

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GRANT WORK PLAN
DEP AGREEMENT NO.: CM746**

ATTACHMENT 3

Project Title: City of Sebastian – Building Resilience into the Comprehensive Plan

Grantee

Organization Name: *City of Sebastian*
Chief Elected Official or Agency Head: *Joe Griffin*
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Project Manager

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Fiscal Agent

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FEID No.: 59-6000427

DUNS No.: 087757977

Location: *City of Sebastian, Indian River County, Florida*

Project Description:

The City of Sebastian has diligently worked towards mitigating damages from coastal flooding and storm damage to public facilities. The City desires to prepare a master plan that will guide the next steps towards funding of capital infrastructure projects. In order to move forward with a comprehensive plan, the City requires technical assistance to complete a matrix of development strategies that increase their resiliency along Florida's coastline. Though a portion of the City's Comprehensive Plan was updated in 2012, the Public Facilities, Conservation Element and Coastal Management Element have not been updated since 1999, presenting an almost twenty-year gap in data and analysis. The City proposes to translate science and data into risk preparedness policy. Utilizing existing data sources, an assessment of the vulnerability of various aspects of the City's land-use, public assets, and ecosystems to certain hazards will lead to the end goal of enhancing resiliency.

The main parts of the planning effort will include:

- A. IDENTIFY areas of flood risk and vulnerability that may require planning considerations.
- B. ASSESS level of readiness and preparedness to deal with a disaster before it occurs.
- C. DEVELOP coastal resiliency strategies and integrate policies into the Plan including statutory Peril of Flood language.
- D. PRIORITIZE mitigation measures that need to be implemented to reduce future losses.
- E. SHARE the results with the community.

The final product will be a Vulnerability Assessment and an Adaptation Action Plan incorporated as part of the data and analysis leading to proposed policy directives for the Comprehensive Plan Elements; Public Facilities, Conservation, and Coastal Management. Furthermore, policy language will be included that satisfies the statutory requirements of the 2015 Florida Peril of Flood Act which addresses flood risks to real property and the built environment.

Based on the findings of this project, the City will be able to prepare a "readiness to proceed" document that will assist in lining up a next step scenario for future grant opportunities, capital improvement project planning and engineering strategies for infrastructure projects.

The City proposes to contract out 100% of the grant funds with a planning consultant experienced in performing this specialty work. City staff will support the work through our staff salaries, equipment and supplies as match to the grant funds.

Total Budget Summary:

	Grant
AGREEMENT TOTAL	\$50,000.00

TOTAL GRANT FUNDS

Categories	Task 1	Task 2	TOTAL BY CATEGORY
Contractual	\$30,000.00	\$20,000.00	\$50,000.00
SUB-TOTAL BY TASK	\$30,000.00	\$20,000.00	\$50,000.00

PROJECT TIMELINE: The tasks must be completed by the corresponding task end date and all deliverables must be received by the designated due date of June 30, 2019.

Task/ Deliverable No.	Task or Deliverable Title	Task Start Date	Task End Date	Deliverable Due Date/ Frequency
1	Vulnerability Assessment and Adaptation Action Plan	08/01/2018	03/30/2019	03/30/2019 Bi-weekly updates with consultant
1a	Kick-Off Workshop			08/30/2018
1b	Data Collection and Evaluation Process			12/31/18
1c	Asset/Threat Pair Development			02/28/2019
1d	Development of Evaluation of Adaptation Measures			03/30/2019
1e	Public Involvement			Ongoing; 03/30/2019
2	Comprehensive Plan Goals, Objectives and Policies Update (Conservation/Coastal Management/Public Facilities, Future Land Use (as applicable))	08/01/2018	06/01/2019	06/30/2019 Bi-weekly updates with consultant

Task 1 Description: Vulnerability Assessment and Adaptation Action Plan

Task 1a Kick-off Workshop

CONSULTANT will participate in a kick-off workshop with CITY Staff to review the goals and objectives of the project. The workshop will be used as a mechanism to establish the lines of communication and flow of information, as well as to review the scope and schedule. The CITY will determine what key CITY staff will attend the workshop. The selection of the planning level horizon for sea level rise will be determined.

It is anticipated that the CITY will provide, or make available to the CONSULTANT the following data for CONSULTANTS review and assessment:

- Indian River County Flood Insurance Rate Map (FIRM) including the CITY panels showing the map of Special Flood Hazard Areas
- CITY Demographics
- CITY Land Use Map
- CITY Zoning Map
- Shapefiles and maps of all publicly owned utilities including sewer, water and stormwater as well as any data available for the location of private septic tanks.
- Other GIS files including shapefiles of CITY boundaries; street layers; critical facilities such as schools, hospitals, public shelters, master lift stations, treatment plants, etc.
- Latest Digital Elevation Model;
- Finished floor elevations (in NAVD88 datum) of critical facilities, if available.
- Available as-built drawings for critical facilities;
- Shapefile of the location and addresses of all “repetitive loss” properties within the CITY along with the location and elevation of any past high water marks from previous storm events.
- Location of areas of recurrent flooding or public facilities which have experienced past loss of operational effectiveness due to acute events (e.g. storms) or chronic stresses (e.g. heat)

The results of the workshop will be compiled into a matrix showing the responses by those engaged in the involvement process focusing on perceived threats and vulnerabilities, existing plans and desired actions to improve resilience. The discussion will also lead to the formation of the assets to be evaluated as part of the analysis.

Task 1b Data Collection and Evaluation Process

The CONSULTANT will review the data provided and advise the CITY of any significant data gaps which must be addressed to ensure the successful achievement of the project's goals. In addition to the data provided by the CITY, the CONSULTANT will collect the following published data as part of the assessment:

- IRC Lidar (Indian River County);
- Sea Level Rise and nearest tidal information from the National Oceanic and Atmospheric Administration.
- Design rainfall events based on the St. Johns River Water Management District's Basis of Review for the 25-year, and 100-year/3-day events.

Unless otherwise provided by the CITY, the CONSULTANT will acquire the latest Digital Elevation Model (DEM) as available from either the St. Johns River Water Management District or Indian River County. The DEM will provide the basis of the Vulnerability Assessment and will be used "as is" to project flood depth. Initial conditions will be set based on the DEM. The Consultant will not review the DEM for topographic voids and will not include any as-built conditions or cut-over dates since the publication of the DEM.

Task 1c – Asset/Threat Pair Development - Vulnerability Assessment

Based on the information gathered in subtasks 1a and 1b, the CONSULTANT will project flood risk derived from the 25-year, and 100-year precipitation events in combination with sea level rise scenarios. The scenarios used for the risk analysis will consist of:

- Flood depths for the 25- and 100-year rainfall events with no sea level rise
- Flood depths and extents for 2 events with sea level rise (based on the planning horizon agreed to at the Workshop meeting, i.e. 30 years, this will include an analysis of low, medium and high sea level rise based on NOAA projections). The CONSULTANT will integrate the modeling results and information agreed to in subtask 1a to assess vulnerabilities. This will include the development of a paired asset-threat relationship in consultation with the CITY. The threats are estimated to include:
 - Sea Level Rise for the low/medium/high projections
 - 25-yr/72-hour rainfall
 - 100-yr/72-hour rainfall
 - Predicted storm surge for a Category 1 Hurricane (based on available data from Indian River County Emergency Management Division) using high tide conditions
 - Predicted storm surge for Category 3 Hurricane (based on available data from Indian River County Emergency Management Division) using high tide conditions
 - Combined sea-level rise (low projection) with 25-yr/72-hr event
 - Combined sea-level rise (high projection) with 100-yr/72-hr event

The asset-threat relationships will be combined in a matrix to demonstrate the vulnerabilities.

Task 1d Development and Evaluation of Adaptive Measures

Based on the vulnerability matrix from subtask 1c, the CONSULTANT, in consultation with the CITY will develop a qualitative screening process to develop a range of adaptation measures (engineering strategies) for each asset/threat pair determined to be vulnerable, focusing on the most vulnerable, most important assets first. Screening criteria may include:

- Engineering Feasibility
- Cost and benefits
- Community Acceptance
- Environmental Impacts
- Socio-economic Impacts

The results from the screening will be ranked by the CONSULTANT and the CITY will prioritize the strategies for adoption.

Task 1e Public Involvement

CITY staff, with the assistance of the CONSULTANT, will schedule and advertise one (1) Public workshop to gather information and/or present adaptation ideas for public input involved in the vulnerability assessment or development of adaptive measures. The City will be responsible for advertising and securing the location of the workshop. One (1) web based meeting will also be provided to review the draft technical memorandum and findings noted in the Deliverable.

Deliverable: a) *Matrix of vulnerabilities by asset/threat pair and Geodatabase of model results.*
b) *Technical Memorandum of Vulnerability Matrix with Ranked and Prioritized Adaptation Strategies.*

Due Date/Frequency/Performance Period: March 30, 2019 (Though the due date for all deliverables is June 30, 2019, we are establishing this date in order to ensure final deliverable).

Performance Measure: The Department will review the deliverable(s) to ensure it meets the specifications provided in the Task Description, above.

Funding for Task 1:

Category	Grant Funds
Contractual:	\$30,000.00
TASK TOTAL:	\$30,000.00

Task 2 Description: Comprehensive Plan Goals, Objectives, and Policies Update: Conservation, Coastal Management, Public Facilities, Future Land Use (as applicable).

Based on the analysis, findings and strategies developed as part of **Task 1**, the City of Sebastian will be required to update the respective Elements of the City's Comprehensive Plan including the applicable Goals, Objectives, and Policies (GOPs). These Comprehensive Plan Amendments are understood to include preparation of the statutory (required) Data, Inventory and Analysis (DIA) based on the results of **Task 1**, preparation of strikethrough and underline versions of the City's current comprehensive plan identifying proposed amendments (deletions and or additions) and required public hearings as identified below. Specifically, the CONSULTANT will perform the following to the Elements identified above:

1. Review the Plan for consistency with adopted State and regional requirements, since the last EAR.
2. Develop a draft review "Matrix" of recommended GOPs for amendment including justification(s).

3. Update applicable MAPS within the Element and submit MAPS in GIS layers (based on available CITY GIS data; the development of new GIS data and layers is not assumed as part of the Task), as well as PDFs.
4. Prepare for and attend one (1) community workshop, understood to be facilitated by the City's Local Planning Agency (LPA)/Planning & Zoning Commission.
5. Based on the findings of items 1-3, update the GOPs for each of the comprehensive plan elements specific to those identified above. Draft GOPs will be presented to City staff for review and comment including providing up to two rounds of revisions to the draft GOPs based upon staff review.
6. Present the draft GOPs one (1) time to the LPA.

Deliverable: *a) Prepare a (finalized) review matrix of the existing Comprehensive Plan including recommendations for amendments to the City's Plan; and b) Prepare draft set of Goals, Objectives and Policies (GOPs) for the combined Conservation, Coastal Management and Public Facilities Elements, including Future Land Use as applicable. All Maps will be submitted in GIS layers as well as imbedded in the document as PDF's.*

Due Date/Frequency/Performance Period: *June 30, 2019.*

Performance Measure: The Department will review the deliverable(s) to ensure it meets the specifications provided in the Task Description, above.

Funding for Task 2:

Category	Grant Funds
Contractual:	\$20,000.00
TASK TOTAL:	\$20,000.00