



Alternatives for Sanitary Sewer Capital Improvements

City Council
April 14, 2008



Purpose

- Review status of entire Sewer CIP
- Discuss SSO issues
- Alternatives to Address SSO's
- Discuss next steps



Sewer CIP

- Town has invested almost \$19M since 1996
- Capital program presented to FAC continues investment at average of \$1.5M annually over next 10 years
 - Exception of proposal for \$8M in 2009 to address Crystal Springs Trunk

Sewer CIP – 2007-2012

Number	Project Description	YEARS				
		07/08	08/09	09/10	10/11	11/12
		\$1,060,000	\$1,225,000	\$8,085,000	\$1,230,000	\$1,230,000
50701	Smartcovers	\$60,000				
50752	Main Rehabilitation Cherry Creek	\$1,000,000				
50851	Burlingame Oak Grove		\$1,000,000			
50852	San Mateo Improvements		\$225,000	\$85,000	\$30,000	\$30,000
50951	El Cerrito Capacity*			\$8,000,000		
51051	Storm Drain Rehabilitation				\$200,000	
51052	Burlingame Treatment Plant				\$1,000,000	
51151	Storm Drain Rehabilitation					\$200,000
51152	Main Rehabilitation					\$1,000,000

Sewer CIP 2012-2017

Number	Project Description	12/13	13/14	14/15	15/16	16/17
		\$2,730,000	\$1,700,000	\$1,200,000	\$1,700,000	\$1,200,000
51251	Town Hall Detention	\$1,500,000				
51252	Cleaning and Video	\$1,000,000				
51253	Storm Drain Rehabilitation	\$200,000				
51351	Storm Drain Rehabilitation		\$200,000			
51352	Main Rehabilitation		\$1,500,000			
51451	Storm Drain Rehabilitation			\$200,000		
51452	Cleaning and Video			\$1,000,000		
51551	Storm Drain Rehabilitation				\$200,000	
51552	Main Rehabilitation				\$1,500,000	
51651	Storm Drain Rehabilitation					\$200,000
51652	Cleaning and Video					\$1,000,000



CIP

■ In Hillsborough

- Assumes continued maintenance at current levels
- CCTV best method for detecting deficiencies
- Lining/repair of mains known to have failures
- Town makes spot repairs as issues are identified



CIP

■ Outside Hillsborough

□ Burlingame

- Improvements downstream on Oak Grove (2008)
- New detention basin at WWTP in design (2009)
- Additional detention upstream (2012)

□ San Mateo

- Dale Ave pump station/pipe improvements (TBD)
- Outfall improvements (TBD)

SSO's

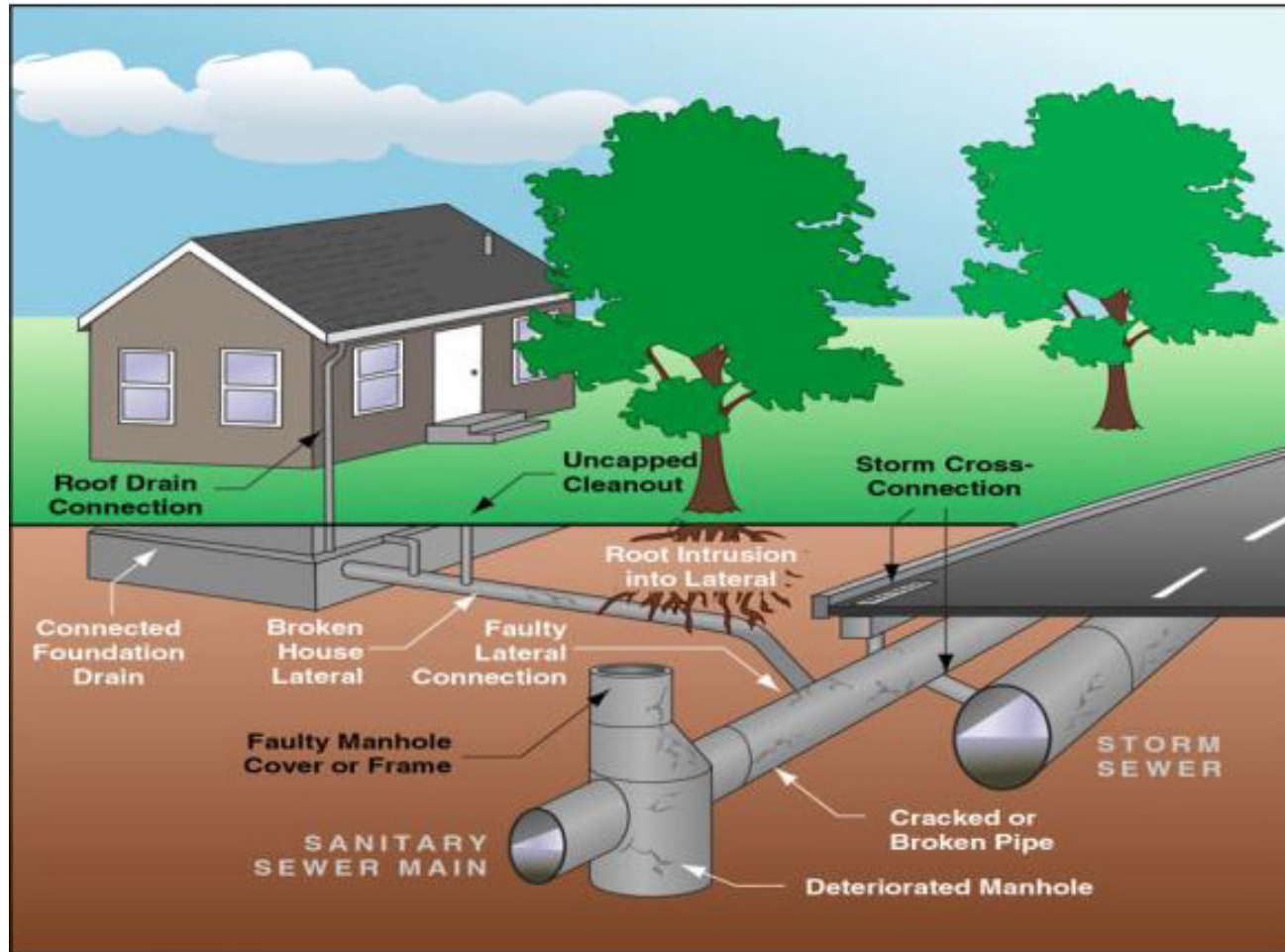
- Dry weather SSO's associated with disposable clothes and other debris in mains
 - Easily cleared by maintenance crews
 - Volume of spill usually under 100 gallons

- Majority are wet weather events
 - Volumes can be massive in excess of 10,000 gallons
 - Uncontrolled duration
 - Containment is response

Inflow/Infiltration

- Inflow is a direction connection into main
- Infiltration occurs when mains and laterals have cracks or breaks.

Where Does I/I Occur?



Key:

- ← Inflow Source
- ← Infiltration Source



How to Detect I/I Sources?

- Visual inspection
- CCTV
 - Time of sale requirement
 - Town projects
 - Burlingame video contract
- Smoke testing
 - 2/3rd's of Town tested in 2005
 - Illegal connections rare

What Is Source?

- Infiltration - Roots affect mains and laterals



Forestview lined in 2006



What is Source?

- Infiltration – Broken mains and laterals





Inflow/Infiltration

- Wet weather flow to dry weather ratio
 - Burlingame Treatment Plant 3:1
 - San Mateo Treatment Plant 3.5:1
 - Instantaneous peaking factors at metered locations vary greatly from 5:1 to 10:1



How I/I Affects WWTP's?

When overwhelmed by storms...

- Burlingame release treated sewage near the shore at Coyote Point
- San Mateo exceeds its treatment capacity and releases partially treated sewage into bay



How I/I Affects Hillsborough?

- Both Burlingame and San Mateo are planning significant capital improvements to address WWTP capacity
 - Contractually Town must share cost
 - By comparison to main improvements WWTP rehabilitation/expansion projects are very expensive
 - Management of storm water future issue



How I/I Affects Hillsborough?

- Both Burlingame and San Mateo/County of San Mateo/CSCSD are seeking to renegotiate sewer contracts
 - Metering/measurement needed in future
 - Burlingame seeking allotment of WWTP capacity, and maximum cap on total flow in wet weather
 - Share responsibility for WWTP discharges



What Are Alternatives?

- Continue to experience SSO's
- Implement projects to meet capacity demands created by I/I
- Prevent I/I to reduce need for additional capacity



Factors to Consider

- Potential for regulatory actions
- Control over total sewer system infrastructure
- Total cost over time (10-50 years)
 - Maintenance
 - Capital Improvements
 - Potential Liabilities



Addressing I/I

- Inflow relatively rare
- Main rehabilitation has been aggressive
- No lateral rehabilitation program
 - Resident owns lateral from house to main
 - Testing/video only required at time of sale



Lateral Rehabilitation

- Pilot program proposed in budget
- FAC discussed a more aggressive lateral rehabilitation program as alternative to provide more direct benefit to Town than Crystal Springs Trunk project (\$8M)



Lateral Rehabilitation

- 4,100 houses in Town
 - Ancillary building (pool houses) often have separate laterals

- Cost to replace lateral varies widely
 - Distance from house to main
 - Topography
 - Ability to use trenchless technologies



Questions