



Public Works Update: 2022 Year-in-Review February 2023

Azalea Mitch
Director of Public Works

Evan Albert
Deputy Director of Public Works

Matt Fabry
Deputy Director of Public Works

Public Works “Stewards of the Infrastructure”

- Agenda
 - Public Works Overview
 - Engineering Services Update
 - Environmental Services Update
 - Storms
 - Strategic Planning for 2023



The City's Public Assets

We plan, design, improve, and maintain:

210 miles of City streets

380 miles of sidewalks

87 traffic signal intersections

Over 7,000 streetlights

32 public buildings, 29 parks

11 publicly owned parking lots and garages

260 miles of sewers

130 miles of storm drains

20 miles of open creeks and drainage canals

27 sanitary sewer pump stations

10 storm drainage system pump stations

3 dams

1 flood-control lagoon

3 miles of bay front levees (there are levees along most of our creeks and channels too!)

1 wastewater-treatment plant that serves San Mateo, Foster City, Hillsborough and portions of unincorporated San Mateo County

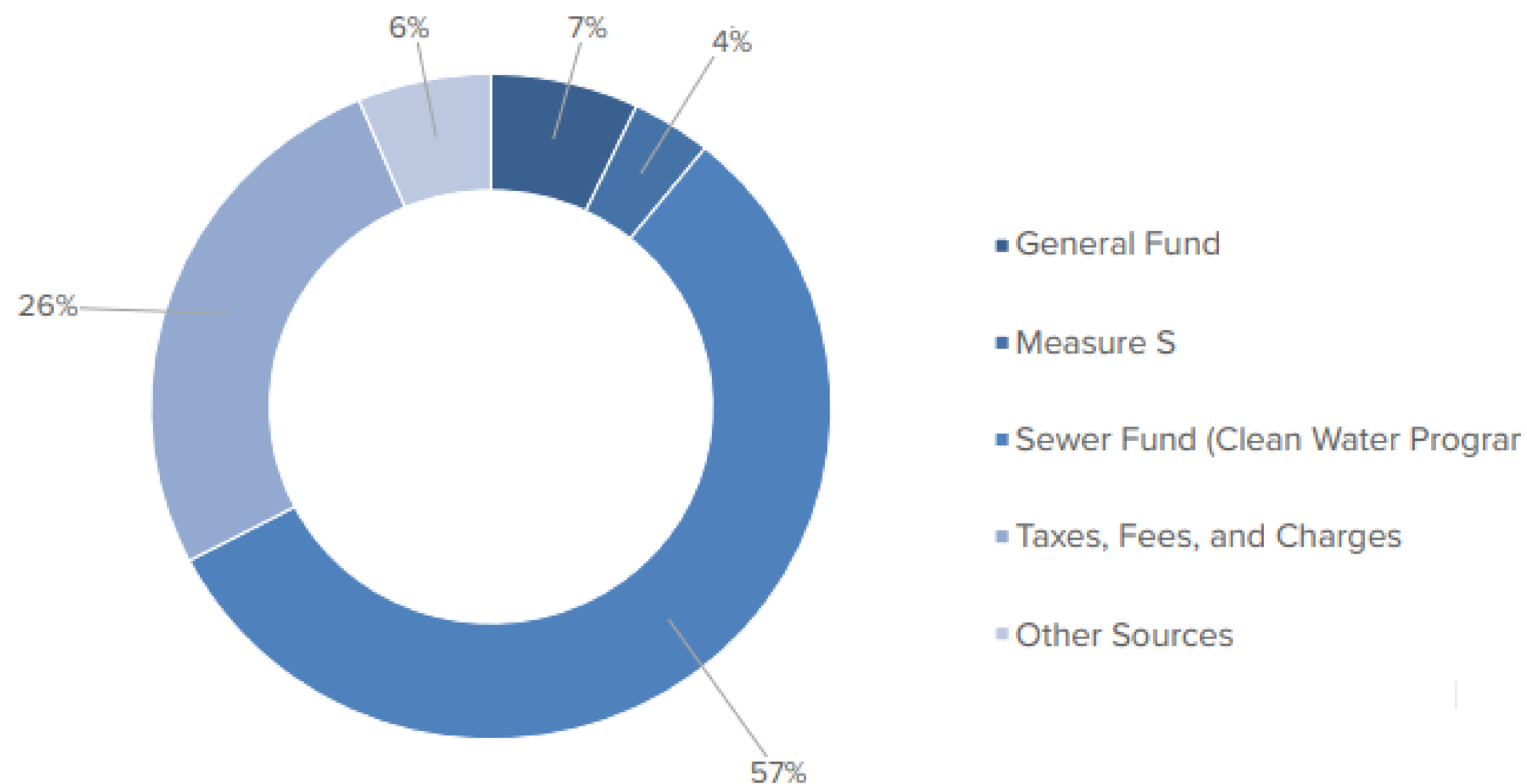


Our Budgets / Sources of Funding

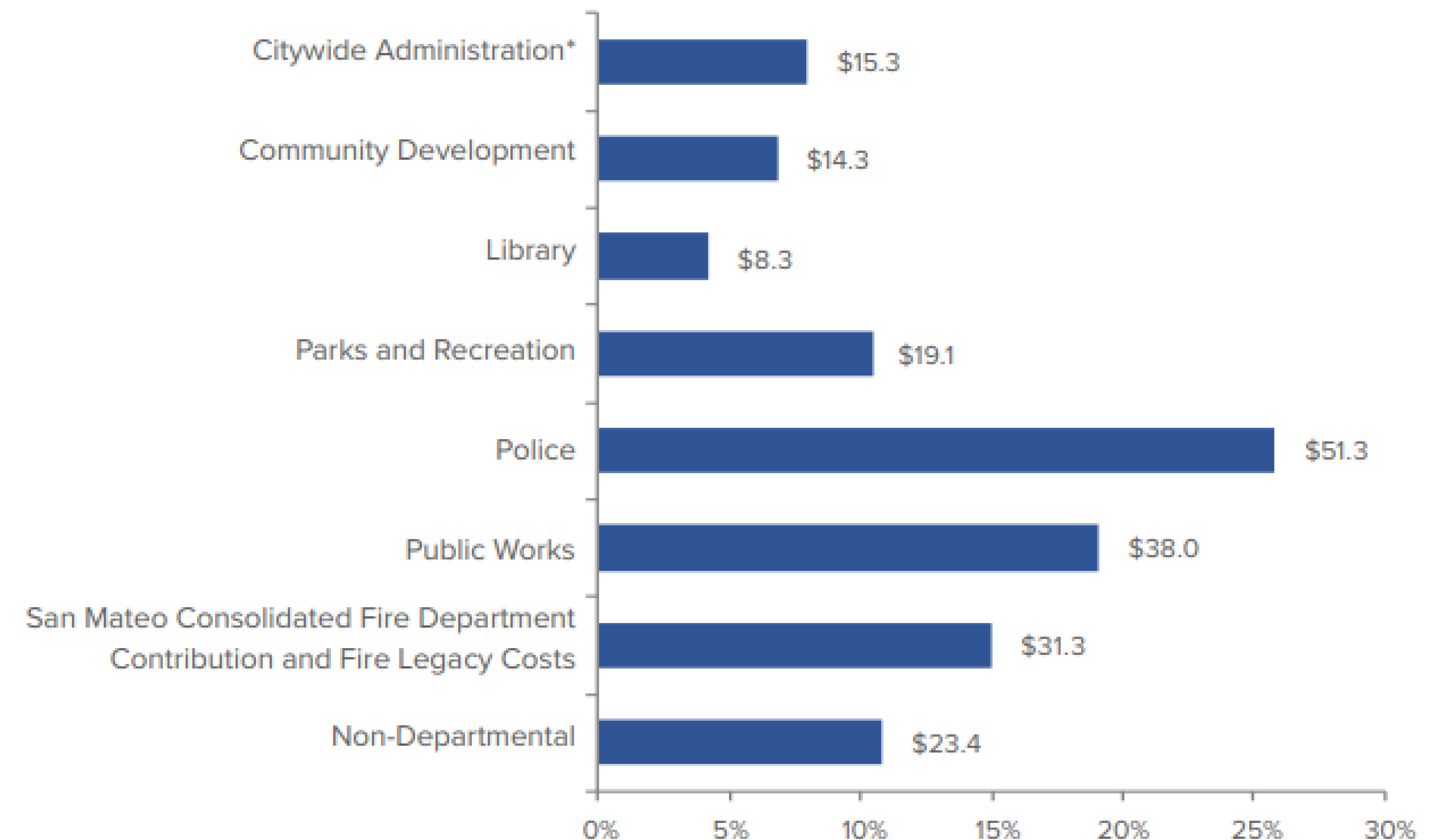
2022-23 Capital Improvement Program: \$67.9 million

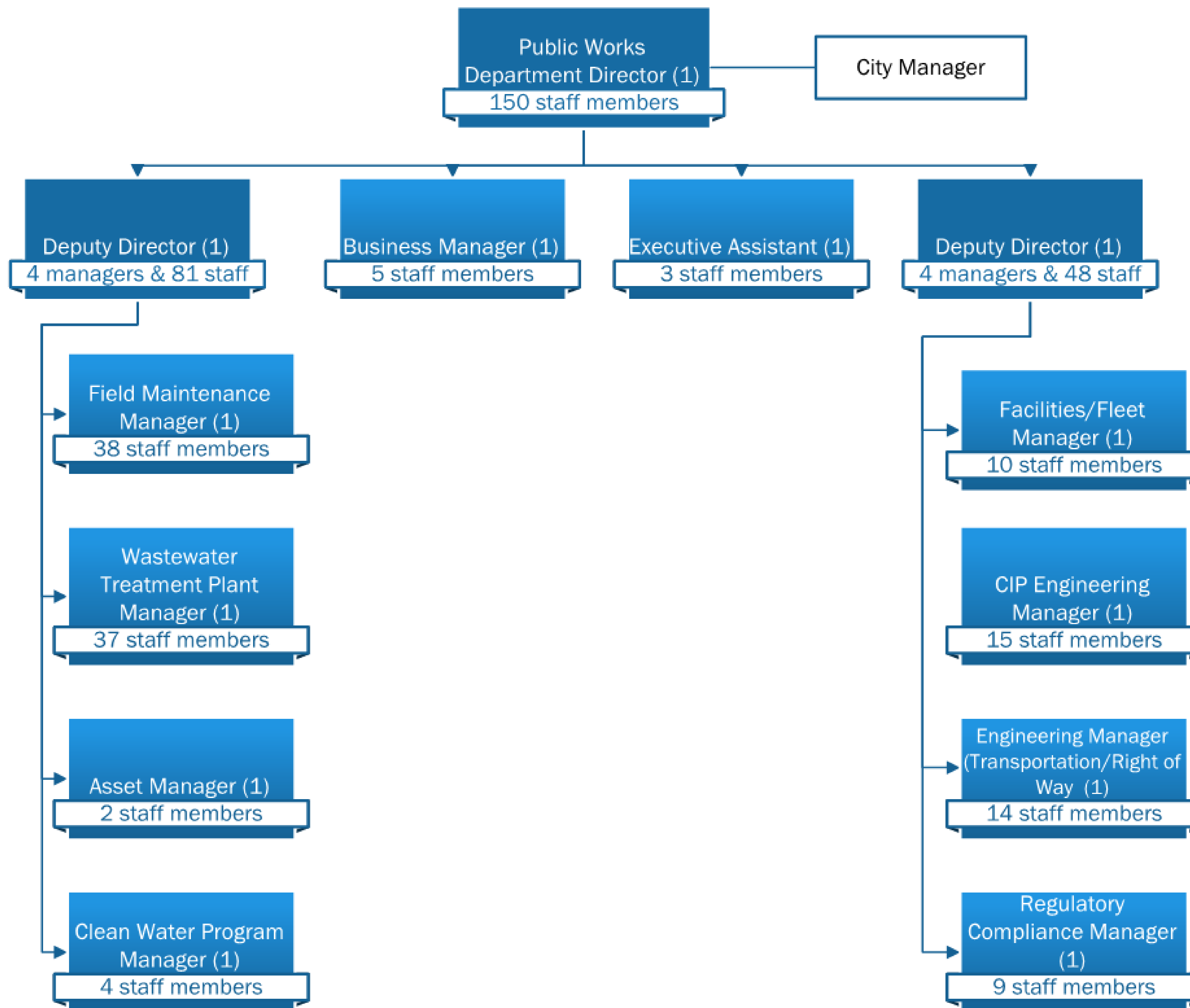
2022-23 Operating Budget: \$216.9 million

**CAPITAL IMPROVEMENT PROGRAM
2021-22 (\$52.6 MILLION)**



**CITYWIDE OPERATIONS BY DEPARTMENT
2021-22 (\$201.0 MILLION)**





Engineering – Capital Improvement Program

Engineering Division - CIP
Engineering Manager

Senior Engineer
(3 FTE)

Senior Engineer
(2 FTE)

Senior Engineer
(5 FTE)

- Planning
- Design
- Construction
- Inspection
- Budget: \$15M FY23/24
- FTEs: 14

Pavement Management Program

Smooth Streets Program

Construction Management

Bridge Maintenance Program

Train Quiet Zone Program

Service Requests

Stormwater Program

Budget Management

Inspection
-PW Construction
-Right-of-Way
-Private Development

Pavement Management Program

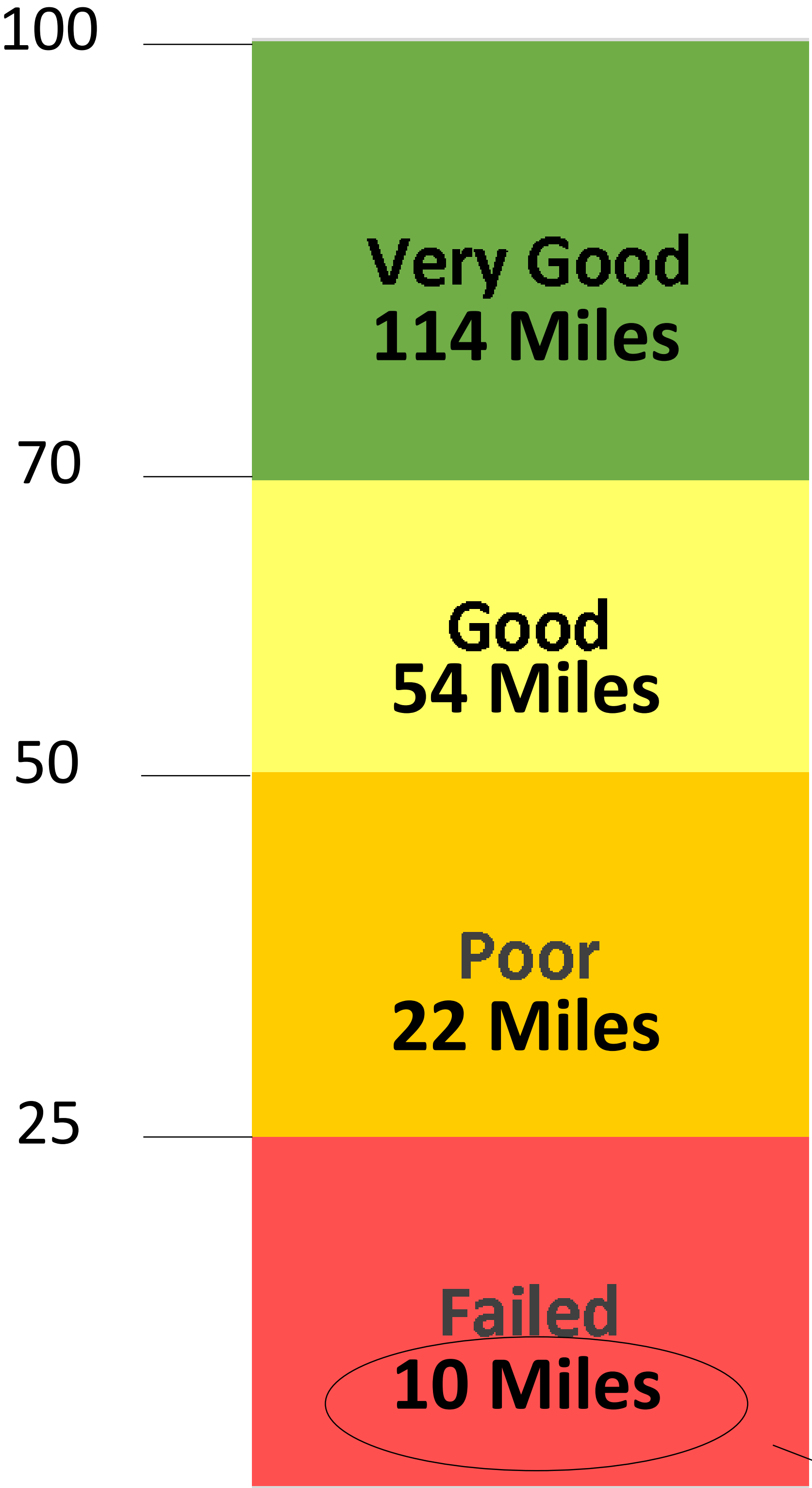
Roadway Preservation and Treatment



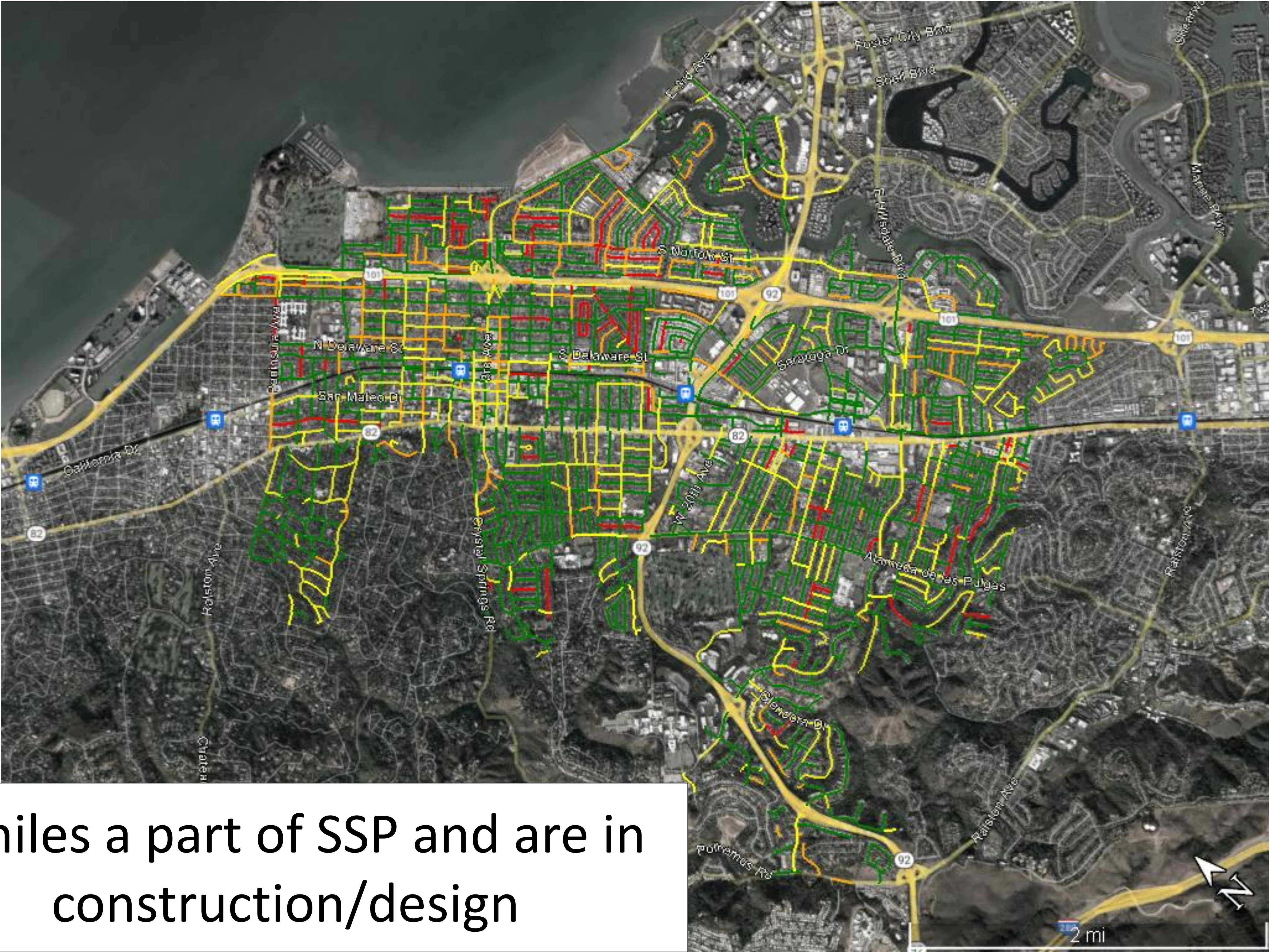
- Crack Seal
- Slurry Seal
- Rehabilitation (Grind and Pave)
- Reconstruction



Current Street Network Pavement Condition Index



5 miles a part of SSP and are in construction/design



Pavement Management

200 Miles of Streets Maintained by City

Annual Pavement Management Program

Smooth Streets Program

Recently Completed Projects

- Rehabilitation – 2.6 Miles
- Slurry Seal – 17.1 Miles (Approx. 10% of Road System)
- Reconstruction – 1.6 Miles (in construction)

Total Estimated Construction Cost: \$11.0 Million



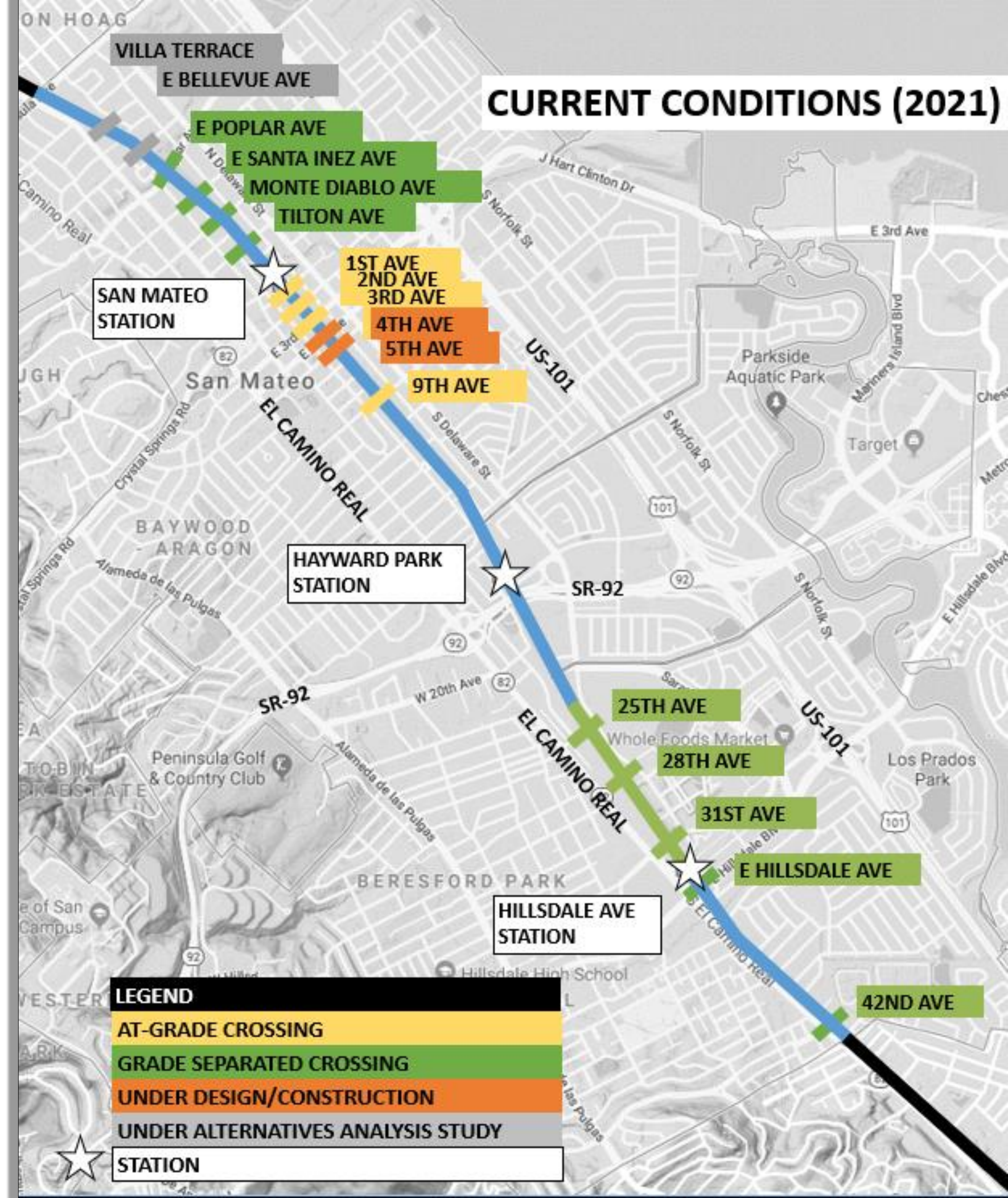
Train Horn Noise

- Project Description: Minimize train horn noise impacts throughout the City by establishing a quiet zone.
- 4th & 5th Ave Railroad Crossings Project
 - Installation of 4-quad gates
 - Funding by CPUC under Railroad-Highway Grade Crossings Program “Section 130”
 - Completed Design
 - Construction in 2023



Train Quiet Zone

- Still need closure of Villa Terra or East Bellevue to fully qualify for Quiet Zone

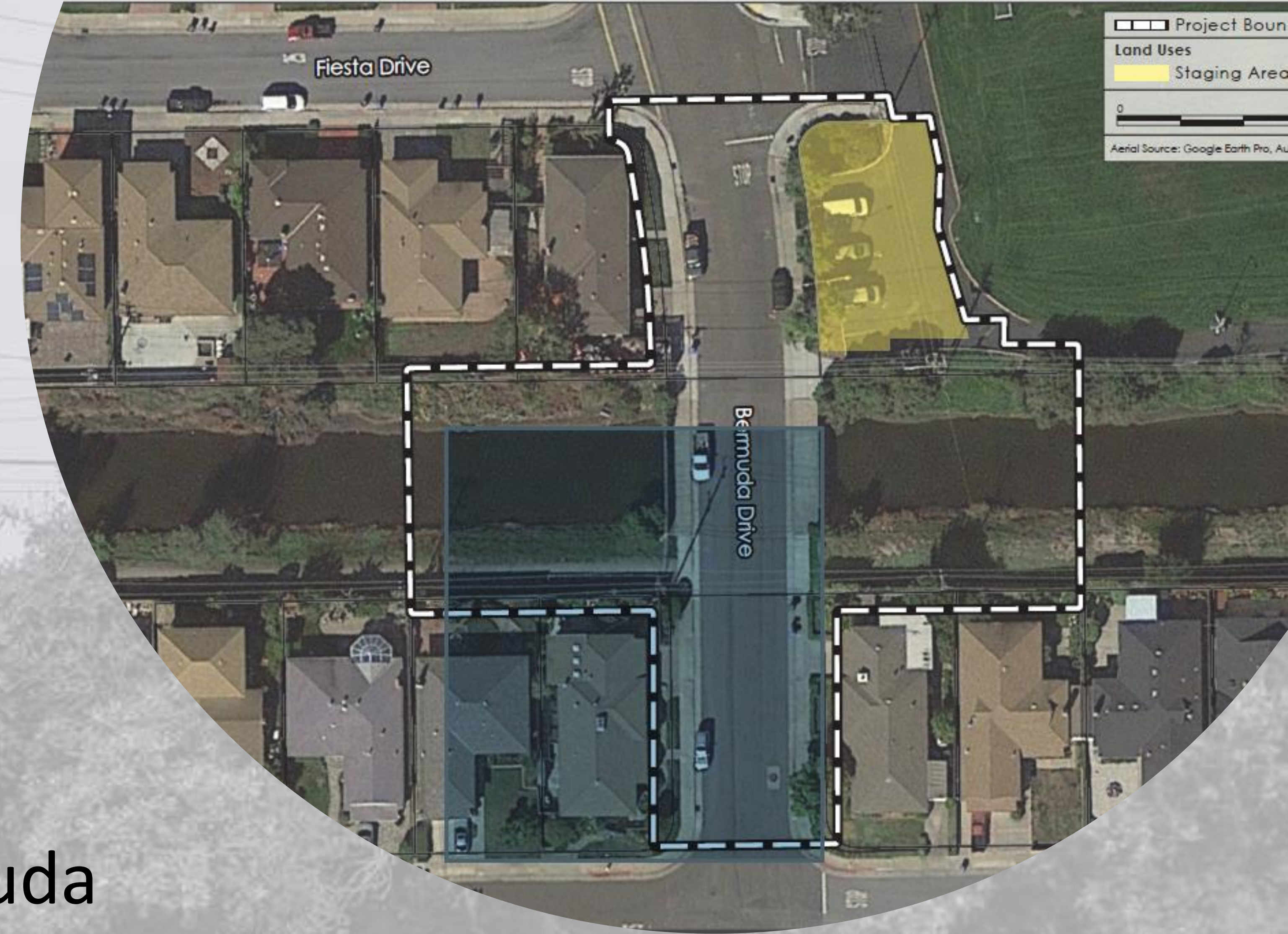


Bermuda Bridge Replacement

Project Description: This Project replaces the existing Bermuda Drive Bridge over Fiesta Channel.

Existing Bridge Issues: Caltrans Bridge Inspection reports indicate the existing bridge is structurally deficient due to:

- Deterioration and corrosion of the steel pile shells
- Visible severe cracking along wall face and wall leaning





North Shoreview Flood Improvements

Investigation

Project
Initiation

Preliminary
Planning

Design

Construction

Project
Close-Out

North Shoreview Flood Improvements

- \$30 Million project to provide flood protection in 100-year storm events
- Removes 1,600 residential properties out of FEMA's special flood hazard area
- Anticipated completion in Spring 2023





Green Fleet 2030

- Decommission existing CNG system – use in future energy project at WWTP
- Transition to zero emissions vehicles and renewable diesel
- Consistent with anticipated CARB regulations and anticipated vehicle market trends
- CNG system may be used as part of future energy project at the WWTP

Sidewalk Repair Program

- Horizontal Concrete Saw-Cutting Pilot
 - To evaluate the effectiveness of horizontal concrete saw-cutting as an alternate concrete improvement technology
- On-call services agreement to fix deficiencies on case-by-case basis
- Reevaluation of Program plan terms (e.g. cost sharing w/ owners)



Customer Service Requests

Fix Street
Light

Traffic Signal
Timing

Sewer Issue

Restripe
Crosswalk

Sidewalk
Issues

Storm Drain
Clogged

Illegal Dumping

Report a
Pothole

Request a
Street Sign

Street Paving



What can you call Public Works for?

Residential Service Requests

- Emails to Public Works Email Address: 3,600/year
- Customer Calls/inquiries: 200 to 300/week
- Cartegraph Requests to O&M: ~2,400 requests

Capital Program: 258 Public Requests

- 111 Sidewalk
- 98 Streets and Roadways
- 40 Other (Sewer, Storm, Etc.)



Ways to Reach Us



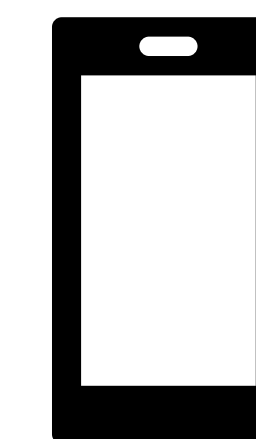
Phone



Email



Online Form



My SanMateo App



BY MF

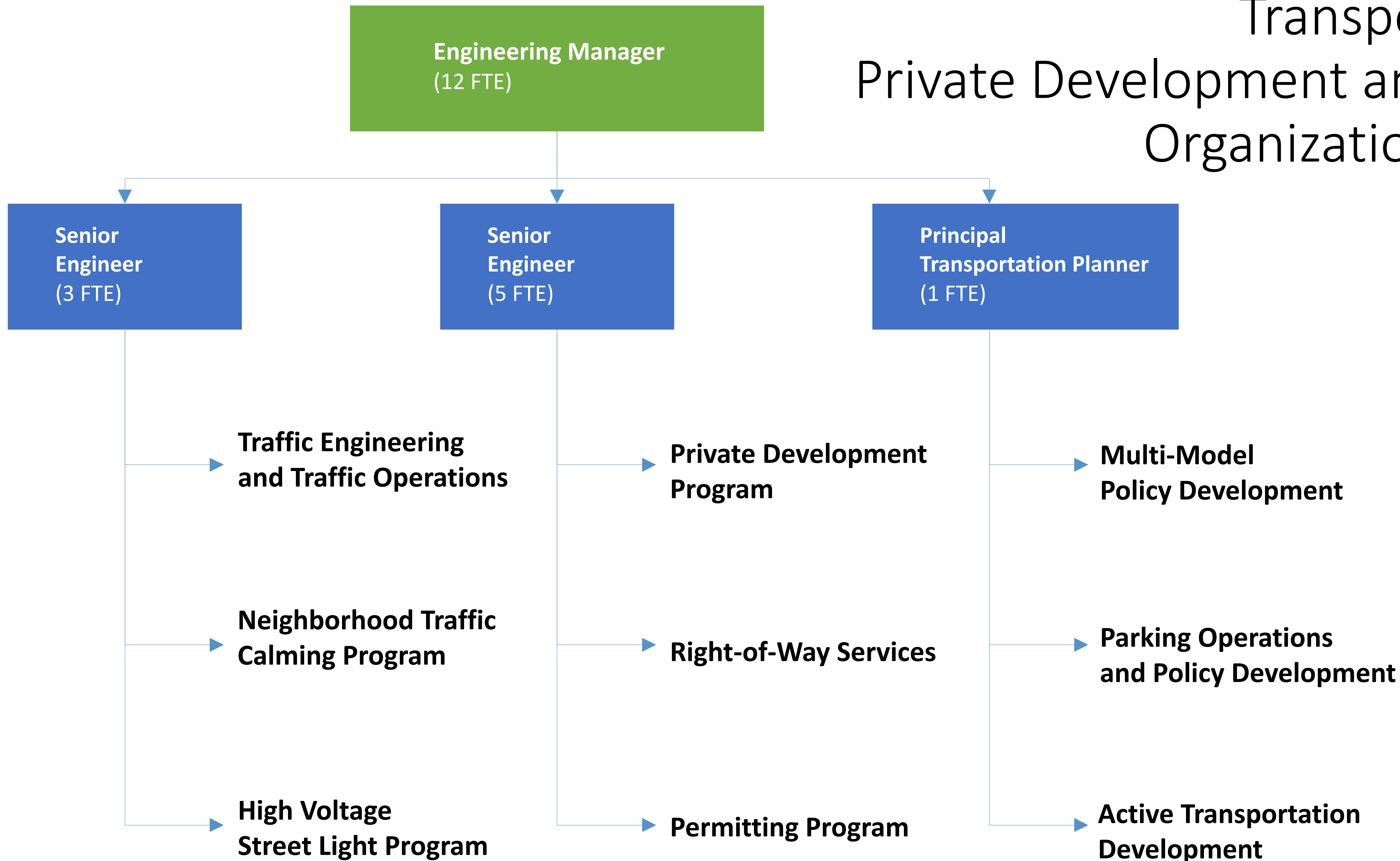


Upcoming Projects

- Smooth Streets Phases 4 (2023) & 5 (2024)
- PMP Phase 4 (2023) and Beyond
- 4th Ave/5th Ave Rail Crossing Improvements (2023)
- 82/92 Highway Interchange Landscaping Improvements

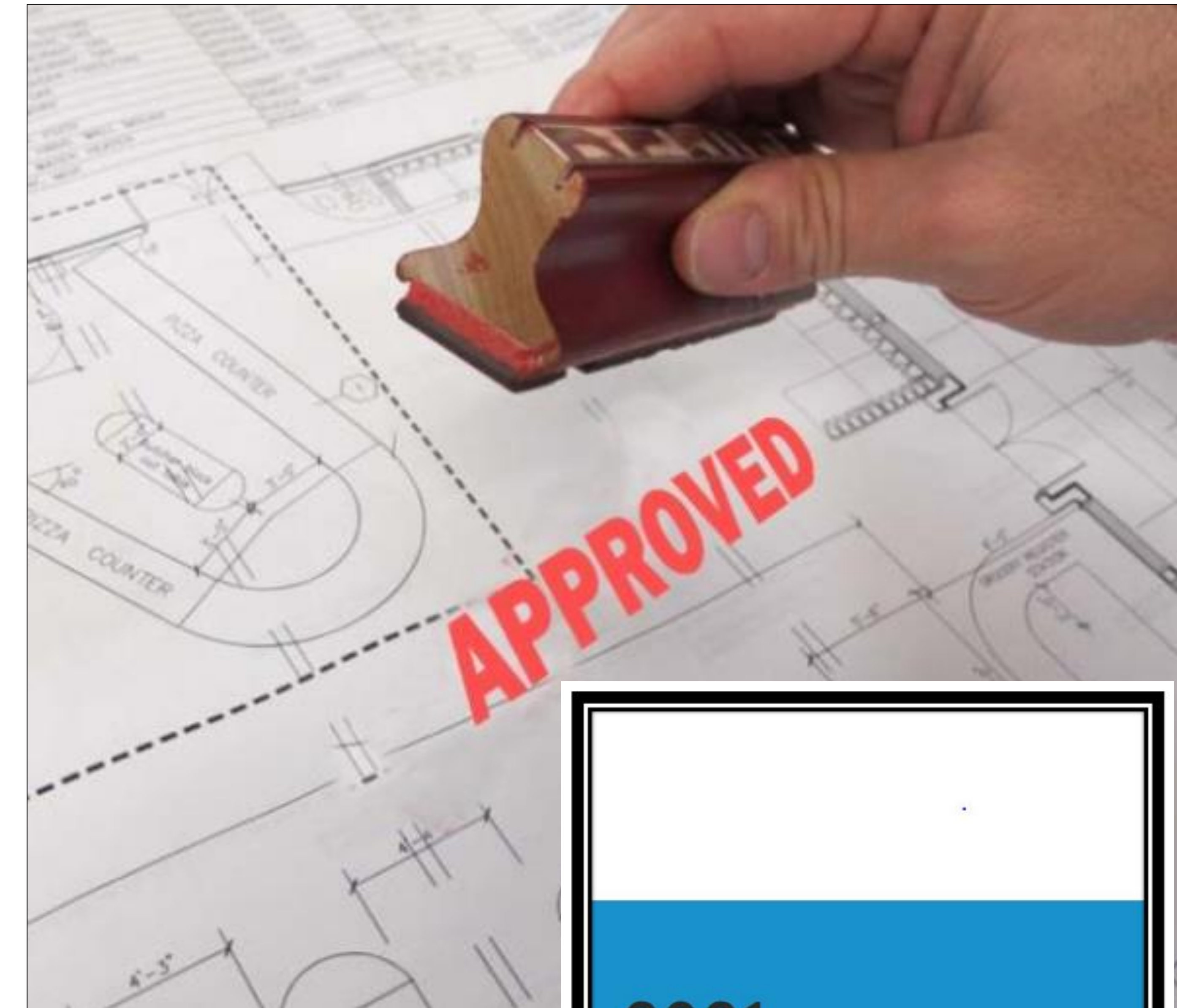


Transportation Private Development and ROW Organization Chart



Private Development/ROW Accomplishments

- Reviewed 162 Planning Applications
- Reviewed 1,280 Building Permits (10-Year record)
- Reviewed and Issued 1,265 encroachment permits
- 12 Small Cell Applications / Wireless Communications



2021
Design Standards, Application
Requirements, Conditions of Approval
For Wireless Facilities in the Public Right-Of-Way

Transportation Engineering

What do we do?

- Application of technology and scientific principles to the **planning**, functional **design**, operation and **management** of infrastructure for **all modes** of transportation in order to provide for safe, efficient, economical and environmentally responsible movements.

Plan
Design
Manage



ALL MODES



Traffic Engineering

Senior Engineer

- 1 Associate Engineer
- 1 Assistant Engineer
- 1 Engineering Technician

Traffic Engineering and Traffic Operations

- Traffic signal simulation, optimization, modernization, timing, network planning, congestion relief

Improve Safety for All Users

- Collision data review
- Stop warrant assessments
- Speed Limit Program / speed studies
- Neighborhood Traffic Calming Program
- Traffic Action Plans
- Local Roadway Safety Study
- Streetlight Planning and Design

Traffic Engineering

Senior Engineer

- 2 Associate Engineer
- 1 Engineering Technician

Capital Projects - Implementation

- Grade separation
- 101/Peninsula interchange
- High Voltage Project
- School Speed Zones
- Bicycle and pedestrian improvements
- Coordination with Pavement Management

Coordination – Private Development / Police

- Review of traffic control plans
- Traffic impact analyses
- General Plan – Circulation Element
- Collision data, speed setting

Master Plans

- Traffic Signal Master Plan
- Complete Streets
- Downtown Circulation Study

Transportation Planning

**Senior
Transportation
Planner**
- 1 Associate
Planner

Operations

- Parking supply, pricing, asset management
- Permit programs, on-street accessible parking
- Transportation Demand Management
- Safe Routes to School
- Commuter shuttles

Improve Safety for All Users

- Bicycle Master Plan implementation

Master Plans

- Traffic Oriented Development Action Plan
- General Plan – Circulation Element

Coordination – Private Development / Police

- Review of parking studies / rail corridor
- General Plan – Circulation Element



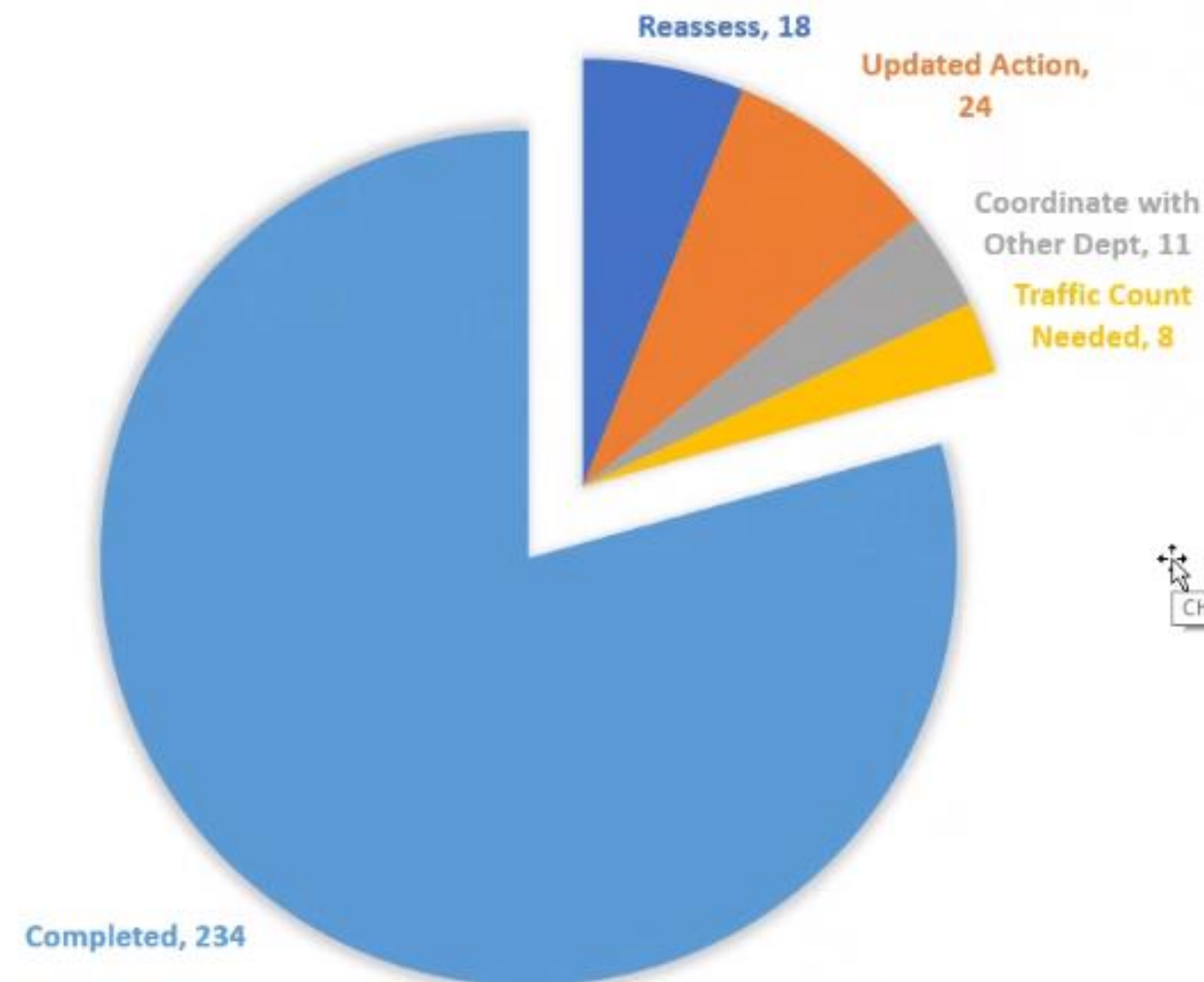
APRIL 2020 FINAL

Council Priority

Implement traffic programs and improvements to enhance safety for all users by utilizing public input and data, such as the input that led to the Traffic Action Plans, to improve safety on neighborhood roadways and intersections.

- Data driven approach
 - Collision dashboard
- 14 Traffic Action Plans
 - 292 unique action items
 - 234 actions completed
 - Reassessing more expensive actions (>\$1M)

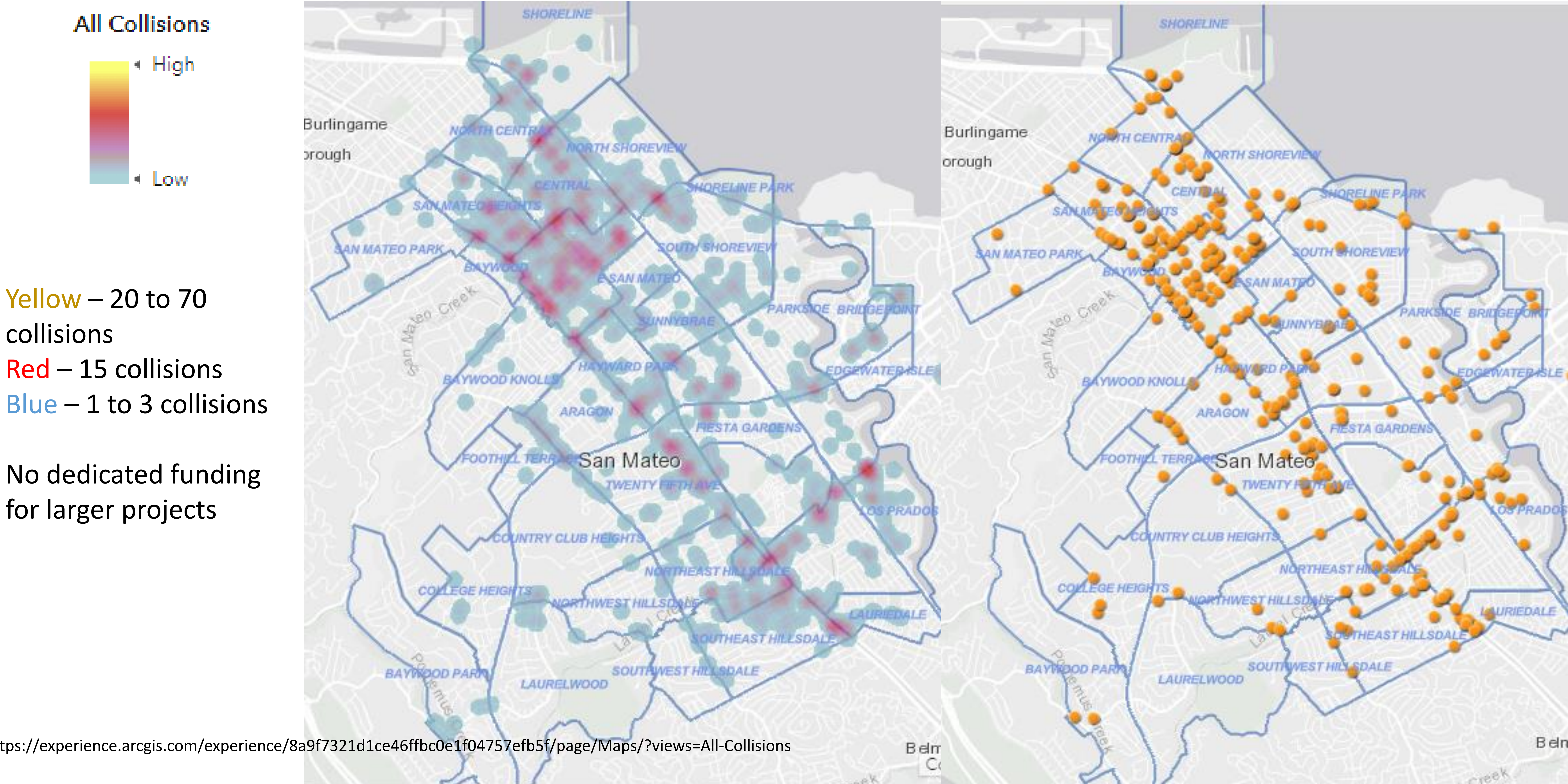
Program Progress



Data-Driven Approach, Prioritization

All Collisions (2020-2023)

Injury Collisions (2020-2023)



Alameda De Las Pulgas and Hillsdale Traffic Signal

Project Description: Installation of a new traffic signal at the intersection of Alameda De Las Pulgas and Hillsdale Blvd.

- Benefits
 - Improve operations
 - Improve pedestrian safety
 - Better intersection lighting

2019

Preliminary Eng. & Planning

2023

Design

2025*

Construction

*Pending Funding



19th Avenue Fashion Island Study

Project Description: This Project studies the Fashion Island Corridor to determine existing operational condition and provides projects to improve congestion.

Existing Issues: Vehicle congestion during AM and PM peak hours

- **Benefits**

- Improve corridor travel times
- Reduce cut-through traffic
- Enhanced multi-modal safety

2022

Preliminary Eng.
& Planning

2023*

Design

2025*

Construction

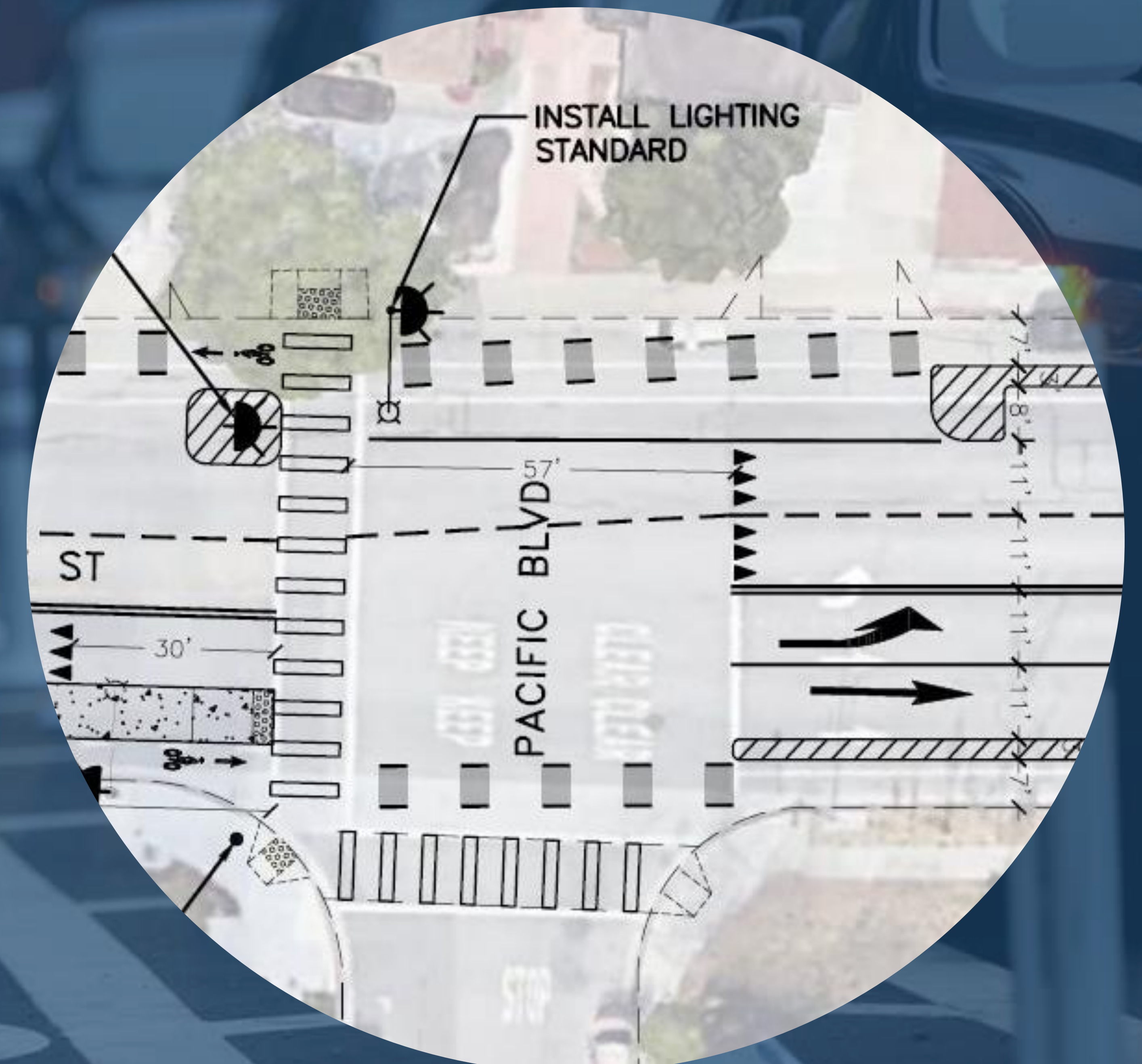
*Pending Funding

Delaware Safe Routes Corridor Protected Bike Lane

Project Description: This fully grant funded project improves the bike infrastructure on Delaware Street from Pacific to 19th Avenue.

- **Benefits**

- Increase bicycle safety
- Encourage use of bicycle facilities
- Reduced vehicle emissions



2022

Preliminary Eng.
& Planning

2023

Design

2025

Construction

Complete Streets Plan

Project Description: A plan that focuses on improving safety, increase economic development and enhanced quality of life, by designing streets for all modes of transportation.

- Benefits
 - Improved safety for all modes
 - Improve pedestrian safety
 - Increased transportation choices
 - Improved public health

2022

2023

2025

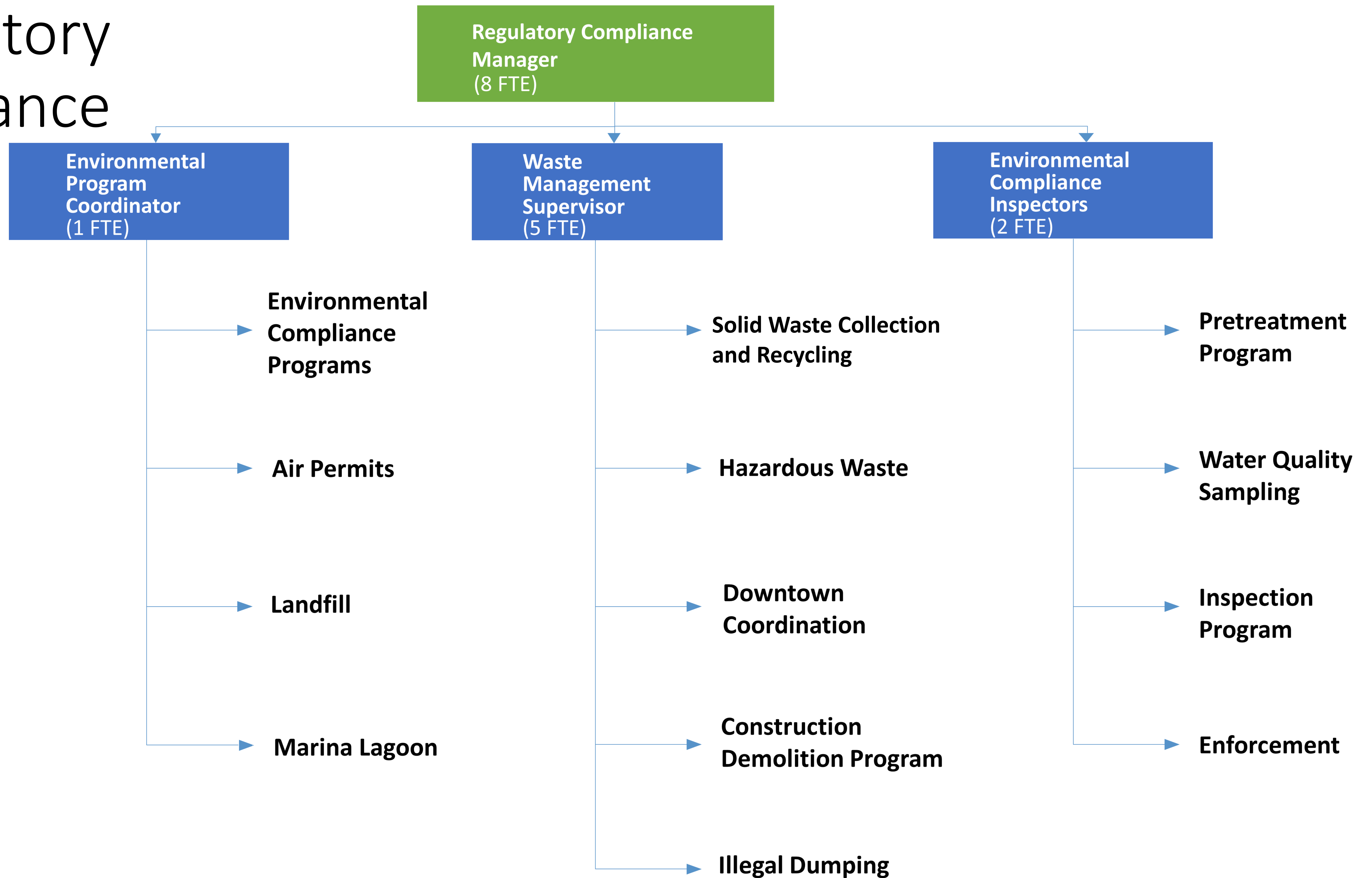
Project Kick-Off

Plan Development

Plan Completion



Regulatory Compliance



Environmental Compliance Programs

Stormwater

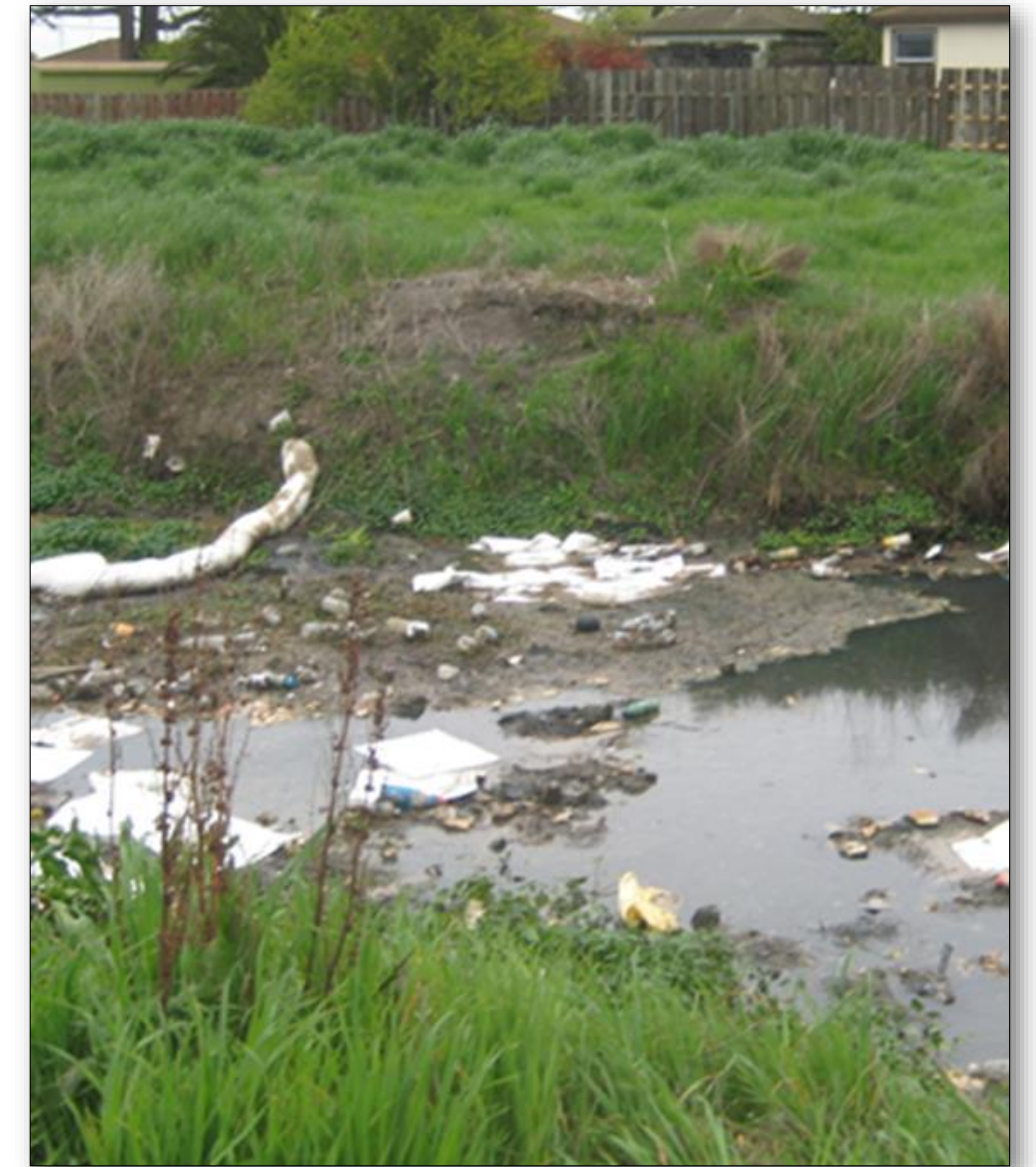
- Municipal Regional Permit
- Clean Creeks and Flood Control Initiative

Wastewater

- Water Quality Control Plant (WQCP) Permit Renewal
- Air Permitting for new WQCP

Inspection and Enforcement for Commercial and Industrial

- Pretreatment - wastewater discharges to sanitary
- Stormwater - preventing illegal discharges to the storm drain system



Solid Waste

Solid Waste Rate Increases

Mandatory organics recycling ordinance

Construction and demolition program -
plan reviewed

Illegal dumping

Team Up to Clean Up

- Community clean up events

E-Waste and shredding

Adopt A Drain

Bayfront Cleanup



Marina Lagoon

Vegetation Management

Water Quality

- TMDL Implementation Actions
- Goose control program
- Sampling and analysis
- Best Management Practices

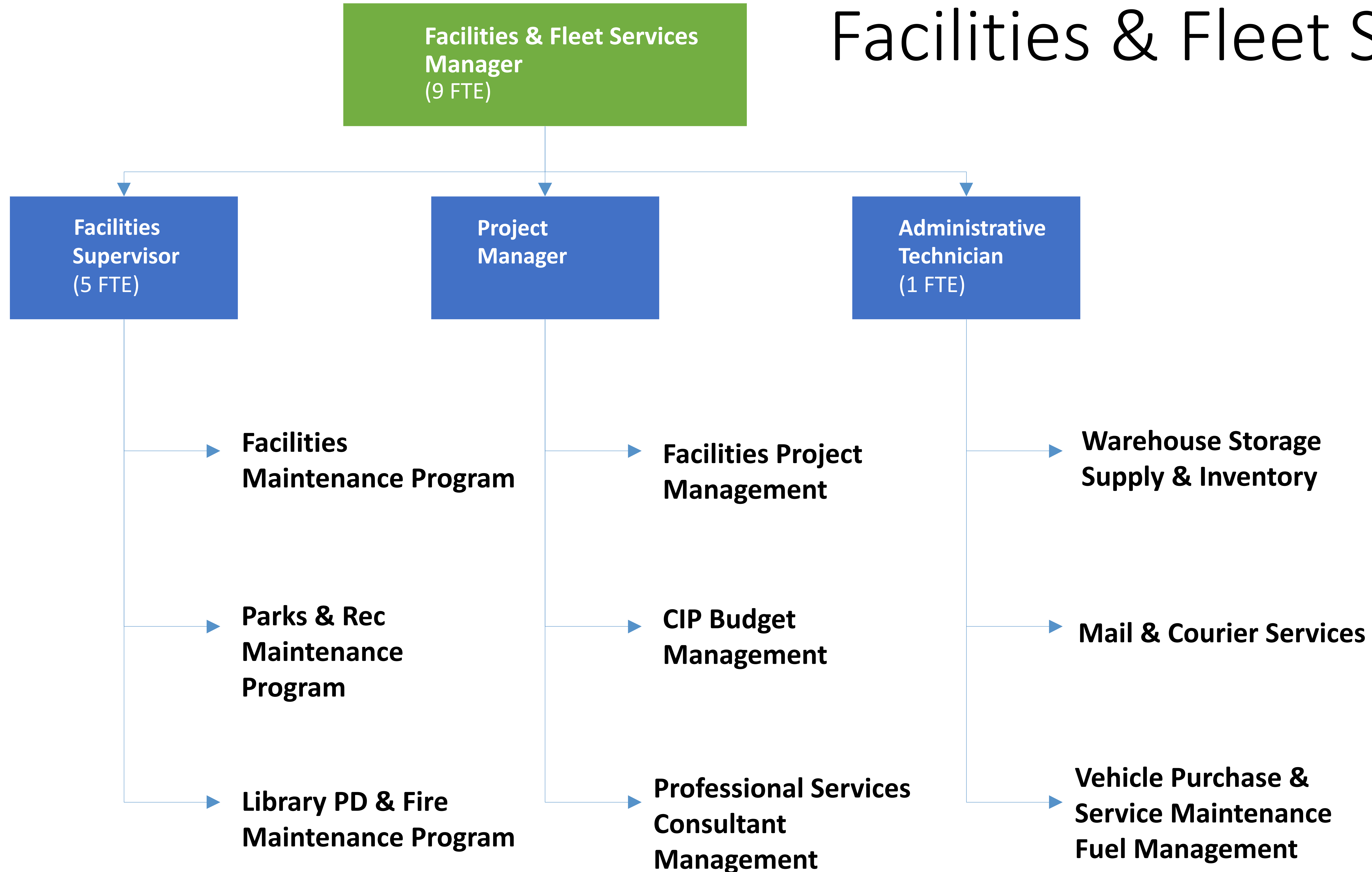
Routine Maintenance Permit Renewals

Funding Analysis for Stormwater System

- \$80M for dredging
- \$3M/annual need for capital improvements (2004 Master Plan)
- \$3.7M/annual need for operations and maintenance
- User fee initiative



Facilities & Fleet Services



Facilities & Fleet

Facilities and Fleet is responsible for providing centralized maintenance for all City buildings and park infrastructure. The division is also responsible for all building and infrastructure upgrades, remodels, and new building construction. In addition, it manages procurement and maintenance of all city vehicles through oversight of the fleet maintenance contractor.

11 publicly-owned parking lots and garages
32 public buildings, 29 parks
198 vehicles

Maintenance Activities

Janitorial	Kitchens
Roofing	Fire Suppression
Fire & Intrusion Alarms	Pools & Recreation Equipment
Fire Extinguishers	Graffiti & Downtown Cleaning
HVAC & Plumbing	Parking Lots
Flooring, Windows & Glass	Painting & Carpentry
Pest Control, Birds & Wildlife	Lighting & Generators
Sewer & Sanitation Pumps	Move Add Change Requests
Elevators, Gates & Doors	General Repairs
Parking Garages	

Facilities CIP Projects

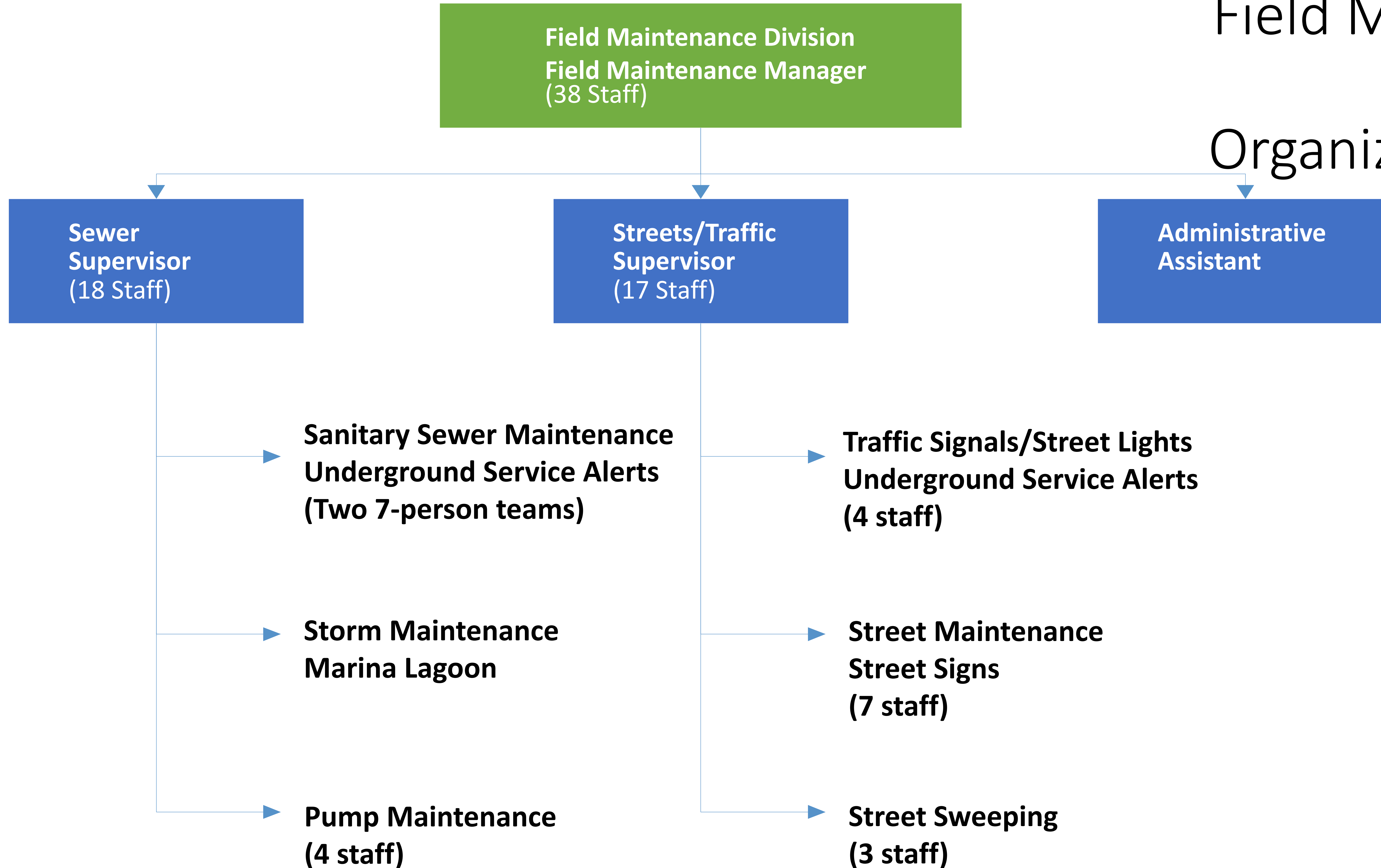
- City Hall Space Planning
- Marina Branch Library
- City Hall Staff Restroom Remodel
- Corporation Yard Underground Storage Tanks
- King Center Kitchen
- Joinville Changing Rooms

Designs completed for:

- Indian Springs Park Restrooms
- Fiesta Meadows Park Restrooms
- Casanova Park



Field Maintenance Division Organization Chart



Field Maintenance

Managing the Underground System – Storm and Sewers

- 240 miles of sewers
- 130 miles of storm drains
- 27 sanitary sewer pump stations
- 10 stormwater pump stations
- Trash racks and filters
- Marina Lagoon
- Always on-call



Field Maintenance

Managing the Aboveground System – Streets and Traffic

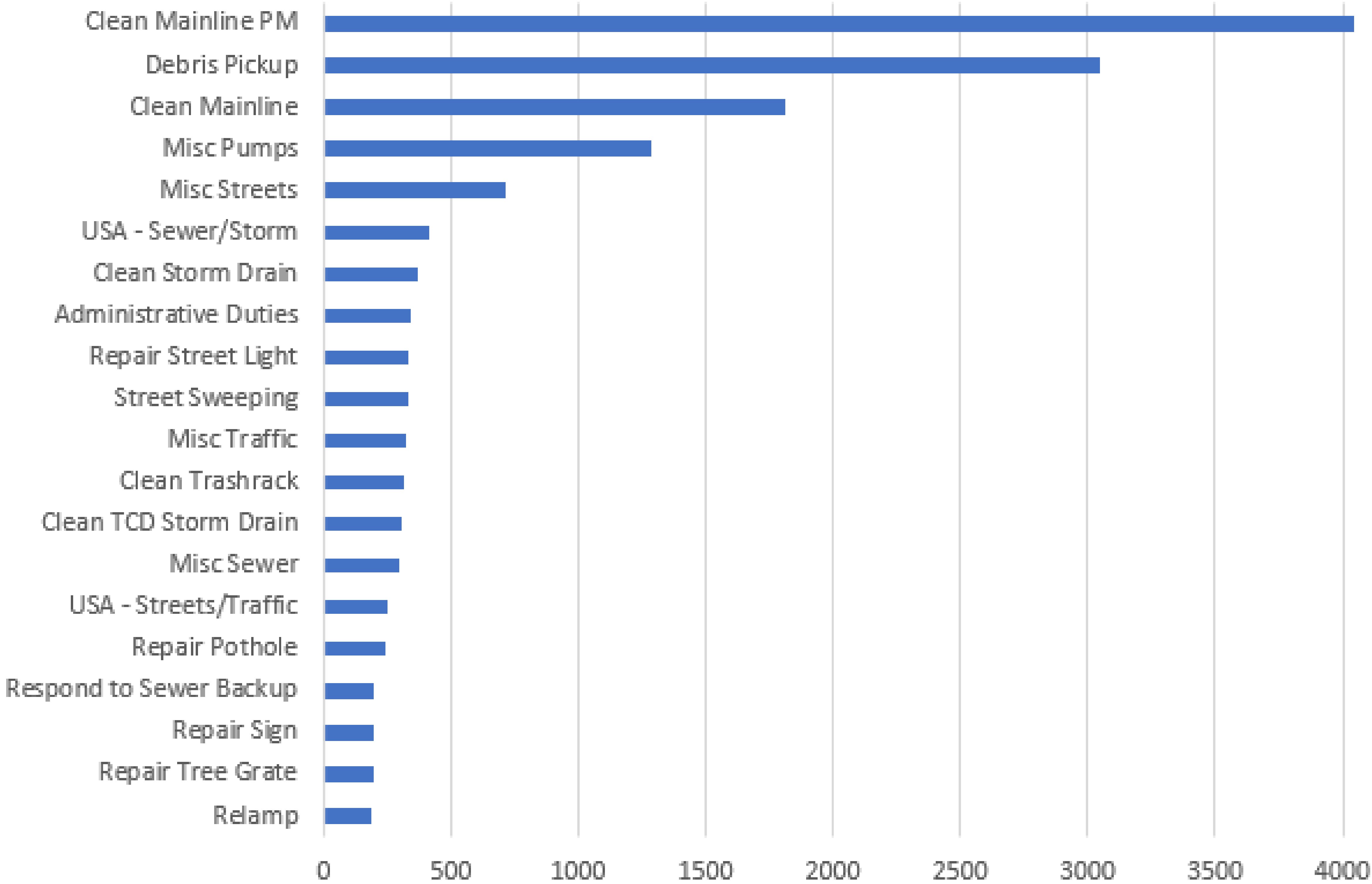
- 210 miles of City streets
- 380 miles of sidewalks
- 87 traffic signal intersections
- Over 7,000 street lights



Field Maintenance



Top 20 Field Maintenance Tasks for 2022



Wastewater Treatment Plant
Treatment Plant Manager
(31 Staff)

Wastewater Treatment Plant

Operations
Superintendent
(16 Staff)

Maintenance
Superintendent
(8 Staff)

Laboratory
Manager
(3 staff)

Administrative
Assistant

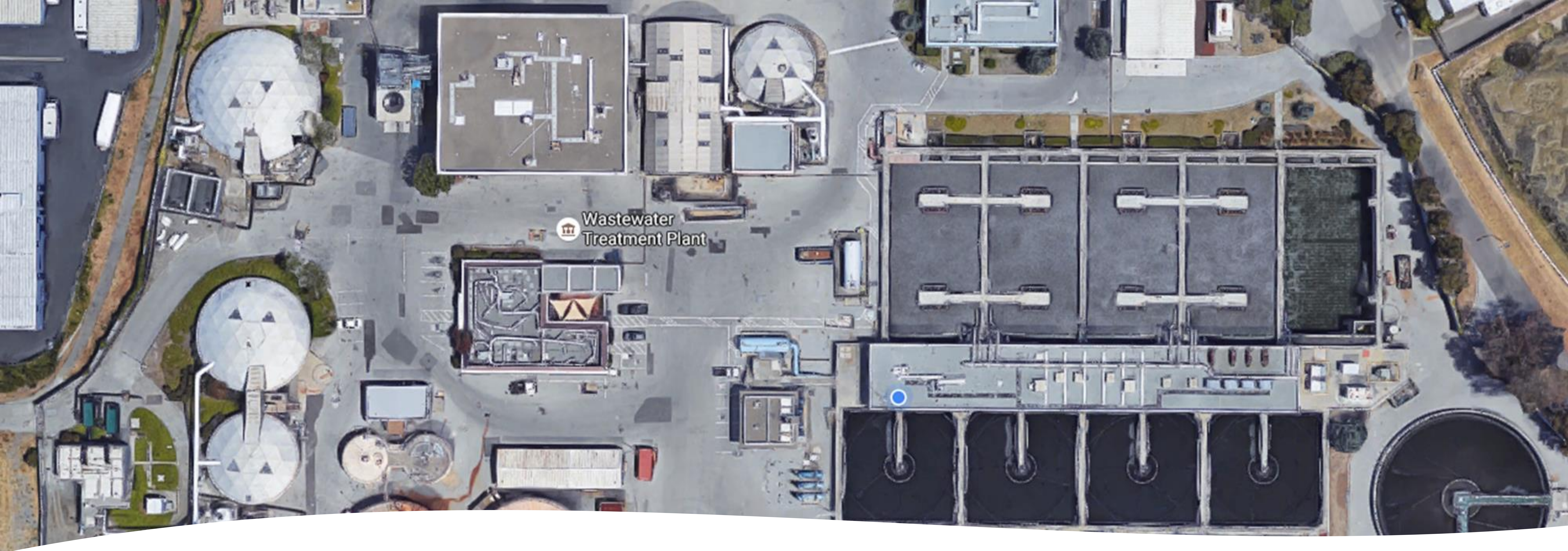
Day Shift

Night Shift

Mechanical/Electrical

Instrumentation/Controls

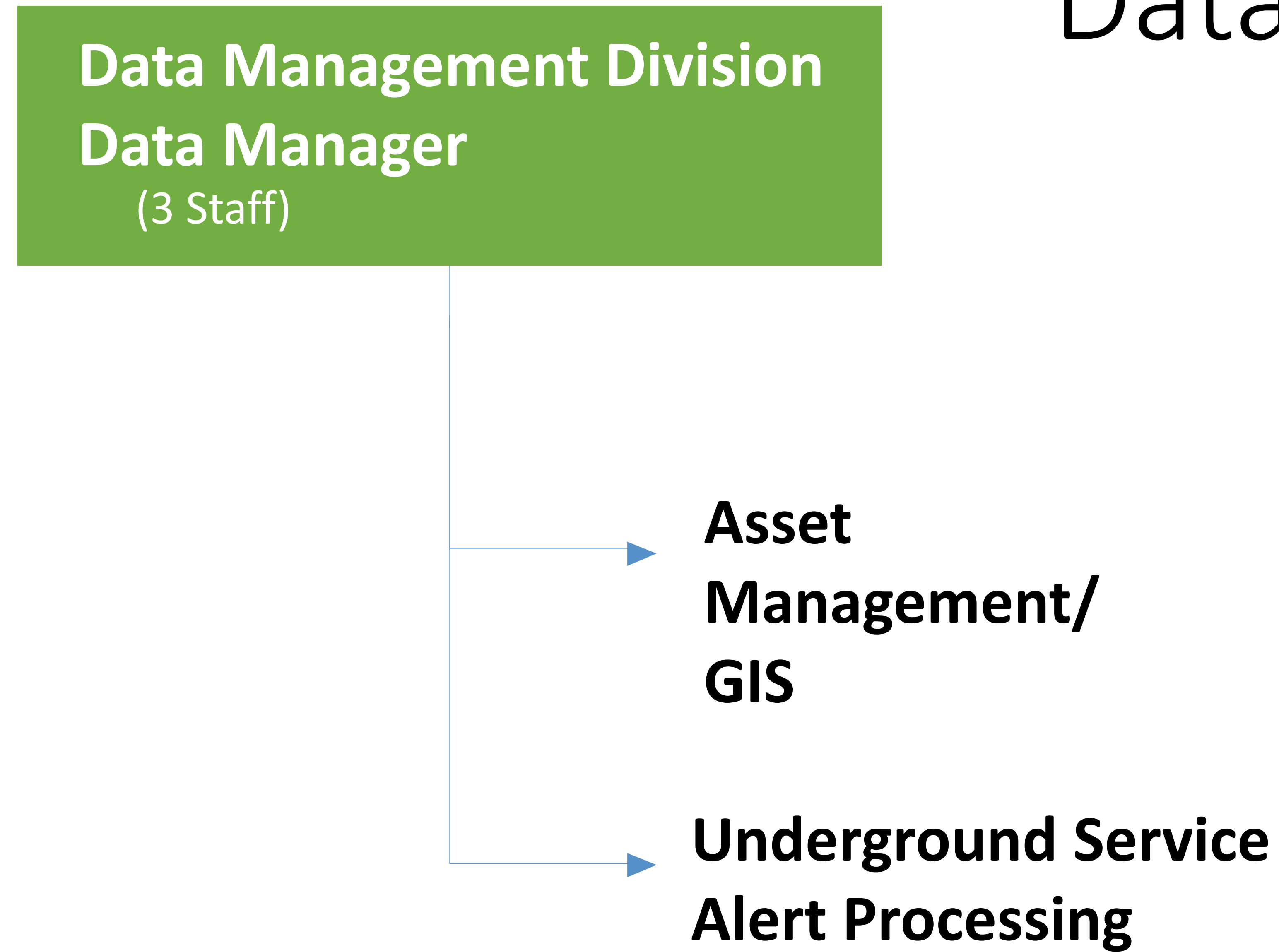
Asset Management



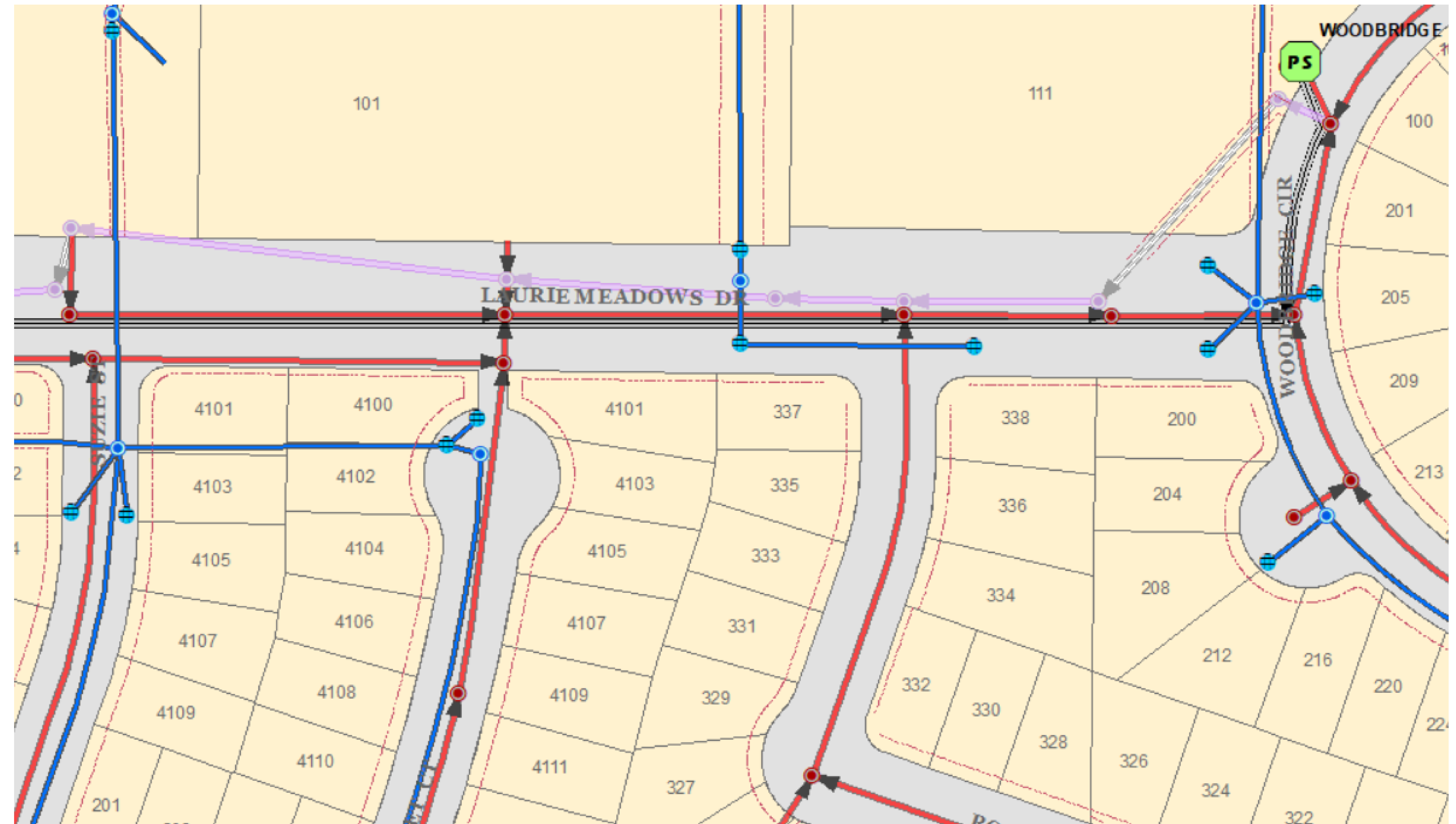
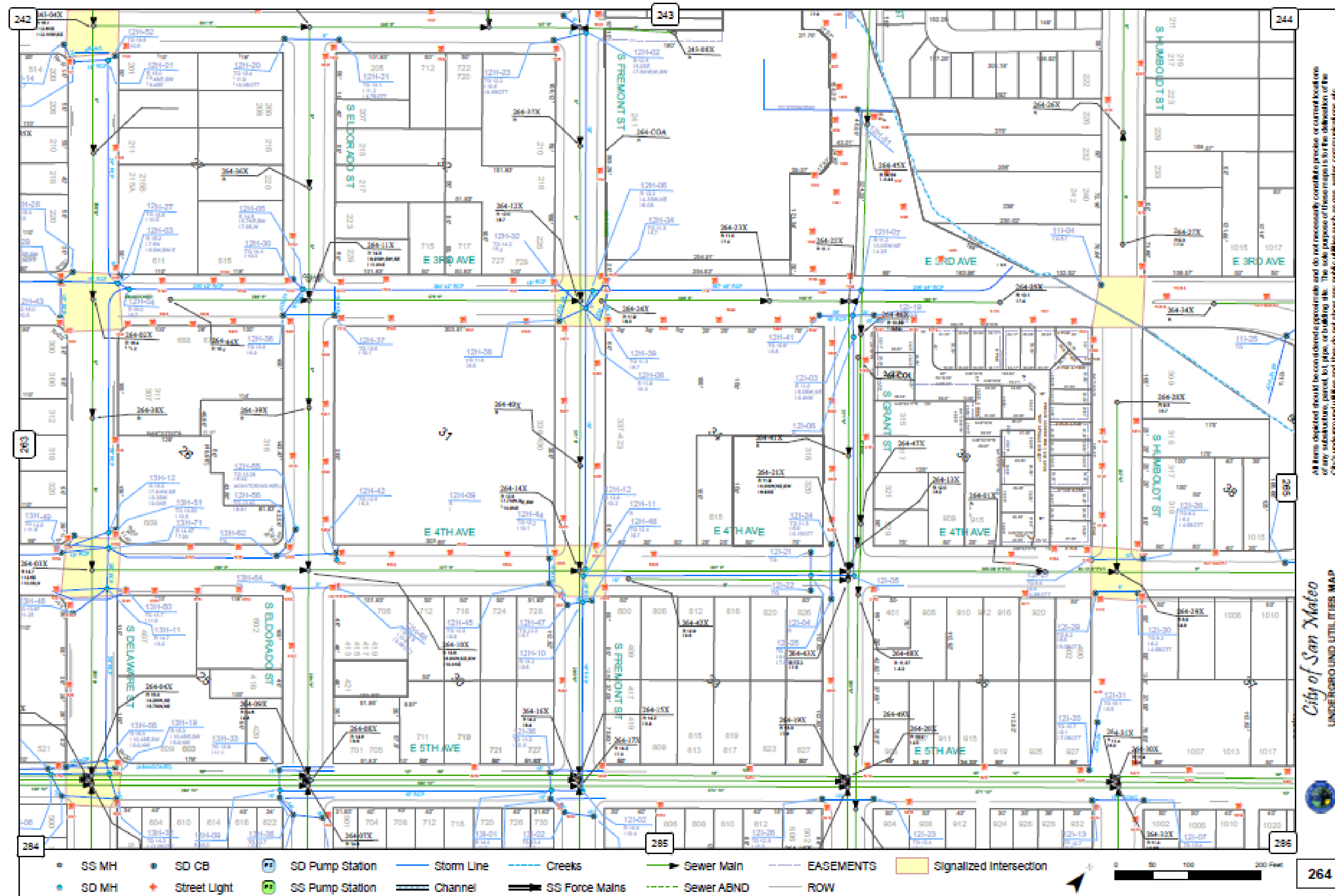
Wastewater Treatment Plant

- 24/7 Operation with Day/Night Shifts
- Protect public health and the environment
- Meet regulations for treatment 365 days/year

Data Management Division



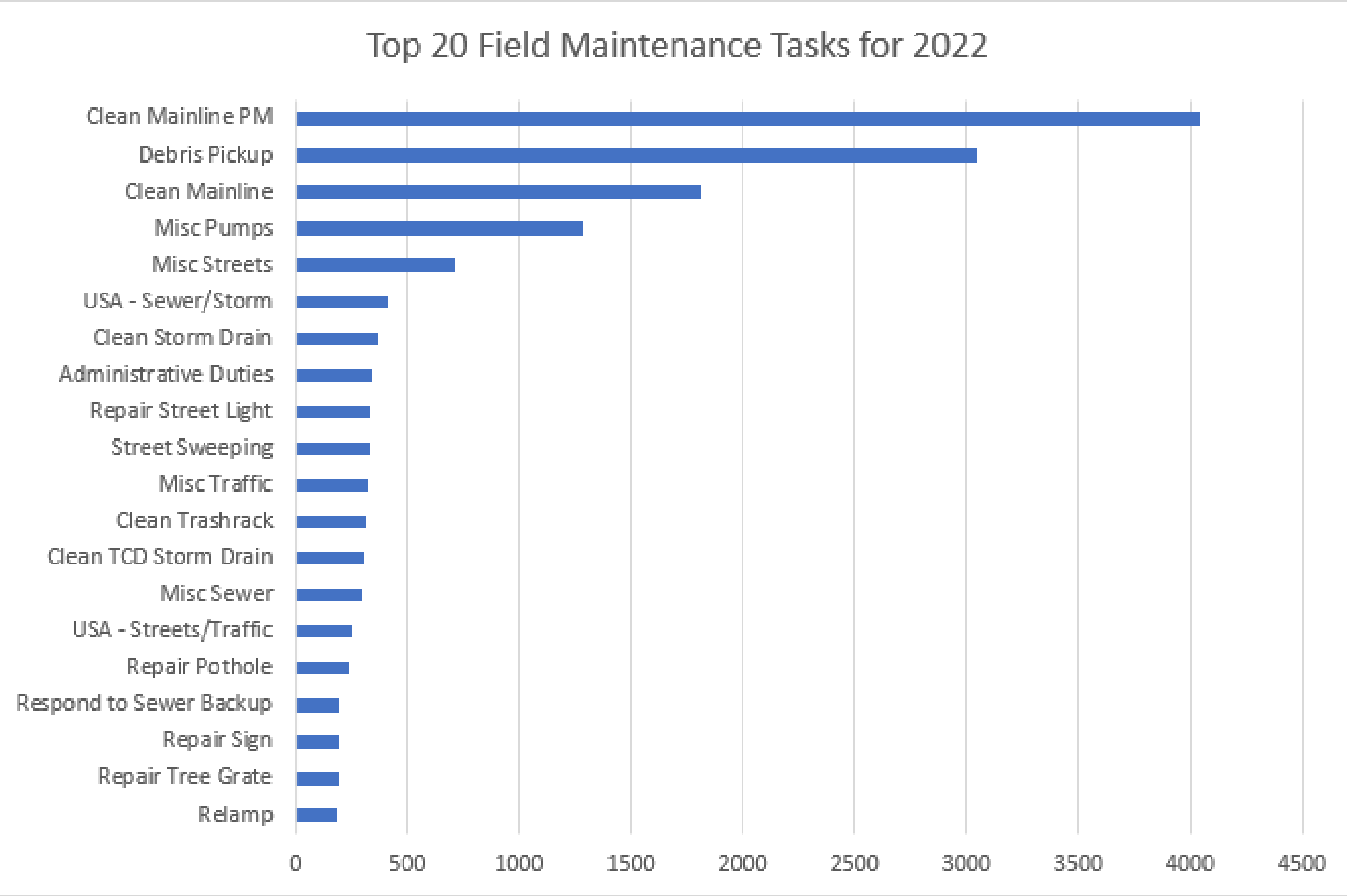
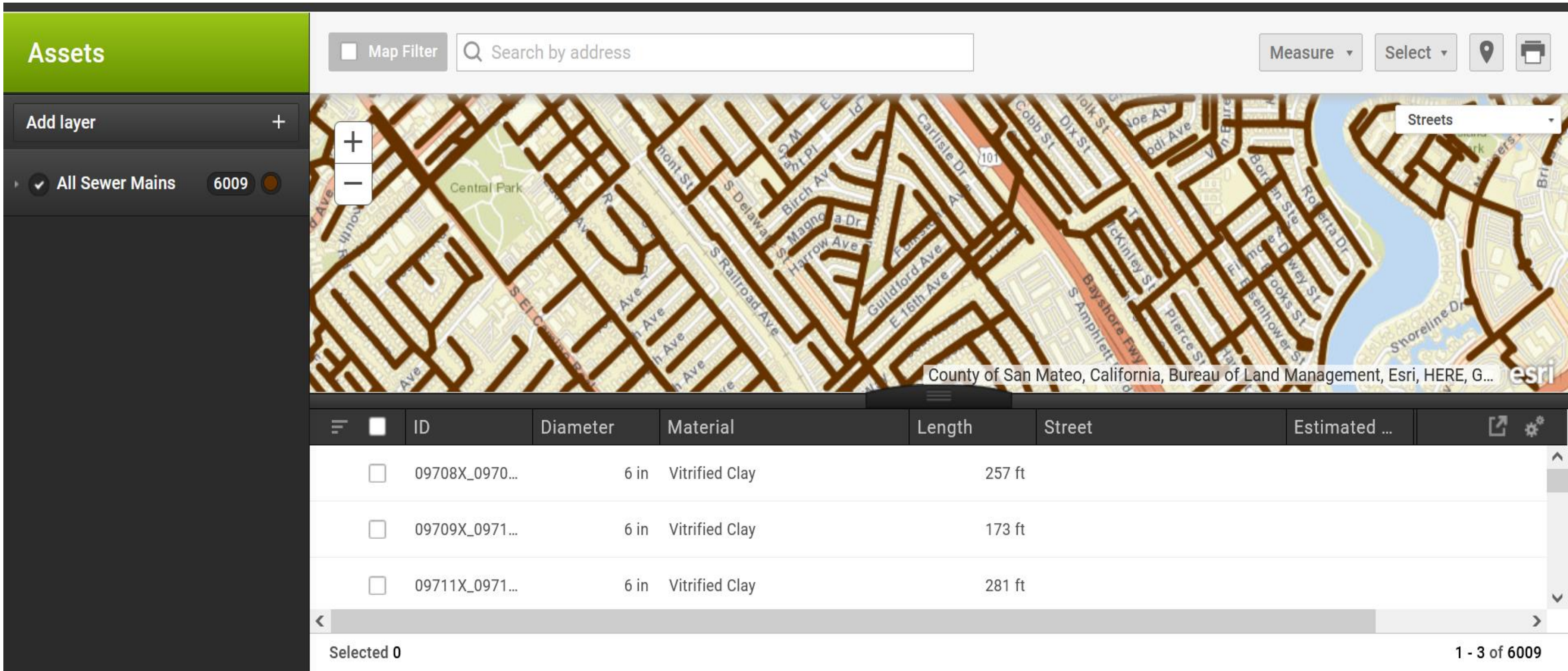
- Update & maintain over 30 GIS datasets
- Provide up-to-date underground map books
- Map and data support for PW Department



Assets linked to GIS in a Computerized Maintenance Management System

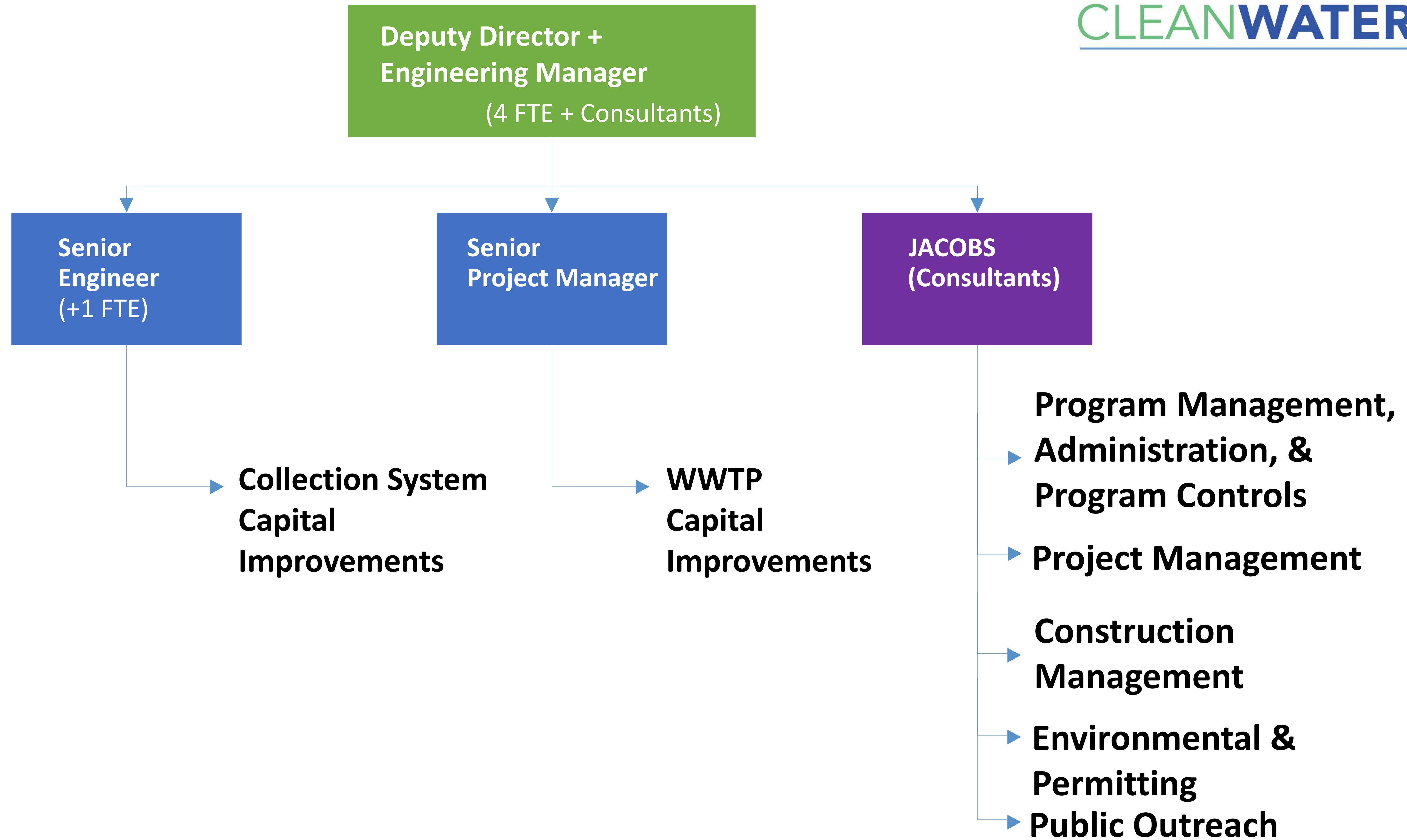
Annually:

- Nearly 3,000 service requests
- Over 32,000 task activities recorded
- Approximately 18,000 USA tickets



Cartegraph™

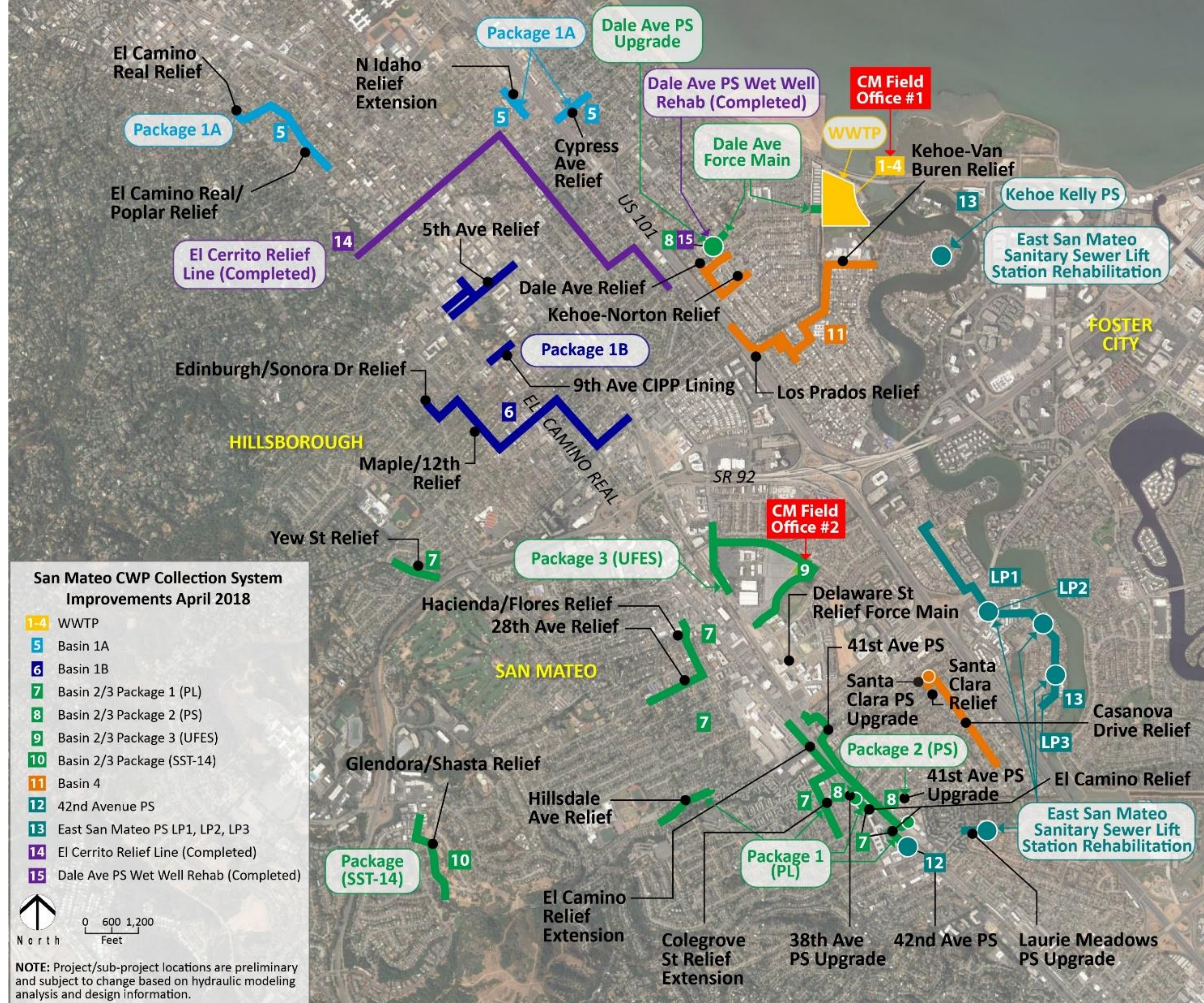




Clean Water Program

- \$1 billion, 10-year effort
- Wet Weather Management
- Collection System Rehab and Capacity Improvements
- WWTP Upgrades
 - Nutrient Removal
 - Additional Capacity

cleanwaterprogramsanmateo.org

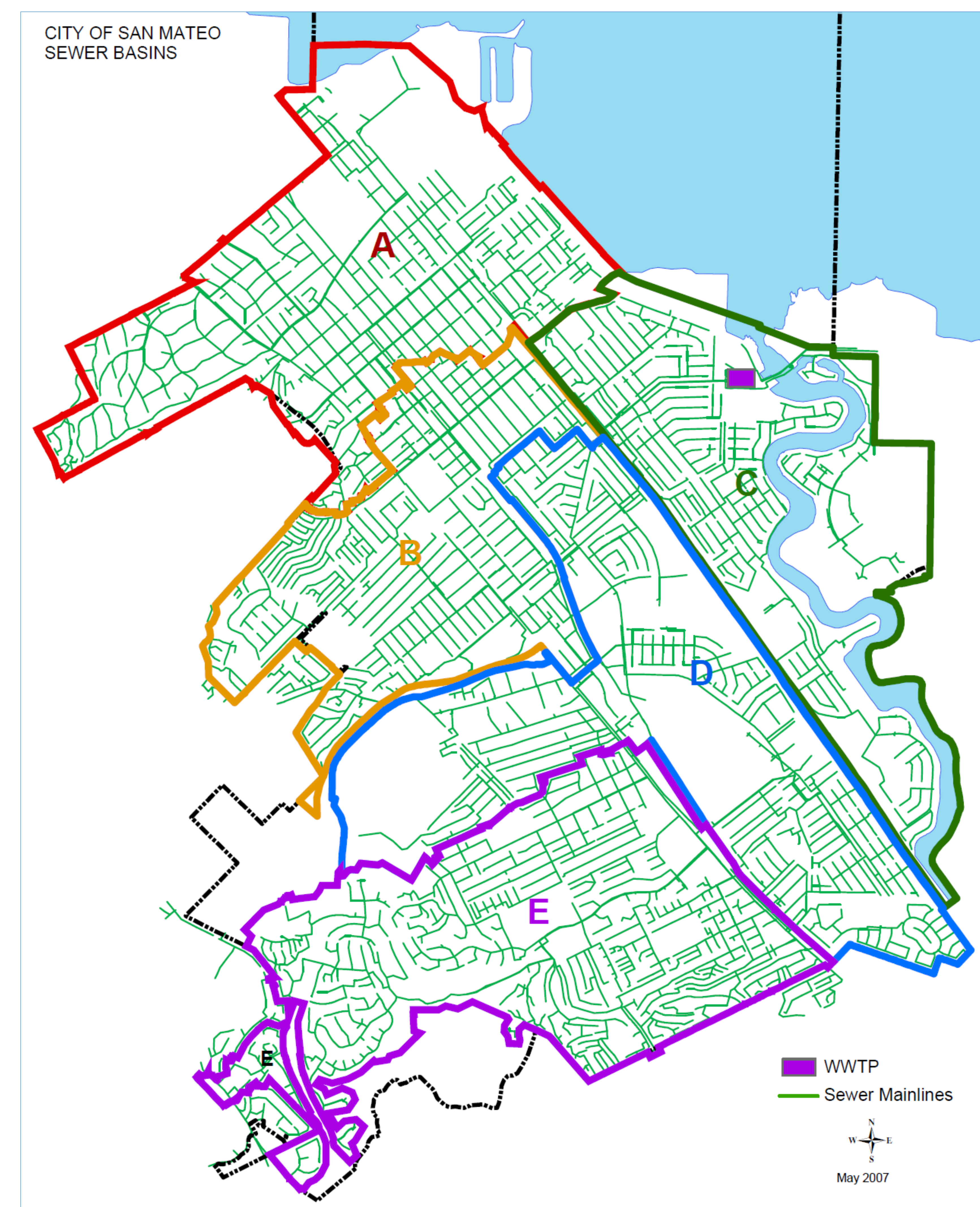


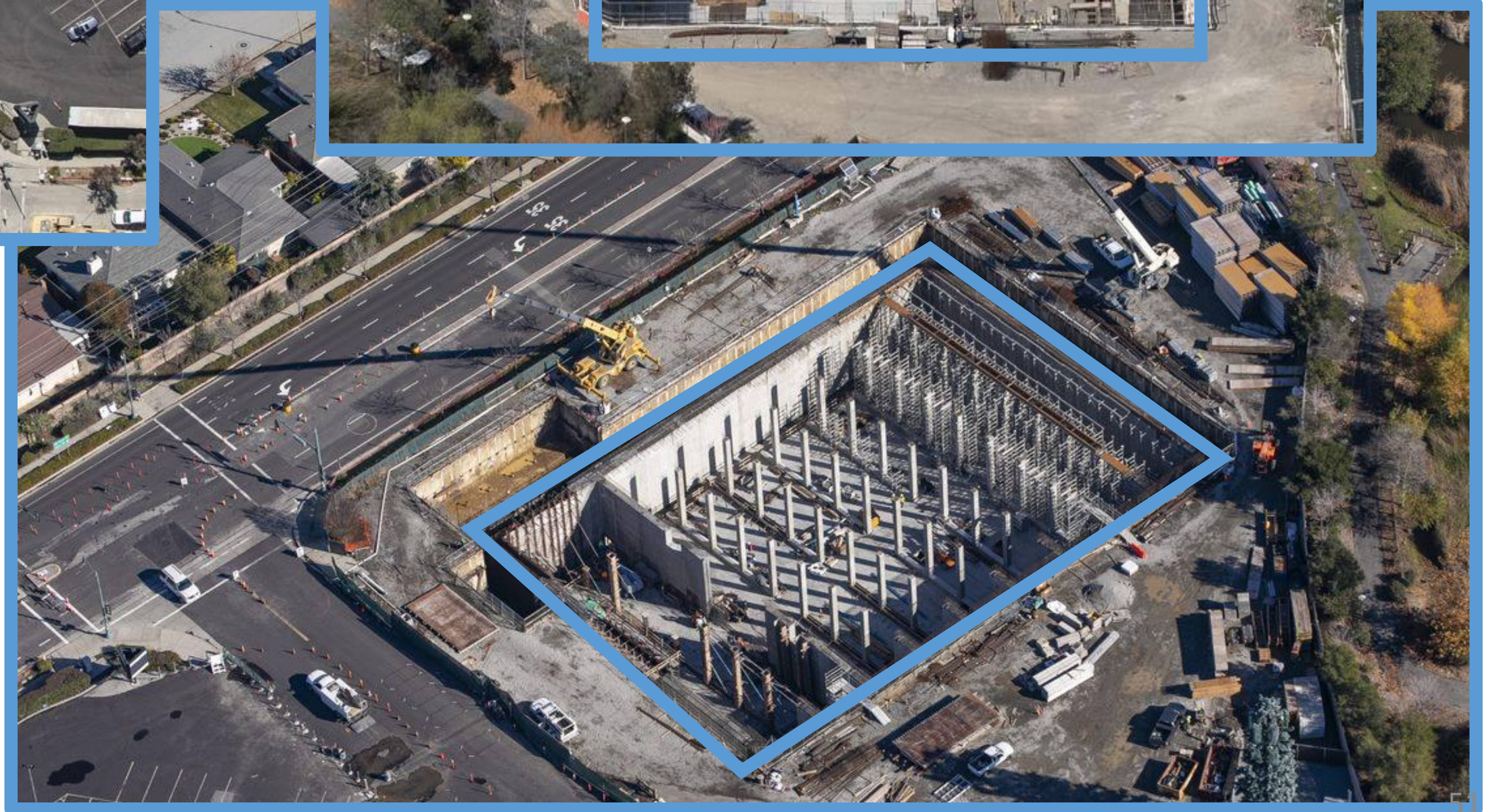
Annual Sewer Rehabilitations

Collection system split into 5 basins (A to E).
Every year one basin is evaluated and repaired.
Entire system addressed every 5 years.

Sequence of Activities for Each Basin

1. Clean & Video Investigate
2. Evaluate Defects
3. Design Repairs
4. Construct Repairs





Underground
Flow Equalization
System (UFES)

UFES Progression in 2022



WWTP Upgrade & Expansion



Nutrient removal and wet weather management

- Phase 1 (Excavate & Site Prep)
 - Contracted: ≈\$35 Million
 - Completed
- Phase 2 (Foundation)
 - Contracted: ≈\$20 Million
 - Awarded: May 2020
 - Completed
- Phase 3 (Facilities)
 - Contracted: ≈\$394 Million
 - Awarded: September 2020
 - Anticipated Completion: 2024

Admin Building Start of 2022



Admin Building End of 2022



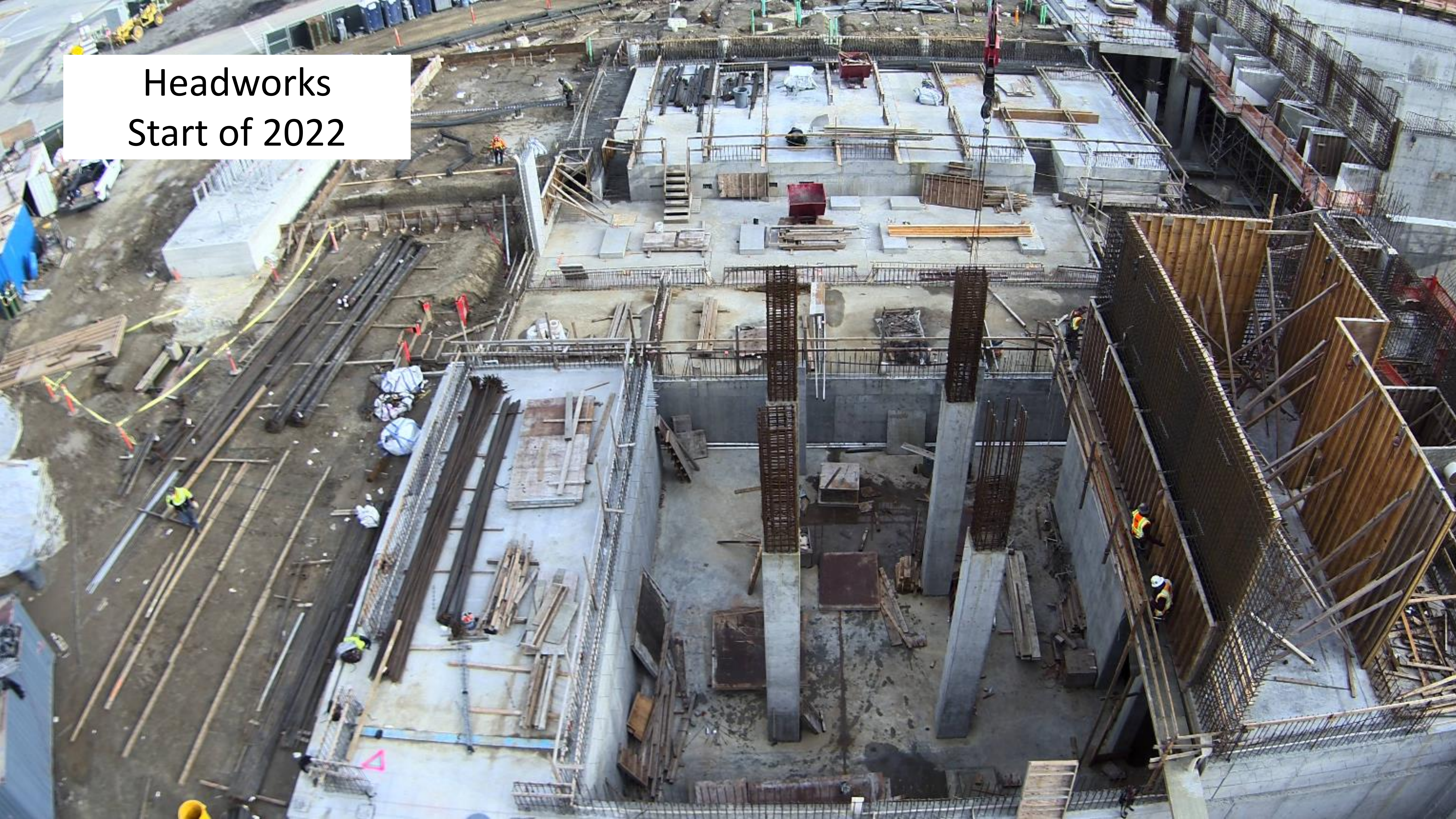
Treatment Areas
Start of 2022



Treatment Areas
End of 2022



Headworks
Start of 2022



Headworks
End of 2022



Electrical Bldg Start of 2022



Electrical Bldg End of 2022

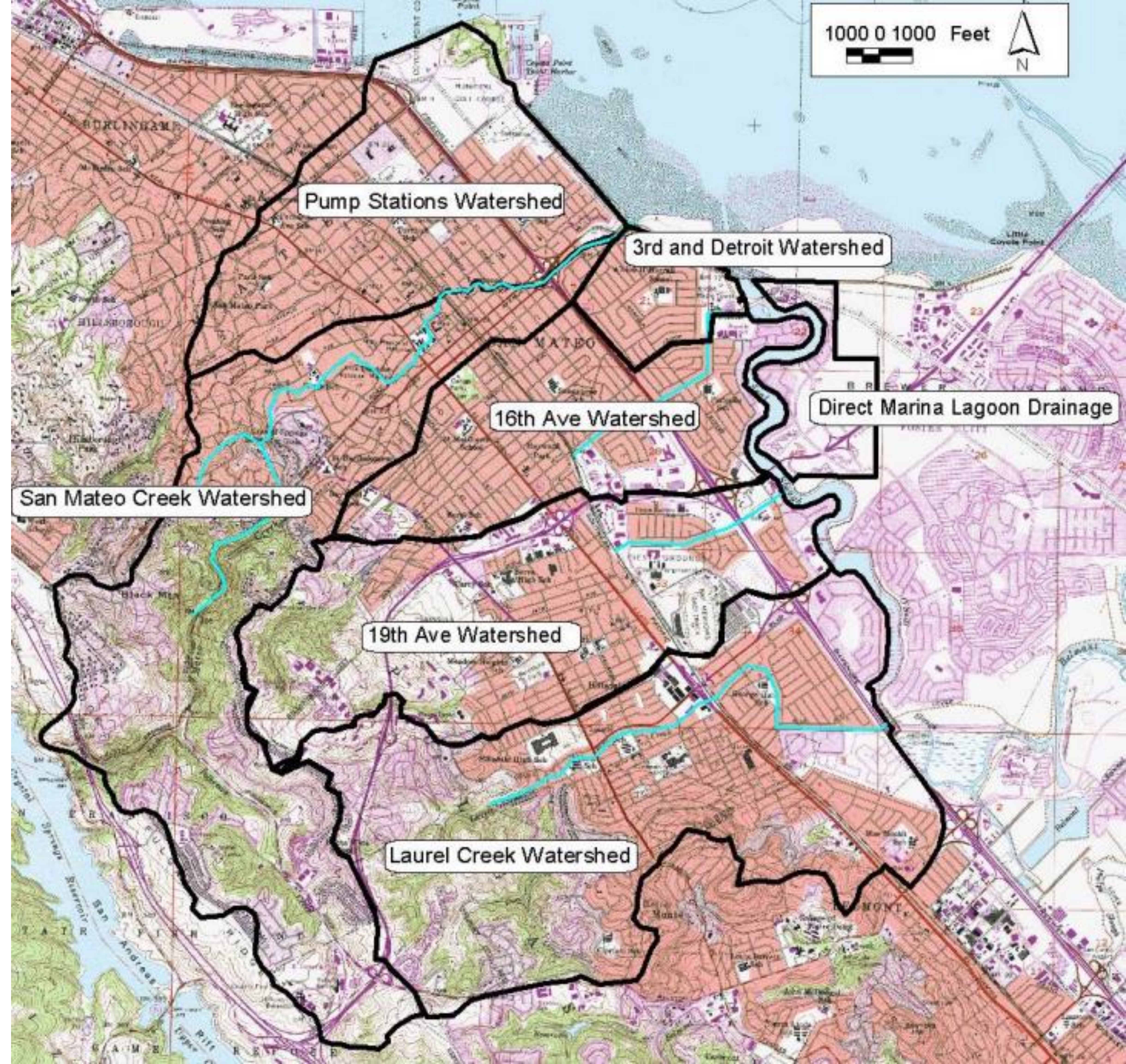




Winter Storms Response

City of San Mateo

- Population: 105,000
- Area: 12 sq. mi. land
- Seven major watersheds:
 - North Shoreview District
 - San Mateo Creek
 - East Third Avenue
 - 16th Avenue
 - 19th Avenue
 - Laurel Creek
 - Direct drainage Marina Lagoon
- Marina Lagoon
 - Large storage and pumping facility created from Seal Slough
 - 16th Ave., 19th Ave., Laurel Creek, direct

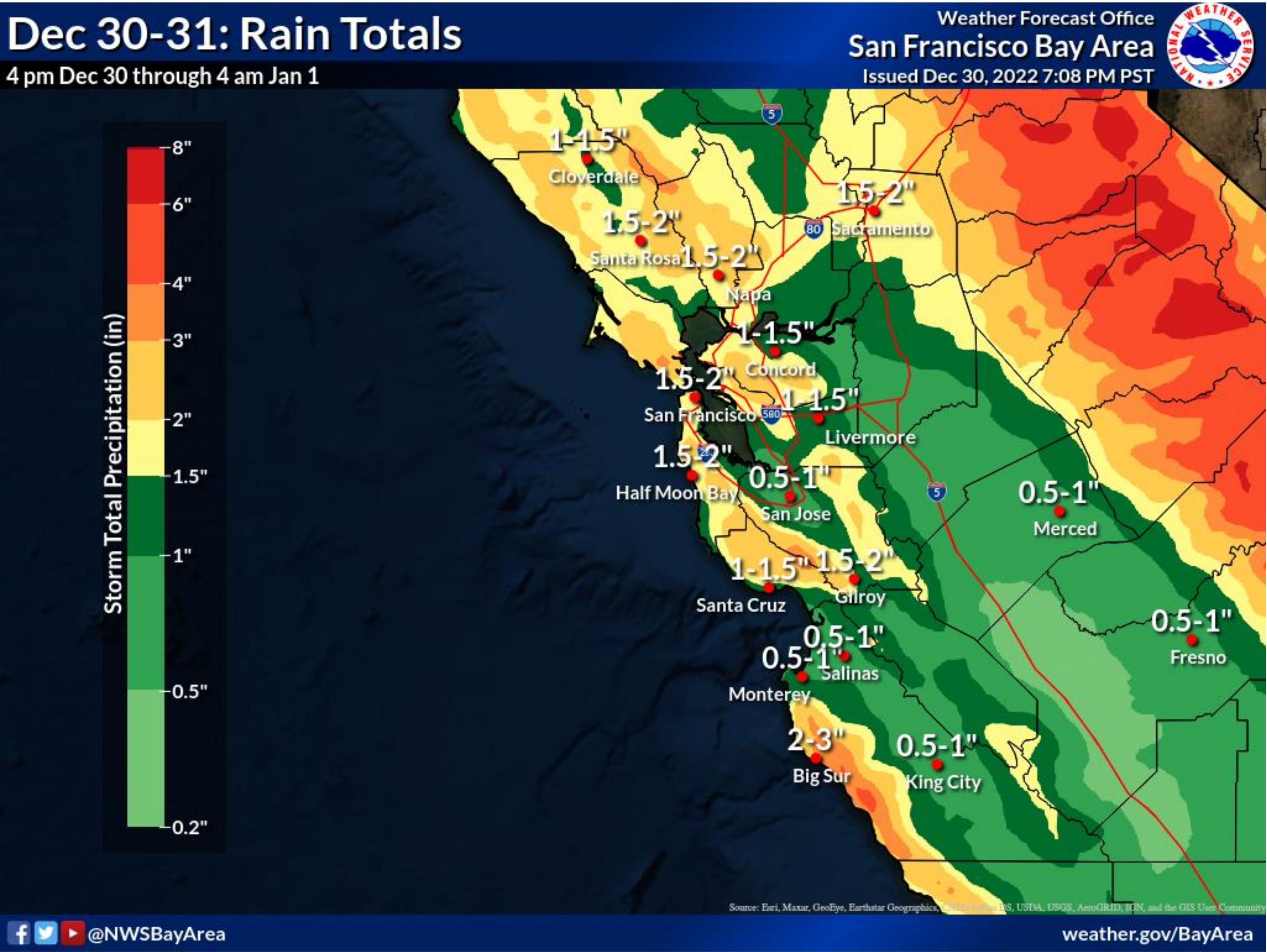


Wet Weather Preparation

- 260 miles of sewers and 130 miles of storm drains
- 27 sanitary sewer pump stations
- 24/7 Wastewater treatment plant
- 10 storm water pump stations
- Clear catch basins and trash racks
- Remove leaves and debris
- 24/7 public sandbag station
- Staff on standby for wet weather events, after-hours

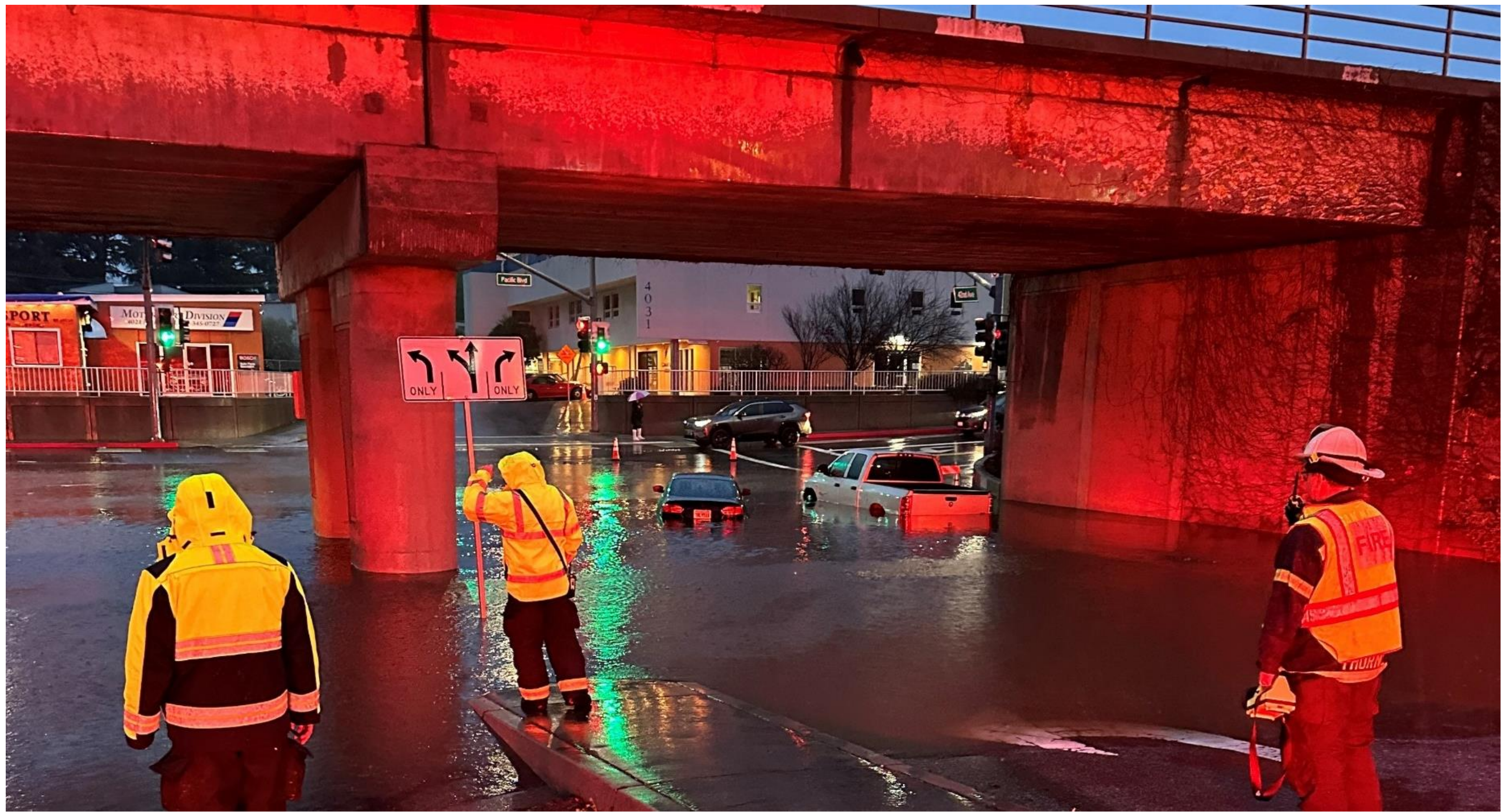


New Year's Eve



The Sunnybrae neighborhood, along with many other locations in San Mateo, flooded during Saturday's storm.
Nick Rose/Daily Journal

What we expected (1 inch) vs. What we saw (4-5 inches)

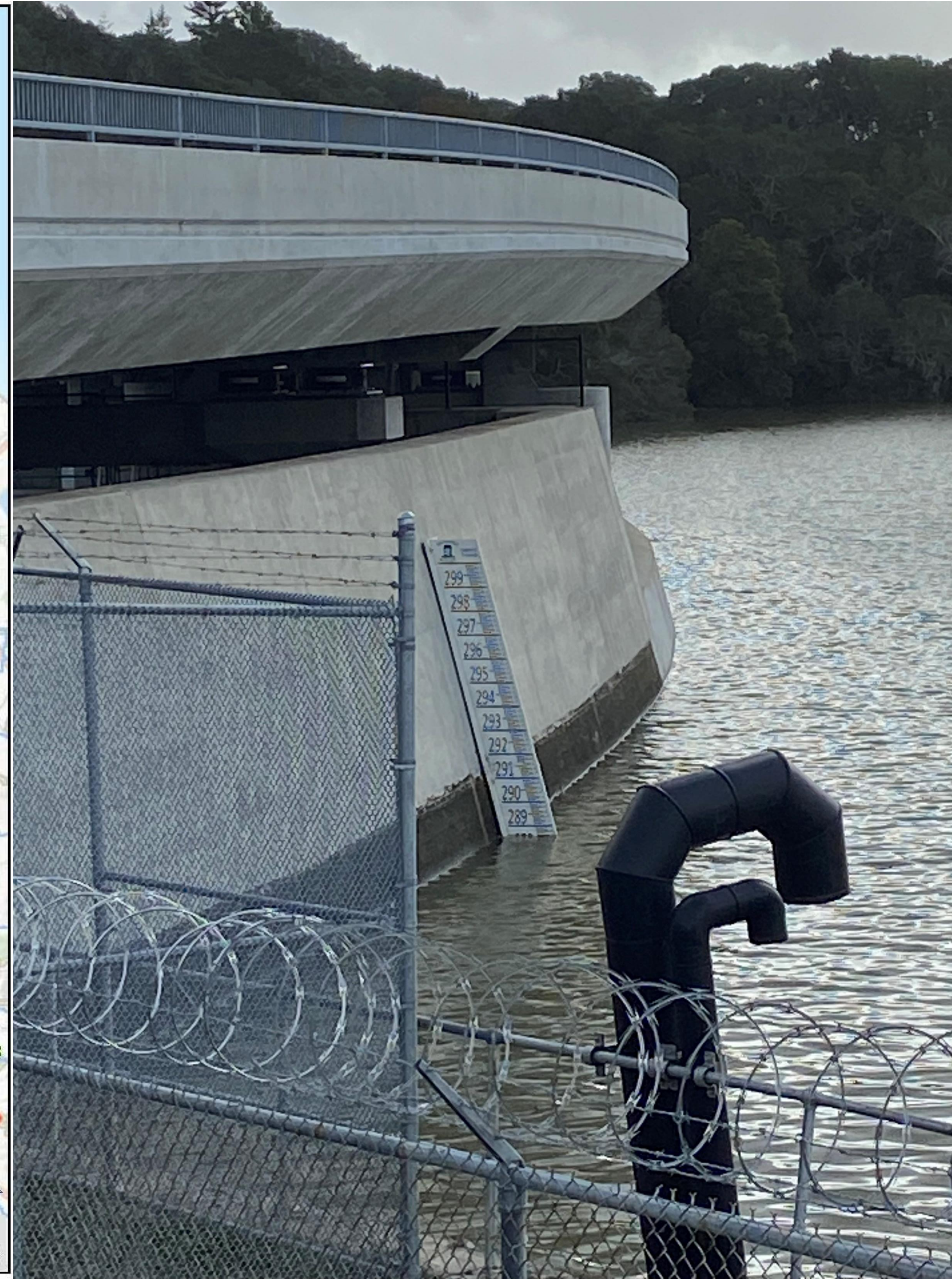
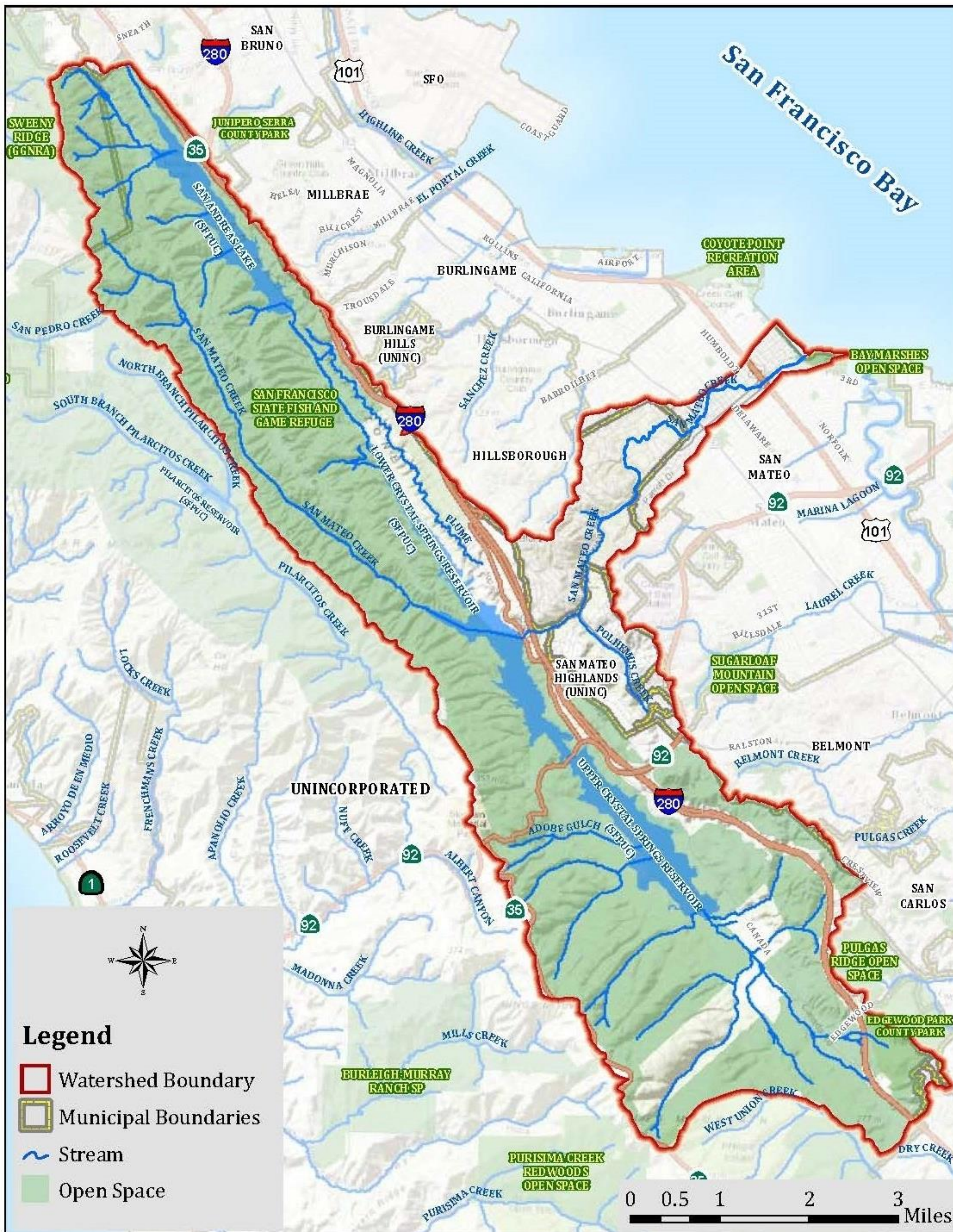


“Bomb cyclone” response

- Opened Emergency Operations Center
- Proclaimed a local emergency
- Prepared to pre-emptively close roads
- Set up City Hall as evacuation site and temporary shelter
- Brought Marina Lagoon levels further down
- Increased staffing at WWTP
- Field crews: 24 hour operation
 - 12 hour shifts – two crews of 12 + Parks staff
 - Public Works dispatch
- 500 tons of sand
- 15,000 bags for sand

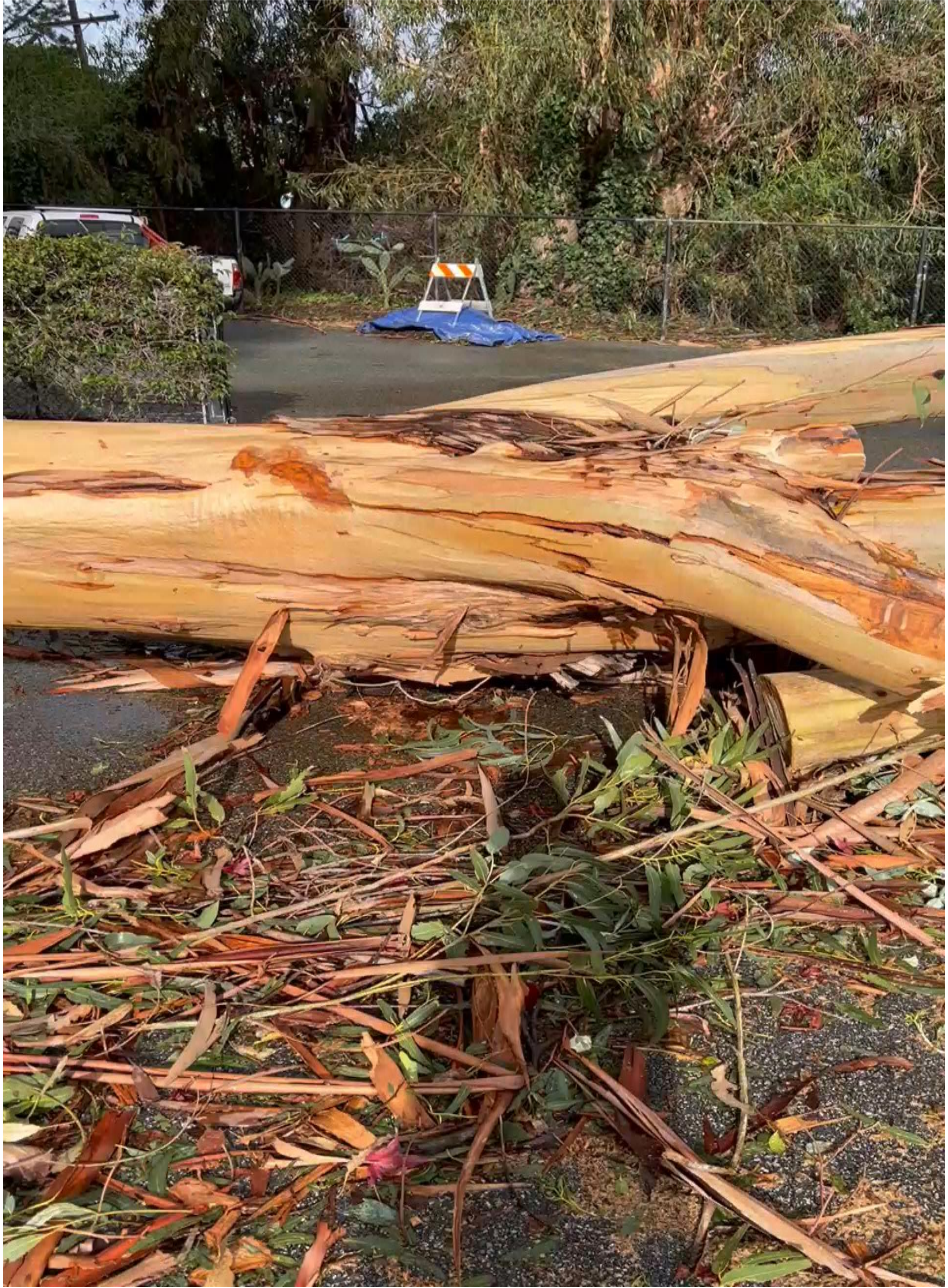


Crystal Springs Reservoir



- Coordination with the San Francisco Public Utilities Commission
- Potential for spillway flow to San Mateo Creek
- Scheduled releases during no rain
- Public outreach









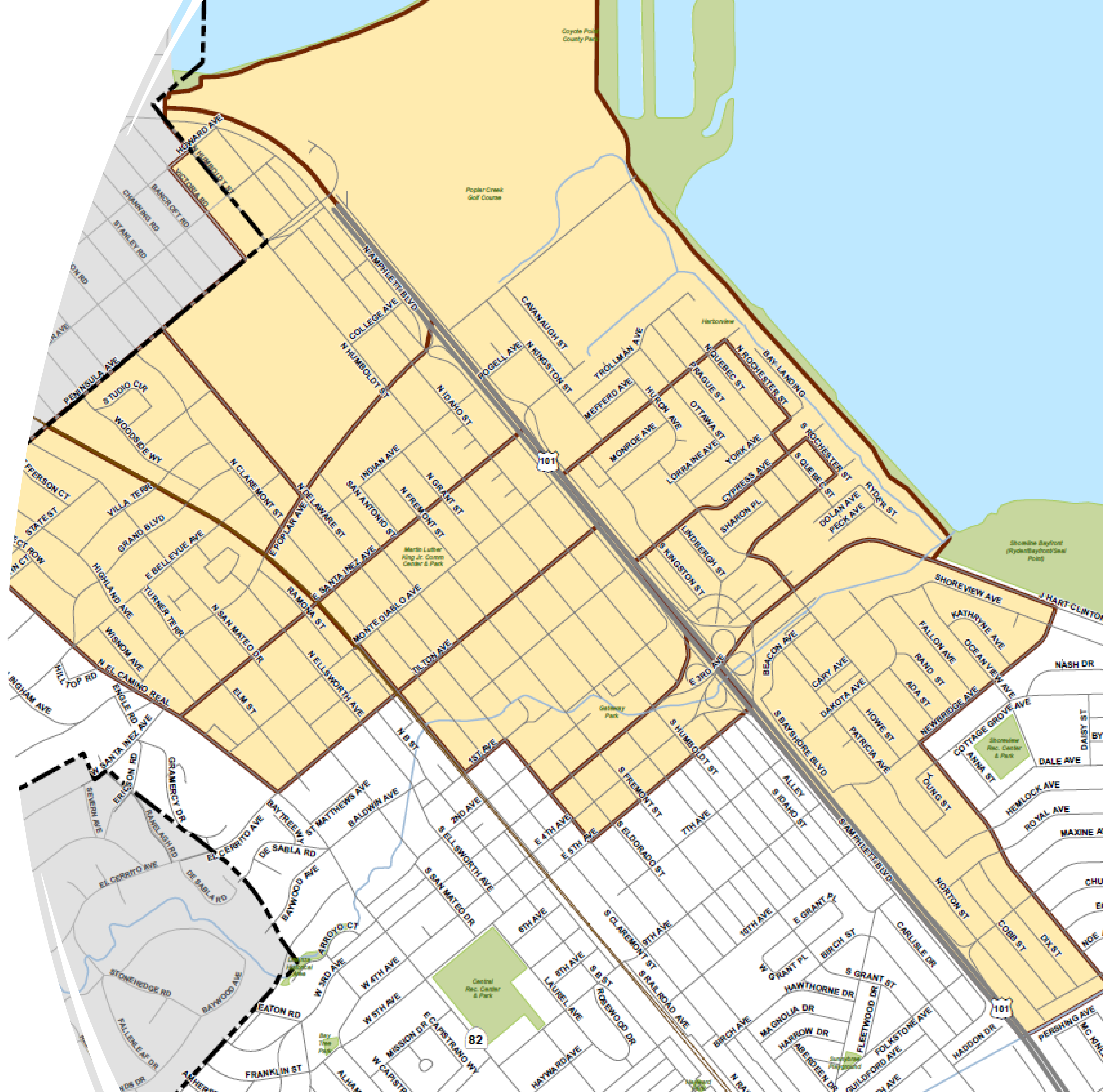


www.cityofsanmateo.org/floodprep



Next Steps for Public Works

- Blue Sky Session – City Council Priorities
- Budget Planning, Adoption in Spring
- Public Engagement
 - Complete Streets
 - Bermuda Bridge
 - Stormwater Fee
 - Community Development Block Grant Project – Sidewalk Repairs
 - 4,800 sidewalk tripping hazards
 - North Central Parking Needs
 - 101/Peninsula
 - Safe Routes to School
 - Department-wide



Next Steps for Public Works

- Marina Lagoon Pump Station Analysis
 - NYE Storm reconstruction
 - Pump / engine condition assessment
- San Francisco Public Utilities Commission - San Mateo Creek
 - Coordination on watershed study, reservoir releases
- Stormwater Fee, March Council Meeting
- Funding requests for City-wide comprehensive stormwater assessment
 - Evaluation of the Marina Lagoon storage volume
 - Update of the City's hydraulic models to include major public and private creeks
 - Identification of storm system improvements for the City's pump stations, pipes / culverts / channels, and Marina Lagoon dredging needs
 - City-wide creek monitoring program
 - Stormwater system improvements



Thank you for your time.

You can reach us at:

amitch@cityofsanmateo.org, 650-522-7303

ealbert@cityofsanmateo.org, 650-522-7308

mfabry@cityofsanmateo.org, 650-522-7309

PLEASE VISIT OUR WEBPAGE 😊

www.cityofsanmateo.org/publicworks

Stewards of your infrastructure

330 W. 20th Avenue
San Mateo, CA 94403
650-522-7300



Smooth Streets Program (SSP)

Work Performed in 2021:

Phase 1 (Completed June 2021)

- 1.42 Miles; 7 Streets
- \$767K Change Order Addressing Soft/Compressible Subsurface Conditions
- Complex and Difficult Street Reconstruction on Franklin St and Fairfax Ave

Phase 2 (In Construction)

- 0.66 Miles; 2 Streets
- Concrete Base Streets

Phase 3 (In Design)

- 1.55 Miles; 9 Streets
- Geotechnical Field Investigations Complete
- Construction in 2022

Phases 4 and 5 (Pre-Design)

- 5.8 Miles; 40 Streets
- RFP Issued, Consultant Selected, Council Award Jan 3rd
- Construction in 2023 and 2024

Poplar/Golf Course Trash Capture Project

- The City is required to reduce trash loads by 100% in its storm drainage system by July 1, 2025.
- Accounts for 12% of City's trash capture objectives.

Work Performed in 2021:

- Submitted the Initial Study/Mitigated Negative Declaration
- Council adoption anticipated Feb 2022
- All environmental permits have been submitted
- Ready to bid once environmental permits are obtained



Example Trash Capture Device

Public Customer Service Requests

- Emails to Public Works Email Address: 3,600/year
- Customer Calls/inquiries: 200 to 300/week
- Cartegraph Requests to O&M: ~2,400 requests
- Public Records Request: 75/year
- CIP Division Requests: Total ~300/year
 - ~125 street issues/year
 - ~75 sidewalk issues/year
 - ~25 storm issue/year
 - ~25 sewer issue/year
 - ~50 other issue (uncategorized)/year
- Fleet and Facilities:
 - Total ~ 37/year
 - 14 request of street signs/year
 - 21 speed bumps/year
 - 2 restriping faded stripes/year
- Traffic Requests
 - Over 60 traffic inquiries and concerns
 - Completed over 40 traffic calming request
- Regulatory Compliance:
 - Total ~ 700 incidents/ year
 - 660 incidents of illegal dumping of solid waste
 - 40 incidents of illegal stormwater discharge