

Sewer Smoke Testing Project

Clean Water SoCal Collection Systems Committee Meeting

February 26, 2026



Long Beach Utilities Overview

Combined Water, Gas, and Sewer Utility

- Serve a population of over 500,000
- Over 500 dedicated employees
- Governed by a five-member Board of Public Utilities Commissioners
- Annual Budget of ~ \$387M (FY26)



Long Beach Utilities Overview

Water Infrastructure

- Over 900 miles of pipeline
- Groundwater Treatment Plant, 62.5 MGD
- 90,000 Water Service Connections



Natural Gas

- Over 1,900 miles of pipeline
- 155,000 gas service connections



Sewer Conveyance System

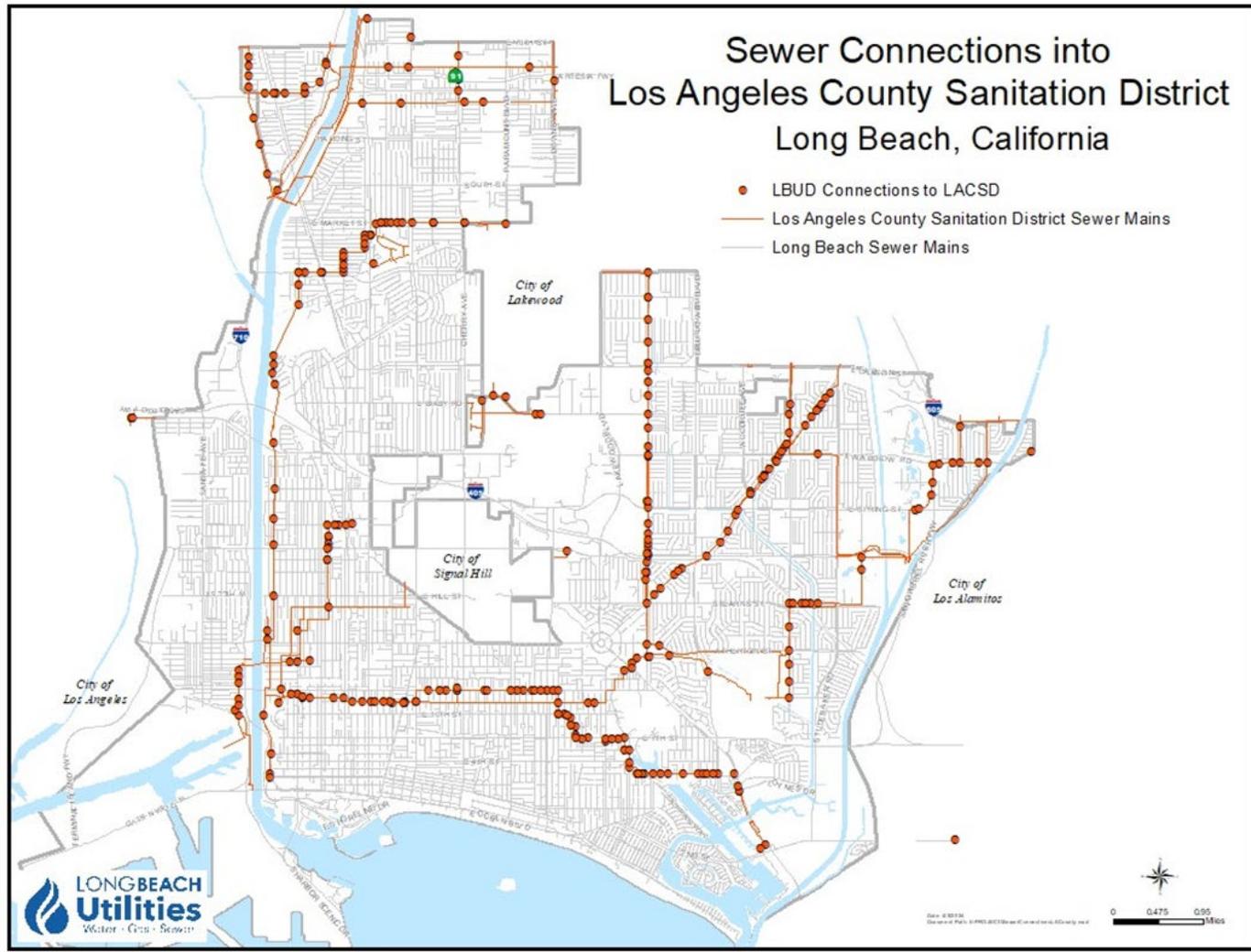


Overview

- 700 miles sewer mains
- 500 miles sewer laterals
- 15,000 manholes
- 28 sewer pump stations
- 8 miles force mains
- Collection and conveyance of 32 million gallons per day



Sewer System Overview



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

- Long Beach wastewater goes to Los Angeles County Sanitation Districts for treatment



Sewer Operations

Proactive maintenance includes

- Cleaning
- CCTV Inspections
- Repairs

Objectives

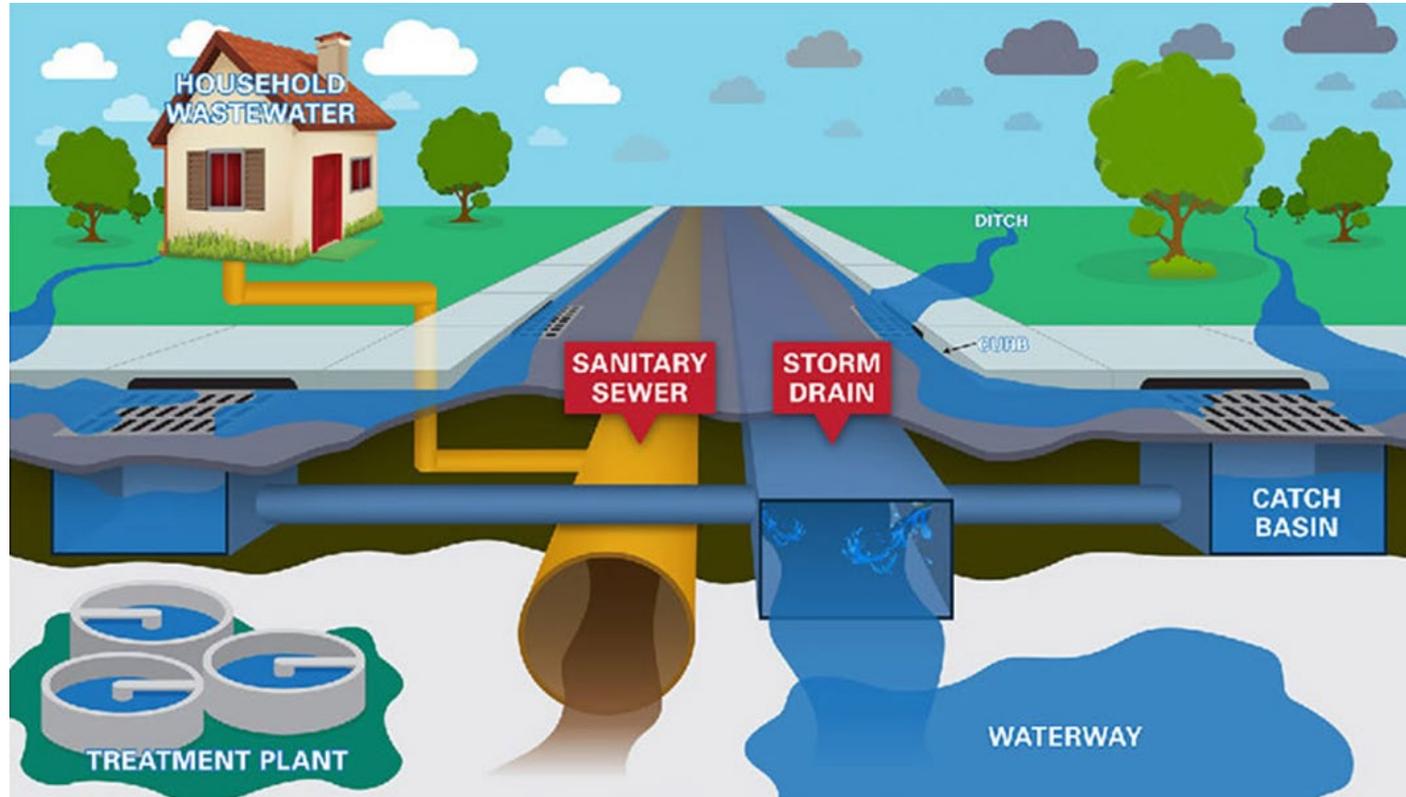
- Prevent sewer spills
- Contain and mitigate spills that do occur



Long Beach: Separate Systems

Sewers

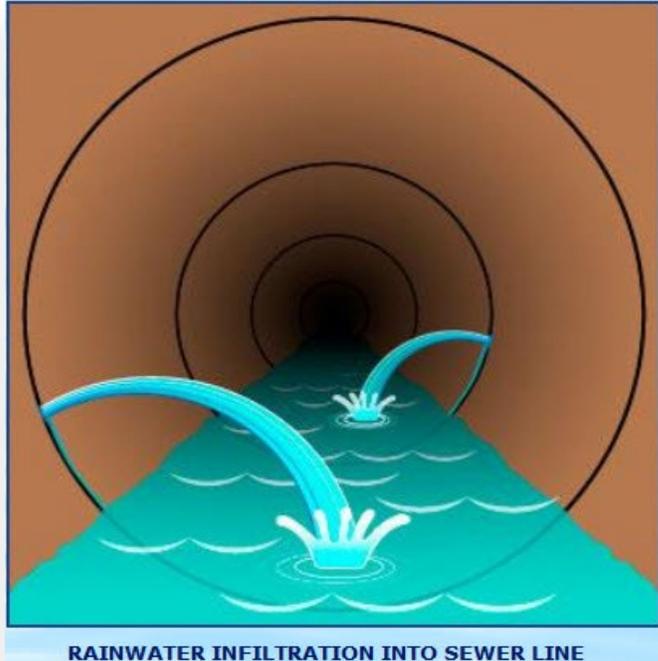
- Closed System
- Wastewater only
- Treated



Storm Drains

- Opened System
- Rain, irrigation overflow
- Not treated

Inflow and Infiltration (I&I)



Infiltration: Groundwater that seeps into sewer pipes through holes, cracks, joint failures, and faulty connections.

Inflow: Stormwater enters via improperly connected roof drain downspouts, storm drain cross-connections, or holes in manhole covers.

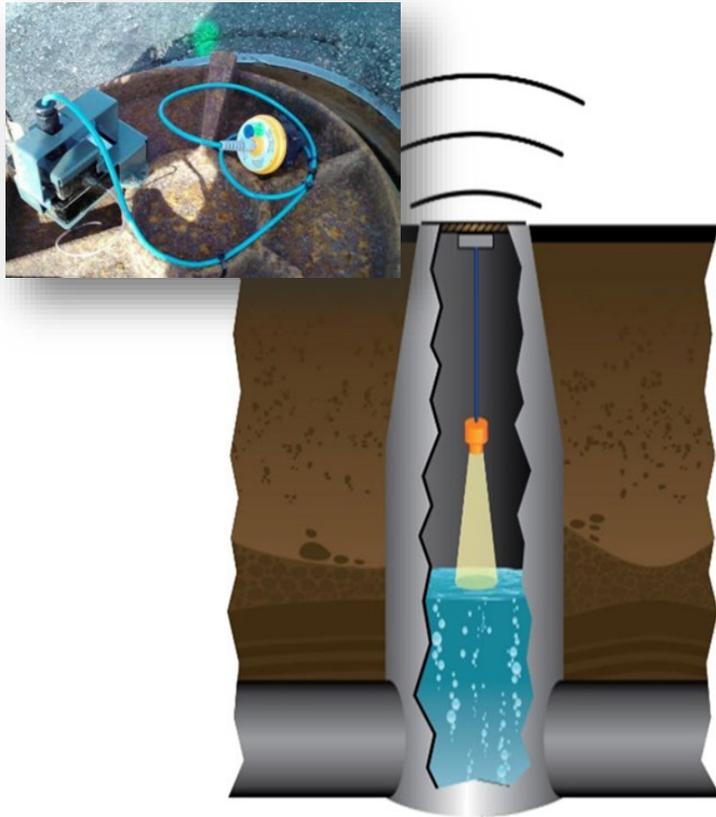
Major Storm Event

February 2024

- Record setting rainfall of 10-inches
- Pump Station S10 exceeded capacity
- Naples Island bridge closure
- Vacuum trucks used to relieve pump station
- Action taken to prevent sewer spill



Storm Protection Measures



SmartCovers® installed throughout City

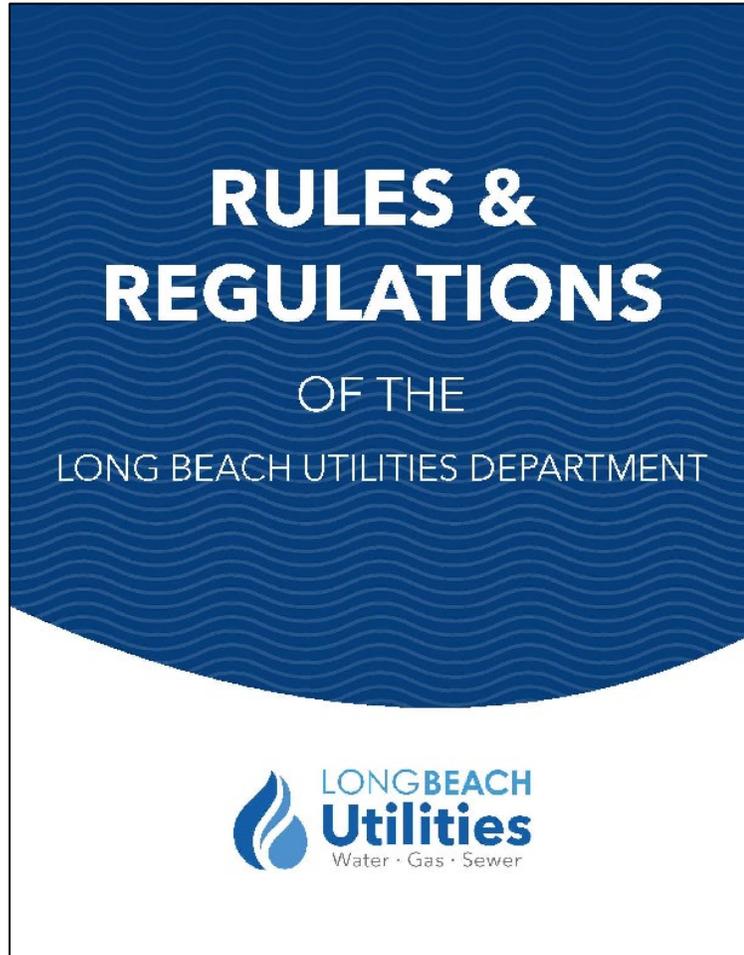


Cork and seal manholes to prevent inflow of stormwater



Trial use of composite lids in select areas

Rules and Regulations



SECTION 1401 DISCHARGES PROHIBITED

Except as provided in Parts 10 through 18, no person shall discharge or cause to be discharged into any Public Sewer or into any opening of any Public Sewer in the City the following:

- A. Earth, sand, rocks, ashes, gravel, plaster, concrete, glass, metal filings, metal objects, other materials which will not be carried by the Sewer stream, anything which may obstruct the flow of Sewage in the Sewer, or any object which will cause clogging of a Sewage pump or a Sewage sludge pump;
- B. Any garbage which has not been first shredded so that each particle is not more than 3/8-inch in any dimension or any garbage containing broken glass;
- C. Any solid or semisolid material such as garbage, trimmings, cuttings, offal or other waste produced in the processing of meats, fruits, vegetables, foodstuffs or similar materials except garbage produced which meets the requirements of Parts 10 through 18;
- D. Any volatile liquids or substances which can produce toxic or flammable atmospheres in the Sewer;
- E. Any compounds which may produce strong odors in the Sewer or Sewage Treatment Plant;
- F. Any storm water or runoff from any roof, yard, driveway, street or pump station, except where prior approval has been given by the Chief Engineer;

What is Smoke Testing?

- Non-toxic, odorless, harmless smoke pumped into isolated sewer sections
- Observations of smoke from defects, broken laterals, cross-connections
- Documentation with photos, GIS notes

By detecting leaks, finding improper connections, and identifying stormwater entry points, smoke testing can minimize capacity overload and prevent sewer spills.



Project Overview

Objective: Evaluate the condition of the sewer system and identify sources of I&I

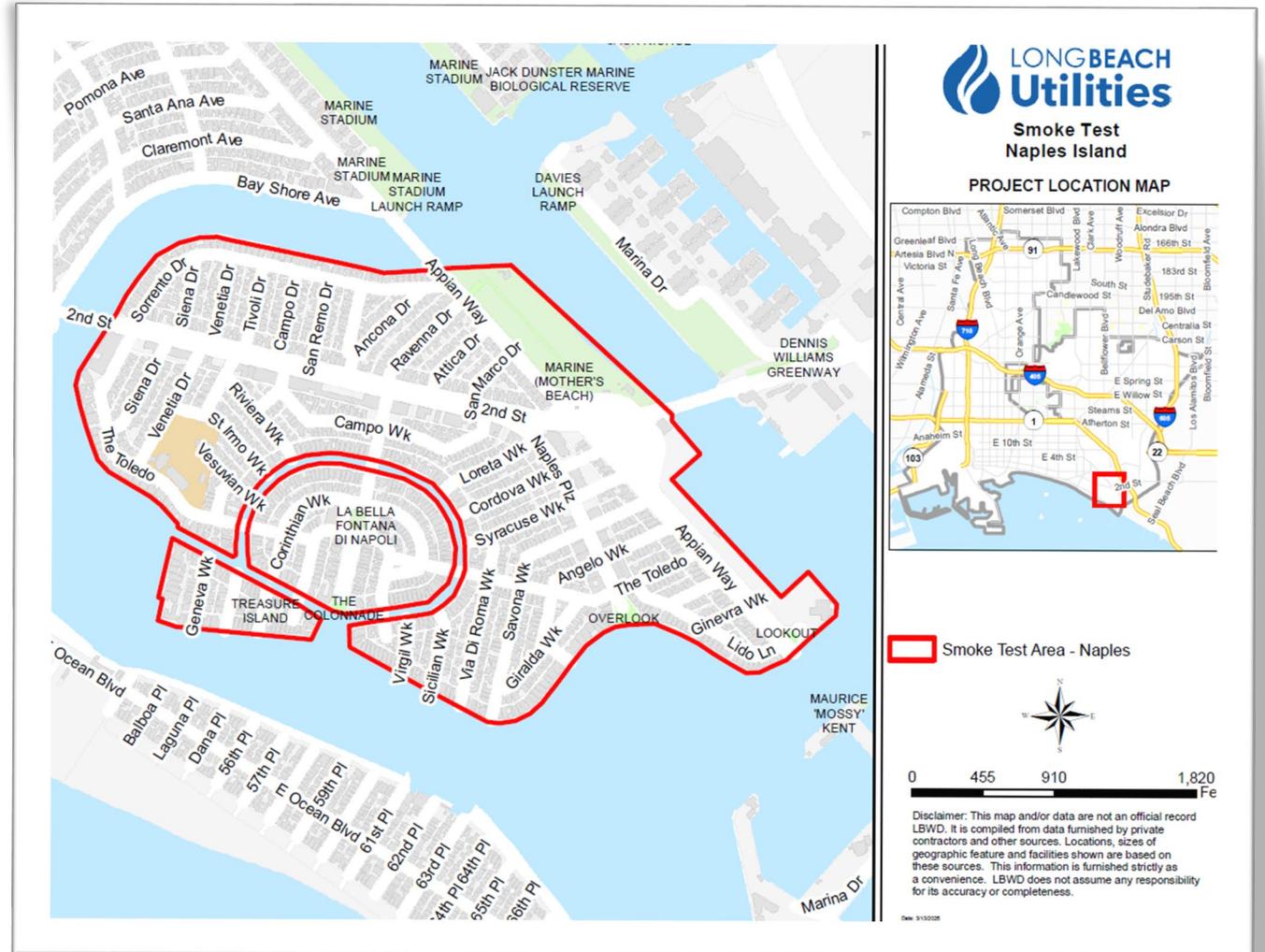
Project Area: Naples Island Neighborhood

Duration: 5-day testing period in July 2025

Contractor: Downstream Services, Inc.

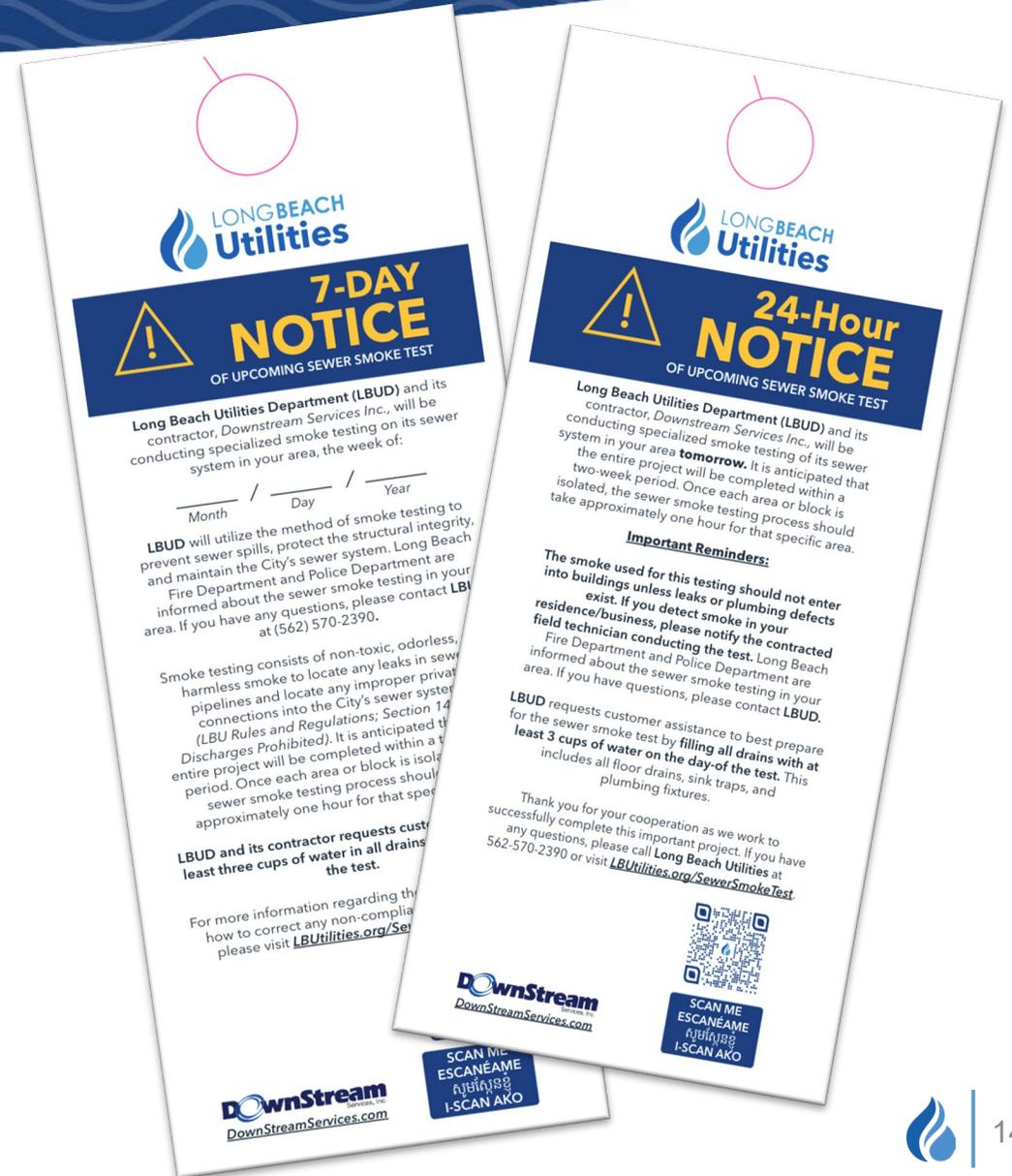
Scope

Addresses = 1,985
Linear Feet = 45,386
Segments = 289
Manholes = 300

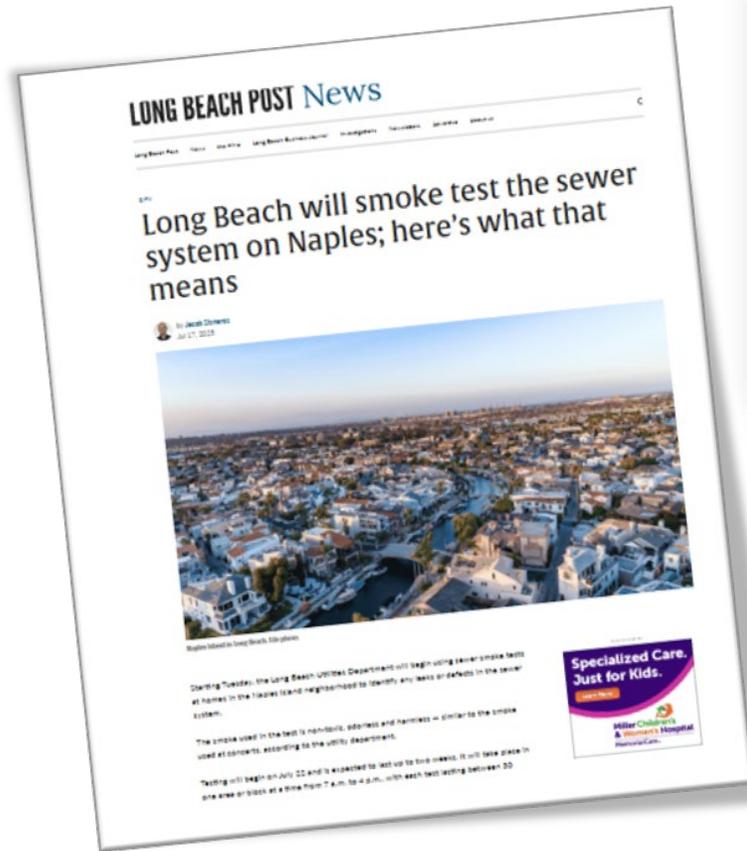


Community Outreach

- Prior to sewer smoke testing, residents and businesses will receive:
 - 21-Day Mailer
 - 7-day doorhanger
 - 24-hour doorhanger
- Community meeting and Town Hall
- Announcements in community newsletters (Naples Improvement Association and Council District)
- Website:
LBUtilities.org/SewerSmokeTest



Community Outreach



- Frequent communication with LB Fire and LB Police while planning and daily during project
- Message Boards
- Hand-delivered postcards to surrounding areas
- Press Release, news articles
- Social Media

Project Results

Summary of Results

Majority of the system showed no visible defects or inflow/infiltration (I/I) issues

24 total instances of smoke observed

- 16 Private issues
 - Clean out Cap: 10
 - No inflow: 4
 - Inflow: 2
- 8 issues on City-side requiring further investigation
 - Potential breaks: 7
 - No inflow: 1

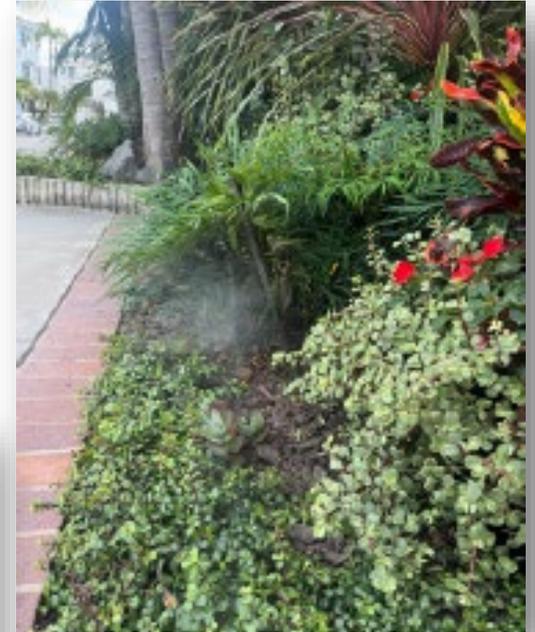
Significant difference in smoke appearance at different manhole types

Project Results

Private Property Examples



Appearance on property

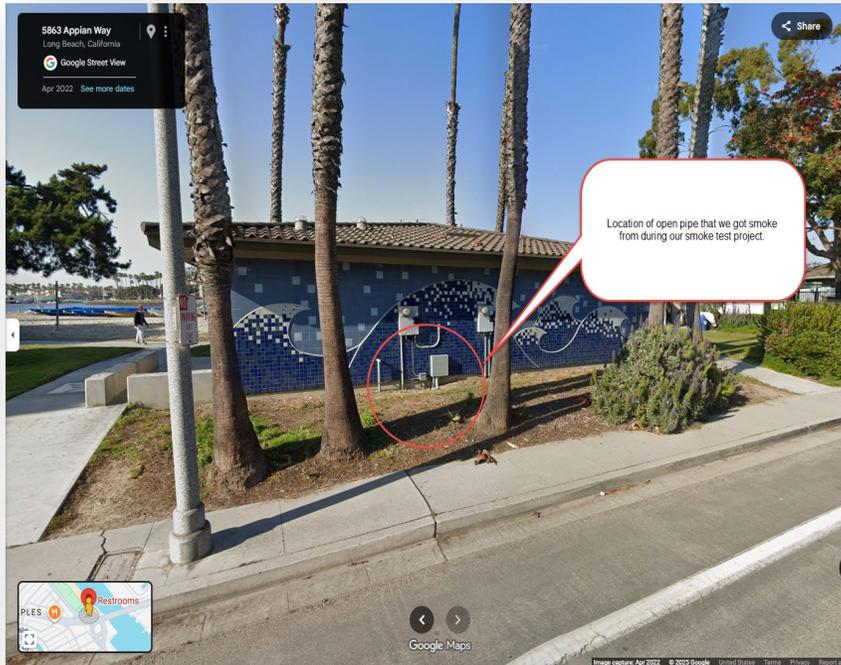


Missing or defective cleanout caps



Project Results

City Sources



City-Owned Bathroom Stub-Out

Uncapped stub from a city-owned facility identified. (Abandoned)

Utility Vault Check Valve

One-way valve functioning correctly, no groundwater or I/I impact

Project Results

City Sources
Further investigation needed to find cause

➤ 7 Repairs needed



Water Meter Box

- Indicating potential breaks in nearby sewer laterals



Hole in Ground

- Visible void
- Reported by residents



Hole in Ground

- No visible sinkhole or depression
- No reports

Project Results

Smoke Appearance at Manhole Lids



Standard Lids

Significant smoke through pick holes and ring



Cork and Seal

Slightly less vs. standard, but still significant



Composite

No observable smoke
No inflow!

Smoke Testing: Follow Up Actions

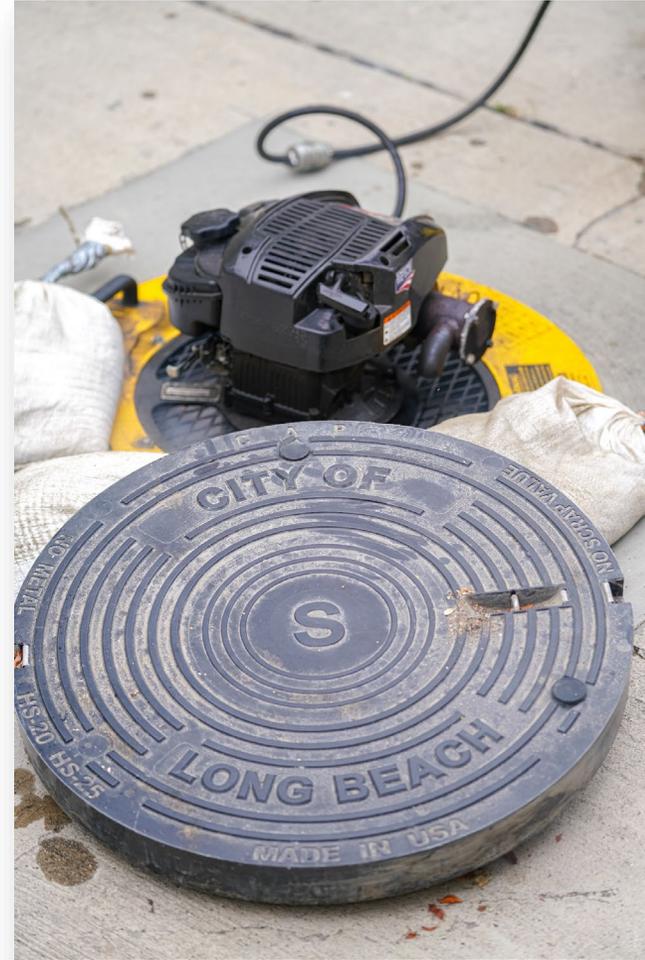
- Notified property owners of private issues
- Completed 7 sewer repairs discovered as a result of smoke testing
- Installing 50 Composite Lids this year in areas prone to inflow
- Sharing results with regional partners

Systemic Infrastructure Changes

Overall system is largely intact and functioning well



**Confirmation of Proper Connections*



Stormwater inflow primarily through pick holes in manhole lids, even those that have been corked and sealed

- **Composite sewer manhole lids are highly effective at preventing inflow**



LONG BEACH
Utilities
Water · Gas · Sewer