

MEMORANDUM

TO: Max Royle, City Manager

FROM: William Tredik, P.E. Public Works Director

DATE: July 6, 2020

SUBJECT: Amendment #32 to Contract with CMT (formerly Stone Engineering)
Engineering Services - City of St. Augustine Beach Vulnerability
Assessment and Adaptation Plan

DISCUSSION

In 2019, the City applied to the Florida Resilient Coastlines Program (FRCP) for financial assistance to conduct a Vulnerability Assessment and Adaptation Plan (the Plan). The purpose of the Plan is to identify and analyze the City's vulnerability to flooding due to storm surge and sea level rise and develop an adaptation plan to guide the City in future decision making. On March 3, 2020 the FRCP notified the City of the anticipated award of \$72,500 for the subject project in the State of Florida 2020-2021 fiscal year, beginning July 1, 2020. The grant does not require a City match.

The Plan will include the following three major work elements:

1. Update the City GIS system with Drainage and Topographic Mapping to determine areas vulnerable to sea level rise and storm surge.
2. Update the City Master stormwater model to include new data within the stormwater master plan area. An informational public workshop partnering with the Northeast Florida Regional Council will be conducted at the completion of the modeling update.
3. Synthesize the results from the first two phases with the results of the analysis of the sea level rise scenarios evaluated based on implementation feasibility, public acceptance, effective sustainability, and cost.

The Plan will be used in development of future capital improvement programs and will be reviewed and presented to the City Commission for approval at a public meeting. Following this second public meeting, policy strategies may be developed to reduce flood risk from sea level rise and storm surge. These strategies may include policy objectives, land use policies, land acquisition, regulatory strategies, and incentive-based programs

The City's continuing contract engineering consultant, CMT, is uniquely qualified to develop the Plan due to their detailed knowledge of the City's Master Drainage Plan and their past development and possession of a citywide stormwater model. The existing stormwater model will be updated – rather than being developed from scratch – thus saving significant time and expense. Per the terms of the grant agreement, the Plan must be complete by April 30, 2021. The time savings associated with utilizing and updating the existing CMT citywide stormwater model is essential to the completion of the Plan within the required timeframe and available funding.

ACTION REQUESTED

Approve Amendment #32, Engineering Services, City of St. Augustine Beach Vulnerability Assessment and Adaptation Plan.

City of St. Augustine Vulnerability Assessment

THIS AMENDMENT is made as of _____, 2020, by and between CITY OF ST. AUGUSTINE BEACH (City) and, Crawford, Murphy & Tilly (CMT) (formerly STONE ENGINEERING GROUP). This Amendment to the City / CMT Agreement for Professional Engineering Services is in connection with the City's efforts to complete the assessment evaluation of the above referenced project.

SECTION 1: PROJECT DESCRIPTION:

St. Augustine Beach has received a grant from the Florida Department of Environmental Protection (FDEP) Florida Resilient Coastlines Program (FRCP) to conduct a Coastal Vulnerability Assessment and Adaptation Plan (the Plan). The grant contract is scheduled to be in effect on July 1, 2020. The Plan will include analysis of City vulnerabilities to sea level rise, extreme tides, and storm surge, and propose adaptation measures to mitigate the effects. Strategies implemented will support resiliency planning efforts and guide future capital improvement plan development. Plan development will include a level of coordination with the Northeast Florida Regional Council (NEFRC) and a level of engagement with the citizenry in considering the need to invest in a sustainable future mitigation against sea level rise. The findings in the Plan will be used to evaluate and prioritize future capital improvements and resiliency measures. The Plan will consist of the following three primary tasks:

1. Updating City GIS system with Drainage and Topographic Mapping to determine areas vulnerable to sea level rise and storm surge, including:
 - Analyze the City's coastal dune system to find vulnerabilities to storm surge
 - Update and analyze public and private drainage conveyances to determine vulnerability to backflow from the Matanzas River and Salt Run
 - Mapping of all low-lying lands which may provide overland conveyance of storm surge into the City of St. Augustine Beach
2. Updating the City Master stormwater model to include new data within the stormwater master plan area, including:
 - Running the updated model for high tide conditions during two sea level rise scenarios with current 25-year and 100-year rainfall events.
 - Develop GIS maps showing inundation associated with various model runs. This process will yield a comprehensive set of maps and an interactive GIS data base to allow for the results to be displayed dynamically at public workshops and public hearings and using the NEFRC's Regional Resilience Exposure Tool. will be utilized to further public engagement by summarizing the results through a PowerPoint presentation and other appropriate graphic methods.

Synthesize the results from the first two phases with the results of the analysis of the sea level rise scenarios evaluated based on implementation feasibility, public acceptance, effective sustainability, and cost. The final prioritized implementation plan to be used in development of future capital

improvement programs and will be reviewed and acted upon by the City Commission and presented at a public meeting. Following this second public meeting, policy strategies may be developed to reduce flood risk from sea level rise and storm surge. These strategies may include policy objectives, land use policies, land acquisition, regulatory strategies, and incentive-based programs.

SECTION 2: SCOPE OF SERVICES:

CMT will provide services and deliverables to the City as described in the following three tasks:

Task 1 – Existing Information, Field Evaluation and Update Existing GIS layers

Existing Information Use- Determine, using available County Lidar data, County property data, existing City Stormwater master plan, recent design improvement projects and field reconnaissance to identify areas within the City of St. Augustine Beach matching the available geographic data, vulnerable to sea level rise, extreme tides and storm surge.

Data Input Into GIS- CMT will gather, compile, and assist the City in the input of available existing/ most recent survey, lidar, and other topographical information to be used in populating/updating GIS layers in the City's GIS database. CMT field reconnaissance will attempt to confirm conflicting available data to further identify and represent within the GIS system a pathway in which storm surge and coastal flooding could inundate the City.

Presentation and Report Based Graphics- Using this supplemental data incorporated into the City GIS system, CMT will create a graphic representation of the identified areas within the City vulnerable to flooding due to their elevation and connection to receiving waters. These maps intended to be of sufficient resolution to identify specific parcels subject to flooding.

Deliverables - CMT will submit to the City the following digital deliverables on or before the Task/Deliverable Due Date listed in the Project Timeline:

- Mapping showing the City's coastal dune system, highlighting areas vulnerable to penetration or over-wash from storm surge.
- Mapping showing identified public/private drainage connections to receiving waters, including internal low-lying areas subject to coastal flooding through backflow of drainage conveyances
- Copy of any survey, field investigation data and other raw data collected or used during Task 1

Task 2 – Update with New input Data/ Rerun the Stormwater Model for Sea Level Rise Impacts

Update the Master ICPR Model - CMT will incorporate within the existing boundaries of the City Stormwater Master Plan ICPR stormwater model, any new differing information gathered in Task 1. The updated model will be run for two pre-established St. Johns County EMS sea level rise scenarios and in conjunction with established current 25 year-24-hour storm events and a 100 year-24-hour storm events. The inundation data associated with the various model runs will be compared and

coordinated within the relevant GIS data. This process will yield the capabilities for a comprehensive set of maps and an interactive GIS data base.

Public Workshop-An informational public workshop will be conducted at the completion of the modeling update to present maps and graphics and to summarize the results through a PowerPoint presentation

Deliverables - CMT will submit to the City the following deliverables on or before the Task/Deliverable Due Date listed in the Project Timeline:

- Summary report describing the methods and results of updating the stormwater model
- All model input files as well as link-node diagram(s).
- Existing Conditions model results associated with the two rainfall events and two predicted sea level rise scenarios.
- A version of the maps developed from the GIS system in Task 1 refined with modified flood inundation results from the ICPR model runs.
- Public workshop and associated presentations and exhibits.

Task 3 – Incorporate Results & Finalize the Coastal Vulnerability Assessment Plan.

Comprehensive Report - The results of the Tasks 1 and 2 will be incorporated into a comprehensive report identifying the City's vulnerabilities to extreme tides from sea level rise and storm surge. The final report shall include exhibits of areas vulnerable to coastal flooding for the various selected storm events. The final report shall also make recommendations as to how the vulnerable areas may be made more resilient and protected in the future. The Plan will identify key strategies and options which could be implemented in future capital improvements programs.

Public Meeting/ City Commission Presentation-A final public meeting will be conducted at the completion of the plan, presenting the results through a PowerPoint presentation. The meeting to be coordinated with the City Commission's normally scheduled meeting to act on the report.

Deliverables - CMT will submit to the City the following deliverables on or before the Task/Deliverable Due Date listed in the Project Timeline:

- Report on the updated stormwater model with strategies included to determine effectiveness of proposed solutions.
- Final Coastal Vulnerability Assessment Plan with exhibits.
- Attend second public meeting/City Commission meeting and prepare associated presentations and exhibits.

SECTION 3: PROFESSIONAL FEES

Tasks 1 through 3 will be paid as fixed fee tasks not to exceed the following:

Task 1	\$	17,500
Task 2	\$	35,000
Task 3	\$	20,000
Total Fee:	\$	72,500

SECTION 4: SCHEDULE

The schedule is predicated on a contract date and NTP of no later than July 1, 2020. The deliverables of this agreement are established based upon NTP of the same date. Deliverables for Tasks 1 through 3 will be provided on or before the following dates:

Task 1	September 30, 2020
Task 2	December 31, 2020
Task 3	March 31, 2021

IN WITNESS WHEREOF, the parties have made and executed this Amendment, the day month and year first above written.

CITY OF ST. AUGUSTINE BEACH, FLORIDA

By: _____
Margaret England, Mayor

ATTEST:

By: _____
Max Royle, City Manager

CMT

By: _____
It's Florida Manager: Gary L. Sneddon