

M E M O R A N D U M

TO: Tom Harmer, Town Manager
FROM: Isaac Brownman, Public Works Director
REPORT DATE: January 14, 2020
MEETING DATE: January 21, 2020
SUBJECT: Canal Dredging/Greer Island Spit Management Plan Update

Recommended Action

None, informational purposes only.

Canal Dredging Project Background

The goal of the Canal Dredging Project is to dredge canals within the Town that indicated need based on the October 2016 Feasibility Study provided by the Town's consultant, Taylor Engineering. This project also incorporates a Seagrass Mitigation Plan, which included permitting, filling and planting of up to four (4) acres of mitigation sites in Sarasota Bay. In October 2016, the Canal Design threshold of a useable depth of -3 feet was established by the Commission. The Feasibility Study originally identified sixteen (16) canals required dredging to meet the -3 feet design criteria. At the Town Commission's May 6, 2019 Regular Meeting an update was provided highlighting the progress of the project, the budgetary constraints, and discussing potential next steps. In June 2019, the project was reassessed and re-scoped instructing Taylor Engineering to move the existing Canal Dredging Project through permitting within the existing budget. The reassessment effort scaled the project back to fourteen (14) canals and also separated Greer Island / Canal 1a from the project and awarded it to APTIM Engineering under a separate contract.

Permitting Requirements for the Canal Dredging Project State

1. Florida Department of Environmental Protection (FDEP) Canal Dredging Exemption
2. Seagrass Mitigation Required
3. Mitigation Site Permitting (including fill material selection)

Federal

1. Seagrass Mitigation Required
2. Mitigation Plan
3. Mitigation Site Design
4. National Marine Fisheries Review

Canal Dredging Project Status

- Seagrass Mitigation Site Plan
 - Delayed due to Red Tide conditions in 2018
 - Resurveyed area in June 2019 to check for reduction in grasses due to 2018 Red Tide

- Finalized in August 2019
- FDEP Permit Application
 - Submitted September 2019
 - First Requests for Additional Information answered January 2020
- USACE Permit Application
 - Submitted October 2019
 - USACE Permit reviewer assigned November 2019
- Will need National Marine Fisheries review (long turn around)

Greer Island/Canal 1a Project Background

The goal of the project is to design, develop, permit, and construct a comprehensive plan to manage the migration of sand that forms the Greer Island spit. The goal includes developing a recommendation for a manageable amount of sand to remove from the spit and construction options for beneficial use of the material. The project also includes permitting and construction drawings for Canal 1a that ties into the spit management plan.

- APTIM Engineering awarded the contract in July 2019
- APTIM contract amount = \$129,915
- Design to minimize or eliminate any environmental impacts

Permitting Requirements for the Greer Island / Canal 1a Project State

1. FDEP Canal Dredging (ERP)
2. FDEP Beaches for Spit Management Plan (JCP)
3. FDOT for work around bridge (Potential)

Federal

1. ACOE
2. National Marine Fisheries Review

Greer Island / Canal 1a Project Status Update

- Field data collection completed December 2019
- Coastal engineer analyses completed December 2019
- Stakeholder Coordination
 - FDOT initial meeting in December with follow up meeting January 2020
 - Manatee County meeting completed December 2019
 - FDEP Pre App meeting completed December 2019
 - USACE Pre App meeting scheduled in January 2020
 - Public meeting scheduled for February 2020
- Spit Mitigation Plan development to be complete by end of January 2020
- Finalized plan to be developed per requirements of permitting process
- Permit applications targeted for mid-February 2020
- Permitting could take a year or longer

Note: The Town could try to align this project with the North end groin project and use spit material for backfill, to potentially make up for shortfalls from the Longboat Pass dredge or use as future project backfill.

Potential Short-Term Project for Canal 1a

Due to the accelerated Greer Island Spit growth, the sand is now touching the adjacent dock structure. This has restricted any passage for kayaks and canoes in the area. APTIM Engineering and the Town has asked the FDEP if it would be feasible to conduct a small emergency operation, to provide some relief, at the December pre-application conference call. FDEP stated they would like the Town to plan the project as a whole, but would be willing to look at an emergency option if the project got delayed. The Town is in the process of conducting a pre-application meeting with the ACOE. At this meeting we will also discuss the short-term project. If the outcome of that meeting is favorable, then the Town will instruct APTIM to provide a change order proposal to further that effort. We would seek as rapid a permitting solution as possible, and move the project into construction, as soon as applicable.

Budget and Estimated Cost for Greer Island/Canal 1a Project

The Engineers Estimate of Cost (APTIM Engineering) for the Greer Island project ranges between \$475,000 and \$1.15 million. This includes an estimate of construction costs to be between \$400,000 and \$1 million, and an unknown mitigation cost, if any. This total also included the \$130,000 to \$150,000 encumbered on engineering services for design, permitting and construction management.

The project is budgeted out of beach funds with an available project balance of \$750,000. The budget is within the estimated cost range and we anticipate being able to proceed once we receive all of the necessary permits. If the emergency Canal 1a work is approved and permitted, the Town would need to re-evaluate the amount of this work against the budget and completing the remainder of the project.

Budget and Estimated Cost for the Canal Dredging Project

The rough order of magnitude estimate provided to the Commission at the May 2019 update, recommended adding an additional \$2 million dollars to the Canal Dredging Project budget. The updated Engineers Estimate of Cost (Taylor Engineering) for the Canal Dredging Project ranges between \$4.2 million and \$5.1 million. This includes an estimate of construction costs to be between \$3.3 million and \$4.1 million, a post construction monitoring range of \$140,000 to \$180,000, and a Construction Management estimate between \$315,000 and \$365,000. This total also included the \$455,000 spent on engineering services for design and permitting, to date.

Currently there is approximately \$889,010 budgeted for the Canal Dredging Project. This leaves an unfunded balance of roughly \$3.3 million to \$4.2 million. An alternate funding option may be needed, to realize the funds necessary to move the Town Canal Dredge project forward. The Town was previously eligible/awarded \$300,000 through a Sarasota County West Coast Inland Navigation District (WCIND) Grant for the portion of canal dredging to be conducted within Sarasota County. Those funds expired when the Town delayed the project in 2019. The Town was assured they remain eligible to reapply for, and receive, those funds through Sarasota County WCIND. The Town is also negotiating with Manatee County to apply for similar funding through their WCIND

Grant program for the portion of the canal dredging to be conducted within Manatee County.

Next Steps

Greer Island /Canal 1A Project

- Budget appears to be available to continue project through design and construction
- Pursue temporary alternative maintenance cut with APTIM, FDEP and USACOE
- Continue design and permitting for full project
- Proceed to construction, target aligning with North End Groins Project

Canal Dredging Project

- Budget is under pressure based on current cost estimates
- Budget supports continuing through design, engineering, and permitting
- Potentially phase the project (canals with no seagrass / those with)
- Develop a Dredge Management Program to include
 - Funding strategies to move entire program forward
 - Describe levels of service

Recommended Action

None, informational purposes only.

Attachments

PowerPoint Presentation



Canal Dredging Update

Town Commission Regular Workshop
January 21, 2020



Canal Dredging Project Update

- Project History & General Criteria
- Update on Canal Project
- Update on Greer Island / Canal 1a Project
- Budget and Projected Project Costs
- Options and Future of Program



Project History

- Prior work efforts:
 - Developed GIS database
 - Collected preliminary field data
 - Estimated canal shoal volumes



Identify from: < Top-most layer >

Locations: 530,546.521 381,464.087 Meter

Field	Value
CanalFront	1
Shape	Polygon
HasDock	Substantial Dock
PARCELID	783510004
NOBUILDG	1
TWN	355
RNG	18E
SEC	23
STATEPARID	C51-000-538-4799-2
ACRES	.78
OBJECTID_1	1665
OBJECTID	2589
SELECTPRN	783510004
OWNER	MASTENBROEK,HENDRIKUS
SECONDARY	MASTENBROEK,DEBORAH ANN
PRIMARY_AD	6516 BAYOU HAMMOCK RD
PROP_ID	6516
PROP_IDN	BAYOU HAMMOCK
PROP_IDR	
PROP_CITYN	LONGBOAT KEY
PROP_ZIP	34228
COMMISSION	John Chappe
SUBDNUM	000000
SUBDIVISIO	NOT IN SUBDIVISION Q/D
SUBDIVS_1	N/A,N/A
LUC	0100
LUC_DESCRI	Single Family Residential (1554
ZONING	LBK_R_15F
FUTURE_LAN	CITY
SECTION_ID	522,23 T35 R 16
HST_NAME	NONE
OVERLAYS	NONE
WATERSHED	NONE
HISTORIC	URBAN-A
FIRE_DISTR	Longboat Key
EVACUATION	A-NONE
IMPACT_PRR	A-SIV
SPECIAL_AR	CRA,NONE
SCHOOL_SVC	55A-4

CanalFront	Shape	HasDock	PARCELID	NOBUILDG	TWN	RNG	SEC	STATEPARID	ACRES	OBJECTID_1*	OBJECTID	SELECTPRN	OWNER
1	Polygon	Substantial Dock	783510004	1	355	18E	23	C51-000-538-4799-2	.78	1665	2589	783510004	MASTENBROEK,HENDRIKUS



Project History – Initial Canal Inventory

- Evaluated 91 canals/waterways, totaling ~147,000 ft. (almost 28 miles)
- Found 16 canals with some degree of “hot spot” shoaling, using our preliminary criterion: < 2 ft. depth (Mean Lower Low Water [MLLW], Red)
- Our assessment indicates these hot spots result in ‘restricted access’ during MLLW along length of about 12,500 ft. (~2.4 miles) or 9% of total
- Deeper draft boats would be a concern for areas in Yellow (representing 49 canals), these added to Red would be about 33% of entire length



Conceptual Design – General Criteria





Conceptual Design – General Criteria Cont.

- Town direction (October 2016): **use a depth of -3 ft. below MLLW as a minimum ‘threshold’**; result in adequate navigable depth for most vessels at all stages of the tide.
- Town guidance allowed us to refine prior analysis and focus on a priority program for these ‘hot spot’ (red) canals; adjoining ‘Potentially Restricted’ (yellow) shoaled areas are included in the expanded analysis as areas of ‘restricted access’.
- This is based off the 2016 Feasibility Study

Based on the criteria developed, number of canals was reduced from 49 to 14



2019 Project Rescoping

Canal Dredging Project Original Contract with Change Orders:

- \$454,415
- 2 additional CO were pending adding seagrass mitigation design / monitoring and Greer/Canal 1a
 - Would have Added \$402,000
- Rescope
 - Provide Services to bring Project Through Permitting (Taylor Engineering)
 - Remove Greer Island / Canal 1a (APTIM Engineering Awarded)

Greer Island / Canal 1A:

- Awarded to APTIM Engineering
- \$129,915



Permitting Organizational Chart for Canal Dredging Project

State

1. FDEP Canal Dredging Exemption
2. Mitigation Required
3. Mitigation Site Permitting (including Fill Material Selection)

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Permitting Organizational Chart for Greer Island / Canal 1a

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1. ACOE
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Past Work/Current Status Canal Dredging Project

- Seagrass Mitigation Site Plan
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 - Finalized in August 2019

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Greer Island / Canal 1a



Figure1



Past Work/Current Status Greer Island / Canal 1a

- Field Data Collection Completed December 2019
- Coastal Engineer Analyses Completed December 2019
- Stakeholder Coordination
 - FDOT initial Meeting in December 2019 with follow on meeting in January 2020
 - Manatee County meeting completed in December 2019
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Note: Could try to align this project with the groin project and use spit material for backfill, to potentially make up for shortfalls coming from Longboat Pass dredge or use as future back filling.



Potential Short-Term Alternative



The spit growth has essentially closed off small boat (kayak, canoe) access to properties adjacent to Canal 1a.

The Town is working through our consultant to develop an emergency option to provide some access and maintain circulation of water as well.

Key Steps and Goals:

Permitting: APTIM and Town work with FDEP/USACOE on quick turn-around permit for basic cut, to the extent a rapid permit is feasible.

If this action appears feasible in the regulatory authorities view, APTIM to provide a change order proposal to continue effort.

Construct as soon as possible if permissible.



Budget Pressure

Greer Island / Canal 1a Project (Stand alone)

Estimated Dredge Volume	15,000 to 25,000 CY
Estimated Construction Cost	\$400,000 to \$1 Mil
Mitigation Costs	TBD
<u>Design & Engineering Fees*</u>	<u>\$130,000 to \$150,000</u>
	\$475,000 \$1,150,000

* Includes Permitting

Canal Dredging Project Costs

Estimated Dredge Volume	9,000 CY
Estimated Construction Cost	\$3.3 Mil to \$4.1 Mil
Design & Engineering Fees*	\$455,000 to \$455,000
Post Construction Monitoring	\$140,000 to \$180,000
<u>Const. Engineering Fees (Est.)</u>	<u>\$315,000 to \$365,000</u>
	\$4.2 Mil \$5.1 Mil

* Includes Permitting

- Order of magnitude costs
- Engineering assessment not complete
- Engineering fees may vary depending on the regulatory permit and mitigation requirements. Mitigation requirements unknown at this point
- Engineering fees may vary depending on the regulatory permit and mitigation requirements
- Includes mitigation site costs



Program Budget Comparison

Major Budget Line Items

Greer Island / Canal 1a \$750,000 (Beach Fund)

Total Cost of Greer Project = \$475K to \$1.15 Mil

Canal Dredging Program: \$704,440

Monitoring and Mitigation: \$184,570

\$889,010 (Canal Project Fund)

Total Cost of Canal Projects = \$4.2 Mil to \$5.1 Mil

Unfunded Balance of \$3.3 to \$4.2 Million need to move Canal Project Forward not including potential WCIND Grants



Continuation of Overall Program

Develop funding options to bring to Town Commission for consideration

(ex., special assessment canal dredging program – was part of original feasibility study task, but General Fund became the preferred funding option)

General Fund cannot sustain current or future dredge projects without a millage increase.



Next Steps

Canal 1a / Greer Island Beneficial Use

- Budget appears to be available to continue project through design and construction
- Pursue temporary alternative maintenance cut with APTIM, FDEP and USACOE
- Continue design and permitting for full project
- Proceed to construction, target aligning with North End Structure Project

Canal Dredging

- Budget is under pressure based on current cost estimates
- Continue design engineering and permitting
- Potentially phase the project (canals with no seagrass / those with)
- Develop a Dredge Management Program to include:
 - Funding Strategies
 - Describe and Define Levels of Service.

End of Agenda Item