

**FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
FINDING OF NO SIGNIFICANT IMPACT
City of Fort Myers Canal Armoring
Lee County, Florida
FEMA-HMGP-4337-0227-FL**

BACKGROUND

On September 10, 2017, President Trump signed a disaster declaration (FEMA-4337-DR-FL) for the State of Florida due to damages caused by Hurricane Irma between September 4, 2017, and October 18, 2017. This disaster declaration authorized the Department of Homeland Security’s Federal Emergency Management Agency (FEMA) to provide federal assistance to the designated areas. Lee County is seeking funding from FEMA in the form of Hazard Mitigation Grant Program (HMGP) funding to mitigate erosion along multiple drainage canals in the City of Fort Myers.

The City of Fort Myers has highly developed low-lying areas and the city’s drainage canals act to remove stormwater from these areas. Due to their design and the Florida weather, heavy rains quickly enter the canals and flow at high velocities. Over time, these high velocity flows have gradually worn away natural soils and fill materials from the canals, causing the loss of slopes, and exposure of utilities. Destabilization of upland areas that are adjacent to roads, private properties, electrical utility poles, subterranean waste and potable water lines, have also been caused by the high velocity flows.

The proposed work is to install varying combinations of Concrete Cloth, HydroTurf, and Armormax systems to harden vulnerable sections of the canals to protect them against canal slope failure due to erosion and scour. It is intended to prevent the exposure of utilities, as well as erosion of roadways and private properties. Adjacent utilities, infrastructure, and private property shall be protected from damage and disruption. The project area includes nine (9) sections of canals across the City of Fort Myers in Lee County, Florida. See Table 1.0 for project location information.

Table 1.0 Project Location GPS Coordinates

| Canal Name | Street Location | GPS Coordinates |
|---|--|--|
| Manuel’s (Canal Street) | US 41 (Cleveland Avenue) to Evans Avenue | Start: 26.626282, -81.860227 End: 26.626139, -81.872103 |
| Winkler | Rogers Weir to McGregor Boulevard | Start: 26.604126, -81.883974 End: 26.604107, -81.887515 |
| Matthew Drive | DeLeon Street to South Drive | Start: 26.589858, -81.879235 End: 26.589871, -81.876329 |
| Ford Street Cemetery (Lower Ford Street) | Gallee Way to Central Wastewater Treatment Plant | Start: 26.649948, -81.847761 End: 26.650843, -81.847761 |
| New York Ditch (Segment 1) | Ballard Road to New York Avenue | Start: 26.652536, -81.820176 |

| | | |
|--|---|--|
| | | End: 26.655949, -81.820235 |
| Bowling Green Ditch (Matthew Drive Ditch) | South Drive to Bowling Green Boulevard | Start: 26.594745, -81.879799 End: 26.589857, -81.879342 |
| Ford Street (Clemente) | Martin Luther King Jr. Boulevard to Blount Street adjacent to Clemente Park | Start: 26.641192, -81.848260 End: 26.642807, -81.848300 |
| New York Ditch (Segment 2) | New York Avenue north for approx. 650 LF | Start: 26.656141, -81.820176 End: 26.657938, -81.820233 |
| Thomas Street | Ford Street to Henderson Avenue | Start: 26.637427, -81.846249 End: 26.637394, -81.848003 |

On May 21, 2024, a draft environmental assessment (EA) was prepared by the Florida Division of Emergency Management on behalf of FEMA. A public notice is posted on FEMA’s website and the City of Fort Myers’ website: <https://www.cityftmyers.com/CivicAlerts.aspx?AID=1631>

On June 11, 2024, FEMA finalized the EA and is available for viewing by visiting the following website: <https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-fort>

FINDINGS

The Proposed Action as described in the EA will impact geology and soils, air quality, water quality, floodplains, wetlands, coastal resources, biological resources, noise, transportation, environmental justice, and hazardous materials. Short-term impacts to noise, air quality, water quality, wetlands, wildlife and fish, vegetation, transportation and traffic, and hazardous materials may occur. Long-term beneficial impacts to floodplains, environmental justice, utilities and public health and safety are expected.

In consideration of the overall impacts of the proposed project in relation to impacts from past, present, and foreseeable future activities, the proposed action is not expected to have significant adverse cumulative impacts on any resource.

CONDITIONS

General Project Conditions

1. Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
2. This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.
3. The subrecipient (City of Fort Myers) will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

Special Conditions

1. If human remains or intact archaeological features or deposits (e.g., arrowheads, pottery, glass, metal, etc.) are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The subrecipient will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The subrecipient's contractor will provide immediate notice of such discoveries to the applicant. The subrecipient shall contact the Florida Division of Historic Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities; all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.
2. Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.
3. Utilization of construction/protective matting to reduce ground disturbance.
4. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.
5. The City must comply with the terms and conditions of FDEP Permit # 0412943-003 SFG and associated guidance. The City must obtain permit modifications as necessary. Failure to comply with these conditions may jeopardize FEMA funding; verification of compliance shall be required at project closeout. The subrecipient must obtain floodplain permit from the local floodplain administrator before work begins. Failure to comply with these conditions may jeopardize FEMA funding; verification of compliance shall be required at project closeout.
6. The proposed project must adhere to the Protected Species conditions related to the eastern indigo snake, manatee, sea turtle and smalltooth sawfish as listed in FDEP Permit # 0412943-003 SFG. Failure to comply with these conditions may jeopardize FEMA funding; verification of compliance shall be required at project closeout
7. Temporary erosion control measures should be implemented such as sediment fencing, turbidity curtains, and synthetic hay bales to protect downstream waters from sediment discharges and turbidity.

8. Staging and laydown areas for each of the canal sites should be within the City's canal access right-of-ways that have been previously disturbed due to routine maintenance.
9. To minimize noise impacts, construction activities will adhere to all local noise ordinances.
10. To the greatest extent practicable, transport of materials to and from the construction area shall consider avoiding school zones and areas with low income and minority populations.
11. To minimize risks to safety and human health, construction activities will be performed using qualified personnel trained to use the required equipment properly.
12. The construction area will be secured from public access and signage indicating closed site and only authorized personnel allowed at all entrances and exits.
13. All construction activities will be conducted in accordance with the standards specified in the OSHA regulations.
14. For ground disturbing activity, if contaminated soil is encountered during construction, it should be treated, stored, and disposed of according to applicable federal, state, and local regulations.
15. Any hazardous materials discovered, generated, or used during construction of the proposed action will be disposed of and handled by the subrecipient in accordance with applicable federal, state, and local regulations.
16. Construction equipment will be kept in good working order, any equipment to be used over, in, or within 100 feet of water will be inspected daily for fuel and fluid leaks. Any leaks will be promptly contained and cleaned up, and the equipment will be repaired.
17. Construction shall be limited to the hours of 7:00 A.M. to 7:00 P.M. Monday through Saturday within or adjacent to residential areas. Some activities such as special types of construction that may require the continuous operation of pumps, well points, dredges, draglines, and other machinery of link nature outside the listed hours shall require a permit

CONCLUSION

Based on the findings of the EA, coordination with the appropriate agencies, comments from the public, and adherence to the project conditions set forth in this FONSI, FEMA has determined that the proposed project qualifies as a major federal action that will not significantly affect the quality of the natural and human environment, nor does it have the potential for significant cumulative effects. As a result of this FONSI, and in accordance with FEMA Instruction 108-1-1, an EIS will not be prepared, and the proposed project as described in the attached EA may proceed.

APPROVAL
ANGELIKA H
PHILLIPS

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Final Environmental Assessment

City of Fort Myers Canal Armoring

FEMA-HMGP-4337-0227-FL

City of Fort Myers, Lee County, Florida

June 2024



FEMA

**U.S. Department of Homeland Security
Federal Emergency Management Agency Region IV
Atlanta, Georgia**



**Florida Division of Emergency Management
Tallahassee, Florida**

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LIST OF ACRONYMS

| | |
|-------|---|
| APE | Area of Potential Effects |
| BFE | Base Flood Elevation |
| BMP | Best Management Practices |
| CBRS | Coastal Barrier Resources Act |
| CCCL | Coastal Construction Control Line |
| CEQ | Council of Environmental Quality |
| CFR | Code of Federal Regulations |
| EA | Environmental Assessment |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| ERP | Environmental Resource Permit |
| ESA | Endangered Species Act |
| FAC | Florida Administrative Code |
| FDEP | Florida Department of Environmental Protection |
| FDEM | Florida Division of Emergency Management |
| FEMA | Federal Emergency Management Agency |
| FIRM | Flood Insurance Rate Map |
| FWC | Florida Fish and Wildlife Conservation Commission |
| GHG | Greenhouse Gas |
| HMGP | Hazard Mitigation Grant Program |
| IPaC | Information for Planning and Consultation |
| MBTA | Migratory Bird Treaty Act |
| NEPA | National Environmental Policy Act |
| NHC | National Hurricane Center |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System (NPDES) |
| NRHP | National Register of Historic Places |

| | |
|--------------|---|
| NWI | National Wetland Inventory |
| OEHP | Office of Environmental Planning & Historic Preservation |
| OSHA | Occupational Safety and Health Administration |
| SFWMD | South Florida Water Management District |
| SHPO | State Historic Preservation Office |
| Stafford Act | Robert T. Stafford Disaster Relief and Emergency Assistance Act |
| USC | Unites States Code |
| USFWS | United States Fish and Wildlife Service |
| USACE | United States Army Corps of Engineers |

1.0 INTRODUCTION

Hurricane Irma impacted the State of Florida between September 4, 2017 and October 18, 2017 bringing strong winds, storm surge, and flooding. President Trump signed a disaster declaration (FEMA-4337-DR-FL) on September 10, 2017 authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide federal assistance to the designated areas of Florida. This assistance is provided pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), and Public Law (PL) 93-288, as amended.

Lee County experienced two major rainfall events during the summer of 2017, the events being approximately two weeks apart. A major event occurred between August 25th through August 27th, first known as Invest 92L by the National Hurricane Center (NHC). Many areas in south Lee County saw 10 to 12 inches or more of rainfall in a three-day period, with smaller pockets having higher amounts. Hurricane Irma followed on September 10, which delivered another 6 to 10 inches in most county areas in one day with higher amounts in the eastern portion of Lee County. This intense rainfall coupled with Hurricane Irma's storm surge exceeded the carrying capacity of the County's natural and manmade drainage features, leading to flooding in low-lying areas. More recently, the City of Fort Myers also experienced significant impacts from Hurricane Ian, which caused severe flooding due to the combination of heavy rainfall and storm surge. Hurricane Ian made landfall in Lee County on September 28, 2022, as a Category 4 storm with maximum sustained winds of 150 mph.

In low-lying areas, such as much of the City of Fort Myers, drainage canals are fed by stormwater inlets and intake structures that act to remove stormwater from developed areas. The canals are vital facilities to prevent the prolonged back-up of flood waters within the city. When higher velocity flows from heavy rain events and increased volume impact non-hardened areas of these canals, soil losses and slope destabilization can occur. Canal erosion can threaten adjacent properties, utilities, roads, and other critical infrastructure.

The City of Fort Myers, through the Florida Division of Emergency Management (FDEM), has applied for Hazard Mitigation Grant Program (HMGP) funds from FEMA under Section 404 of the Stafford Act, 42 United States Code (USC) 5121-5207, in order to mitigate the erosion along multiple drainage canals in the City of Fort Myers in Lee County, Florida (4337-0227).

In accordance with the Stafford Act, regulations promulgated pursuant thereto and codified in 44 Code of Federal Regulations (CFR) Part 206 (44 CFR 206), and FDEM Mitigation Bureau Non-Federal Representative Memorandum of Agreement, dated November 14, 2017, FEMA and FDEM are required to analyze the potential environmental impacts of the Proposed Action prior to making an informed decision regarding project funding. The proposed action presented by The City of Fort Myers does not qualify for use of Department of Homeland Security Categorical Exclusion N4 for federal assistance for actions involving stream work and modification and floodways because the project activities involve ground disturbance greater than ½ acre and stream bank alterations greater than 300 linear feet. Therefore, FDEM on behalf of FEMA have prepared this Environmental Assessment (EA) in accordance with NEPA (PL 91-190, as amended), the President’s CEQ regulations for implementing NEPA (40 CFR part 1500-1508, as amended in 85 Federal Register 43304-76 July 16, 2020), and regulations adopted pursuant to Department of Homeland Security Directive 23-01-001-01, Rev 01, FEMA Directive 108-1, and Notice of Utilization of Streamlined Procedures for Environmental Assessments Associated with Hurricanes Harvey, Irma, Maria, and Nate (Docket ID: FEMA-2017-0035).

2.0 PURPOSE AND NEED

The objective of FEMA’S Hazard Mitigation Grant Program (HMGP) is to reduce the loss of life and property due to future natural disasters. This is achieved by grants being provided to states and local governments to implement long-term hazard mitigation measures. The purpose of the proposed action presented in this EA is to protect the infrastructure and private properties including roads from the erosion of adjacent drainage canals within the City of Fort Myers using HMGP funding.

The need for the proposed HMGP funding has risen from the devastating effects of not only tropical storms and hurricanes, but also severe wind and coastal flooding events that have impacted the drainage canals over time. The City of Fort Myers has highly developed low-lying areas and the city’s drainage canals act to remove stormwater from these areas. Hurricane Irma impacted the area in 2017 and caused substantial damage to these susceptible areas. This category 4 hurricane brought intense and forceful winds which caused millions of dollars of debris to be cleaned up, and also caused flooding due to heavy rains. Once again in September of 2022, the City of Fort

Myers experienced significant damage from extreme flooding due to heavy rainfall and storm surge from Hurricane Ian, which made landfall as a deadly category 4 storm. The City of Fort Myers has identified the need to withstand future storm events, reduce erosion, and decrease the risk of property damage and utility failure. In addition, these canals are critical in the prevention and protection from flooding to the surrounding properties and roadways.

In accordance with federal laws and FEMA regulations, the EA process for a proposed federal action must include an evaluation of alternatives and a discussion of the potential environmental impacts. This EA was prepared in accordance with FEMA's regulations as required under NEPA. As part of this NEPA review, the requirements of other environmental laws and executive orders are addressed.

3.0 PROJECT LOCATION AND BACKGROUND

The project area includes nine (9) sections of canals across the City of Fort Myers in Lee County, Florida within zip codes 33916, 33901, 33905, and 33907 (Appendix B). All the canals are within moderate to highly urbanized and residential areas. These canals run adjacent to streets, residential properties, and share space within various utility rights-of-way and easements. Many of the canals also have existing pipes that discharge from adjacent private and public properties, to assist with stormwater removal.

The existing canals are man-made drainage ditches with grassy vegetation and some tree cover that ultimately discharge into the Caloosahatchee River. Due to their design and the Florida weather, heavy rains quickly enter the canals and flow at high velocities. Due to the observed increase in storm frequency and intensity, high rainfall events have caused and would continue to cause gradual erosion from high velocity flows. These have gradually worn away natural soils and fill materials from the canals, causing the loss of slopes, and exposure of utilities. Destabilization of upland areas that are adjacent to roads, private properties, electrical utility poles, and subterranean waste and potable water lines, have also been caused by the high velocity flows. The following table shows the location of each canal and the infrastructure nearby.

Table 3.1 Project Locations

| Canal Name | Street Location | Coordinates | Infrastructure Nearby |
|---|---|--|---|
| Manuel's (Canal Street) | US 41 (Cleveland Avenue) to Evans Avenue | Start: 26.626282, -81.860227 End: 26.626139, -81.872103 | Road, Sewer & Water Utilities, Residential & Private Properties |
| Winkler | Rogers Weir to McGregor Boulevard | Start: 26.604126, -81.883974 End: 26.604107, -81.887515 | Water Utilities & Residential Properties |
| Matthew Drive | DeLeon Street to South Drive | Start: 26.589858, -81.879235 End: 26.589871, -81.876329 | Road, Sewer Utility, Residential & Private Properties |
| Ford Street Cemetery (Lower Ford Street) | Gallee Way to Central Wastewater Treatment Plant | Start: 26.649948, -81.847761 End: 26.650843, -81.847761 | Wastewater Treatment Plant & Public Cemetery |
| New York Ditch (Segment 1) | Ballard Road to New York Avenue | Start: 26.652536, -81.820176 End: 26.655949, -81.820235 | Residential Properties |
| Bowling Green Ditch (Matthew Drive Ditch) | South Drive to Bowling Green Boulevard | Start: 26.594745, -81.879799 End: 26.589857, -81.879342 | Residential Properties |
| Ford Street (Clemente) | Martin Luther King Jr. Boulevard to Blount Street adjacent to Clemente Park | Start: 26.641192, -81.848260 End: 26.642807, -81.848300 | Road & City Park |
| New York Ditch (Segment 2) | New York Avenue north for approx. 650 LF | Start: 26.656141, -81.820176 End: 26.657938, -81.820233 | Residential Properties |
| Thomas Street | Ford Street to Henderson Avenue | Start: 26.637427, -81.846249 End: 26.637394, -81.848003 | Residential Properties & Public School |

4.0 ALTERNATIVES

The alternatives considered in addressing the purpose and need stated are the No Action Alternative, and the Proposed Action, which is the armoring of the canals in the City of Fort Myers. Per the Utilization of Streamlined Procedures for Environmental Assessments associated with Hurricanes Harvey, Irma, Maria, and Nate (Federal Register Notice FEMA-2017-0035), these are the only alternatives required for consideration in this EA. Alternatives considered but not dismissed are discussed in Section 4.3.

4.1 Alternative 1: No Action Alternative (No FEMA HMGP Funding)

Under the No Action Alternative, the project would not be constructed using HMGP funding. If the City of Fort Myers cannot fund the project using other opportunities, then erosion will likely continue to occur and worsen along the canals putting at risk adjacent roadways, private properties, and critical utility and infrastructure. This likely will result in infrastructure and property damage, and loss of critical services. With critical services down during or after disasters, first responders and temporary emergency protective measures likely will have to be deployed leading to the risk of life safety and improved property damages.

While the No Action Alternative will not satisfy the purpose of or need for the proposed Federal funding, this alternative was retained to provide a comparative baseline against the other alternatives, as required in the CEQ regulations (40 CFR 1502.14). The No Action Alternative reflects the status quo and serves as a benchmark against which effects of the Proposed Action can be evaluated.

4.2 Alternative 2: Proposed Action (Canal Armoring Project)

Under the Proposed Action, nine (9) canals within the City of Fort Myers would be hardened to mitigate the erosion. The project proposes the use of different armoring products (Concrete Cloth, HydroTurf, and Armormax) to harden vulnerable sections of the drainage canals and to protect against canal slope failure due to erosion and scour. Each canal would have one armoring product depending on existing erosion and hydrological conditions. The Concrete Cloth is a flexible cement-impregnated fiber material that hardens when hydrated to form a thin, tough, and waterproof concrete layer. HydroTurf is an impermeable fiber-reinforced concrete liner that

combines synthetic turf with a high-friction membrane that also provides a natural vegetation look. Armormax is a flexible lightweight mat that is anchored to the subgrade and supports natural vegetation growth by seeding or sodding.

All different armoring products provide a protection layer covering soil erosion-prone slopes. The permanent and hard-layer armoring products protect the underlying soils from erosive forces from high flow conditions. Before the installation of all products, the slopes of the canals would be cleaned and smoothed out, removing any existing vegetation or debris on the bank. The slopes would be compacted and free of surface irregularities, foreign and organic material, sharp objects, particles, rocks, or other objects that could damage the products. After subgrade preparation, the products would be placed on the slope and, to prevent undermining of the installed products, anchor trenches or small ditching at the top and bottom of the slopes would be performed.

Heavy construction equipment such as trucks, backhoes or excavators, and compactors would be used. Trucks would be used to mobilize equipment and bring supplies to the site. Backhoes or excavators would be used to clean and shape the canals prior to the installation of the armoring. Compactors would be used in the final preparation of the banks and after the installation of the armoring for some of the armoring options. Hand tools would be used for trenching and anchoring the products. Temporary erosion control measures would be implemented that include sediment fencing, turbidity curtains, and synthetic hay bales to protect downstream waters from sediment discharges and turbidity. The staging and laydown areas for each of the canal sites would be within the City's canal access right-of-ways that have been previously disturbed due to routine maintenance. The following table shows the products to be installed and the expected disturbance at each canal.

Table 4.2 Alternative 2 Project Locations, Proposed Products and Expected Ground Disturbance

| Canal Name | Coordinates | Canal Slope | Expected Ground Disturbance | Proposed Product |
|---|--|---------------------|-------------------------------|--------------------------------|
| Manuel's (Canal Street) | Start: 26.626282, -81.860227 End: 26.626139, -81.872103 | Both Slopes | 145,213 sq ft 10 ft depth | HydroTurf |
| Winkler | Start: 26.604126, -81.883974 End: 26.604107, -81.887515 | Both Slopes | 55,542 sq ft 12.2 ft depth | ArmorMax |
| Matthew Drive | Start: 26.589858, -81.879235 End: 26.589871, -81.876329 | North Slope | 13,773 sq ft 5.6 ft depth | HydroTurf |
| Ford Street Cemetery (Lower Ford Street) | Start: 26.649948, -81.847761 End: 26.650843, -81.847761 | Both Slopes | 15,372 sq ft 9.2 ft depth | HydroTurf |
| New York Ditch (Segment 1) | Start: 26.652536, -81.820176 End: 26.655949, -81.820235 | Both Slopes | 37,328 sq ft 7.3 ft depth | HydroTurf or Concrete Cloth |
| Bowling Green Ditch (Matthew Drive Ditch) | Start: 26.594745, -81.879799 End: 26.589857, -81.879342 | North/East Slope | 21,711 sq ft 5.3 ft depth | HydroTurf |
| Ford Street (Clemente) | Start: 26.641192, -81.848260 End: 26.642807, -81.848300 | Both Slopes | 24,324 sq ft 8.4 ft depth | HydroTurf |
| New York Ditch (Segment 2) | Start: 26.656141, -81.820176 End: 26.657938, -81.820233 | East Slope | 21,107 sq ft 9.2 ft depth | Concrete Cloth |
| Thomas Street | Start: 26.637427, -81.846249 End: 26.637394, -81.848003 | Both Slopes | 20,019 sq ft 9.0 ft depth | HydroTurf |

4.3 Alternatives Considered and Dismissed

During project planning and scoping, consideration was given to other alternatives including the relocation of utilities, and the acquisition and demolition of properties adjacent to the drainage canals. These alternatives were dismissed from detailed analysis as they are cost prohibitive and would not retain the fabric of the community. The inability to find willing homeowners throughout the entire project area to achieve protection, in addition to substantial costs for the city, would make these alternatives not feasible.

4.4 Impact Evaluation

The Council on Environmental Quality (CEQ) notes: “Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial” (40 CFR 1508.8).

When possible, quantitative information is provided to establish potential impacts; otherwise, the potential qualitative impacts are evaluated based on the criteria listed in Table 4.0.1:

Table 4.0.1: Impact Significance and Context Evaluation Criteria for Potential Impacts

| Impact Scale | Criteria |
|-----------------|---|
| None/Negligible | The resource area would not be affected and there would be no impact, OR changes or benefits would either be non-detectable or, if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable. |
| Minor | Changes to the resource would be measurable, but the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects. |
| Moderate | Changes to the resource would be measurable and have either localized or regional scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects. |
| Major | Changes to the resource would be readily measurable and would have substantial consequences/benefits on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected. |

The Scoping Checklist (Appendix A) evaluates the potential environmental direct and indirect impact of the No Action, and Proposed Action alternatives. A summary table of the potential impacts of the No Action, and Proposed Action alternatives, is provided in the table below:

Table 4.0.2: Summary of Affected Environment and Potential Impacts for the No action Alternative and Preferred Action Alternative.

| Area of Evaluation | Alternative 1: No Action (No FEMA HMGP Funding) | Alternative 2: Proposed Action (Canal Armoring Project) |
|--------------------|--|---|
| Physical Resources | <p>None/ Negligible:</p> <p>No impacts to existing geology and soils, air quality, visual quality and aesthetics, or climate change.</p> | <p>Minor:</p> <p>The Proposed Action would involve re-grading the canal slopes for the preparation of the soils before placing the armoring products. Short-term impacts to air quality may occur due to exhaust emissions from construction equipment.</p> |
| Water Resources | <p>None/Negligible:</p> <p>No impacts to the water quality, floodplain, or wetland.</p> | <p>Minor:</p> <p>The Proposed Action would occur within a floodway and is functionally dependent upon its location within the floodplain. The proposed scope is to reduce the risk of erosion to the existing drainage system.</p> <p>Proposed project may cause short-term impacts to wetlands as installation of canal armoring products may cause temporary increases to turbidity, vegetation clearing, and disturbance to habitats. No long-term impacts are expected.</p> |
| Coastal Resources | <p>None/Negligible:</p> <p>No impacts to the coastal zones or coastal barrier resources.</p> | <p>Minor:</p> <p>Entire state of Florida is located in a coastal zone; therefore, the project areas are in a coastal zone area.</p> |

| Area of Evaluation | Alternative 1: No Action (No FEMA HMGP Funding) | Alternative 2: Proposed Action (Canal Armoring Project) |
|-------------------------|---|--|
| Biological Resources | <p>Minor:</p> <p>No impacts to wildlife and fish, vegetation, invasive species, threatened and endangered species, migratory birds, essential fish habitat, or bald and golden eagles as no work would occur within the area. Although the action area is not suitable habitat for aquatic species (manatee and sawfish), the existing habitat would continue to decline as the canals continue to degrade if no action is taken.</p> | <p>Minor:</p> <p>Temporary impacts to wildlife and fish would occur through habitat disruption during the installation of canal armoring products. Existing vegetation would be removed from the canal slopes. Any invasive species found within the proposed canal slopes will be removed as part of the vegetation removal. The proposed project may affect but is not likely to adversely affect the Eastern Indigo Snake and Wood Stork species.</p> |
| Cultural Resources | <p>None/ Negligible:</p> <p>No impacts to cultural resources are anticipated.</p> | <p>None/ Negligible:</p> <p>The Proposed Action received concurrence from the State Historic Preservation Office (SHPO) with the determination of No Adverse Effect to Historic Properties and no adverse impact to Archaeological Resources. See Section 5.3 for more details.</p> |
| Socioeconomic Resources | <p>Minor:</p> <p>No effect on noise levels or traffic volume in the project area. No disproportionate or adverse impacts on minority or low-income populations would be anticipated. The surrounding area would continue to experience erosion, risking failure to the effectiveness of the drainage systems and damage to the surrounding infrastructure.</p> | <p>Minor:</p> <p>Short-term noise impacts from construction equipment may occur. Increases in noise will be temporary and limited to the duration of construction. Impacts will be limited by following applicable city noise ordinances.</p> <p>Short-term impacts to transportation or traffic volume and routing may occur during construction.</p> <p>The Proposed Action would not have disproportionate or adverse impacts on minority or low-income populations</p> |

5.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

5.1 WATER RESOURCES

5.1.1 Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into waters of the United States and regulating quality standards for surface waters. Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into Waters of the United States, including wetlands. Section 404 requires a permit before dredged or fill material may be discharged into Waters of the United States unless the activity is exempt from Section 404 regulation. Section 10 of the Rivers and Harbors Act grants the United States Army Corps of Engineers permitting jurisdiction for structures or work in or affecting navigable waters of the United States. Under the National Pollutant Discharge Elimination System (NPDES), the EPA regulates both point and non-point pollutant sources, including stormwater and stormwater runoff. Activities that disturb one acre of ground or more are required to apply for an NPDES permit, through the Florida Department of Environmental Protection (FDEP) as authorized by the EPA. This Section 401 water quality certification is required when obtaining a CWA 404 Permit.

5.1.1.1 Existing Conditions

The project area includes nine (9) sections of canals across the City of Fort Myers. These existing canals are man-made drainage ditches which channel stormwater and ultimately outfall into the Caloosahatchee River. According to the USFWS National Wetlands Inventory, accessed on November 17, 2022, the project area is located within or adjacent to designated wetlands (Appendix H). The National Wetlands Inventory classifies these canals as riverine (R5UBFx) wetlands.

5.1.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, there would be no construction activities; therefore, no direct impacts to Waters of the United States would occur. However, there would continue to be minor impacts to surface waters and water quality from the continued erosion of the drainage canals with increased erosion and sedimentation occurring during flood events.

Alternative 2: Canal Armoring Project (Proposed Action)

Construction activities associated with the Proposed Action would have the potential to impact water quality in the short-term as the installation of canal armoring products may cause temporary increases to turbidity and sedimentation. This project will comply with FDEP Section 404 Permit # 0412943-003 SFG (Appendix I). The permitting requirements would include the use of BMPs and other conditions, thereby minimizing the short-term impacts to wetlands and surface waters during construction activities. Overall, this alternative would have beneficial impacts to Waters of the United States by reducing erosion and sedimentation during future flood events.

5.1.2 Floodplains

Executive Order (EO) 11988 Floodplain Management, as implemented in 44 CFR Part 9, requires federal agencies to “avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” The 100-year floodplain is the area covered by water in the event of a 100-year flood, which is a flood that has a 1 percent annual chance of being equaled or exceeded in magnitude in any given year. The 500-year floodplain is the area covered by water in the event of a 500-year flood, which is a flood that has a 0.2 percent annual chance of being equaled or exceeded in magnitude in any given year. VE zones are FEMA designated coastal areas with a 1% or greater chance of flooding and additional hazard associated with storm waves. See NFIP Flood Insurance Manual 2024, Appendix D (D3). The VE zones as well as the 100- and 500-year floodplains are mapped on FEMA Flood Insurance Rate Maps (FIRM). FEMA uses the eight-step decision-making process (Appendix M) to evaluate potential effects on and mitigate impacts to floodplains and wetlands in compliance with EO 11988 and EO 11990, Wetlands Management.

5.1.2.1 Existing Conditions

The project area is located within the AE zone and Regulatory Floodways per FIRM panel numbers 12071C0288H, 12071C0407G, 12071C0409G, 12071C0289H and 12071C0287G, dated November 17, 2022 (Appendix G). The project area includes nine (9) sections of canals which channel stormwater. Due to the observed increase in storm frequency and intensity, flooding events

have caused an would continue to cause gradual erosion from high velocity flows wearing away natural soils and fill materials from the canals, resulting in the loss of slopes, exposure of utilities and destabilization of upland areas.

5.1.2.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, no impacts to the floodplain would occur. However, floodplain values of properties (public and private) adjacent and potentially downstream to the project area would remain at risk for major impacts from future flooding events.

Alternative 2: Canal Armoring Project (Proposed Action)

Under the Proposed Action, the nine (9) canals within the City of Fort Myers would be hardened to mitigate erosion. The Proposed Action would not contribute to development within the floodplain and would not affect the functions or values of the floodplain within or downstream of the project areas. This action proposes the use of different armoring products to harden vulnerable sections of the drainage canals and to protect against canal slope failure due to erosion and scour.

This action would reduce erosion during future storm events and decrease the risk of property damage and utility failure. Additional effects of the Proposed Action would include reducing the risk of flooding on adjacent properties and utilities by reducing the risk of failure to the floodway system. The canals are critical in the prevention and protection from flooding to the surrounding properties and roadways. This action would allow for the continuity of the drainage function of the canals and reduce the need for maintenance as well as the potential for future disaster assistance.

5.2 BIOLOGICAL RESOURCES

5.2.1 Vegetation

5.2.1.1 Existing Conditions

Vegetation within canal systems can be an important part of erosion control but can also impact water flow and capacity if they become too dense. The existing canals are man-made ditches with grassy vegetation and some tree cover. There are two (2) federally listed endangered plant species

that have a range that overlaps the project area, the Aboriginal Prickly-apple (*Harrisia aboriginum*) the Beautiful Pawpaw (*Deeringothamnus pulchellus*), but are not likely to be found within the project area. Executive Order 13112, Invasive Species, requires federal agencies, to the extent practicable, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. Invasive species prefer disturbed habitats and generally possess high dispersal abilities, enabling them to out-compete native species. Some invasive plant species which are likely to occur within the project area include the air potato (*Dioscorea alata*), Old World climbing fern (*Lygodium microphyllum*), Brazilian pepper (*Schinus terebinthifolius*) and Water hyacinth (*Eichhornia crassipes*). Additional invasive vegetation that may be found within or around the project area can be found in Appendix Q.

5.2.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities therefore, there would be no impact to any listed or endangered plant species. There will continue to be erosion in the areas, which may negatively affect species. Invasive species would persist in the immediate project area.

Alternative 2: Canal Armoring Project (Proposed Action)

Under the Proposed Action, there would be removal of existing vegetation within the proposed canal systems, including any trees located within the slopes. The vegetation would be replaced with the installation of armoring products (Concrete Cloth, Hydroturf, Armormax). The Armormax product would incorporate natural vegetation that would be selected by site-specific conditions to better replace the removed vegetation. Any invasive species found within the proposed canal slopes would be removed as part of the vegetation removal.

The Proposed Action would have minor impacts to vegetation due to the removal of established vegetation; however, positive long-term impacts are anticipated due to the establishment of native vegetation and removal of existing invasive vegetation.

5.2.2 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) provides for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead Federal agencies for implementing ESA are the United States Fish and Wildlife Service (USFWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). The ESA requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

5.2.2.1 Existing Conditions

In accordance with Section 7 of the ESA, the proposed area was evaluated for the potential occurrences of federally listed threatened and endangered species by accessing the USFWS Information for Planning and Consultation (IPaC) database on October 11, 2023 (Appendix K). The threatened and endangered species with the potential to occur in or near the project area are: the federally endangered Florida Bonneted Bat (*Eumops floridanus*), the federally endangered Florida Panther (*Puma concolor coryi*), the federally threatened West Indian Manatee (*Trichechus manatus*), the federally threatened Crested Caracara (*Polyborus plancus audubonii*), the federally threatened Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), the federally endangered Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*), the federally threatened Red Knot (*Calidris canutus rufa*), the federally endangered Red-cockaded Woodpecker (*Picoides borealis*), the federally threatened Wood Stork (*Mycteria americana*), the federally threatened American Crocodile (*Crocodylus acutus*), the federally threatened Eastern Indigo Snake (*Drymarchon couperi*), the federally threatened Green Sea Turtle (*Chelonia mydas*), the federally endangered Kemp's Ridley Sea Turtle (*Lepidochelys kempii*), the federally threatened Loggerhead Sea Turtle (*Caretta caretta*), the federally threatened Gulf Sturgeon (*Acipenser oxyrinchus desotoi*), the federally endangered Miami Blue Butterfly (*Cyclargus thomasi bethunebakeri*), the federal candidate Monarch Butterfly (*Danaus plexippus*), the federally endangered Aboriginal Prickly-apple (*Harrisia aboriginum*), and the federally endangered Beautiful Pawpaw (*Deeringothamnus pulchellus*). However, the likelihood of the Florida Bonneted Bat, the Florida Panther, The Crested Caracara, the Eastern Black Rail, the Everglades Snail Kite, the Red Knot, the Red-cockaded

Woodpecker, the Wood Stork, the American Crocodile, the Green Sea Turtle, the Kemp's Ridley Sea Turtle, the Loggerhead Sea Turtle being present in the proposed project area is unlikely as the project area is highly developed and does not contain or impact preferred habitat for these species. The Smalltooth Sawfish was not listed in the IPaC species list; however, it is a species of concern in the Caloosahatchee River and was also included in the impact evaluation.

5.2.2.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would not involve any construction activities; therefore, the No Action Alternative would have no impact to any listed threatened or endangered species. Although the action area is not suitable habitat for aquatic species (manatee and sawfish), the existing habitat would continue to decline as the canals continue to degrade.

Alternative 2: Canal Armoring Project (Proposed Action)

On June 14, 2023, FEMA initiated informal consultation with USFWS and received a response on August 8, 2023, that this project had previously gone through consultation as a part of the Florida Department of Environmental Protection (FDEP) permitting process. Through this consultation, it was determined that the Proposed Action may affect, but is not likely to adversely affect the West Indian Manatee, the Eastern Indigo Snake, and the Smalltooth Sawfish. This determination aligned with FEMA's determination for the listed species, and thus this consultation was adopted. Most of the listed threatened and endangered species with the potential to occur within the project area are unlikely to occur due to poor habitat quality and inaccessibility due to the downstream weirs. The area is highly developed and urbanized, and the canals run adjacent to streets, residential properties, and share space within various utility rights-of-way and easements. Due to expected disturbances in the canals and waterways, the Eastern Indigo Snake), *Western Indian Manatee*, and *Smalltooth Sawfish* have the potential to be affected by the proposed action.

Eastern Indigo Snakes have the potential to be injured or killed by construction personnel and equipment during the clearing of the canal slopes. Work on the canal slopes would require removal of vegetation and soil disturbance up to 12.2 feet in depth. The proposed project areas may have the eastern indigo snake present, but more likely in the canals that are not within a densely

urbanized zone with houses and pavement. The existing canalization and urbanization are already contributing to their habitat fragmentation. The Proposed Action would permanently change the habitat in the canals regarding vegetation and soil. All existing vegetation would be permanently removed. The topsoil would be cleared of debris and rocks, and then finally be compacted. Installation of armoring products would substitute vegetation and topsoil and subsequently prevent tortoise burrows that could be used by these snakes as a habitat. It is expected that effects on their habitat would be limited as these species prefer unfragmented habitats and the likelihood of their presence is minimal. Due to the possibility of presence within the proposed project areas, the standard Eastern Indigo Snake Conditions (Appendix N) would be followed during construction to minimize the risk of take.

The West Indian Manatee and Smalltooth Sawfish have potential for occurrence within the proposed project areas; however, their presence is unlikely due to the existing downstream weirs and water structures that largely prohibit movement upstream. Per the FEMA's coordination with USFWS, the previous FDEP consultation via permitting process requires the Standard Manatee, Sea Turtle and Smalltooth Sawfish Construction conditions (Appendix O-P) to be followed during construction to minimize the risk of effects.

Under the Proposed Action Alternative, impacts to listed species are anticipated to be minimized through project conditioning. Impacts to threatened and endangered species would be minor based on the low potential for occurrence, project conditioning, and temporary nature of construction. The reduction in erosion within listed species habitat would have long-term benefits to threatened and endangered species.

5.3 CULTURAL RESOURCES

As a federal agency, FEMA must consider the potential effects of its actions upon cultural resources prior to engaging in any project. Cultural resources are defined as prehistoric and historic sites, structures, districts, buildings, objects, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. There are several laws a federal agency must consider when working with and identifying cultural resources. For project 4337-227-R City of Fort Myers, Canal Armoring, FEMA has met this obligation through its Section 106 of the National Historic

Preservation Act of 1966 (NHPA) consultation. Section 106 of the NHPA, as amended and implemented by 36 CFR Part 800, outlines the required process for federal agencies to consider a project's effects to historic properties. The NHPA defines a historic property as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register." Eligibility criteria for listing a property on the National Register of Historic Places (NRHP) are found at 36 C.F.R. Part 60. While the definition of a cultural resource under NEPA can be broader, FEMA regularly uses Section 106 to meet its obligations to consider an action's effects to cultural resources. For this project, FEMA determined that it was appropriate to use its NHPA review to fulfill its NEPA obligations.

Cultural resources determined to be potentially significant under the NHPA are subject to a higher level of review and federal agencies must consider the potential effects of their projects on those resources and consider steps to avoid, minimize, or mitigate those effects. To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the NRHP. The term "eligible for inclusion in the NRHP" includes all properties that meet the NRHP listing criteria, which are specified in the Department of Interior regulations Title 36, Part 60.4 and NRHP Bulletin 15. Properties and sites that have not been evaluated at the time of the undertaking may be considered potentially eligible for inclusion in the NRHP and, as such, are afforded the same regulatory consideration as nominated properties.

Pursuant to 36 CFR 800.16(d), the Area of Potential Effects (APE) "is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist." Within the APE, impacts to cultural resources are evaluated prior to the undertaking for both Standing Structures (above ground resources) and Archaeology (below ground resources).

Based on the nature and scope of the undertaking, FDEM and FEMA have determined that the APE is limited to the areas within which all construction and ground disturbing activity would be confined and the viewshed of the proposed project. No potential for indirect effects outside the viewshed of the proposed project exist.

A review of the Florida Master Site File was conducted as part of the Section 106 review processes. The review focused on the APE of each project location. The search revealed eight (8) cultural resource investigations that include the Proposed Action's APE; however, subsurface excavations were not conducted within the APE. This review also revealed three (3) previously recorded historical resource groups, four (4) previously recorded archaeological resources, and one (1) cemetery within the proposed APEs.

In accordance with Section 106 responsibilities and the Programmatic Agreement among the Florida SHPO, FDEM, FEMA, and participating tribes executed on September 10, 2014 and the 3rd Duration Amendment, effective September 1, 2023, FEMA had initiated consultation for the Proposed Action. In addition to identifying historic properties that may exist in the proposed project's APE, federal agencies must also determine, in consultation with the appropriate State Historic Preservation Officer (SHPO) and interested Tribal Historic Preservation Officers (THPOs), what effect, if any, the action will have on historic properties.

5.3.1 Historic (Standing) Structures

5.3.1.1 Existing Conditions

Review of the APE revealed three (3) previously recorded historical resource groups within the APE: McGregor Blvd, Tenmile Canal Spur, and Seminole Park through the Florida Master Site File search.

McGregor Blvd (08LL0286) was found to be eligible for inclusion in the National Register and located within the Proposed Action's APE. From the early part of the 1800s to the present, McGregor Blvd has served as a means of transportation. This route, originally a sandy trail that connected Fort Myers with Punta Rassa, was first used during the Second Seminole War and then later as a cattle drive trail. Between 1912 and 1915 the entire length was paved, and the name changed from Riverside Drive to McGregor Boulevard. Under the direction of Thomas Edison, royal palms were planted along both sides of McGregor Boulevard, giving this road an alternate name "Boulevard of Palms". In 1923, McGregor Boulevard was designated part of State Road 25, which extended from Punta Rassa to Palm Beach. It was redesignated as State Road 867 during the 1945 Florida State Road renumbering, with the portion east of US 41 to Palm Beach becoming

State Road 80. In 1981 McGregor Boulevard was designated a State Historic Highway. In 2010 the roadway was evaluated by the SHPO and considered eligible for listing in the NRHP under criteria A, B, and C. The portion of the proposed project that includes McGregor Boulevard is located just south of Winkler Avenue (26.604107, -81.887515) and the drainage ditch in this Proposed Action runs perpendicular to McGregor Boulevard.

The Tenmile Canal Spur (LL02000) was identified to have portions of the site within the Proposed Action's APEs. The Tenmile Canal Spur begins at the mouth of the Caloosahatchee River, flows southeast to Cleveland Street, and then eastward paralleling Branch Canal Street. The eastward section includes Miguel's Canal (Canal Street). At Ford Street the canal spur turns north and ends at a sewage disposal that drains into Billy Creek; this north branch includes three of the APEs for this project, the Ford Street Cemetery (Lower Ford Street), the Ford Street Canal (Clemente), and the Thomas Street Canal. The canal's entire length is approximately 4.5 miles, with multiple turns and spurs; however, none of the other segments of the canal include any of the Proposed Action's APEs.

Seminole Park (LL01448) was also identified as potentially eligible for listing in the NRHP. Seminole Park is a neighborhood that runs along McGregor Boulevard and was initially developed in the 1920s. This park is shaped like a trapezoid and is bounded on the west by McGregor Boulevard, on the north by Hill Avenue and the eastern boundary by Rogers Street (formerly Cortez Street). The southern boundary of Seminole Park is the drainage ditch, known as the Winkler Canal. In December of 1989, the Florida National Register Review Board considered a proposal to nominate Seminole Park Historic District for listing in the NRHP, however no motion was made to recommend the nomination. As stated by the SHPO at the time of the proposal it was "agreed that the district may, in fact, meet the criteria for listing in the National Register ... the proposal was deficient in some areas" (pp. 66-67). This resource has not been reevaluated by the SHPO as of 2023. More information would be needed to determine if the resource is eligible for listing in the NRHP.

5.3.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action Alternative would involve no construction activities resulting in viewshed impacts. Therefore, under the No Action Alternative there would be no impact to historic structures,

Alternative 2: Canal Armoring Project (Proposed Action)

A portion of the Proposed Action runs perpendicular to McGregor Blvd (08LL0286). Alternative 2 proposes to armor a portion of this drainage ditch near the resource. The armoring would temporarily alter the appearance of the drainage ditch and would be visible from the eligible resource; however, the effect will not be permanent as vegetation will be reseeded along its length. It is unlikely Alternative 2 would affect the integrity of McGregor Blvd.

The Tenmile Canal Spur is within the APE of Miguel's Canal (Canal Street), the Ford Street Cemetery (Lower Ford Street), the Ford Street Canal (Clemente), and the Thomas Street Canal. The canal was previously determined ineligible for listing in the NRHP by the SHPO and; therefore, Alternative 2 would have no effect on the eligibility of the Tenmile Canal Spur resource.

Seminole Park (LL01448) is within the APE of Winkler Canal. The armoring of Winkler Canal would temporarily alter the appearance of the drainage ditch; however, the effect would not be permanent as vegetation will be reseeded along its length. It is unlikely that Alternative 2 would affect the integrity of Seminole Park.

In a letter dated June 8, 2023, FEMA consulted with the Florida SHPO on its determination of effect for the proposed activities under Alternative 2. In this letter, FDEM and FEMA concluded that Alternative 2 had a finding of No Adverse Effect to Historic Properties in accordance with 36 CFR 800.5(b).

The Florida SHPO concurred with the findings in a letter dated July 11, 2023.

Based on the analysis conducted, Alternative 2 will have No Adverse Effect on Historic Properties. This action will not impact the Seminole Park Historic District and the upgrades to the canal will

serve to reduce erosion and reduce any impact that flood waters will have during storm events. Alternative 2 will not impact the historic integrity of the structures of the historic district.

5.3.2 Archaeological Resources

5.3.2.1 Existing Conditions

A review of the Florida Master Site File found a total of four (4) previously recorded archaeological resources within a one-mile radius of the proposed project APEs.

One cemetery was also identified within the APE. The Fort Myers Cemetery (LL02563) is approximately 67 acres in size and includes 4000-5000 interments. The cemetery is bounded by a chain link fence and is segmented nearly in half by a drainage canal. This canal is included in the Proposed Action's APE. More information would be needed to make a NRHP determination.

5.3.2.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

If no action is taken, there would be no ground disturbance or new construction would occur. Therefore, under the no-action alternative there would be no impact to archaeological resources.

Alternative 2: Canal Armoring Project (Proposed Action)

The APE of Alternative 2 is within the boundaries of the Fort Myers Cemetery (8LL2563) which is potentially eligible for listing in the NRHP. The Fort Myers Cemetery is approximately 67 acres in size and includes 4000-5000 interments. The cemetery is bounded by a chain link fence and is segmented nearly in half by the Ford Street Cemetery Canal that is included in the Proposed Action under Alternative 2. Upon review of the resource and the scope of Alternative 2, FDEM and FEMA determined Alternative 2 would not affect the integrity (eligibility or cultural value) of the Fort Myers Cemetery as the work would be limited to the canal and not impact this resource.

FEMA consulted with the Florida SHPO on its effect determinations for the proposed activities under Alternative 2 via letter dated June 8, 2023. In this letter, FDEM and FEMA concluded that the activities listed under Alternative 2 would not alter the characteristics of any historic properties that qualify for inclusion in or eligibility for the NRHP and therefore, would have "No Adverse Effect to Historic Properties." In order to meet this determination, FDEM and FEMA specified the

following conditions for the treatment of fortuitous finds or unexpected discoveries during ground disturbing activities within the project area:

- If human remains or intact archaeological features or deposits (e.g., arrowheads, pottery, glass, metal, etc.) are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The subrecipient will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The subrecipient's contractor will provide immediate notice of such discoveries to the applicant. The subrecipient shall contact the Florida Division of Historic Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities; all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.
- Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.

The Florida SHPO concurred with the findings in a letter dated July 11, 2023 provided the following conditions are met:

- Utilization of construction/protective matting to reduce ground disturbance.
- If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume

without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes

FDEM and FEMA would require these conditions to be met as part of Alternative 2's implementation.

FEMA also initiated consultation with the following Tribal Historic Preservation Offices for the following federally recognized tribes on the proposed activities under Alternative 2 via letter dated June 8, 2023: Alabama-Quassarte Tribal Town, Miccosukee Tribe of Indians of Florida, Poarch Band of Creek Indians, Seminole Nation of Oklahoma, and Seminole Tribe of Florida. No responses were received from the consulted tribes. As per stated in Stipulation I.E.1 and Stipulation II of the FL SHPO Programmatic Agreement executed on September 10, 2014, and the 3rd Duration Amendment, effective September 1, 2023, lack of response from consulted tribes is interpreted as concurrence.

Based on the analysis conducted and the project conditions, Alternative 2 will have No Adverse Effect to Historic Properties.

6.0 CUMULATIVE IMPACTS

Per the CEQ regulations, cumulative impacts refer to the impact on the environment that “results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taken place over a period of time” (40 CFR 1508.7). In accordance with NEPA, this EA considered the combined effort of the preferred alternative and other actions occurring or proposed in the vicinity of the proposed project site.

As the existing stormwater system continues to feed into the drainage canals, the increased velocity flows and volume from heavy rain events are expected to continue to result in erosion within these unhardened areas. This continued erosion increases the probability of damage to adjacent private properties, utilities, roads, and other critical infrastructure. The proposed action is expected to

harden these vulnerable canals to reduce the likelihood of erosion and the risk of failure to the adjacent private properties, utilities, roads, and critical infrastructure as well as allow for the continued unimpeded function of these drainage canals to move stormwater away from the city's developed areas. It is expected that the project will protect and maintain existing infrastructure and will not increase development within the area.

Other planned activities that are proposed to take place in the vicinity of the project area include a proposed septic to sewer project and multifamily development approximately 3000' upstream of the Winkler Canal location. There is also a planned water and sewer utility replacement project adjacent to the Canal Street location and plans to upgrade Roberto Clemente Park adjacent to the Ford Street Cemetery (Lower Ford Street) location. These proposed future projects are not expected to impact the Proposed Action.

The proposed action is not expected to have long-term negative impacts to any of the adjacent residential, commercial, industrial, or recreational areas or to the environment in the project area, as it is intended to reduce the risk of erosion within the drainage canals and reduce the risk of damage to the adjacent private properties, utilities, roads, and other critical infrastructure. However, it is anticipated that the proposed action will have short-term impacts to air quality, wetlands, wildlife, vegetation, threatened and endangered species, historic structures, noise, and transportation. In consideration of the overall impact of the proposed project in relation to impacts from past, present, and reasonably foreseeable future activities, the proposed action is not expected to have significant adverse cumulative impacts on any resources.

7.0 PERMITS AND PROJECT CONDITIONS

The Sub-Recipient (City of Fort Myers) is responsible for compliance with all federal, state, and local laws and regulations, including obtaining all required federal, state, and local approvals or permits prior to beginning construction activities and adhering to any conditions laid out in these approvals for this EA. The following list may not include all approvals or permit(s) required for the Proposed Action. Before, and no later than, submission of a project closeout package, the subrecipient shall provide FDEM with a copy of the required permit(s) from all pertinent regulatory agencies.

1. FDEP 404 Permit - *Approved on 3/22/2023*
2. FDEP NPDES Permit - *To be acquired prior to construction*
3. SFWMD 401 Environmental Resource Permit - *Exemption notification dated 6/14/2022*
4. FDOT Permit - *Applies if traffic detours impact FDOT roadways*
5. Local Floodplain Permit/Letter of No Permit Required - *To be acquired prior to construction*
6. No Rise Certification - *Signed on 2/8/2023*
7. City of Fort Myers Tree Removal Permit - *Permit or exemption to be acquired prior to tree removal*

General Project Conditions

1. Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
2. This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.
3. The Sub-recipient (City of Fort Myers) will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

Special Conditions

1. If human remains or intact archaeological features or deposits (e.g., arrowheads, pottery, glass, metal, etc.) are uncovered, work in the vicinity of the discovery will stop immediately and all reasonable measures to avoid or minimize harm to the finds will be taken. The subrecipient will ensure that archaeological discoveries are secured in place, that access to the sensitive area is restricted, and that all reasonable measures are taken to avoid further disturbance of the discoveries. The subrecipient's contractor will provide immediate notice of such discoveries to the applicant. The subrecipient shall contact the Florida Division of Historic Resources and FEMA within 24 hours of the discovery. Work in the vicinity of the discovery may not resume until FEMA has completed consultation with SHPO, Tribes, and other consulting parties as necessary. In the event that unmarked human remains are encountered during permitted activities; all work shall stop immediately, and the proper authorities notified in accordance with Florida Statutes, Section 872.05.
2. Any changes to the approved scope of work will require submission to, and evaluation and approval by, the State and FEMA, prior to initiation of any work, for compliance with Section 106.
3. Utilization of construction/protective matting to reduce ground disturbance.
4. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.
5. The City of Fort Myers must comply with the terms and conditions of FDEP Permit # 0412943-003 SFG and associated guidance. The City of Fort Myers must obtain permit modifications as necessary. Failure to comply with these conditions may jeopardize FEMA

funding; verification of compliance shall be required at project closeout. The subrecipient must obtain floodplain permit from the local floodplain administrator before work begins. Failure to comply with these conditions may jeopardize FEMA funding; verification of compliance shall be required at project closeout.

6. The proposed project must adhere to the Protected Species conditions related to the eastern indigo snake, manatee, sea turtle and smaltooth sawfish as listed in FDEP Permit # 0412943-003 SFG. Failure to comply with these conditions may jeopardize FEMA funding; verification of compliance shall be required at project closeout
7. Temporary erosion control measures should be implemented such as sediment fencing, turbidity curtains, and synthetic hay bales to protect downstream waters from sediment discharges and turbidity.
8. Staging and laydown areas for each of the canal sites should be within the City's canal access right-of-ways that have been previously disturbed due to routine maintenance.
9. To minimize noise impacts, construction activities will adhere to all local noise ordinances.
10. To the greatest extent practicable, transport of materials to and from the construction area shall consider avoiding school zones and areas with low income and minority populations.
11. To minimize risks to safety and human health, construction activities will be performed using qualified personnel trained to use the required equipment properly.
12. The construction area will be secured from public access and signage indicating closed site and only authorized personnel allowed at all entrances and exits.
13. All construction activities will be conducted in accordance with the standards specified in the OSHA regulations.
14. For ground disturbing activity, if contaminated soil is encountered during construction, it should be treated, stored, and disposed of according to applicable federal, state, and local regulations.
15. Any hazardous materials discovered, generated, or used during construction of the proposed action will be disposed of and handled by the subrecipient in accordance with applicable federal, state, and local regulations.
16. Construction equipment will be kept in good working order, any equipment to be used over, in, or within 100 feet of water will be inspected daily for fuel and fluid leaks. Any leaks will be promptly contained and cleaned up, and the equipment will be repaired.

17. Construction shall be limited to the hours of 7:00 A.M. to 7:00 P.M. Monday through Saturday within or adjacent to residential areas. Some activities such as special types of construction that may require the continuous operation of pumps, well points, dredges, draglines, and other machinery of like nature outside the listed hours shall require a permit.

8.0 AGENCY COORDINATION

The following agencies were contacted during the preparation of this EA:

- U.S. Fish and Wildlife Service, Florida Ecological Services Office
- Florida Department of Environmental Protection
- Florida Division of Historic Resources, State Historic Preservation Office
- Alabama-Quassarte Tribal Town
- Miccosukee Tribe of Indians of Florida
- Poarch Band of Creek Indians
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida

9.0 LIST OF PREPARERS

| Name | Organization | Title |
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| Cary Helmuth | FEMA | Environmental Protection Specialist |
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