

**Brevard County  
Utility Services Department  
Merritt Island Service Area**

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# 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 (3.4 MGD Capacity)
  - 939 miles of force main, gravity sewer & water mains
- 317 Wastewater Pump (Lift) Stations
- Approximately 204,000 Sewer Customers
- Approximately 19,500 Water Customers

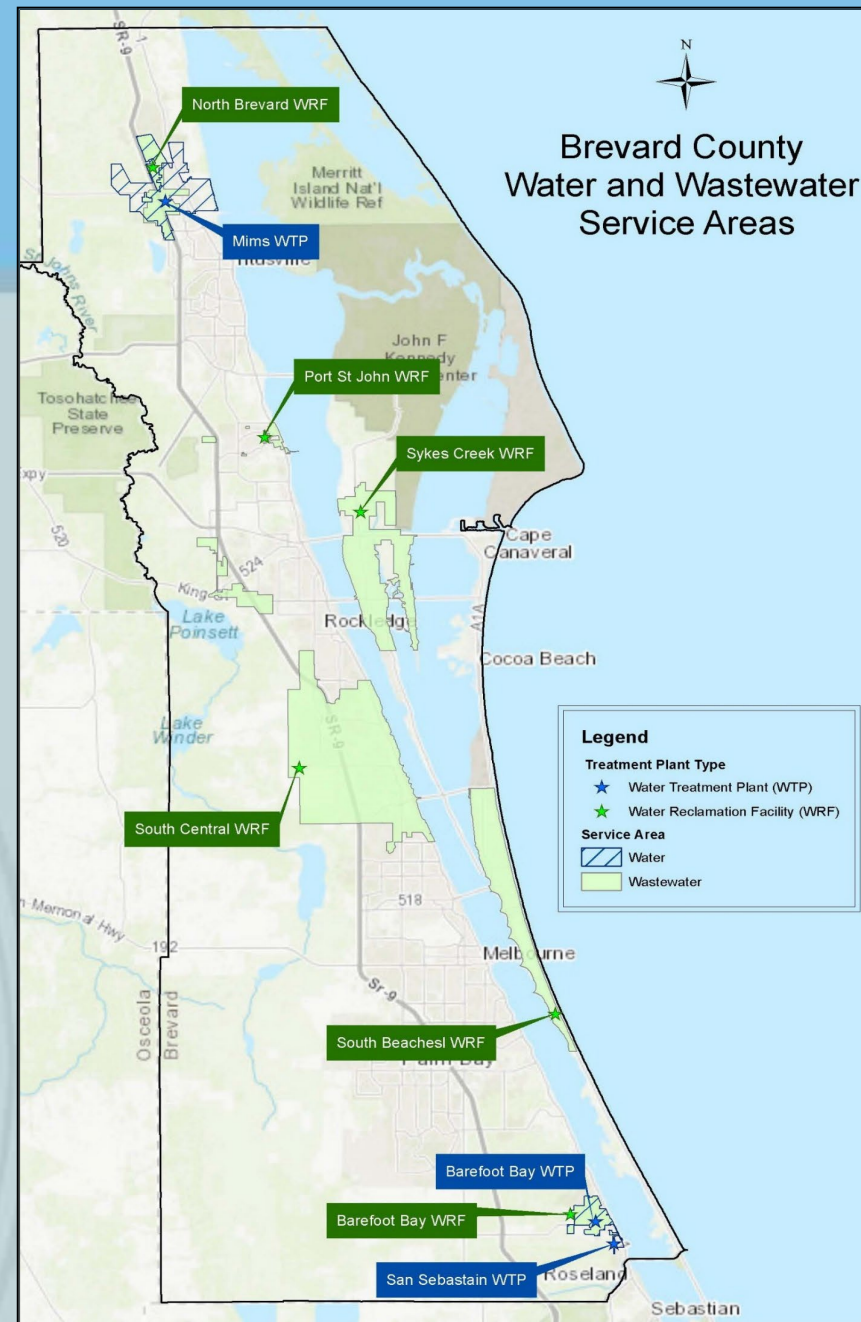


Figure 1 - Brevard County Water and Wastewater Service Areas 3

# Infrastructure: Gravity Sewer

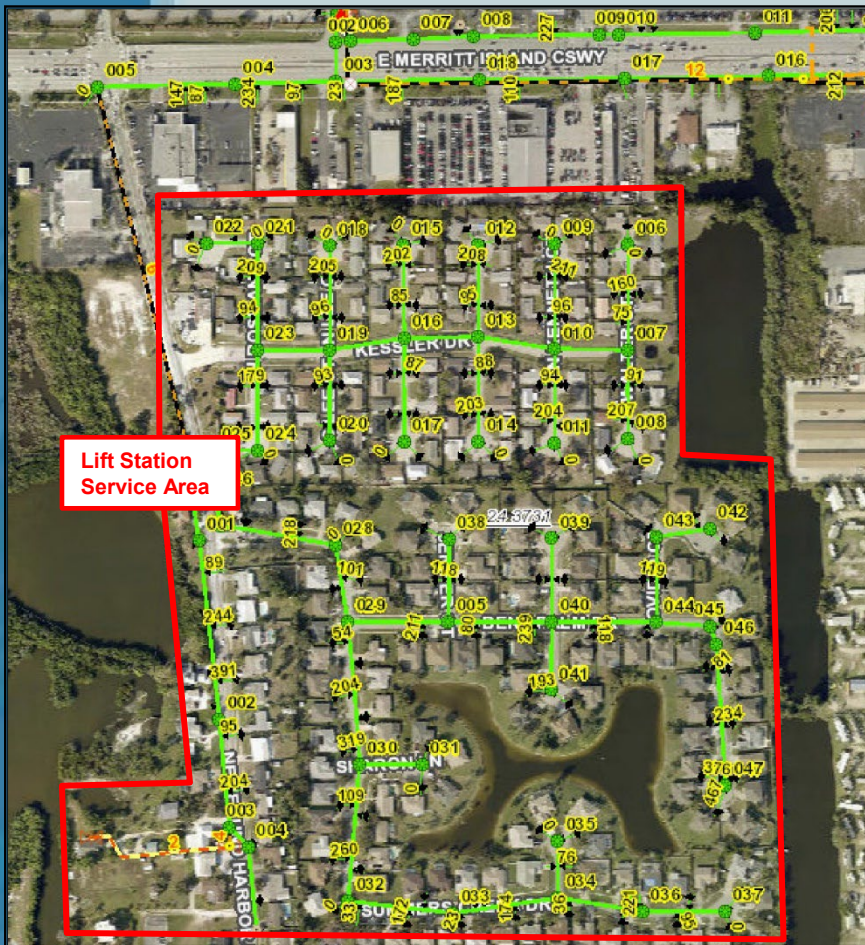


Figure 2 - Typical Lift Station Service Area

Conveyance system for wastewater from homes and businesses which flows by gravity.

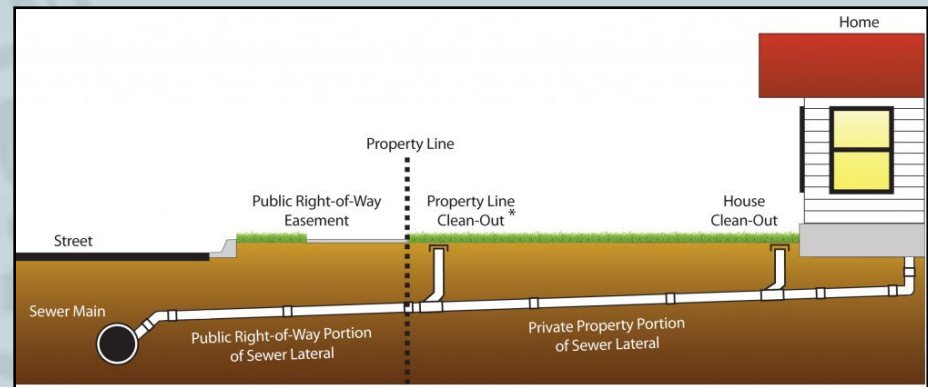


Figure 3 - Typical Sewer Connection  
Source: City of Fort Walton Beach, Florida  
([https://www.beachapedia.org/Sewer\\_Laterals](https://www.beachapedia.org/Sewer_Laterals))

# 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

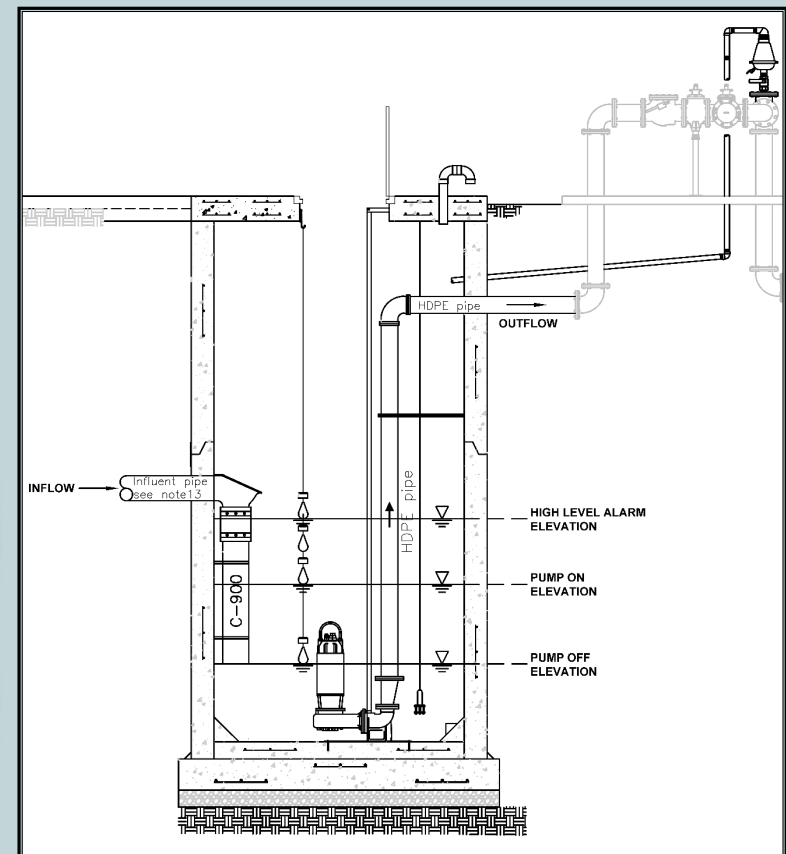


Figure 5 - Typical Lift Station Wet Well Section 5

# Infrastructure: Force Mains

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

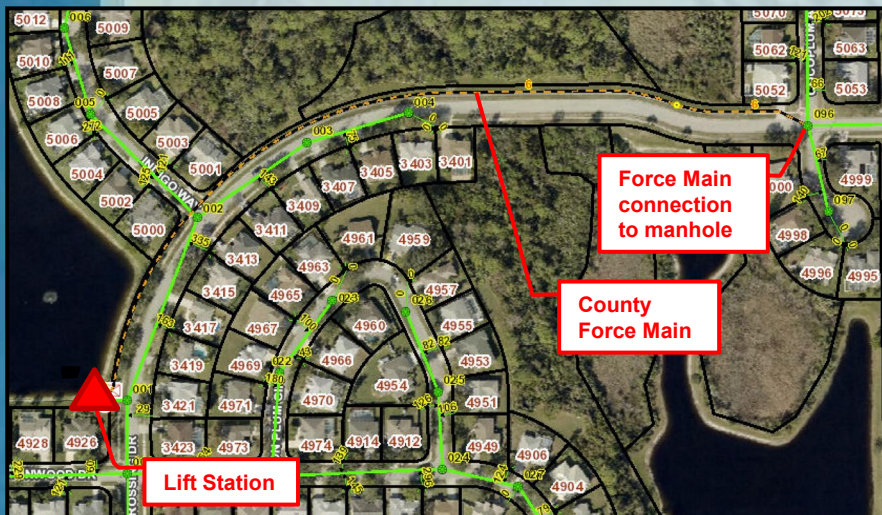


Figure 6 - Typical Force Main to Gravity Main Transition

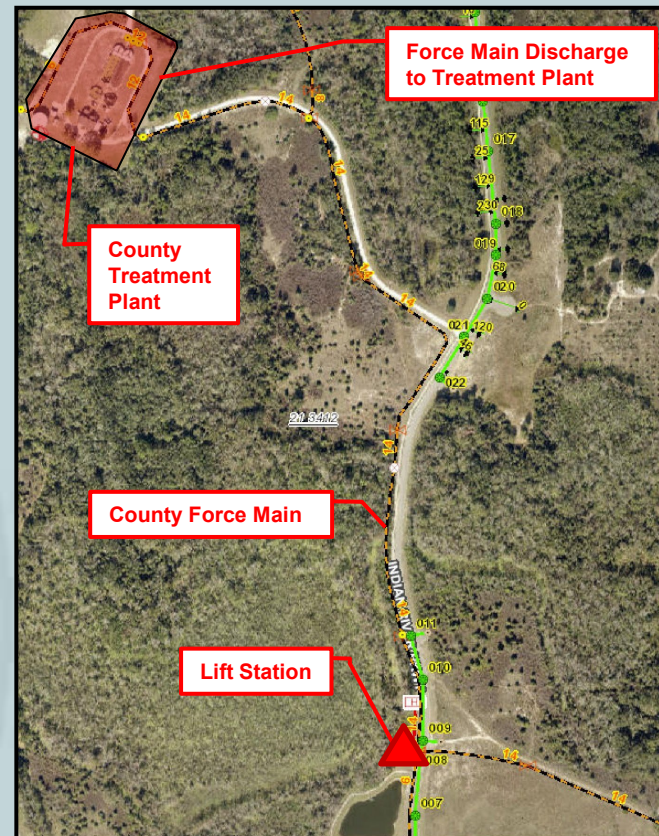


Figure 7 - Typical Force Main Discharge to Treatment Plant

# 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.

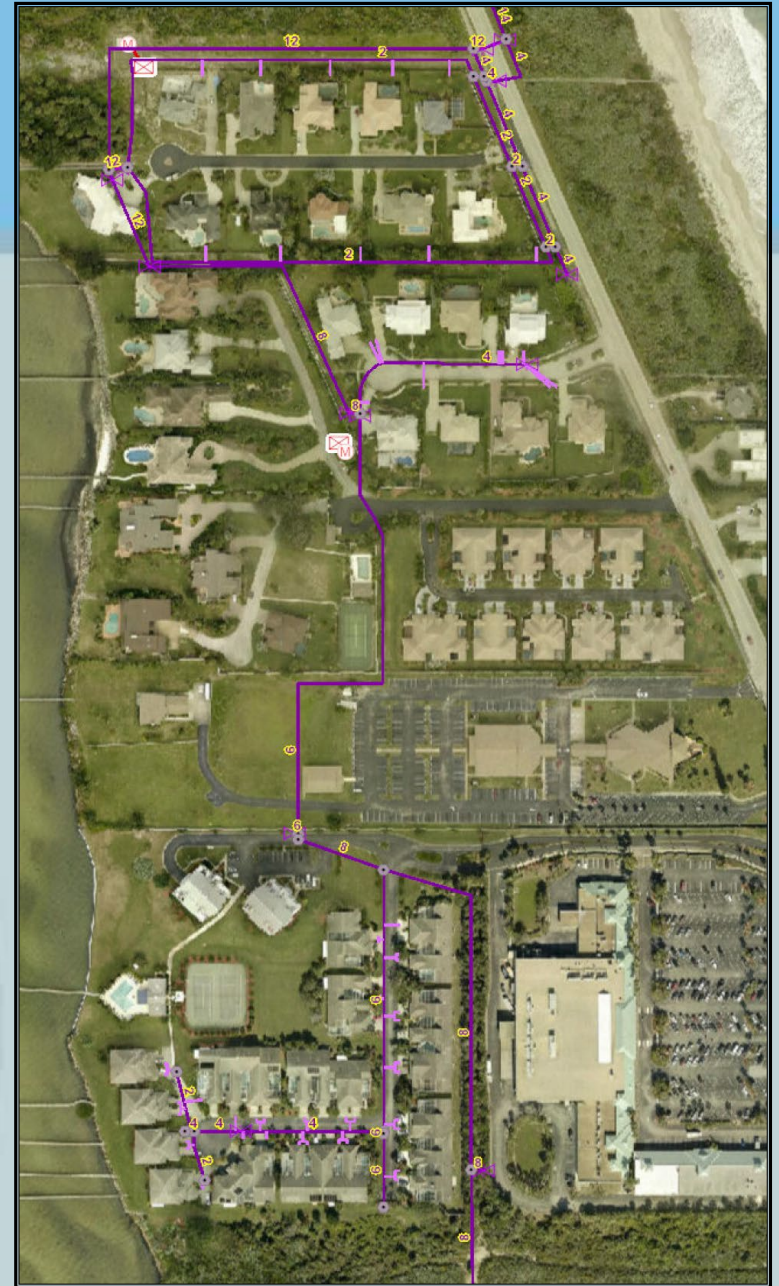


Figure 8 - Typical Reclaimed Water Service Area 7

# Infrastructure: M.I. Wastewater Treatment Plant



*Figure 10 - Typical Wastewater Treatment Plant*



# Infrastructure: Assessments

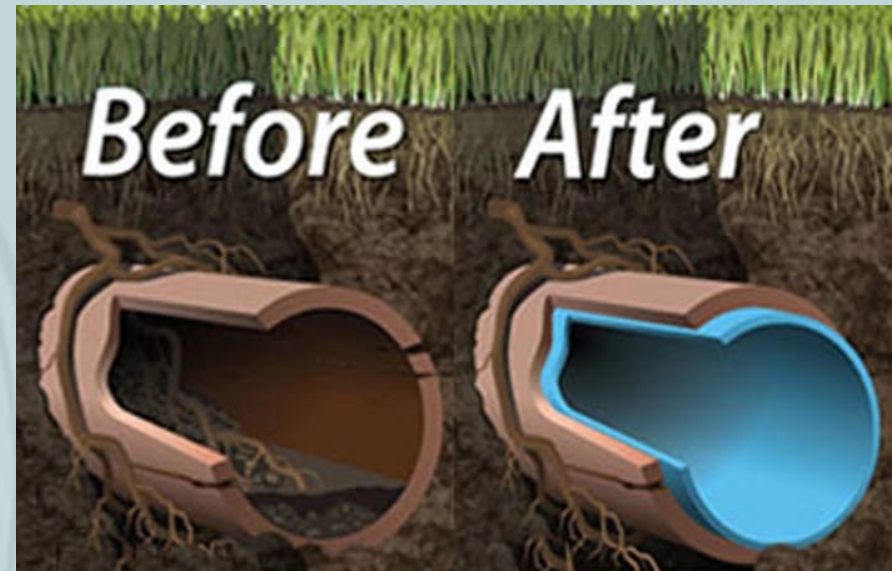
- **Manhole and Gravity Main Assessments Ongoing**
  - Smoke testing, sewer main lining, and manhole lining
- **Lift Station and Force Main Assessments Ongoing**
  - Lift station rehabilitation or replacement, force main replacement
- **Wastewater and Water Treatment Plants Assessed**
  - Sykes Creek WWTP Assessment Completed in 2022
- **Wastewater Treatment Plant and Conveyance System Capacity Assessments Ongoing**
  - 2040 Population Projections Completed in 2020
  - Ongoing Merritt Island Collection System Modeling

# Infrastructure: Assessments

- **Identification of Necessary Projects**
  - **Operations and Maintenance**
    - \$1.5 million Manhole & Sewer Lining
  - **Capitol Improvement**
    - \$40M in Sykes Creek WWTP Rehabilitation/Replacement
    - \$74M in Conveyance Rehabilitation/Replacement
- **Completed Revenue Sufficiency Analysis to Determine Funding Requirements**
- **Rate Adjustments were Initiated**

# Rehabilitation: Sewer Lining

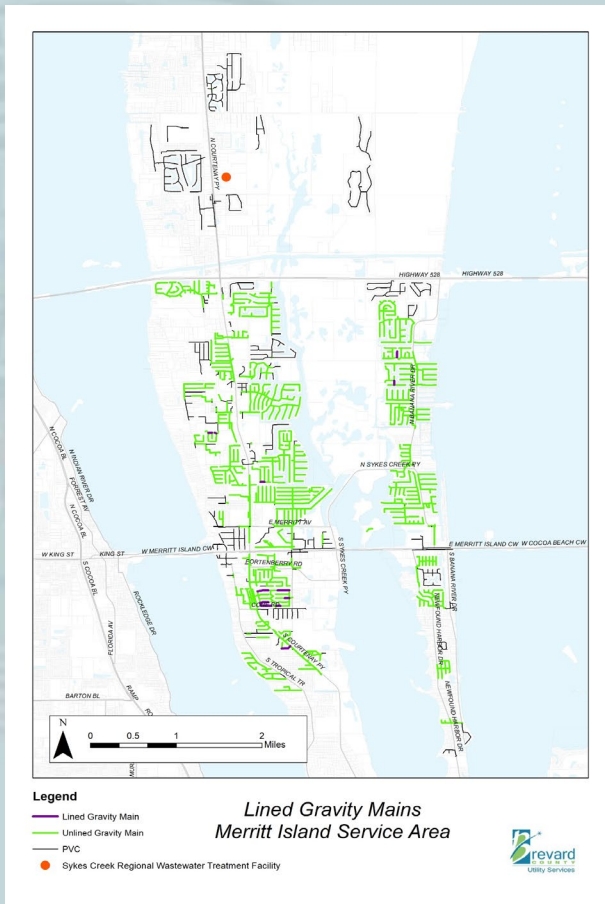
- Provides extra protection for sewer pipes to prevent stormwater intrusion
  - Example: Cured-In-Place Pipe (CIPP) allows for trenchless sewer lining
- 296,772 LF (56.2 miles) of sewer main has been lined since 2017
  - North Brevard – 20,134 ft (3.81 miles)
  - Port St. John- 7,899 ft (1.5 miles)
  - Sykes Creek - 62,373 ft (11.81 miles)
  - South Central– 12,828 ft (2.43 miles)
  - South Beaches – 173,093 ft (32.7 miles)
  - Barefoot Bay – 20,445 ft (3.87 miles)



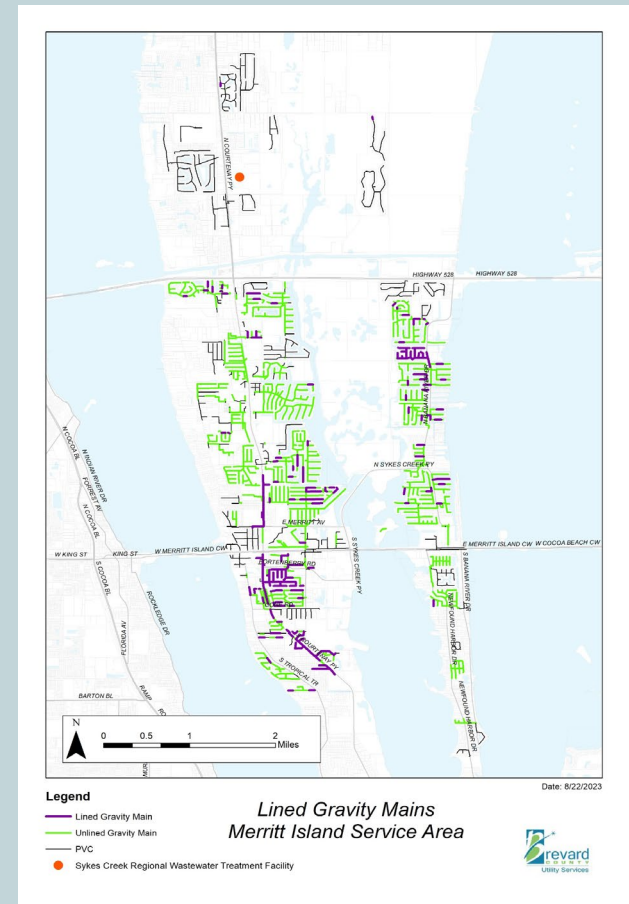
*Figure 19 – Sewer Lining*

# Rehabilitation: Sewer Lining

- Sykes Creek Service Area Progress:



Sykes Creek Sewer Lining 2017



Sykes Creek Sewer Lining 2023

# Rehabilitation: 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
- 110 Manholes have been rehabbed since 2017
  - North Brevard : 18
  - Port St. John : 0
  - Sykes Creek : 53
  - South Central : 14
  - South Beaches : 11
  - Barefoot Bay : 14
- Manholes that require rehab: 2356



Figure 22 – Manhole Intrusion

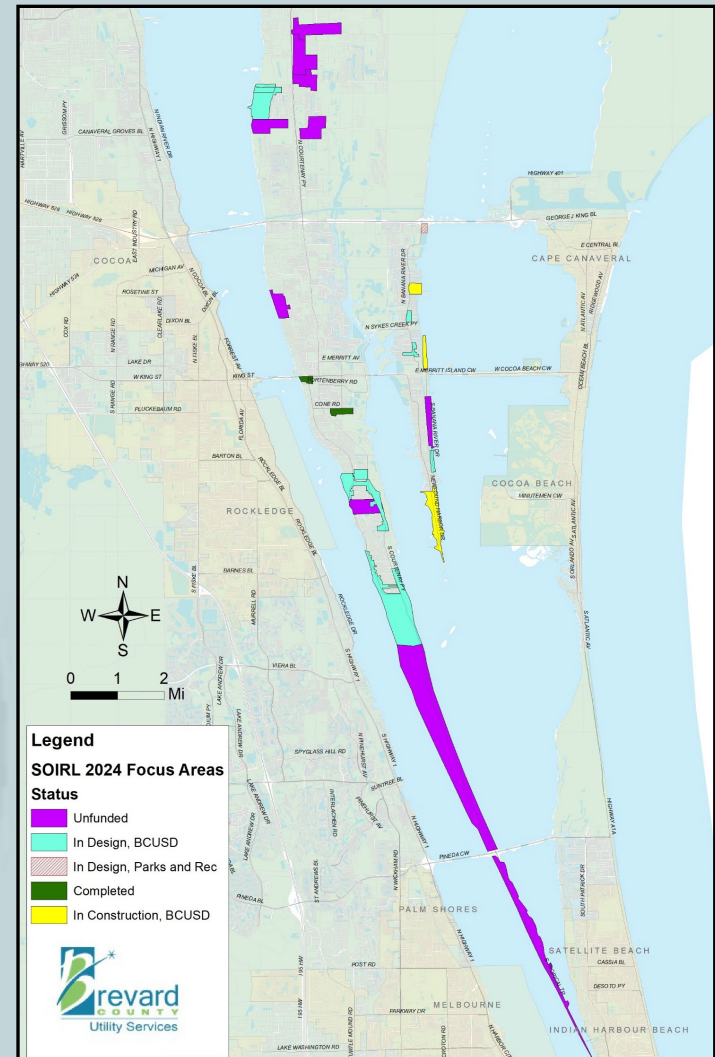
# Save Our Indian River Lagoon: Septic to Sewer Projects

- 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 drainfields
- The Save Our Indian River Lagoon (SOIRL) Program funds septic to sewer conversion projects in Brevard County.



# Save Our Indian River Lagoon: Septic to Sewer Projects

- Septic-to-sewer projects on Merritt Island:
  - 2 completed
  - 3 in construction
  - 7 in design
  - Additional identified



# Do not flush

**AVOID SEWER BACKUPS AND OVERFLOWS BY KEEPING THIS STUFF OUT OF YOUR TOILET**

**Did you know?**  
Cleaning wipes, baby wipes and facial wipes are one of the biggest problems for sewer back-ups in the City of Livermore. That's right- even if the package says "flushable" or "disposable", they should NEVER be flushed. They belong in the trash.

**Items to avoid flushing:**

- Cotton swabs & makeup pads
- Tampons, maxi pads & their applicators/wrappers
- Kitty litter
- Bandages & sticker backs
- Whitening strips & their wrappers
- Diapers
- Prescription and OTC medications
- Hair
- Condoms and their wrappers
- Plastics and food wrappers
- Dental Floss
- Cleaning wipes, baby wipes and facial wipes

**CLOG**

**Flush ONLY toilet paper. Put trash in the trash can.**

Photo: iStockphoto © 2011  
Goldstreet Design Agency, Inc.



# Wipes Clog Pipes!



**Dispose of these items in the TRASH, **NOT** the toilet:**

- **Disinfecting Wipes**
- **Paper Towels**
- **Baby Wipes**
- **Moist Wipes**
- **Mop refills**

# Utility Services Department

- **QUESTIONS**