

# 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**

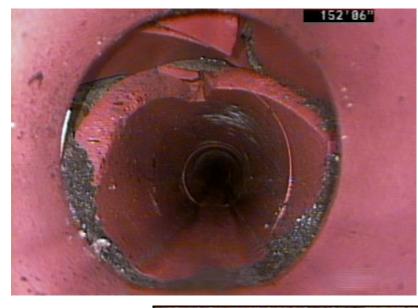




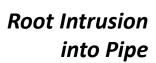








Inside of Failed & Cracked Pipe



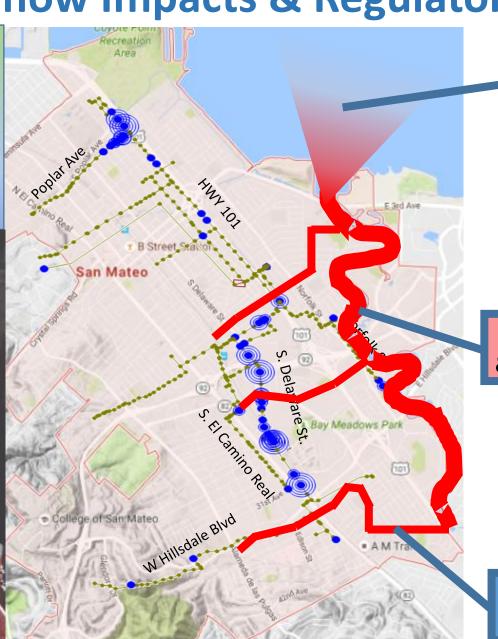


**Sewer Overflow Impacts & Regulatory Violations** 

#### **What Causes Sewer Overflows?**

Raw Sewage, PLUS **Unintended Rain Water** Entering the System

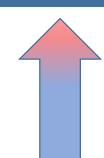












**CREEKS** 









#### **Clean Water Program Drivers and Goals**

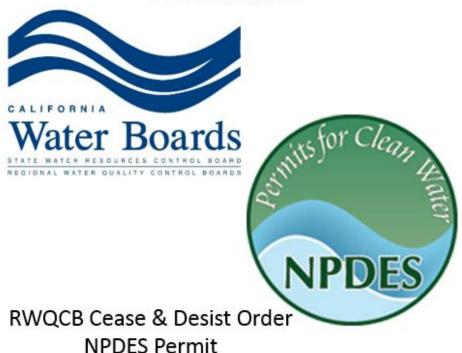
#### Replace Aging Infrastructure

Co

Collection System



#### Provide Higher Levels of Treatment & Capacity Assurance



## Align with City's Sustainability Goals







Infrastructure Sustainability Metrics



#### **Comprehensive Approach**

Capacity & Flow Management Improvements



Clean Water Program
Comprehensive
Approach

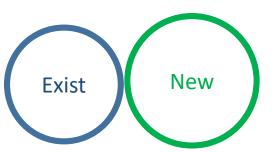
Inflow/Infiltration
(I/I) Reduction &
System Rehabilitation



#### **Capacity & Flow Management Improvements**

Pipe Improvements





Diameter

New Parallel "Relief" Pipe

Optimize Pump Stations



Underground In-System
Storage Facility

Wastewater Treatment Plant Upgrade







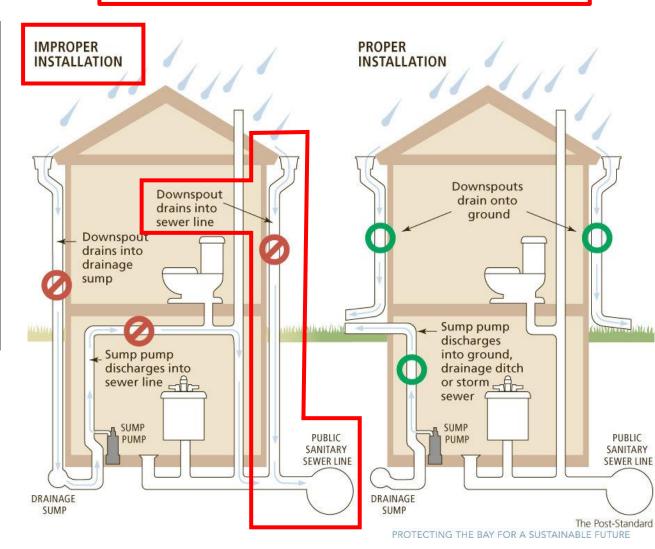


#### Sources of Inflow/Infiltration (I/I) and Contributors to SSOs

#### **FAILURES & OPENINGS IN SYSTEM**

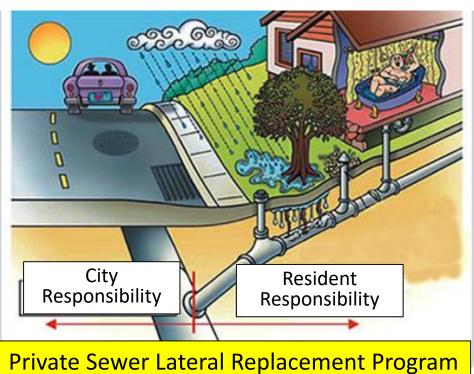
# Inflow: rain water seeps in through manholes. Infiltration: ground water seeps in through cracks and joints. To wastewater treatment

#### **UNAUTHORIZED CONNECTIONS**



#### I/I Reduction and System Rehabilitation









Pipe Spot Repairs

Pipe Lining

Pipe Replacement



Fat, Oils, Grease Reduction



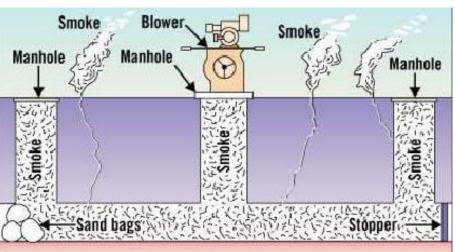
I/I Reduction and System Rehabilitation

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**





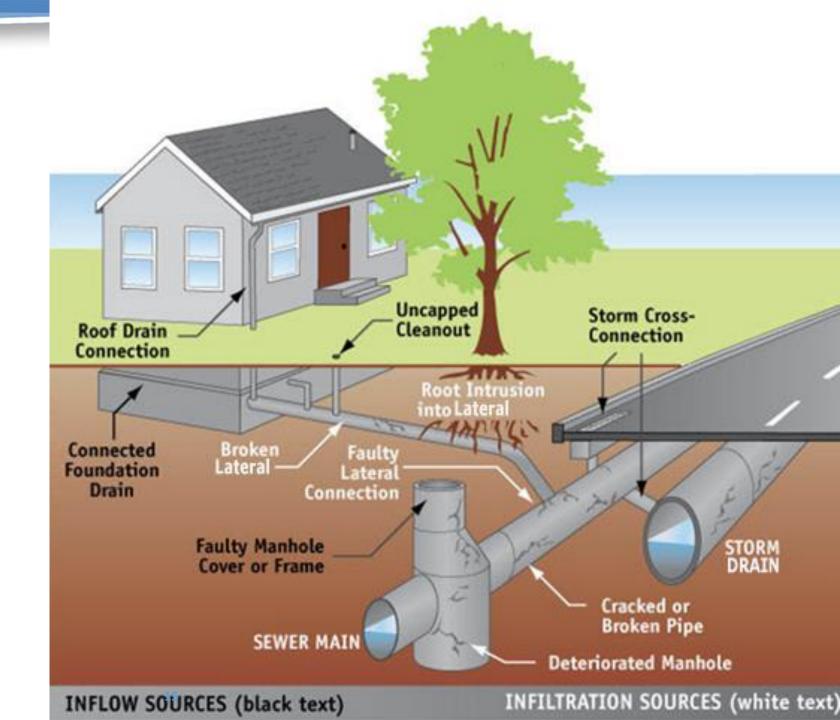
#### **Condition Assessment Activities**

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



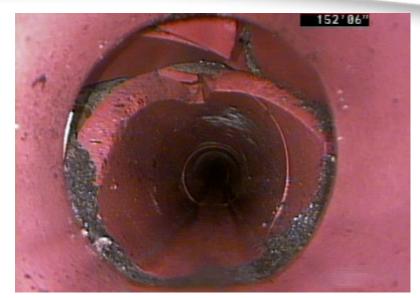
#### **Video Inspection**

- 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** 



#### **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.



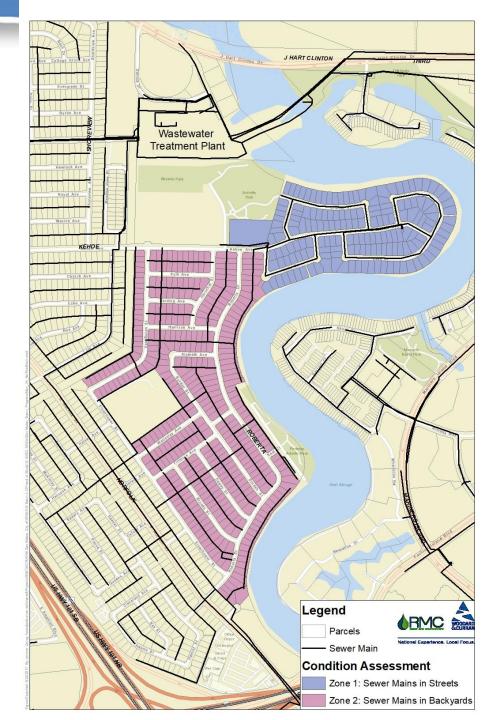




Hydrovac pipeline cleaner

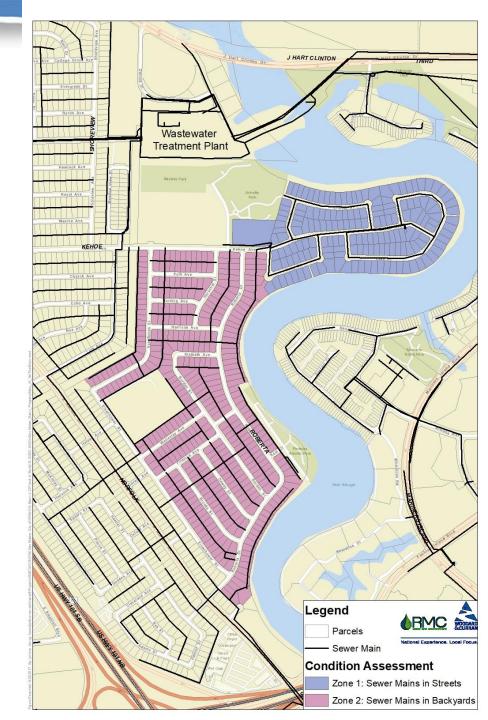
#### **Sewer Mains**

- 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.

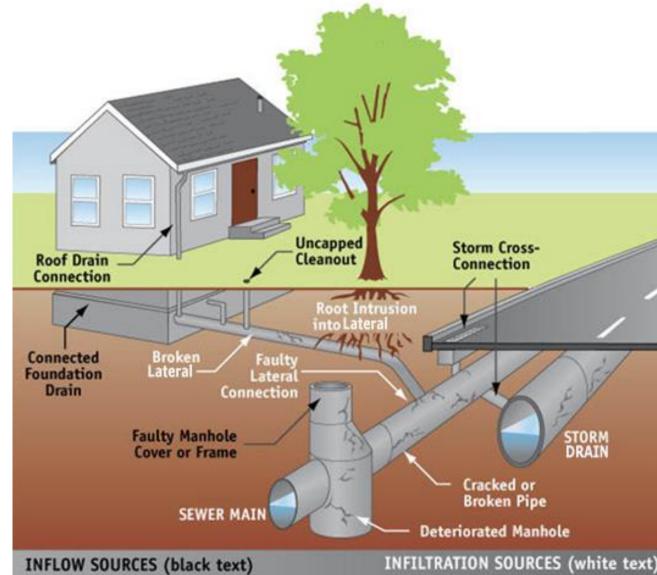






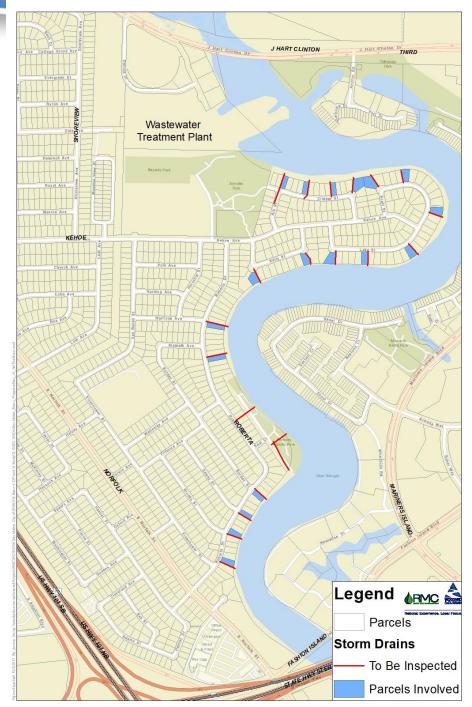
#### **Storm Drains**

- 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?

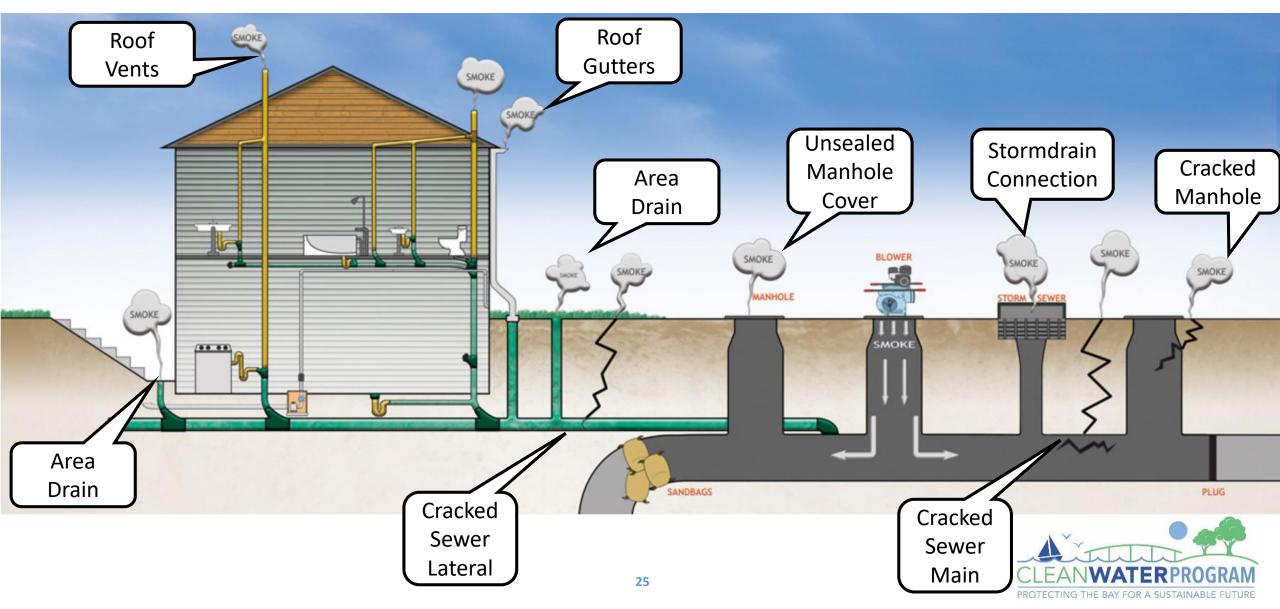
 Locate cracks and other openings or connections where outside water might enter the sewer system.

#### • 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**



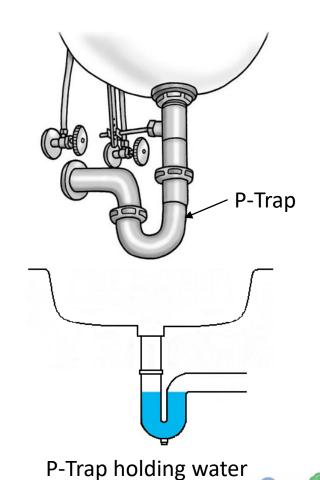
#### **Non-Toxic Smoke Test**

#### 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.



#### **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



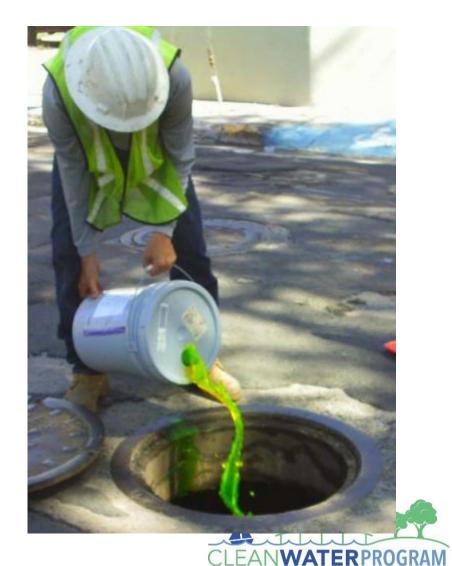
#### **Non-Toxic Colored Water Tracer Test**

#### 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 labilities.
  - —Establishes that no liens will be created.

### RIGHT OF ENTRY AGREEMENT FOR SANITARY SEWER INSPECTION AT

THIS RIGHT TO ENTER FOR SEWER PIPELINE CONDITION THIS RIGHT TO ENTER FOR SEWER PIPELINE CONDITION

ASSESSMENT ("Permit") is entered into as of

OF SAN MATEO ("City") and << INSERT NAME >> ("Property Owner"), <<

PROPERTY ADDRESS >> . San Mateo, California ("Property").

A. Property Owner is the owner of property located at << PROPERTY A. Property Owner is the owner of property located at << PROPERTY

ADDRESS >> ("Property"). Access to Property is required to perform inspections
of the sanitary sewer system and to assess the condition of the sewer system. ADDRESS >> ("Property"). Access to Property is required to periorm inspection of the sanitary sewer system and to assess the condition of the sewer system.

Property Owner is willing to grant permission to City, its employees and agents, including City contractors and subcontractors (collectively, the and agents, including City contractors and subcontractors (conecutively, in "City"), at no cost to Property Owner, to enter the Property to inspect the

FOR VALUABLE CONSIDERATION, the receipt of which acknowledged, the parties agree as follows:

of this Right of Entry Agreement, Property Owner grants to City a temporary Grant of Right to Enter. Subject to the conditions and covenants of this Right of Entry Agreement, Property Owner grants to City a temporary right to enter and inspect, logether with necessary rights of ingress and egress over the Property for the nurpose of inspecting the existing sanitary sewer. right to enter and inspect, together with necessary rights of ingress and egroups the property for the phtpose of inspecting the existing sanitary sewer everant. This right to sarry does not constitute a deed or evant of assembly over the Property for the purpose of inspecting the existing samilary sewer system. This right to entry does not constitute a deed or grant of easement or

This document will remain valid <<INSERT DAYS>> calendar days after the Right of Entry Agreement is executed by the City and Property Owner.

City shall cause the inspection to be completed in an efficient and safe City shall cause the inspection to be completed in an ellicient and sair manner that causes the least amount of disruption to Property Owner. The manner that causes the least amount of disruption to Property Owner. The inspection shall include two tasks; sewer lateral pipeline mapping and smoke

Indemnification. City shall defend, indemnify, and hold Property Owner harmless from and against any and all claims, demands, liability, and more property of the passenger of any damage, these passenger instructions of dash. Owner harmless from and against any and au claims, demands, undulty, a judgments for or by reason of any damage, loss, personal injury or death. Judgments for or by reason of any damage, loss, personal injury or dear caused by or arising out of City's act or failure to act, in the occupancy, caused by or arising out of City's act or lamure to act, in the occupancy, maintenance, operation or use of the Property, and City hereby agrees to pay and sincharms all costs observed and expenses that may be incurred in maintenance, operation or use of the Property, and the merety agrees to and discharge all costs, charges, and expenses that may be incurred in an accordance to the most described in Degrace to the most described in the m and discharge all costs, charges, and expenses that may be incurred in connection therewith to complete the work described in Paragraph 1, and any connection therewith to complete the work described in rai and all judgments that may be rendered by reason thereof.



#### 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.

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#### **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**



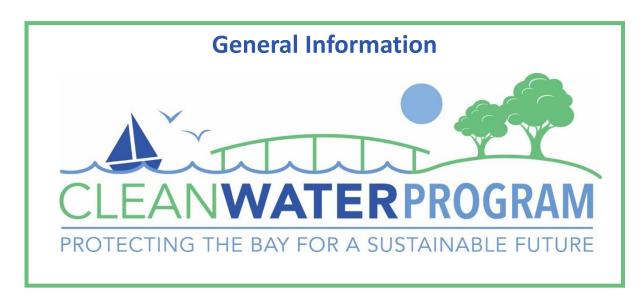
- Determine issues in the sewer system
- Identify feasible rehabilitation approaches
- Prevent environmental and community health risks due to Sanitary Sewer Overflows
- Avoid regulatory violations & possible fines
- We will keep you informed before beginning future activities

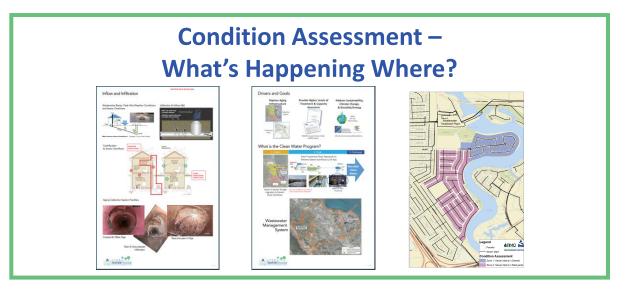


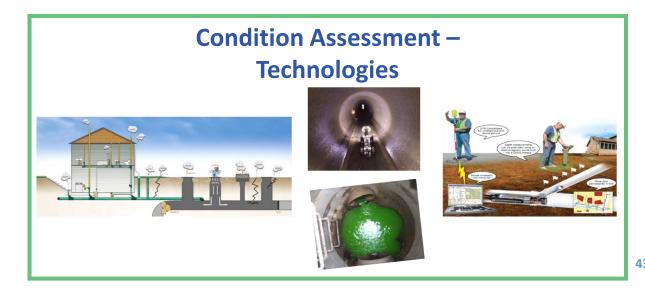
#### **Questions & Feedback**

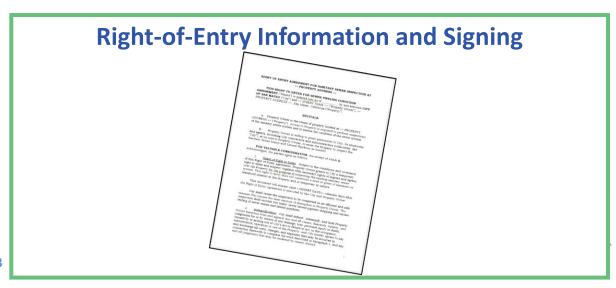


#### **Open House Stations**









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

