

Riviera Bay Civic Association

Neighborhood Association Meeting

04/22/25





Agenda

- Seawall Replacement
 - 87th Avenue
 - 2nd Street
- Forcemain Condition Assessment
- San Martin Bridge Utility Replacement
- NE Basin Infrastructure Improvements
- Flood Risk Model Analysis from Surge and Rain
- Canal Dredging



Seawall Replacement Updates

- 87th Ave N (in the ROW in front of 101 87th Ave N)
 - This seawall repair was bundled in a project with 2 other seawall rehabilitation locations (79th St S and 31st Ave NE)
 - Due to impacts from the 2024 hurricane season, the contractor was shifted to seawalls which failed
 - The contractor is scheduled to mobilize in April 2025, to begin raising the seawall cap and installing flap gates
- 2nd St N bridge (next to 9700 2nd St N)
 - The bridge has been inspected and is structurally good
 - The City is aware of the seawall condition under the bridge on the north side of the canal
 - Design plans have already been developed and currently working with a contractor to obtain pricing
 - Since the storms, our CM has prioritized emergency response to other seawalls throughout the city

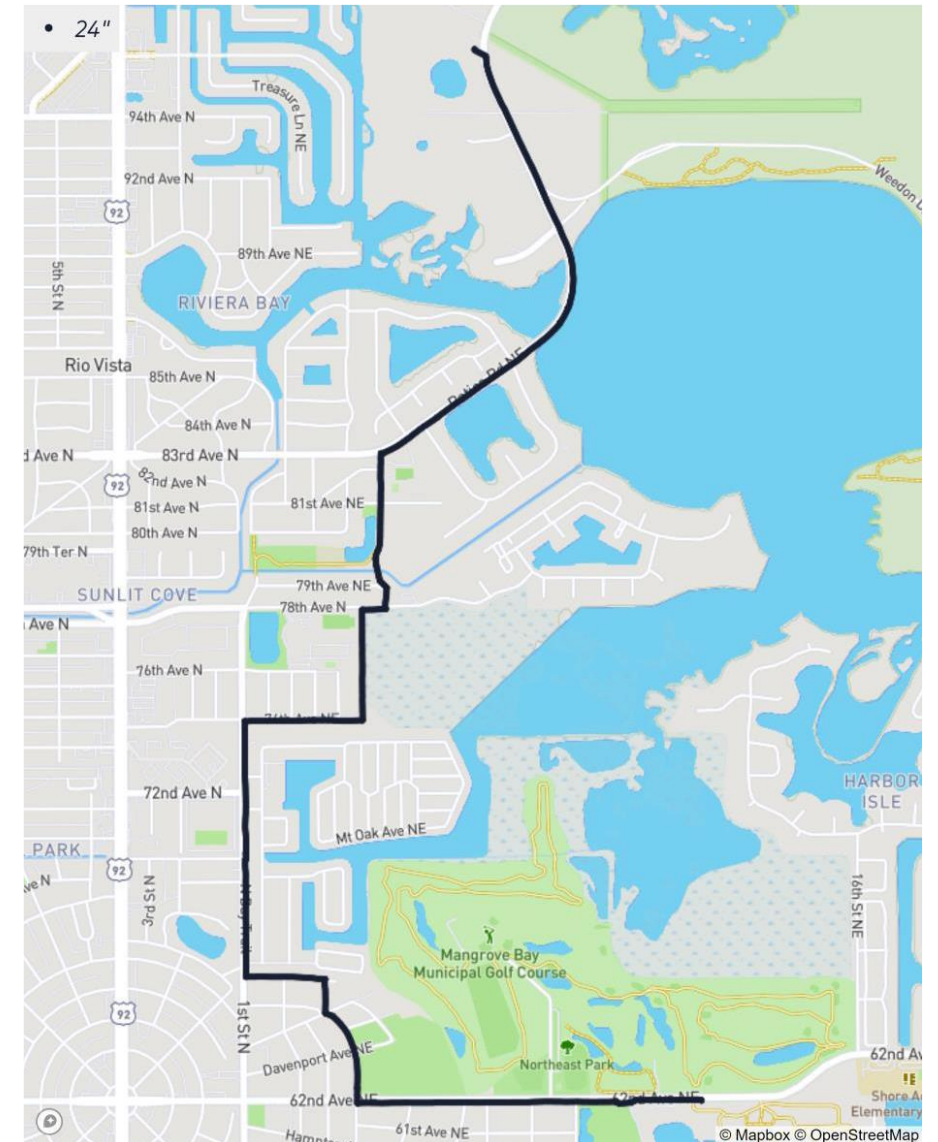
Note that due to storm impacts, seawall work was directed to locations where wall(s) failed or collapsed. Now that these repairs are completed, the contractor is being re-directed to these locations



Forcemain Condition Assessment

This project involved physical condition assessment and analysis of the entire length of the forcemain from LS-63 to NEWRF

- The physical condition assessment has been **completed** by utilizing ultrasonic sensors that send and collect soundwaves to accurately measure the geometry and to detect anomalies in the pipe wall or pipe joints of the forcemain
- The forcemain was found to be structurally sound and no repairs are needed
- While no locations of concern were identified by the ultrasonic analysis, excavations at random sections are being performed to confirm the analysis performed by the ultrasonic analysis
- In the event that the visual inspection identifies needed repairs, these will be sequenced in Phase 3 of NEWRF Basin Capacity Improvements
- *Note that the location of the break in the vicinity of the San Martin Bridge was due to construction debris which was dumped on the pipe*

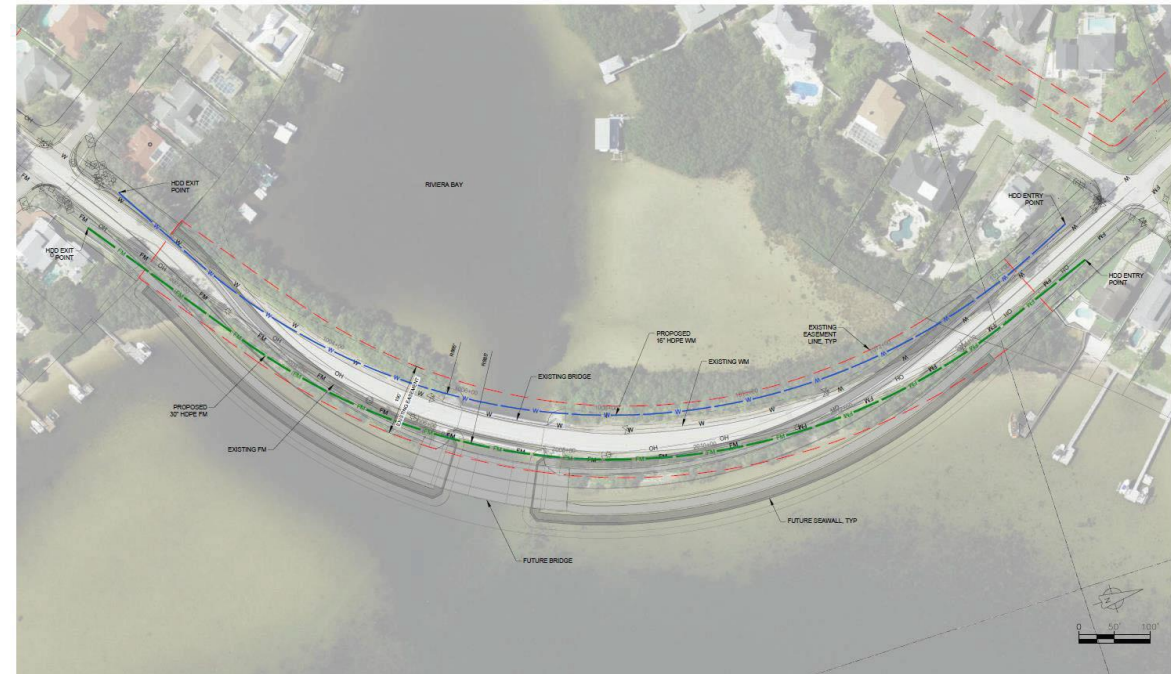




San Martin Bridge Utility Replacement

This Project involves the replacement of the existing 24-inch sanitary forcemain and the 12-inch water main which are currently affixed to the San Martin Bridge.

- The City has **completed** design and is scheduled to replace its utilities ahead of the replacement of the bridge
- A project update meeting with the neighborhood is being scheduled on April 29th to update residents on this project
- The City anticipates initiating construction in **late summer 2025**
- *Note that the change in alignment of the proposed bridge has already been accounted for in the City's design and the project continues to progress to the construction phase*



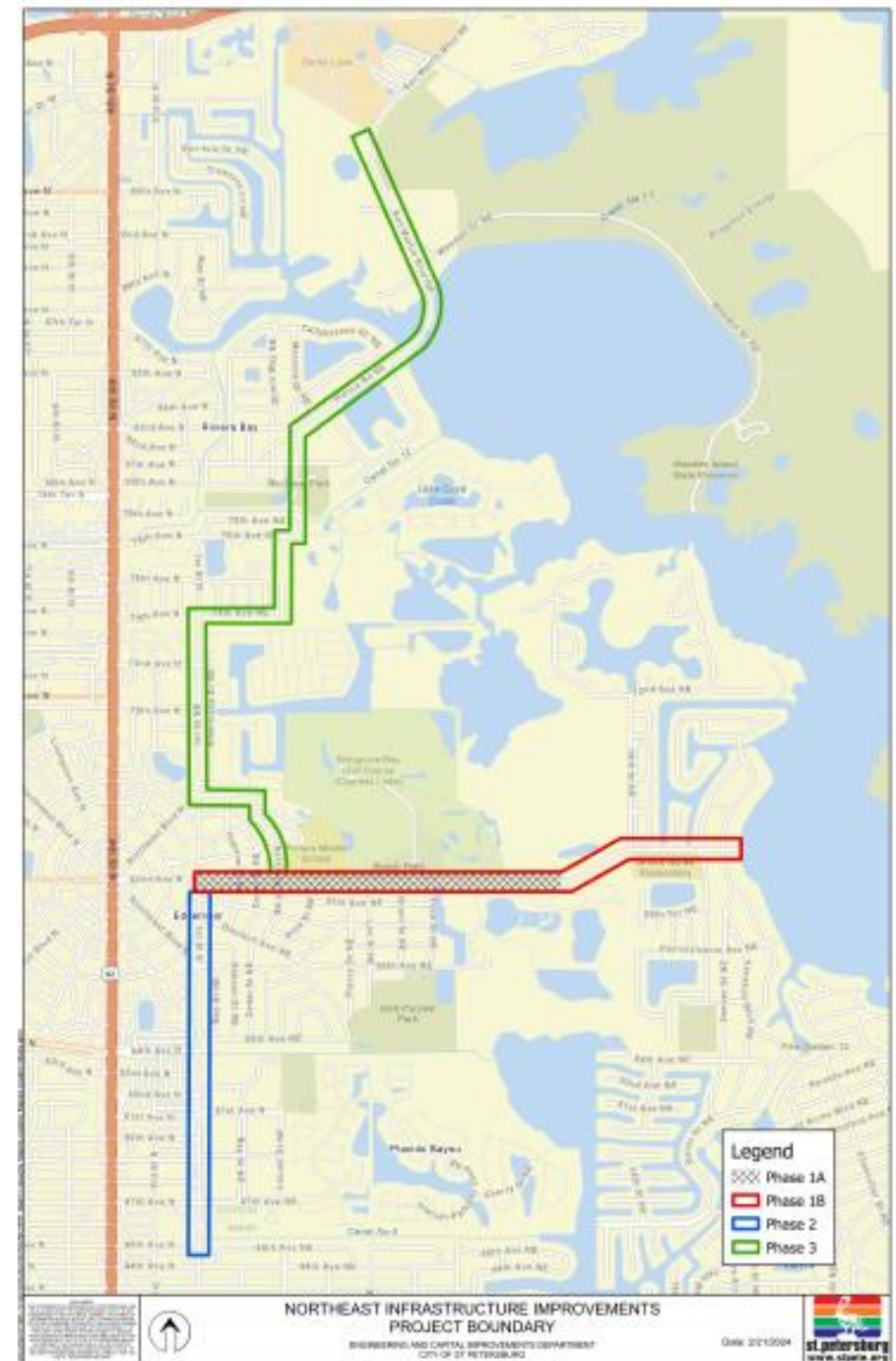


NE Basin Infrastructure Improvements

Generally, Capital Improvements are strategic in phasing to allow for subsequent improvements to result in compounding benefits.

While this Project provides larger scale benefits such as mitigating rain induced flooding, it also provides localized benefit to the neighborhoods along 62nd Avenue.

This overall Program will work to identify the condition of the forcemain, as well as any corrective action if needed within the vicinity of the Riviera Bay Civic Association

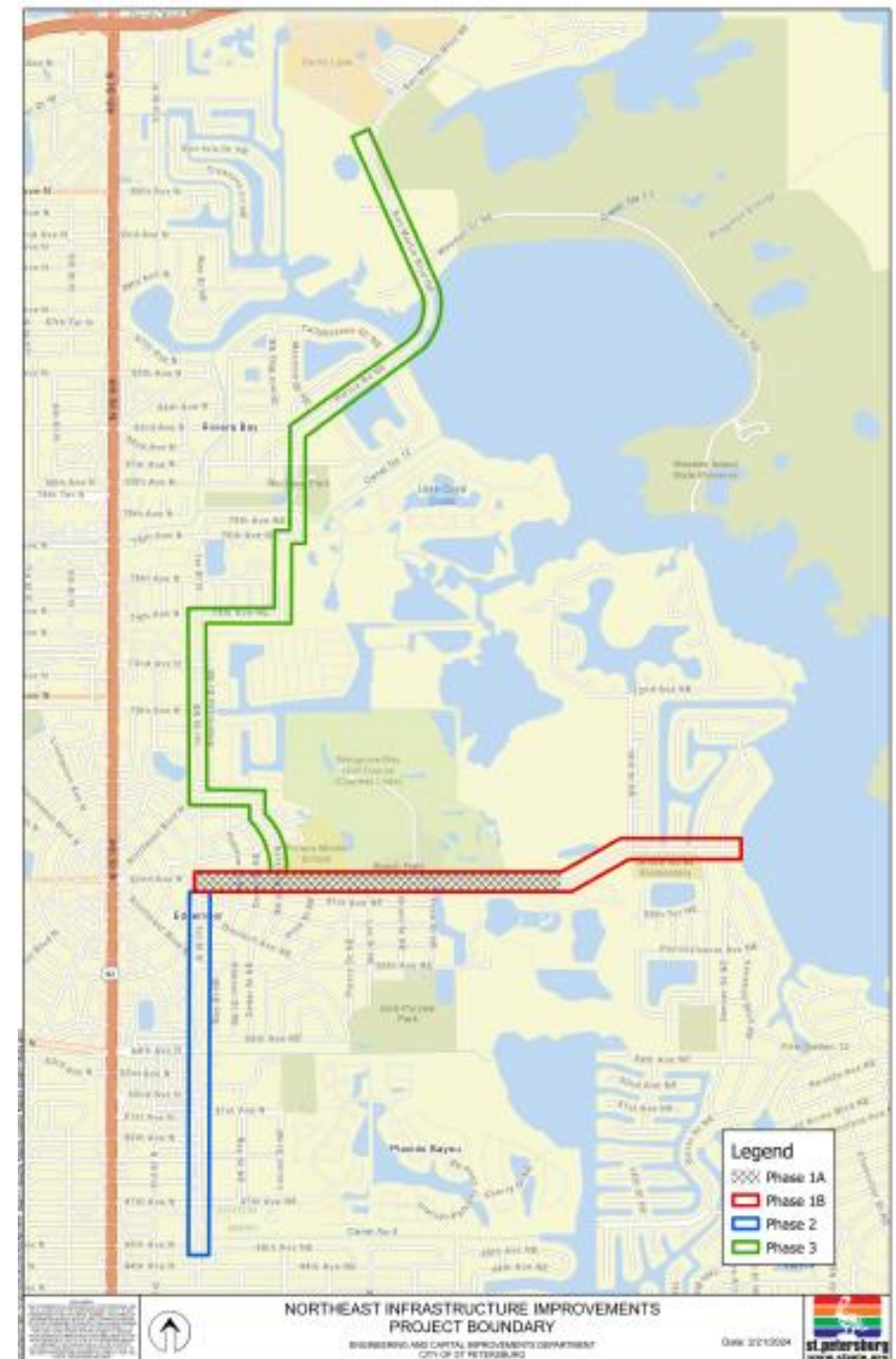




NE Basin Infrastructure Improvements

Program comprises 4 distinct elements:

- Phase 1A – 62nd Avenue NE (Shown in black hatch)
 - **Completed**
- Phase 1B – 62nd Avenue NE (Shown in red)
 - **Currently in Design Phase**
- Phase 2 – 1st St N (Shown in blue)
- Phase 3 – Multiple locations (Shown in green)
 - **Condition Assessment completed**



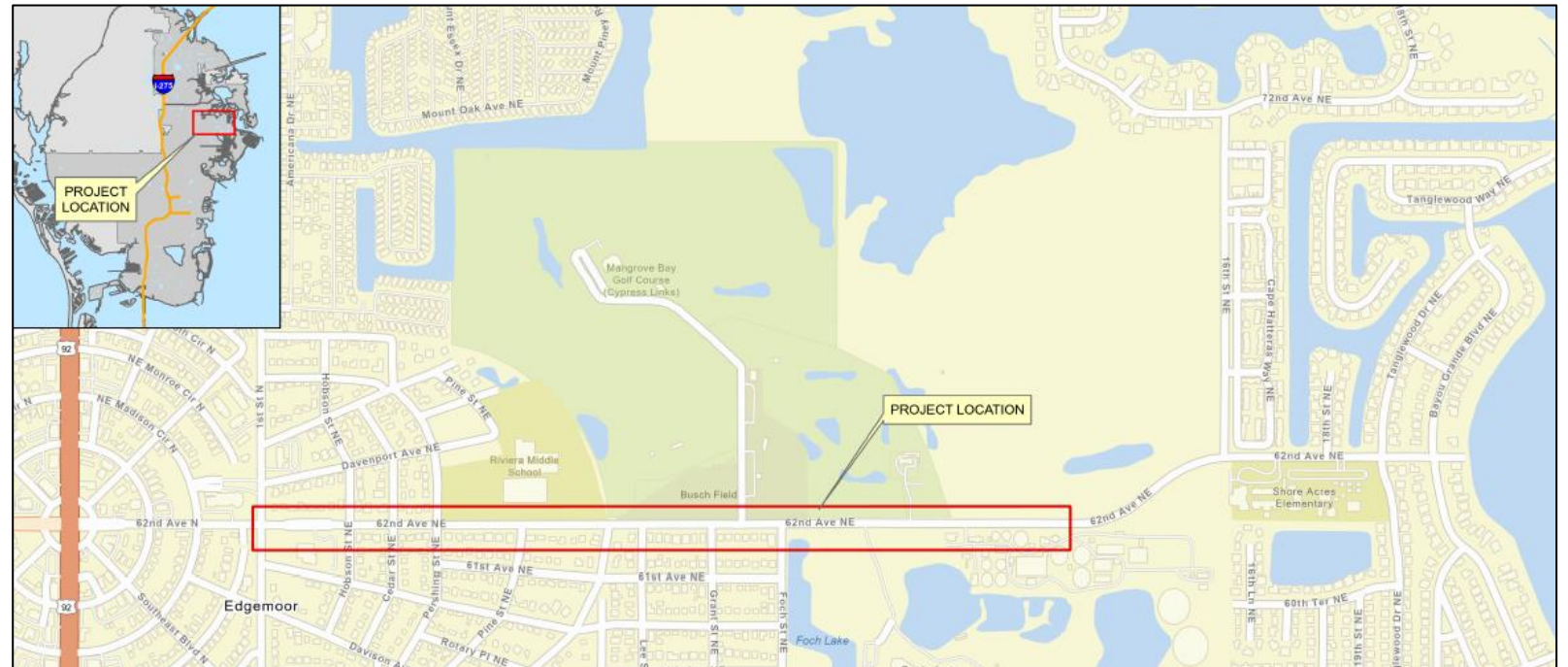


NE Basin Infrastructure Improvements

Phase 1A – 62nd Avenue NE – **Completed**

Objective

- Interim improvements to 62nd Avenue NE from 1st Street to the vicinity of the NEWRF
- Milling & resurfacing of the travel lanes with new pavements markings

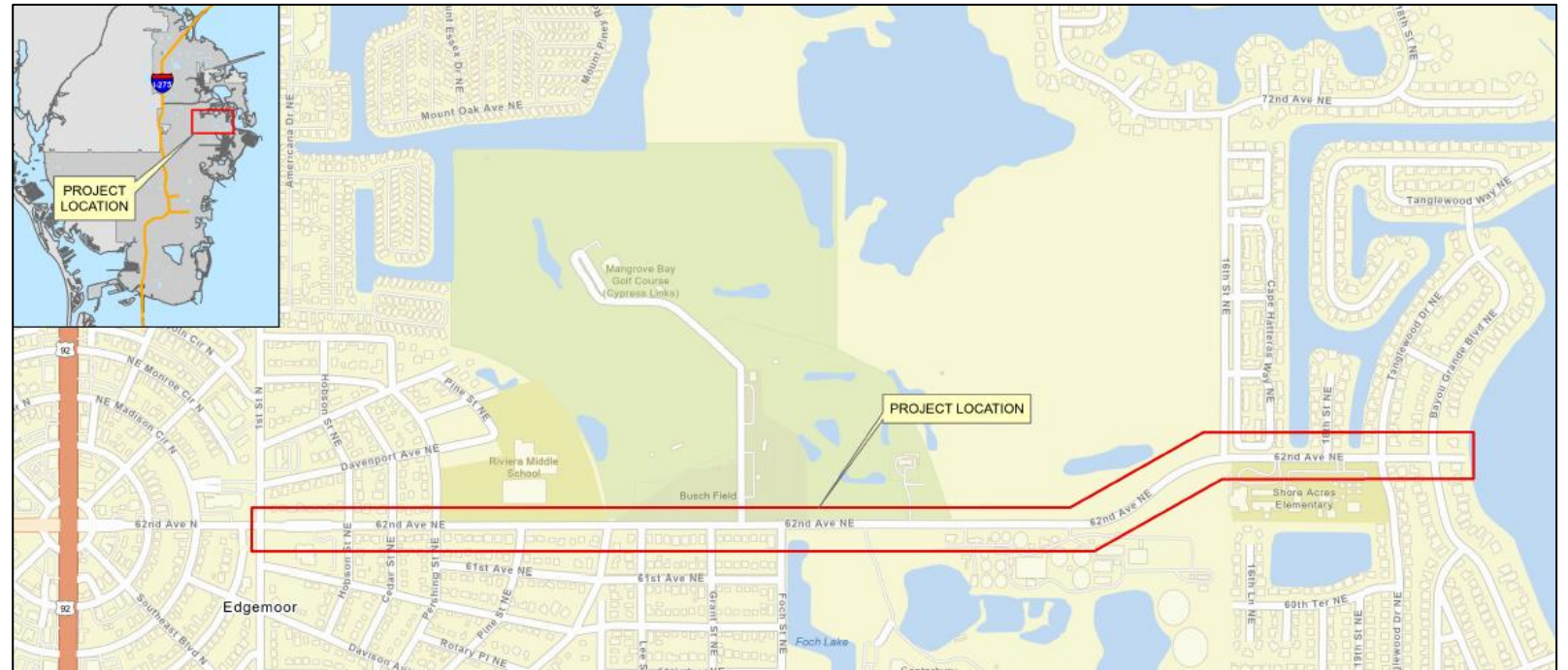




NE Basin Infrastructure Improvements

Phase 1B – 62nd Avenue NE – **Design Phase**

- Conduct roadway and utility upgrades/improvements to 62nd Avenue NE resulting in functional and aesthetic entry to the Neighborhoods
- 62nd Avenue NE from 1st Street to the Bayou Grand Blvd NE
- Design of Phase 2 force main





NE Basin Infrastructure Improvements

Phase 1B – 62nd Avenue NE

- Rehab existing force main along 62nd Avenue NE
- New wet weather force main along 62nd Avenue NE
- Replace aged watermain and service connections
- Stormwater capacity upgrades to reduce flooding
- Low impact design to improve water quality
- Roadway geometry changes (vertically) to reduce flooding
- Roadway/curbline adjustments to reduce flooding to adjacent neighborhood
- Overall mill and resurface
- Landscape improvements along corridor to improve water quality and aesthetics

Current Status

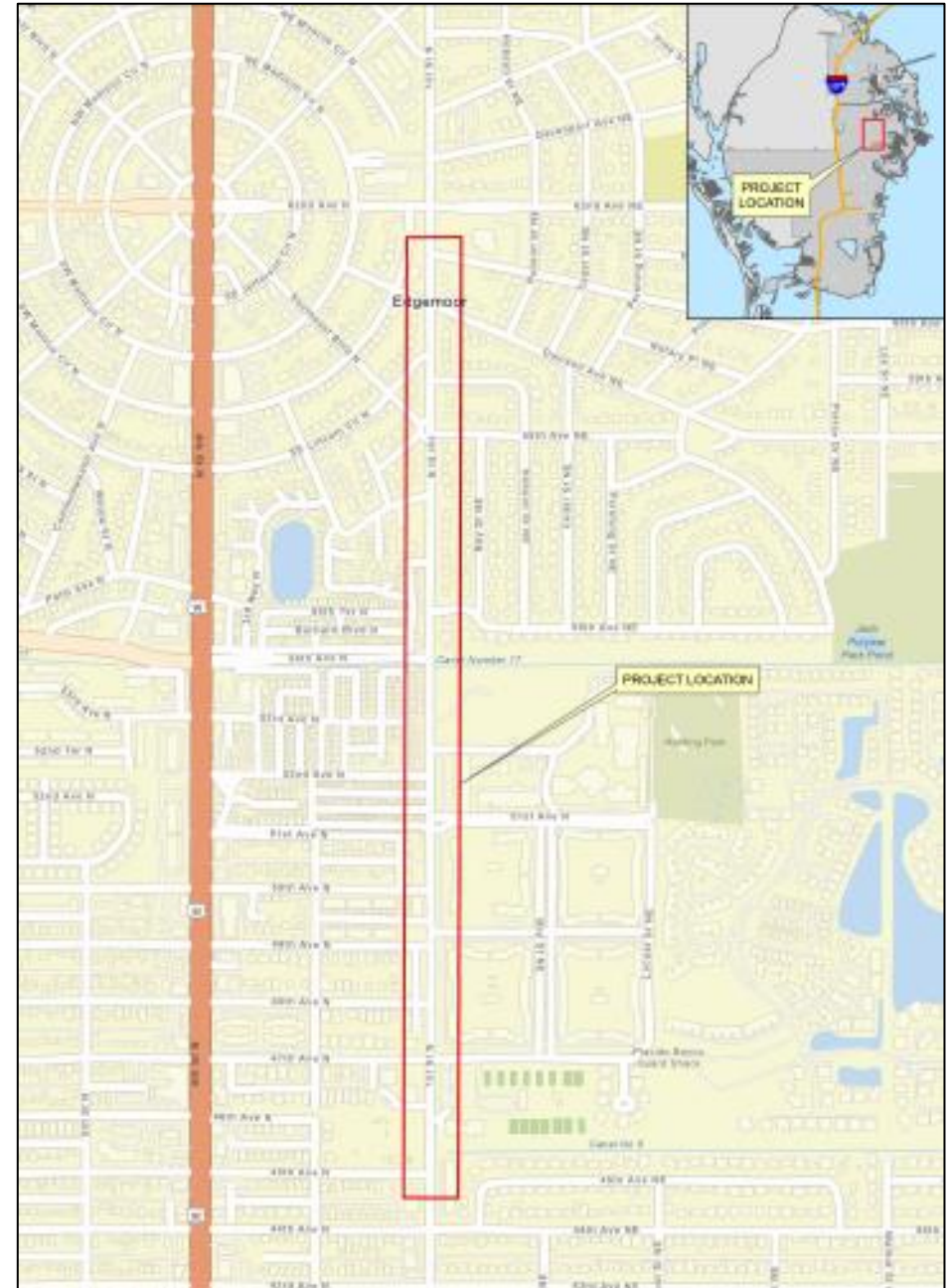
- **Preliminary Design Phase**
 - Stormwater Model
 - Traffic Analysis
 - Equalization Feasibility



NEWRF Basin Infrastructure Improvements

Phase 2 – 1st St N

- Construction of new force main from approximately 4580 1st Street N to connect to force main at 62nd Avenue N and 1st Street which was constructed as part of Phase 1B
- Construct new wet weather lift station at approximately 4580 1st Street N





NEWRF Basin Infrastructure Improvements

Phase 3 – Various locations

- Ultrasonic condition assessment was performed to identify any deficiencies to the pipe, joints, etc.
- Condition Assessment is **complete**
- While no initial locations were identified, field tests are being conducted to further refine the analysis
- *Exception is the segment along the bridge which is being replaced due to the replacement of the San Martin bridge*





Flood Risk Model Analysis from Surge and Rain

- This project is a Neighborhood-specific Vulnerability Assessment
- Review in a comprehensive model the existing conditions and flood conditions within the subject neighborhood and perform a vulnerability assessment
- This model will compile topographic data, the existing configuration of the stormwater system, canals and conduct analysis of impacts by simulating various scenarios, tidal level and rainfall which will result in projects/alternatives that provide measurable risk and flood reduction benefits across the neighborhood
- Proposed projects/alternatives will consider both rainfall and tidal-induced flooding
- The intent is to prioritize projects which mitigate structural and street flooding due to precipitation, storm surge, and high tide
- *Note that this Project is being advanced ahead of the City's Vulnerability Assessment and is currently underway*

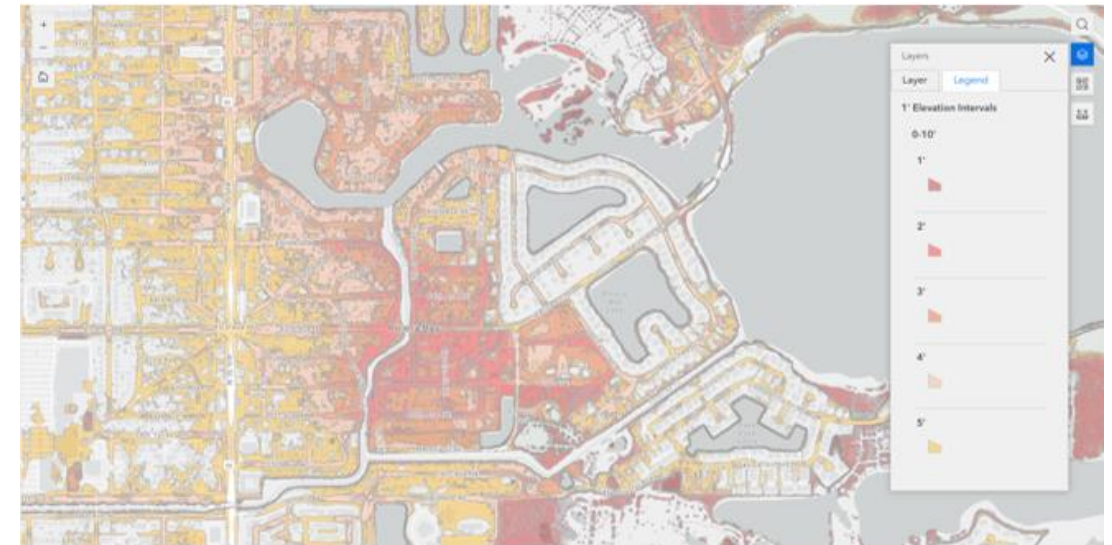


Figure 2 - Topography ranging from 1' to 5.99' NAVD



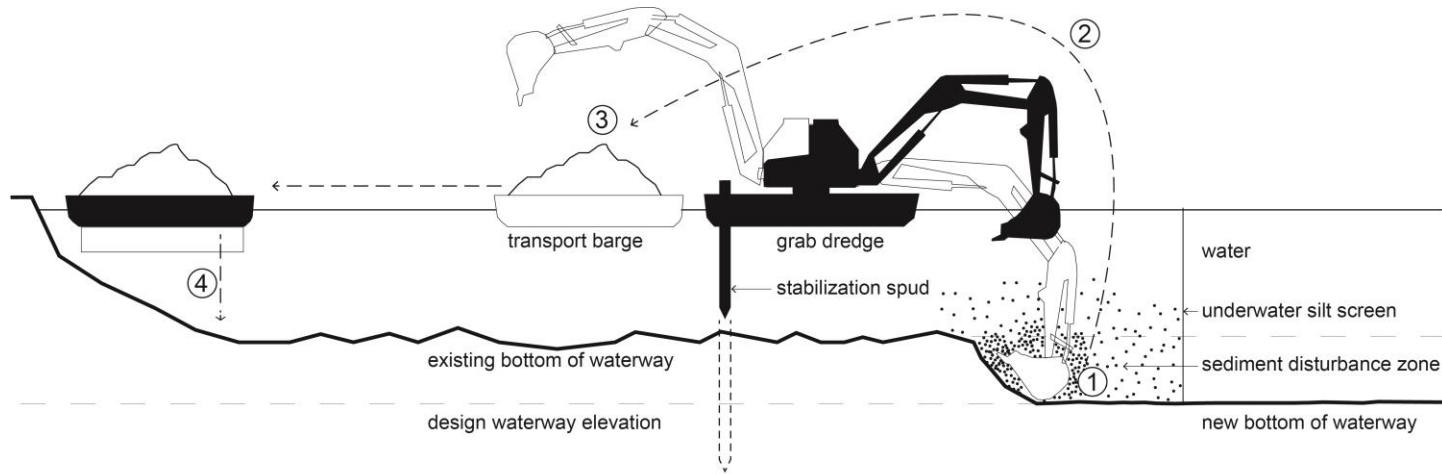
Typical Dredging Methods

- Mechanical
 - Excavators with buckets dig and remove sediments either from the shoreline or by barge
- Hydraulic
 - Pipes and pumps use water pressure and suction to loosen and move sediments to shore
- Suction/Hand Dredging
 - Similar to hydraulic dredging but on a smaller scale
 - Time consuming





Mechanical Dredge

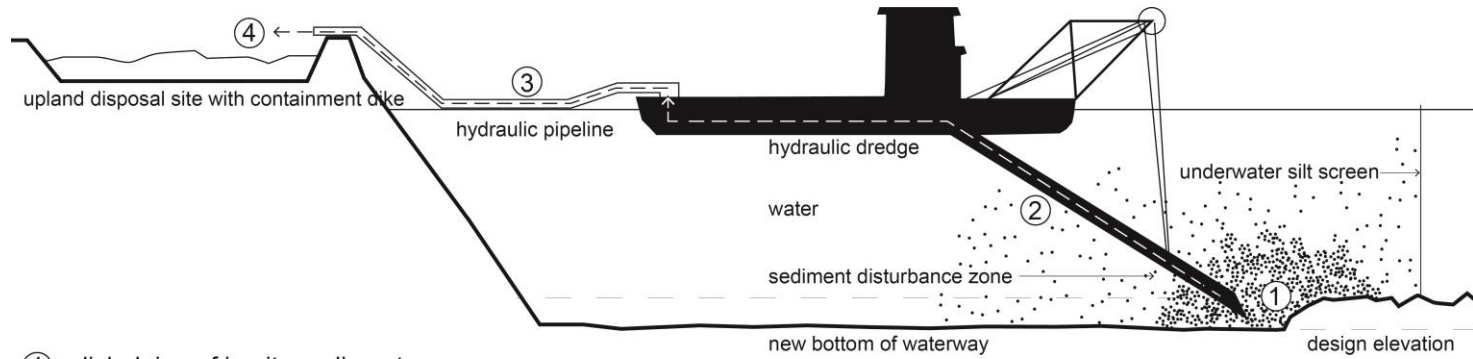


- ① - dislodging of in-situ sediment
- ② - raising of dredged material to the surface
- ③ - horizontal transport
- ④ - placement or further treatment





Hydraulic Dredge



- ① - dislodging of in-situ sediment
- ② - raising of dredged material to the surface
- ③ - horizontal transport
- ④ - placement or further treatment





Potential Environmental Impacts

- Increased Turbidity during construction (decreased light penetration in water column)
 - Requires turbidity barriers
- Seagrass Habitats
 - Equipment can damage seagrass
 - Sediments can smother existing seagrass
- Marine Life and Listed/Threatened Species
 - Plan in place to avoid impacts to marine life
- Mangroves
 - Protect mangroves from heavy equipment and sedimentation
- Treatment, transportation and disposal of dredge material
 - If excessive nutrients are identified in the permitting process. Specific treatment and disposal is required



*Potential impacts can be avoided by proper planning, design and construction



Typical Permit Requirements

Dredging and filling in the surface waters of Florida have been regulated since the early 1970s. This program was established under Florida Statutes Chapter 403.

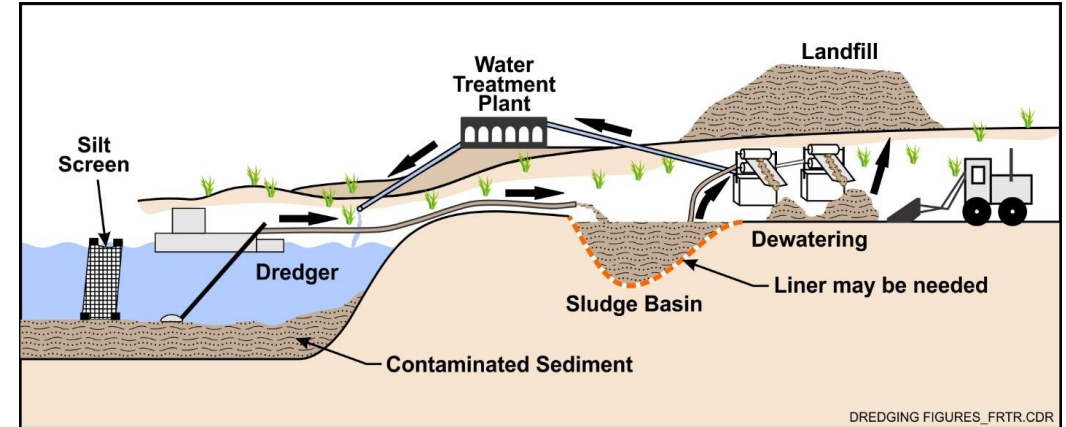
- **Federal-** United States Army Corps of Engineers (USACE)
 - Requires consultation with other federal entities like National Marine Fisheries, U.S. Fish and Wildlife Service, etc.
 - Initial consultation will determine if this is within the jurisdiction of the USACE, and identify the other applicable Federal Agencies to be part of the permit review/approval process
- **State-** Southwest Florida Water Management District (SWFWMD) and Department of Environmental Protection (DEP)
 - Environmental Resources Permit (ERP) from SWFWMD/DEP per Part IV of Chapter 373 of the Florida Statutes is required
 - Sovereign Submerged Lands Approvals (DEP)- permission to use any sovereign (state-owned) submerged lands also must be reviewed and approved
- **County-** Pinellas County Water and Navigation
 - Dredge and Fill activities in Pinellas require a permit

Note that Dredging within coastal waterways typically require permits from the Federal, State and County Agencies



Sediment Quality and Disposal

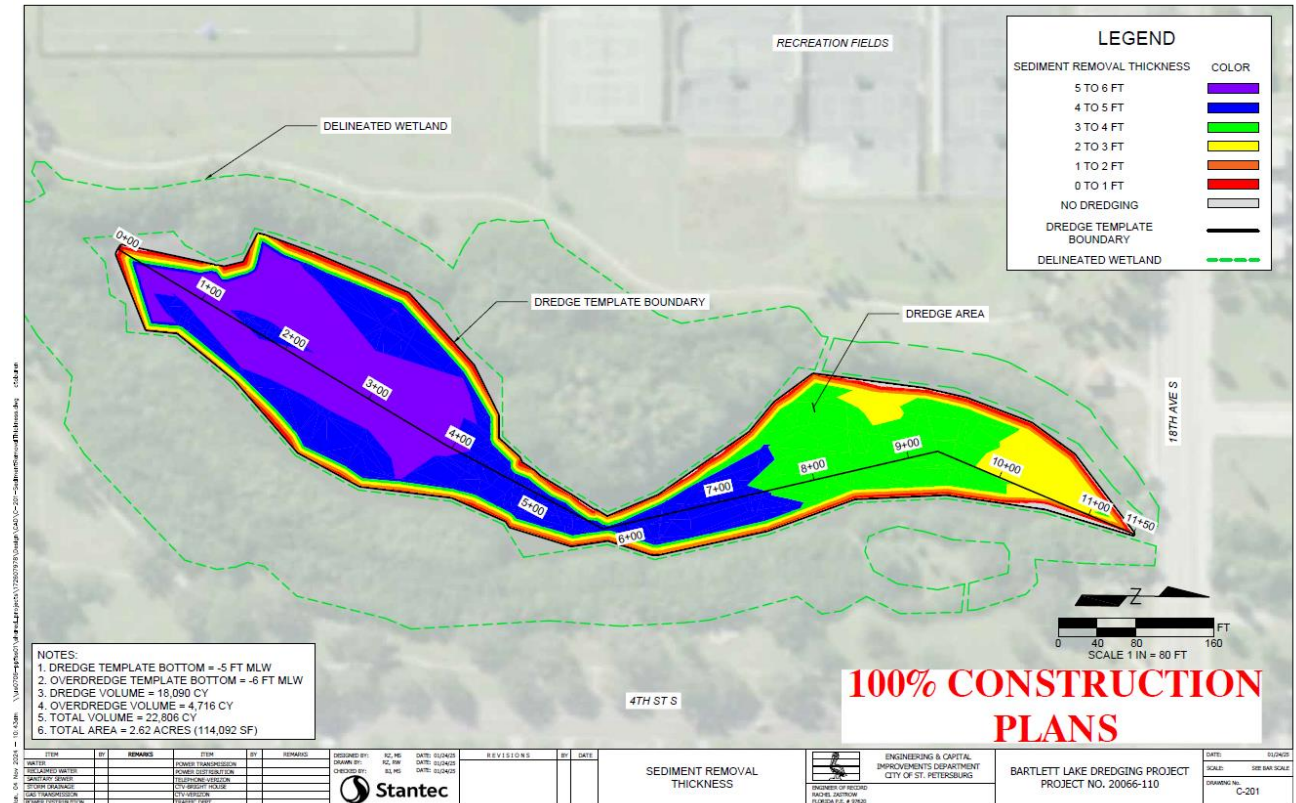
- Sediment quality and quantity
 - Rate of sedimentation Analysis
 - Modeling analysis to identify the rate of sedimentation
 - Regulatory Agencies may require 1 year of observation and analysis
 - Testing is required for
 - Chemical and physical properties can vary
 - Requires analysis of sediment samples
- Disposal- Depends on Sediment characteristics
 - Landfill
 - Dredge spoil disposal sites
 - Opportunity for reuse on site (rare)
- Cost per cubic yard removed
 - Costs can vary based on dredging methods, sediment quality, project location, scope, etc.
 - Separate costs for dredging, hauling, and disposal



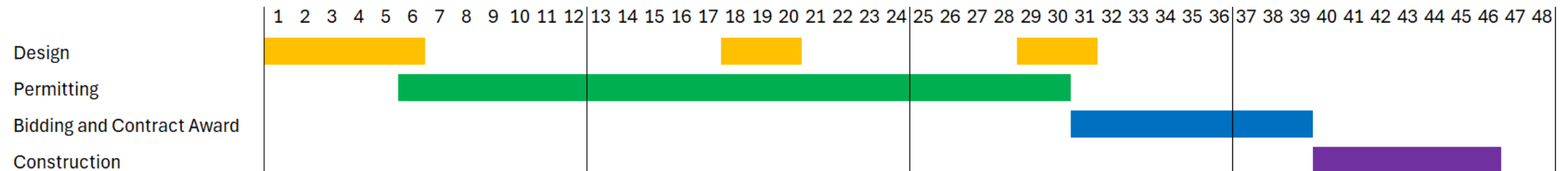


Example Projects: Bartlett Lake

| 100% Design - Engineer's Opinion of Probable Costs (High) | | | | | |
|---|--|----------|------|-----------|-------------|
| Line Item | Item Description | Quantity | Unit | Unit Cost | Total |
| 1 | Mobilization | 1 | Job | \$150,000 | \$150,000 |
| 2 | Silt Fence | 1,342 | LF | \$2 | \$2,684 |
| 3 | Turbidity Curtain | 544 | LF | \$15 | \$8,160 |
| 4 | Pre-Construction Video Monitoring | 1 | Job | \$3,000 | \$3,000 |
| 5 | Dredging (-5ft MLW) | 18,090 | CY | \$120 | \$2,170,800 |
| 6 | Overdredge (-6ft MLW) | 4,716 | CY | \$120 | \$565,920 |
| 7 | Manatee Observation | 1 | Job | \$105,000 | \$105,000 |
| 8 | Turbidity Monitoring | 1 | Job | \$50,000 | \$50,000 |
| 9 | Hauling | 22,806 | CY | \$15 | \$342,090 |
| 10 | Landfill Waste Tipping Fee ¹ | 30,788 | Ton | \$51 | \$1,570,188 |
| 11 | Staging/Dewatering Area Restoration | 1 | Job | \$50,000 | \$50,000 |
| 12 | Surveys | 1 | Job | \$45,000 | \$45,000 |
| 13 | Demobilization | 1 | Job | \$50,000 | \$50,000 |
| 14 | Pier Demo/Restoration (TBD) | 1 | Job | \$75,000 | \$75,000 |
| 15 | Contingency (fixed) | 1 | Job | \$50,000 | \$50,000 |
| Construction Subtotal | | | | | \$5,237,842 |
| 16 | Construction Management/CEI ² | 1 | Job | \$265,000 | \$265,000 |
| Engineering Subtotal | | | | | \$265,000 |
| Project Total | | | | | \$5,502,842 |



Project Schedule



THANK YOU



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