RESOLUTION 24-40

A RESOLUTION OF THE CITY OF PANAMA CITY BEACH, FLORIDA, APPROVING A COMBINED TASK ORDER AND NOTICE TO PROCEED WITH GEMINI ENGINEERING & SCIENCES, INC. FOR ENGINEERING SERVICES RELATED TO THE DEVELOPMENT OF A CITYWIDE STORMWATER VUNERABILITY ASSESSMENT IN AN AMOUNT NOT TO EXCEED $50,000.00.

BE IT RESOLVED that the appropriate officers of the City are authorized to execute and deliver on behalf of the City that certain Combined Task Order and Notice to Proceed #2024-01 to its Master Services Agreement with Gemini Engineering & Sciences, Inc. for Professional Stormwater Engineering Services for City Stormwater Master Plan for engineering services associated with the development of a Citywide stormwater vulnerability assessment in an amount not to exceed Fifty Thousand Dollars ($50,000.00), in substantially the form **attached** as Exhibit A and presented to the Council today, with such changes, insertions or omissions as may be approved by the City Manager.

THIS RESOLUTION shall be effective immediately upon passage.

PASSED, APPROVED AND ADOPTED in regular session this 14th day of December 2023.

CITY OF PANAMA CITY BEACH

By: _____
Mark Sheldon, Mayor

ATTEST:

_____
Lynne Fasone, City Clerk

COMBINED TASK ORDER AND
NOTICE TO PROCEED

TASK ORDER NO. 2024-01 DATE 12/14/2023

Reference is made to that certain MASTER SERVICE AGREEMENT BETWEEN CITY OF PANAMA CITY BEACH AND GEMINI ENGINEERING & SCIENCES, INC. RELATING TO PROFESSIONAL ENGINEERING SERVICES dated **12/09/21**, (the "Agreement"), the terms, conditions, and definitions of which are incorporated herein as if set forth in full. Neither party is in breach of the Agreement.

Pursuant to the Agreement, Engineer agrees to perform the specific tasks set forth upon incorporated Attachment A, Scope of Services, relating to Vulnerability Assessment.

Engineer's total compensation shall be (check one):
__X__ a stipulated sum of $ 50,000.00 ; or
____ a stipulated sum of $_____ plus one or more specified allowances listed below which may be authorized in writing by the City Manager or his designee,
Allowance of $ _____ for _____, and
Allowance of $ _____ for _____; or
____ a fee determined on a time-involved basis with a maximum cost of $_____;

as set forth upon incorporated Attachment B, Fee Breakdown, and shall be paid in monthly installments as specified in the Agreement.

Work shall begin on January 8, 20 24, and shall be completed within 120 calendar days. The date of completion of all work is therefore May 7, 20 24. Liquidated delay damages, if any, are set at the rate of $ 0.00 per day. There are no additional rights and obligations related to this Task Order other than as specified in the Agreement.

Upon execution of this task order by both Engineer and City, Engineer is directed to proceed.

IN WITNESS WHEREOF the parties have caused these presents to be executed in their names on the date shown.

Witness:
Ted Sisak, Vice President

GEMINI ENGINEERING & SCIENCES, INC.
By: _____ Date: Dec 1, 2023
Its: President

ATTEST:
City Clerk

CITY OF PANAMA CITY BEACH, FL.
By: _____ Date: 12.5.23
ACTING City Manager

Citywide Vulnerability Assessment
City of Panama City Beach

December 1, 2023

SCOPE OF SERVICES

SECTION 1. PROJECT BACKGROUND

This statement of work describes the responsibilities of Gemini Engineering & Sciences (PROFESSIONAL) and the City of Panama City Beach (CITY) for the development of a Citywide Vulnerability Assessment. The scope of work for this project is to develop a Citywide Vulnerability Assessment for the City of Panama City Beach, consistent with the requirements of the Florida Department of Environmental Protection (FDEP)'s Resilient Florida Program, Office of Resilience and Coastal Protection (ORCP), as defined by Section 380.093, F. S.

Bay County is currently developing a comprehensive countywide Vulnerability Assessment, although details of the scope and schedule are unclear at this time. In light of this uncertainty, preparation of this Vulnerability Assessment is intended to maximize the CITY's eligibility for Resilient Florida Program grants to enhance infrastructure and services that maintain resilience to flood-related damage, especially as related to Sea-Level Rise (SLR). Additionally, this Vulnerability Assessment will incorporate the best available scientific methods to identify the structural and social assets that may be vulnerable to future coastal flooding, and thus inform the CITY's future Adaptation Planning.

SECTION 2. SCOPE OF SERVICES

The Scope of Work for this assignment will include the following specific services, divided into three (3) Tasks as follows:

Task 1 – Gather Background Information and Data

Task 1 will include, as recommended by FDEP guidance, arranging, and conducting a Kick-Off Meeting with CITY staff, and preparing a brief memorandum specifying attendees, their recommendations, and outcomes.

Task 1 will include gathering background information and preparing a technical summary of the data gathered. Data will be gathered for the following:

1.1. Critical/regionally significant assets
- 1.1.1. Transportation assets and evacuation routes
- 1.1.2. Critical infrastructure
- 1.1.3. Critical community & emergency facilities
- 1.1.4. Natural, cultural, and historical resources

1.2. Topographic data
    1.2.1. Survey data
    1.2.2. LiDAR data & DEM data: min. 3 m resolution for DEM data
1.3. Flood scenario-related data
    1.3.1. Precipitation data from NOAA Atlas 14, USGS, Florida Flood Hub
    1.3.2. Groundwater data
    1.3.3. Sea-Level Rise (SLR) projections: NOAA's 2014 Int-High & Int-Low projections for 2040 and 2070 + optionally, other projections from NOAA Digital Coast website, Florida Flood Hub
1.4. Tidal datums & Tidal flooding, from NOAA Digital Coast SLR Viewer, FL Flood Hub
1.5. Storm Surge, from FEMA, USACE
1.6. Hydro-stratigraphic information, if applicable with justification
1.7. River channel cross-section data, if applicable
1.8. Land Use Data, incl. Total Impervious Area (TIA), Directly Connected Impervious Area (DCIA) and Projected Future Land Cover data, from UF GeoPlan Center (2022).
1.9. Evapotranspiration Data
1.10. GIS files and associated metadata, which must adhere to the Department's GIS Data and Metadata Standards (FDEP, 2022, Appendix C), and GIS metadata incorporating levels for the 4 asset types defined in statute:
    1.10.1. Transportation assets and evacuation routes
    1.10.2. Critical infrastructure
    1.10.3. Critical community and emergency facilities
    1.10.4. Natural/cultural/historic assets

The Task 1 technical summary will outline data compiled and analysis of remaining gaps therein; recommendations and actions to address the identified data gaps, if applicable; GIS files with appropriate metadata, including locations of Critical Assets owned or maintained by the CITY and regionally significant assets, classified as defined in s. 380.093(2) 1-4, F.S.

Task 2 – Draft Vulnerability Assessment

Task 2 consists of preparing the draft Vulnerability Assessment, which will document the modeling process, type of models utilized and resulting tables and maps illustrating flood depths for each flood scenario; and GIS files with results of exposure analysis for each flood scenario, with appropriate metadata identifying the methods used to create the flood layers. This will include the following two components, as required by a Vulnerability Assessment for the Resilient Florida Program:

2.1 Exposure Analysis: to identify the depth of water caused by each scenario of sea level rise, storm surge, rainfall, and/or compound flooding, respectively (Florida Adaptation Planning Guidebook, Ch. 2), using water surface depths, flood scenarios, standards, etc. as defined in s. 380.093, F.S. As specified in the statute, the analysis of water surface depths (i.e., flood scenarios) will be based on the following data:

- Tidal flooding, if applicable, including future high tide flooding, which must use thresholds published and provided by FDEP. The analysis should also geographically display the number of tidal flood days expected for each scenario and planning horizon (as applicable/practicable).
- Current and future storm surge flooding, if applicable, using publicly available NOAA or FEMA storm surge data. The initial storm surge event used must equal or exceed the current 100-year flood event. Higher frequency storm events may be analyzed to understand the exposure of all critical assets depending on available budget and schedule.
- Rainfall-induced flooding using spatiotemporal analysis or existing hydrologic and hydraulic modeling results. Future boundary conditions should be modified to consider sea-level rise and high tide conditions (as applicable/practicable).
- Compound flooding or the combination of tidal, storm surge, and rainfall-induced flooding (as applicable/practicable).

As specified by s. 380.093, F.S., the Exposure Analysis will adhere to the following scenarios and standards:

- All analyses will be performed in North American Vertical Datum of 1988 (NAVD88).
- If applicable, at least two local sea-level rise scenarios, including the 2017 NOAA Intermediate-Low and Intermediate-High sea-level rise projections.
- At least two planning horizons that include planning horizons for the years 2040 and 2070.
- If applicable, local sea level data that has been interpolated between the two closest NOAA tide gauges. Local sea level data may be taken from one such gauge if the gauge has higher mean sea level. Data taken from an alternate gauge may be used with appropriate rationale and Department approval if it is publicly available or submitted to the Department.
- Encompassing entire municipality/county and including all critical assets owned or maintained by the municipality/county.
- The exposure analysis will use the most recent publicly available DEM which meets the defined minimum standard of 3-meter cell size. A standard modeling technique for the exposure analysis is the "Modified Bathtub Model," which identifies all areas under a target elevation as potentially flooded with a hydrologic connectivity filter applied to remove isolated inundated areas not connected to a major waterway. A more detailed explanation of the Modified Bathtub approach is outlined in the 2017 NOAA publication Detailed Method for Mapping Sea Level Rise Inundation (NOAA, 2017).

As specified in the Florida Adaptation Planning Guidebook (Ch. 2), the Exposure Analysis process may be defined in the following four steps:

- First, choosing a sea level rise model.
- Secondly, selecting horizon dates (e.g., 2040, 2070) to guide the model's first output.
- Third, model calculations of the static sea level rise elevations (and other changes to local coastal landscapes) for "how much" sea level rise is probable at the chosen horizon time points.
- Finally, location of future inundation areas.

Task 2.2 Sensitivity Analysis to measure the impact of flooding on assets, applying the data from the Exposure Analysis to the inventory of Critical Assets; following guidance in Ch. 2 of the Florida Adaptation Planning Guidebook and the requirements defined in s. 380.093, F.S. As specified in the Florida Adaptation Planning Guidebook (Ch. 2), the Sensitivity Analysis will include the following:

- An Inventory of community assets, such as populations, structures, and economic functions.
- An evaluation of the impact of flood severity on each asset type, for each flood scenario, respectively.
- A risk level assigned based on percentages of land area inundated and number of critical assets affected for each flood scenario, respectively.

Additionally, as part of Task 2, as recommended by the Resilient Florida Program, identification and assignment of Critical Focus Areas (maximum of 5) in relation to Critical Assets and community preference will be performed.

Task 3 – Final Vulnerability Assessment

Task 3 consists of preparing the final version of the Vulnerability Assessment, based on the draft prepared in Task 2. The final Vulnerability Assessment will be prepared to include the following components, as required for the Resilient Florida Program:

- A Report detailing the findings of the assessment.
- All electronic mapping data used to illustrate flooding and SLR impacts identified in the Assessment in a format suitable for input to FDEP's mapping tool.
- GIS data that has been incorporated into the appropriate Florida State Plan Coordinate System and suitable for FDEP's mapping tool.
- Metadata using standards prescribed by FDEP.
- A list of critical assets, including regionally significant assets, that are impacted by flooding and SLR.

Task 3 will also include a City Council presentation of key aspects of the final Vulnerability Assessment.

SECTION 3. SERVICES NOT INCLUDED

The following services are not currently included in this Scope of Services:

- Drafting of any coastal management element language for the City's Comprehensive Plan, as specified in the Peril of Flood requirements in s. 163.3178(2)(f), F.S., which are deemed not to be required for this Vulnerability Assessment.
- Design and permitting of any improvements.
- Implementation or construction support of any improvements.
- Public engagement.
- Revisions to the City's Local Mitigation Strategy (LMS).

SECTION 4. DELIVERABLES

Gemini Engineering & Sciences will complete Tasks 1 through 3 and deliver to the CITY a final Citywide Vulnerability Assessment, as specified in Task 3 above, including associated digital data required by FDEP.

SECTION 5. INFORMATION AND SERVICES TO BE PROVIDED BY CITY

The CITY will provide the following information and services at the time of notice to proceed:

- We understand that Bay County is currently developing a comprehensive countywide Vulnerability Assessment.
- Although Gemini has previously obtained a significant amount of data from the CITY which would be applicable for this effort, there may be a need for further assistance with GIS features and photographs of stormwater inventory and Critical Assets within the City of Panama City Beach, as available.
- Potential additional information of City-owned septic, sewer and stormwater infrastructure, as well as any Critical Assets, as necessary, beyond publicly available information.
- Information about expenditures for Operations and Maintenance, Capital Improvements, and other budgets and expenditures for the CITY's Stormwater System, Critical Assets, and related infrastructure, as needed to complete the analysis.
- As available, information about the ownership of property and associated rights-of-way within the City of Panama City Beach.

SECTION 6. PROJECT SCHEDULE

The total project period and period of performance for the services outlined in this scope are as follows:

- Task 1 – January 8, 2024, to February 5, 2024
- Task 2 – February 5, 2024, to April 1, 2024
- Task 3 – April 1, 2024, to May 7, 2024

SECTION 7. COMPENSATION

Gemini Engineering & Sciences shall perform the Scope of Services on a Not-to-Exceed basis per task. The total Not-to-Exceed fee for this Scope of Services is $50,000.00.

The breakdown of compensation for the above listed tasks will be:

- Task 1 – $12,000
- Task 2 – $28,000
- Task 3 – $10,000