

SEWER SYSTEM IMPROVEMENT PROGRAM

Bayside Watersheds

URBAN WATERSHED ASSESSMENT RECOMMENDATIONS

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AGENDA

1. Urban Watershed Assessment (UWA) Purpose and Need
2. Opportunities to Meet LOS Challenges
3. Solutions Developed through Alternatives Analysis
4. Next Steps
5. Questions and Discussion

UWA PURPOSE AND NEED

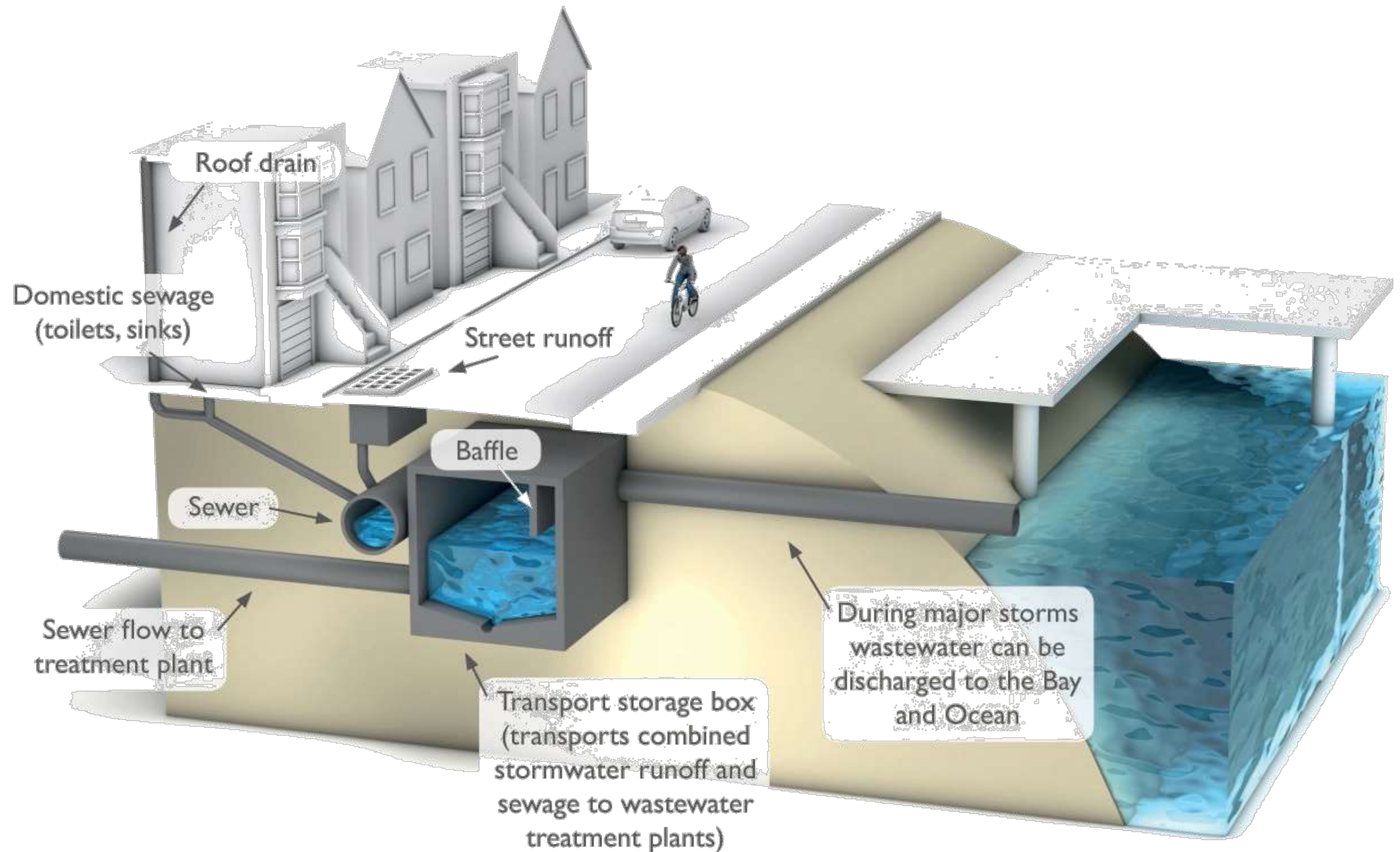
URBAN WATERSHED ASSESSMENT (UWA)

Sewer System Planning For The Future



- 1,000 Miles of Sewers
- 8 Transport/Storage Structures
- 19 All-Weather Pump Stations
- 25,000 Catch Basins
- Green Infrastructure

SFPUC COLLECTION SYSTEM



UWA PURPOSE AND NEED

Levels of Service Goals

- ✓ Provide a Compliant, Reliable, Resilient, & Flexible System that can Respond to Catastrophic Events
- ✓ Integrate Green & Grey Infrastructure to Manage Stormwater and Minimize Flooding
- ✓ Provide Benefits to Impacted Communities
- ✓ Modify the System to Adapt to Climate Change
- ✓ Achieve Economic & Environmental Sustainability
- ✓ Maintain Ratepayer Affordability

URBAN WATERSHED ASSESSMENT TIMELINE

September 2011

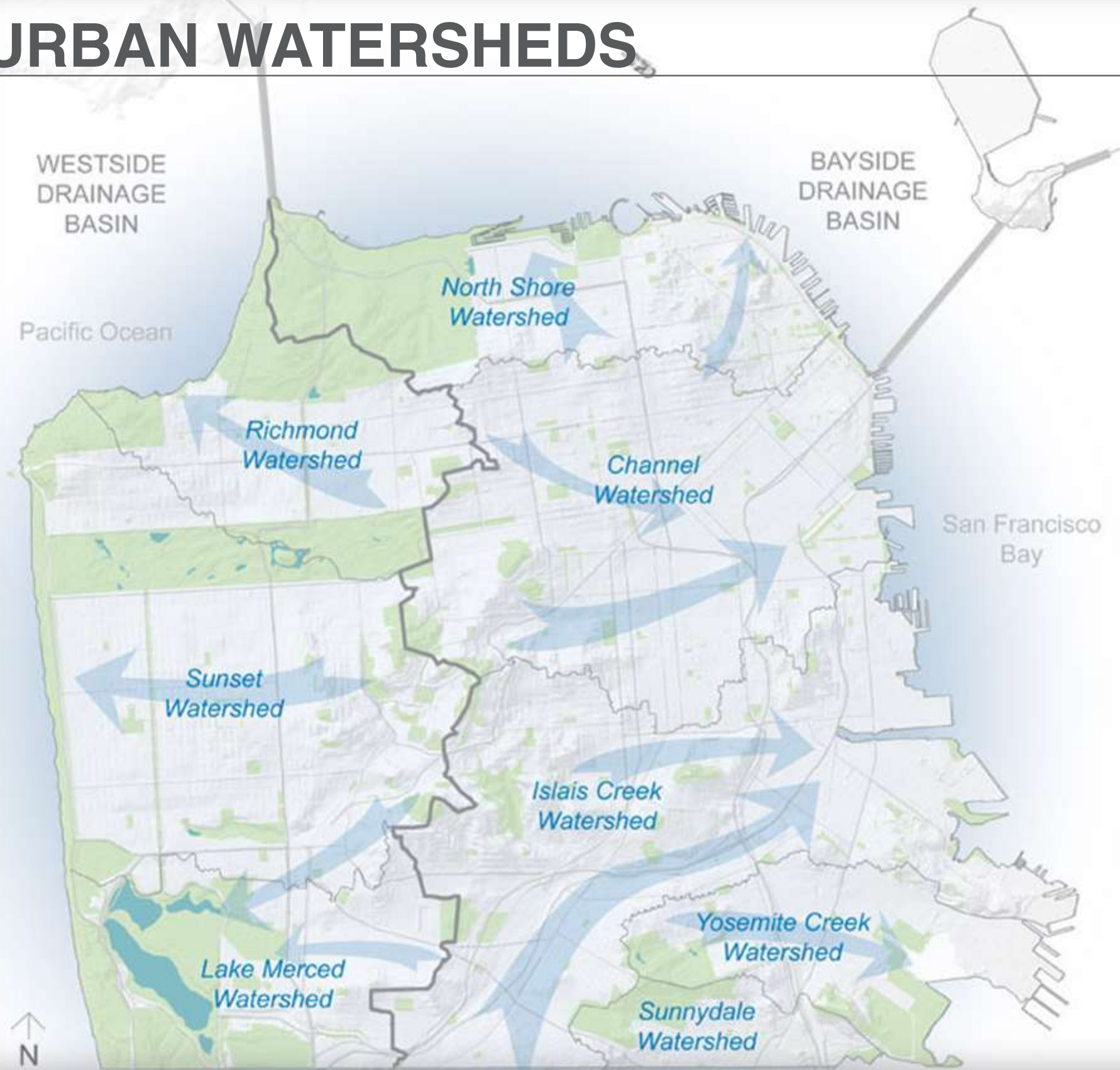
December 2015

Inter-Agency Coordination and Involvement



Public Outreach and Engagement

OUR URBAN WATERSHEDS



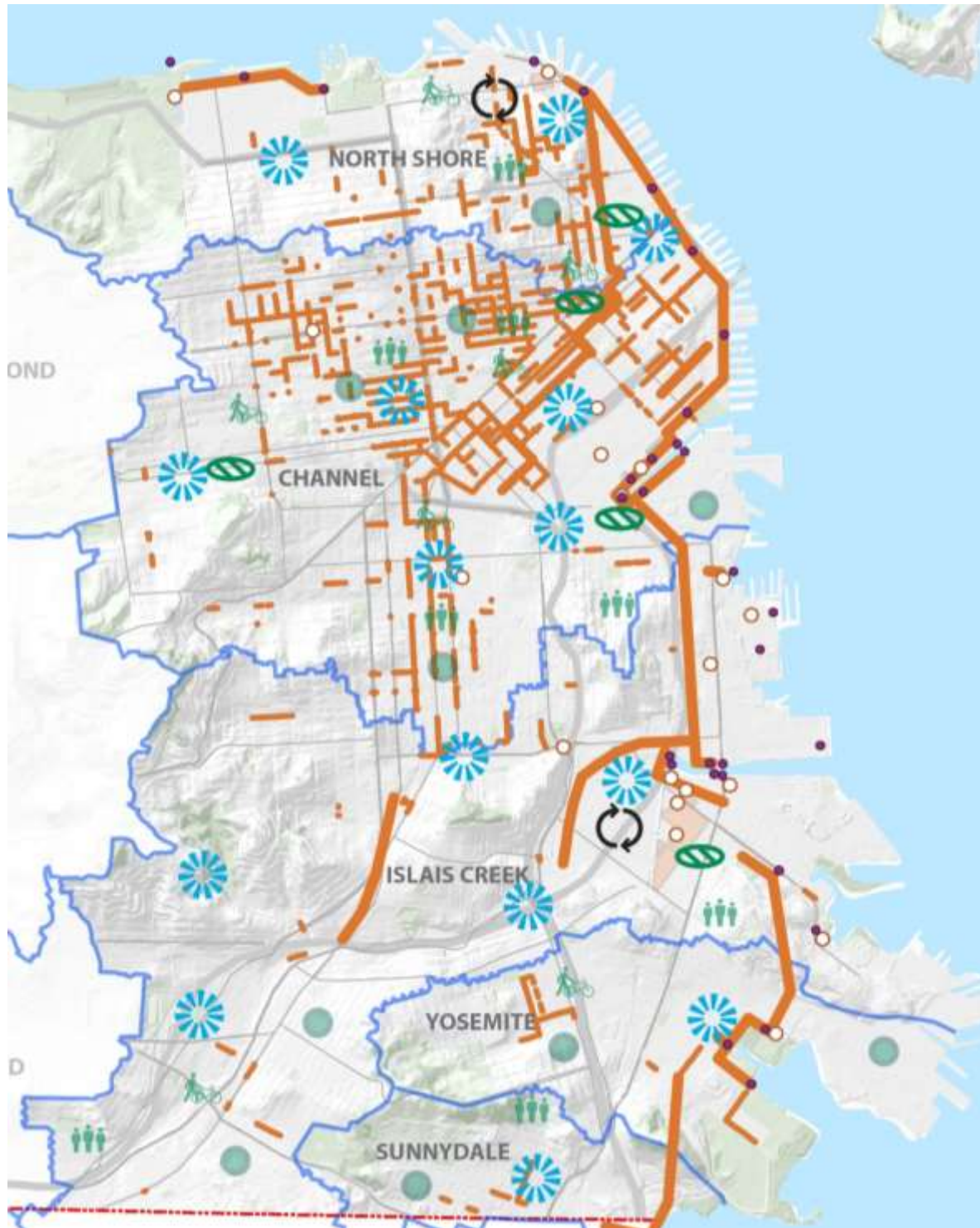
BAYSIDE CHARACTERIZATION

San Francisco's Bayside Watersheds

- Steep Slopes
- Infiltration Constraints
- 75% Impervious
- Large Rooftops and Impervious Areas, Smaller Lots, Narrower Streets and Sidewalks
- Seismic Vulnerability
- More System Challenges: CSDs, Excess Stormwater, Aging Infrastructure, Sea Level Rise, EJ Areas



BAYSIDE CHALLENGES



LOS 1 - Compliant & Resilient System

High Risk Sewer Pipes

LOS 2 - Stormwater Management

Low-lying Areas/Excess Flow Areas

LOS 3 - Community Benefit

Odor Open Space Need

Environmental Justice/
Impacted Community

Pedestrian/Bicycle Injury Corridor

LOS 4 - Climate Adaptation

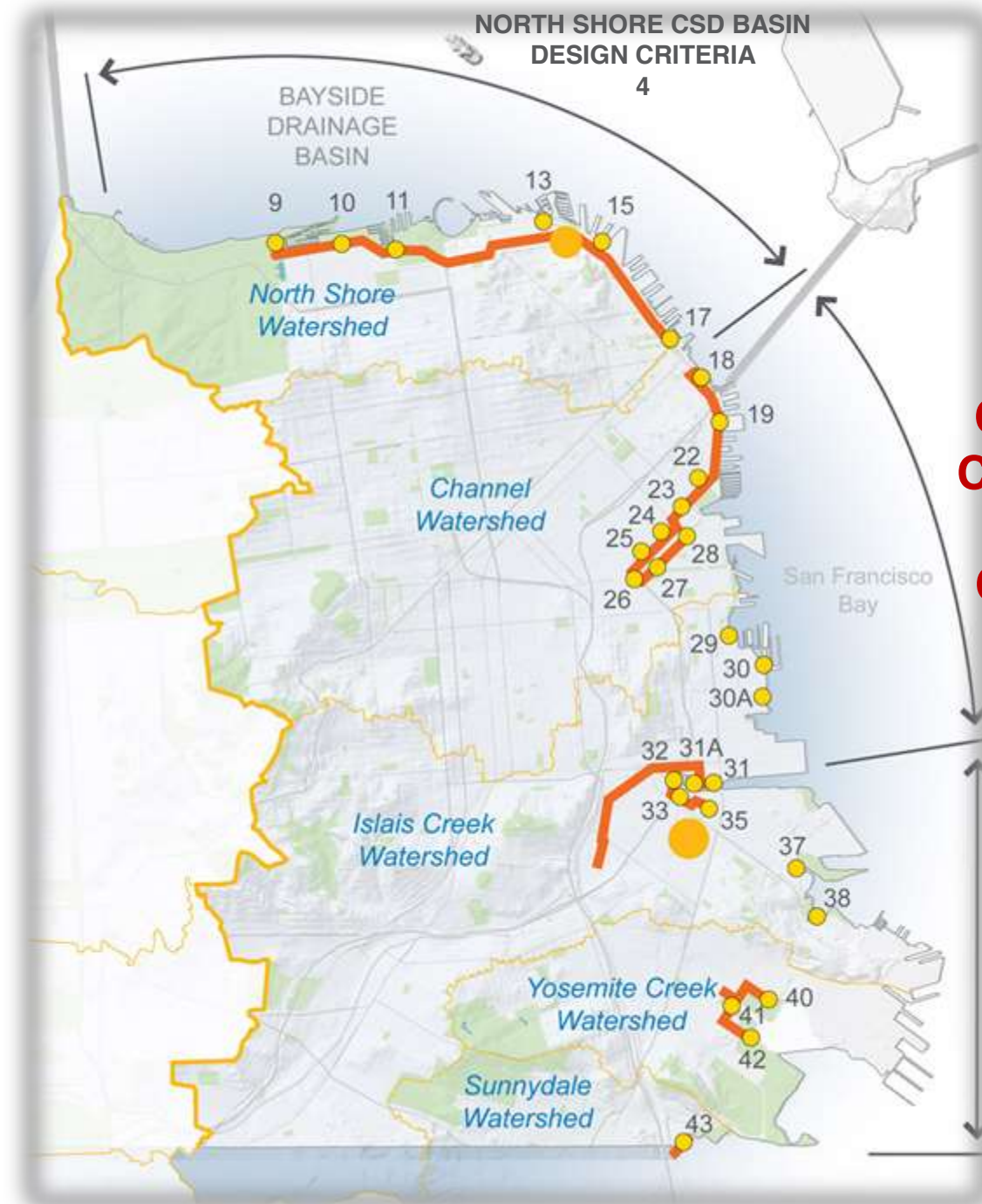
CSD outfalls

LOS 5 - Sustainability

Non-Potable Water Reuse

BAYSIDE CHALLENGES

Combined Sewer Discharge (CSD)



**CENTRAL
CSD BASIN
DESIGN
CRITERIA
10**

**SOUTHEAST CSD
BASIN DESIGN
CRITERIA
1**

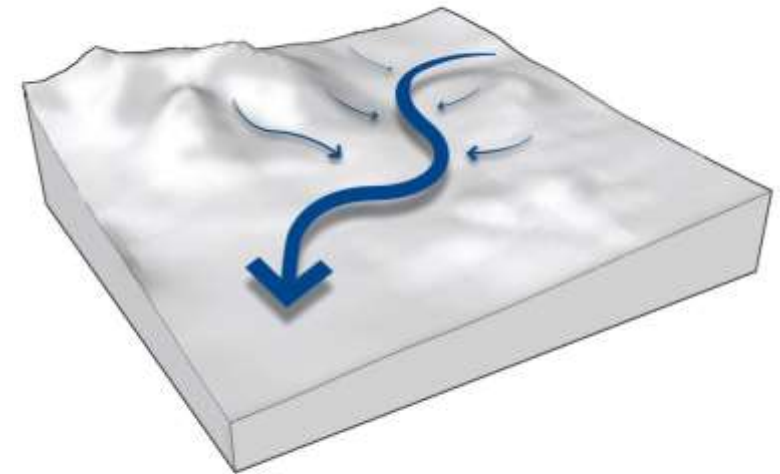


BAYSIDE CHALLENGES

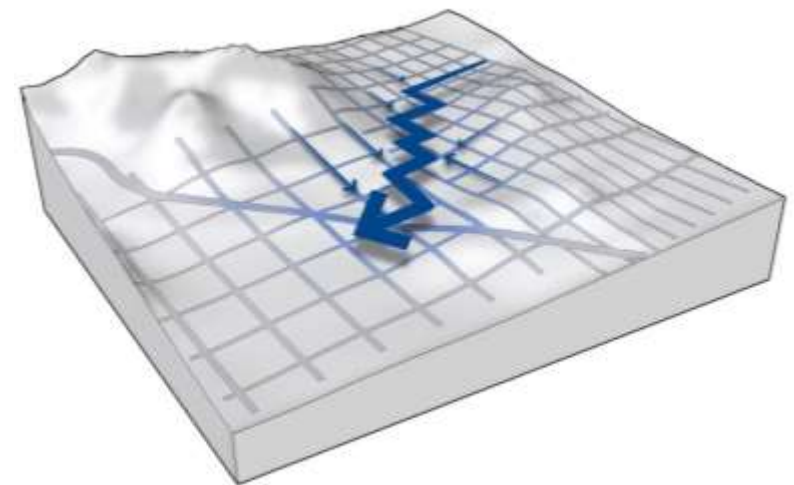
Areas of Excess Flow



NATURAL FLOWS



CONSTRAINED URBAN CONDITIONS



BAYSIDE OPPORTUNITY INPUTS

Public Outreach

- 3 Bayside Watershed Planning Workshops - 170 participants
- Online and in-person survey – More than 3,400 responses
- Presentations and events - More than 40 groups



OPPORTUNITIES TO MEET LOS CHALLENGES



Pipes



Tunnels



Pump Stations

Benefits

- Address excess flow through large conveyance and/or storage
- Maximize system storage and minimize CSDs
- Contribute to Sea Level Rise adaption

BAYSIDE OPPORTUNITIES

Green



Rain Gardens



Permeable Paving



Green and Blue Roofs

Benefits

- Remove Runoff from System
 - Reduce Combined Sewer Discharge Volume and Peak Runoff
- Environmental, Pedestrian Enhancements and Traffic Calming
- Interagency Collaboration

SOLUTIONS DEVELOPED THROUGH ALTERNATIVES ANALYSIS

BAYSIDE LONGTERM UWA PROJECT CONCEPTS



Grey

- Channel Tunnel
- Upstream Conveyance

Green

- Streets
- Parks, Schools, Housing, Creeks, City properties
- Incentive Programs

LEGEND

- Channel Tunnel
- Upstream Conveyance

- Green Streets
- Green Parks
- Green Schools
- Green Housing
- Creek Daylighting
- PUC Parcels
- Other City Parcels

BAYSIDE GI PROJECT CONCEPTS

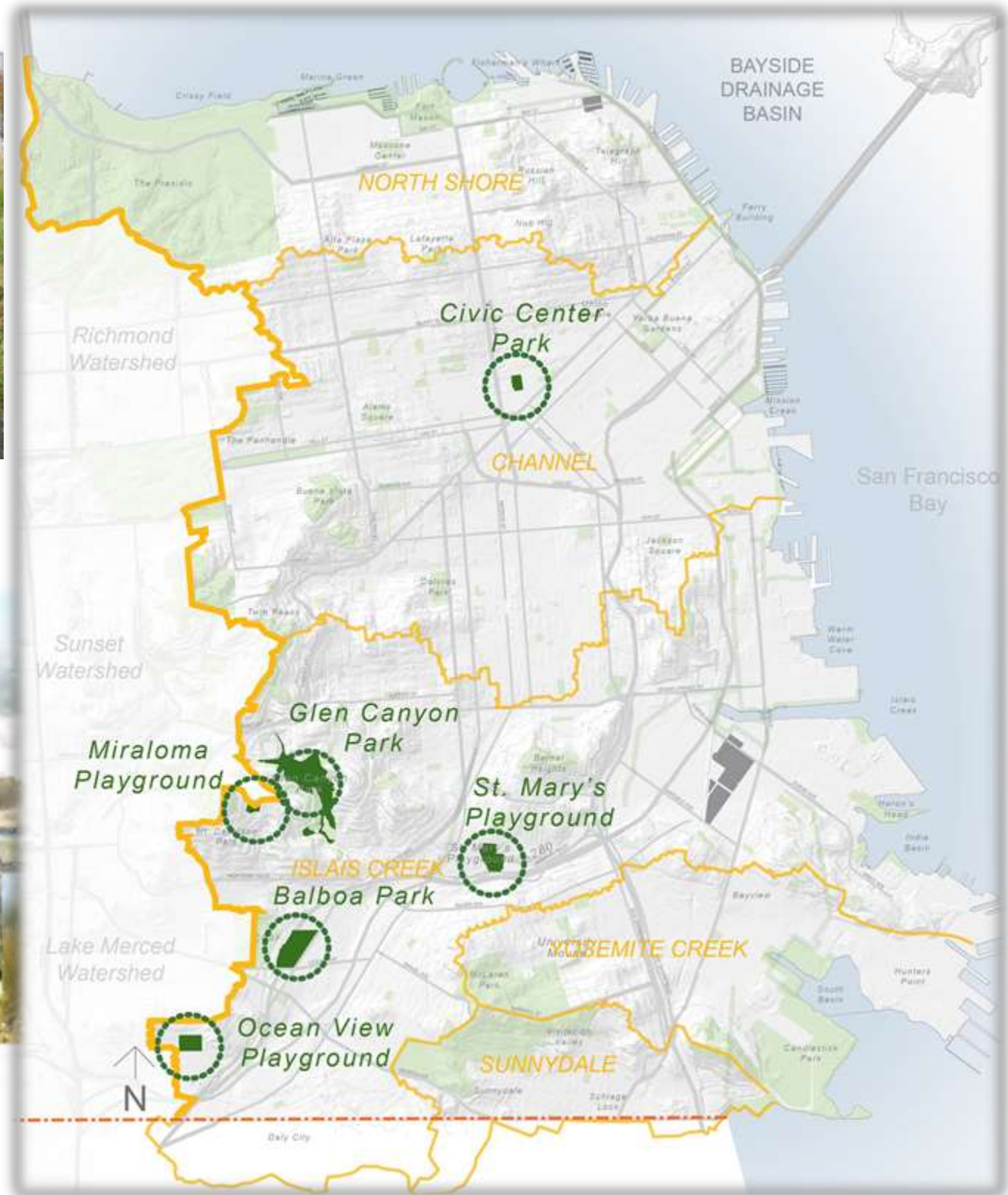
Streets



BAYSIDE GI PROJECT CONCEPTS

Parks

(San Francisco Rec & Park)



BAYSIDE GI PROJECT CONCEPTS

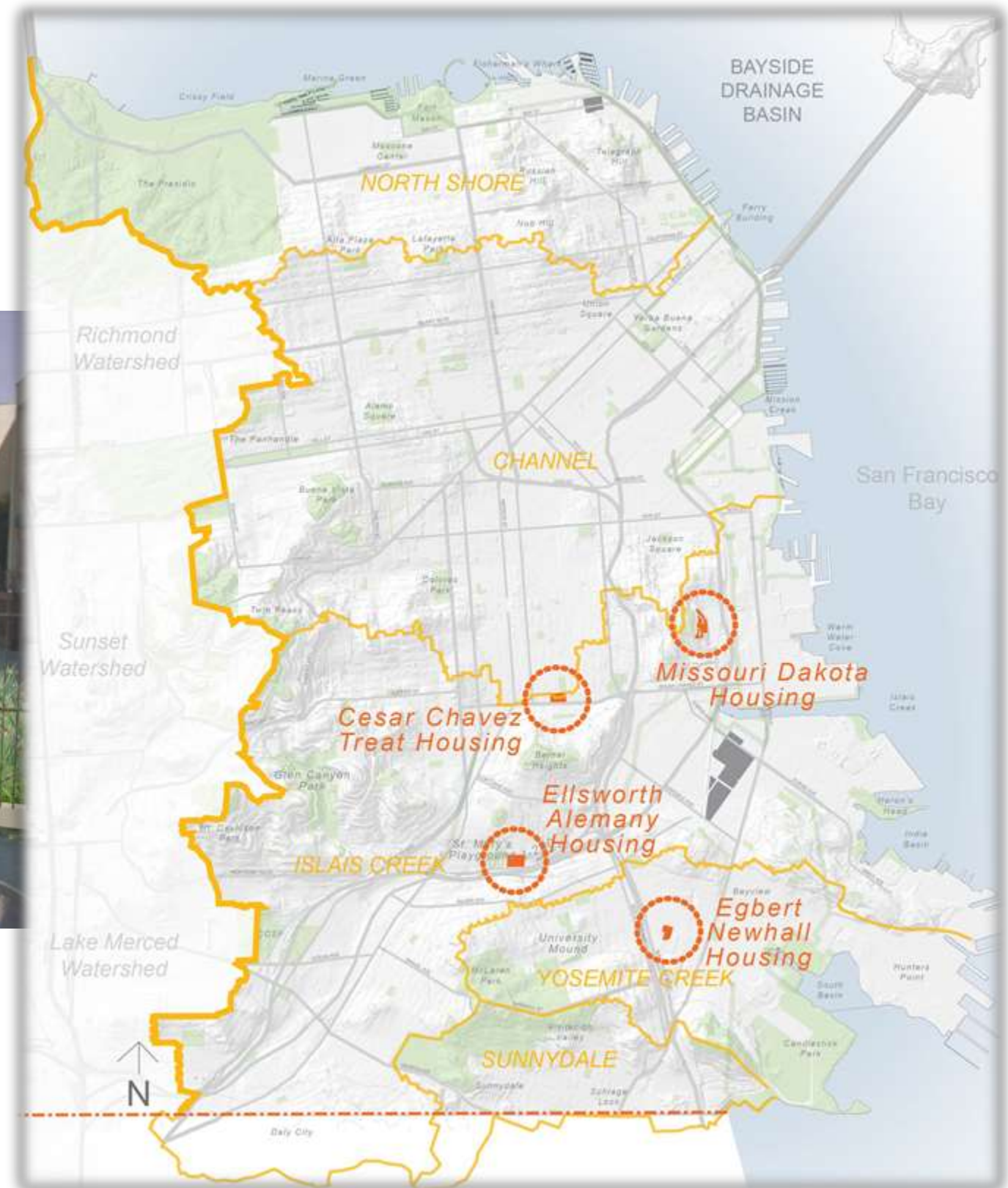
Schools

(San Francisco Unified School District)



BAYSIDE GI PROJECT CONCEPTS

Housing (San Francisco Housing Authority)



BAYSIDE GREEN INFRASTRUCTURE

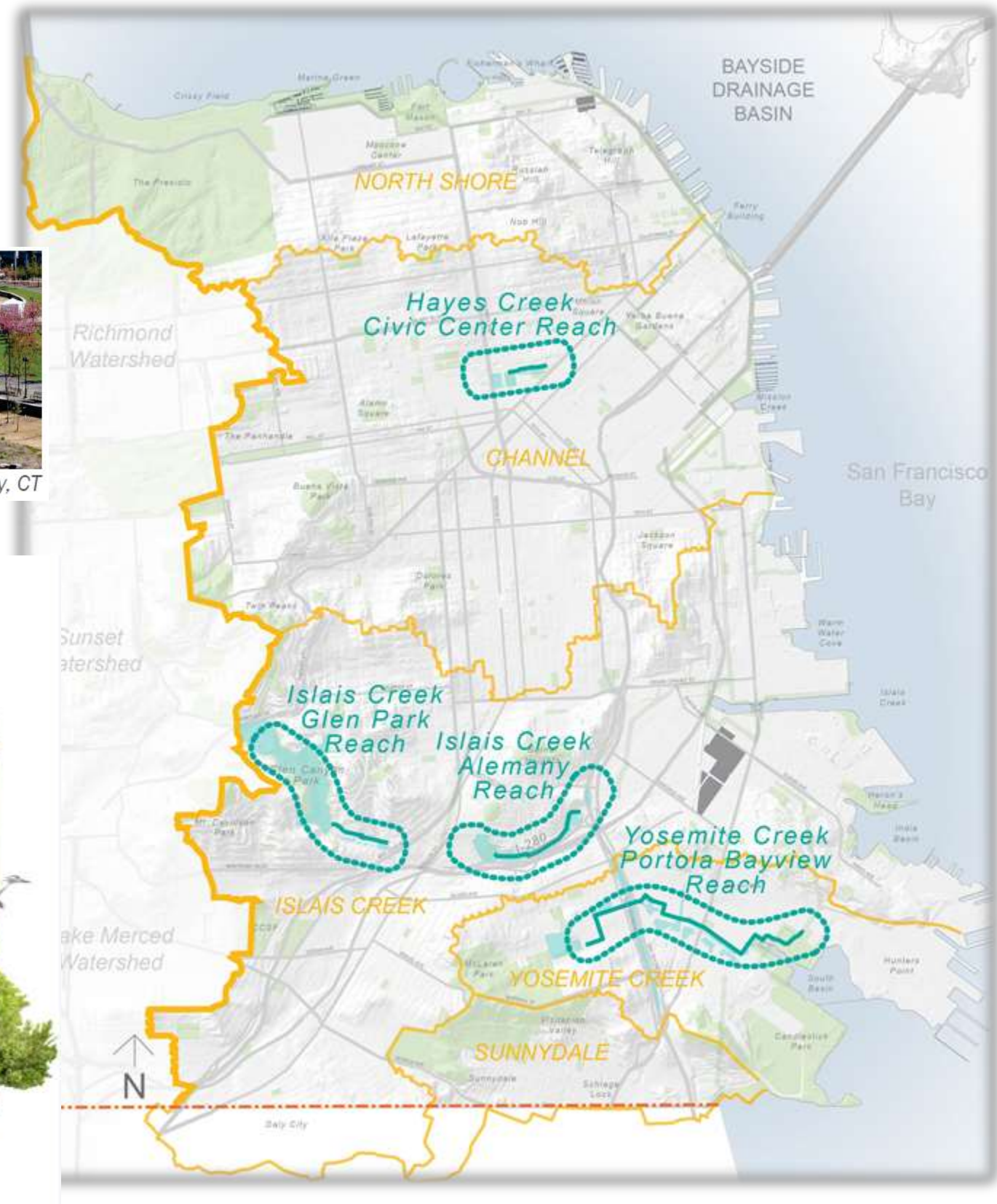
Creek Daylighting



Creek Daylighting in Zurich, Switzerland



Mill River Park and Greenway, CT



BAYSIDE GREEN INFRASTRUCTURE

Incentive Programs for Private Properties

- Sustainable Roof Program
- Watershed Improvement Program
- Residential Stormwater Program
- Stormwater Technical Services Program

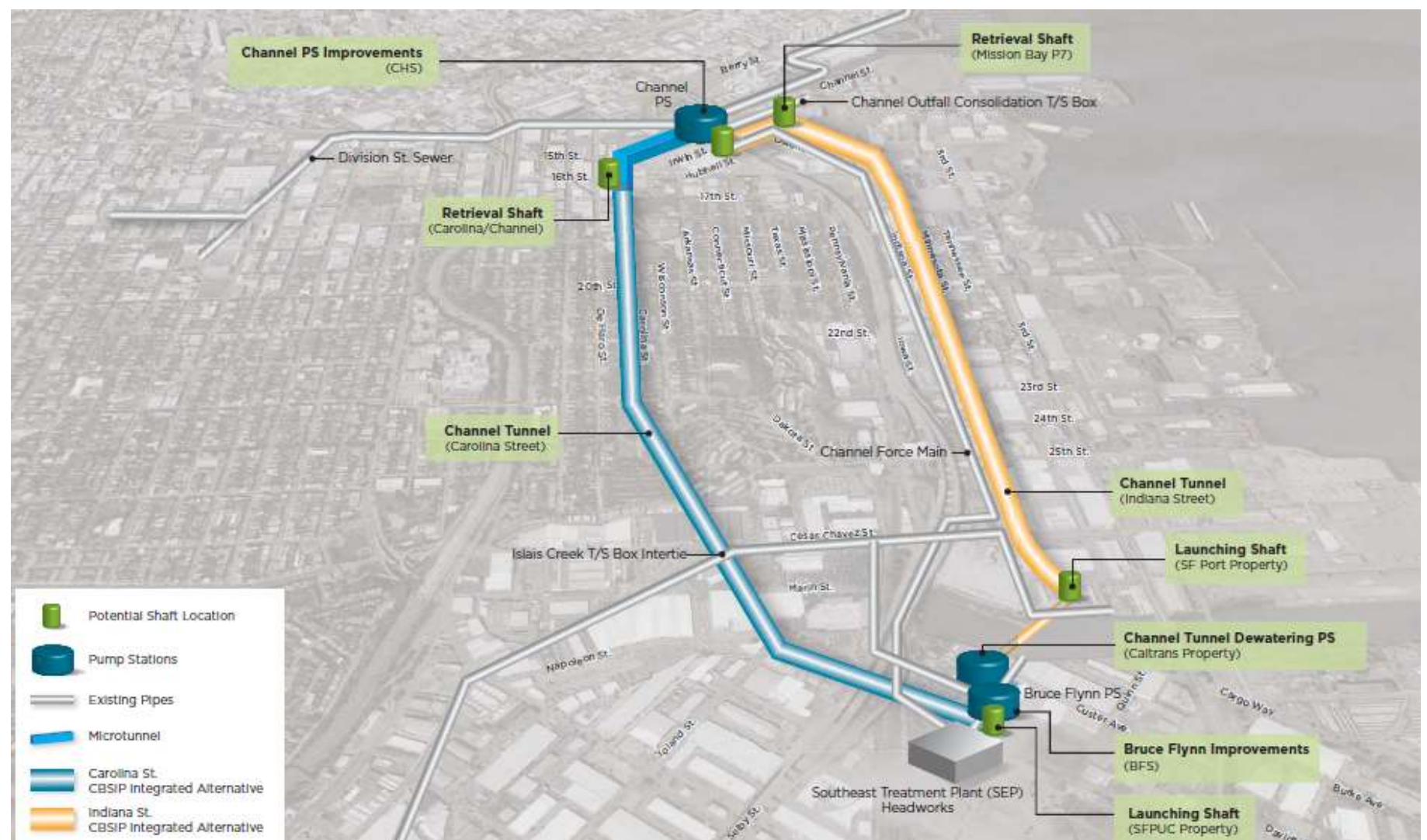


CENTRAL BAYSIDE SYSTEM IMPROVEMENT PROJECT

Channel Force Main Reliability and Redundancy

Project Goals:

- Provide needed redundancy to the Channel Force Main
- Improve seismic reliability
- Improve stormwater management in the Channel and Islais Creek watersheds



NEXT STEPS

OTHER SSIP PROJECTS & PROGRAMS

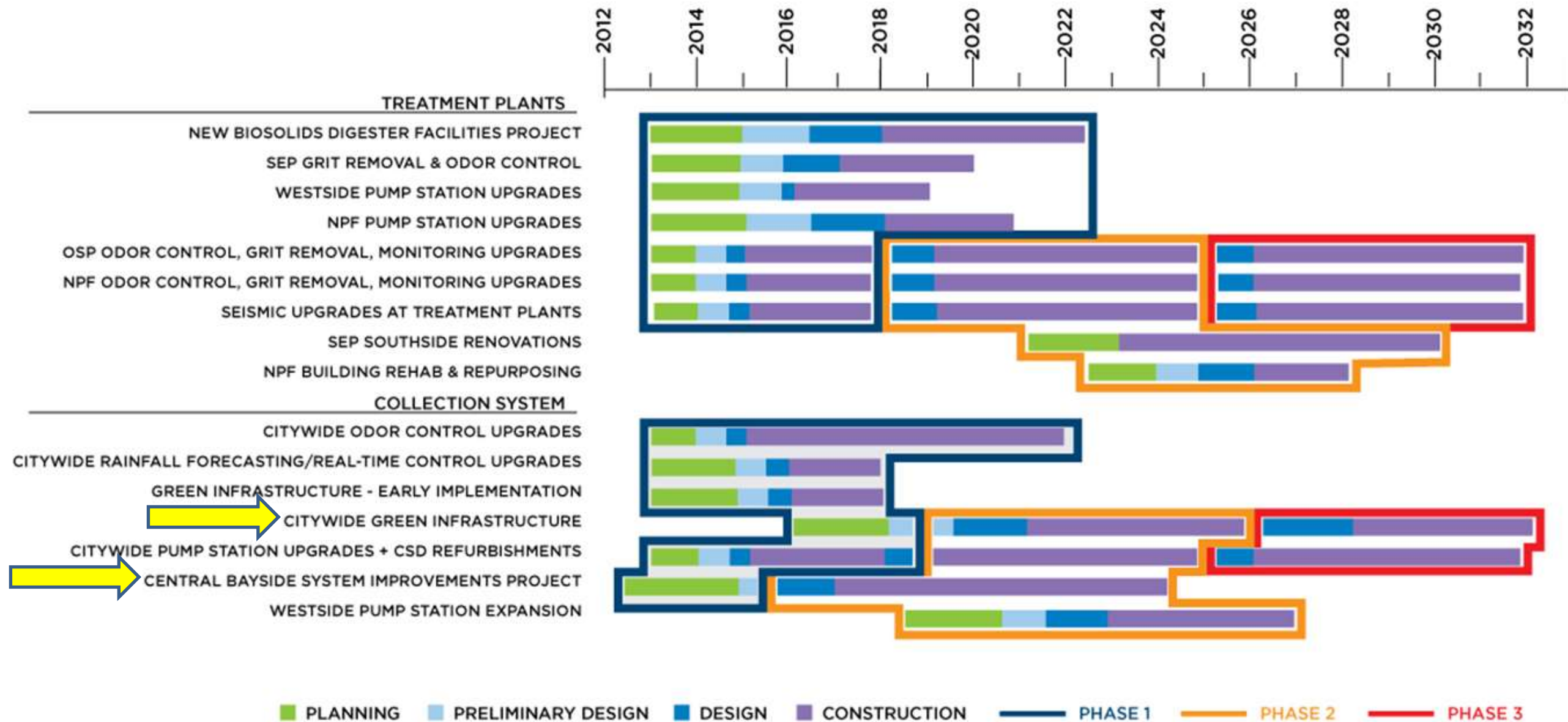
- **Southeast Treatment Plant Upgrades**
- **North Point Wet Weather Facility Upgrades**
- **Green Infrastructure Projects**
- **Contractors Assistance Center**
- **Sewer Repair Work**



SSIP IMPLEMENTATION SCHEDULE

SSIP PHASED IMPLEMENTATION

PHASE 1 \$2.7B | PHASE 2 \$3.3B* | PHASE 3 \$0.9B*



URBAN WATERSHED ASSESSMENT NEXT STEPS

Bayside Watersheds

- Present Final Recommendation to Commission - April 2015

Westside Watersheds

- Complete Westside UWA – October 2015

Citywide Watersheds

- Prioritize UWA Recommendations System-wide for Implementation – December 2015

QUESTIONS?

Tell us what you think!

www.surveymonkey.com/s/UWABaysideRec

Grey.



**SYSTEM & SEISMIC
RELIABILITY & REDUNDANCY**

Green.



**INNOVATIVE STORMWATER
MANAGEMENT SOLUTIONS**

Clean.



**PROTECTING OUR BAY
& PACIFIC OCEAN**