

grants

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RAN-00205

State Agency			
State Program			
Applicant Information			
Grant Funding Type	Funding for Resilient Florida – Infrastructure Grants	Status	Submitted
Applicant Account	City of Delray Beach	Applicant Contact	
Applicant Authorized Signee	Terrence Moore	Applicant Fiscal Agent	Hugh Dunkley
Regional Resilience Entity Account		Applicant Grant Manager	Missie Barletto
Project Information			
RPG Project Type		Project Title	Thomas Street Stormwater Pump Station Improvement
Entity Category	County, Municipality, or Authorized Special District Addressing Risks of Flooding or Sea Level Rise Identified in a Vulnerability Assessment	Project Location	
Resilient Florida Grant Program Types	Adapt critical assets to effects of flooding and sea level rise; Mitigate threats from flooding and sea level rise; Coastal Flood Control; Stormwater Infrastructure	Project Geo Location Narrative	Project is located on the edge of intracoastal waterway.
List the City(ies)/ Town(s)/Village(s)	City of Delray Beach	State Lands Lease Agreement No.	
State Lands or State Parks Utilized	No	Project Geo Location	26.465803 -80.061045
Area Served	Palm Beach	Project Geo Location Metadata	
Sponsor City/County		Percent of Population	
Total Population		Total Grant Match Amount	\$2,500,000.00
Prior Vulnerability		Total Grant Funding Amount Requested	\$5,000,000.00
Prior Vulnerability Share		Prior Vulnerability Entities	
Project Critical Assets		Funding for Regional Resilience	

## General Information

**Project Need** Project Needs: Thomas Street Pump Station is a vital lifeline for approx. 800 residents living in the 50-acre drainage basin. The original pump station was built in 1976 and has reached the end of its designed useful life (about 50 years). The original pump capacity is designed for 25-year 3-day storm events in 1979, which is 18,000 GPM (gallon per minute). From 2017 Hurricane Irma, the pump station has experienced at least one breakdown annually. In March 2019, the pump station broke down and costed the City over \$300,000 in emergency acquisitions to keep temporary pumping while the pump was being repaired. In addition, higher pump capacity is required to meet South Florida Water Management District (SFWMD) Level of Service (LOS) criteria for both current and 30-year Sea Level Rise (SLR) and tidal conditions. The existing drainage pipes are also too small to provide enough water flow to deliver the required higher pump capacity. The existing pump station has no backup generator, and its sole power source comes from overhead powerline which can render the pump station out of service during frequent outages in peak hurricane season.

Project Scope: Replace the existing 18,000 gpm Thomas Street pump station with a new 85,000 gpm pump station with an upgraded drainage network. It will include the following features:

- Four (4) new 20,000 gpm pumps and one (1) 5000 gpm duty pump
- A new 400KW backup generator with 2,000-gallon onsite fuel tank
- Four (4) new 30" pipes and one (1) 16" pipe with stainless steel flap gate and manatee grates
- 110 linear feet of 8'X4' concrete influent box culvert
- Upsizing of 125 linear feet of existing 24" drainage pipe (north side) with 54" drainage pipe.
- Overhead powerlines that supply power to the pump station will be converted to be buried underground to enhance reliability and resiliency
- Addition of new catch basins
- New seawall will be built based on projected SLR

New pump station will address the needs of increased flood and sea level rise (SLR) protection. It provides the local drainage basin flood protection from 100-year 3-day storm events and projected 30-year SLR. The backup generator, fuel tank and underground powerlines will increase the reliability of pump station and provide better resiliency in facing nature disasters

such as hurricanes. This project will also significantly reduce pump station maintenance and breakdown emergency acquisition cost.

**Project Fit** The new bigger pump station will mitigate flooding threats related with heavy rain or sea level rise. Based on S380.093 FS (Florida Statutes), stormwater pump station is a critical asset. This project will increase the resiliency of this critical asset to handle more severe flooding efficiently. The project is located on intracoastal waterway therefore it is a project for coastal flood control. The project is a replacement of a stormwater infrastructure.

**GI Critical Asset VAAP** Yes

**GI Critical Asset VAAP Explanation**

Please see the attached document- Thomas Street Vulnerability Assessment. The document includes modelling results from AccelAdapt, which is a visual summary of Jurisdiction-Wide Climate Change Vulnerability Assessment completed in 2021 according to 380.093 FS. From this analysis, the project area is Highly Vulnerable to flooding and will be even more vulnerable in the future. This project is designed to reduce risk of flooding and risk consequences from sea level rise in the area.

**GI Flood Erosion Reducing** Yes

**GI Flood Erosion Reducing Explanation**

Please see the attached document-Thomas Street Vulnerability Assessment. The high level of vulnerability to rainfall-induced flooding, storm surge, and tidal flooding, consider all the risk together, it is clear that vulnerability to compound flooding will be higher than any individual threat. It is the basis for prioritizing climate change mitigation projects at the project location.

**GI Regionally Significant** Yes

**GI Regionally Significant Explanation**

Per 68S-8.002 , Thomas Street Pump Station is a regionally significant asset because it is a water resource facility that is used to collect, transport and treat stormwater for the local community serving over 960 residents there. This project will reduce the chance of facility breakdown and costly repairs. This project will also decrease flooding risk caused by natural disaster like hurricanes and projected sea level rise.

**GI Percent CA Vulnerable** 80% or more

**GI Percent CA Vulnerable Explanation**

Please see the attached FEMA SFHA'S Map. The whole project area is in SFHA, which means that this area will be inundated by a flood event that has a percent chance of being equaled or exceeded in any given year. According to S.380.093, the following 4 critical assets are vulnerable and served by this project. Those critical assets are Stormwater Pump Station, Water Utility Conveyance System, Major Roadway and Surface Water. The project will rebuilt all underground drainage pipes and roadways within project area.

		Therefore, the whole project area (100%) is covered with critical assets.	
<b>GI Existing Flood Mitigation</b>	Yes, by incorporating BOTH new or enhanced structure AND natural system restoration and revegetation	<b>GI Existing Flood Mitigation Explanation</b>	New structures will be the new pump station and all-new upsized drainage pipes. These structures will efficiently remove stormwater and prevent water flowing down Seabreeze Avenue into Atlantic Avenue which is the main street in City of Delray Beach. Those structures will reduce upland flooding possibility and reduce related damage cost such as revenue loss due to declined tourism or flood damage to local businesses or historic houses along Atlantic Avenue. This project will also restore natural system by installing a baffle box in the center of project area, which serves as an on-site water treatment facility. All stormwater will be treated in the baffle box first before being released into Intracoastal Waterway. This effort will restore the water quality in our nature system- Intracoastal Waterway. In the project scope, revegetation is also included along the roadways in the project area. New vegetation will also filter stormwater before it is being discharged into the baffle box.
<b>GI Site Currently Flood</b>	Has been flooded at least 3 times in the last 5 years or is experiencing ongoing erosion	<b>GI Site Currently Flood Explanation</b>	Please see the attached local news about Thomas Street Pump Station. The pump station has failed annually for the past few years. When the pump station failed, Seabreeze Avenue will be flooded with water 6 to 10 inches deep.
<b>GI Current Flood Zone</b>	Flooding greater than 3 inches in last 3 years or has ever experienced unmitigated erosion	<b>GI Current Flood Zone Explanation</b>	Please see the attached local news about Thomas Street Pump Station. The pump station has failed annually for the past few years. When the pump station failed, Seabreeze Avenue will be flooded with water 6 to 10 inches deep.
<b>GI Project Design Stage</b>	Design is complete – see “i” icon for more information	<b>GI Project Permitting Stage Explanation</b>	All permits are in hand. Please see the attached permit approval letters. SFWMD ERP (Environmental Resource Permit) #50-105735-P- Approved. USACE NWP(Nationwide Permit)SAJ-2021-01918 Approved.
<b>GI Project Permitting Stage</b>	All permits have been applied for or at least one permit has been approved	<b>GI Cost Share Explanation</b>	This project has received \$1,837,500.00 through a cost reimbursement grant by FDEP for the 1st year of construction work. Please see the attached grant award email. Also City has committed 50% (\$2,500,000) of 2nd year construction cost through secured funding sources. Please see the attached CM cost share commitment letter.
<b>GI Cost Share</b>	Yes	<b>GI Habitat Enhancement Explanation</b>	The project will include revegetation along the new roadway. The new vegetation is the nature-based solution to filter stormwater and reduce runoff before it reaches intracoastal waterway.
<b>GI Habitat Enhancement</b>		<b>GI Critical Habitat Explanation</b>	

	Yes		
<b>GI Critical Habitat</b>	No	<b>GI Project Cost Effective Explanation</b>	Please see the attached Thomas Street Cost Effectiveness Analysis. The estimated cost for this project is \$5,000,000. The other option "Do Nothing" is estimated of possible damage of \$8,653,733.2. Therefore, the project is cost-effective.
<b>GI Project Cost Effective</b>	Yes	<b>GI Funding Secured Project Explanation</b>	Please see the attached cost share letter signed by City Manager.
<b>GI Funding Secured For Project</b>	Yes (Cost share has been secured)	<b>GI Previous State Involvement Explanation</b>	Thomas Street Phase I construction is funded through a cost reimbursement grant administrated by FDEP. Please see the attached grant award letter.
<b>GI Previous State Involvement</b>	Construction (previous phases)	<b>GI Will Exceed FL Bldng Code Explanation</b>	<p>The Project exceeds the FBC requirements and applicable floodplain management regulations in the following ways: Those specific requirements and design criteria are referenced and provided in the attached signed and sealed drawings.</p> <ul style="list-style-type: none"> <li>• All materials of construction have been selected and designed to resist the effects of flood hazard and flood loads.</li> <li>• The outfall portion of the wetwell structure (into the Intracoastal Waterway) includes the installation of rock rip rap protecting the integrity of the wetwell structures.</li> <li>• An above ground fuel tank will be constructed on-grade and designed to be anchored to resist flood loads. It will be located above the BFE+1' requirement.</li> <li>• The back-up generator will be housed in an outdoor enclosure with bottom rail system located on top of the wetwell structure. It will be located above the BFE+1' requirement.</li> <li>• The electrical and controls equipment will all be installed on top of the wetwell structure</li> </ul>
<b>GI Will Exceed Florida Building Code</b>	Yes	<b>GI Innovative Tech Reduce Cost Explanati</b>	<p>The project will use cutting edge technology "Press-In" method to install sheet piles for the pump station. Traditionally sheet piles are installed using vibratory hammer which creates loud noises and intense vibrations. In order to protect the nearby homes, "Silent Piles" will be used to install piles precisely with minimal noise and vibration. This innovative technology will reduce the potential construction claims due to expensive damages that can be caused by vibrations to those homes.</p> <p>Variable Speed Drive (VFD) technology from wastewater industry is innovatively adopted in this project to provide a more flexible and powerful stormwater solution compared to using traditional constant-speed pumps. Pumping with variable speed pumps can result in energy saving and reduced maintenance cost.</p>

GI Innovative Tech Reduce Cost	Yes	GI Community Financially Disadvantaged E	
GI Community Financially Disadvantaged	No	GI Benefit Spring Explanation	
GI Benefit Spring	No	GI Protect Water Sources Explanation	
GI Protect Water Sources	No	GI Facilities Waste Treatment Explanation	
GI Facilities Waste Treatment	No	GI Convert Septic To Sewer Explanation	
GI Convert Septic To Sewer	No	GI Green Stormwater Infrastructure Expl	revegetation is included in the project. Revegetation along the new roadways will filter the water and reduce stormwater runoff before it reaches the intracoastal waterway.
GI Green Stormwater Infrastructure	Yes	GI Applied Other Programs Explanation	Florida Legislature Annual Appropriation, approved \$1.8M for the first year construction.
GI Applied Other Programs	Yes		
GI Community Population	70,000		

## Project Work Plan

**Project Summary** Please see the attached Thomas Street City Top Priority Project Document. Message from City Manager at Delray Beach (page 2) clearly mentioned that Thomas Street Pump Station is the top priority and must-do project to address climate change in our coastal community.

**Project Description** This project will address the pump station's service reliability /efficiency and resiliency during storm events and projected sea level rise. The goal of the project is to prevent flooding on streets or on local properties even with a 100-year-3-day storm event and the next 30-year projected sea level rise.

## Project Need and Benefit

**Project Feasability**

**Project Vulnerability**  
**Vulnerability Assessment include State**

## Budget

**Budget Narrative**

**Indirect Percent**

**Work Performed by**

## Signature

**Authorized Signers Signature** Terrence Moore

**Certification Agreement** 

**System Information**

<b>Created By</b>	Missie Barletto, 7/28/2022 2:52 PM	<b>Preparer Type</b>	Applicant
<b>Last Modified By</b>	Missie Barletto, 9/1/2022 1:48 PM	<b>Preparer Account</b>	City of Delray Beach
<b>Owner</b>	Missie Barletto	<b>Preparer Contact</b>	Missie Barletto
<b>EGR Application Name</b>	RAN-00205	<b>Preparer User</b>	Missie Barletto

**Files****ThomasSt\_ProjectArea**

Last Modified **9/1/2022 1:44 PM**  
 Created By **Missie Barletto**

**Thomas Street-City Top Priority Project Document**

Last Modified **9/1/2022 10:10 AM**  
 Created By **Missie Barletto**

**Resilient Florida Thomas Street Pump Station Cost Share Commitment Letter-Signed Revised**

Last Modified **8/31/2022 2:30 PM**  
 Created By **Missie Barletto**

**Thomas St Vulnerability Assessment**

Last Modified **8/29/2022 1:27 PM**  
 Created By **Missie Barletto**

**USACE\_SAJ-2021-01918\_NWP\_Re-Verification-Letter-Short**

Last Modified **8/10/2022 11:02 AM**  
 Created By **Missie Barletto**

**Thomas Street FEMA Map with Critical Assets**

Last Modified **8/9/2022 9:50 AM**  
 Created By **Missie Barletto**

**EGR Application Tasks****RTN-01221**

Task Number **1**  
 Task Description **Thomas Street Pump Station Construction**  
 Total Task Amount Requested **\$5,000,000.00**

**Thomas Street Signed and Sealed Plans**

Last Modified **9/1/2022 1:43 PM**  
 Created By **Missie Barletto**

**Thomas Street Tier 3 Write up From Design Consultant**

Last Modified **8/31/2022 2:30 PM**  
 Created By **Missie Barletto**

**Thomas Street Cost Effectiveness Analysis**

Last Modified **8/29/2022 1:27 PM**  
 Created By **Missie Barletto**

**SFWMD\_ERP\_App\_210824-7220\_Permit\_20211229-issued 12-29-2021**

Last Modified **8/10/2022 11:02 AM**  
 Created By **Missie Barletto**

**Thomas Street News-Flooding**

Last Modified **8/10/2022 8:49 AM**  
 Created By **Missie Barletto**

**Thomas Street Phase I Funding Support from FDEP Letter**

Last Modified **7/28/2022 3:53 PM**  
 Created By **Missie Barletto**

