

# City of Palm Coast, Florida Agenda Item

**Agenda Date:** August 8, 2023

<b>Department</b>	CONSTRUCTION MANAGEMENT & ENGINEERING	<b>Amount</b>
<b>Division</b>	ENGINEERING	<b>Account #</b>
<b>Subject:</b> PRESENTATION - SALTWATER CANAL UPDATE		
<b>Presenter:</b> Carmelo Morales, Stormwater Engineer & Terry Cake, Tyler Engineering Consultant		
<b>Attachments:</b> 1. Presentation		
<p><b>Background:</b></p> <p><b>Council Priority:</b>  <b>D. Sustainable Environment and Infrastructure:</b>  <b>5. Develop a plan for maintenance of the saltwater canals.</b></p> <p>On January 17, 2023, Council approved a contract with Taylor Engineering, Inc., (RFSQ-SWE-22-33) for design, permitting, and engineering services to dredge approximately 26 miles of the saltwater canal system.</p> <p>Scope of services will include data collection, preliminary design, permit application assistance, final design, technical specifications, preparation of bid documents, bid assistance, and construction phase services</p> <p>Taylor Engineering, Inc., proposed a three (3) phased approach to the project:</p> <p>Phase I – Initial Investigation</p> <ol style="list-style-type: none"> <li>1. Permit and Design Review</li> <li>2. Data Collection</li> <li>3. Identify and Evaluate Potential Funding Sources</li> </ol> <p>Phase II – Design and Permitting</p> <p>Phase III – Construction Administration</p> <p>This presentation will give an update on the findings for Phase I.</p>		
<b>Recommended Action:</b> <b>PRESENTATION FOR COUNCIL REVIEW AND DIRECTION</b>		



TAYLOR ENGINEERING, INC.

# Palm Coast Saltwater Canals Project Update

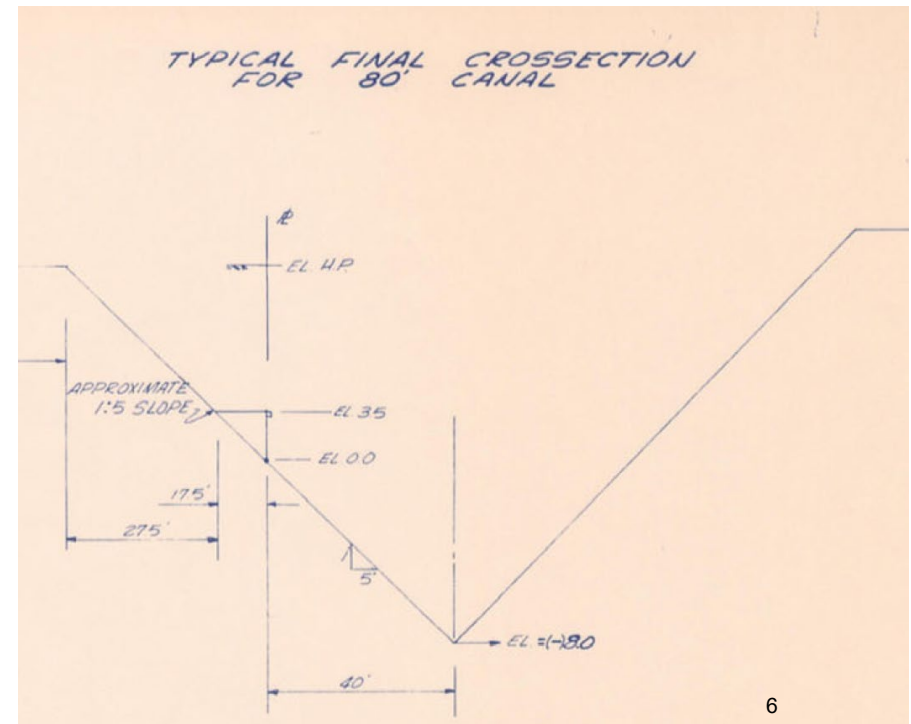
August 8, 2023

WORK PRODUCT



Presented by: Terry <sup>5</sup>Cake, P.E.

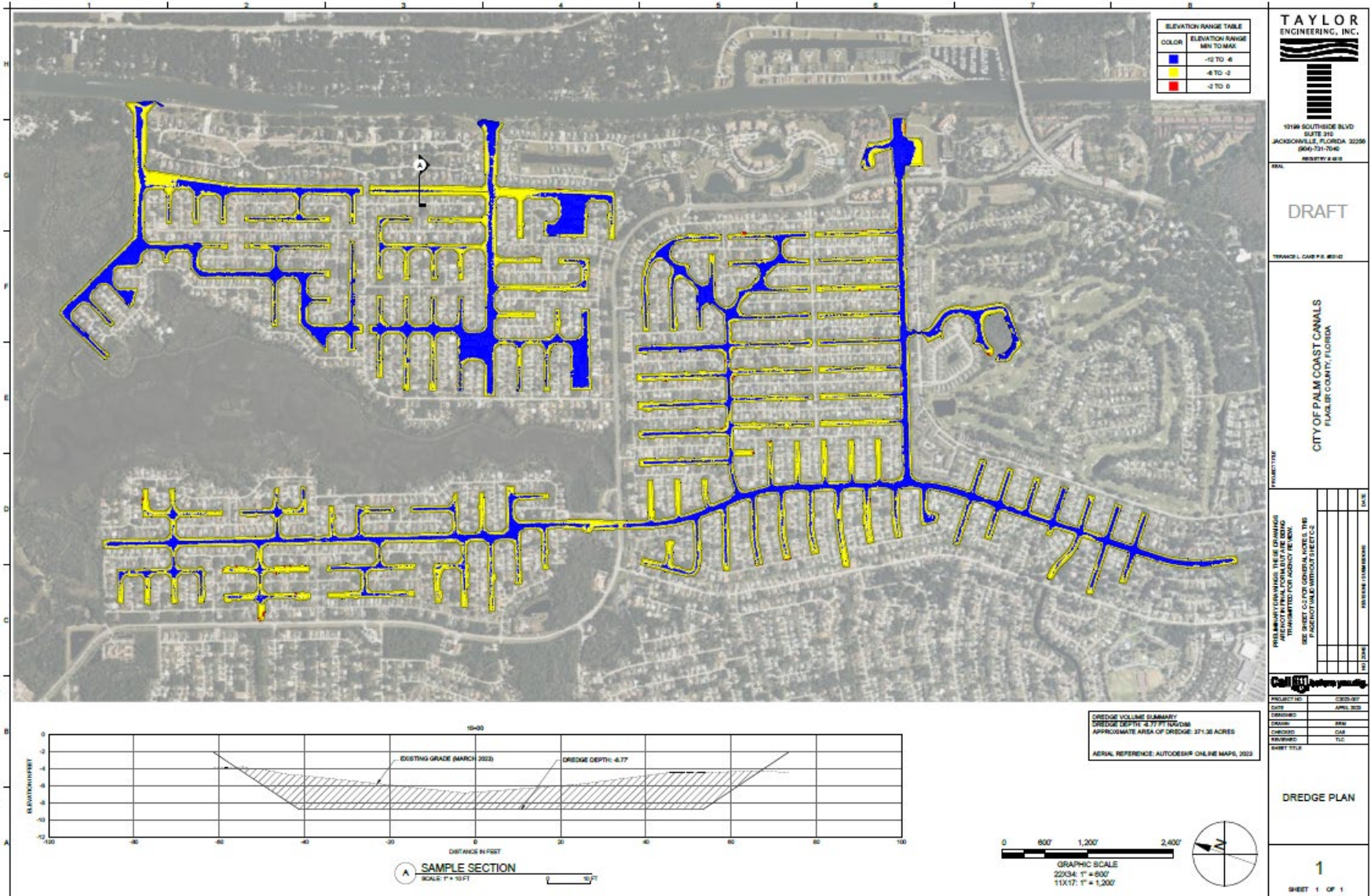
- Previous Construction or Maintenance Permit Search
  - None found
  - Assume canals were constructed before permits were required
  - Assume no maintenance dredging has been performed
- Construction Documents
  - One canal “as-built” found
  - Construction depth -8.0’ NGVD29
    - -8.0’ NGVD28 = -8.77’ NAVD88
- Next Step- Establish permittable dredge depth with FDEP



# Data Collection Task 2.2 Bathymetric Survey

- Field survey complete
- Initial data processing complete
- Develop survey drawings
  - Base for future design and permitting





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 JACKSONVILLE, FLORIDA 32256  
 (904) 731-7040  
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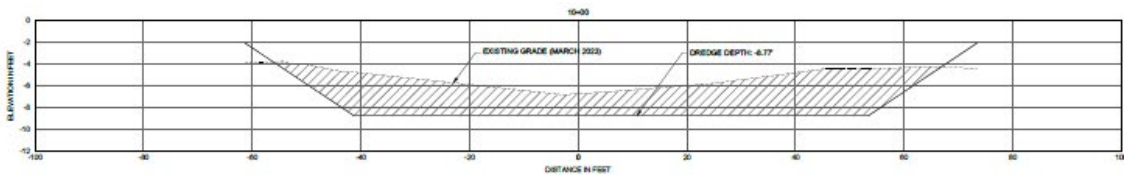
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PROJECT TITLE  
**CITY OF PALM COAST CANALS**  
 FLAGLER COUNTY, FLORIDA

NO.	DATE	REVISION / COMMENTS

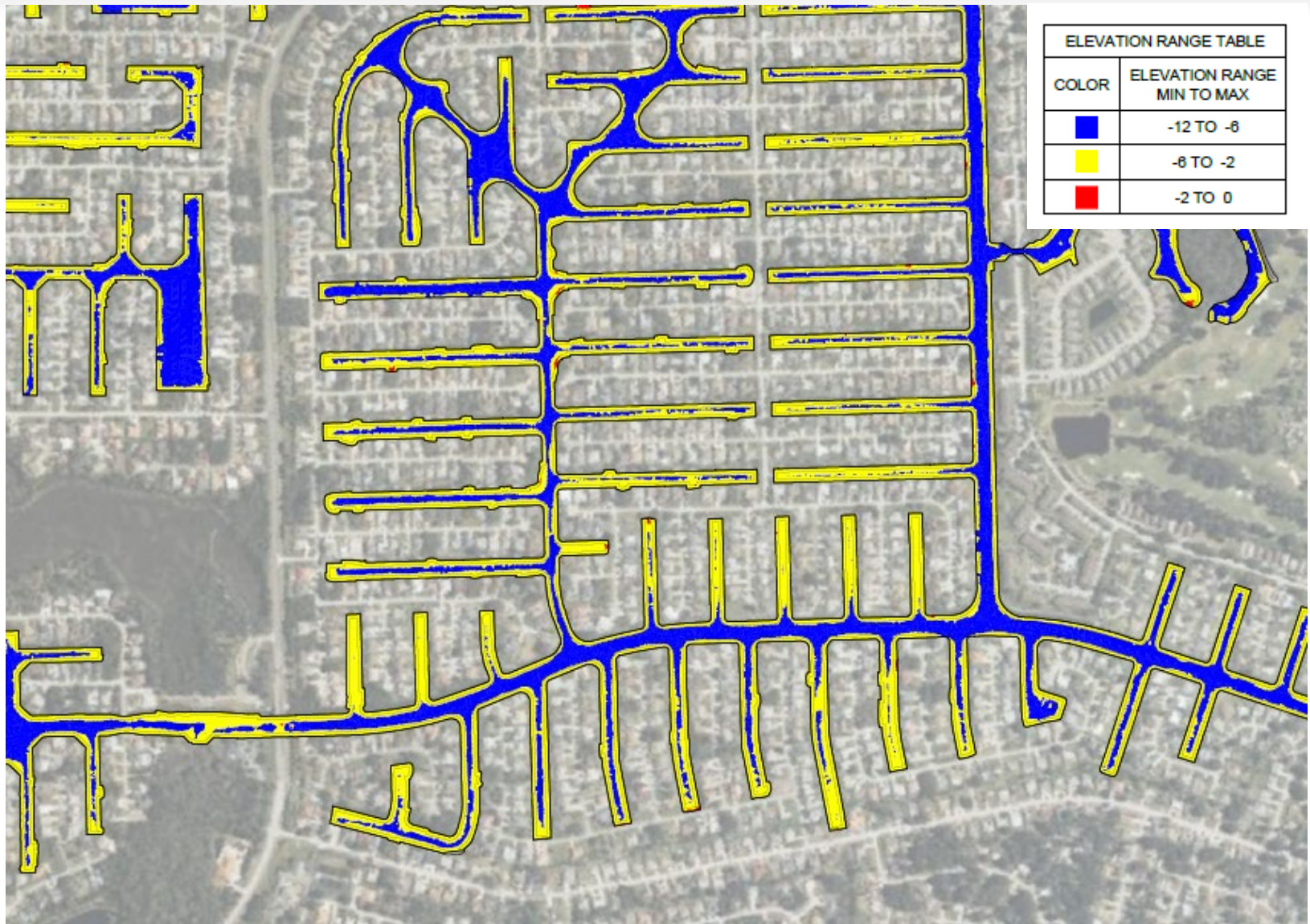
DATE	BY	CHECKED	REVIEWED
APRIL 2023			

**DREDGE VOLUME SUMMARY**  
 DREDGE DEPTH: 0.77 FT @ 50%  
 APPROXIMATE AREA OF DREDGE: 371.56 ACRES  
 AERIAL REFERENCE: AUTODESK® ONLINE MAPS, 2022



**DREDGE PLAN**

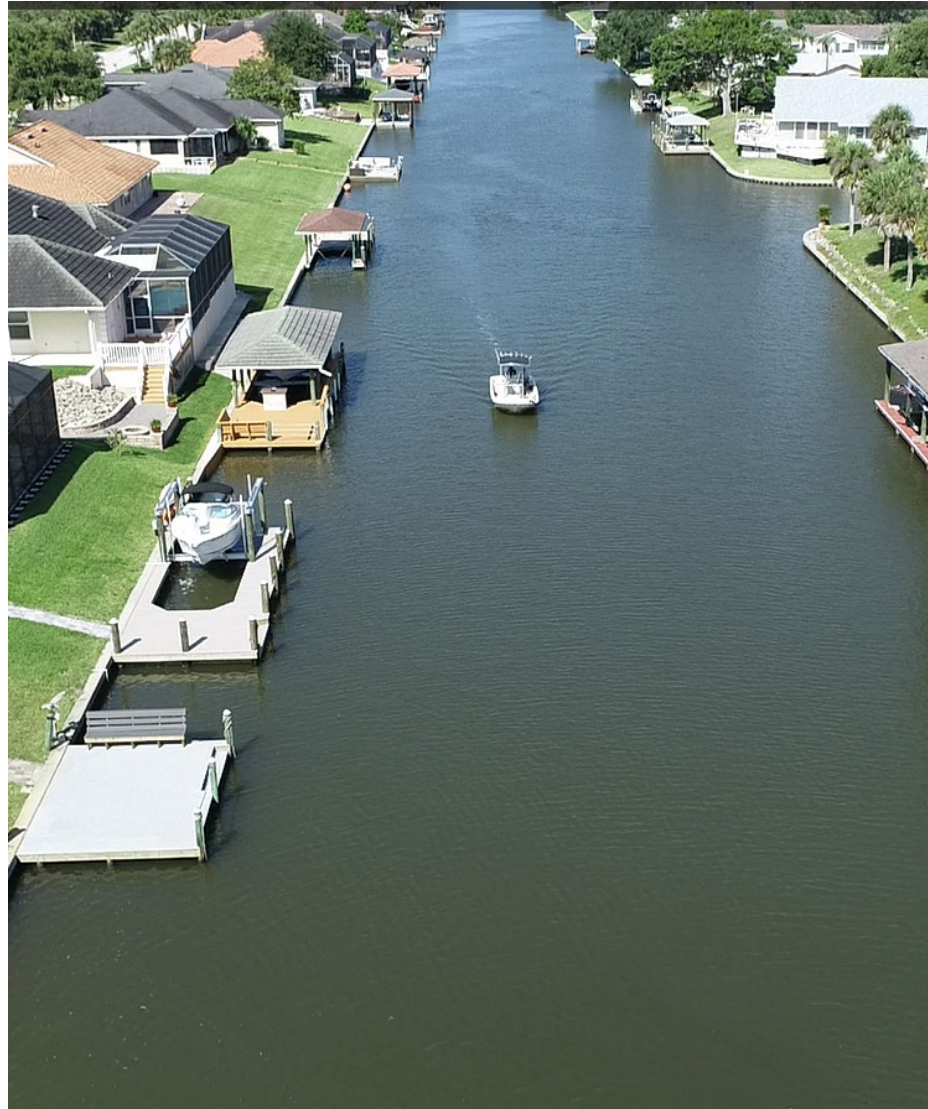
**1**  
 SHEET 1 OF 1

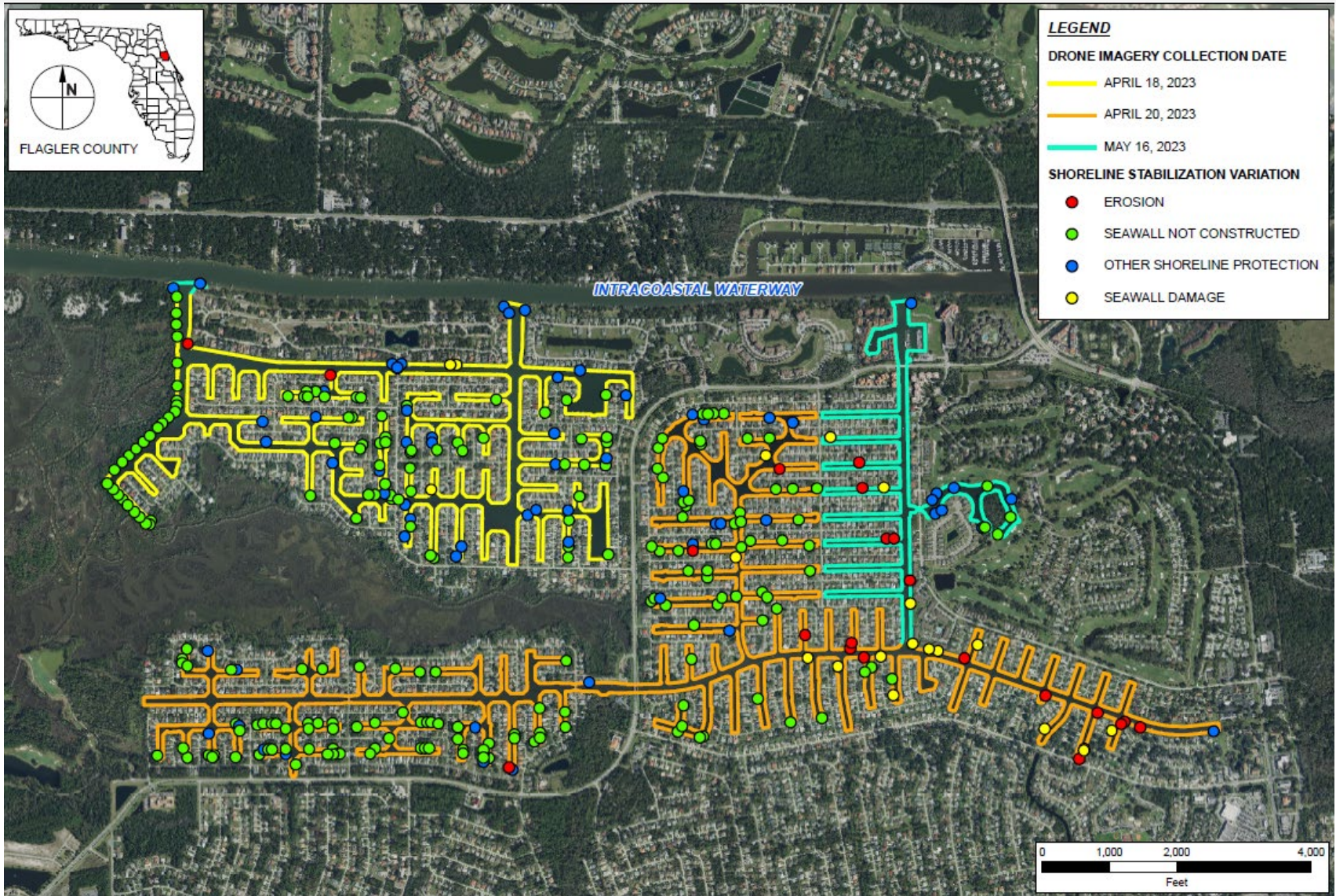


# Data Collection Task 2-1 Seawall Survey

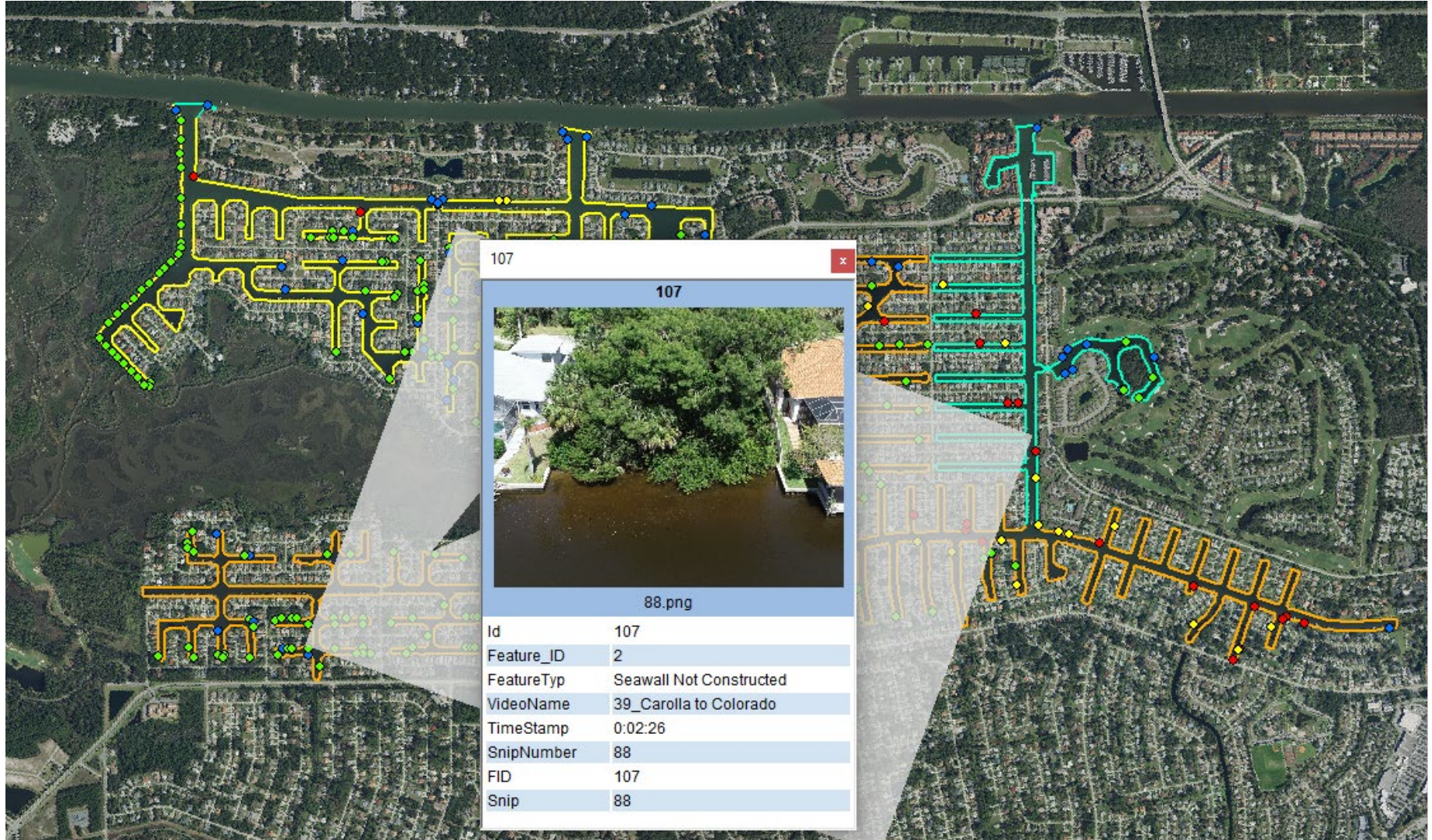
WORK PRODUCT

- Field survey and data processing complete
- Identified visible signs of failure
  - Shoreline erosion
  - Damaged seawalls
  - Absence of seawalls
  - Other shoreline Protection













# Seawall Survey – Seawall not Constructed **WORK PRODUCT**



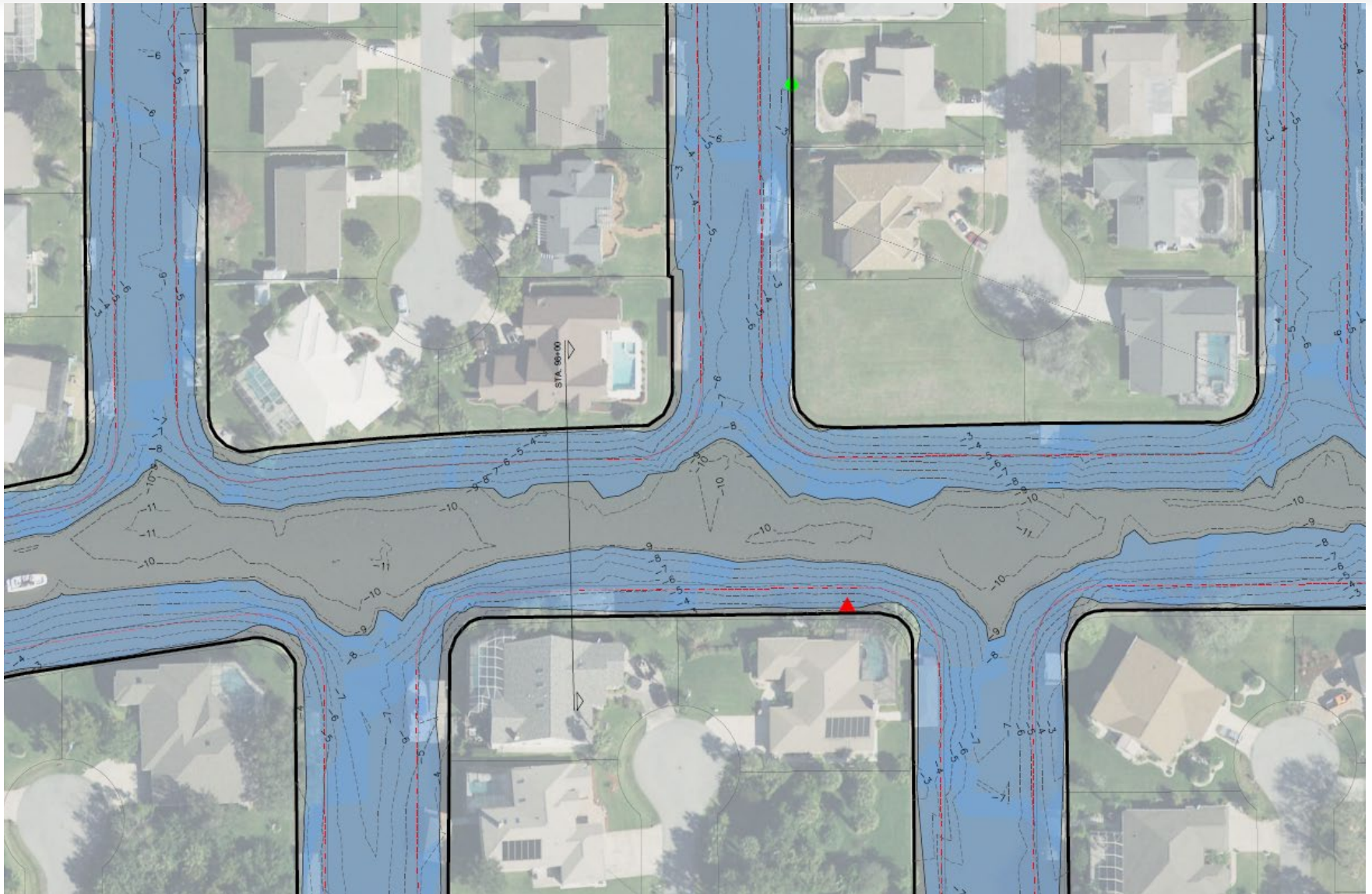
# Seawall Survey – Other Shoreline Protection

WORK PRODUCT



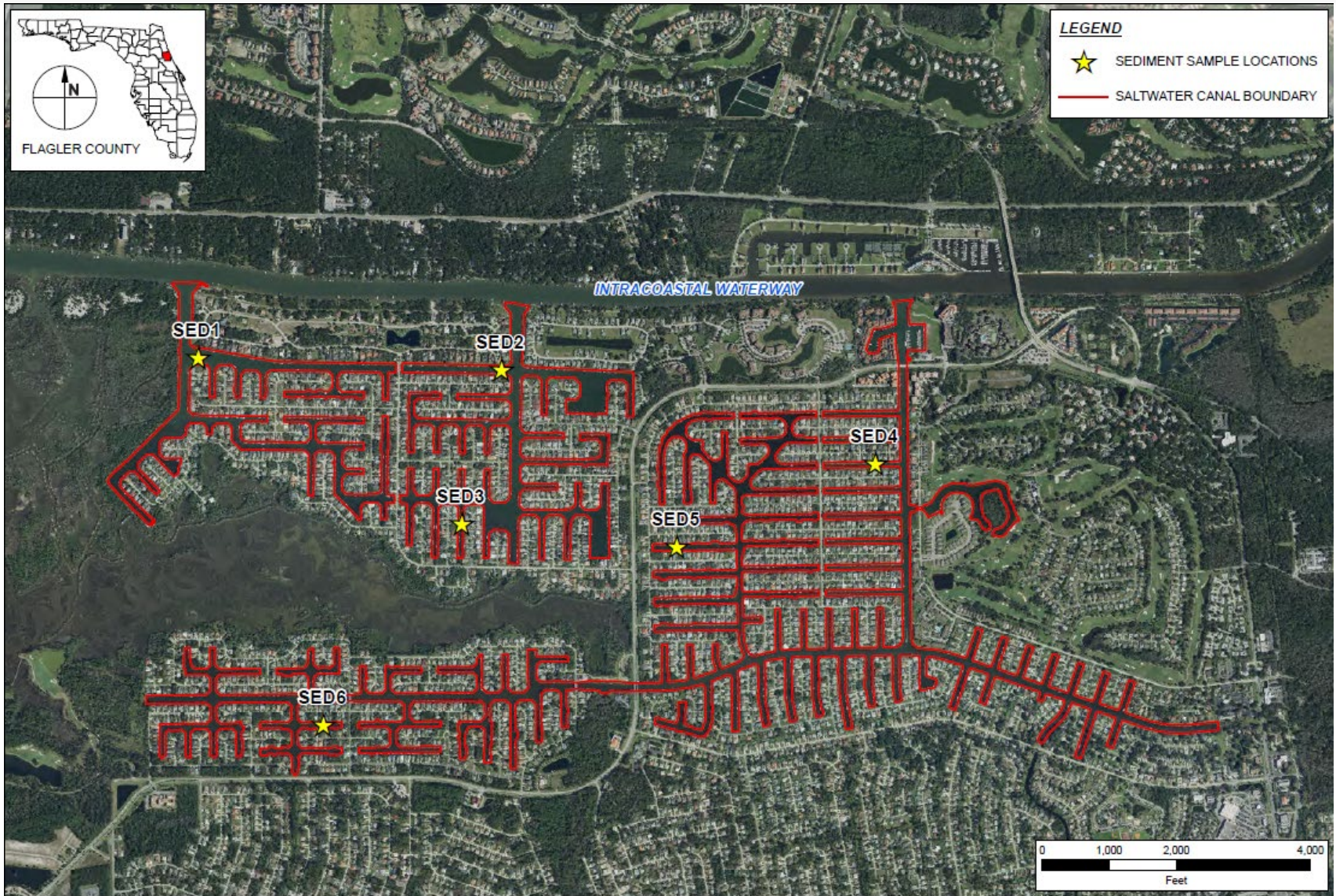








# Task 2-3 Sediment Sampling and Analysis WORK PRODUCT



# Task 2-3 Sediment Sampling and Analysis **WORK PRODUCT**

- Sediment Sample Collection
  - Six locations
  - Chemical and physical analysis
- Results
  - Sand and silt
  - Possibly suitable for commercial/industrial fill



## Task 2-4 Evaluate Feasibility of Additional Dredging

WORK PRODUCT

- Additional depth limited by canal width
  - Risk of seawall/dock damage
  - Significant volume and expense

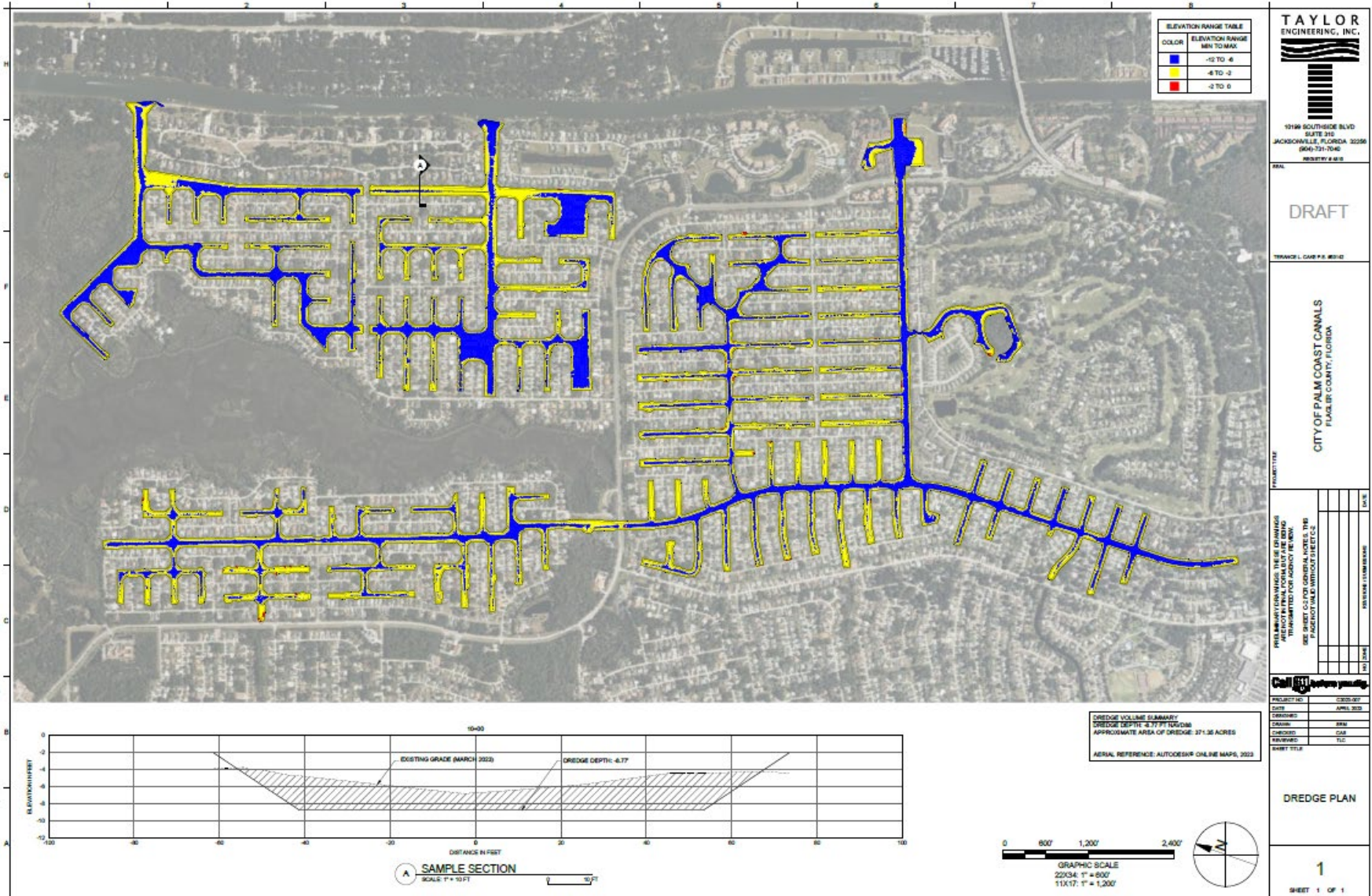
## Task 3 – Identify and Evaluate Potential Funding Sources

WORK PRODUCT

- Identification of applicable funding sources in progress
  - Lack of public access eliminates some options
  - Possible Options
    - ❑ FDEP Water Quality and Resilient Florida
    - ❑ SJRWMD Cost-Share Funding
    - ❑ USACE Water Infrastructure Financing Program
    - ❑ Waterways Assistance Programs
    - ❑ Others to be identified

- Significant Shoaling Areas
  - North and middle ICWW entrance
  - Near Long Creek Nature Preserve
  - Dead end canals
- Input Needed:
  - Regulatory input for permitted dredging depth
  - Determine priority areas and depth for dredging
- Potential Placement Areas
  - FIND FL-8
    - ▣ Closest but undeveloped
  - FIND FL-3
    - ▣ Developed and active

- Level of Effort (Order of Magnitude)
  - Approximately 13 miles of canals are shallower than -6' at centerline.
  - 250,000 to 500,000 cubic yards in final permitted proposal to FDEP
  - Cost \$10-\$20 Million
- Recommendations:
  - Engage FDEP to define permissible dredge depth
  - Evaluate areas by use and need
  - Determine priority dredging areas
  - Continue to identify appropriate funding sources



ELEVATION RANGE TABLE	
COLOR	ELEVATION RANGE MIN TO MAX
Blue	-10 TO -6
Yellow	-6 TO -2
Red	-2 TO 0

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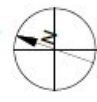
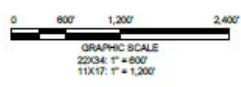
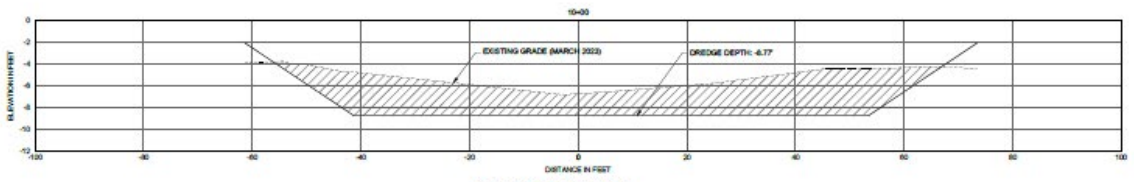
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Call 904.731.7040

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