs
- City and EPA executed a WIFIA Master Agreement on August 9, 2022

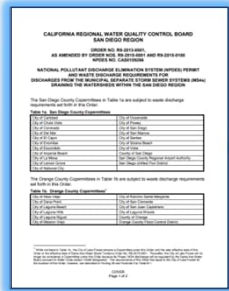


WIFIA Project Categories

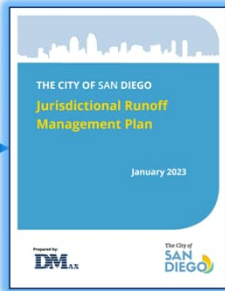




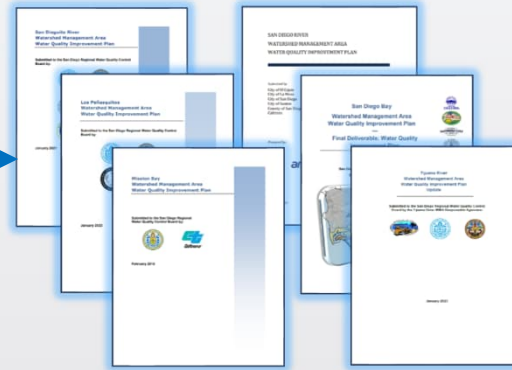
Program Drivers



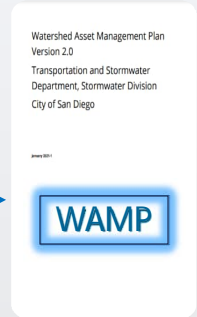
San Diego MS4 Permit



Jurisdictional Runoff Management Plan



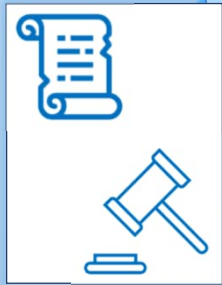
Water Quality Improvement Plans



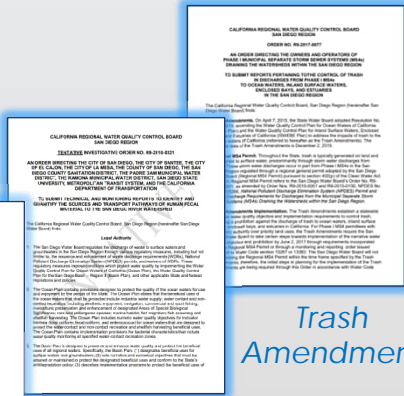
WAMP



Targeted Studies

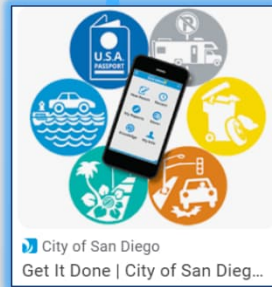


Litigation

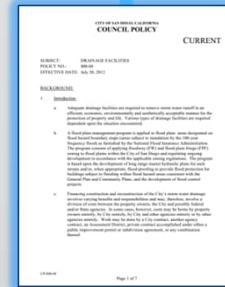


Investigative Orders

Trash Amendment



Get It Done



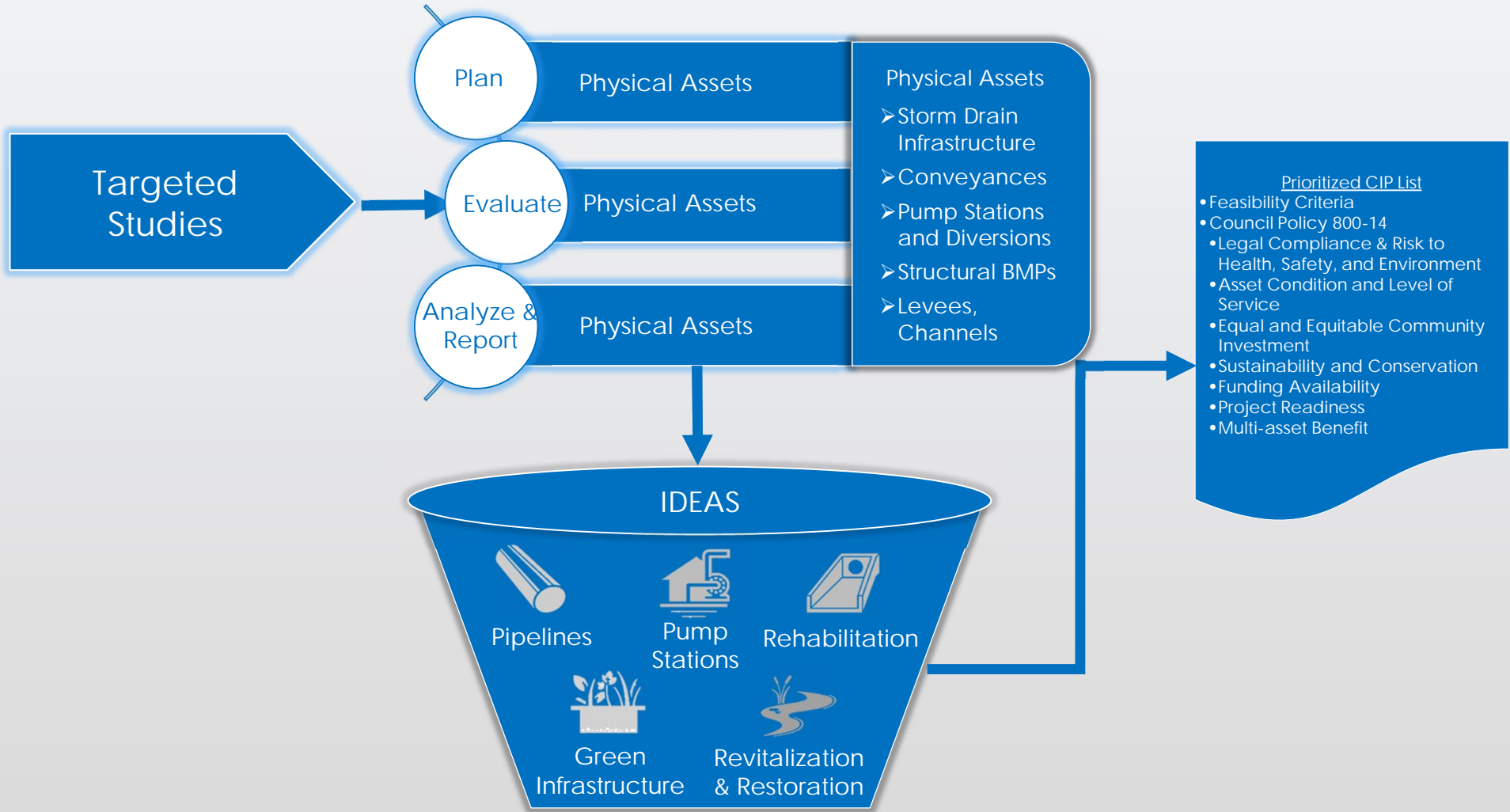
Needs List



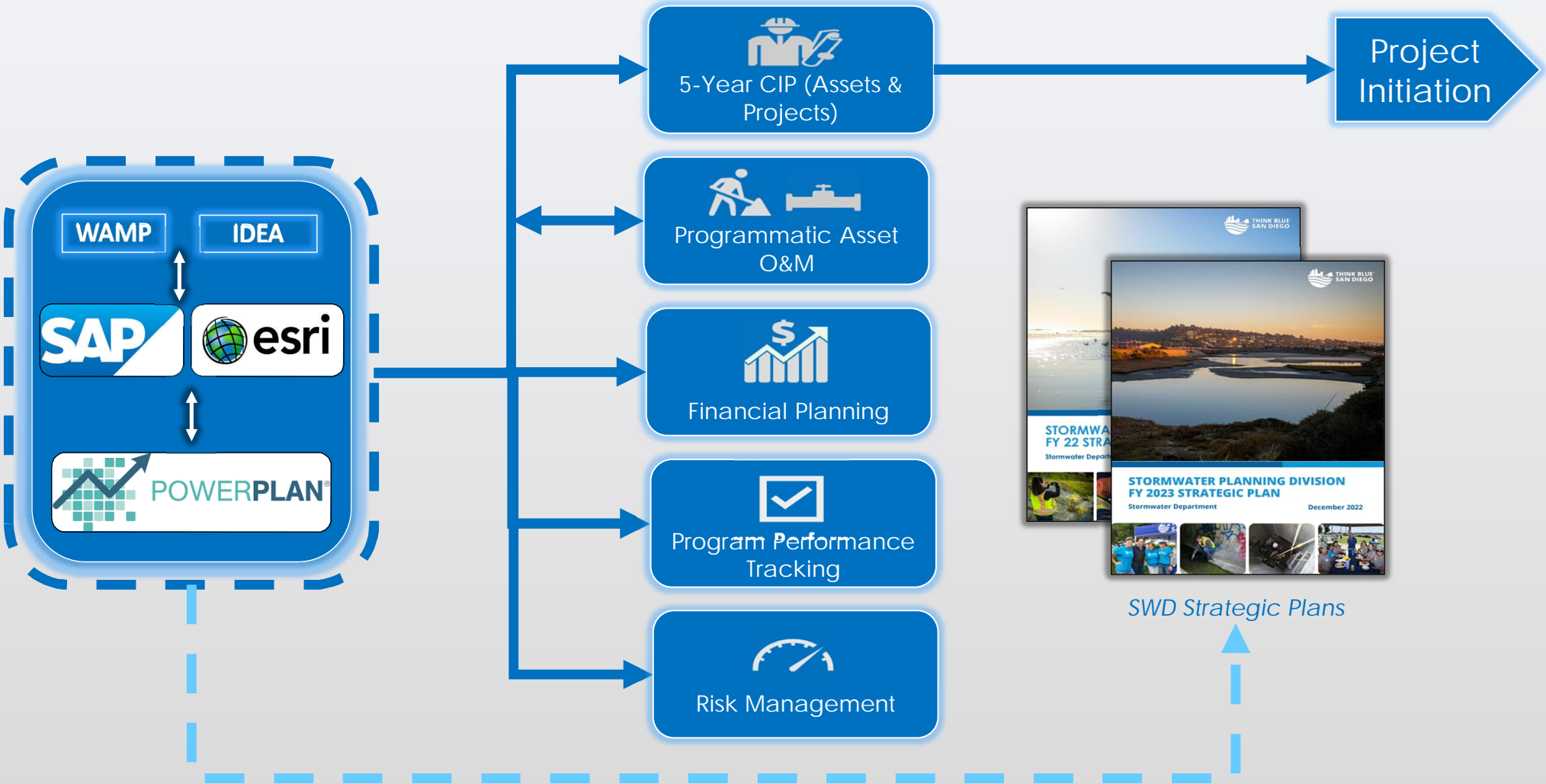
Citywide Strategic Plan, Climate Action Plan, Climate Equity Index



Integrated Drainage Engineering Analysis



Strategic Planning Documents



Post-Construction Project Categories



Exempt/Routine Maintenance



Standard Project



Priority Development Project (PDP)

Category 1 Exemption: Walkways

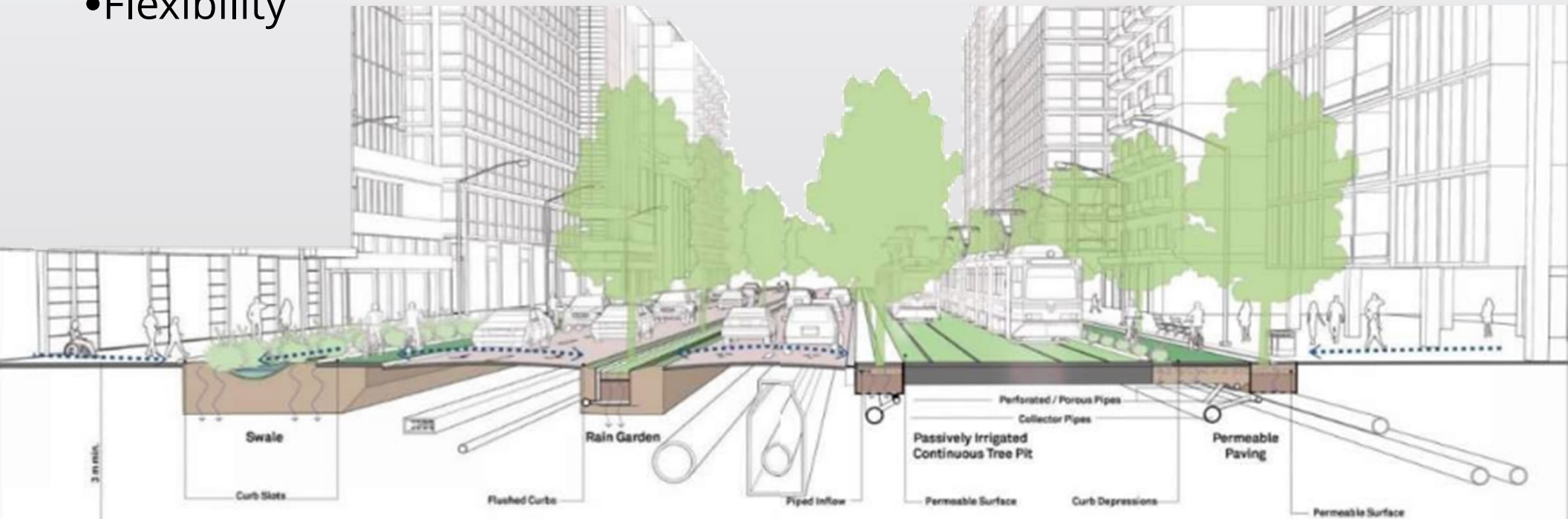
- Walkways that are designed to drain to adjacent, stable pervious areas
- Standardized approach to walkways exemption requirements (Category 1)



BMP Applicability and Selection for PDP Exemption Category 1		FORM J-1A
Project Name:		
Project Number:		
Check the box for the option selected to qualify for Category 1 exemption. If more than one option is selected because different options are being used for different parts of the same project, explain in the notes section at the end. See Appendix J.1 of the Stormwater Standards Manual for additional details.		
Drains to Vegetated Area (Appendix J.1.1)		
Stormwater runoff from the sidewalks, bicycle lanes, or paths is directed to adjacent vegetated areas that meet all of the items below. Include a DMA map to show drainage to the dispersion area. <ul style="list-style-type: none"> • The area receiving runoff ("dispersion area") has vegetation of a type and density adequate to prevent erosion at the maximum hydraulic load rates and velocities expected to occur under large storm events, such as the 10-year storm event. • The dispersion area is at least 10 feet wide (i.e., 10 feet long in the direction of flow). • The longitudinal slope of the vegetated area is less than 5% in the direction of flow. • Inflow to the dispersion area is sheet flow. 		<input type="checkbox"/>
Drains to Stabilized Non-Vegetated Area (Appendix J.1.1)		
Stormwater runoff from the sidewalks, bicycle lanes, or paths is directed to adjacent non-vegetated areas that meet all of the items below. Include a DMA map to show drainage to the dispersion area. <ul style="list-style-type: none"> • The area receiving runoff ("dispersion area") is covered with 1 inch diameter or larger gravel, or other material not susceptible to erosion at the maximum hydraulic load rates and velocities expected to occur under large storm events, such as the 10-year storm event. • The layer of gravel or other pervious material receiving runoff is at least 2 inches thick. • Loading ratio is 5:1 or less (impervious:gravel or other non-vegetated area). • The contributing impervious surface has a maximum width of 20 feet (i.e., 20 feet long in the direction of flow). • The contributing impervious area has a cross slope equal to or less than the standard cross slope for sidewalks. 		<input type="checkbox"/>
Hydraulically Disconnected from Adjacent Streets or Roads (Appendix J.1.2)		
The sidewalks, bicycle lanes, or paths are hydraulically disconnected from paved streets or roads. The stormwater runoff collected from the sidewalk, bicycle lane, and/or path surface is separated from the stormwater runoff collected from the adjacent paved street or roadway. Include a DMA map to show drainage separation.		<input type="checkbox"/>
Uses Permeable Pavement (Appendix J.1.3)		
The sidewalks, bicycle lanes, or paths are permeable pavement <u>without</u> an impermeable liner. Examples of permeable pavement include pervious asphalt or concrete, ungrouted unit pavers, reinforced gravel paving, or reinforced turf paving. If in ROW, include approval for use of permeable pavement from Stormwater O&M. Include a cross section of the permeable paving.		<input type="checkbox"/>
Notes		

Category 2 Exemption: Green Street

- Appendix J of the Stormwater Standards Manual
- Redevelopment of streets
- Implement green street elements
- Flexibility



Routine Maintenance Exemption

Routine Maintenance

- Table 1-2 of the SWS Manual
- Typical routine maintenance activities:
 - Resurfacing, overlay, restriping
 - Restoring pavement from utility trench work
 - Solar arrays (over existing impermeable surfaces)
- Always exempt from BMP requirements



Routine Maintenance Exemption

Routine Maintenance (Conditional)

- Table 1-3 of the SWS Manual
- Includes:
 - Full depth replacement
 - ADA curb ramp replacement
 - Driveway apron replacement
- Not considered routine maintenance if outside RoW or combined with a green street or PDP



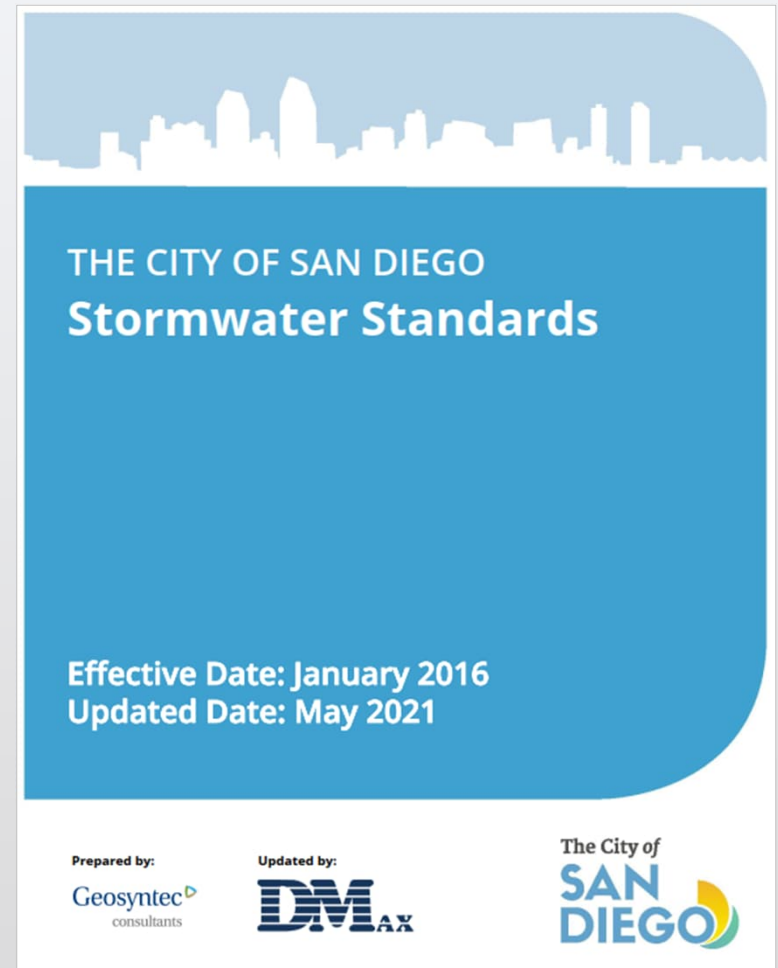


Municipal Permit Reissuance

Updated Municipal Permit expected in next 1-2 years

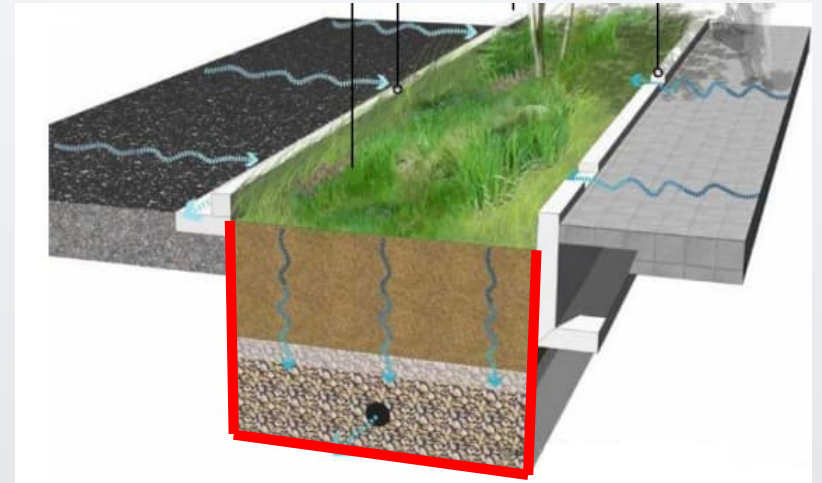
Potential for development and construction requirement changes
City Stormwater Standards Manual update after Municipal Permit adopted

City will keep development community updated on any proposed changes



Lessons Learned – Charing Place

1. PVC Liners are NOT the way to go
2. Provide pedestrian access



Charing Place – Clairemont



Lessons Learned – Kellogg Park

3. Permeable Pavers are difficult to maintain



Kellogg Park – La Jolla Shores

Lessons Learned – Bannock Ave

- 4. Handrails
- 5. Trees

- 6. Pervious concrete
- 7. Mulch



Bannock Ave – Clairemont



Lessons Learned – January Storm

1. Large storms are unpredictable
2. Climate Change needs to be incorporated into design
3. Stormwater Infrastructure needs more funding and support



Questions?



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Stormwater Quality Requirements

Clean Water Act 1972 (Federal)

Municipal Permit MS4 (State)

Model BMP Design Manual (Regional)

Stormwater Standards Manual (City)

WIFIA Loan Structure

Master Agreement

- Awards \$733M
- EPA provides 49% of loan amount
- City pays 51% of loan amount
- Allows for three Credit Agreements

Credit Agreement – First Loan Installment

- \$459M to fund 82 Projects
- Interest Rate: 3.11%



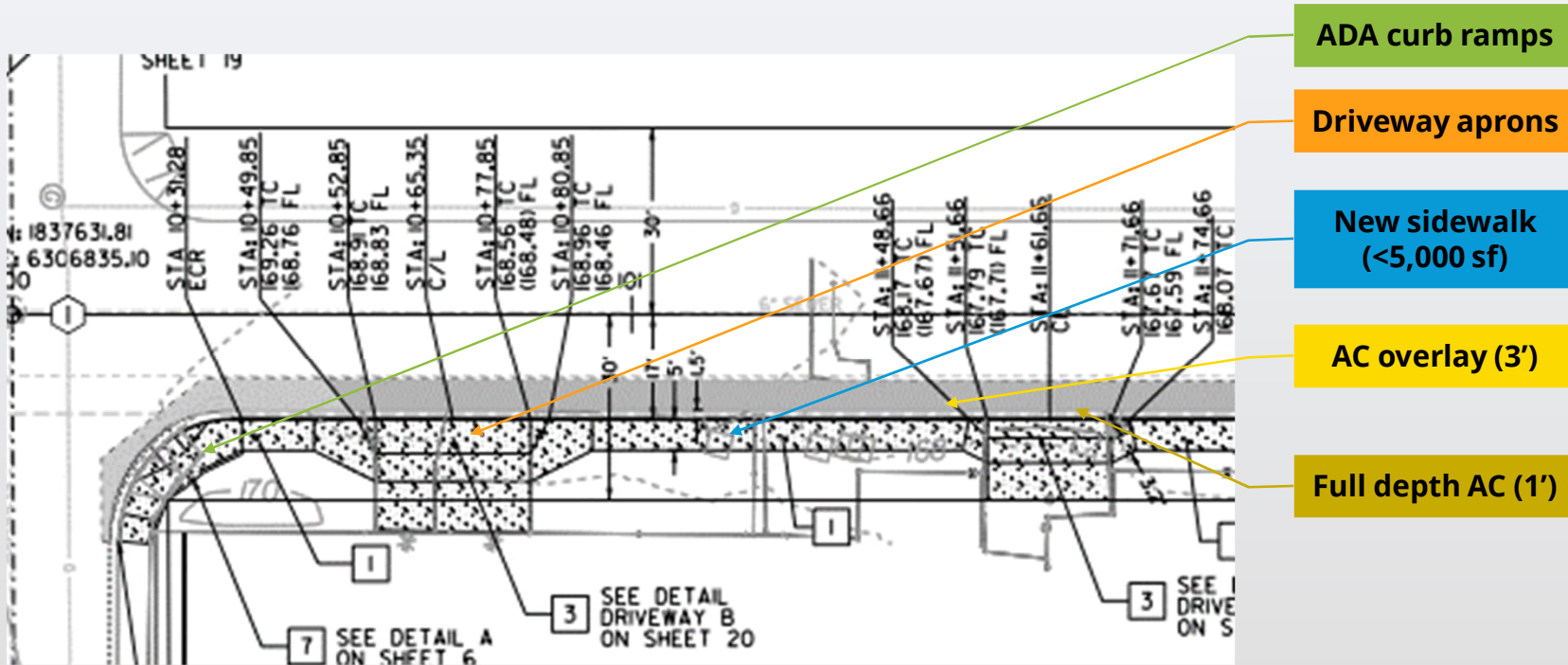
Routine Maintenance Example

ADA improvements:

- Replace curb ramps
- New sidewalk
- Replace alley aprons



Routine Maintenance Example



Stormwater Program Goals





2018 Stormwater Audit Documented Historic Underfunding

Recommendation #5

1. Develop a long-term funding strategy

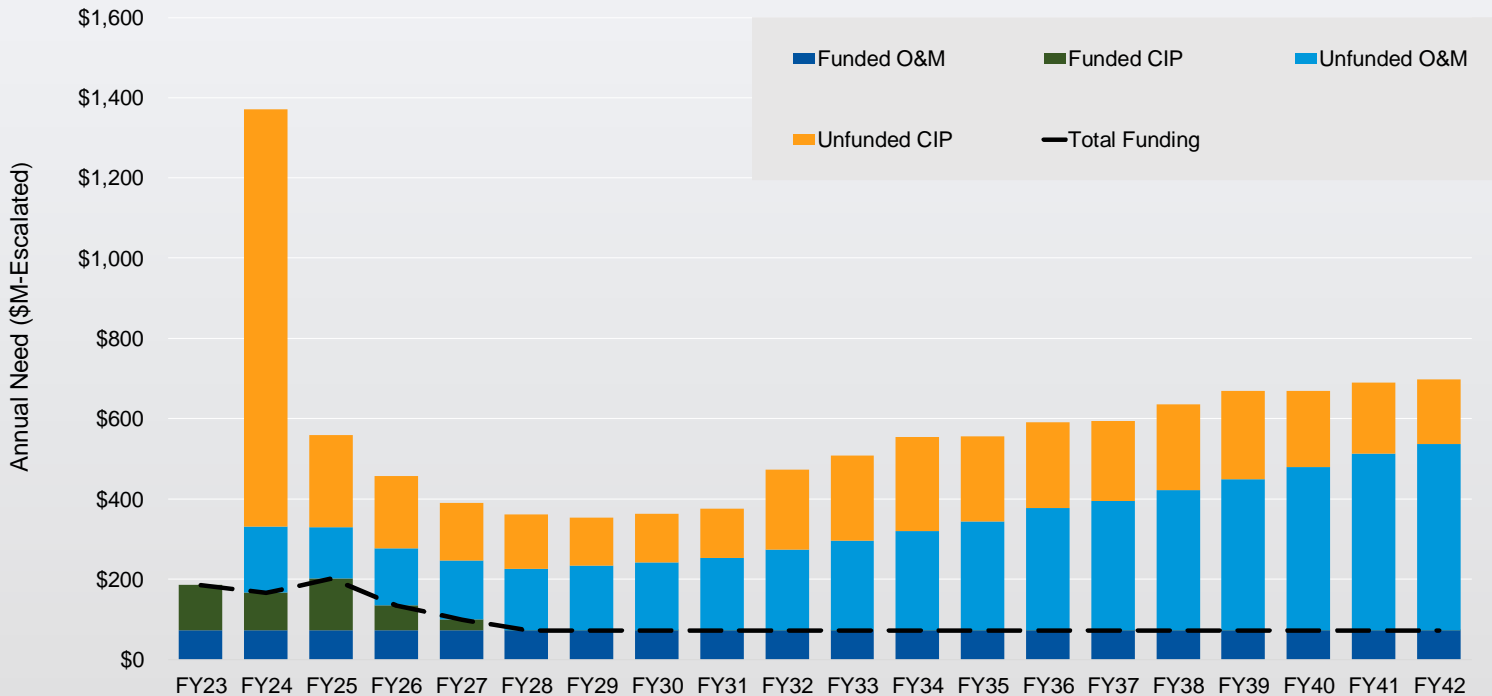
Recommendation #6

1. Assess funding mechanism options
 - Tax
 - Fee
2. Conduct viability surveys
3. Stakeholder outreach and engagement



Funding Needs Continue to Grow at a Rapid Rate

*Includes unmet needs "snowplowed" from previous years



\$310M

Average Annual Funding Gap

\$0.95/mo

Current Storm Drain Fee (\$5.7M/yr)





Planning, Design, and Permitting

Pre-Design

Survey and Investigations

- Topographic survey
- Utility investigations
- Geotechnical and Groundwater Investigations
- Phase I and II Site Assessments
- Hazardous Materials Surveys
- Preliminary Environmental Assessment

Pre-design Report

- Project Execution Roadmap Information
- Location Map
- Project Priority Score
- Alternatives
- Public Art Review

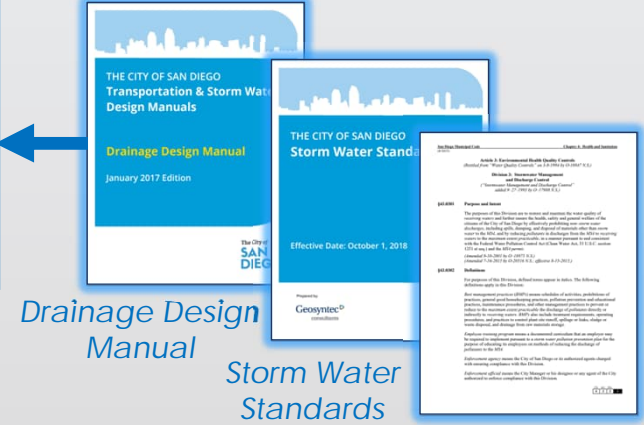
Design

- Sustainability
- 30% Design
- 60% Design
- 100% Design
- Final Design

City, Encroachment, and Environmental Planning & Permitting

- CEQA
- NEPA
- Biological and Revegetation Studies and Plans
- Special Studies
- Cultural/Tribal
- Historic Resources
- Storm Water Quality Management Plan
- Resource Agency Permits
- City Permits
- Encroachment Permits

Construction



Construction

