



# Sewer Modernization Program Public Workshop

September 20, 2017

Millbrae Council Chambers



# MILLBRAE SEWER SYSTEM

- 55 miles of collection sewers
  - ❖ 6" to 36" diameter
  - ❖ 85% vitrified clay pipes
  - ❖ 70+ years old
- 3 Pumping Stations- Hacienda, Madrone & Plaza Bay
- Wastewater Treatment Plant (WWTP)
  - ❖ Treatment & Storage Capacity = 14MGD

# MILLBRAE SEWER SYSTEM

- Millbrae's Sewer System experiences Sanitary Sewer System (SSO) overflows during rain events.
- SSO's are caused by the Infiltration and Inflow (I/I) of rainwater into the Sewer System
- SSO's pose a potential public health risk, pollute San Francisco Bay, and are prohibited under the federal Clean Water Act

# SANITARY SEWER OVERFLOW (SSO)

Definition:



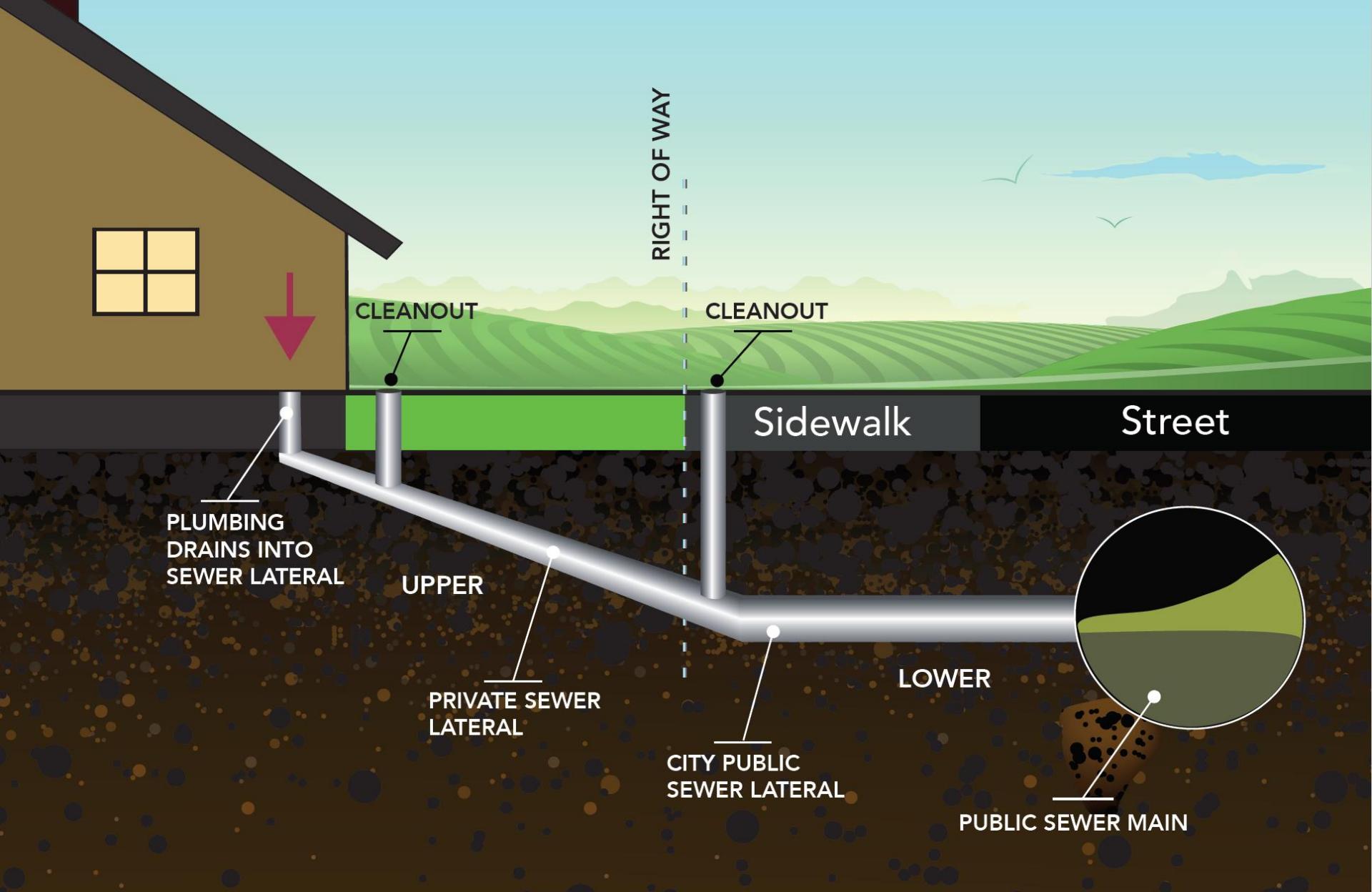
*An **SSO** is any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system.*





FEB 12 2007

# TYPICAL SEWER CONNECTION

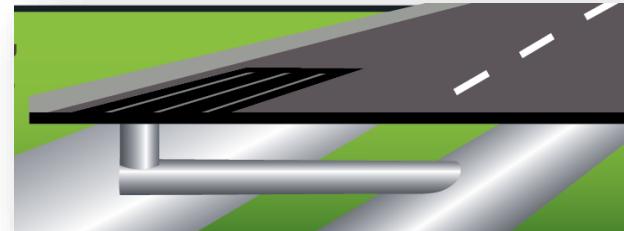


# INFLOW & INFILTRATION (I/I)

“*Inflow*” means groundwater, rainwater, or other surface water that may enter the sewage collection system through...



ILLEGAL ROOF  
CONNECTIONS



ILLEGAL STORM  
DRAINS

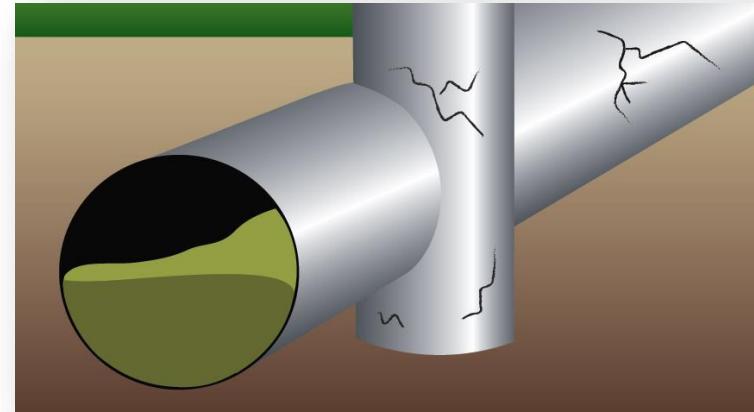


# INFLOW & INFILTRATION (I/I)

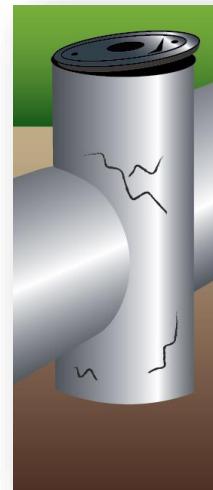
*“Infiltration”*  
means  
groundwater,  
rainwater, or  
other surface  
water that may  
enter the  
sewage  
collection  
system  
through...



ROOT  
INTRUSION



CRACKS IN  
SEWER PIPES



CRACKS IN  
MANHOLES

Up 313077  
8/30/2012

To  
ROOTS INTRUDIN

Dn 313133  
09:11

Fracture Multiple  
50.0 FT

0

Up 504004

12/17/2012

To

504005 On

12:45

0

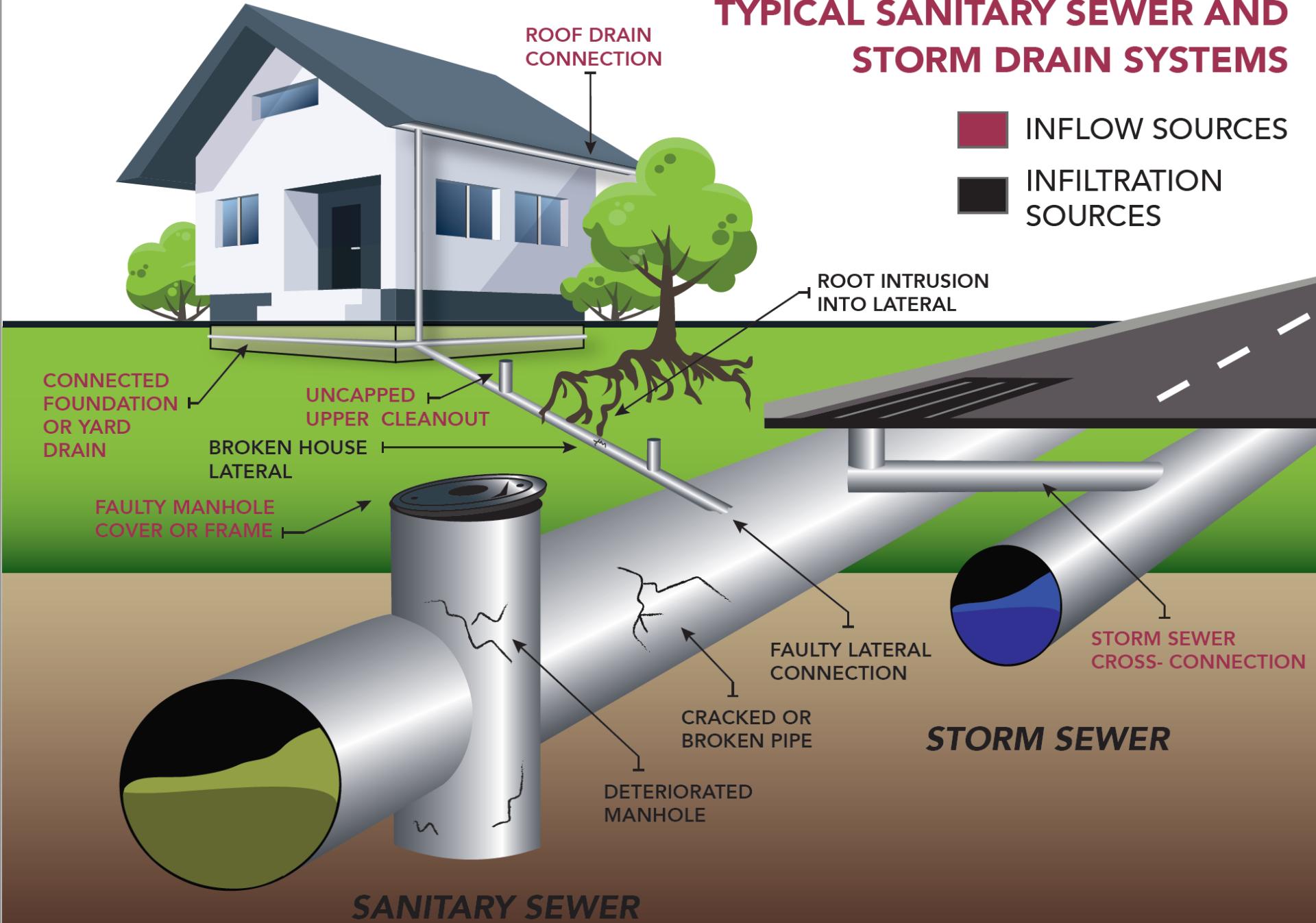
Roots Ball Joint

145.1 FT

0

# TYPICAL SANITARY SEWER AND STORM DRAIN SYSTEMS

- INFLOW SOURCES
- INFILTRATION SOURCES



# SAN FRANCISCO BAYKEEPER

San Francisco Baykeeper is a  
non-profit organization.

In 2009:

- Complaints were filed against several San Francisco wastewater agencies
  - Discharged pollutants from wastewater collection and treatment systems allegedly violated the **Clean Water Act**



# SAN FRANCISCO BAYKEEPER

A number of agencies entered into separate agreements with SF Baykeeper regarding their treatment systems.

Millbrae entered into a Settlement Agreement (AKA “Consent Decree”) in November 2010.



# CONSENT DECREE REQUIREMENTS

- Reduction of Sanitary Sewer Overflows (SSOs) in City's sewer collection system through:
  - Inspection to identify & correct defects
  - Improved preventative maintenance
  - Capital improvements to remove of Infiltration/Inflow (I/I) sources
- Compliance required by November 2018



# CONSENT DECREE REQUIREMENTS

The Consent Decree also required Millbrae to develop a Capacity Assurance Report (CAR)

## Definition:

*The CAR is an technical analysis identifying all the capacity improvements needed to eliminate SSO's and the proposed construction schedule.*

The final CAR was accepted by Baykeeper in 2014



# CAPACITY ASSURANCE REPORT (CAR)

The capital improvements identified in the CAR include:

- Replacing aging pipes
- Increasing sewer capacity
- Replacing leaking sewer laterals

The CAR recommends replacement of Public Infrastructure **as well as** Private Laterals in selected areas:

- ❖ Low overall cost
- ❖ Best sustainability
- ❖ Improved future reliability & performance of sewer collection system



# MILLBRAE'S RESPONSE

## Sewer Modernization Program:

- \$48.6 million investment over the next five to ten years
- \$19 million needed through 2018 to stay in compliance
- The City will use a combination of sewer revenue and bonds to fund the Sewer Modernization Program costs
  - Clean Bay Fee approved on July 11



# MILLBRAE'S RESPONSE

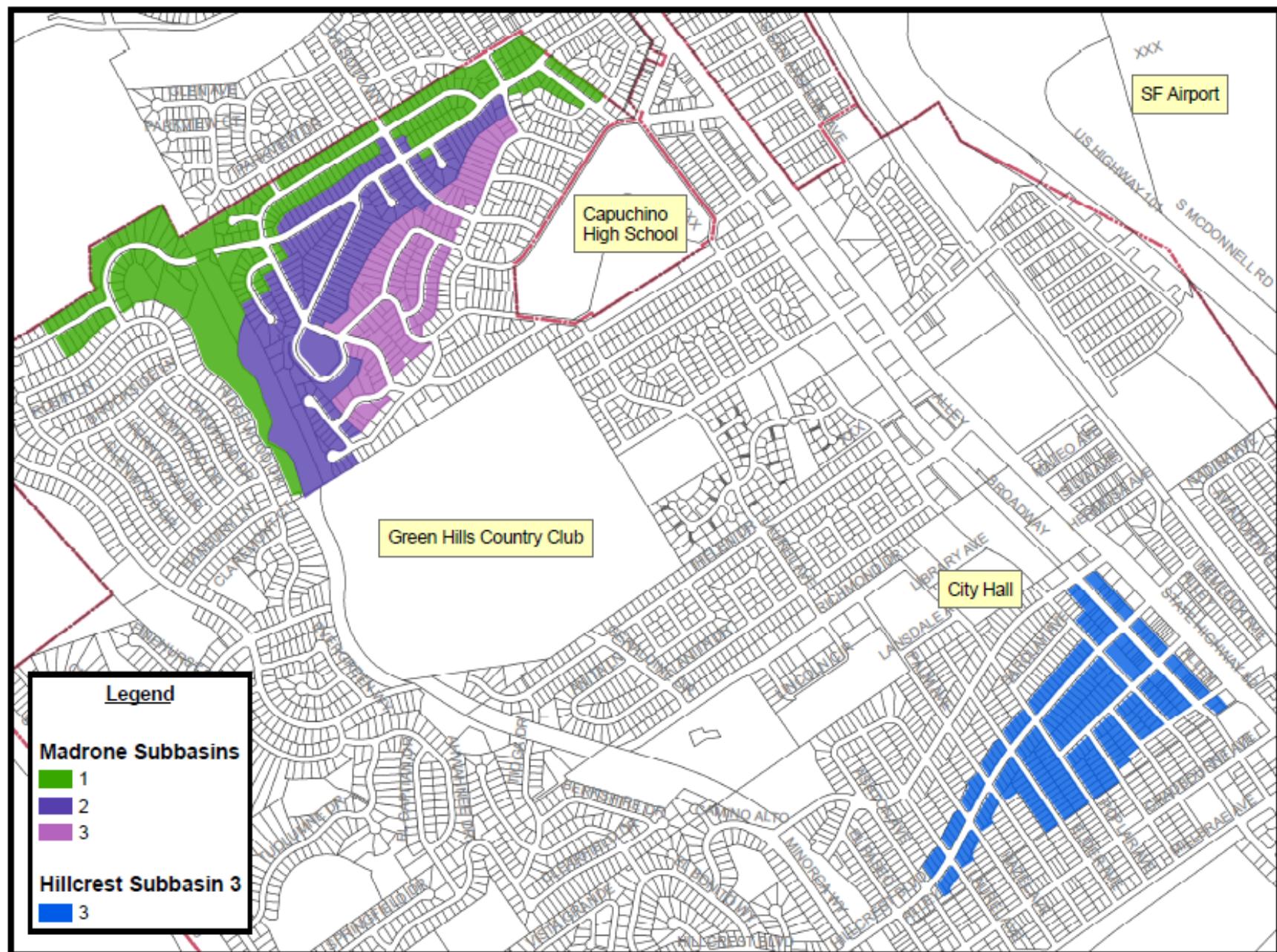
The approved Program requires rehabilitation of public sewer mains as well as both lower & upper laterals.

Previous projects have been determined:

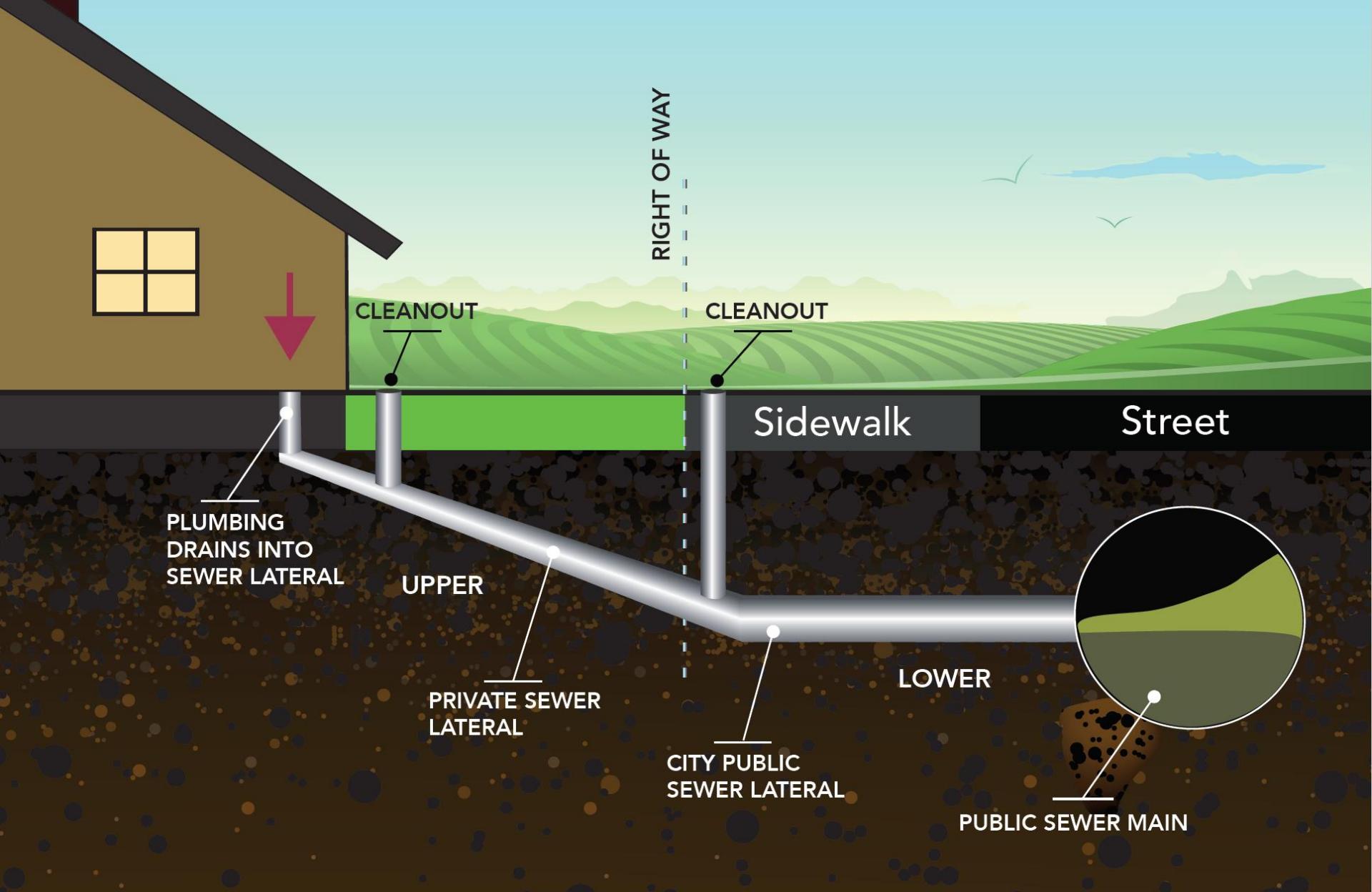
- 30 – 50% I/I removal with rehabilitation of sewer mains & lower laterals only
- Up to 70% removal with comprehensive rehabilitation of sewer mains & both lower and upper laterals



## Priority Basins to be completed by November 2018



# TYPICAL SEWER CONNECTION



# PRIVATE SEWER LATERAL INSPECTION & REPAIR PROGRAM

- Repair or replacement of upper laterals involves the following elements:
  - ❖ Pressure testing/video inspection
  - ❖ Installation of 2 way cleanout(s)
  - ❖ Repair/replacement of lateral
  - ❖ Repair/ replacement of affected landscaping & hardscape
  - ❖ Plumbing Permits
  - ❖ Compliance inspection & Certificate issuance



# PRIVATE SEWER LATERAL INSPECTION & REPAIR PROGRAM

- Current City Ordinance requires inspection and repair upon sale of home  
**(up to \$1,000 City credit)**
  - ❖ Number of upper lateral repairs under current Ordinance insufficient to meet Consent Decree timeline
  - ❖ Locations of upper lateral repairs under current Ordinance not concentrated in Priority Basins



# PRIVATE SEWER LATERAL INSPECTION & REPAIR PROGRAM

- Upper laterals are privately owned
  - ❖ Responsibility for upper lateral rehabilitation lies with the homeowner
  - ❖ Cost responsibility for rehabilitation of upper laterals in priority basins needed for CD compliance is a Council policy decision
    1. City pays full cost
    2. Homeowner pays full cost
    3. Sharing of costs



# PRIVATE SEWER LATERAL INSPECTION & REPAIR PROGRAM

- Expenditure of public funds for work on private property:
  - ❖ City must determine that private benefits from public funds is **secondary** to the benefit derived by the public in terms of public health and safety



# CONCLUSION

The CAR program can be completed by the November 2018 Consent Decree deadline, with possible exception of upper lateral rehabilitation.

Council policy decisions and legal determinations need to be in place before upper lateral work can begin.

- Upper lateral pilot program conducted prior to full-scale implementation



# CONCLUSION

A **Public Outreach Program** is being implemented to develop community understanding and support for the program.



# NEXT STEPS – CITY STAFF

City staff is continuing implementation of CAR projects.

This includes:

- Smoke testing
- Flow monitoring & modeling
- Comprehensive rehabilitation of priority sub-basins
- Improvement projects to increase conveyance capacity



# NEXT STEPS – CITY STAFF

Other responsibilities:

- Hire staff for program administration and management
- Evaluate funding options and refine cost estimates
- Conduct pilot program for upper laterals



# NEXT STEPS – CITY COUNCIL

- **Policy decisions on responsibility & funding for upper lateral repairs in the priority basins**



# QUESTIONS FOR THE COMMUNITY

**How can the City Council best ensure that the costs for private lateral repairs are addressed fairly for all ratepayers?**

**What additional information would be helpful in your understanding of our program?**





THANK YOU FOR  
ATTENDING

September 20, 2017

City of Millbrae