

Wastewater Collection System

*Don Stokes,
Maintenance
Manager*

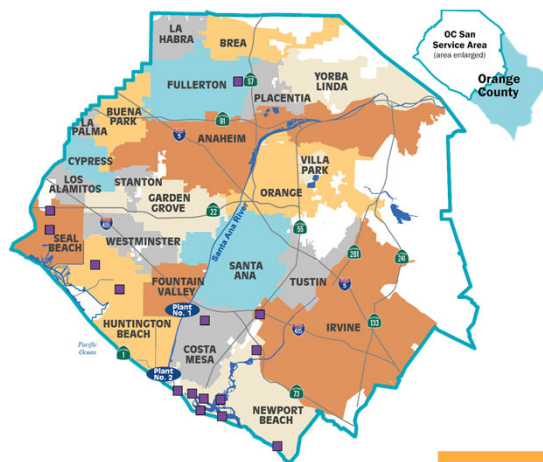
*Operations
Committee*

April 6, 2022



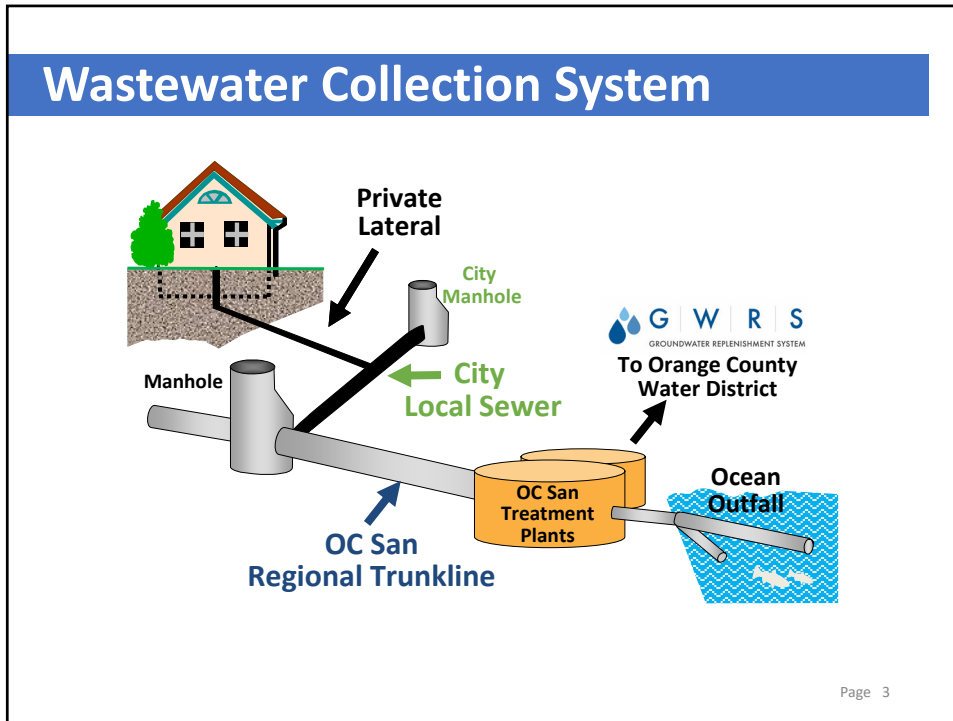
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Our Service Area



- 388** miles of sewers
- 479** square miles
- 183** 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

The map shows the extensive network of gravity collection systems within the Orange County Sanitation District. It highlights various trunks and diversions across different areas, including Fullerton, Placentia, Villa Park, and others. A legend in the bottom left corner provides details about the different types of pipes and systems used.

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Pipe Sizes

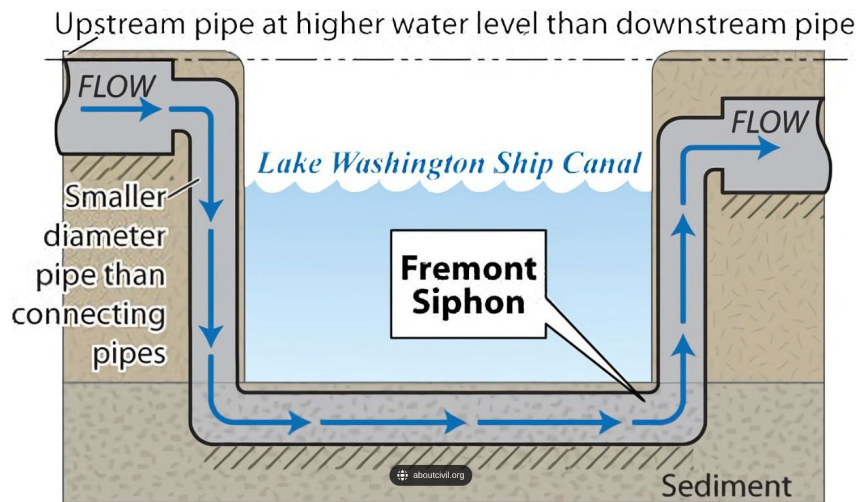
- Smallest = 8"
- Largest = 120"
- Majority range 24" to 60"



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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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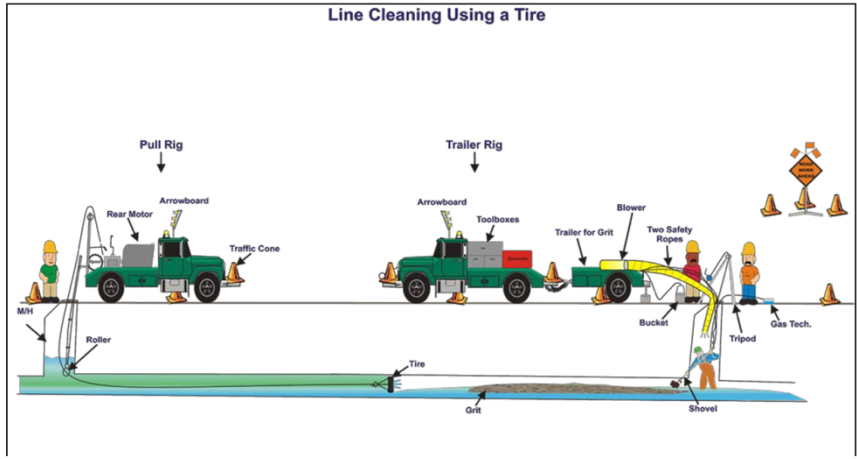
Line Flushing



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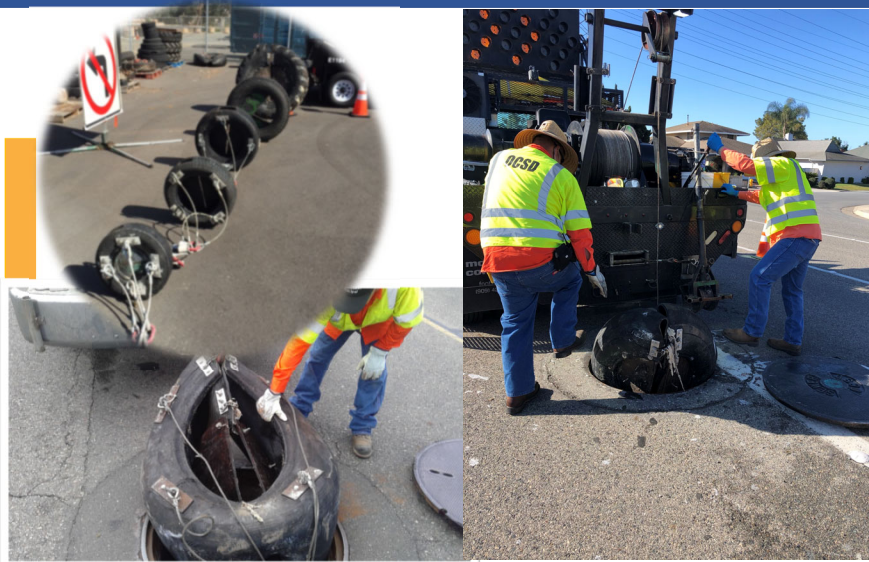
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Mechanical Cleaning - Tire



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Mechanical Cleaning - Tire



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Technology Adoption

Orange County Sanitation District SMARTCOVER MONITORING SYSTEM

You are logged in as: *dsloka* - Super Admin - Log out

Map SmartTrend® Alarms and Alerts System Operations Multi Charts Super Admin Support

SmartCover® Unit Location: **BUS0290-0110** Application: SmartClean®

Charts Management Status Alarm Settings Info Maintenance

BUS0290-0110 Static Charts

High Level Alarm = 19.0 in Water Level above Bottom Sensor Position = 24.0 in
 High Level Advisory = 17.0 in

Window: 6h 24h 48h 1w 3m 6m All 2022-03-09 20:03 - 2022-03-18 11:26

Time Period: 1m 3m 6m 1y 2y 3y 5y Zoom Type: Default Stars Fill Gaps No Filter

Date Range: 2022-02-22 15:17 - 2022-03-22 15:17 Load Filter: Auto Manual

Level PowerPack Voltage Signal Strength Signal Quality Temperature

Update Chart Download Data

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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

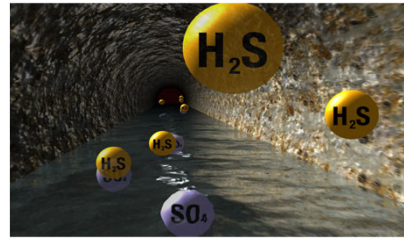
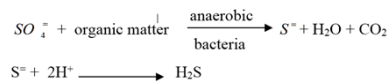


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Odor Control Chemicals

- 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

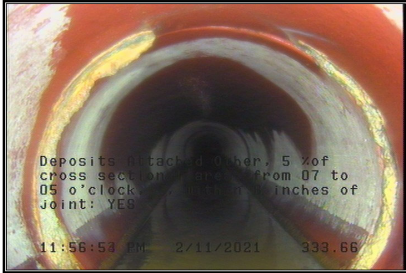


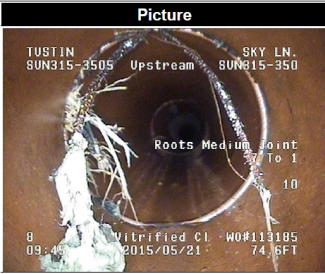
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CCTV

- 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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Team-work & Coordination



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

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Questions



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