Agenda Item # 4

Meeting Date 10-5-20

MEMORANDUM

TO: Max Royle, City Manager

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

DATE: October 5, 2020

SUBJECT: Amendment #33 to Contract with CMT (formerly Stone Engineering) Engineering Services – Engineering Investigation and Evaluation of Flood Control Improvements for Ocean Walk Subdivision

BACKGROUND

Ocean Walk is an 18-acre subdivision built in the 1980s, consisting of 55 single family residential lots. The subdivision relies upon a non-functional "accreted-in" roadside swale system which drains Lee Drive to a single point, whereupon runoff is conveyed via a 24" pipe to the Mickler Boulevard drainage system. Due to the non-functional roadside swales, valleys at driveway aprons hold water for significant periods of time after a rainfall event. After reaching Mickler Boulevard, runoff travels via the new pipe south to 16th Street, where it continues both west (to a private pond on Old Beach Road) and south to the 11th Street canal. Both pathways converge at Lakeside Park, whereupon flow continues west under S.R. A1A to the Mizell Road pond, where natural processes remove nutrients prior to its discharge to the Matanzas River.

The western portion of Lee Drive is low-lying, with Lidar information indicating elevations as low as 4.0 NAVD. Heavy rains in early June 2020 led to localized significant street flooding on Lee Drive. Due to the street flooding in June 2020, Public Works immediately implemented the following actions to reduce the potential for future street flooding, including:

- Removal of vegetation and muck from the 11th Street Canal
- Removal of vegetation and muck from the Mickler Boulevard Canal
- Cleaning and inspection of the 24" outfall pipe from Lee Drive
- Removal of vegetation from the 16th Street ditch
- Removal of vegetation from the private pond outfall at Old Beach Road
- Have pumps on standby to pump down staged water from Lee Drive

In addition to the above immediate mitigating actions, Public Works is taking the following interim steps to reduce the likelihood of future flooding while a long-term strategy is implemented:

- Installation of a pump-out structure on Mickler Boulevard to facilitate stormwater pumping
- Purchase of inflatable pipe plugs to block flow and allow better pipe maintenance and/or backflow protection.
- Install backflow protection device on the Lee Drive outfall to the Mickler Boulevard pipe.
- Budget for a trailer mounted high-volume stormwater bypass pump to allow quick response to potential flooding

DISCUSSION

In order to determine the appropriate long-term solution to the Ocean Walk drainage concerns, it is necessary to take the following actions:

- Gather topographic survey, including street elevations, outfall elevations, grade shots, utilities and other data necessary to determine the characteristics of the site and develop input data for the stormwater model
- Expand the City stormwater model by developing and calibrating a detailed H&H model of the Ocean Walk subdivision.
- Develop and model conceptual improvements
- Develop cost estimates for conceptual improvements
- Develop a report with conclusions and recommendations for improvements

The above steps will allow a staged approach to the development of a long-term solution to Ocean Walk's drainage problems and will help ensure that the best and most appropriate solution is chosen. Once the concept plans are presented, approved, and a funding mechanism is developed for project implementation, the City will be able to move quickly to complete design and permitting.

Public Works has requested and received a proposal from CMT to conduct the necessary work to determine the appropriate long-term drainage solution for Ocean Walk subdivision. CMT is uniquely qualified to conduct this study due to their detailed knowledge of the City's Master Drainage Plan and their past development and possession of a citywide stormwater model. The use of the existing stormwater model will allow design options to be quickly evaluated against tailwater conditions for various storm events. Their work on the City Vulnerability Study will also allow evaluation of options while taking into consideration anticipated sea level rise, future storm surge and extreme

tidal events. This level of evaluation will ensure that the proposed alternatives provide maximum benefit well into the future.

The attached proposed Amendment No. 33 to CMT's contract provides a detailed scope of work regarding the tasks necessary to conduct this investigation.

Major deliverables include:

1.	Topographic Survey and Conversion	$10,950
2.	Investigation of the Conditions and Extent of Flooding	$ 6,450
3.	Evaluation of Mitigation Options	$ 8,500
4.	Reporting and Presentation of Results	$ 4,000
	TOTAL FEE	$29,900

Data acquired and deliverables from this work will be used for the eventual development of construction documents, thus reducing the amount work necessary to complete design and permitting, once a decision has been made to proceed beyond this study.

REQUESTED ACTION

Approve Amendment #33 to Contract with CMT (formerly Stone Engineering) for Engineering Investigation and Evaluation of Flood Control Improvements for Ocean Walk Subdivision

AMENDMENT NO. 33

Engineering Investigation and Evaluation of Flood Control Improvements for Ocean Walk S/D

THIS AMENDMENT is made as of _____, **2020**, by and between **CITY OF ST. AUGUSTINE BEACH (City)** and, **CMT (formerly STONE ENGINEERING GROUP, INC.)**, a Florida corporation. This Amendment to the City / CMT Agreement for Professional Engineering Services is in connection with the City's efforts to investigate the conditions contributing to flooding within the Ocean Walk subdivision and evaluate improvement options for mitigating future flooding.

SECTION 1: PROJECT DESCRIPTION:

The City of St Augustine Beach experienced during late May to early June 2020 heavy daily rain events stretching over a week period resulting in internal flooding within the City drainage system including the Ocean Walk Subdivision.

The proposed engineering scope of this Amendment represents an investigation of the conditions contributing to and the extent of the flooding within the Ocean Walk subdivision, especially along Lee Road. Upon determining the extent of flooding, further evaluate improvement options for mitigating future flooding.

The scope of the anticipated engineering services is as follows.

SECTION 2: SCOPE OF SERVICES:

Our services will be provided in the following Tasks.

Task 2.1 –Topographic Survey and Conversation

A, Topographic survey on 50-foot cross sections for approx. 2,700 linear feet of road R/W.

B. Spot elevations each side of R/W, 10 feet off the R/W

C. Finished floor elevation on all 54 residences.

D. Surface indicators of utilities (existing storm sewer, water, san sewer, cable and elec).

E. Engineering coordination with surveyor and conversion of survey data to Engineering format

Task 2.2 – Investigation of the Conditions and Extent of Flooding.

A. Create a base map of the Ocean Walk S/D and the Mickler pipe connection from and based upon the new topographic survey and as built conditions of the Mickler Road new storm sewer from 16th St to Pope Road)

B. Describe the existing conditions of the subdivision, and surrounding area

C. Confirm and compare ICPR Model storm staging data and topographic elevations within the subdivision

D. Investigate and evaluate the capacity of the existing 24-inch storm sewer pipe serving the subdivision versus expected stormwater flow from the subdivision under varying storms.

E. Create typical and specific cross sections of the critical areas of the subdivision street ROW to indicate relative elevations of finished floors vs street surface vs flood staging.

Task 2.3 –Evaluation of Mitigation Options

A. Evaluate two options for improvement; (1) An evaluation of sections of streets that can be raised and (2) An evaluation of placement of a stormwater pump station and impacts on the street of pump start up elevations.

B. Identify varying utilities that might need adjusted for options evaluated

C. Create proposed conceptual improvement drawings for both options evaluated

D. Develop project wide and construction cost estimate for the two options evaluated

E. Develop an evaluation matrix that includes social, economic, and environmental considerations

Task 2.4 –Reporting and Presentation of Results

A. Develop a limited "white paper" report to be included as a part of the City Master Plan

B. Develop conclusions of the evaluation and recommendations for improvements

C. Coordination and presentation meetings (estimated at 3)

SECTION 3: PROFESSIONAL FEES

Our fee is outlined below:

3.1: Topographic Survey and Conversation	**$**	**10,950**
3.2: Investigation of the Conditions and Extent of Flooding	**$**	**6,450**
3.3: Evaluation of Mitigation Options	**$**	**8,500**
3.4: Reporting and Presentation	**$**	**4,000**
Total Fee:	**$**	**29,900**

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:_____
Its: Mayor

ATTEST:

By:_____
Its City Manager

CMT, INC.

Gary L. Sneddon

By:_____
Its Regional Manager: Gary L. Sneddon