

# Wastewater Collection System

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Assistant General  
Manager

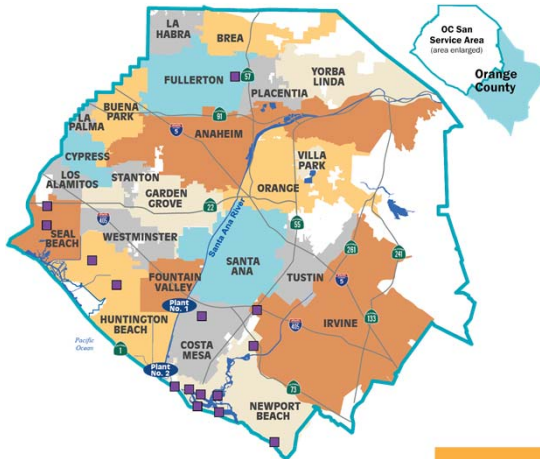
Operations  
Committee

April 7, 2021



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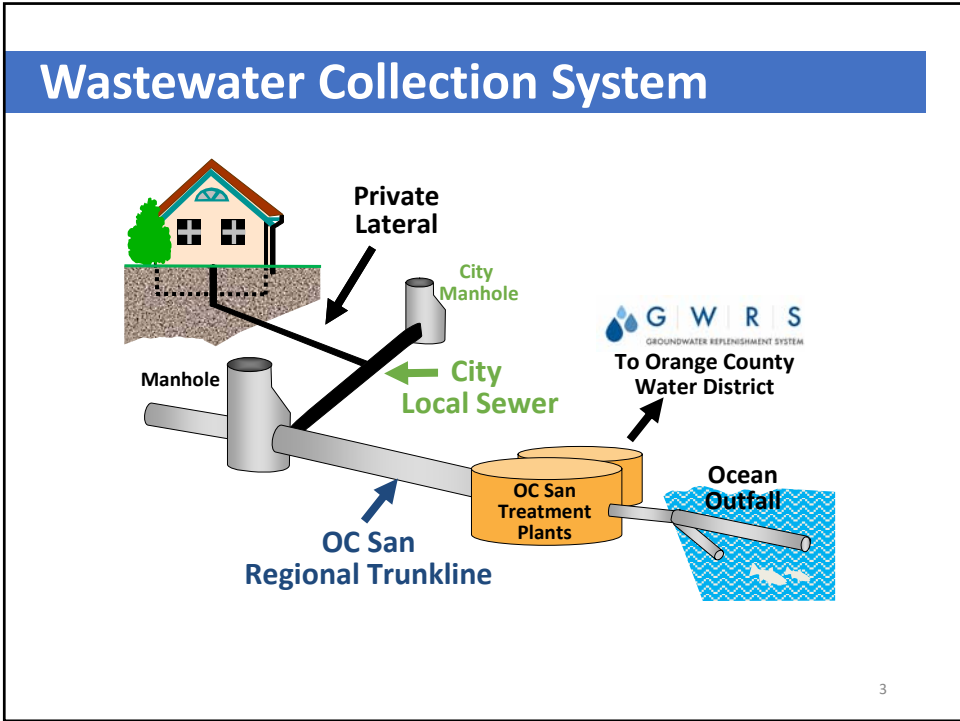
## Our Service Area



- 388 miles of sewers
- 480 square miles
- 189 million gallons per day
- 2.6 million population
- 20 cities, 4 special districts
- 15 pump stations
- 2 treatment plants

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## Our Goal - Prevent Sewer Spills

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

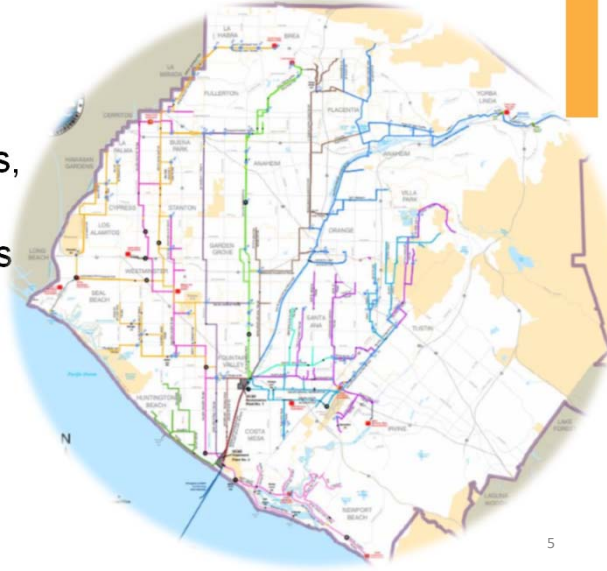
A photograph showing a significant sewer spill on a paved street. A large, dark, viscous liquid is pooled around a circular manhole cover. In the background, a white pickup truck is parked on the street, and some greenery is visible.

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## Gravity Systems

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



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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

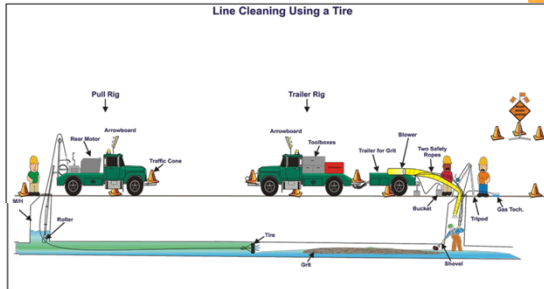


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## Mechanical Cleaning - Tire

Tire cleaning

- Grit removal
- Spill prevention
- Line proofing



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## Mechanical Cleaning - Tire

- Mechanical cleaning means employed by OC San



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## Pressure Systems

- Pump stations - 15
- Force mains - 20 miles



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## Pump Station Maintenance

- Operational rounds
- Pump maintenance
- Wet well cleaning
- Controls/calibration
- Electrical maintenance
- Bypass contingency



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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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# Underground Line Locating

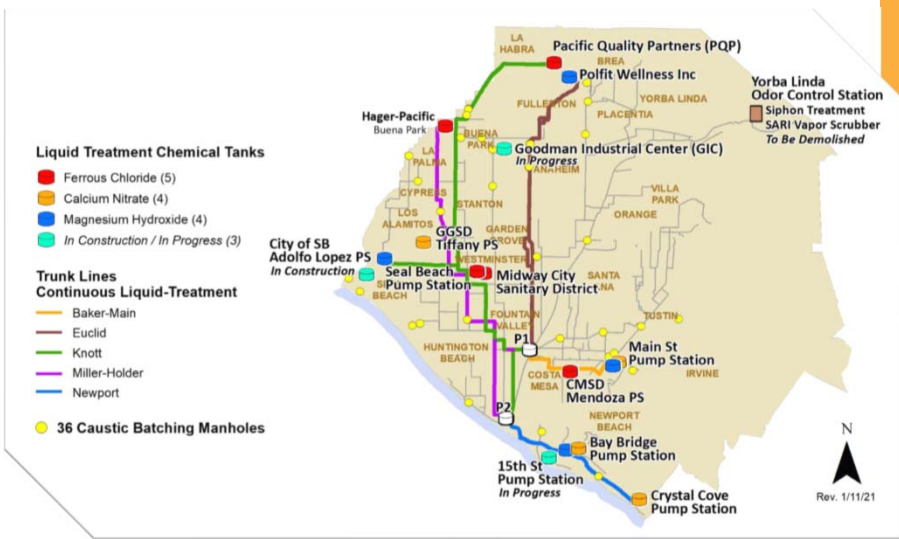
- State enforcement
- Damage prevention
- Other entity request
- Centralized system through state: Dig-Alert system
- Field locating and marking



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# Regional Odor Control

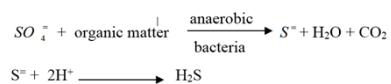


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## Odor Control Chemicals

- 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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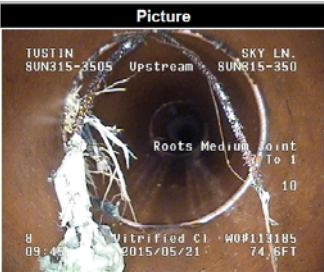
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## CCTV

- 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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## Agency Assistance


- Assisted Costa Mesa Sanitary District (CMSD) and East Orange County Water District (EOCWD) with SSO response
- Assisted Irvine Ranch Water District (IRWD) with cleaning



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Questions



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