



**Sewer Condition Assessment
October 2017**

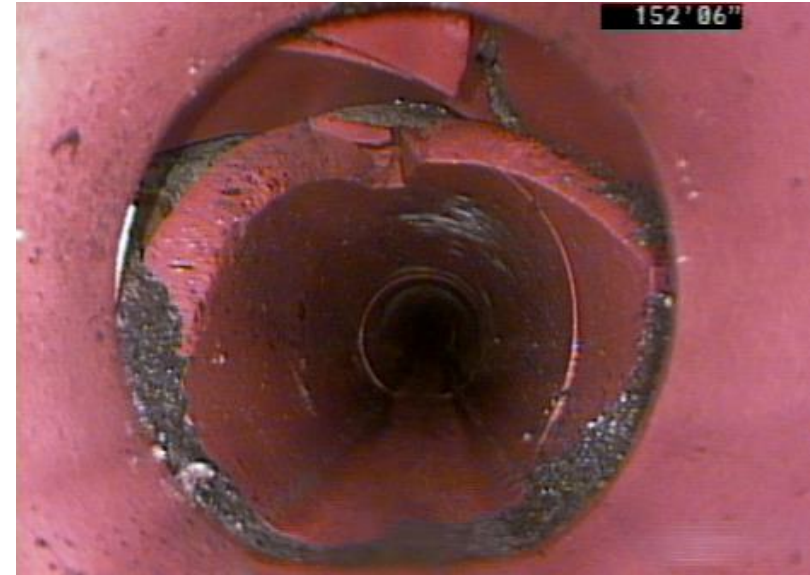
Neighborhood Meetings

Agenda

- Welcome
- Clean Water Program Background/Context
- Condition Assessment Area
- Condition Assessment Activities
 - *Video Inspection of Sewer System and Storm Drains*
 - *Non-Toxic Smoke Test*
 - *Non-Toxic Colored Water Tracer Test*
- Notification & Preparation
- Right-of-Entry
- Schedule
- Questions
- Adjourn to Open House

Clean Water Program Background/Context

Aging WWTP & Collection System Facilities



Inside of Failed & Cracked Pipe

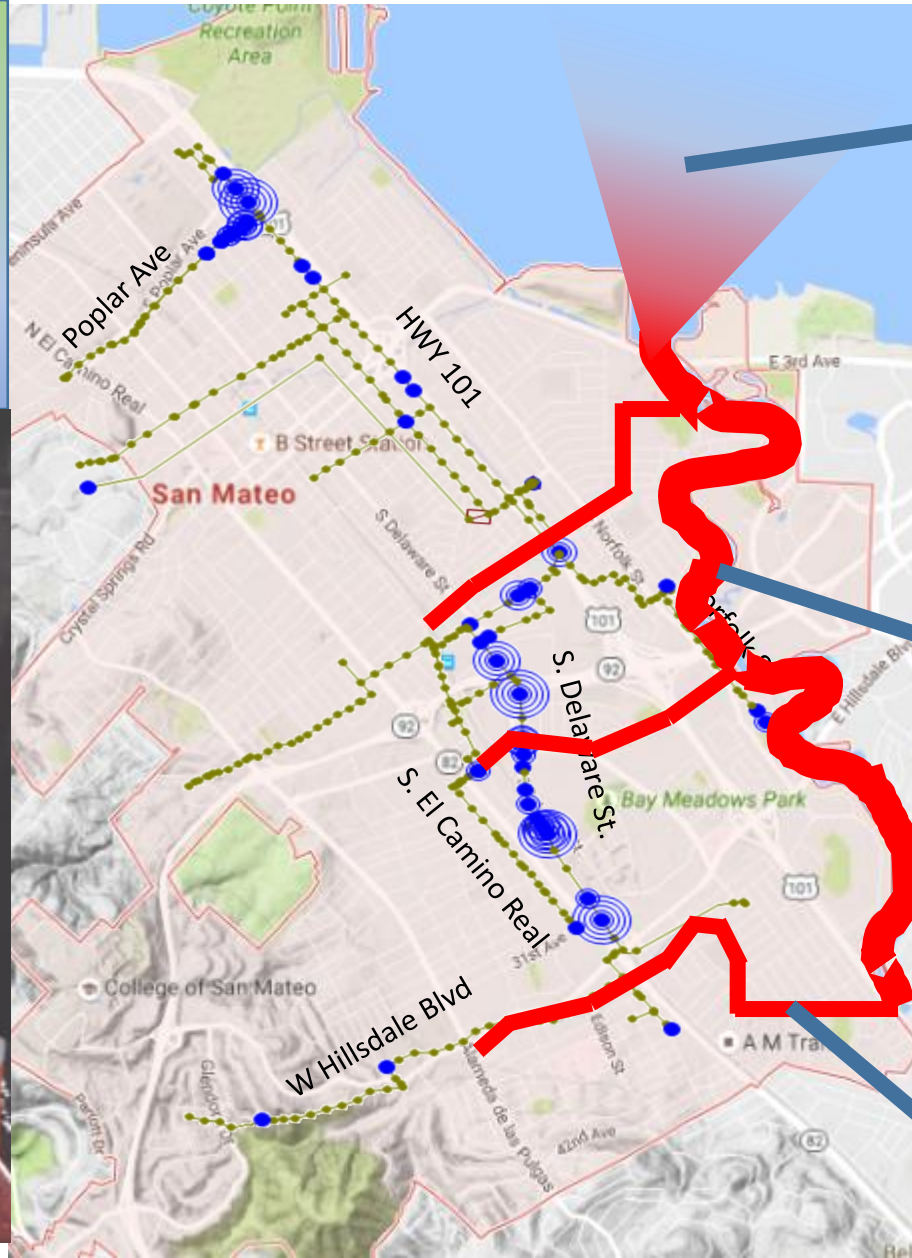


Root Intrusion into Pipe

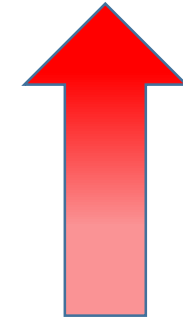
Sewer Overflow Impacts & Regulatory Violations

What Causes Sewer Overflows?

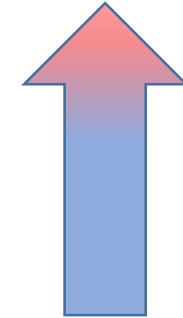
Raw Sewage, PLUS Unintended Rain Water Entering the System



SF BAY



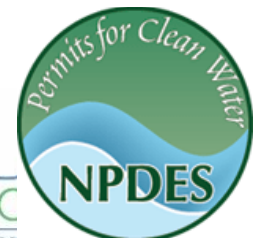
LAGOON & BEACHES



CREEKS



CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS



PROTECTING THE BAY FOR A SUSTAINABLE FUTURE

Clean Water Program Drivers and Goals

Replace Aging Infrastructure

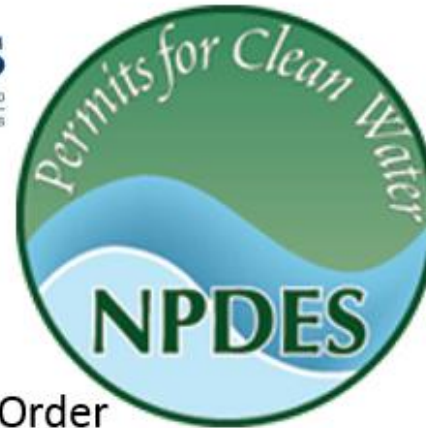


Collection System



WWTP

Provide Higher Levels of Treatment & Capacity Assurance



RWQCB Cease & Desist Order
NPDES Permit

Align with City's Sustainability Goals



Reusable
Clean Water
Partnerships



Institute for
Sustainable
Infrastructure

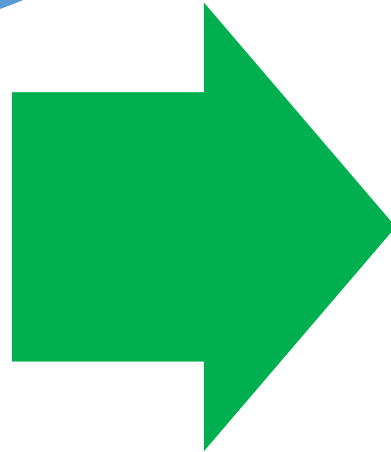


Infrastructure Sustainability Metrics



Comprehensive Approach

Capacity & Flow
Management
Improvements

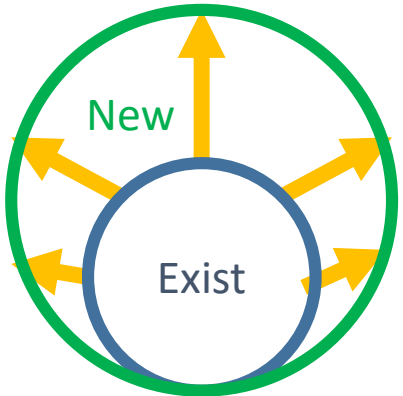


Inflow/Infiltration
(I/I) Reduction &
System Rehabilitation

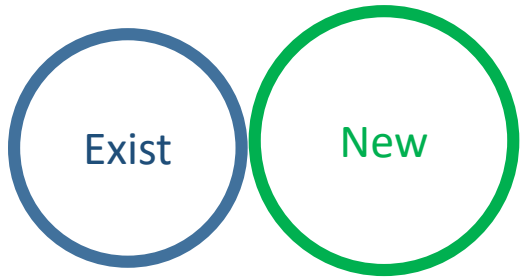
Clean Water Program
Comprehensive
Approach

Capacity & Flow Management Improvements

Pipe Improvements



Increase Pipe Diameter

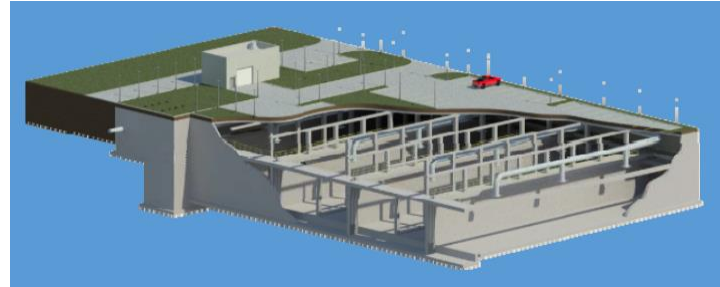


New Parallel "Relief" Pipe

Optimize Pump Stations



Underground In-System Storage Facility

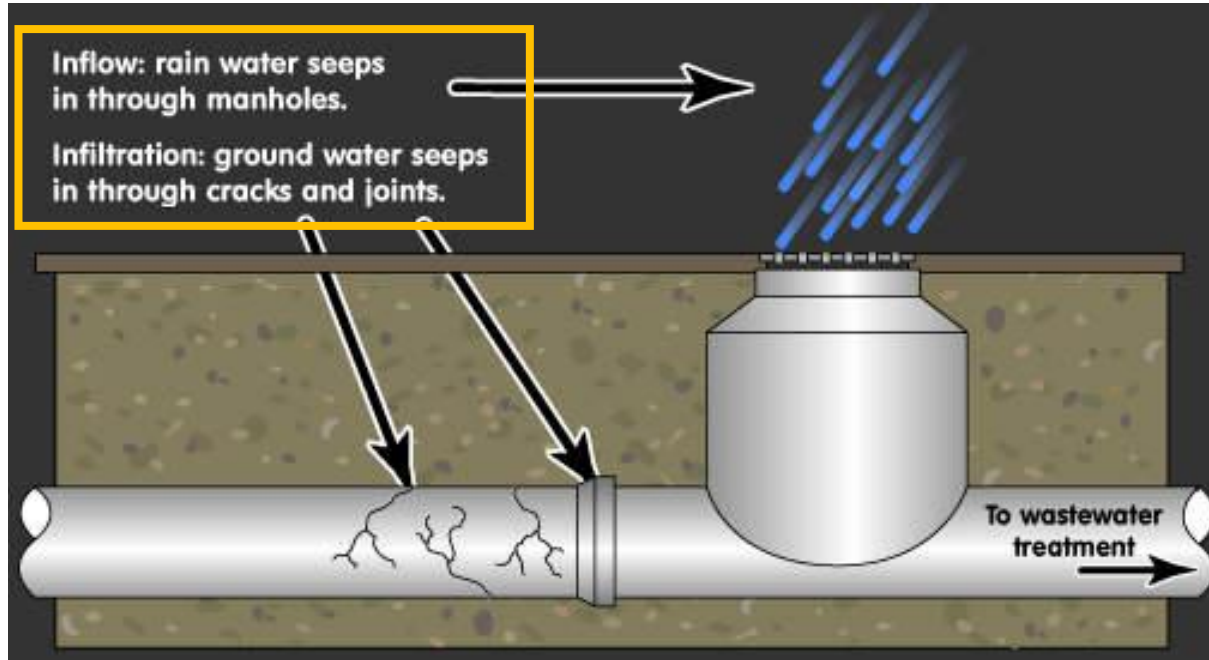


Wastewater Treatment Plant Upgrade

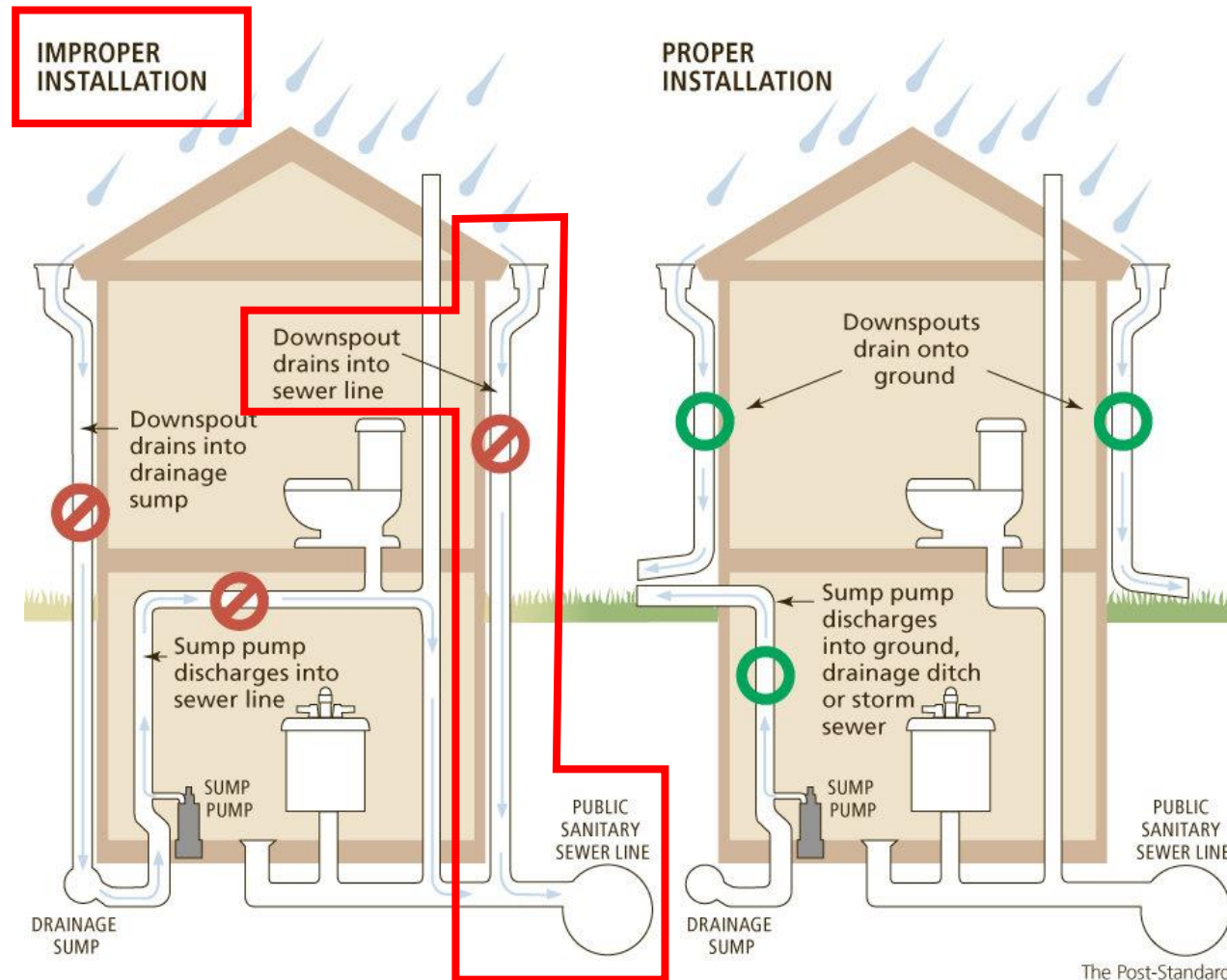


Sources of Inflow/Infiltration (I/I) and Contributors to SSOs

FAILURES & OPENINGS IN SYSTEM



UNAUTHORIZED CONNECTIONS



I/I Reduction and System Rehabilitation

Video Inspections



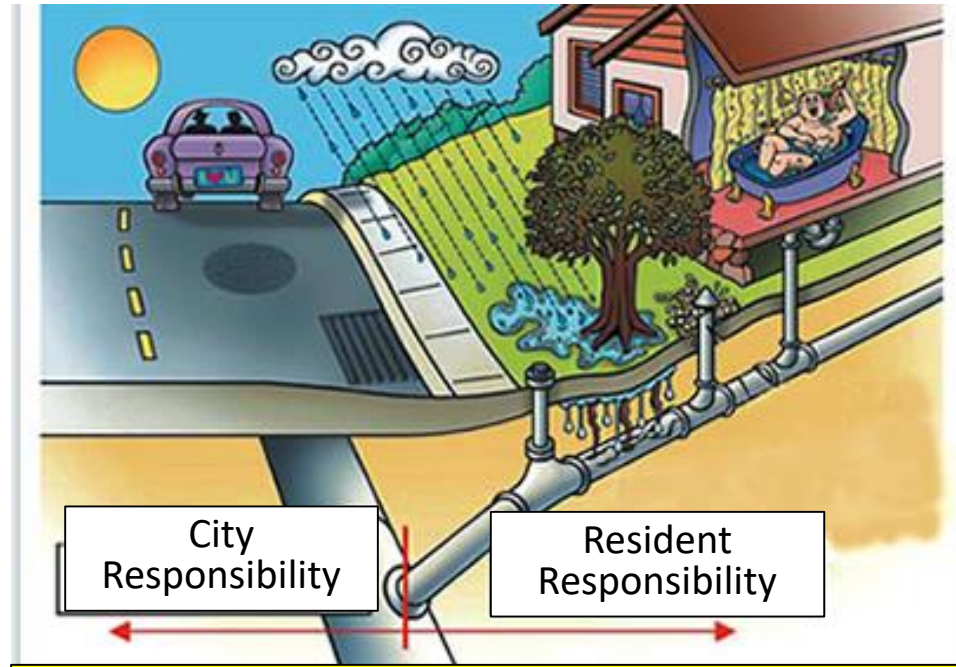
Pipe Replacement



Pipe Spot Repairs



Pipe Lining



Private Sewer Lateral Replacement Program



Fat, Oils, Grease Reduction

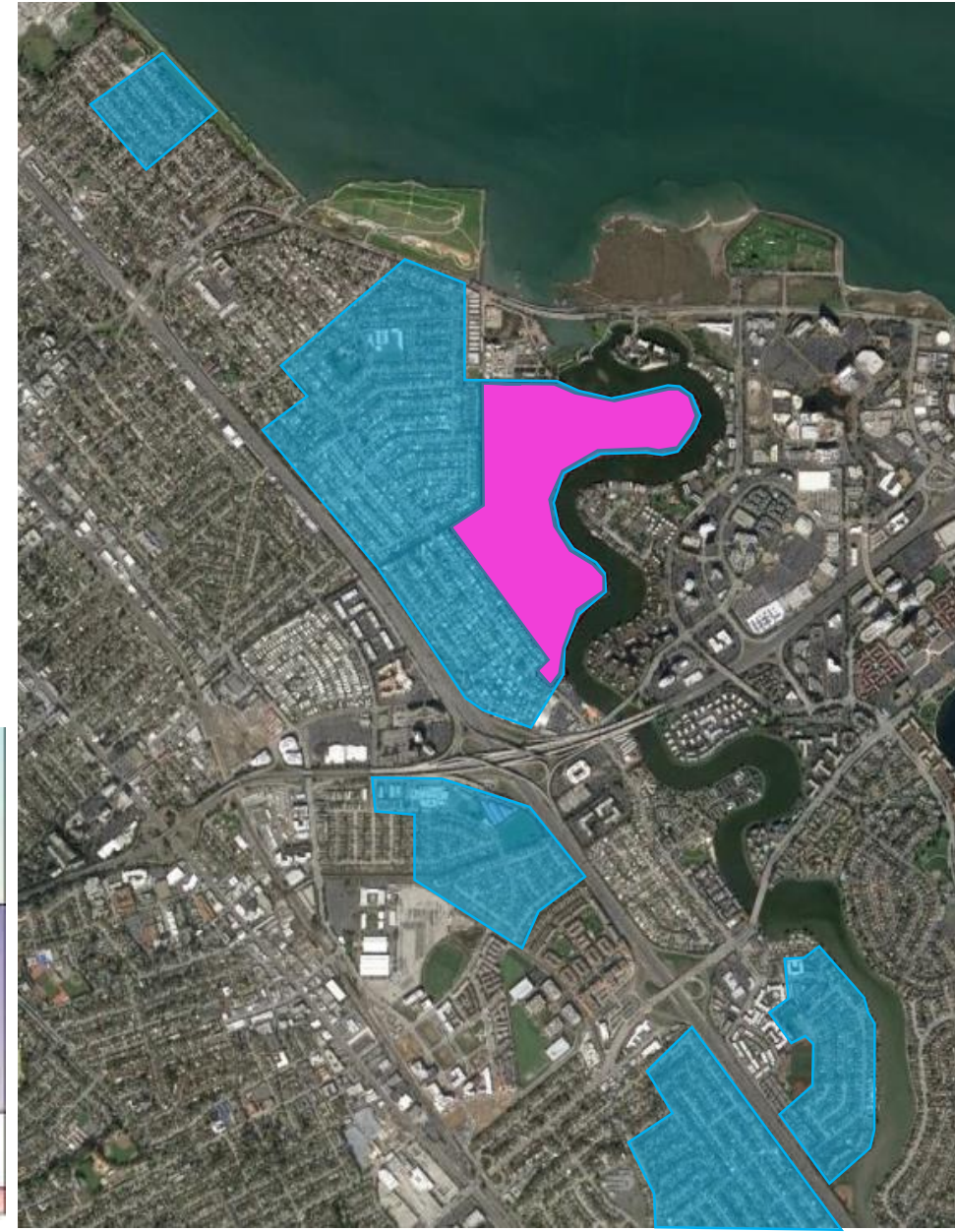
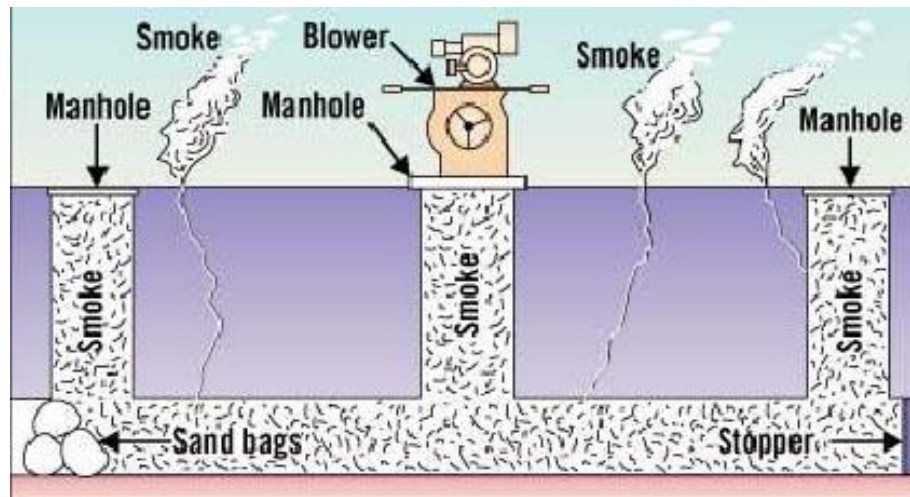
I/I Reduction and System Rehabilitation

Study and Pilot Projects

- I/I Study
 - *Investigations & Data Analysis*
- I/I Reduction Pilot Projects
 - *Pipe Condition Assessments*
 - *Rehabilitation Approach Determination*



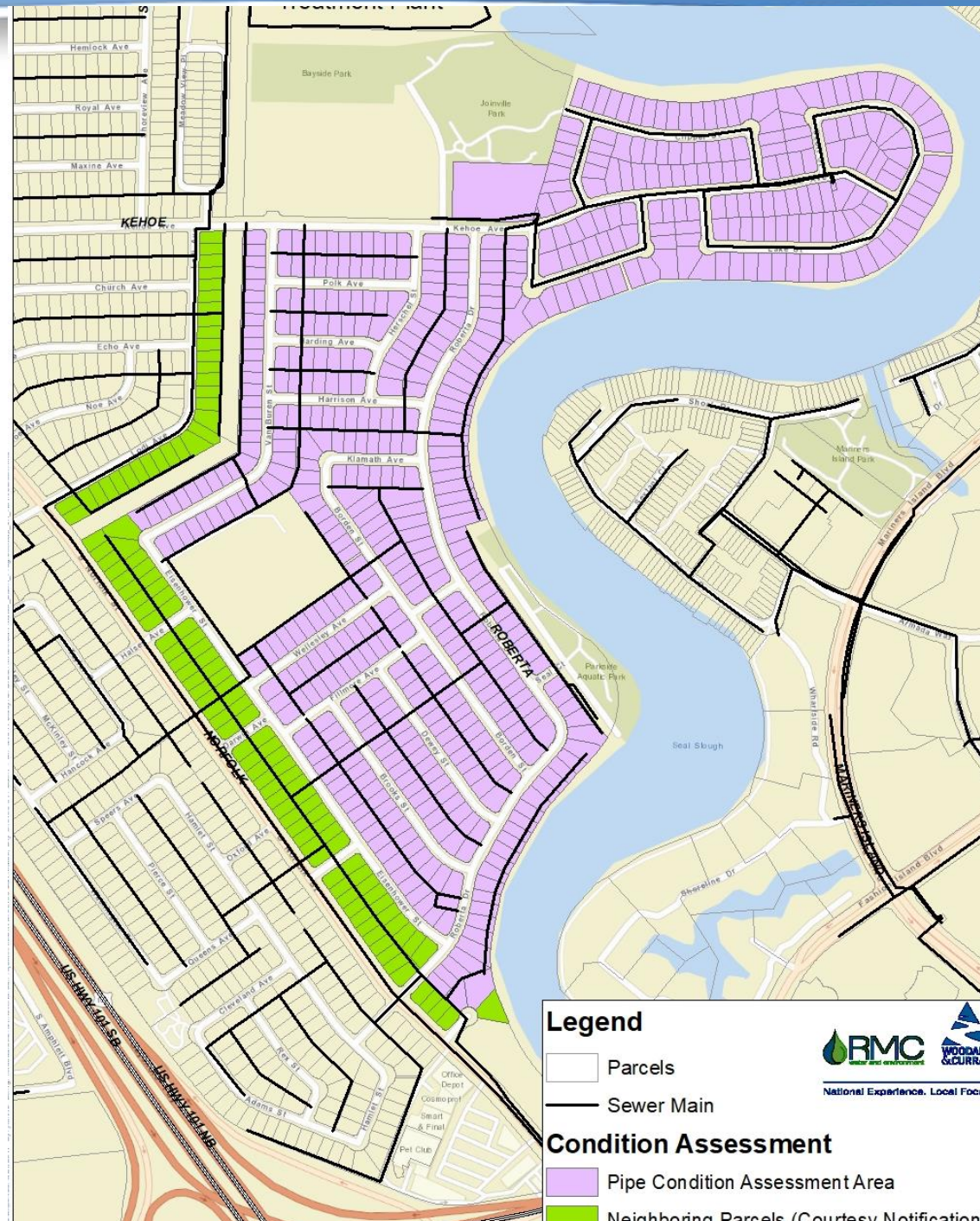
Smoke Testing
Failure Identification



Pipe Condition Assessment

(Why We're All Here)

Pipe Condition Assessment Area

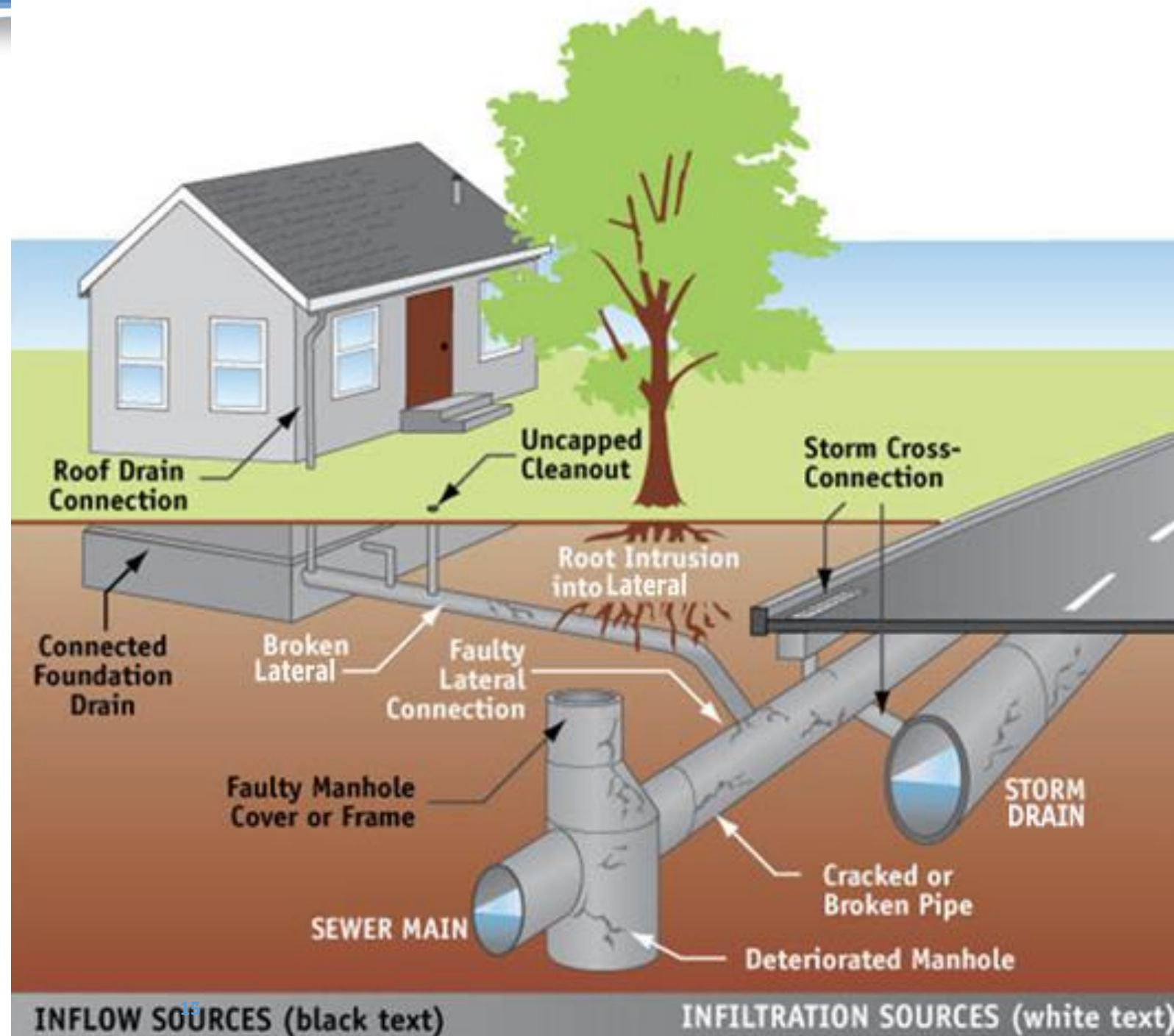


Condition Assessment Activities

- *Video Inspection of Sewer System and Storm Drains*
- *Non-Toxic Smoke Test*
- *Non-Toxic Colored Water Tracer Test*

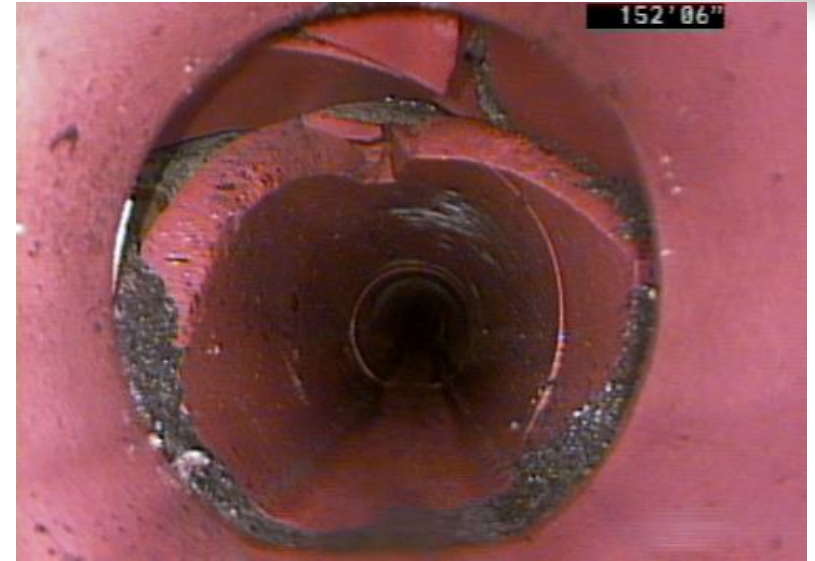
Video Inspection

- Sewer Mains
- Sewer Laterals
- Storm Drains



Sewer Mains

- Why inspect sewer mains?
 - Sewer mains degrade over time. Defects include:
 - Pipe cracks, breaks and joint separation
 - Blockages from tree roots
 - Ground settlement makes problems worse
 - Pipe defects allow outside water to enter the sewer system.



Inside of Failed Pipe



Tree Roots Blocking Pipe

Sewer Mains

- How does a sewer main video inspection work?
 - *The sewer main is first cleaned*
 - *Following cleaning, a remote controlled camera records the pipe defects it finds between each manhole.*

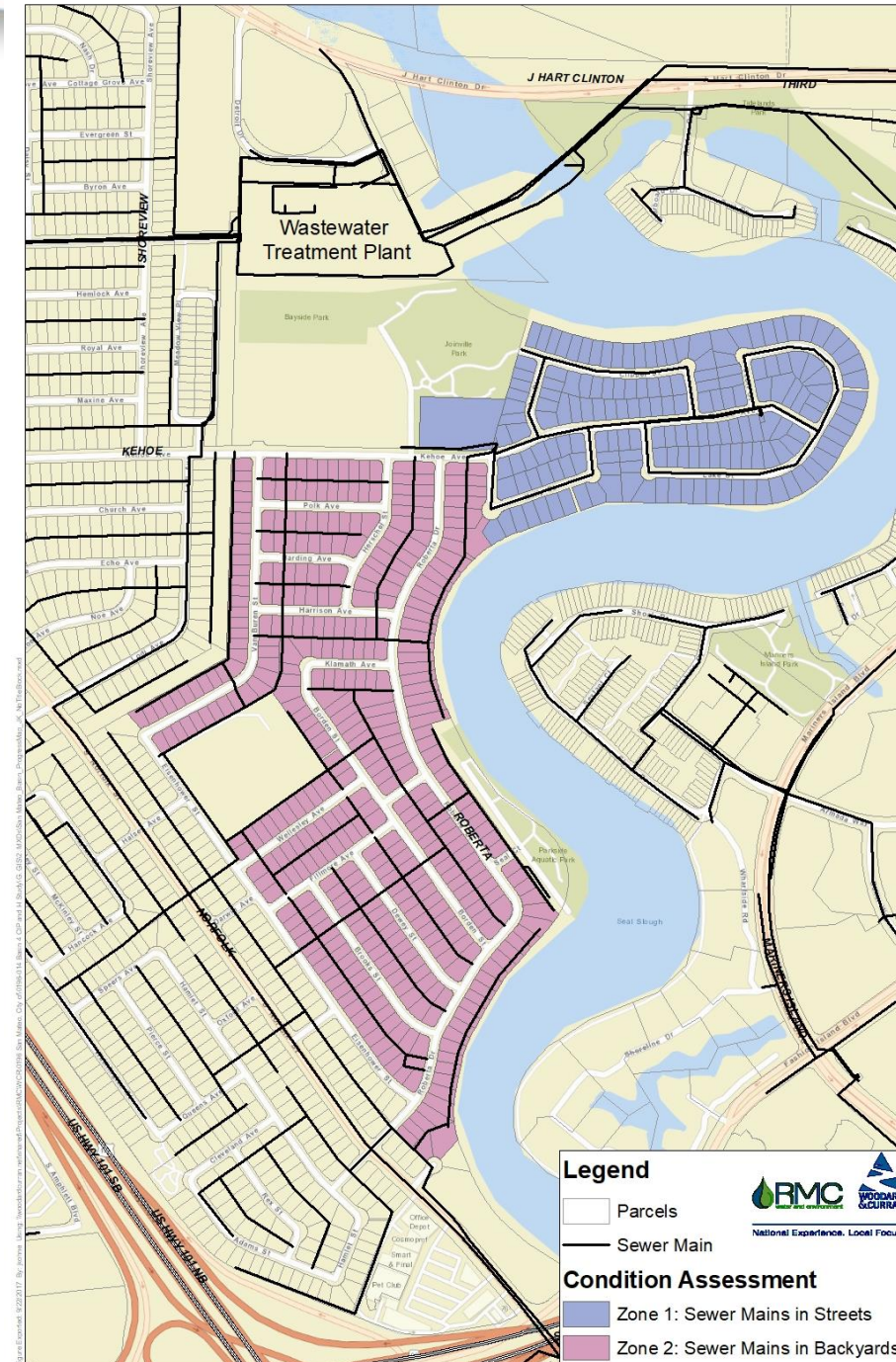


Hydrovac pipeline cleaner



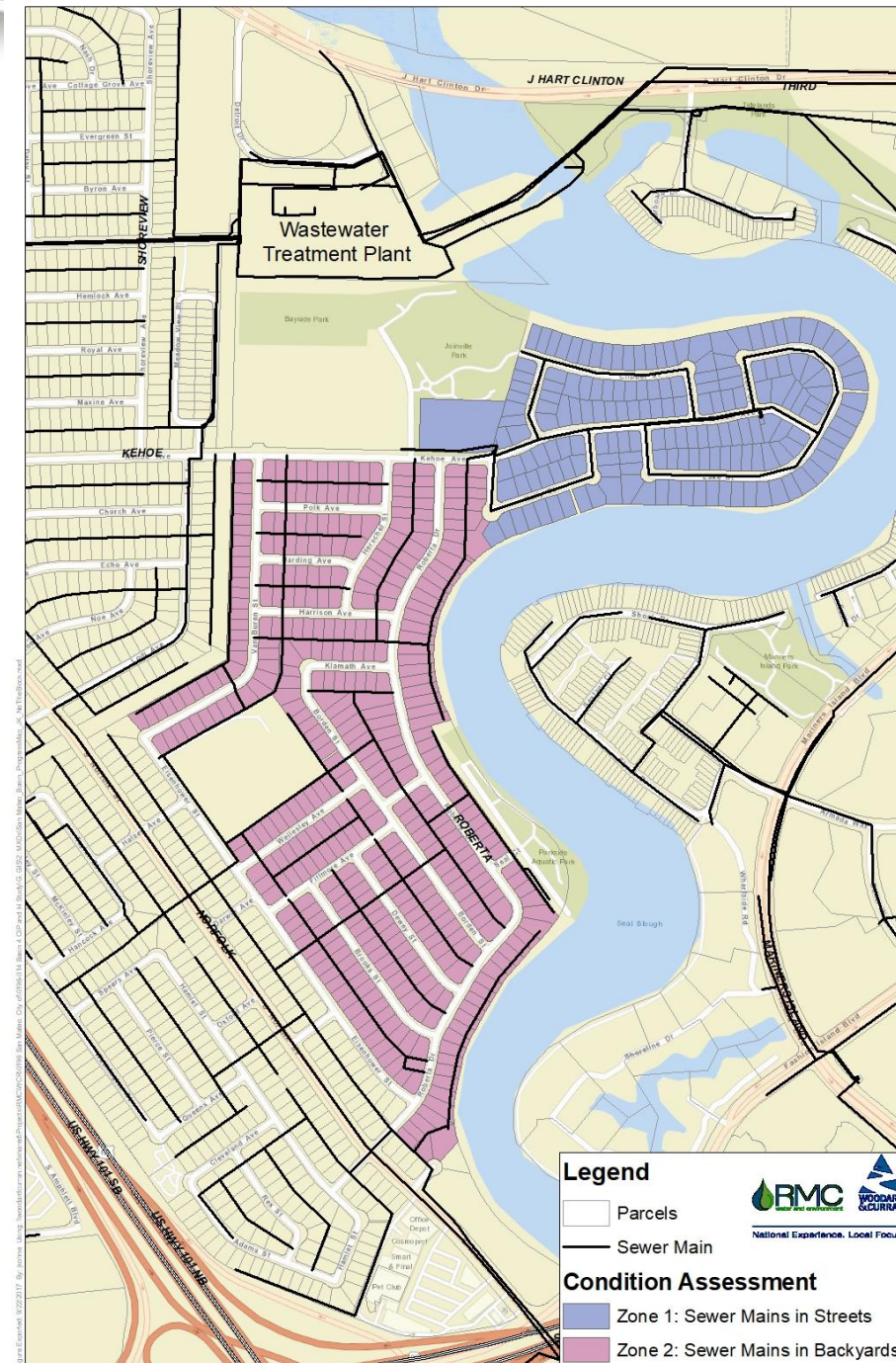
Sewer Mains

- Who will be involved and how?
 - Properties with a sewer manhole in their backyard may be involved.
- Schedule
 - November, 2017 (subject to change).



Sewer Laterals

- Why inspect sewer laterals?
 - *Defects in laterals also allow outside water into the sewer system.*
- How does a sewer lateral video inspection work?
 - *A smaller specially-designed lateral camera enters from the sewer main.*
 - *With permission, a lateral may be inspected using a resident's sewer cleanout.*
- Are all sewer laterals the same?
 - *Front yard laterals (blue area of map)*
 - *Back yard laterals (purple area of map)*



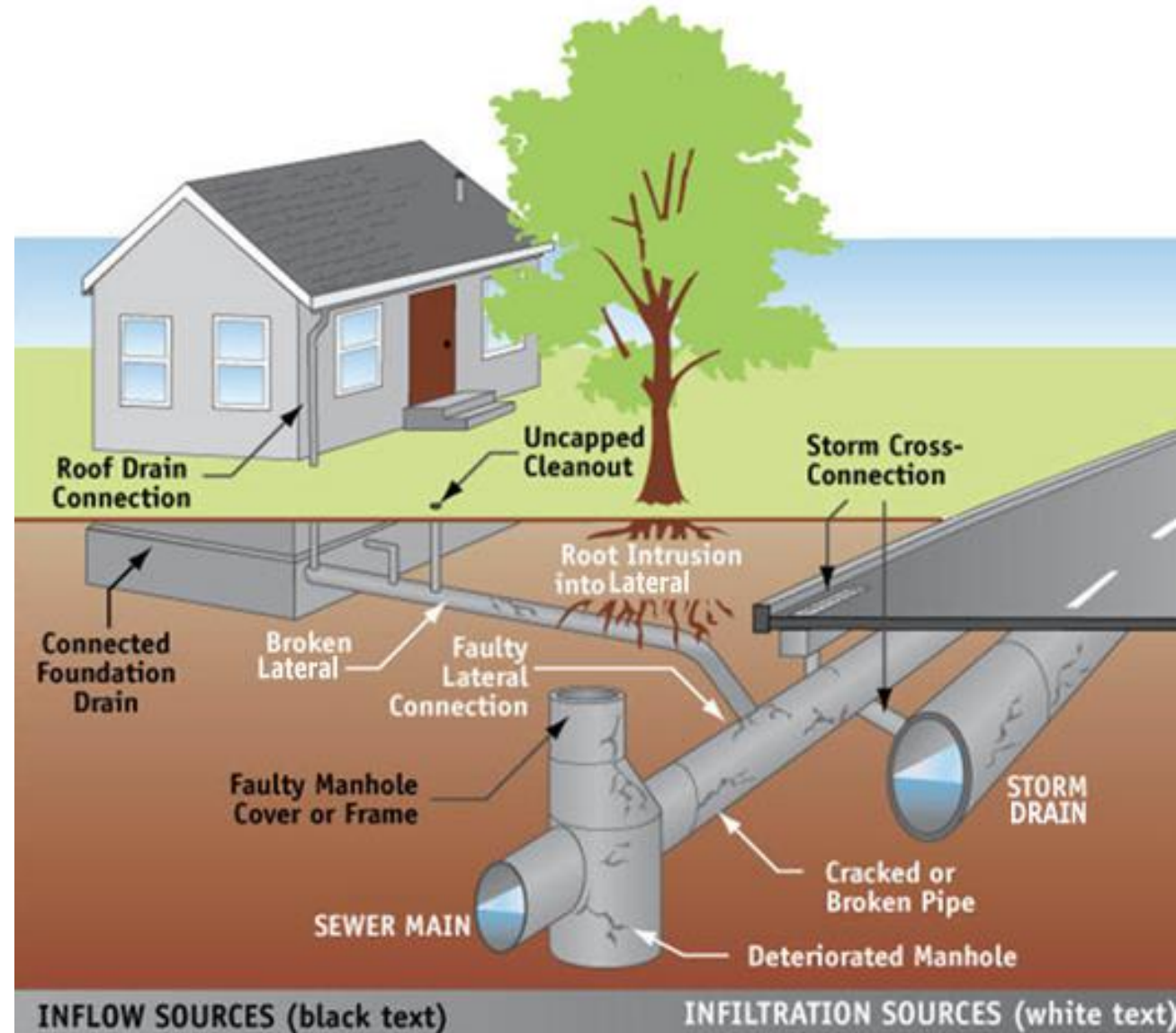
Sewer Lateral Mapping

- How does lateral mapping work?
 - *The camera transmits a signal that a worker follows above ground using a special receiver.*
 - *The worker marks the alignment of the lateral using small flags and the alignment is mapped.*
 - *Marker flags are removed when finished.*
- How long will the mapping take?
 - *Approximately 1-2 hours per property.*



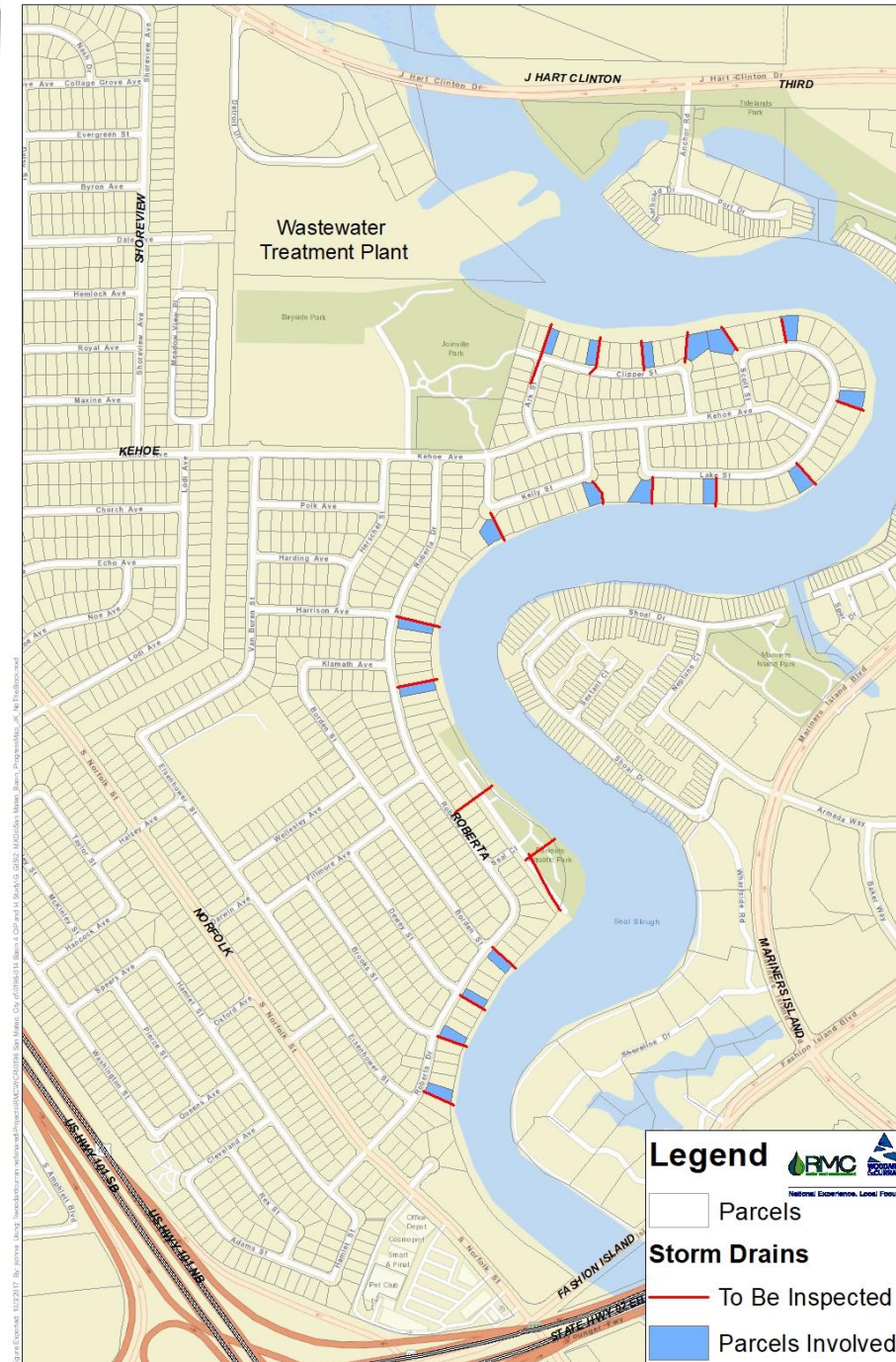
Storm Drains

- Why inspect storm drains?
 - Look for cross-connections*
 - Prevent unintended water from entering the sewer system.
- How does a storm drain video inspection work?
 - Same as a sewer inspection.*



Storm Drains

- Who will be involved and how?
 - Storm drains to be inspected are shown in red.
 - Field crews may need access to your backyard if there are storm drain manholes or lagoon outfalls.
- Current Schedule
 - February, 2018 (schedule subject to change)



Condition Assessment Activities

- *Video Inspection of Sewer System and Storm Drains*
- *Non-Toxic Smoke Test*
- *Non-Toxic Colored Water Tracer Test*

Non-Toxic Smoke Test

- Why Smoke Test?

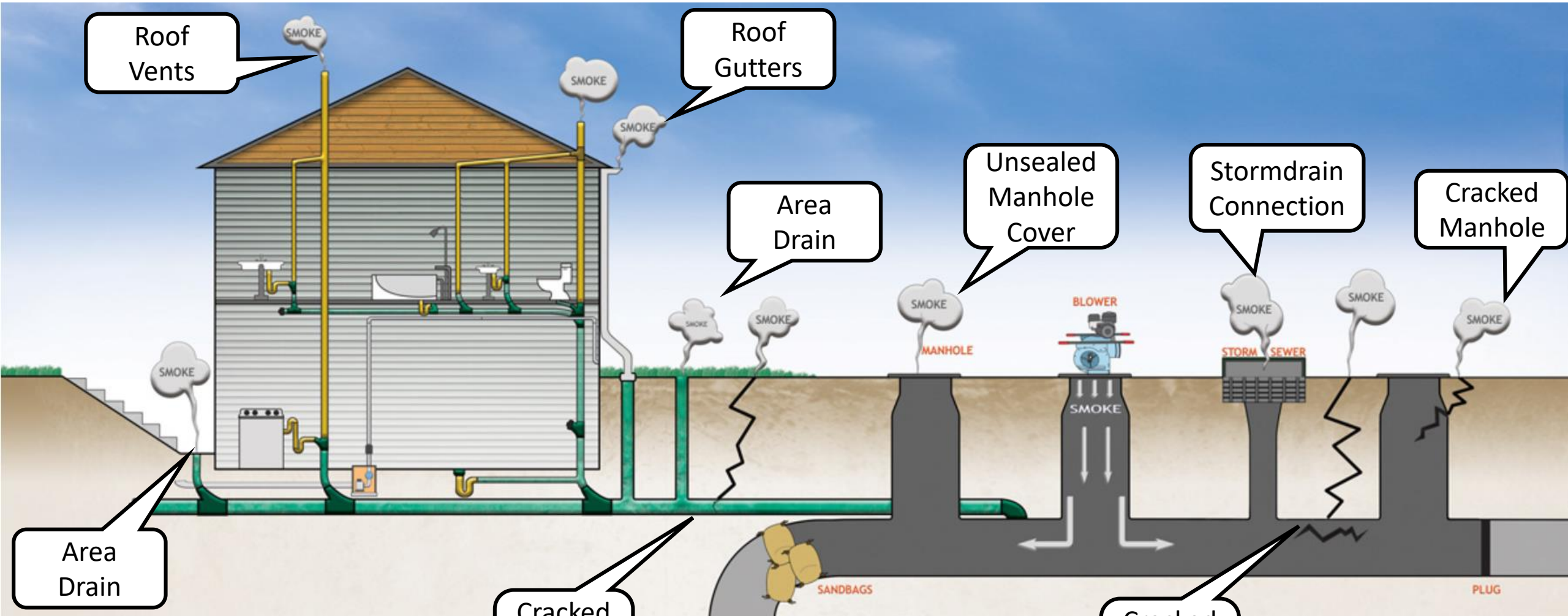
- Locate cracks and other openings or connections where outside water might enter the sewer system.*

- How does smoke testing work?

- Blow non-toxic smoke into parts of the sewer system.*

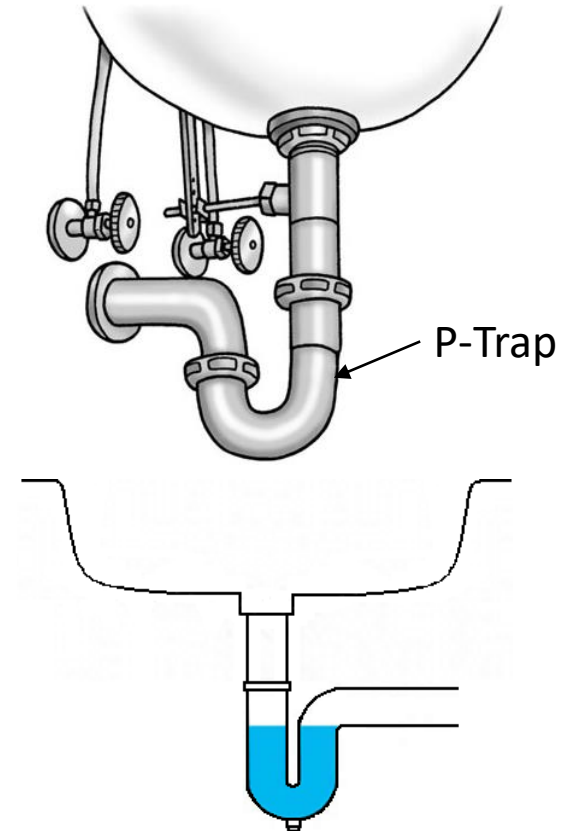
- The smoke will follow the path of any cracks and connections.*

Potential Smoke Release Points



Non-Toxic Smoke Test

- Is the smoke harmful?
 - *The smoke is clean and non-toxic to humans, pets, food, plants, and material items.*
- How should I prepare for the smoke testing activity?
 - *Fill P-traps in unused sinks and drains by running water for 5 seconds.*
 - *The smoke will not enter your home or business if it is properly plumbed, vented, and P-traps contain water.*
 - *If you see smoke in your home, open windows for ventilation, and then inform the crew chief doing the testing in your area.*



P-Trap holding water

Non-Toxic Smoke Test

- Who will be involved?

- All sewer mains in the Pipe Condition Assessment Area.
- Neighboring parcels may see smoke during testing.
- Smoke testing will take approximately 3 days.



Condition Assessment Activities

- *Video Inspection of Sewer System and Storm Drains*
- *Non-Toxic Smoke Test*
- *Non-Toxic Colored Water Tracer Test*

Non-Toxic Colored Water Tracer Test

- **Why Use a Colored Water Test?**

- *Colored water helps identify cross connections between the sewer system and storm drains*
- *Colored water testing is optional, and would depend on results of the video inspections and smoke tests.*

- **How does Colored Water Testing Work?**

- *Colored water testing consists of filling the sewer or storm drain with colored water and observing where else in the system it appears.*
- *Field crews will document the locations of the colored water*



Non-Toxic Colored Water Tracer Test

- **Is the Colored Water Harmful?**

- No. The colored water is non-toxic.*

- **Will I be Affected?**

- Residents may notice colored water at storm drain outfalls to the lagoon, but will not be directly affected by colored water testing activities.*

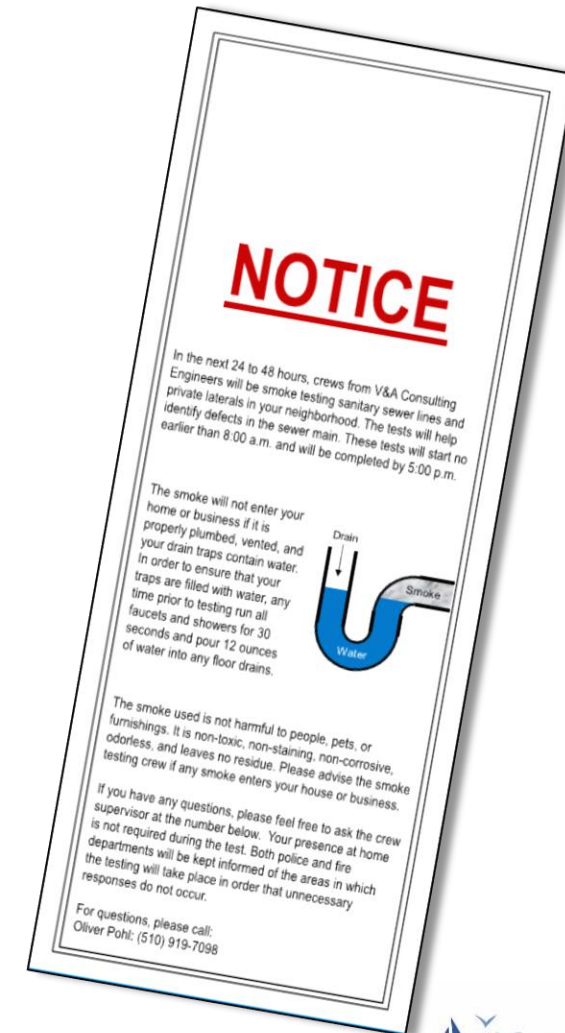
- **How long does the color last?**

- Any colored water that reaches the lagoon would be quickly diluted.*

Notification and Preparation

Notification

- You will be notified before we begin field work
- Door hanger 48 - 72 hours prior to work
- On the day of, field crews will knock on your door before entering your backyard.
- Field crews will be in uniforms with testing equipment



Preparation

- Smoke Testing

- Run the faucet for 5 to 10 seconds at each sink*
- Fill each floor drain with 2 to 3 cups of water*

- Backyards

- Move items that may block access to manholes*
- Make alternative arrangements for dogs that are normally in the backyard*
- If you do not plan on being home, ensure the field crew can access your backyard*

Public Utility Easements & Right-of-Entry Agreements

Public Utility Easements

- Sewer mains, stormdrains, and manholes located in backyards are in a public utility easement
- The City has the right to access these easements for operations and maintenance
- Field crews will access manholes as part of the condition assessment

Activities within the Public Utility Easements

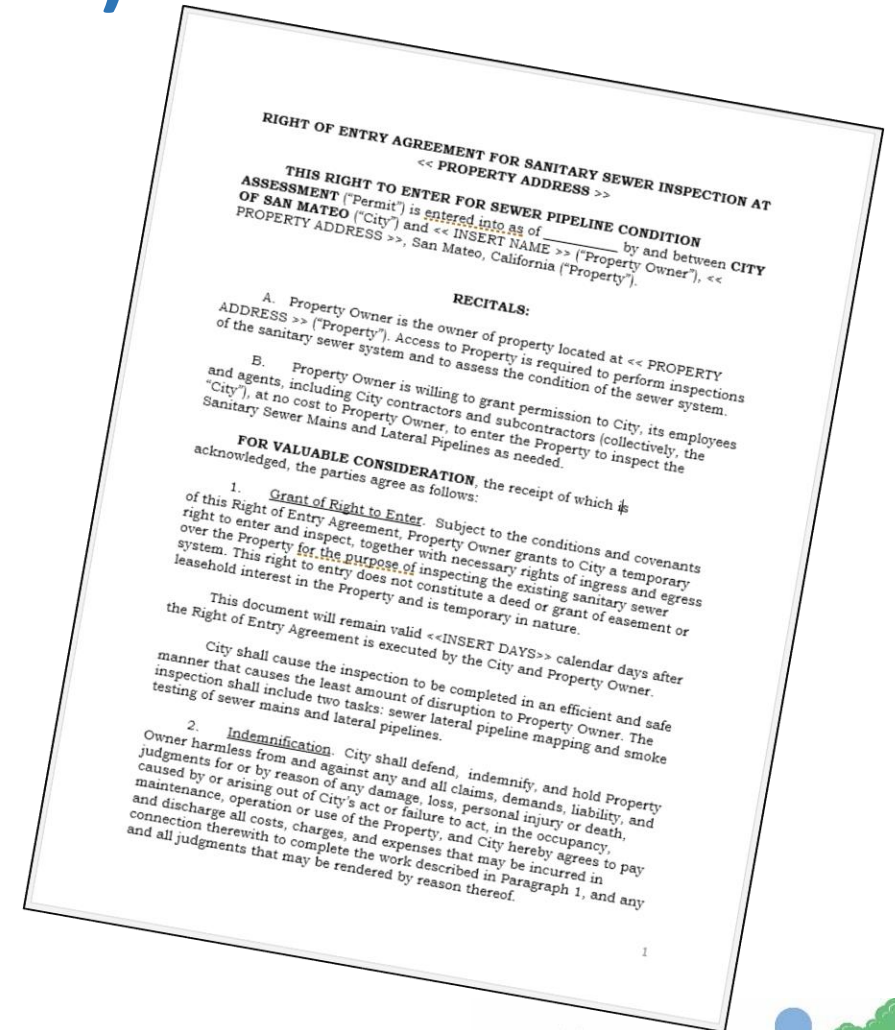
- Emergencies
- Routine operations and maintenance
- Accessing manholes
 - Launching video inspection equipment
 - Releasing non-toxic smoke and tracer water

Activities outside of the Public Utility Easements

- Video inspection of laterals
- Mapping of laterals
- Documenting smoke releases

Right-of-Entry (ROE)

- Why is an ROE needed?
 - *Complete the activities outside of the easement*
- What is a ROE?
 - *Industry and City standard practice*
 - *Establishes a temporary right to enter.*
 - *Specifies the activities to be performed.*
 - *Releases the homeowner of certain liabilities.*
 - *Establishes that no liens will be created.*



Right-of-Entry (ROE)

- Tonight we have an Open House Station where you can review the ROE, ask questions, and if ready, sign the ROE.
- For those who don't sign an ROE tonight, you will receive a copy in the mail.
- Residents are encouraged to sign by Oct 30, 2017, to help the City achieve the project goals.
- Everyone on the property title must sign an ROE
- Only homeowners, not tenants, are required to sign the ROE.



Schedule

Targeted Schedule

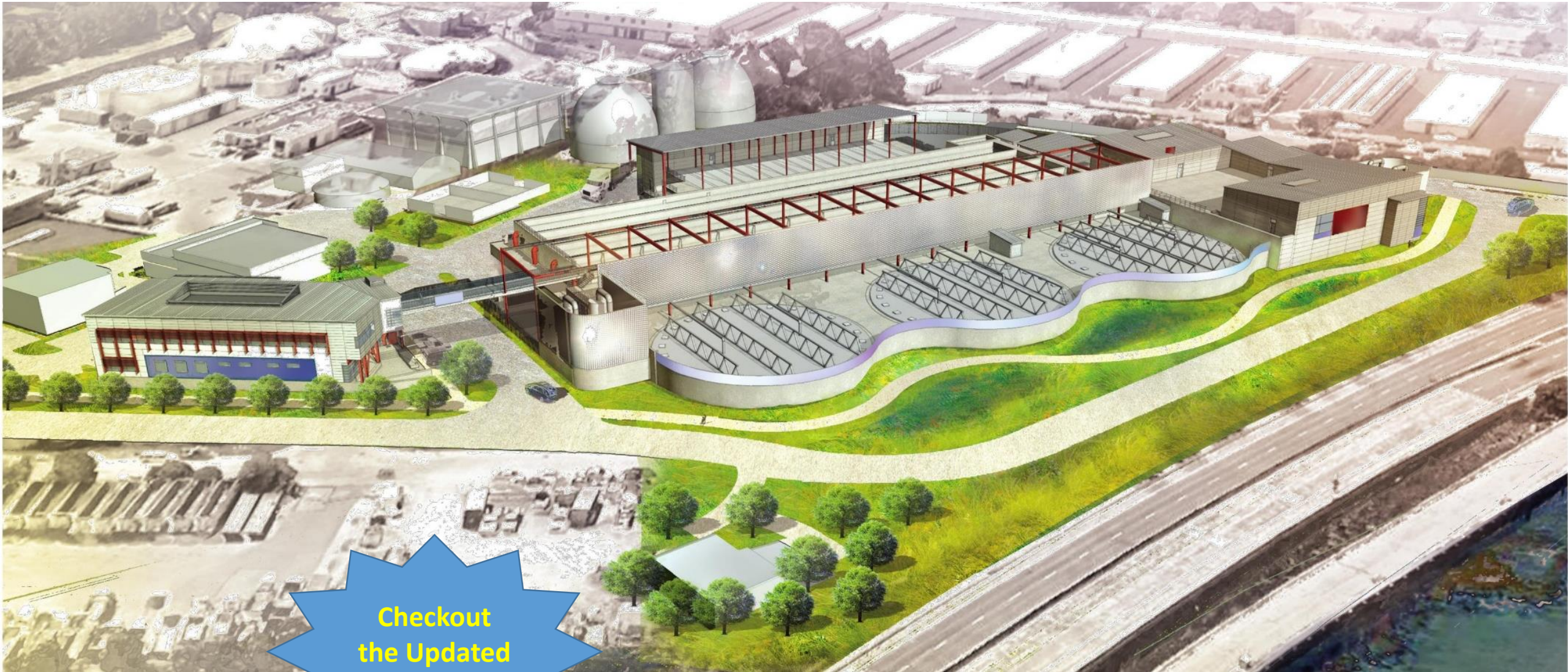
- Video Inspection: Beginning in November, 2017
 - Sewer mains and laterals*
 - Storm Drains*
- Smoke Testing: Beginning in November, 2017
- Colored Water Tracer Testing:
 - Based on the results of the video and smoke testing.*
 - Additional notice will be provided*

Assessments are Needed for the Community



- Determine issues in the sewer system
- Identify feasible rehabilitation approaches
- Prevent environmental and community health risks due to Sanitary Sewer Overflows
- Avoid regulatory violations & possible fines
- We will keep you informed before beginning future activities

Questions & Feedback



Checkout
the Updated
Website

www.CleanWaterProgramSanMateo.org



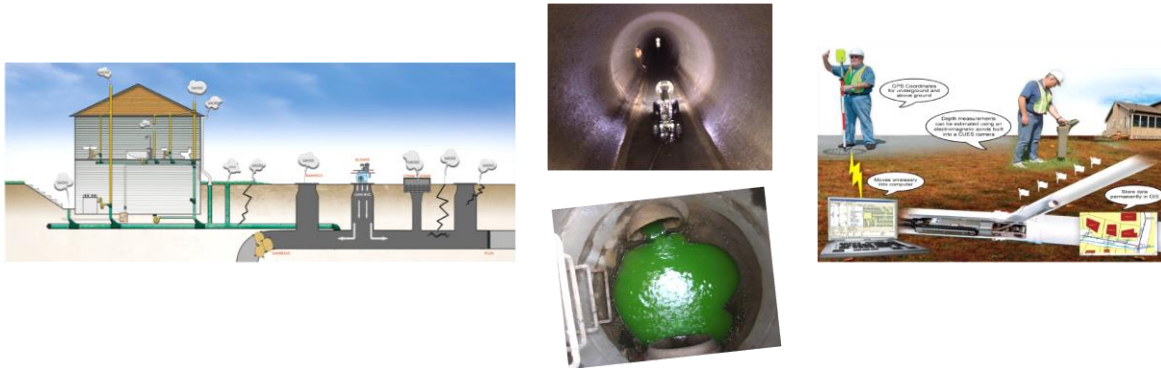
Open House Stations

General Information

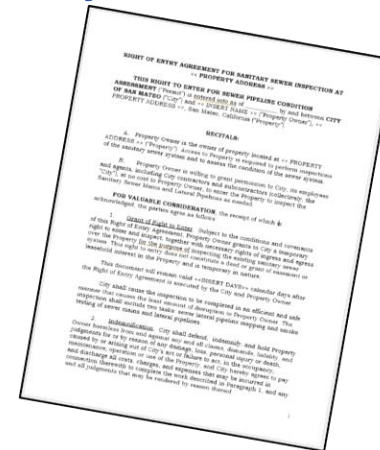


Condition Assessment – What’s Happening Where?

Condition Assessment – Technologies



Right-of-Entry Information and Signing



Methods to Stay Informed & Provide Input

Sign Up for Email Updates

info@cleanwaterprogramsanmateo.org

Register for Private Neighborhood Updates

www.NextDoor.com

Contact Us

www.CleanWaterProgramSanMateo.org

650-727-6870

