

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2024	2025	2026	2027	2028
Capital Expenditures	_____	_____	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	_____	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	_____	_____	_____	_____	_____

ADDITIONAL FTE POSITIONS (Cumulative) 0 0 0 0 0

Is Item Included in Current Budget? Yes _____ No X

Does this item include the use of federal funds? Yes _____ No X

Budget Account No.:

Fund 0001 Department 261 Unit 2101 Object 3401 Program _____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

*There is no fiscal impact associated with this item. When the final award letter is received from the Resilient Florida program, an agenda item will be prepared in which the budget will be adjusted to reflect the actual award.

C. Department Fiscal Review: _____
Deepa Dora 9/19/23

III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

Lisa Monte 9/21/2023
 OFMB *MD 9/21*
Deepa Dora 9/26/23
 Contract Development and Control

B. Legal Sufficiency:

[Signature]
 Assistant County Attorney

C. Other Department Review:

[Signature]
 Department Director

Background and Justification:

On July 6, 2023, the Palm Beach County Purchasing Department executed a contract amendment to the Vulnerability Assessment and Resilience Action Plan Consultant Services Contract (No. F-23-014/MD) to expand the scope of the project. The new scope includes flood modeling, analysis, and accompanying technical reports for five County owned or maintained sites for which the Engineering and Public Works and Parks and Recreation Departments are seeking funding to address flooding and coastal erosion.

On July 11, 2023, the Board authorized the County Administrator or designee to move forward with a consultant to prepare flood modeling and technical assessment reports for five (5) capital construction projects and pursue grant funding from the Resilient Florida Grant Program, with applications due by September 1, 2023. These approved projects included 4 Engineering and Public Works Department projects: Prosperity Farms Road Bridge (District 1); Country Club Acres Subdivision Road (District 5); Englewood Estates/Manor Subdivision (District 3); and Australian Avenue (District 7); and 1 Parks and Recreation Department project: Ocean Inlet Park Resiliency Improvements (District 4).

The Resilient Florida Grant Program funds implementation grants that fund resilience projects that local governments have identified in compliant vulnerability assessments. For the 2023 round of funding through this program, implementation projects must be identified in a vulnerability assessment or other technical report to be eligible for funding. The Office of Resilience has already received funding and is currently in the process of conducting a vulnerability assessment of unincorporated Palm Beach County and the Glades municipalities, with an expected completion date of the final vulnerability assessment of March 2024. These flooding technical reports make these implementation projects eligible ahead of the State-compliant vulnerability assessment.



RAN-00727

State Agency	Florida Department of Environmental Protection	Peril of Flood Listed	✓
State Program	Resilient Florida	Letters of Support Authors	
Disaster Number/Year	N/A	Letters of Support Number	
Critical Infrastructure	No		
Project located in a Coastal Zone?	No		
SLIP Study Required?	No		
Local Project Phase	Construction		
Source of Match	Local funds		
Funding Mechanism	General Revenue		
Estimated Project Duration	36 Months		
Total Evaluation Score			

▼ **Applicant Information**

Grant Funding Type	Funding for Resilient Florida – Infrastructure Grants	Status	Submitted
Applicant Account	Palm Beach County	Applicant Contact	
Applicant Authorized Signee	Megan Houston	Applicant Fiscal Agent	Kenny Rampersad
Regional Resilience Entity Account		Applicant Grant Manager	Holly Knight

▼ **Project Information**

RPG Project Type		Project Title	Englewood Estates Stormwater Adaptation
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	Stormwater Infrastructure	Project Geo Location Narrative	Englewood Estates Neighborhood, Palm Beach County
List the City(ies)/Town(s)/Village(s)	Palm Beach County	State Lands Lease Agreement No.	
State Lands or State Parks Utilized	No	Project Geo Location	26.623 -80.085
Area Served	Palm Beach	Project Geo Location Metadata	
Sponsor City/County	Palm Beach	Percent of Population	
Total Population		Total Grant Match Amount	\$908,000
Prior Vulnerability		Total Grant Funding Amount Requested	\$908,000
Prior Vulnerability Share		Prior Vulnerability Entities	
Project Critical Assets		Funding for Regional Resilience	

▼ General Information

Project Need	<p>Englewood Estates Drainage project will include swale restoration, replacement of outfall pipes, installation of new interconnected pipes, and replacement/upgrade of associated inlets and structures. The project will also include green infrastructure components 1) grassed/sodded roadside swales and 2) the design of baffle boxes to aid in water quality within the limits of this long-established residential neighborhood. Due to the complaints and recurring flooding in the community, Palm Beach County completed a drainage study of the entire community's drainage system and outfalls to determine the areas of most significant flooding, analyze the existing system and changes to it and the community as a whole since it was first developed in the 1950s. Over time, the existing swales have degraded, been filled in, or otherwise blocked, and the aged corrugated metal pipes are showing evidence of failure and are difficult to replace due to their proximity to adjacent homes. Based on the recommendations of the study, Palm Beach County is moving forward with the design of improvements along Elizabeth Road, Vassallo Avenue, Engle Road, and with outfall locations at the north end of both Theresa Road and Engle Road. Improvements of these roads and the addition of new legal positive outfall locations will significantly alleviate flooding in the community.</p>
Project Fit	<p>This project has been identified in a local vulnerability assessment, as more fully described in this application, that addresses risks of flooding and sea level rise to coastal and inland communities in the state. This is a stormwater project specifically designed to address the risk of flooding in this long-established neighborhood in unincorporated Palm Beach County. The risk of flooding to the Englewood Estates community is not a future condition, it is happening today causing people to experience compromised access into and out of the community. This project meets the project types because it 1) mitigates the threat of flooding and sea level rise by adaptation through the installation of improvements to an aged stormwater system; 2) adapts a critical asset, the stormwater features, to mitigate the effects of flooding; 3) includes stormwater infrastructure; and 4) enhances transportation and maintains access to the community by reducing flooding impacts.</p>

Flood risk in VA	Yes	Flood risk in VA explanation	This project reduces the risk of flooding or sea level rise identified in the PSVA by providing increased stormwater capacity and water quality treatment. The Vulnerability Assessment Update 2023 models all requirements in Section 380.093(3)(d)2.a-d for the project impact areas including sea level rise, tidal, surge, rainfall, and compound flooding for 2040 and 2070. This work is a comprehensive vulnerability assessment defined by Rule 62-S-8.002(4), F.A.C. that identifies risks, including flooding and sea level rise, and meets all the required elements in Section 380.093(3)(c) through (d), F.S. The 2023 modeling demonstrates the flood risk this project reduces.
Compound flood risk in VA	Yes	Compound flood risk explanation	This project reduces the risk of compound flooding identified in this PSVA by adapting stormwater features. Compound flood modeling is included in the Vulnerability Assessment and map series. The compound flooding scenarios included (2x) NOAA Intermediate Low & Intermediate High 2040 SLR + adjusted 100 yr & 500 yr storm surge; (2x) NOAA Intermediate Low & Intermediate High 2070 SLR + adjusted 100 yr & 500 yr storm surge; (2x) NOAA Intermediate High 2040 SLR + adjusted rainfall for the 25 yr and 100 yr storm events; (2x) NOAA Intermediate High 2070 SLR + adjusted rainfall for the 25 yr and 100 yr storm events; (4x) Present Day 100 yr and 500 yr storm surge + 25 yr and 100 yr rainfall events; (4x) NOAA Intermediate High 2040 SLR + 100 yr and 500 yr storm surge + 25 yr and 100 yr rainfall events; (4x) NOAA Intermediate High 2070 SLR + 100 yr and 500 yr storm surge + 25 yr and 100 yr rainfall events.
Regionally significant asset	Yes	Regionally significant asset explanation	This project reduces risk to several major roadways serving as evacuation routes, various water infrastructures, emergency management sites, and the E-4 canal which are all regionally significant assets.
Percent CA Vulnerable	80% or more	Percent CA vulnerable explanation	100% of the critical assets within the project impact area were impacted by sea level adjusted (NIH) storm surge. Flood scenarios, including sea level rise (NIH and NIL), high tide flooding, rainfall, storm surge, and combination flooding, for present-day and 2040 and 2070 were compared to determine their flooding risk. At-risk critical assets include bus stops and routes, bridges, gas stations, and major roadways including evacuation routes, potable water systems, sewer systems, a communication facility, a medical facility, nursing home, and other senior services, income restricted/affordable housing communities, the E-4 Canal and while not directly within the project area a nearby emergency activation site, parks and places of worship. Of these assets identified within the project impact area, 100% are considered vulnerable to flooding from a present-day 100 yr (1%) storm surge.
Existing flood mitigation project	Yes, by incorporating BOTH new or enhanced structure AND natural system restoration and revegetation	Existing flood mitigation project expln	Englewood Estates Drainage project will include swale restoration, replacement of outfall pipes, installation of new interconnected pipes, and replacement/upgrade of associated inlets and structures. The project will also include green infrastructure components 1) grassed/sodded roadside swales and 2) the design of baffle boxes to aid in water quality within the limits of this long-established residential neighborhood.
Flood frequency	Has been flooded at least 3 times in the last 5 years or is experiencing ongoing erosion	Flood frequency explanation	There were at least 5 named storm events that impacted the area over the last 5 years. These storms caused extensive regional flooding as documented in Appendix B; the provided news articles document at least 1 flooding event greater than 1 foot over the last 5 years. The project area also experiences some degree of ongoing erosion based on the USGS SSURGO database.
Current flood severity	Flooded greater than 1 foot in the current and each of the previous three calendar years, has been flooded for 7 consecutive days, or erosion is critical for the critical asset class	Flood severity explanation	There were at least 5 named storm events that impacted the area over the last 5 years. These storms caused extensive regional flooding as documented in Appendix B; the provided news articles document at least 1 flooding event greater than 1 foot over the last 5 years. Appendix B for more information. The area has experienced widespread loss of 1-25% of the original topsoil.

Project design status	Partially designed or site-specific environmental or geotechnical reports have been completed	Project design status explanation	A drainage study of Englewood Estates has been completed and included in the supporting materials for this allocation. The project improvements selected are based on the results of the study analysis, accessibility/constructability to replace outfalls within easements between single-family homes, and are in the early stages of the design process. We are currently negotiating the design contract with the design consultant.
Permit & easement status	Necessary permits and easements have been identified	Permit & easement status explanation	Necessary permits include: LWDD right-of-way and general drainage permits; SFWMD ERP and possibly Water Use, FDEP NPDES.
Local cost share available	Yes	Local cost share available explanation	A 50% cost share is provided as evidenced by the Drainage Reserves Line Item included in Palm Beach County's Five-Year Road Program.
Habitat enhancement or NBS	Yes	Habitat enhancement or NBS explanation	Yes, the project will provide grassed/sodded roadside swales and the design of baffle boxes to aid in water quality within the limits of this long-established residential neighborhood. Water quality baffles will be included at new outfall structures and catch basins at key locations within the areas of improvement. Baffle systems are used to screen and help prevent heavy particulates and other pollutants from entering the system. FDOT recommends the use of baffle systems to reduce the loading of sedimentation for downstream receiving waters which enhances environmental habitat- upland and marine (page 31 listing baffle boxes as a structural best management practice to reduce pollutant loading and improving habitat): https://www.fdot.gov/docs/default-source/maintenance/RDW/BestMaintPracticesSWRunoff.pdf
Critical habitat	Yes	Critical habitat explanation	The project impact area includes federally designated critical habitat for the West Indian Manatee.
Cost effective	Yes	Cost effective explanation	Construction cost estimates were generated by the consulting firm that completed the drainage study. Based on the cost estimates generated through the drainage study, Palm Beach County determined that the most impactful benefits would come from the proposed drainage improvements on Elizabeth Road, Vassallo Avenue, Engle Road, and Theresa Road.
Cost share available	Yes (Cost share has been secured)	Cost share available explanation	Funding for this project is provided through the Drainage Reserves of Palm Beach County's Five-Year Road Program.
Previous state funding	None	Previous state funding explanation	
Exceeds FBC/local floodplain regs	These regulations do not apply to the project	Exceeds FBC/local floodplain regs expln	
Innovative tech	No	Innovative tech explanation	
Community financially disadvantaged	Yes	Comm financially disadvantaged expln	Yes. According to the CDC's social vulnerability index, the following census tracts intersect with the project area and are indexed at greater than 50% relative to the greater social vulnerability index: census tracts 45, 46.02, 50, and 49.04. Higher percentages equate to more vulnerable populations considering socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation.
GI Benefit Spring	No	GI Benefit Spring Explanation	
GI Protect Water Sources	No	GI Protect Water Sources Explanation	
GI Facilities Waste Treatment	No	GI Facilities Waste Treatment Explanation	
GI Convert Septic To Sewer	No	GI Convert Septic To Sewer Explanation	
GI Green Stormwater Infrastructure	Yes	GI Green Stormwater Infrastrure Expl	The project includes a baffle system which is considered green infrastructure according to DEP's green stormwater

infrastructure web site: <https://gsi.floridadep.gov/gsi-basics/what-is-gsi/>.

GI Applied Other Programs No
 GI Community Population 1,518,477

GI Applied Other Programs Explanation

▼ Information

Agency Contact		Amount of Funds Awarded	
GI Critical Assets Served		Amount of Funds Requested	
GI Critical Assets Served Explanation		Lands, Easements, Rights of Way	The work will take place within existing right-of-way that is owned and maintained by Palm Beach County, within drainage easements, and within the affected canals (outfall locations). Right-of-way acquisition is not anticipated for this project.
Permitting	Necessary permits LWDD right-of-way and general drainage permits; SFWMD ERP and possibly Water Use, FDEP NPDES	Metric Assigned	Linear feet of pipe replaced or added
Planning Section Lead		Metric Value	2,200.00
Project Follow Up		Metric Value Units	Linear Feet
Statewide Flooding and Sea Level Rise			

▼ Additional Funding

Additional Function Applicant Entity	Additional Funding Current Grant Number
Additional Funding Current Grant	Additional Funding Request
Additional Match Secured	Additional Funding Request Justification

▼ Project Work Plan

Project Summary	The project includes stormwater adaptation to increase drainage capacity for an existing neighborhood that is currently suffering from flooding during routine rainfall events. The project also includes the installation of new pipe, new storm drain inlets and catch basins, re-establishment of grassed/sodded roadside swales and the design of baffle boxes to aid in water quality within the limits of this long-established residential neighborhood.	Project Description	Significant flooding of roads and driveways along Engle Road, at the intersection of Vassallo Avenue and Elizabeth Roads, and at French Avenue and Theresa Road makes it difficult for residents to get in, out, or around during and after even small rain events. Access to the community itself through French Avenue and Engle Road is very difficult in a rain event due to the flooding, making it difficult to see edges of the pavement, as well as painted stop bars and traffic markings in the roadway. As a result of the numerous complaints and observed flooding conditions, Palm Beach County completed a drainage study of the drainage system and outfalls to determine the areas of most significant flooding, and analyze the existing system and changes made to it, since it was first developed in the 1950s. Over time, the existing swales have degraded, been filled in, or otherwise blocked, and aged corrugated metal pipes have deteriorated and exhibit signs of failure within the drainage system. The study recommended the re-establishment/regrading of swales throughout the community, the replacement of 2 existing pipes that outfall to the E-4 Canal, as well as construction of new pipes and drainage structures on Engle Road,
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Vassallo Avenue, and Theresa Road. After further investigation and cost analysis, Palm Beach County intends to add a new pipe on Elizabeth Road with a new outfall to the L-11 Canal, will construct new pipes and outfalls at both Theresa Road and the north end of Engle Road, and will provide bioswales as recommended by the study. Palm Beach County is moving forward with the design of these improvements as improvements to these north-south roads with outfalls at either end will significantly alleviate flooding in much of the community.

▼ **Project Need and Benefit**

Project Feasibility

Project Vulnerability

Vulnerability Assessment include State

▼ **Budget**

Budget Narrative

Work Performed by

Indirect Percent

▼ **Signature**

Authorized Signers Signature Megan Houston

Certification Agreement

▼ **System Information**

Created By	Natalie Frendberg, 8/16/2023 2:26 PM	ID	a195G00003BYr0M
Last Modified By	Natalie Frendberg, 8/31/2023 8:01 PM	Preparer Type	Applicant
Owner	Natalie Frendberg	Preparer Account	Palm Beach County
EGR Application Name	RAN-00727	Preparer Contact	Natalie Frendberg
		Preparer User	Natalie Frendberg

Files

PBC VA for RF 2023 083023 - FINAL

Last Modified 8/31/2023 2:54 PM
Created By Natalie Frendberg

PBC Resolution for RF Applications

Last Modified 8/31/2023 10:05 AM
Created By Natalie Frendberg

Englewood Estates Study - COST ESTIMATE FDEP Application 08-23

Last Modified 8/31/2023 10:01 AM
Created By Natalie Frendberg

PBS PSVA Modeling

Last Modified 8/30/2023 10:23 PM
Created By Natalie Frendberg

PBC Englewood Project Location and Non-Modeling Maps

Last Modified 8/30/2023 10:20 PM
Created By Natalie Frendberg

Englewood Estates Five Year Road Program

Last Modified 8/30/2023 10:13 PM
Created By Natalie Frendberg

Englewood Estates Final_Tech_Memo

Last Modified 8/30/2023 10:13 PM
Created By Natalie Frendberg

Englewood Combined Photos

Last Modified 8/30/2023 10:13 PM
Created By Natalie Frendberg

5YRP Annual Update FY23_Adopted_ December 20, 2022 - R2022-035

Last Modified 8/30/2023 10:13 PM

Created By Natalie Frendberg

EGR Application History**8/31/2023 8:01 PM**

User Natalie Frendberg

Action Changed Status from Draft to Submitted.

8/31/2023 2:08 PM

User Natalie Frendberg

Action Changed Total Grant Funding Amount Requested from \$0.00 to \$1,816,000.00.

8/31/2023 2:06 PM

User Natalie Frendberg

Action Changed Total Grant Funding Amount Requested to \$0.00.

8/31/2023 2:04 PM

User Natalie Frendberg

Action Changed Source of Match to Local funds. Changed SLIP Study Required? to No. Changed Project located in a Coastal Zone? to No. Changed Local Project Phase to Construction. Changed Estimated Project Duration to 36 Months. Changed Critical Infrastructure to No.

8/31/2023 2:03 PM

User Natalie Frendberg

Action Changed GI Green Stormwater Infrastructure to Yes. Changed GI Protect Water Sources to No. Changed GI Facilities Waste Treatment to No. Changed GI Convert Septic To Sewer to No. Changed GI Benefit Spring to No. Changed GI Applied Other Programs to No.

8/31/2023 2:02 PM

User Natalie Frendberg

Action Changed Exceeds FBC/local floodplain regs to These regulations do not apply to the project. Changed Innovative tech to No. Changed Community financially disadvantaged to Yes.

8/31/2023 2:01 PM

User Natalie Frendberg

Action Changed Previous state funding. Changed Cost share available to Yes (Cost share has been secured).

8/31/2023 2:01 PM

User Natalie Frendberg

Action Changed Cost effective to Yes.

8/31/2023 2:01 PM

User Natalie Frendberg

Action Changed Critical habitat to Yes.

8/31/2023 2:00 PM

User Natalie Frendberg

Action Changed Habitat enhancement or NBS to Yes.

8/31/2023 2:00 PM

User Natalie Frendberg

Action Changed Flood frequency to Has been flooded at least 3 times in the last 5 years or is experiencing ongoing erosion. Changed Permit & easement status to Necessary permits and easements have been identified. Changed Project design status to Partially designed or site-specific environmental or geotechnical reports have been completed. Changed Current flood severity to Flooded greater than 1 foot in the current and each of the previous three calendar years, has been flooded for 7 consecutive days, or erosion is critical for the critical asset class. Changed Local cost share available to Yes.

8/31/2023 1:59 PM

User Natalie Frendberg

Action Changed Percent CA Vulnerable to 80% or more. Changed Existing flood mitigation project to Yes, by incorporating BOTH new or enhanced structure AND natural system restoration and revegetation.

8/31/2023 1:58 PM

User Natalie Frendberg

Action Changed Regionally significant asset to Yes.

8/31/2023 1:57 PM

User Natalie Frendberg

Action Changed Compound flood risk in VA to Yes.

8/31/2023 1:57 PM

User Natalie Frendberg

Action Changed Flood risk in VA to Yes.

8/31/2023 1:57 PM

User Natalie Frendberg

Action Changed Sponsor City/County to Palm Beach. Changed Area Served. Changed State Lands or State Parks Utilized to No.

8/31/2023 1:56 PM

User Natalie Frendberg

Action Changed Project Geo Location (Longitude) to -80.085. Changed Project Geo Location (Latitude) to 26.623.

8/16/2023 2:26 PM

User Natalie Frendberg

Action Created.

EGR Application Tasks

RTN-04790

Task Number 1

Task Description **Palm Beach County will prepare solicitation documents and procure a contractor**

Total Task Amount Requested **\$0**

RTN-04792

Task Number 2

Task Description **The construction activity will be commenced and the project constructed according to final design.**

Total Task Amount Requested **\$1,816,000**



Office of Resilience
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411-2743
(561) 233-2400
FAX: (561) 233-2414
www.pbcgov.com/resilience

**Palm Beach County
Board of County
Commissioners**

- Gregg K. Weiss, Mayor
- Maria Sachs, Vice Mayor
- Maria G. Marino
- Michael A. Barnett
- Marci Woodward
- Sara Baxter
- Mack Bernard

County Administrator
Verdenia C. Baker

DATE: August 23, 2023
TO: Verdenia Baker, County Administrator
THROUGH: Patrick Rutter, Assistant County Administrator
FROM: Megan S. Houston, Director, Office of Resilience

SUBJECT: Designee Authority for the FDEP Resilient Florida Grant Program Implementation Application - Englewood Estates/Manor Subdivision Rd. Drainage

At the August 22, 2023, Board of County Commissioners meeting, the County Administrator or designee was authorized to submit a grant application for the Englewood Estates/Manor Subdivision Rd. Drainage project to the Florida Department of Environmental Protection (FDEP) Resilient Florida Grant Program due to time constraints. The County Administrator is assigning the designee as the Director of the Office of Resilience to sign and submit the FDEP Resilient Florida Grant Program implementation grant application.

Approved By:

Verdenia Baker, County Administrator

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