

DEP AGREEMENT NO. R1916
CHANGE ORDER NO. 001

GRANTEE

City of Tampa
306 East Jackson Street
Tampa, FL 33602

DEP Agreement No. **R1916** as entered into on the 3rd day of September 2019, is hereby revised as follows:

1. **Attachment 3, Grant Work Plan, Project Timeline** is hereby deleted in its entirety and replaced with the following, due to the Corona Virus Outbreak:

PROJECT TIMELINE

Task No.	Task Title	Deliverable Due Date	Funding Amount
1	Consultant Selection	08/31/2019	\$500
2	Select Sample of Outfalls	09/30/2019	\$2,000
3	Sea Level Rise (SLR) Vulnerability Analysis	02/21/2019	\$32,500
4	Mitigation Options	05/27/2020	\$15,000
5	Stormwater Outfall Resiliency Strategy Development	06/30/2020	\$20,000
6	Public Outreach and Communication	06/30/2020	\$5,000
Total			\$75,000

All other terms and conditions of the Agreement shall remain unchanged.

CITY OF TAMPA

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Alex Awad
Alex Awad, Grantee Grant Manager

Whitney Gray, DEP Grant Manager

Date: March 24, 2020

Date: _____

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GRANT WORK PLAN
DEP AGREEMENT NO.: R1916**

ATTACHMENT 3

Project Title: Sea Level Rise Vulnerability Analysis

Grantee Contact Information:

Organization Name: City of Tampa
Authorized Signer for the Organization: Jane Castor
Title: Mayor
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City: Tampa
Zip Code: 33602
Area Code and Telephone Number: 813-274-8909
E-mail Address: cityoftampagrants@tampagov.net

Grant Manager Contact Information:

Organization Name: City of Tampa
Title: Alex Awad, Chief Planning Engineer
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City: Tampa
Zip Code: 33602
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Fiscal Agent Contact Information:

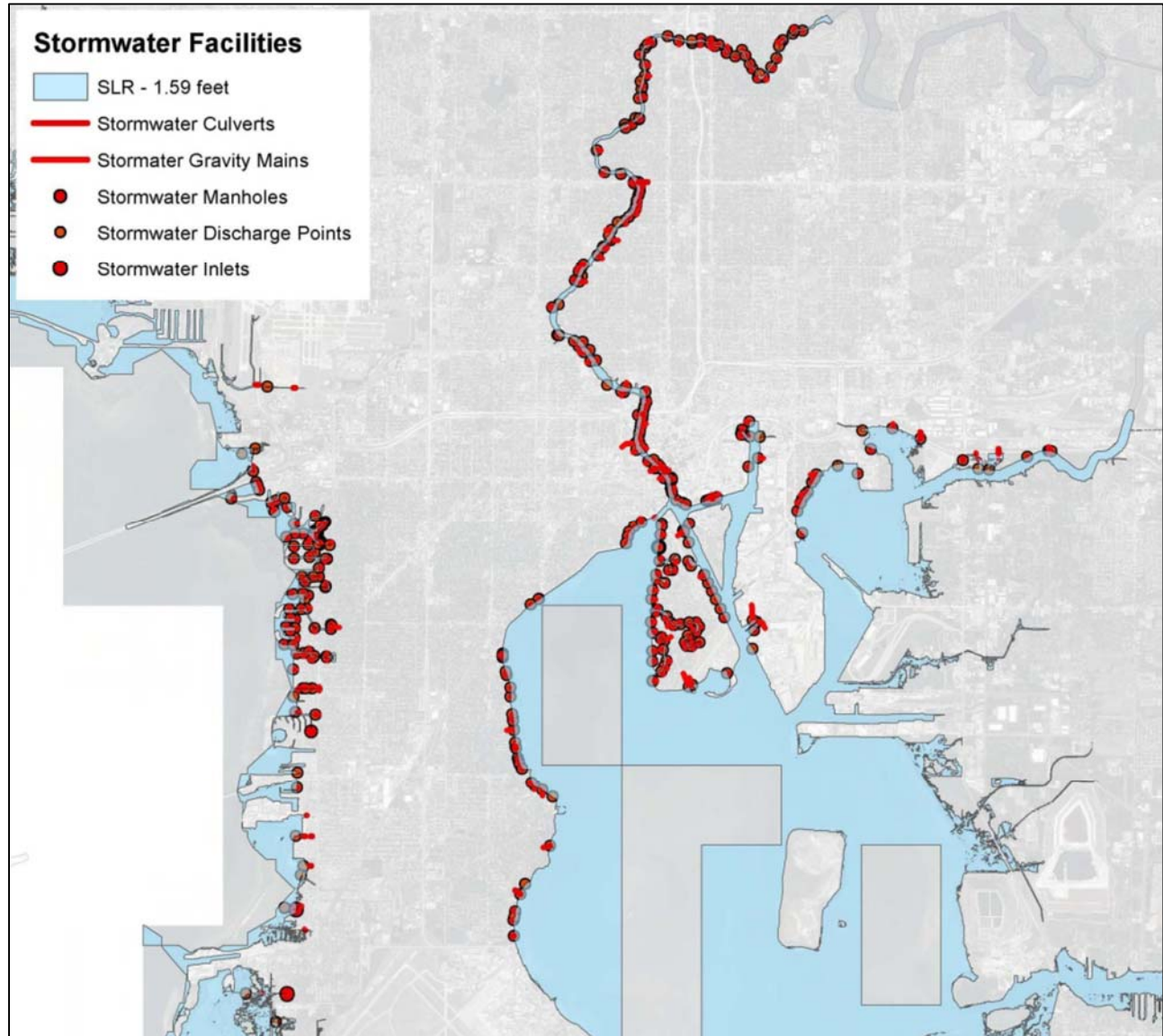
Organization Name: City of Tampa
Title: Ivy Valdes, Grants Supervisor
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E-mail Address: IvyA.Valdes@tampagov.net

FEID No.: 59-1101138

DUNS No.: 059071860

PROJECT LOCATION: The project is located at selected tidally-influenced stormwater outfall locations; City of Tampa, Hillsborough County, Florida. Please see the map on page 5 which includes location of all stormwater facilities that fall within the projected 1.59' sea level rise area within the City of Tampa municipal boundary.

Map. The map shows the location of all stormwater facilities that fall within the projected 1.59' sea level rise area. The map is comprised of nearly all stormwater outlets and gravity mains serving those outlets.



WORK PLAN

1. Project Summary:

The City of Tampa is requesting grant funding to develop a Vulnerability Analysis for critical stormwater systems located in areas susceptible to sea level rise. The project will focus on selected high priority stormwater outfalls (and the impacts to corresponding basins). Alternative mitigation options will be identified to address the sea level rise impacts, from which an overall strategy for addressing all affected outfalls will be developed (including cost estimates). The Vulnerability Analysis will provide an executable plan and road map for addressing the effect of sea level rise in the City of Tampa.

2. Project Description:

The City of Tampa will contract a qualified consulting firm to complete a sea level rise vulnerability analysis of the stormwater system. Using the data from the consulting firm's analysis, the City will then develop a stormwater outfall resiliency strategy. Due to the high number of affected stormwater outfalls (more than 350), it is not possible to assess impacts of all facilities within the scope of this grant. As such, the consulting firm, in cooperation with the City's Stormwater Division, will identify a sample of the affected high priority stormwater outfalls from which to analyze. The final stormwater outfall resiliency strategy will identify project locations and costs which can be directly incorporated in the City's capital improvements process.

The City of Tampa already complies with the 2015 "Peril of Flood" statute, and therefore, is eligible for assistance to further its resiliency planning efforts. This project focuses efforts on Priority Area 3, specifically on the development of a Vulnerability Assessment regarding Stormwater Assets susceptible to impacts from Sea Level Rise.

3. Project Need and Benefit:

In early 2017, the City of Tampa approved a text amendment to the Tampa Comprehensive Plan to comply with the State of Florida Peril of Flood Act. As outlined in the Hillsborough County City-County Planning Commission staff report, the legislation placed new requirements for local governments to address flooding from sea level rise. These requirements are found in Section 163.3178(2)(f), Florida Statutes.

Sea level rise projections for the Tampa Bay region were developed in 2015 by the Tampa Bay Climate Science Advisory Panel. The Planning Commission staff, working closely with City of Tampa staff and with the assistance of the Tampa Bay Regional Planning Council, completed a vulnerability assessment for the City based on these projections. The new Peril of Flood policies are based on these projections.

Some of the more notable findings in Planning Commission staff's assessment are:

- At least 80% of affected properties are publicly owned;
- Tampa General Hospital and several parks are at risk;
- Critical facilities are not located within at-risk areas; however, the area surrounding the McKay Bay Refuse-To-Energy Facility should be monitored;
- Segments of 31 local roads are at-risk;
- Several stormwater basins and some stormwater facilities are within the at-risk areas.

Using the digital data compiled for the vulnerability assessment, staff from the City of Tampa Planning and Urban Design Section completed a more in depth evaluation of the risks of sea level rise to structures, assets and infrastructure in the City. The assessment is based on the predicted "worst case" scenario from the Tampa Bay Climate Science Advisory Panel. This equates to a 1.59' rise in sea level above the local Mean Sea Level (LMSL) by 2040. The digital layer for the sea level rise study was overlaid onto the City's parcel, building footprint and infrastructure facilities layers to identify where the impacts would most likely occur. A Technical Memorandum "Analysis of Sea Level Impacts on City of Tampa Facilities and Assets (June 2017)" was produced.

Results of the assessment found that with the exception of stormwater facilities, the impact of a 1.59' rise in sea level on structures and city facilities is very low in relation to the overall inventory of property, structures and facilities in the City. This provides public and private property owners and facility planners' time to monitor sea level rise and develop long-term solutions where the risks may be greatest.

However, in regard to stormwater facilities, the data suggests that many current stormwater outfalls could be impacted by rising sea level well before 2040 which could result in periodic flooding in low lying areas of the basins they are intended to serve. Even at a moderate impact of sea level rise, numerous parts of the stormwater system could be impeded.

There are 362 stormwater discharge points and 325 gravity mains segments that could be at risk. Because some of the outfalls are already at or near sea level, they could be rendered less effective as sea level rises. This could result in inland flooding during times of either high rains or high tide, or combination thereof. Below is a list of the stormwater facilities that could be impacted by sea level rise.

- 9 of 22,437 (0.04%) Stormwater Inlets in Beach Park, Port Tampa area and Downtown
- 362 of 936 Stormwater Discharge Points (38.7%) at various locations along the river & bays
- 2 of 8,442 (0.02%) of the stormwater manholes
- 1 of 15 Storm System Valves (6.7%) located in Downtown at Washington Street
- 28 of 1,267 (2.21%) Stormwater Culverts located at various areas of the city.
- 325 of 36,544 (0.89%) Stormwater Gravity Mains at various locations along the shoreline

The Technical Memorandum recommended continued monitoring of sea level rise against the worst case projection every 5 years. A sea level rise trend higher than the worst-case scenario would be cause to reevaluate impacts and implement mitigation responses in a more timely manner.

For stormwater facilities, in addition to monitoring sea level rise, the Technical Memorandum recommended that “planners and engineers begin a process to develop alternative mitigation projects.” The Memorandum also noted that “considering the number of outfalls and facilities at risk (and the potential impacts to corresponding basins), the costs of addressing flooding is expected to be significant (although this has yet to be quantified). As such, it would be prudent to identify alternative mitigation projects, costs and methods of financing well before development or community quality of life is restricted.”

Since the City already complies with the 2015 “Peril of Flood” statute and is therefore eligible for assistance to further its resiliency planning efforts. This project focuses efforts on Priority Area 3, specifically on the development of a vulnerability analysis regarding stormwater assets susceptible to impacts from sea level rise. The proposed vulnerability analysis will inform mitigation strategies for short-term improvements, as well as adaptation strategies to identify the long-term solutions. Adaptation measures applied to stormwater assets can also provide benefits to other assets through flood reduction on roads, flood protection for buildings and businesses, expansion of open space, water quality improvements in Tampa Bay and riverine systems, and enhancements to recreation, fishing, and tourism.

The vulnerability analysis will be initiated after the agreement execution date and completed prior to June 19, 2020. Please see page 7 for a detailed timeline to completion.

Images. The images below are stormwater outfalls along the Hillsborough River south of Columbus Drive in the downtown area. As can be seen, water levels are already higher than the bottom of most of the outfalls shown here. A projected 1.59' rise in sea level would affect stormwater flows through these locations. Similar levels have been observed a many of the outlets along the City's shoreline.



4. **Budget Summary:** Allowable budget categories and costs for this project are listed in the table below.

FIXED PRICE	Grant Amount Awarded
AGREEMENT TOTAL	\$75,000

5. **Project Timeline:** All tasks are to be completed and submitted no later than the Deliverable due date listed in the table below. Request for any change must be submitted prior to the current deliverable due date listed in the project timeline. Request are to be sent via separate email to the Department's Grant Manager, with the details of the request being made and the reason for the request.

PROJECT TIMELINE

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Total			\$75,000

6. **Performance Measure:** The Department's Grant Manager will review the deliverables to verify that they meet the specifications in the Grant Work Plan and this task description, to include any work being performed by any sub-contractor(s). Upon review and written acceptance by the Department's Grant Manager of all deliverables under this task, the Grantee may proceed with payment request submittal. All deliverable documents must be provided in an electronic downloadable format.
7. **Consequences for Non-Performance:** The Department will reduce each Task Funding Amount by 5% for every day that the Deliverable(s) is not received on the specified due date in the most recent Project Timeline, for the Agreement. Should a Change Order or Amendment be requested on the date of or after the most current Deliverable Due Date, the 5% reduction of that Task Funding Amount will be imposed until the date of the requested change is received, via email by the Department.
8. **Payment Request Schedule:** Grantee may submit a request for the Task Funding Amount to be paid using the Exhibit C, after all Deliverables for that Task have been approved by the Department. Request(s) for payment must include the Exhibit A showing 100% completion of that Task and must be submitted within 45 days of the Deliverable Due Date.

Or

Grantee may submit one request for the Grant Amount Awarded, by using the Exhibit C, after the project is 100% completed. The request for the Grant Amount Awarded, must include an Exhibit A showing 100% completion for all Tasks, and must be submitted within 45 days of the Deliverable Due Date.

TASKS & DELIVERABLES

Task #1

- A. Title:** Consultant Selection
- B. Description:** Funds provided through Florida Resilient Coastline Program will be used to hire a qualified consulting firm to complete the vulnerability analysis.
- C. Deliverable:** Signed consulting agreement.

Task #2

- A. Title:** Stormwater Outfall Sample Selection
- B. Description:** The City has 350+ stormwater outfalls that discharge to tidally influenced areas susceptible to Sea Level Rise. These outfalls are critical to conveying stormwater and protecting life and property within the full array of land use types across the City. Considering the high number of affected stormwater outfalls, it is not possible to assess impacts of all facilities within the scope of this grant. As such, the consulting firm, in cooperation with the City's Stormwater Division, will identify a sample of the affected high priority stormwater outfalls from which to develop an overall strategy.
- C. Deliverable:** Summary of selection methodology, List of Selected Outfalls and Location Maps

Task #3

- A. Title:** Sea Level Rise (SLR) Vulnerability Analysis
- B. Description:** Once the sample outfalls have been identified, the consulting firm will assess the impacts of future sea level rise impacts on the affected stormwater basins using publicly available data.
- C. Deliverable:** Sea Level Rise Vulnerability Analysis (including maps and scenarios)

Task #4

- A. Title:** Mitigation Options
- B. Description:** Based on the SLR Analysis, the consulting firm will develop alternative mitigation options and cost estimates.
- C. Deliverable:** Mitigation Options Summary Table including cost estimates

Task #5

- A. Title:** Stormwater Outfall Resiliency Strategy Development
- B. Description:** Finally, the consulting firm, in collaboration with City staff, will develop a long-range strategy for addressing the sea level rise needs of the City's stormwater system. This strategy will be used by City staff in the development of the Division's annual capital improvement program.
- C. Deliverable:** Stormwater Outfall Resiliency Strategy including maps, tables and cost options

Task #6

- A. Title:** Public Outreach and Communication

- B. Description:** The City will hold two public meetings to inform stakeholders and citizens and receive input into the process. Additionally, the City will create a web and social media presence so that interested persons can follow the project and access information easily.
- C. Deliverable:** Meeting Notes, Agenda, Sign-in Sheets, and Social Media URLs, for each meeting held.