

Implementation Grant Pre-Application Worksheet

Crystal Beach Drainage Improvement Project

Notes:

What does success look like: (let's use this in grants)
Funded solutions must support community well being
Equitably support right infrastructure investments when and where it is most needed

Applicant Account: Pinellas County

Applicant Grant Manager: Yi Thierry Ku

Applicant Authorized Signee:

Applicant Fiscal Agent:

Project Information

Choose the Entity Category (Refer to 380.093(5), F.S., for more information):

County, municipality, or authorized special district addressing risks of flooding or sea level rise identified in a vulnerability assessment

Project Type

Coastal flood control
domestic wastewater infrastructure
stormwater infrastructure
utilities infrastructure
Living shoreline
cultural or community resource

***Project Title (This should be a brief synopsis of the project plan. Limited to 20 words.):**

Crystal Beach Drainage and Roadway Improvements

List the City(ies)/Town(s)/Village(s) (List all city(ies)/town(s)/village(s) where work is to be performed):

Crystal Beach

Project Location

28 05' 28.59" N – 82 46' 37.95" W

Project Location narrative (Neighborhood, part of town, intersection, etc.):

The project limits are generally from Crystal Beach Avenue to Florida Boulevard and extend from St. Joseph's Sound to Avery Bayou. **Will any of the work to be performed or fall on state lands?**

No

Area Served (If applicable, area served only required for projects that mitigate risks on a regional scale): Sponsor City/County (If applicable. If the applicant is the sponsor, leave blank.):

Background

Explain the demonstrated need(s) and how the project will address those needs. (Explain the demonstrated need which the project addresses.)

Pinellas County will address community flooding impacts to stormwater, wastewater, and transportation assets through the Crystal Beach Drainage and Roadway Improvements project. The need for drainage and roadway improvements in the project area is well documented. In 2008, the Pinellas County Public Works developed preliminary plans to address these issues. However, the project was not completed due to insufficient funding.

The project will make roadway improvements (asphalt and base restoration, shell, paved road restoration, milling and resurfacing, and existing sidewalk improvements); drainage improvements (conveyance); and utility condition assessments and improvements (sanitary sewer and potable water). Nature based features for retention volume in the form of bioswales enhanced by native vegetation are proposed to mitigate local flooding along with future phases of living shorelines. New inlets and pipes will also improve water conveyance, further mitigating flooding. (Attachment X: Appendix E in the Tech Memo).

Important elements of the plan include preserving the community's natural and historic features such as Live Oak Park, the Gulf Shore Park path, mangrove and estuary habitats, and maintaining the "Old Florida" coastal character of the community with native landscaping.

Explain how the proposed project fits into the Project Types chosen.

The project includes drainage capacity improvements to aid in stormwater abatement and flood control, along with enhancements to roadways at risk, and an optional living shoreline component that would address localized flooding and erosion. As part of this project, potable water and sanitary sewer system assets conditions will be assessed. Stormwater improvements can include a network of inlets, pipes, and swales (shallow ditches) that collect and carry

stormwater runoff away from homes, yards, and streets and provide treatment before discharging to coastal waters. This plan replaces existing deep ditches in the project area with either swales or swales over pipe, which will improve stormwater management as well as roadway safety.

Bioswales provide infiltration, conveyance, and treatment of stormwater runoff and are designed to return to dry conditions 72 hours after rainfall. The project proposes bioswales that are designed to receive and treat stormwater runoff before discharging to St. Joseph Sound or Avery Bayou along the South Gulf Drive right of-way and along additional project area roadways. Bio-sorption Activated Media (BAM), a soil amendment technology composed of natural and recycled materials, may also be utilized in the bioswales to provide enhanced pollutant removal. An optional project element is grassed swales or swales planted with Florida-friendly vegetation. Input from the community will better define the number, type, extent, and location of swales.

Roadway improvements to be implemented by the project include repaving roads that have not recently been resurfaced. Paving of shell roads is optional and will be determined by the homeowners along the road segment. Typical roadway sections show the proposed width for paved and shell roads as well as potential combinations of grassed and planted swales. Existing trees in the right-of-way will be retained whenever practicable.

Separate from the conceptual plan described above is an option to create a living shoreline consisting of an oyster reef. The purpose of the reef is to provide erosion protection and shoreline stabilization that will also facilitate the establishment of new wetland grass communities along the shoreline. The reef and tidal marsh would provide ecological benefits, habitat, foraging areas, and sanctuary for wildlife as well as improved water quality conditions along Crystal Beach.

Materials used for the living shoreline oyster reef consist of marine -friendly concrete domes and oyster shell bags. Domes will be placed in approximately 2-feet of water for optimal growing conditions: mostly exposed at low tide and totally submerged at high tide. Behind the domes, there will be mesh bags with shells (mined or locally sourced). Native wetland grasses will be planted behind the reef to provide additional stabilization, reduce pollutant loads, and provide habitat for wildlife.

Input from the Crystal Beach community would determine the size, extent, and location of the living shoreline.

Tier 1

Does the project reduce risk of flooding or sea level rise identified in a comprehensive vulnerability assessment or the comprehensive statewide flood vulnerability and sea level rise assessment? If yes, please explain. (Until July 1, 2024, applicants without a comprehensive vulnerability assessment shall receive points based on risks posed by flooding

or sea level rise identified an assessment, report, evaluation, or other documentation of risk that addresses flooding or sea level rise.)

Yes, the project will reduce risk of flooding and sea level rise as identified through the Pinellas County's Sea Level Rise and Storm Surge Vulnerability Assessment (<https://pinellas.gov/projects/vulnerability-assessment/>) and project vulnerability assessment in *Grants Strategy, Development, and Management Funding Plans* (see attached). Additionally, this project is identified in the Pinellas County's Public Works and *Local Mitigation Strategy* (LMS) (2020). It is listed as Crystal Beach Drainage Improvements (PID 003896A) (see Attachment X). The LMS identifies potential hazards and vulnerabilities, set goals and establishes specific mitigation actions to reduce risk of natural or man-made or natural hazards to people, buildings, infrastructure and the environment.

The vulnerability assessment points out that tidal effects are impacting this area, limiting stormwater capacity, and contributing to localized flooding. This condition is anticipated to worsen, with tidal effects becoming more prevalent over time, increasing localized flooding for each successive rainfall event.

Does the project reduce risk of compound flooding identified in a vulnerability assessment or the comprehensive statewide flood vulnerability and sea level rise assessment? If yes, please explain. (Until July 1, 2024, applicants without a comprehensive vulnerability assessment shall receive points based on risks posed by flooding or sea level rise identified an assessment, report, evaluation, or other documentation of risk that addresses flooding or sea level rise.)

Yes, the project reduces risk of compound flooding from coastal flooding (tidal effects), and pluvial flooding (rainfall-induced flooding of drains/storm surge). Storm surge exposure was demonstrated in 100% of storm surge exposure scenarios (*Grants Strategy, Development, and Management Funding Plans*) while the LMS assessed risk for 22 hazards including flooding. Implementation of this project will reduce risk resulting from compound flooding.

Does the project reduce risk to or adapt a regionally significant asset? This can include relocation. If yes, please explain.

Yes. The project reduces the risk to two sanitary pump stations (asset numbers 16FS-SP3161 and 16FS-SP3162) providing regional benefits. The project will reduce the elevation of water and limit the water coming out of the sanitary sewer, helping limit detrimental impact on the pump stations and several other utilities. This area is largely residential with mostly historically significant—not operationally significant—assets. Utility access holes, elevated powerlines, and transportation centerlines have been identified as regional assets.

What percent of critical assets in the project impact area considered to be vulnerable? Please describe the method used to determine the percent selected as well as provide a list of

critical assets in the project impact area. (Vulnerable critical assets are those at risk of flooding based on applicable scenarios and standards outlined in paragraph 380.093(3)(d), F.S. Until September 1, 2024, if evaluation of those scenarios and standards is unavailable for the project impact area, best available data can be used to determine the percent.)

, 60% or more but less than 80%

Based on the vulnerability assessment meeting FDEP requirements, 64% of critical assets were deemed vulnerable. Asset vulnerability was assessed for exposure to storm surge and tidal flooding based on current future conditions. The ranking analyses included conditions for the years 2018, 2040, 2070, and 2100. Sea level exposure considered the Intermediate Low sea level rise scenarios (representing a 1.9-foot increase in sea levels by 2100), which were published by National Oceanic and Atmospheric Administration in 2017 and obtained for the Clearwater and St. Petersburg tide gauges through the U.S. Army Corp of Engineers Sea-Level Change Curve Calculator in 2019. The sea level rise projections, which differed slightly at each gauge, were spatially interpolated throughout the county using a geographic information system (GIS). Tidal flooding frequency of one hour of flooding per year (the year's highest astronomical tide) was considered. Storm surge projections utilized a hydrodynamic model developed by the University of Florida for mapping the 100-year storm events.

Does the project contribute to existing flood mitigation projects that reduce upland flood damage cost by incorporating new or enhanced structure or natural system restoration and revegetation? If yes, please explain.

, Yes, by incorporating BOTH new or enhanced structure AND natural system restoration and revegetation

Yes, this project will incorporate both **new/enhanced** structures and natural system restoration and revegetation. Roadway improvements/enhancements are proposed including asphalt and base restoration, shell or paved road restoration, milling and resurfacing. New drainage improvements (conveyance) are planned to enhance water retention and conveyance.

Natural system restoration and revegetation features are also key components of the project. New bioswales are planned for roadway and stormwater improvements which will incorporate native vegetation as appropriate. Pinellas County will be following [tree mitigation policies](#) which preserve tree canopy for the entire project footprint ensuring a net tree impact of 0%.

In addition to the initial project plan, County staff are working towards an option to create a living shoreline through partnership with Tampa Bay Watch. Concepts consisting of an oyster reef and fringing tidal marsh vegetation are envision to provide erosion protection and shoreline stabilization. The reef and tidal marsh would provide ecological benefits, habitat, foraging areas, and sanctuary for wildlife as well as improved water quality conditions along Crystal Beach. Input from the Crystal Beach community would determine the size, extent, and location of the living shoreline.

Tier 2

What is the current frequency of flooding or erosion in the project impact area? (If area has been flooded 3 times in 5 years or is experiencing ongoing erosion, supporting documentation must be submitted with the application)

The project area is significantly low-lying and flooding occurs regularly. Some residents have nearly permanent sandbags in front of their garage doors to mitigate the impact of consistent flooding. Pictures and files in the associated folder. Further, please see the following for additional evidence of historical flooding: <https://pinellas.gov/projects/crystal-beach-drainage-and-roadway-improvements-project-status/>.

What is the current severity of flooding or erosion in the project impact area? (If area has been flooded greater than 1 foot in the current and each of the previous three calendar years, been flooded for 7 consecutive days or erosion is critical for the asset class, supporting documentation must be submitted with the application)

- **Has been flooded at least 3 times in the last 5 years or is experiencing ongoing erosion. If area has been flooded 3 times in 5 years or is experiencing ongoing erosion, please explain and provide documentation.**

The project area is significantly low-lying and flooding occurs regularly. Some residents have nearly permanent sandbags in front of their garage doors to mitigate the impact of consistent flooding. Pictures and files of flooding and erosion in the project area are included in Attachment X. Further, please see the following for additional evidence of historical flooding: <https://pinellas.gov/projects/crystal-beach-drainage-and-roadway-improvements-project-status/>.

What is the status of project design? (To receive points for a completed design, plans properly certified by a professional in the relevant field must be submitted with the application.)

The conceptual plans for the project have been completed through a community involvement process. The 15% design plans are scheduled to begin in **XXX 2023**.

Permitting and easement acquisition status. If applicable, please provide a list of necessary permits/easements and application statuses.

This project qualifies for a general permit from Southwest Florida Water Management District. (SWFWMD). Coordination with SWFMWD is scheduled for 2024. No project activities will take place on private property. There are two easements needed for this project. Property rights acquisition will take place 2024.

Are local funding sources committed as cost share or is the project in a financially disadvantaged small community as defined in 380.093(5)€, F.S.? If yes, please explain and provide documentation.

Yes. 'Penny For Pinellas' has been approved to contribute match funding for the project.

Does the project include environmental habitat enhancement or nature-based solutions? If yes, please explain.

Yes. Nature based features for retention volume in the form of bioswales enhanced by native vegetation are proposed to mitigate local flooding along with future phases of living shorelines. Bioswales provide infiltration, conveyance, and treatment of stormwater runoff and are designed to return to dry conditions 72 hours after rainfall. An optional project element is grassed swales or swales planted with Florida friendly vegetation. Input from the community will better define the number, type, extent, and location of swales. Please see Attachment X.

Does the project impact area include area that is identified as state or federal critical habitat for threatened and endangered species? If yes, please explain.

No

Is the project cost-effective? If yes, please explain.

Pinellas County will issue a competitive solicitation and contract for professional services to include engineering, construction management, labor, tools, equipment, and supplies associated with this project to ensure cost effective, fair contracting (see Attachment X: Purchasing Policy & Procedure Manual). Pinellas County will apply all appropriate Uniform Guidance and cost principles toward the use of funds associated with the project.

Tier 3

Is 50% local, state, or federal cost share secured for the project? If 50% cost share has been secured, please provide documentation with the application.

Total project costs are projected at \$15,470,828.00. Total request funding for this project is \$12,200,000.00 with a 50% cost share of \$6,162,000.00 secured through the Penny for Pinellas (see attached). This is a voter-approved, one-cent sales tax used to pay for projects to improve Pinellas County infrastructure.

Has state funding previously been awarded for the project? If so, for what? Please explain and provide information sufficient for the Department to verify previous state funding. (Pre-construction activities are defined in s. 380.093(2)(c), F.S.

Pinellas County received a legislative appropriation for FY 2022/23 through House Bill 4505 and Senate Bill 356 which are administered through Florida DEP. The County requests a determination on the use of these funds for match.

Will this project exceed Florida Building Code flood-resistant requirements and local floodplain management regulations? If yes, please outlines the specific requirements and details relating to how the design exceeds the criteria.

Yes, the project is subject to Pinellas stormwater regulations that are more stringent than those of the Florida Building Code. The project will exceed the requirements. Further, the roadside swale exceeds the State criteria.

Tier 4 Criteria Information

Does this project include innovative technologies designed to reduce project costs and provide regional collaboration? If yes, please specify which technologies will be used and explain why they are innovative as well as how they will reduce cost and provide regional collaboration. (For this criterion, “innovative” means an emerging technology or a proven technology used in a unique way to adapt one or more critical assets to the effects of flooding or sea level rise.)

Yes. To establish native vegetation an innovative material is being considered for the bioswale design which will remove typical roadside pollutants thereby enhancing the long term success of native vegetation growth and resilience to future stressors. Bio-sorption Activated Media (BAM), a soil amendment technology composed of natural and recycled materials, may also be utilized in the bioswales to provide enhanced pollutant removal.

Does the critical asset being adapted or the project impact area contain a financially disadvantaged community? If yes, please explain the metric used to determine financial disadvantage (ex. Local income compared to state average).

No

Will this project benefit a spring? If yes, please explain.

No

Will this project protect water sources using alternative water supplies? If yes, please explain.

No

Will this project construct, upgrade or expand facilities to provide waste treatment? If yes, please explain.

No. The project only inventories and assesses existing sanitary sewer infrastructure and recommends rehabilitations and does not construct, upgrade or expand facilities to provide waste treatment.

Will this project convert septic to sewer? If yes, please explain.

This project does not involve septic-to-sewer conversion. However, after assesses existing sanitary sewer infrastructure and recommends may include conversions in future phases.

Has this project been submitted to other programs for funding? If yes, please explain.

No.

What is the population of your community? (Enter integer values only.)

972,852

Multiagency Information

The following information is for data collection purposes only and do not correlate with any of the project evaluation criteria.

Estimated Project Duration

7-1-2021 to 2027

Permitting (Brief description of expected permit determinations necessary for project completion or relevant permit information once permitted.):

This project qualifies for a general permit from the Southwest Florida Water Management District. We anticipate coordination for permitting to begin in 2024.

Lands, [Easements](#) , Rights of Way (Brief description of acquisitions or permissions necessary for project completion or relevant information once required.):

Yes, we will begin property right acquisition in 2024 in order to acquire two easements within the project area.

Critical Infrastructure (Select yes if this project includes critical infrastructure that is confidential or should be redacted from public records searches):

No

Project located in a Coastal Zone?

Yes

SLIP study required?

A SLIP study has been conducted for the project.

Source of Match:

Local Funds

Funding Mechanism (Program utilized or local funding mechanism.):

Penny For Pinellas has been approved to contribute match funding for the project.

Local Project Phase:

Pre-construction (design, permitting, etc.)

The project just finished Concept plans and will begin 15% design plans soon.

Project Work Plan

Project Summary (Provide a brief synopsis of the project. Limited to 75 words.):

- # 5 Improve stormwater management. Better stormwater management will result in reduced mosquito breeding and improve pedestrian and vehicle safety.
- #6 Improve drainage to reduce ponding of water in yards and on the roads.
- # 2 Reduce erosion from stormwater runoff.
- # 1 Improve water quality and flood resiliency by incorporating green infrastructure.
- # 3 Improve the condition of roadway surfaces where desired.
- #7 Improve aesthetics with native landscaping.
- #4 Improve utility infrastructure by updating potable water and sanitary sewer lines.

Project Description (This should be a concise summary of the work being done. It may explain the broader issue that the project will address or what the end goal of the work is. It should NOT restate the tasks or deliverables and should not give specifications or similar detailed descriptions. Limited to 300 words.):

Pinellas County will address community flooding impacts to stormwater, wastewater, and transportation assets through the Crystal Beach Drainage and Roadway Improvements project. The need for drainage and roadway improvements in the Crystal Beach Drainage and Roadway Improvements project area is well documented. In 2008, the Pinellas County Public Works developed preliminary plans to address these issues in close coordination with local community associations. However, the project was not completed due to insufficient funding at that time. Addressing flood risks within this community continues to be a priority and County resources have been committed for project implementation.

Based on the current conceptual design, the base project will make roadway improvements for resilient design including reducing flood risks impacting the road. Stormwater management

plans consider drainage improvements (new inlets and pipes) to reduce community flooding, erosion, and asset impacts. As part of this project, sanitary sewer and potable water utility conditions will be assessed allowing updated resilient infrastructure design. Nature based features for water retention in the form of bioswales are proposed to mitigate local flooding. Conceptual plans include native vegetation considerations along with innovate bioswale designs to enhance long term resilience.

In addition to the initial project plan, County staff are working towards an option to create a living shoreline through a partnership with Tampa Bay Watch. Concepts consisting of an oyster reef and fringing tidal marsh vegetation are envisioned to provide erosion protection and shoreline stabilization. The reef and tidal marsh would provide ecological benefits, habitat, foraging areas, and sanctuary for wildlife as well as improved water quality conditions along Crystal Beach. Input from the Crystal Beach community would determine the size, extent, and location of the living shoreline.