

M E M O R A N D U M

To: Howard Tipton, Town Manager
From: Isaac Brownman, Public Works Director
Report date: June 11, 2024
Meeting date: June 28, 2024
Subject: Utility Capital Projects Update: Country Club Shores Asbestos Cement Water Main Replacement and Subaqueous Force Main Projects

Recommended Action

None, informational only.

Country Club Shores Asbestos Cement Watermain Replacement Project

Country Club Shores (CCS) subdivision is located at the south end of the island. The potable watermains in this neighborhood are made of asbestos cement pipe, and were constructed in the late 1960s and early 1970s. The water mains have aged beyond their useful life and are very fragile.

The replacement project was conceived years ago, prior to 2017, and the five (5) subdivision phases are broken into four (4) project phases. The CCS Phases 4 and 5 at the northern end of the subdivision were the highest priority areas, so these were designated project phases 1 and 2, respectively. Phases 1 and 2 involve the replacement of 15,000 linear feet of asbestos cement water main with new, 4-inch to 8-inch size PVC water main pipes. For this project, the new piping will need to be placed in the roadways. As part of the project, all services and meter boxes are being replaced as well as replacing and adding fire hydrants. At the conclusion of the project a full mill and resurfacing will be conducted to all the roadways in CCS Phases 4 and 5.

Kimley-Horn and Associates, Inc. conducted the design and permitting, and Spectrum Underground, Inc. is conducting the construction. The construction contract is approximately \$5.5 million. Notice-to-Proceed was issued in October 2023, and it is a 480-day contract. The Town and contractor are about halfway through the contract.

CCS Phases 1, 2, and 3 will be conducted as project Phases 3 and 4. Survey work is complete, and the planned method of construction is called pipe bursting. New pipes are bored into the same location through the old pipe, and services are connected in. This will eliminate impacts on the roadways and is anticipated to reduce costs. Estimated construction cost is between \$3 to \$3.5 million. Funding is proposed in the FY 2025 budget, and the project would be planned to start construction within 2025.

Subaqueous Force Main Project

The Town of Longboat Key operates and maintains the wastewater collection system for the island. The system consists of 47 lift stations pumping effluent to the Town's primary lift station, Lift Station D, on Gulf Bay Road. From Lift Station D, the material is pumped approximately four (4) miles through the Town's force

main to the Manatee County Southwest Water Reclamation Facility (SWWRF) located on 65th Avenue East in Bradenton. The Town's force main is a 20-inch ductile iron pipe installed in 1973 and was put into service in 1975.

The Town has been planning a new, redundant force main pipeline since at least 2015. In January 2020, the Town began preliminary design and permitting to "open cut" Sarasota Bay for the installation of a new pipeline. Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers permits to open cut Sarasota Bay have been acquired since then.

As the Town was progressing with this planning and permitting effort, Manatee County and Town staff discovered a force main leak on the mainland side in Long Bar Pointe in June 2020. With coordination and effort to hire a quality and available contractor, the force main was repaired and placed back into service in about 30 hours.

In February 2021, the Town entered into a consent order with FDEP for the unauthorized sanitary sewer overflow. The consent order included commitments made by the Town to enhance system reliability. All in-kind projects were completed, and all deliverables are up to date. The Town was required to replant the impacted area on Long Bar Pointe property with young, nursery-grown mangroves, but most of them did not survive the initial planting period. The Town is working with FDEP and through our consultants to develop a revised solution to the restoration area on Long Bar Pointe.

Preliminary Design and Permitting progressed, and the Town took advantage of an opportunity to perform a slip-line rehabilitation of a major mainland portion of the force main pipe. Using a total of approximately \$2.05 million in state appropriations granted to the Town, the Town hired Murphy Pipeline Contractors to slip an 18-inch high-density polyethylene pipe inside the existing 20-inch ductile iron force main in increments totaling 6,400 linear feet. That work was completed in May 2023 and now, effectively, a new pipe exists from the Manatee County master meter on 53rd Avenue, where the Town's pipe ownership ends, south to the location of the repair on Long Bar Pointe. The overall project cost was \$2.72 million and included design, permitting, construction, and construction oversight.

As part of the Town's normal course of business, a condition assessment of the existing force main was planned as well. The FDEP consent order also noted this assessment as a requirement. The condition assessment was completed in November 2023 using basic industry screening tools, such as gas pocket and leak detection, corrosion detection, coupon extraction, and dive testing. No major data points of concern were discovered during that time, and the Town is continuing with the subaqueous project.

The Town is now under contract for final design with Carollo Engineers, Inc. The plans will be continued to full construction plans and specifications. The Town has already received FDEP and U.S. Army Corps permits to open cut and install a redundant Subaqueous Force Main under Sarasota Bay. These permits will be updated as part of the final design effort. In accordance with our permits, the Town will have to perform sea grass and mangrove mitigation for the open cut (8-acres and 1-acre, respectively).

With updated cost estimates, Town staff has proposed \$31.4 million in the FY 2025 proposed budget for final design, permitting updates, easement acquisition,

construction, and construction oversight. The intent is to complete final design, obtain necessary easements, construct the new pipeline project, and construct the mitigation areas.

Next Steps

- Proceed with and complete final design and permit updating (approx. 1-year). Select construction manager for the new, major project early in final design process (Fall 2024).
- Obtain necessary easement (temporary and permanent) from Long Bar Pointe and Florida Office of State Lands.
- Target start of construction Fall 2025.

In addition, as the Town proceeds forward into final design:

- Resolve final settlement with Long Bar Pointe regarding leak impacts.
- Resolve restoration area mangrove mitigation alternative.

Staff Recommendation

None, informational only.

Attachments

PowerPoint Presentation

Utility Capital Projects Update:

Country Club Shores AC Water Main Replacement and Subaqueous Force Main Project

Town Commission Special Workshop

June 28, 2024



TOWN OF LONGBOAT KEY

Country Club Shores Asbestos Cement Pipe Replacement

Project Background:

Country Club Shores subdivision is located at south end of the island.

The potable water mains in this neighborhood are made of asbestos cement pipe, constructed in the late 1960's and early 1970s.

The water mains have aged beyond their useful life and are very fragile.

Project Phases 1 and 2:

- Replace 15,000 LF with new PVC, 4" to 8", and place in roadways
- Replace services and meter boxes
- Replace and add fire hydrants
- Full mill and asphalt overlay





TOWN OF LONGBOAT KEY

Country Club Shores Asbestos Cement Pipe Replacement

Project Phases 1 and 2:

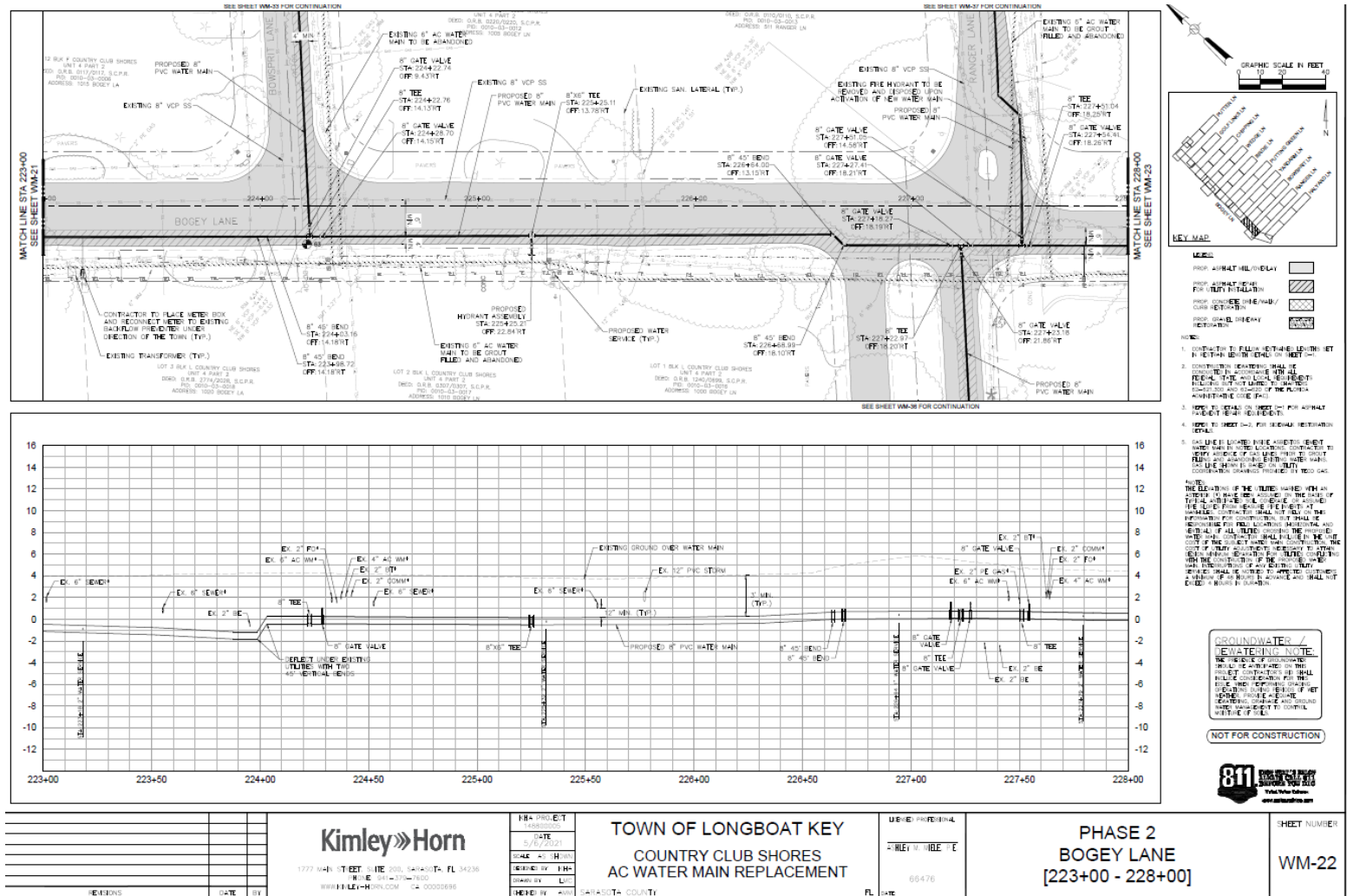
Town hired KHA for design and permitting: Complete

Bids Received: May 2023

Contractor:

Spectrum Underground, Inc.
\$5.5 million

- Notice-to-Proceed Oct. 2023
- 480-day contract.
- Approx. halfway through contract.

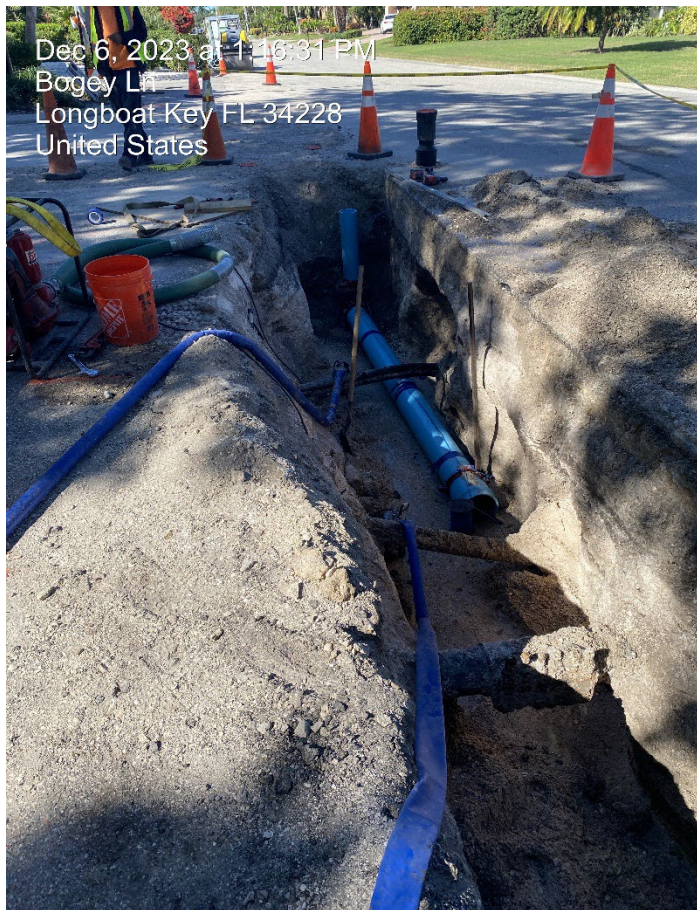




TOWN OF LONGBOAT KEY

Country Club Shores Asbestos Cement Pipe Replacement

Project Phases 1 and 2:





TOWN OF LONGBOAT KEY

Country Club Shores Asbestos Cement Pipe Replacement

Project Phases 3 and 4:

Survey work Complete

Scope of Work:

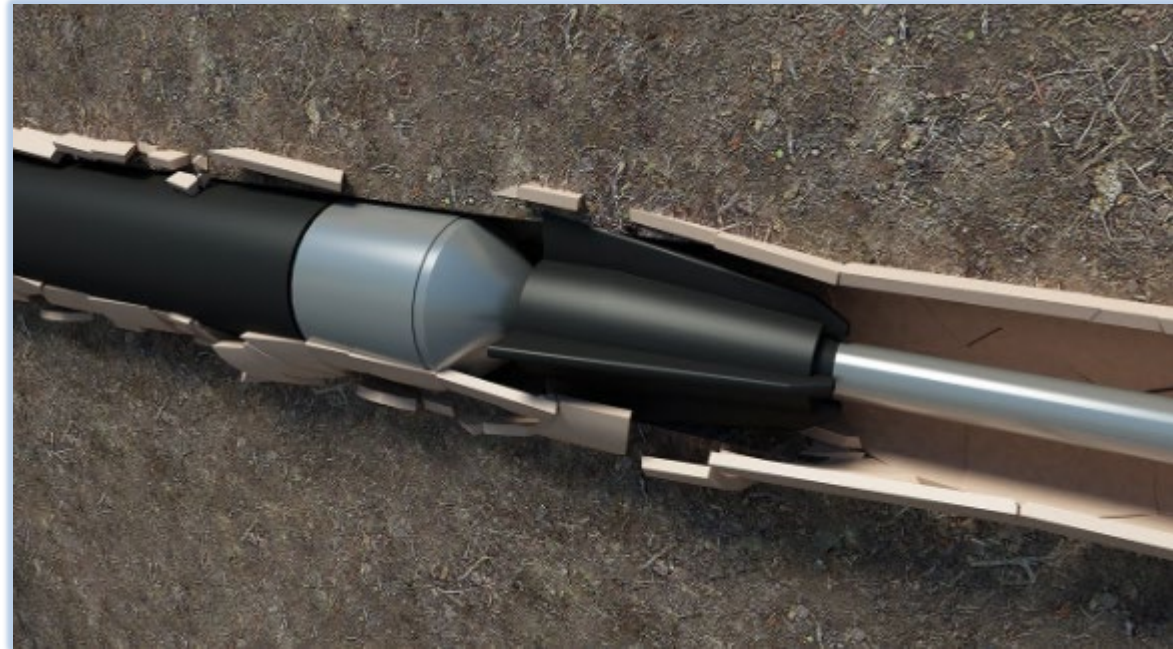
- Area conducive to a trenchless technology called "Pipe Bursting."
- New pipes bored into same location as existing and services tied in.
- Burst the existing pipe and leave in place (permitted activity)
- Cost savings and minimize disruption and inconvenience.

Advertise for Bids:

After Budget Adoption October 1, 2024

Estimated Construction Cost:

\$3 - \$3.5 million



Example: Trenchless Solutions. [pipe bursting \(how it works\) \(youtube.com\)](https://www.youtube.com/watch?v=...)



TOWN OF LONGBOAT KEY

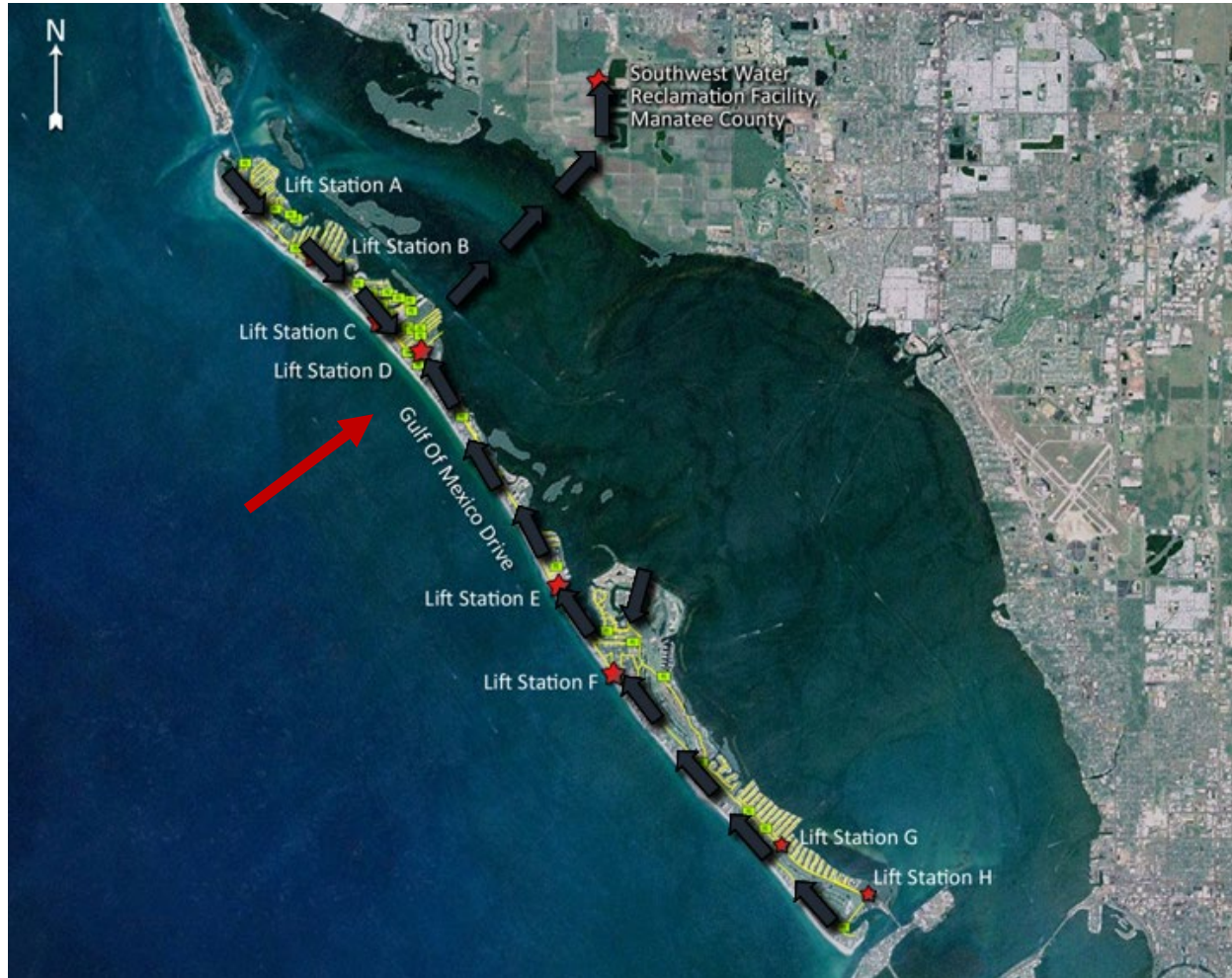
Town of Longboat Key

"Premier Community, Exceptional Service"

Subaqueous Force Main Project

Town Wastewater System Overview

TOWN OF LONGBOAT KEY



47 Lift Stations island-wide to move effluent to Primary Lift Station “D” on Gulf Bay Road

Town effluent pumped from Lift Station D through a four (4) mile route to Manatee County Southwest Water Reclamation Facility on 65th Avenue East

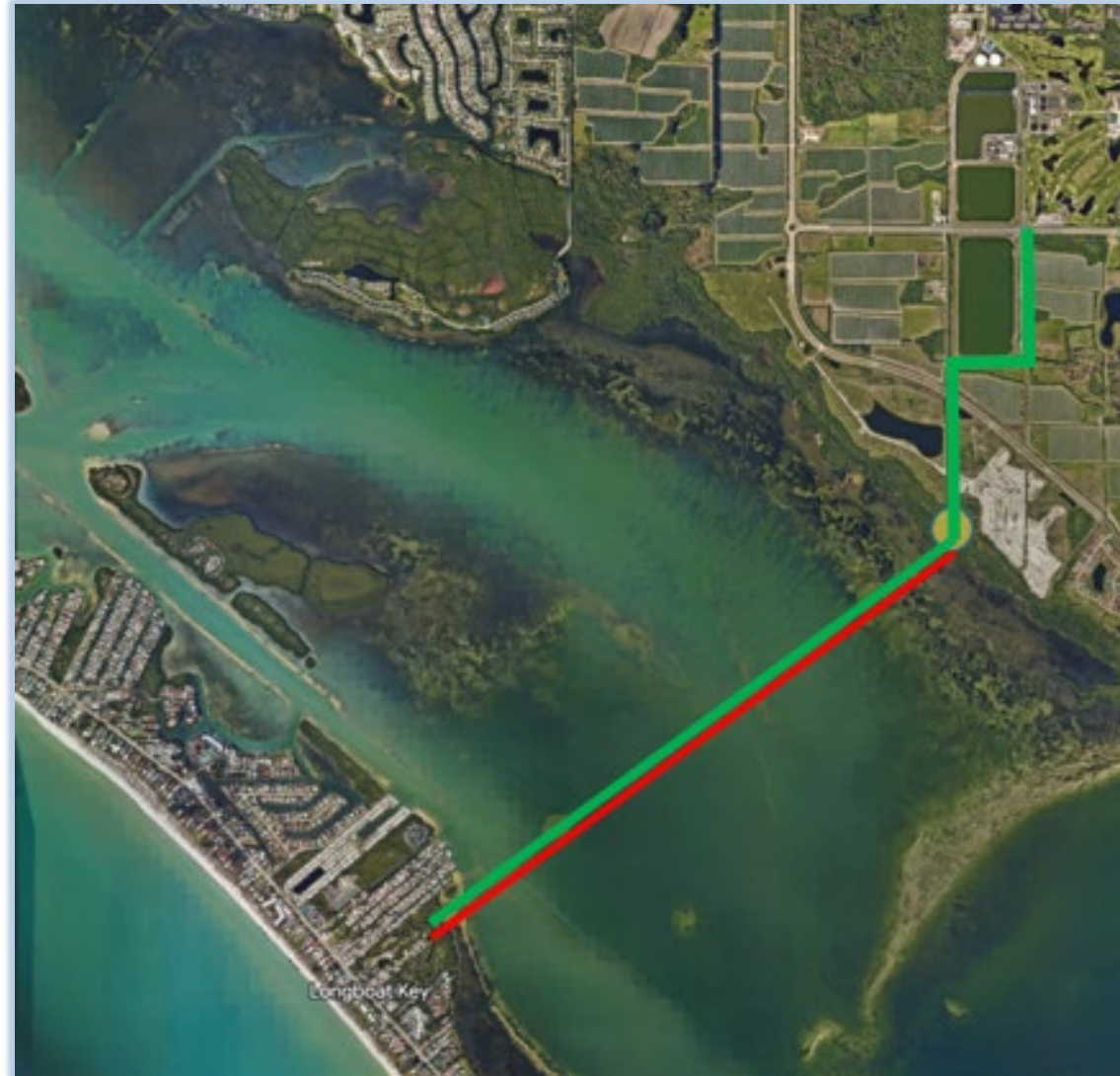
- Approx. 2-miles under Sarasota Bay
- Approx. 2-miles under land
- Town owns up to master meter on 53rd Ave.

Town’s 20-inch ductile iron force main was installed in 1973 and placed into service in 1975



Update on Current Force Main Efforts

1. Town has been planning the addition of a redundant force main (replacement) for some time.
2. **Jan. 2020:** Began preliminary design and permitting for a Sarasota Bay “open-cut” project.
 - a. Carollo Engineers, Inc. and ESA
3. **June 2020:** Manatee County and Town staff discovered a force main leak on the mainland side in Long Bar Pointe. Repaired and placed back into service in about 30-hours.
4. **February 2021:** Entered into consent order with Florida Department of Environmental Protection (“FDEP”).
5. **May 2023:** Town completed slip-line rehabilitation of major mainland portion of the force main pipe line (~6,400 linear feet).





June 2020 Force Main Repair: E.T. Mackenzie

TOWN OF LONGBOAT KEY





TOWN OF LONGBOAT KEY

June 2020 Force Main Repairs: E.T. Mackenzie





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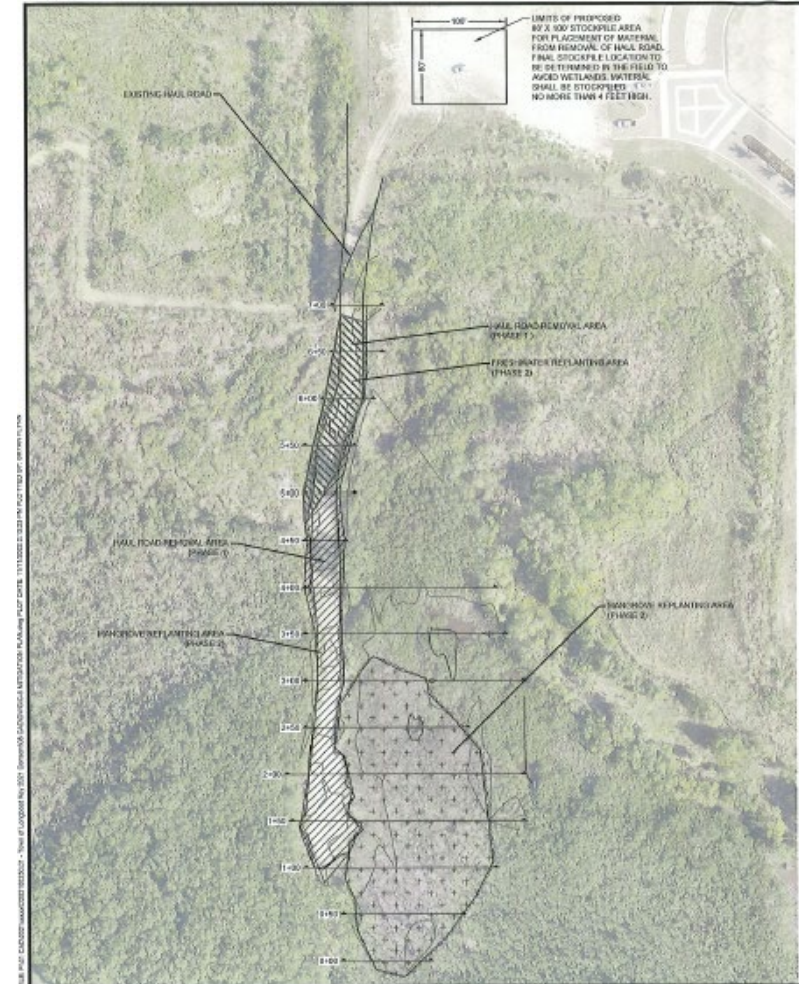
Consent Order between Town and FDEP

Consent order signed Feb. 2021:

- All deliverables up to date including 1st monitoring report.
- All “in-kind” projects completed.
- Town’s Restoration Plan for Long Bar Pointe initiated:
 - A portion of nursery grown planted mangroves in ~1-acre area did not survive.
 - Coordinating alternative(s) with FDEP.



Lift Station “E” By-Pass Pump



Restoration area, imagery by ESA.
Plan approved January 31, 2023



TOWN OF LONGBOAT KEY

Mainland Force Main Lining Project Completed May 2023

Town was granted two State appropriations in the amounts of \$1.25 million and \$800,000, respectively.

Public Works engaged Murphy Pipeline Contractors to line a mainland portion north of Sarasota Bay:

- Slip line with 18" High Density Polyethylene ("HDPE").

Lining work began November 2022 and was completed May 2023:

- From Manatee County meter at 53rd Ave. south into Long Bar Pointe to the leak repair site.
- Approximately 6,400-feet of new pipe inside existing.

Overall project cost approximately \$2.72 million. This includes design, construction and construction oversight.

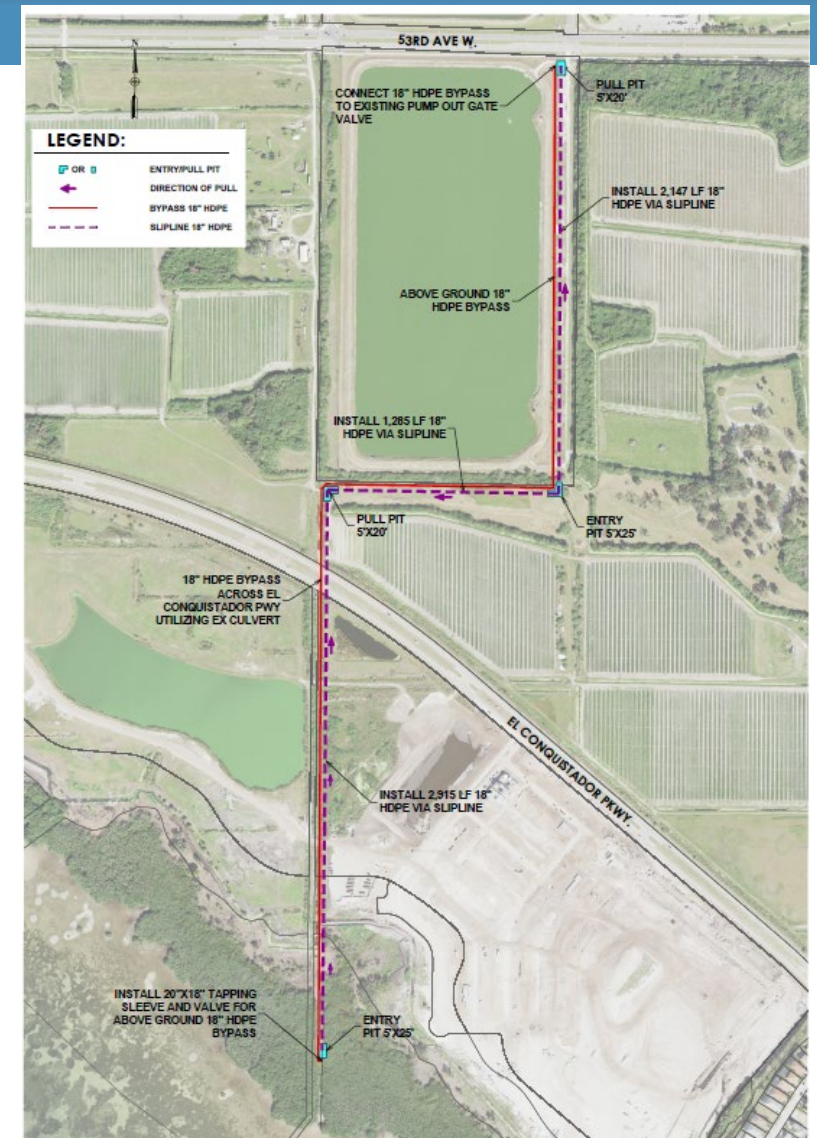


Exhibit – 1, by Chen Moore and Associates



Mainland Force Main Lining

TOWN OF LONGBOAT KEY



Condition Assessment (Screening)

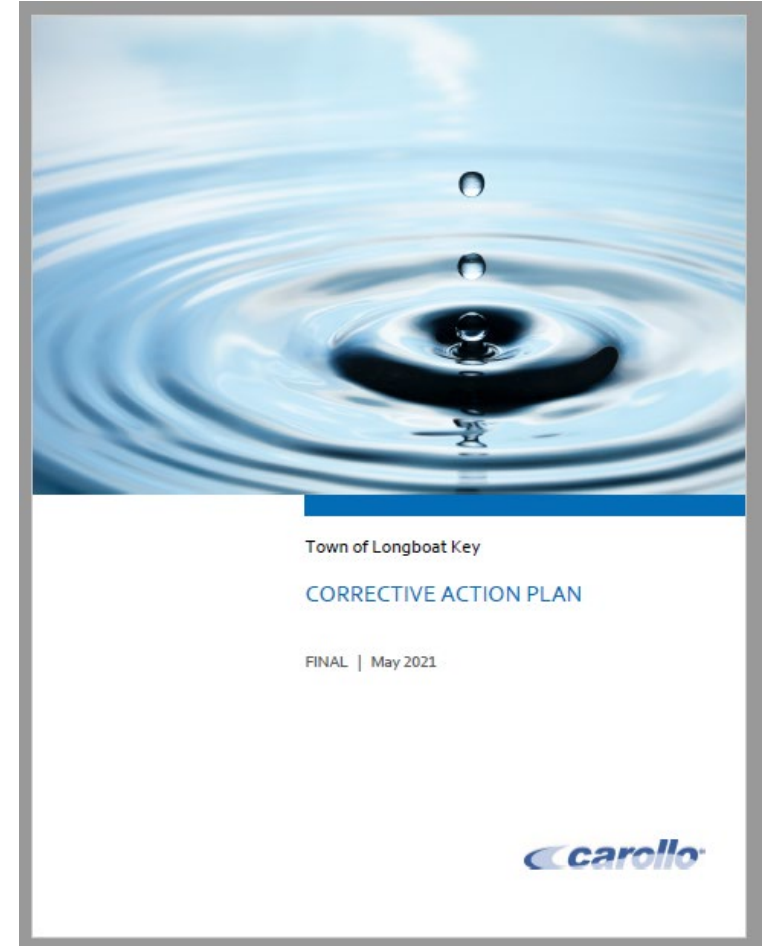
TOWN OF LONGBOAT KEY

Performed condition assessment in accordance with Town's plan and consent order.

Screening tools:

- Hydromax USA Nautilus for gas pockets and leak detection
- V&A Consulting Engineers, Inc. using electro-potential survey for corrosion detection (mostly mainland)
- Coupon extraction from the mainland lining project
- Dive testing.

No major data points of concern at this time. Continue proceeding with major project.





Subaqueous Force Main Project: Current Status

TOWN OF LONGBOAT KEY

Current Status

- New Force Main under Sarasota Bay preliminary design is complete.
- Town has received FDEP and U.S. Army Corps permits to open cut and install a redundant Subaqueous Force Main under Sarasota Bay
- In accordance with our permits, Town will have to perform sea grass and mangrove mitigation for the open cut (8-acres and 1-acre, respectively).
- Town staff proposed \$31.4 million in FY 2025 for final design, easement acquisition, and construction
- Intent is to complete final design, obtain necessary easements, construct the new pipeline project, and construct the mitigation areas.



Subaqueous Force Main Project: Next Steps

TOWN OF LONGBOAT KEY

Next Steps

1. Proceed with and complete final design and permit updating (approx. 1-yr.). Select construction manager for the new, major project early in final design process (Fall 2024).
2. Obtain necessary easement (temporary and permanent) from Long Bar Pointe and Florida Office of State Lands.
3. Target start of Construction Fall 2025.

In addition:

- Resolve final settlement with Long Bar Pointe regarding leak impacts.
- Resolve restoration area mangrove mitigation alternative.

Thank you!

End of Agenda Item