

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GRANT WORK PLAN
DEP AGREEMENT NO.: R2228**

ATTACHMENT 3

I. TITLE PAGE

1. PROJECT TITLE: Bank Stabilization Along the City Canal System

2. GRANTEE Contact Information:

Organization Name: City of Mexico Beach

Name of Authorized Signer: Mario Gisbert

Title: City Administrator

Address: 201 Paradise Path

City: Mexico Beach

Zip Code: 32456

Area Code and Telephone Number: 850-648-5700

E-mail Address: m.gisbert@mexicobeachgov.com

3. GRANT MANAGER Contact Information:

Organization Name: Atkins

Name: Ryan Wiedenman

Title: Project Manager

Address: 1616 E. Millbrook Rd, Ste 160

City: Raleigh

Zip Code: 27609

Area Code and Telephone Number: 919-431-5295

E-mail Address: ryan.wiedenman@atkinsglobal.com

4. FISCAL AGENT Contact Information:

Organization Name: City of Mexico Beach

Name: Mary Harmon

Title: Accounts Payable

Address: 201 Paradise Path

City: Mexico Beach

Zip Code: 32456

Area Code and Telephone Number: 850-648-5700

E-mail Address: m.harmon@mexicobeachgov.com

Attachment 3, DEP Agreement #: R2228

1 of 9

5. FEID No. (a.k.a. Tax ID#): 59-1220917 Seq No. 0

DUNS No. 024406969

6. WORK PERFORMED BY: Sub-Contractor Only

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): Bay County

B. List of City(ies)/Town(s)/Village(s): City of Mexico Beach

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.

Remainder of this page intentionally left blank.

II. WORK PLAN

9. PROJECT SUMMARY: This project will utilize native species planting/vegetation to achieve stream bank restoration, erosion control, and stabilization in order to achieve the following outcomes: 1.) stormwater management 2.) improved water quality 3.) stabilization and protection of properties. This project is currently identified in the 2020 City of Mexico Beach Resilient Redevelopment Plan.

10. PROJECT SCOPE OF WORK: The City of Mexico Beach utilizes a tidally-influenced canal to drain the City's stormwater system. The canal discharges to the Gulf of Mexico at a high energy coastal section of beach. This project will address bank stabilization along the City canal system, specifically within the canal upstream of the Gulf outfall which is most prone to erosion. The project will include approximately 4,300 LF of bank stabilization consisting of two activities: 1.) invasive species removal 2.) planting/revegetation of native plants. The project extents will include both sides of the banks and extend to the City right of way limits which vary along the channel from approximately 20 feet up to 50 feet. Implementing this scope of work will mitigate the risk of future flooding by reducing the amount of sediment that is eroded away into the canal system. Currently, when sediment is eroded into the canals, this reduces the volume of water that can be held within the canal system, which thereby increases the likelihood of flooding when storms occur because the water has less available space to flow through. By stabilizing areas along stream banks with vegetation, less erosion will occur and flood risk will be mitigated.

11. PROJECT NEED AND BENEFIT:

A. Explain the demonstrated need, which the project addresses.

The majority of stormwater runoff in Mexico Beach drains directly into the man-made Mexico Beach Canal system which traverses nearly the entire length of Mexico Beach (west to east). The City's infrastructure also includes a series of smaller ditches, pipe systems, and large culverts, all of which ultimately drain into the canal. The canal provides minimal water quality treatment before entering the Gulf of Mexico, other than the sedimentation which occurs as the water travels throughout the length of the canal itself. The Mexico Beach Canal system not only acts as the principal drainage system for stormwater from the City, but also acts as the downstream channel for two creek systems; Salt Creek which enters the main canal at the City Marina, and Cypress Creek which enters the City at the 15th Street Bridge located between Hatley Drive and Robin Lane. The City canal system is susceptible to erosion and scour. Specifically, the area immediately upstream of the discharge to the Gulf at 8th Street is prone to erosion both from high flows during a storm event and also due to high surge/tide from the Gulf.

This results in multiple negative impacts within the City. Significant erosion and sedimentation into the channel at the Gulf of Mexico discharge repeatedly blocks channel flow and causes increased headwater elevation/staging upstream which creates localized flooding. In addition, erosion destabilizes the residential properties abutting the channel and threatens private property. Finally, sedimentation within the channel degrades water quality on the beach at the channel outfall due to turbidity, aesthetic (color, smell, deposits) on the beach which affect recreation, and in terms of silt/nutrients immediately continuously deposited offshore at this stormwater discharge point.

This project will result in a number of positive impacts. First, it will mitigate the risk of flooding to homes and other infrastructure during heavy rainfall events by reducing the overall amount of sediment within the canal system, which can slow the canal system's ability to drain properly to the Gulf as large amounts of sediment in the canal system can slow or stop flow. This, in turn, can cause flooding outside of the banks of the canals and damage homes and other facilities. Second, this project will also help enhance the City's economic resilience by preventing damage to City

infrastructure that can be costly to repair. Third, erosion is currently a major problem within the canal system and nearby private property may be threatened as erosion continues because it reduces the canal's effectiveness at conveying stormwater. Additionally, erosion leads to further sedimentation downstream, which reduces water quality at the outfalls into the Gulf of Mexico. This project will help to reduce overall erosion and reduce many of these negative impacts. In addition, revegetating the canal banks creates better habitat for shore animals and plants. Having a more ecologically functional canal system will increase the ability of habitats to adapt as sea level rise occurs.

- B. Explain how the proposed project meets the purpose of one or more of the Goals and Priorities for FRCP.** This project fits two out of the three RIG Project Types – “Nature-based options for erosion and flood control” and “Projects specifically included in existing adaptation/resilience plans”. This project will provide a nature-based solution, revegetation and slope stabilization, to the City's canal system in order to reduce erosion and to provide better flood control. The additional benefit of this project is that it will also provide restoration of the canal bank area which will result in improved ecosystem vitality. The canal system not only provides stormwater conveyance to reduce the impacts of stormwater on the built environment, but it also provides aquatic connectivity. Therefore, in the future, as the City experiences the impacts of sea level rise, it will allow for habitat migration. Upon the completion of this project, the City will monitor the channel banks for new erosion or loss of vegetation for at least one year. If additional erosion occurs, the City will identify these areas and implement additional plantings of native vegetation. The expected annual cost for these future activities is approximately \$4,000 annually if required. This project was included in the recently prepared and FDEP-approved Mexico Beach Resilient Redevelopment Plan which was funded out of the FY 2019 FDEP FRCP Resilience Planning Grants program. This project was one of the priority projects in the Plan for future funding. The need for this type of project was also discussed in the City's 2015 Stormwater Master Plan.
- C. Discuss how the project is feasible and can be completed by the grant period deadline.** The project is ready for immediate implementation and does not require engineering design. The project is not located within a management area and is located entirely within City right of way/easements. The project is expected to be completed within 5 months of start date. The timeline shows that the project could be completed in less than six (6) months, well within the one-year grant period.
- D. Explain how this project is addressing social vulnerability or vulnerability of historic resources or stormwater management systems.** As noted above, the canal system in Mexico Beach is the primary system of conveyance of stormwater for the City. In almost every area of the city, stormwater is directed into the canal system and drains out to the Gulf of Mexico at several outfalls. This project will reduce erosion within the canal system, which will facilitate the flow of stormwater through the canal system and reduce the amount of sedimentation that currently occurs within the canals. The erosion of the stream banks poses an issue for the City in two respects. First, it increases the amount of sediment that is built up within the canal system, thereby decreasing the volume of water that can flow through the canal at any time. In turn, this leads to an increasing chance of water backing up at pinch points as it drains to the Gulf, which can cause flooding of homes and infrastructure that are adjacent to the canal system. Secondly, when major tropical systems impact the area and cause storm surge (as occurred during Hurricane Michael), high volumes of water can be pushed into the canal system. If significant erosion has occurred prior to these events, the canals will not be able to contain the incoming water volumes and they will overflow and cause flooding. Additionally, the surge may cause further erosion and

undercut the banks, thereby putting structures and infrastructure at risk to collapsing into the canal system.

12. DESCRIPTION OF PROJECT OUTCOMES:

The project will help in several ways. First, it will mitigate the risk of flooding of homes and other infrastructure during heavy rainfall events by reducing the overall amount of sediment within the canal system, which can slow the canal system's ability to drain properly to the Gulf as large amounts of sediment in the canal system can slow or stop flow. This, in turn, can cause flooding outside of the banks of the canals and damage homes and other facilities. Second, this project will also help enhance the City's economic resilience by preventing damage to City infrastructure that can be costly to repair. Third, erosion is currently a major problem within the canal system and nearby private property may be threatened as erosion continues because it reduces the canal's effectiveness at conveying stormwater. Additionally, erosion leads to further sedimentation downstream, which reduces water quality at the outfalls into the Gulf of Mexico. This project will help to reduce overall erosion and reduce many of these negative impacts. In addition, revegetating the canal banks creates better habitat for shore animals and plants. Having a more ecologically functional canal system will increase the ability of habitats to adapt as sea level rise occurs.

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

ALLOWABLE BUDGET SUMMARY

Budget Categories	Payment	Task 1	Task 2	Task 3	Task 4	Task 5	Grant Amount Awarded
Contractual Services	Reimbursement	\$0	\$5,100	\$3,225	\$12,201	\$2,800	\$23,326
GRANT AGREEMENT TOTAL		\$0	\$5,100	\$3,225	\$12,201	\$2,800	\$23,326

A. Describe how the project costs were determined:

The contractor rates were estimated based on a local quote. The Contract work will be competitively procured according to the City's policy when project is ready to begin.

B. CONTRACTUAL SERVICES:

CONTRACTUAL SERVICES BREAKDOWN

Company Name*	Task 1	Task 2	Task 3	Task 4	Task 5	Total
Unknown at this time	\$0	\$5,100	\$3,225	\$12,201	\$2,800	\$23,326
Contractual Total by Tasks	\$0	\$5,100	\$3,225	\$12,201	\$2,800	\$23,326

*Upon a selected Sub-Contractor(s), the Grantee will Provide a signed certification statement giving a description of the procurement process that was utilized for the selection of the sub-contractors. The description must include:

- a. What procurement process was utilized
- b. Justification as to how & why you made your final selection.
- c. For competitively obtained Sub-Contractor also include:
 - i. A list of all entities that you received bids/quotes from,
 - ii. Names and addresses of those entities that provided bids/quotes,
 - iii. Actual amounts of the bids/quotes that were submitted.

- 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	Task Due Date	Funding Amount
1	SLIP Study Report	*Refer to Task 1 Description	\$0
2	Site Inspection	10/22/2021	\$5,100
3	Invasive Species Removal	12/2/2021	\$3,225
4	Materials Purchase	12/10/2021	\$12,201
5	Revegetation/Bank Stabilization	02/05/2022	\$2,800
Grant Total			\$23,326

- 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 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 task/deliverable due date. Please refer to the [website Grants page](#) for "How to Request Payment", and "Checklist for Requesting Payment".

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 last task/deliverable due date.

- 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 Grant Manager for a copy) and the following statement on, the following language.

Attachment 3, DEP Agreement #: R2228

6 of 9

“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:** SLIP Study Report
- B. Goal:** IF THE PROJECT LOCATION IS WITHIN THE [COASTAL BUILDING ZONE AS DEFINED IN s. 161.551, F.S.](#), submit a Sea Level Impact Projection (SLIP) study report.
- C. Description:** Pursuant to [s. 161.551, F.S.](#) and [Chapter 62S-7, F.A.C.](#), certain state-funded new construction in the coastal building zone must have an associated SLIP study report which must be submitted to the Department, approved, and published for at least 30 days before construction begins. This will inform the project owner about the potential effects of sea level rise and coastal flooding on the structure so that they can utilize this information in project planning and adaptation. Visit the [SLIP tool website \(https://floridadep-slip.org\)](https://floridadep-slip.org) for more information.
- D. No-Cost Deliverables:**
 - 1) A SLIP Study Report submitted to the Department, approved by the Department, and then published on the Department’s website for no less than 30 days before construction commences. If the project is not located in the Coastal Building Zone, the Grantee will submit **one pdf document** to the Department’s Grant Manager containing a written explanation to show that the project is not subject to s. 161.551, F.S. based on its location.

Task #2

- A. Title:** Site Inspection
- B. Goal:** A site inspection will be performed to determine the locations along the canal for vegetation implementation, determining the field project boundaries.
- C. Description:** During this task, the site observation will take place and the project boundaries will be identified and finalized. The inspection will be completed by a sub-contractor who is familiar with the canal system’s flow and hydrology and who can also identify locations that are particularly vulnerable to erosion. The inspector will then calculate the amount of vegetation that will be needed within the most vulnerable areas and determine the most effective areas to utilize the project funds. Once the site boundaries are finalized, the identification of appropriate native vegetation for the site conditions will be decided and confirmed.

- 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) Photos from the site inspection identifying areas where vegetation/stabilization will occur.
 - 2) List of the native vegetation that will be used to stabilize banks.

Task #3

- A. Title:** Invasive Species Removal
- B. Goal:** The various forms of invasive vegetation species will be removed from project site and within boundaries identified in Task 2.
- C. Description:** The removal of the identified invasive vegetation along the perimeter of the canal boundaries will be performed. The vegetation will be removed by the roots to ensure that it does not regrow along the canal within the project limits. This step will ensure that the project is in the proper condition for revegetation with native plant species.
- 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) Photos of the invasive species and/or the removal process will be provided
 - 2) Brief summary including acreage of invasive species removed and a list of species

Task #4

- A. Title:** Materials Purchase
- B. Goal:** The soil and space will be prepared along the project boundaries and identified limits along the canal.
- C. Description:** With the appropriate vegetation having been identified in Task 2, the site will be prepared for planting of the new vegetation. Depending on the conditions and weather, the soil may need to be pre-watered or temporarily stabilized so that the plants can take root and adjust to their new conditions. The site may need to be marked in advance to allow proper spacing of plants, particularly if varying types are being used.
- 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) Photos documenting soil and space preparation for planting
 - 2) Invoices showing costs of material purchases

Task #5

- A. Title:** Revegetation/Bank Stabilization
- B. Goal:** The overall goal with the final task of the project is to provide erosion control and bank stabilization along the canal through revegetation, which has been demonstrated in the past to

reduce erosion and create a more stable canal system for transmission of stormwater into the Gulf of Mexico.

- C. Description:** All along the identified project boundaries the native species of plants will be planted on both sides of the banks of the canal channel within the identified project area. This will be the ultimate outcome of the process as the native vegetation will help to stabilize the banks, thereby reducing future erosion and improving water quality through reduction of sedimentation.
- 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) A set of photos of the final conditions of the project showing where vegetation occurred.
 - 2) A brief, final site report detailing site inspections that occurred throughout the project