

OC San Collection System

Presented by:
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Manager

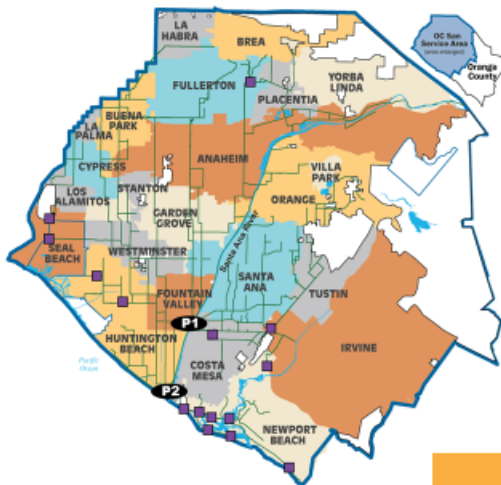
Administration
Committee

October 11, 2023



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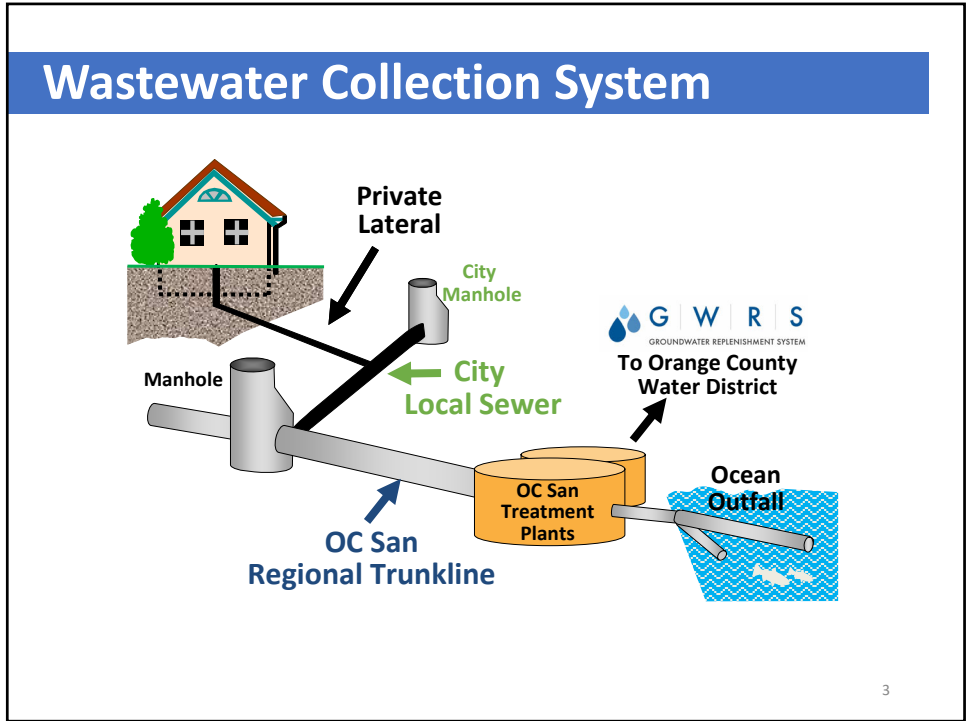
Our Service Area



- 388 miles of sewers
- 479 square miles
- ~180 million gallons per day
- 2.6 million population
- 2 ● treatment plants
- 15 ■ pump stations
- 20 cities
- 4 special districts
- unincorporated parts of County of Orange

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Gravity Systems

- Various pipe materials
- Trunks, interconnections, reliefs
- Inverted siphons
- Diversions

Trunklines and Diversions

The map shows a dense network of colored lines representing wastewater trunklines and diversions across Orange County. Major cities labeled include Long Beach, Seal Beach, Huntington Beach, Costa Mesa, Garden Grove, Orange, Santa Ana, Tustin, Newport Beach, and Lake Forest. A legend in the bottom left corner provides details about the system components.

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Pipe Sizes

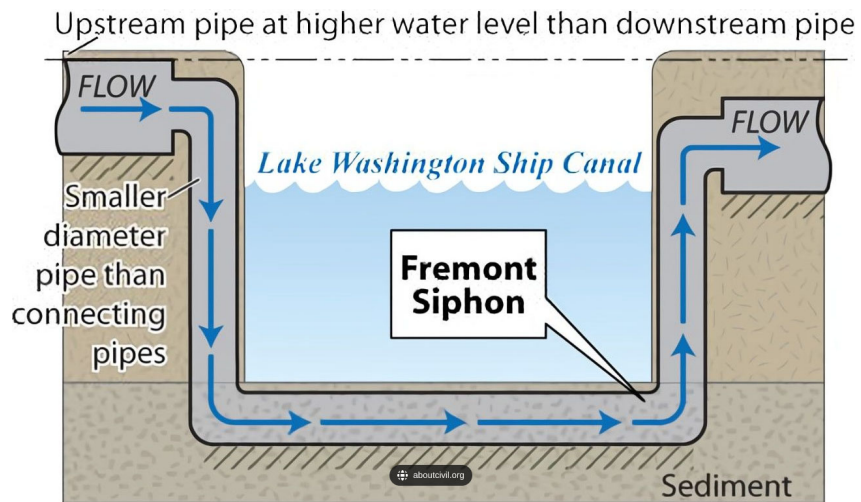
- Smallest = 8"
- Largest = 120"
- Majority range 24" to 60"



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Inverted Siphon



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Line Cleaning Types

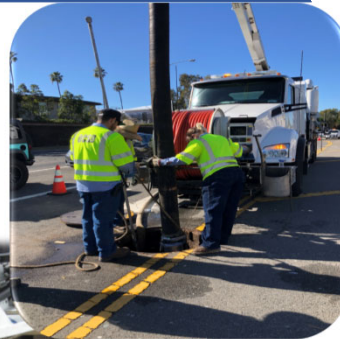
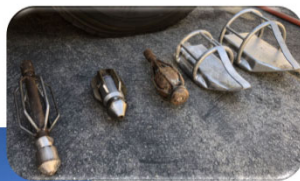
- Flush work
 - Grit removal
 - Spill prevention
- Tire cleaning
 - Grit removal
 - Spill prevention
 - Line proofing



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Line Flushing

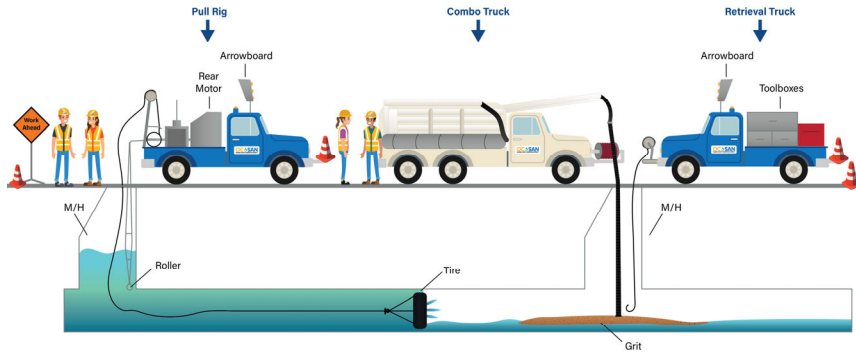


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Mechanical Cleaning - Tire

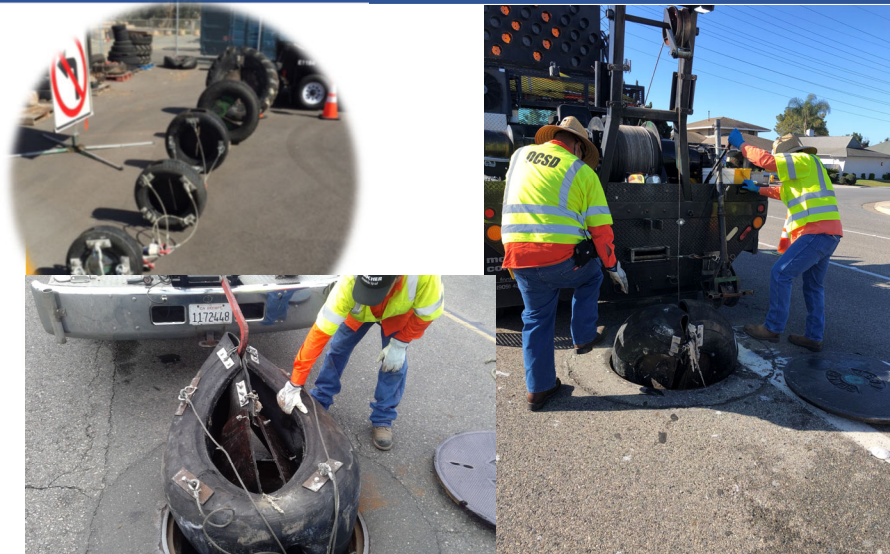
Line Cleaning Using a Tire



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Mechanical Cleaning - Tire



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Technology Adoption

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Pressure Systems

- Old vs. New
- Small vs. Large

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Pump Station Maintenance



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Our Goal - Prevent Sewer Spills

- OC San relevant standard – 2.1 sewer spills per 100 miles
- Collections' goal – 0 spills



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Pee, Poop & Paper



**Know what should go
down the drain that
is sewer safe**

*It's simple, the toilet is only meant to flush
the three P's—pee, poop and paper.*

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Pump Station Resiliency

- Bypass pumping
 - Emergency response
 - Critical maintenance
 - Assessments
- Bypass pumping design
 - Unique to each station
 - Agile and quick assembly

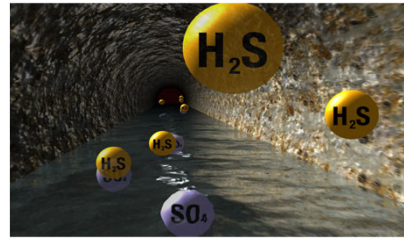
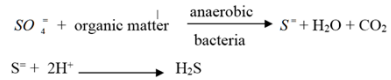


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Odor Control Chemicals

- Magnesium Hydroxide
 - Raises pH to keep HS^- in solution
- Ferrous Chloride (Ferric Salts)
 - Oxidize sulfide to sulfur
 - Precipitates sulfide as ferric sulfide
- Calcium Nitrate (Bioxide)
 - Naturally occurring bacteria biochemically oxidize dissolved sulfide in the presence of nitrate
- Sodium Hydroxide
 - Sloughs off slime layer



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Regional Odor Control Efforts

- Proactive outreach
- Investigate
- GIS tracking of “Hot Spots”
- Received AAEEES award and patent for approach

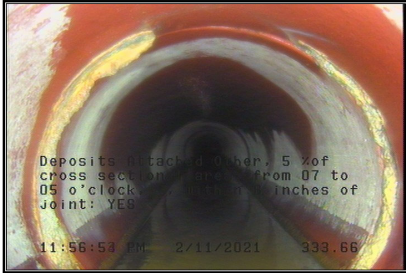


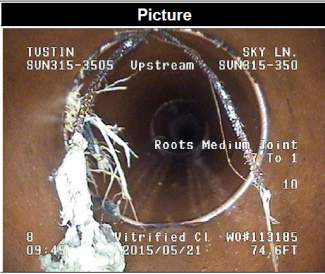
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CCTV

- Asset inspection
- Structural degradation and cleaning
- Project scoping
- Spill prevention



Distance	Fault Observation	Picture
74.6	Roots Medium Joint Position: 7 To 1 Severity: None Percent: 10 Joint Maint Weight: 3	

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Teamwork & Coordination

- Coordinate efforts
- Assist when a crisis arises
- Assist with special needs



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Questions

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