



Brevard County Utility Services Department

2026



Introduction

Brevard County Utility Services Department (BCUSD)

- Providing quality potable water, reclaimed water, and wastewater services throughout various areas of Brevard County
- Operates 24/7 to meet Federal/State requirements
- Support County infrastructure and field staff
- Funded by customer fees

Misconceptions about Utility Services' responsibilities

- Not responsible for Utilities outside service area (i.e. City of Titusville, City of Melbourne, etc.) or septic systems.

Overview

- 9 Treatment Plants
 - 6 Wastewater (28 MGD Capacity), 3 Water (3.5 MGD Capacity)
 - 1,143 miles of force main, gravity sewer, potable water mains, & reclaimed water mains
- 328 Public Wastewater Pump (Lift) Stations
- Approximately 67,200 Sewer Customers
- Approximately 9,330 Water Customers

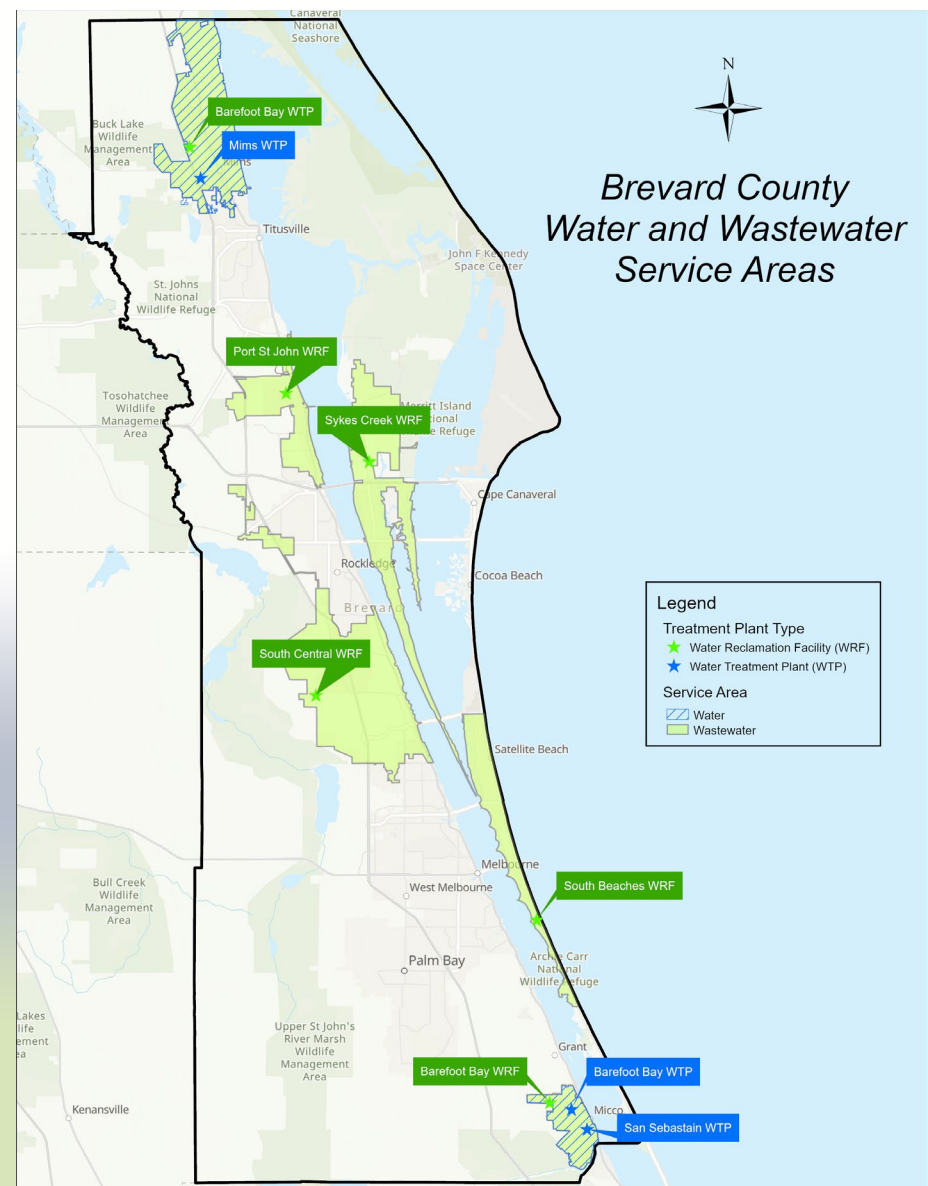


Figure 1 – Brevard County Water and Wastewater Service Areas

Infrastructure: Wastewater Lift Stations



Gravity mains drain to a lift station where the sewage is pumped into a force main.



Figure 4 – Typical BCUSD Lift Station

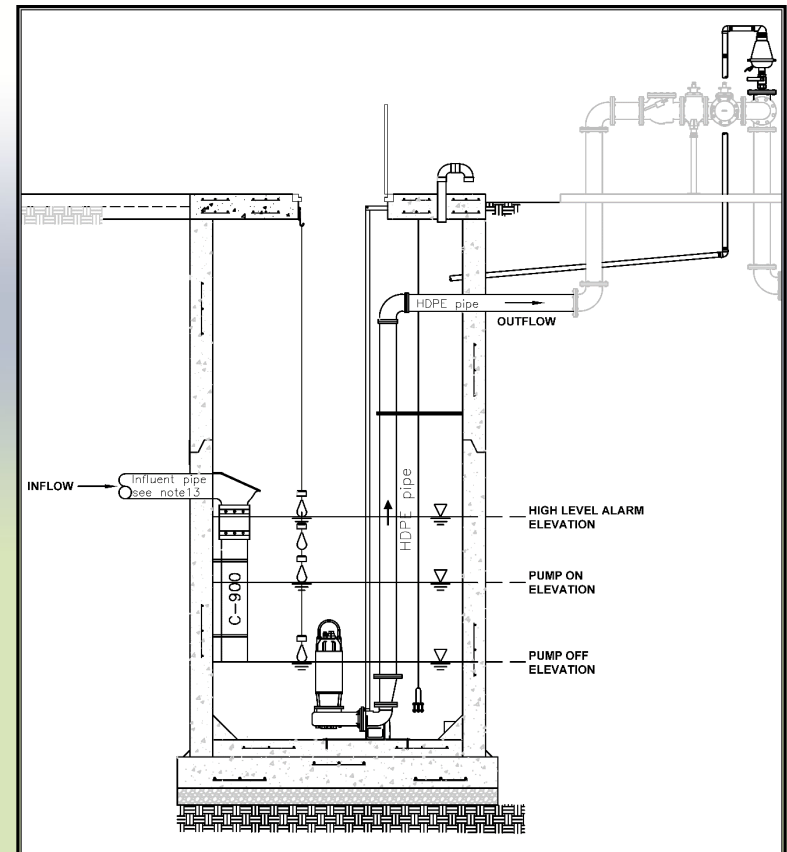


Figure 5 – Typical Lift Station Wet Well Section



Infrastructure: Force Mains

Convey sewage by pressure differential (i.e. force) to a treatment plant or another gravity system.



Figure 6 – Typical Force Main to Gravity Main Transition

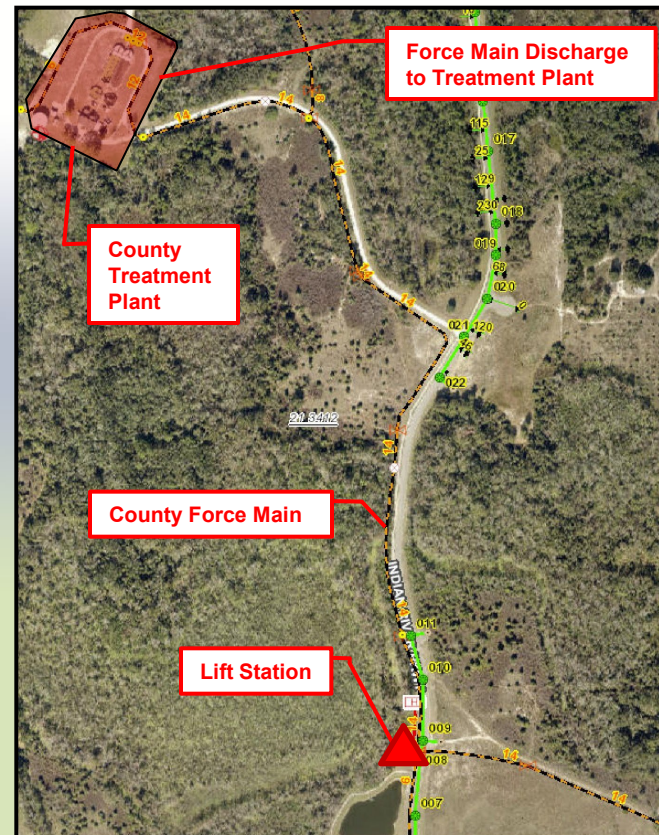


Figure 7 – Typical Force Main Discharge to Treatment Plant

Infrastructure: Reclaimed Water

- Reclaimed Water: Treated wastewater distributed for non potable use, typically irrigation.
- All 6 of Brevard County's wastewater facilities produce reclaimed water.
 - Injection wells and a man made wetland system used for disposal when the WWTP effluent discharge rate exceeds reclaimed water demand.



Figure 8 – Typical Reclaimed Water Service Area

Infrastructure: Wastewater Treatment Plant Processes



The series of physical, chemical and biological processes to treat wastewater

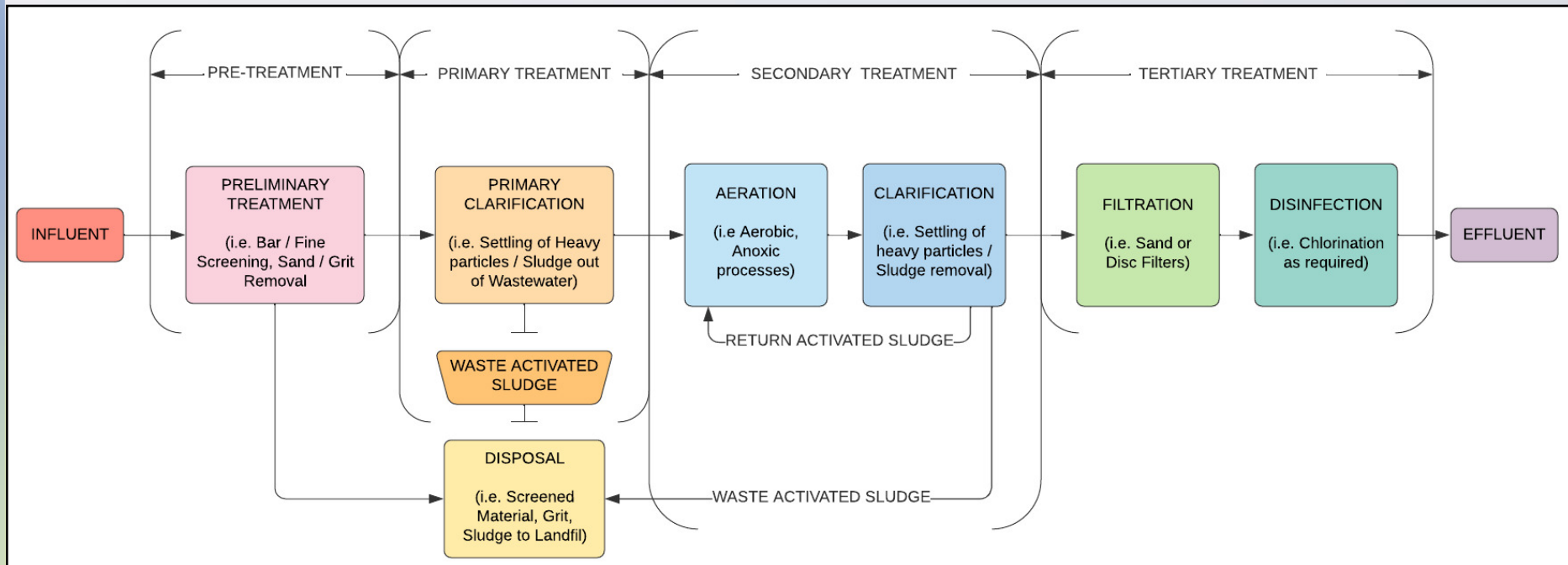


Figure 9 – Typical Wastewater Treatment Plant Flow Process Schematic

Infrastructure: Wastewater Treatment Plant Processes



Figure 10 – Typical Wastewater Treatment Plant

Infrastructure: Water Treatment Plant Processes



A series of physical, chemical and biological processes to treat water.

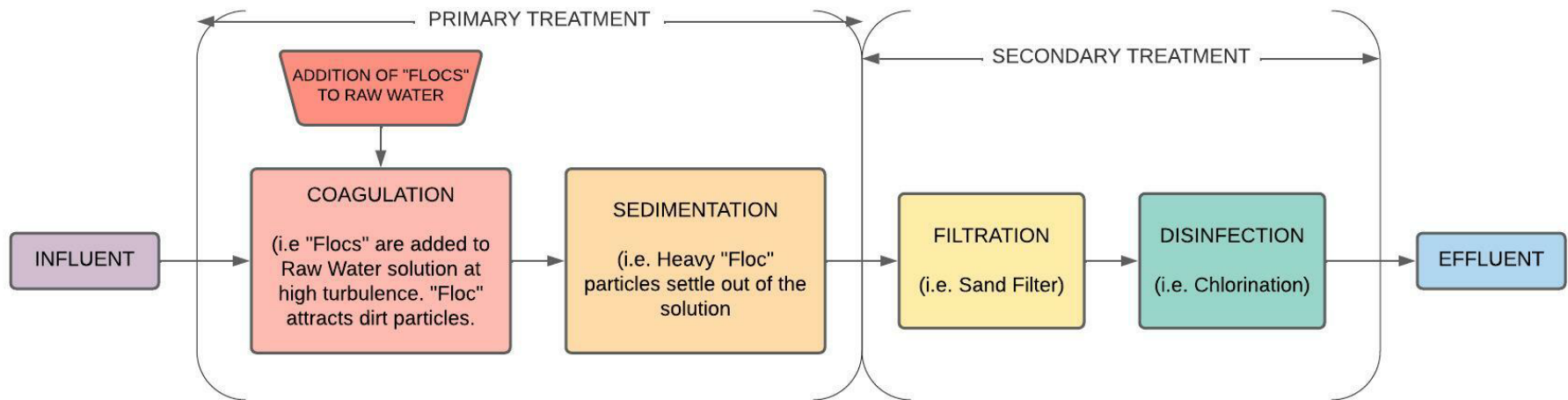


Figure 11 – Water Treatment Plant Flow Process Schematic

- All water quality meets the standards established by the Florida Department of Environmental Protection Agency.

Infrastructure: Water Treatment Plant Processes



Figure 12 – Typical Water Treatment Plant

Financial Structure / Fees



The water and sewer utility is operated as an Enterprise Fund. All cost and expenses are funded through fees for service.

No tax dollars are used to support the utilities operation. We collect two types of fees:

- **Connection Fees**
 - For new construction
 - To construct the major facilities such as treatment plants and regional transmissions facilities.
- **Service Fees**
 - For water and wastewater service areas
 - Used for day-to-day operation & maintenance

Operations & Maintenance



- Continuous Operation
- Routine Utility Maintenance
 - Valves
 - Lift Stations
 - Treatment Plants
- Emergency Operations
 - Sewer Line Breaks
 - Sewer Overflows
 - Hurricanes & Heavy Storm Occurrences



Figure 13 - Utility Services staff working

Goals of the Department



- Safety
- Environmental Compliance
- Level of Services
- Customer Service



Figure 14 - Team working together to meet goal

Safety



- Public safety
 - Provide continuous necessary service to public
 - Keep the public informed on projects

- County Staff safety
 - Provide safe work environment meeting current safety standards and requirements
 - Train staff
 - Require staff to wear necessary personal protective equipment



Figure 15 - Personal Protective Equipment

Environmental Compliance: Reduction of Sanitary Sewer Overflows



1. Assess all assets
2. Improve resiliency of existing infrastructure
 - Sewer lining
 - Smoke testing
 - Manhole lining
 - Valve exercising
 - Lift station rehabilitation
3. Capital Improvement Projects
 - South Patrick Drive Force Main – Phase 3
 - South Beaches 2nd Deep Injection Well

Environmental Compliance: Reduction of Sanitary Sewer Overflows



Inflow vs. Infiltration due in part to Aging Infrastructure



Figure 16 - Groundwater infiltration in sewer pipe



Figure 17 - Inflow vs. Infiltration

Environmental Compliance: Reduction of Sanitary Sewer Overflows

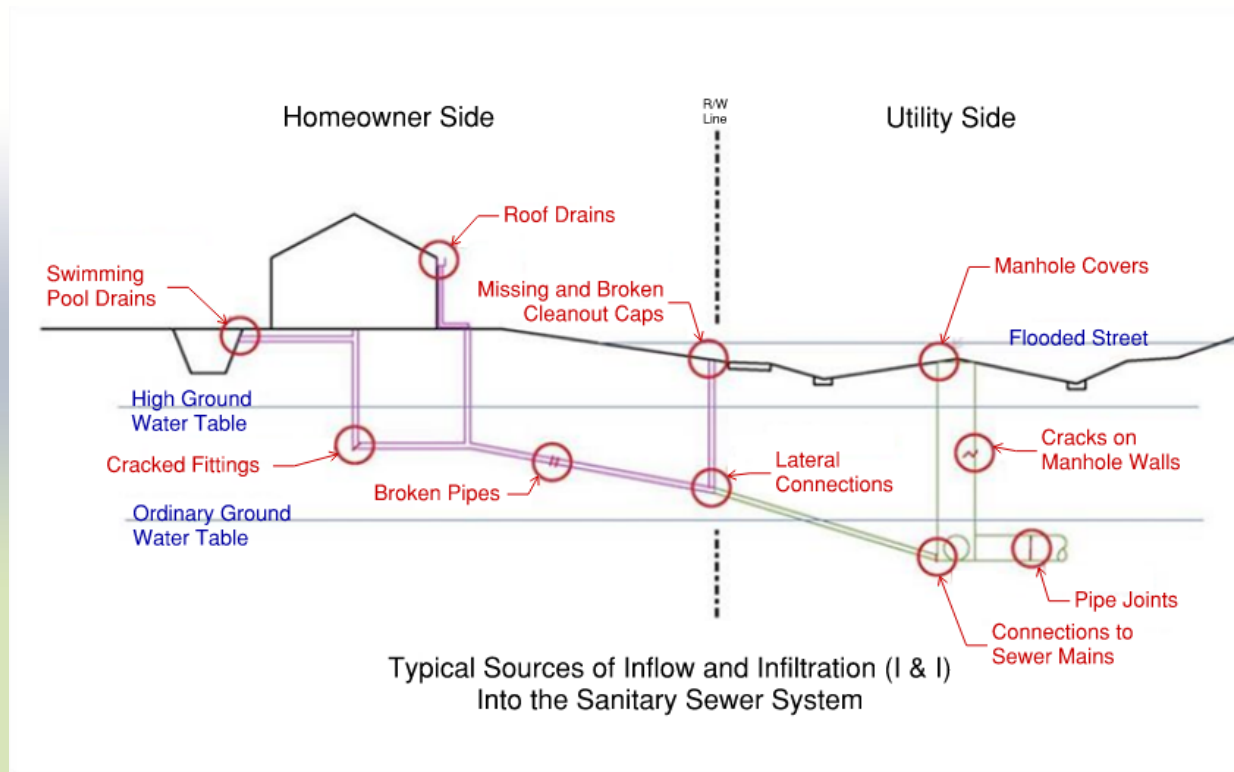


Figure 17 - Groundwater infiltration in sewer pipe

Environmental Compliance: Sewer Lining



- Provides extra protection for sewer pipes to prevent stormwater intrusion
 - Example: Cured-In-Place Pipe (CIPP) allows for trenchless sewer lining
- 419,964 LF (75 miles) of sewer main has been lined since 2017
 - North Brevard – 37,533 ft (7.1 miles)
 - Port St. John- 12,111 ft (2.3 miles)
 - Sykes Creek – 75,391 ft (14.3 miles)
 - South Central– 28,496 ft (5.4 miles)
 - South Beaches – 241,080 ft (40.5 miles)
 - Barefoot Bay – 25,353 ft (4.9 miles)

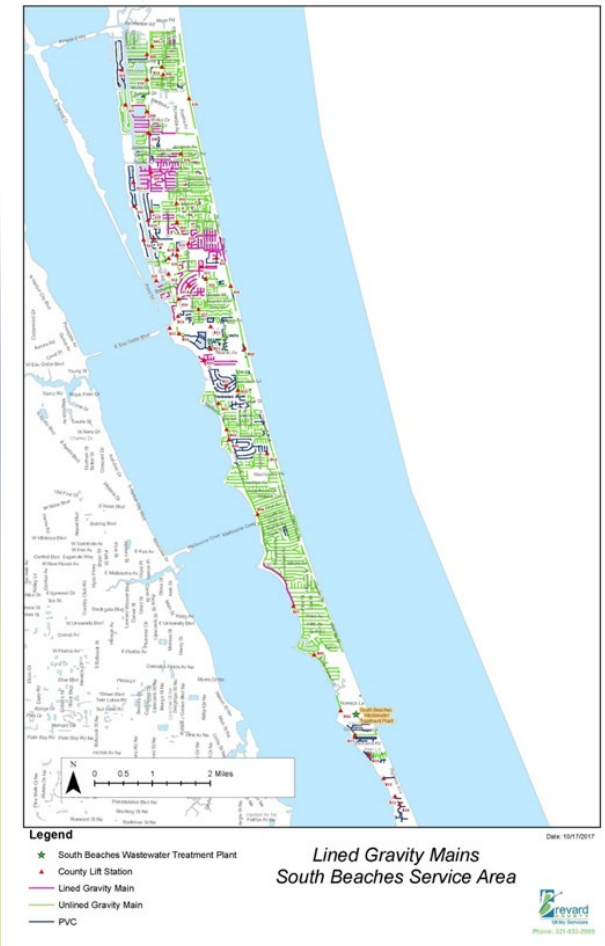


Figure 19 - Sewer Lining

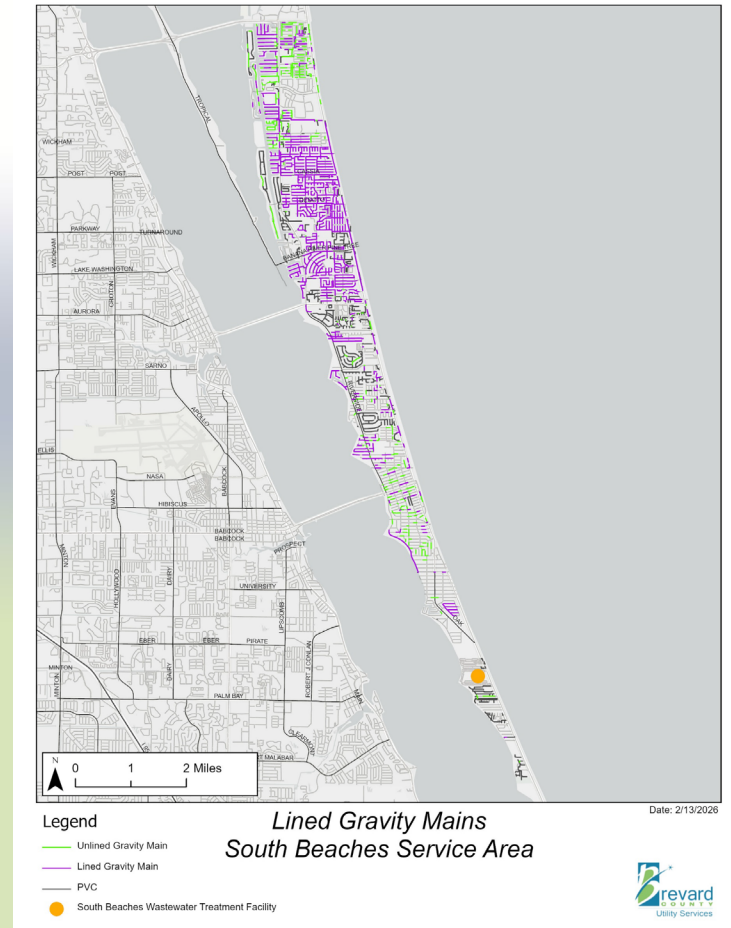
Environmental Compliance: Sewer Lining



- South Beach Service Area Progress:



South Beaches Sewer Lining 2017

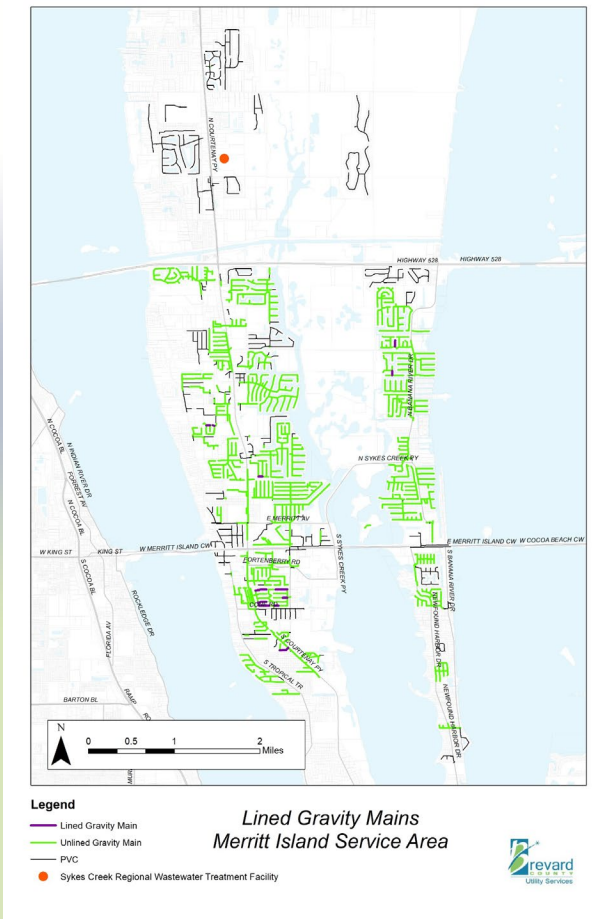


South Beaches Sewer Lining 2026

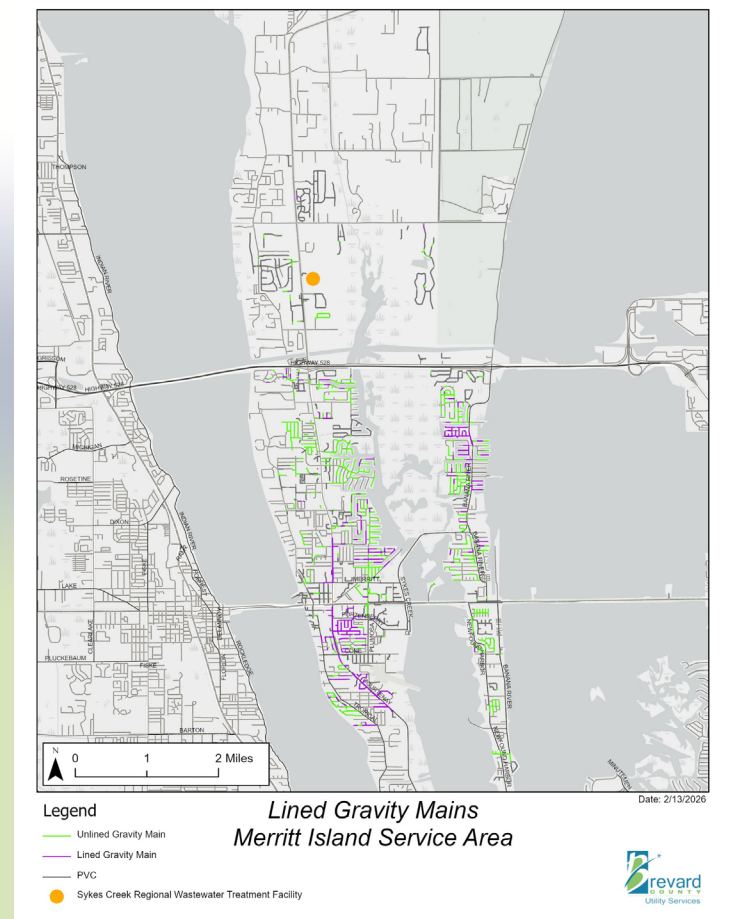
Environmental Compliance: Sewer Lining



- Sykes Creek Service Area Progress:



Sykes Creek Sewer Lining 2017



Sykes Creek Sewer Lining 2026

Environmental Compliance: Smoke Testing



- Smoke testing is done to check where there are leaks or breaks in the system

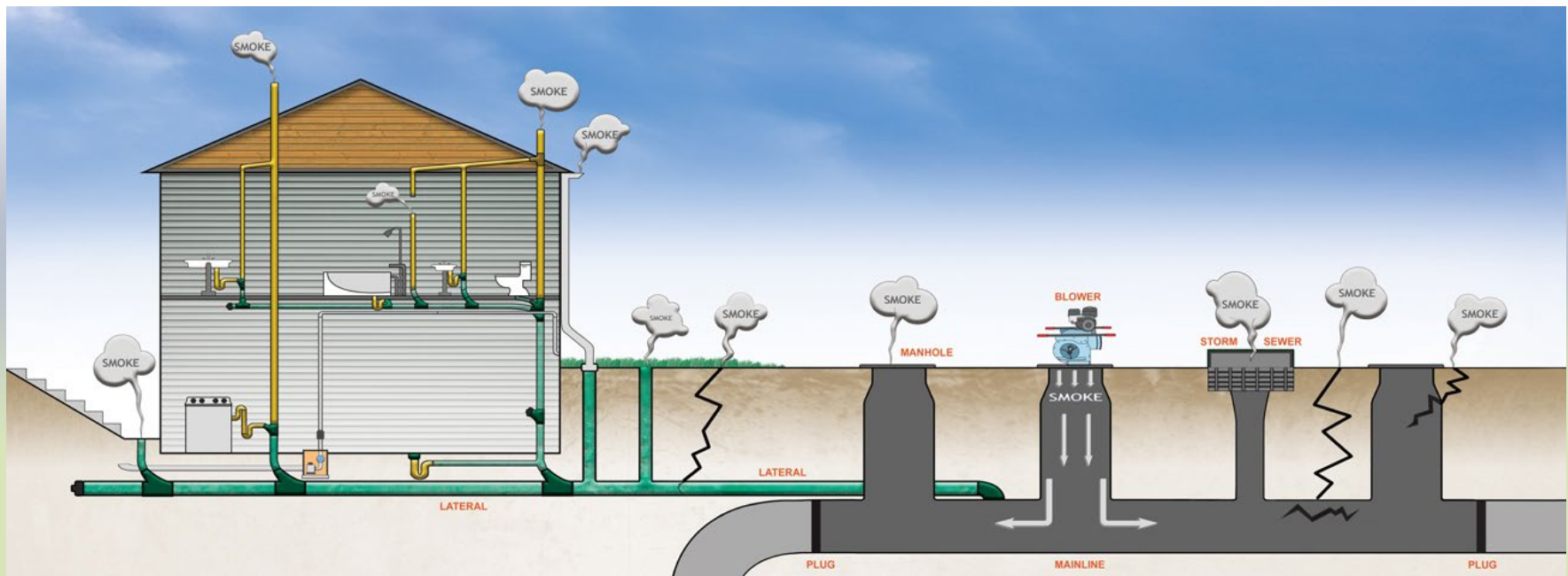


Figure 20 - Smoke Testing Diagram

Environmental Compliance: Smoke Testing



- Linear Feet of Smoke Testing Since 2017 per service area
 - Sykes Creek: County – 579,642 ft, Private – 50,497 ft
 - South Beaches: County – 904,039 ft, Private – 89,859 ft
 - Barefoot Bay: County – 199,240 ft, Private – 836 ft
 - North Brevard: County – 94,556 ft, Private – 7,518 ft
 - Port St. John: County – 57,013 ft, Private – 1,357 ft

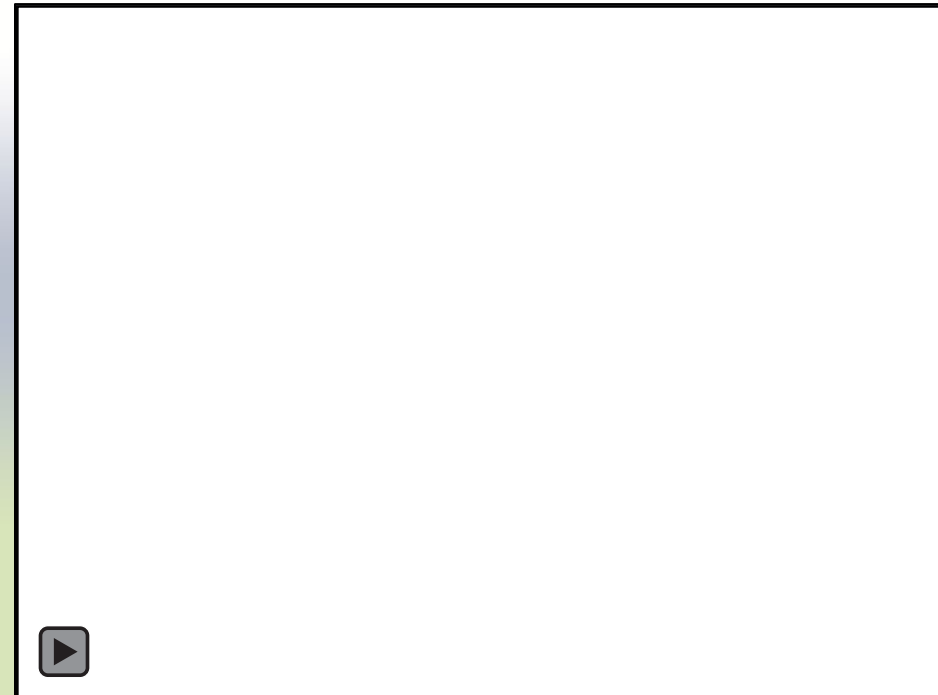


Figure 21 - Smoke Testing

Environmental Compliance: Manhole Lining



- Over time, concrete manholes corrode leading to stormwater intrusion
- Manhole lining adds a layer of protection to keep stormwater out of the sanitary sewer system
- 796 Manholes have been rehabbed since 2017
 - North Brevard : 79
 - Port St. John : 68
 - Sykes Creek : 114
 - South Central : 88
 - South Beaches : 287
 - Barefoot Bay : 48



Figure 22 - Manhole Intrusion

Environmental Compliance: Valve Exercising



- Valves are exercised regularly to prevent any buildup and confirm valves are working properly.



Figure 23 - Valve Exercising Example

Environmental Compliance: Lift Station Rehabilitations



Pre-Rehab



Post-Rehab

Figure 24 - Lift Station S-08 Rehab in South Beaches Service Area

Environmental Compliance: Septic to Sewer Projects



- Septic systems can be a major contributor of nutrients, bacteria, and viruses to the environment.
 - In poor soils close to open water
 - Leaky tanks and failing drain fields
- The Save Our Indian River Lagoon (SOIRL) Program funds septic to sewer conversion projects in Brevard County.
- SOIRL projects by the Brevard County Utility Services Department:
 - 12 in design
 - 5 in construction
 - 3 completed

Environmental Compliance: Septic to Sewer Projects



Figure 25

Micco Sewer Line Extension (Phase I & II)

- 18 Total Connections
- Est. total nitrogen (TN) Reduction: 1,493 lbs./year
- 100% of Construction Completed

South Central Zone C

- 147 Total Connections
- Est. total nitrogen (TN) Reduction: 5,146 lbs./year
- 100% of Construction Completed



Figure 26

Environmental Compliance: New Laws



- 2021 – Florida passed F.S. 403.064 & 403.086
 - F.S. 403.064 – Reuse of Reclaim Water

“...wastewater treatment plants permitted and operated under an approved reuse program by the Florida Department of Environmental Protection, the reclaim water shall be considered environmentally acceptable and not a threat to public health and safety.”
 - F.S. 403.086 – Sewage Disposal Facilities

“...sewage disposal facilities may not dispose of any wastes into the ... Indian River Lagoon, or into any river, stream, channel, canal ... or other water tributary thereto, without providing advanced wastewater treatment...”

Environmental Compliance: What We Need to Do to Comply With Florida Law?



- F.S. 403.064 requires us to:
 - Replace the Barefoot Bay WWTP with an AWT WWTP
 - Install a 2nd deep injection well at South Beaches WWTP
- F.S. 403.086 requires us to:
 - Eliminate discharge
 - Assess and repair wastewater collection system
 - Convert 2 MGD & 6 MGD at South Beaches WWTP to AWT
 - Biological improvements at Ritch Grissom Memorial Wetlands
 - South Central AWT improvements

Level of Service: Provide Capacity for Future Growth



- 2045 Brevard County Population Projection
 - Identified the following areas, within Utility Services service area, as population growth:
 - North Brevard
 - South Brevard
- Service areas increase in the Water Supply Plan:
 - North Brevard
 - South Brevard



Example of Growth



Figure 28 - Community of Viera in 2010
Source: Google Earth

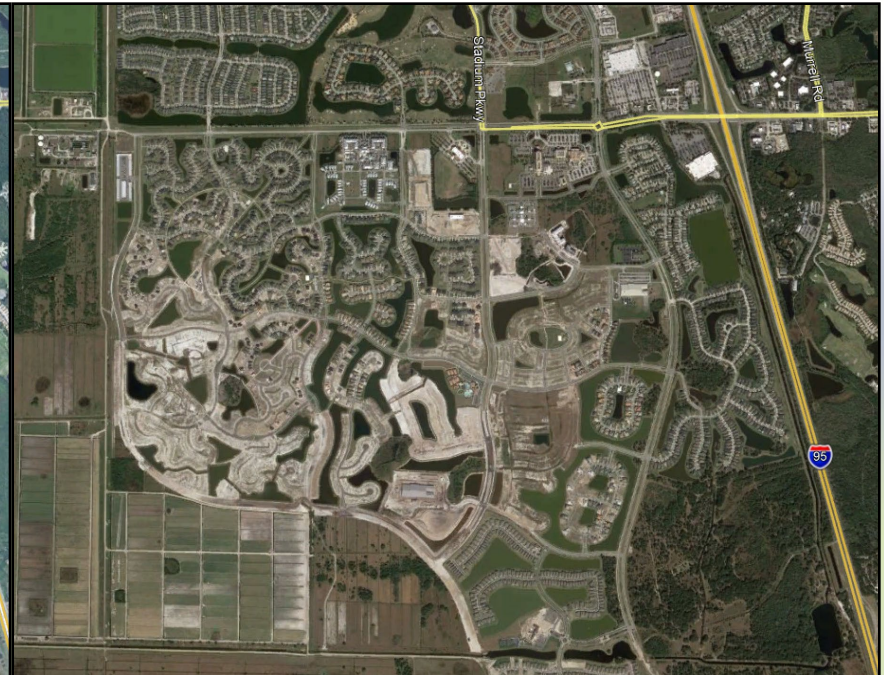


Figure 29 - Community of Viera in 2020
Source: Google Earth

Customer Service: Land Development Projects



- Review plans for new construction
- Inspect new construction
- Assist Developer / Public by answering any questions and providing requested data
- Confirm Information about existing utilities
 - Locates (Soft digs and ground penetrating radar [GPR])



*Figure 30 - Aerial View of Construction
Mid County Middle School, Viera, FL*

Brevard County Utilities



- Questions?

Brevard County Utility Services Department

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