STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REVISED GRANT WORK PLAN
DEP AGREEMENT NO.: R2132

ATTACHMENT 3-A

I. TITLE PAGE

1. PROJECT TITLE: Vulnerability Assessment and Resiliency Adaptation Action Plan

2. GRANTEE Contact Information:

Organization Name: City of North Miami

Name of Authorized Signer: Theresa Therilus, Esq.

Title: City Manager

Address: 725 NE 125th Street

City: North Miami

Zip Code: 33161

Area Code and Telephone Number: 305-893-6511

E-mail Address: Citymanager@northmiamifl.gov

3. GRANT MANAGER Contact Information:

Organization Name: City of North Miami

Name: Debbie Love, AICP

Title: City Planner

Address: 12400 NE 8th Ave

City: North Miami

Zip Code: 33161

Area Code and Telephone Number: 305-893-6511 Ext. 19003

E-mail Address: dlove@northmiamifl.gov

4. FISCAL AGENT Contact Information:

Organization Name: City of North Miami

Name: Miguel A. Augustin, CPA

Title: Finance Director

Address: 725 NE 125th Street

City: North Miami

Zip Code: 33161

Area Code and Telephone Number: 305-893-6511

E-mail Address: maugustin@northmiamifl.gov

5. FEID No. (a.k.a. Tax ID#): 59-6000390 **Seq No.** 029

6. WORK PERFORMED BY: (Select only one)

_____ Grantee ONLY
__X__ Subcontractor ONLY
_____ BOTH the Grantee & Sub-Contractor
_____ To Be Determined

7. SUBCONTRACTORS CONTACT INFORMATION: *(If applicable & known)*

Organization Name: Unknown at this time

Name: _____

Title: _____

Address: _____

City: _____

Zip Code: _____

Area Code and Telephone Number: _____

E-mail Address: _____

8. PROJECT LOCATION:

A. List of County(ies): Miami-Dade County

B. List of City(ies)/Town(s)/Village(s): City of North Miami

C. State Lands Lease Agreement Number(s): N/A

Provide lease agreement number(s) for any work that will be performed on State Lands. If work will not be on any state lands, please indicate N/A.

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II. WORK PLAN

9. **PROJECT SUMMARY:** The City will conduct a city-wide climate **change/sea level rise vulnerability assessment, with a special emphasis on vulnerable populations, flooding and septic systems;** develop adaptation and implementation strategies; create an adaptation plan; engage and inform the public about risks and adaptation opportunities; and build the capacity of the city to include climate change/sea level rise data in decision making.

10. **PROJECT SCOPE OF WORK:** The City of North Miami seeks to complete a Climate Change Vulnerability Assessment and Resiliency Adaptation Plan. The Climate Change Vulnerability Assessment (CCVA) will review future exposure to existing developed areas and future areas of development, financial exposure, and risks to significant environmental, cultural resources, and social communities. This project will specifically help the City assess the overall environmental, social, and economic vulnerabilities related to flooding, sea level rise risks, extreme heat and septic systems, mitigate the effects and be better prepared

11. **PROJECT NEED AND BENEFIT:**
    A. **Explain the demonstrated need, which the project addresses.** As a coastal community, sea level rise presents major challenges to the City due to a combination of urbanized areas, aging flood control facilities, flat topography, rising ground water table, and porous limestone aquifers. For instance, the City's freshwater well field protection areas lie close to the current interface between saltwater and freshwater, which will shift inland with rising sea level, affecting the City's ability to draw drinking water from current resources. Flood control structures are now threatened by sea level rise. Even today, residents in some areas of the City are experiencing "sunny day" flooding as ground water levels rise, flooding streets and yards.

    The impacts of SLR predictions for Miami Dade County have been studied and forecasted by many experts; their findings are in numerous publications. These publications have enumerated the risks and the projected impacts of increased hazard to the environment, human lives and habitat. To determine the rise in sea level the National Oceanographic and Atmospheric Administration (NOAA) has one of its gauge stations in Miami Beach, the nearest gauge to the city of North Miami, providing real-time data on the sea levels.

    Several models show the risk of flooding in the city of North Miami, using the Miami Beach gauge data set as a basis for the analysis. For example, the Coastal Flood Exposure Mapper (CFEM) analyses the effects of flooding in North Miami.
    The Climate Change Vulnerability Assessment (CCVA) will help the City fully understand and characterize the hazards of places, measures of the social and physical characteristics of hazards and the environment (i.e., hazard exposure). The creation of an Adaptation Resiliency Action Plan will provide prioritized strategies to eliminate or minimize the risks associated with climate change, including extreme heat events, sea level rise, flooding and the impacts of failing septic systems on the human health and natural resources.

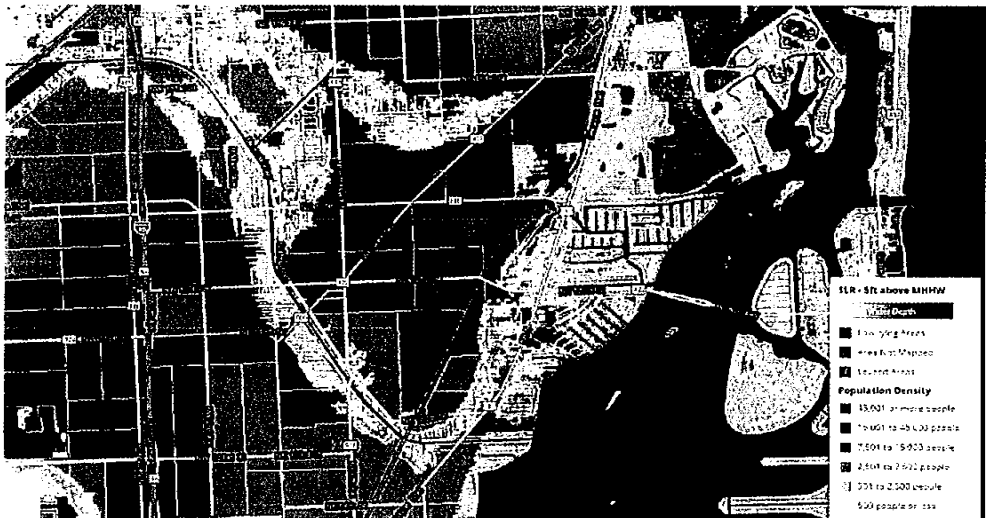

Figure 1 provides a synopsis of the flood effects mapped against the population density. For a 5- foot sea-level rise the flooding occurs in very densely populated areas, where the population is more than 45,000. **More than 21% of the population is below the poverty level in those zones.** Flooding scenario in high density, low income areas due to a 5-foot rise in sea level.

B. Explain how the proposed project meets the purpose of one or more of the Goals and Priorities for FRCP. The preparation of the City of North Miami Vulnerability Assessment and Adaptation Action Plan meets the purpose of Priority #3, "Vulnerability Assessments, Adaptation Plans or Resilience Plans other than that necessary for compliance with Peril of Flood requirements. "

C. Discuss how the project is feasible and can be completed by the grant period deadline. The bulk of the data needed is available from Miami-Dade County, Florida International University - Biscayne, and the city's internal studies, thus reducing the time frame for completion.

D. Explain how this project is addressing social vulnerability or vulnerability of historic resources or stormwater management systems. The CCVA will also analyze those social, economic, and demographic characteristics that informs and influences the City's various social groups' ability to prepare for, respond to, cope with, recover from, and ultimately adapt to these hazards.

For example, wealth enables communities to withstand the impact of losses more readily than those communities in poverty because of their access to capital, insurance, and so forth. With a 26% poverty rate (3 times the national average), and a median 2018 household income of $39,723. Furthermore, over 70% of senior households in the City are housing cost burdened, which is defined as households paying between 30 percent and 50 percent of income to housing cost. Moreover, 43 percent of the senior households in the City are severely housing cost burdened, which represents more than 50 percent of income going toward housing cost.

Age is another characteristic that influences vulnerability, and this is normally recognized at the two extremes of the age continuum-children and older adults. These age cohorts need special care, are often more susceptible to harm, and may have mobility constraints, all of which influence the ability to get out of harm's way. The City's population is aging. The US. Census (2016) indicates that 22.1% of the City's population is 55 years of age and over. Furthermore,

between 2000 and 2016, most age groups declined in size or saw minimal growth (1.2%); however, this age cohort increased almost 6% during the same time period.

Special needs populations (e.g., nursing home residents, infirmed) are another example of a highly vulnerable population as they are often difficult to identify. According to the US. Census (2018), almost 10% of the City's population is disabled, defined as those with serious difficulty with four basic areas of functioning - hearing, vision, cognition, and ambulation.

Gender, race, and ethnicity often impose language and cultural barriers, affect access to post-disaster recovery funding, and often constrain employment opportunities and access to education. Almost 53% of the City's population is foreign born, and approximately 75% speak a language other than English at home.

Finally, housing age and tenure (e.g., renters) influence vulnerability. Almost 70% of the City's 21,496 housing units are over 50 years old, with approximately 46 percent of the units built before 1960. Older housing is not as reliable as a sheltering option in high wind environments and renters are more vulnerable than homeowners are because they live in temporary quarters, often do not have renter's insurance to cover the loss of their personal property, and lack strong social ties to the community.

The CCVA will also analyze and address the effects of flooding and sea level rise on septic systems, including the impacts upon human health and natural resources. The City recently completed a preliminary assessment of septic systems within the city boundaries. The study sought to quantify the number and analyze the impacts of flooding and sea level rise on these systems. The CCVA will include a comprehensive field-verified analysis of the septic systems.

12. **DESCRIPTION OF PROJECT OUTCOMES:** Identification of future impacts and the creation of adaptation and implementation strategies, including programs and capital improvements, to eliminate or minimize the risks associated with extreme heat events, rising sea levels and flooding, and the negative impacts of septic systems upon human health and natural resources.

13. **BUDGET SUMMARY:** Allowable budget categories and form of payment with the costs for this project are listed in the table below.

BUDGET SUMMARY BREAKDOWN

Budget Categories	Payment	Task 1	Task 2	Task 3	Grant Amount Awarded
Salaries & Fringe	Fixed Price	$0	$0	$0	$0
Contractual Services	Fixed Price	$5,000	$40,000	$30,000	$75,000
GRANT AGREEMENT TOTAL		**$5,000**	**$40,000**	**$30,000**	**$75,000**

A. **Describe how the project costs was determined:** Quotes from potential subconsultants, final deliverables cost will be determined by contractor after procurement.

B. **Other Project Funding Sources:** N/A

C. CONTRACTUAL SERVICES:

CONTRACTUAL SERVICES BREAKDOWN

Company Name	Task 1	Task 2	Task 3	Total
Company will be selected through procurement process	$5,000	$40,000	$30,000	$75,000
Contractual Total by Tasks	**$5,000**	**$40,000**	**$30,000**	**$75,000**

14. **PROJECT TIMELINE:** All tasks are to be completed and submitted no later than the task/deliverable due date listed in the table below. Requests for any change must be submitted prior to the current task/deliverable due date listed in the project timeline. Requests 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

Task No.	Task Title	Deliverable Due Date	Funding Amount
1	Community Participation Plan	01/04/2021	$5,000
2	Future Climate Change Projected Impacts Report	02/15/2021	$40,000
3	Vulnerability Assessment and Resiliency Adaptation Plan	04/07/2021	$30,000
Total			**$75,000**

15. **PERFORMANCE MEASURES:** The Grantee will submit all deliverables for each task via **one pdf document** to the Department's Grant Manager on or before the Task/Deliverable Due Date listed in the Project Timeline. The Department's Grant Manager will review the task/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.

16. **CONSEQUENCES FOR NON-PERFORMANCE:** The Department will reduce each Task Funding Amount by 5% for every day that the task/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 task/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.

17. **PAYMENT REQUEST SCHEUDLE:** 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 task/deliverable due date. Please refer to the website Grants page for "How to Request Payment", and "Checklist for Requesting Payment".

18. **FUNDING SOURCE:** Grantee agrees to include on all publications, printed reports, audiovisuals (including videos, slides, and websites except that unless required under special terms of this Agreement, this requirement does not apply to audiovisuals produced as research instruments or for documenting experimentation or findings and which are not intended for presentation to the general public) or similar materials must include the DEP logo (which can be found on the Department's website at

https://floridadep.gov/resilience or by contacting the Department's Grant Manager for a copy) and the following statement on, the following language.

"This work was funded in part through a grant agreement from the Florida Department of Environmental Protection, Florida Resilient Coastlines Program, by a grant provided by the Office of Resilience and Coastal Protection. The views, statements, findings, conclusions and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida or any of its subagencies."

The next printed line shall identify the month and year of the publication.

III. TASKS & DELIVERABLES

Task #1

A. Title: Community Participation Plan

B. Goal: A Community Participation Plan (CPP) that includes a wide-variety of engagement techniques, e.g., workshops, small group discussions, surveys, and social media to optimize public participation in the planning process, particularly those in the traditionally underserved populations.

C. Description: The city will prepare a Community Participation Plan (CPP), which at a minimum will include:

1) Establishing Steering Committee
2) Providing support to the Steering Committee to serve as ambassadors for implementation

D. Deliverables: The Grantee will submit all task/deliverables for each task via **one pdf document** to the Department's Grant Manager on or before the task/deliverable due date listed in the Project Timeline.

1) Final Community Participation Plan including a roster of the Steering Committee

Task #2

A. Title: Future Climate Change Projected Impacts Report

B. Goal: To identify climate related impacts upon a review and inventory of relevant science-based literature including regional climate change plans, vulnerability assessments, scientific publications, Miami-Dade sea level rise projections, etc. Then to make preliminary determination of what asset categories should be included in the CCVA.

C. Description: Prepare a Projected Impacts Report that will illustrate scenarios and projections for, at a minimum, the following climate-related impacts identifying "where" based on two choices - when (what horizon) and how much (which scenario):

1) Sea level rise (SLR)
2) Storm surge
3) Extreme heat events
4) Extreme precipitation events and inland flooding
5) High Winds
6) Lightning
7) Beach erosion

8) Saltwater intrusion
9) Wildfires
10) Pest and Disease outbreaks
11) Economic Losses
12) Human Migration

D. Deliverables: The Grantee will submit all task/deliverables for each task via **one pdf document** to the Department's Grant Manager on or before the task/deliverable due date listed in the Project Timeline.

1) Projected Impacts Report including
    a. Bibliography of references reviewed
    b. Scenarios used in the analysis
    c. Methodology of analysis
    d. Outcomes of analysis, identifying "where" based on two choices - when (what horizon) and how much (which scenario)
2) Summary Report of selections for asset categories
    a. Description of approach
    b. Geographic scale each will be assessed at
    c. Level and type of data available for each
    d. Must have metadata with source and description of data
3) Copies of all workshop/meeting announcement/advertisements
4) Agendas and attendance lists from each workshop/meeting indicating location, date, and time of the meeting
5) Presentations and other meeting materials/handouts
6) Brief summary report from each workshop/meeting including attendee feedback and workshop outcomes
7) Any materials created at each workshop/meeting (as applicable)

Task #3

A. Title: Climate Change Vulnerability Assessment and Resiliency Adaptation Plan

B. Goal: The central task of the CCVA is to evaluate the vulnerability to climate threats across each asset category (people, property, water infrastructure, transportation infrastructure, critical facilities, economy, natural resources); and estimate the likelihood and magnitude of potential losses. Climate vulnerability is a measure of the degree to which an asset or a system is susceptible to and able/unable to cope with adverse effects of climate change/threats. To assess climate vulnerability, this task needs to document how the selected assets are affected by climate threats in terms of the following:

1) Exposure: the presence of people, assets, and ecosystems in places where they could be adversely affected by hazards
2) Sensitivity: the degree to which a system, population, or resource is or might be affected by hazards/threats
3) Adaptive Capacity: the ability of a person, asset, or system to adjust to a hazard, take advantage of new opportunities, or cope with change

C. Description: The CCVA will identify the citywide systems that will be affected from geographic perspective. Examples include but are not limited to septic systems, stormwater facilities, sea walls, transportation, economic, fire rescue, police, critical facilities, etc. Additional areas of affected "systems" will include two (2) "inland at-risk" categories (i.e., significantly disadvantaged socioeconomic communities, extremely low-lying locations). After identifying

climate-related impacts, the city will develop principles (e.g., goals, objectives, and policies) to guide the project planning process.

The CCVA will prioritize vulnerabilities by conducting an initial risk assessment and determining specific criteria that will evaluate the risk of a climate change impact and stress and rate the component based on the economic, social, health and safety, cultural and historical, and ecological factors as well as the likelihood the climate impact shall occur.

The following is a representative, but not exhaustive, list of the types of adaptation strategies to consider:

- Asset- or site-specific protective measures, including nature-based solutions, to reduce or at least minimize prolonged service interruption and flood risk
- Potential design guidelines for future infrastructure upgrades/designs or changes in operations that assist in mitigating flood risk
- Potential design guidelines for future property development (building and landscape) that mitigate flood risk, heat impacts, etc.
- Assets that may be considered for relocation, as well as parcels that are unsuitable for additional asset development or should remain as undeveloped open space
- Policies that can protect property values in highly vulnerable areas (e.g., transfer of development rights)
- Community outreach methods and education efforts to improve communication of threats and adaptive measures that can be or have been taken to protect sensitive populations
- Program or communication strategies to address vulnerable communities
- Partnership or program development to address local businesses and corporate anchors
- Insurance tools or novel financial programs that address risk reduction

The results of the CCVA may be used to implement adaptation strategies that are cohesive and collaborative among participating entities in order to develop a region resilient to the impacts of climate change. Sharing the results of the Vulnerability Assessment (CCVA) and in response to the sensitive entities identified in the CCVA, obtain community input to identify priority areas that will receive adaptation strategy attention.

The CCVA shall consist of five general tasks:

1) Explore Climate Threats,
2) Assemble Data on Community Assets,
3) Assess Vulnerabilities and Risks,
4) Investigate Potential Adaptation Strategies, and
5) Prepare Final Report and Interactive Map.

The implementation strategies for adaptation strategies will include identification of potential funding opportunities, and create a schedule for implementation strategies that is synchronized to the findings of the CCVA, and a Monitoring and Evaluation plan that uses Key Performance Indicators so that the CCVA Plan will have the capability of being tracked by the city throughout the implementation horizon and rated based on effectiveness. Opportunities for the public to help finalize the scope of work for the proposed Adaptation Strategies; and the proposed Implementation Strategies.

D. Deliverables: The Grantee will submit all task/deliverables for each task via **one pdf document** to the Department's Grant Manager on or before the task/deliverable due date listed in the Project Timeline.

1) **Summary Report** describing the approach taken to evaluate the impact of each climate threat per asset type (including a summary of each tool used to perform the evaluation); the exposure, sensitivity and adaptive capacity of each asset; estimates of risk (i.e., the likelihood and magnitude of losses) resulting from each climate threat; and planning-level cost estimates for the projected damages/losses by asset.
2) **Summary Report** including the approach for identifying potential adaptation measures; a comprehensive list and description of adaptation strategies at both the regional and community scales (including the categories listed in Task 4.A above at a minimum); and a list of potential funding mechanisms for implementation of adaptive measures.
3) Planning-level **cost estimates** for each type of adaptation strategy.
4) **Prioritized list** of adaptation strategies organized in terms of communities to which they are relevant with opportunities for collaboration between communities identified.
5) **Climate Change Vulnerability Assessment Final Report** (ADA compliant)
6) **Climate Change Vulnerability Assessment Executive Summary**
7) **GIS-Based Interactive Map**
8) Copies of all workshop/meeting announcement/advertisements
9) Agendas and attendance lists from each workshop/meeting indicating location, date, and time of the meeting
10) Presentations and other meeting materials/handouts
11) Brief summary report from each workshop/meeting including attendee feedback and workshop outcomes
12) Any materials created at each workshop/meeting (as applicable)