

## Implementation Grant Pre-Application Worksheet

### Cross Bayou Canal

Notes:

**Applicant Account: Pinellas County Government**

**Applicant Grant Manager: Jennifer Shannon**

**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

Natural System restoration

Stormwater Infrastructure

Living shoreline

Land acquisition and conservation

Select as many as possible (defensible)

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

Cross Bayou Canal Phases 1 & 2. The project mitigates flooding, erosion, and sea level rise impacts.

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

City of Pinellas Park, City of Largo, Unincorporated Pinellas County

#### **Project Location**

27.908608 – 82.704210

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

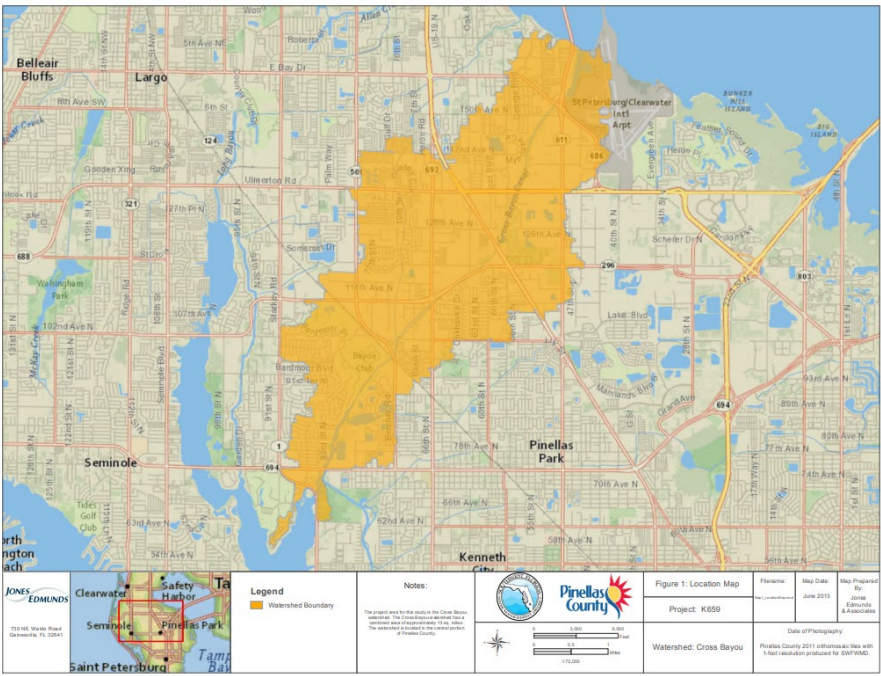
150th Ave N up to Bryan Dairy Right of Way

**Will any of the work to be performed or fall on state lands?**

Yes, some of the project work will be performed on state lands.

**Area Served (If applicable, area served only required for projects that mitigate risks on a regional scale):**

The proposed project will provide benefits on a regional scale covering approximately 8 miles of canal which crosses three watershed basins. The northern most portion of this watershed abuts Old Tampa Bay Estuary (the largest estuary in Florida) and includes a portion of St. Petersburg Clearwater Airport while the southernmost portion abuts Cross Bayou before entering into Boca Ciega Bay. While all aspects of the project fall within Pinellas County, the flooding benefits will extend to the City of Pinellas Park and City of Largo in addition to unincorporated communities of Pinellas County. By providing resilient designed conveyance of flooding which will reduce erosion and overload events on wastewater facilities, benefits are also provided to Pinellas County and Boca Ciega Bay Aquatic Preserves.



**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 Cross Bayou Canal project (Phase 1 & 2). The Cross Bayou Canal was constructed in the early twentieth century and spans the 8,000-acre watershed from Old Tampa Bay (east end) to Cross Bayou (west end). The entire Cross Bayou Canal has been identified to be within Pinellas County's Flood and Sea Level Rise Vulnerability Zone. Cross Bayou Canal has been a source of recurring erosion, sedimentation maintenance, and flooding issues for the county since the 1960s. With the intensive urbanization of the Cross Bayou Canal Watershed, these flooding conditions and damages have become more prevalent and frequent, resulting in flood related property loss and asset vulnerability. In addition to recurring flooding problems, the Cross Bayou Canal system has incurred significant degradation to both habitat and water quality associated with increased runoff and exotic/nuisance species colonization. The proposed resilient design to reshape and stabilize Cross Bayou Canal will improve the hydraulic conveyance function and flood control level of service to help regionally significant and critical assets along with public health and safety. This is particularly relevant considering the increased probability of flooding risks from storm surge events and tidal flooding. All risk scenarios run for Cross Bayou Canal demonstrated risk exposure. During the development of the Preliminary Engineering Study, Pinellas County will continue to leverage current and previously completed studies focused on flood and sea-level rise modeling (Cross Bayou Watershed Management Plan, Countywide Flood Mitigation Project, and the Pinellas County Flood Forecasting Project) and storm surge modeling (Pinellas County Vulnerability Study).

The 2020 Forward Pinellas Gateway Master Plan identified the Cross Bayou project as a short-term priority and of the highest priority among triple-bottom-line resilience and sustainable infrastructure catalyst projects.

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

The proposed project presents a comprehensive approach that effectively interacts with coastal flood control, natural system restoration, stormwater infrastructure, and living shorelines. To address coastal flood control, the project implements design measures such as widening, deepening, and stabilizing canal segments, and enhancing hydraulic conveyance to mitigate flood risks during intense rain events and rising sea levels. In terms of natural system restoration, the project incorporates green buffer zones and living shorelines, utilizing mangroves and other native vegetation to restore ecological habitats, foster biodiversity, and enhance resilience against environmental challenges. Additionally, the project focuses on stormwater infrastructure improvements by utilizing hydrodynamic models to optimize flow and capacity, ensuring effective stormwater management and reduced flood impacts that protect critical regional transportation infrastructure, utilities, and residential neighborhoods.

### Tier 1

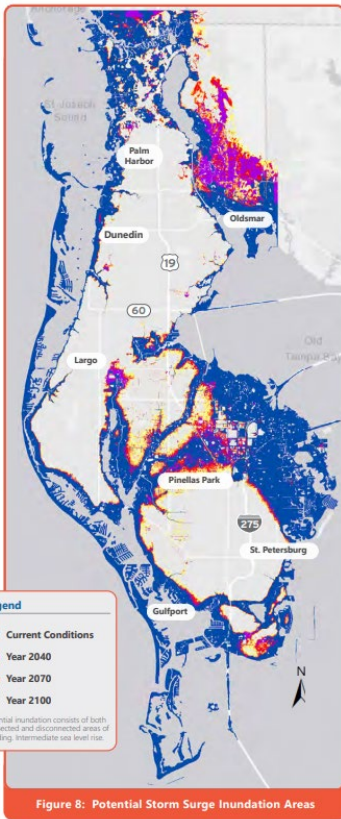
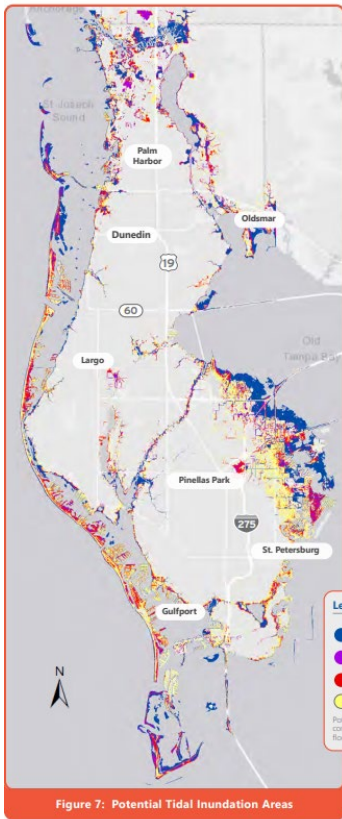
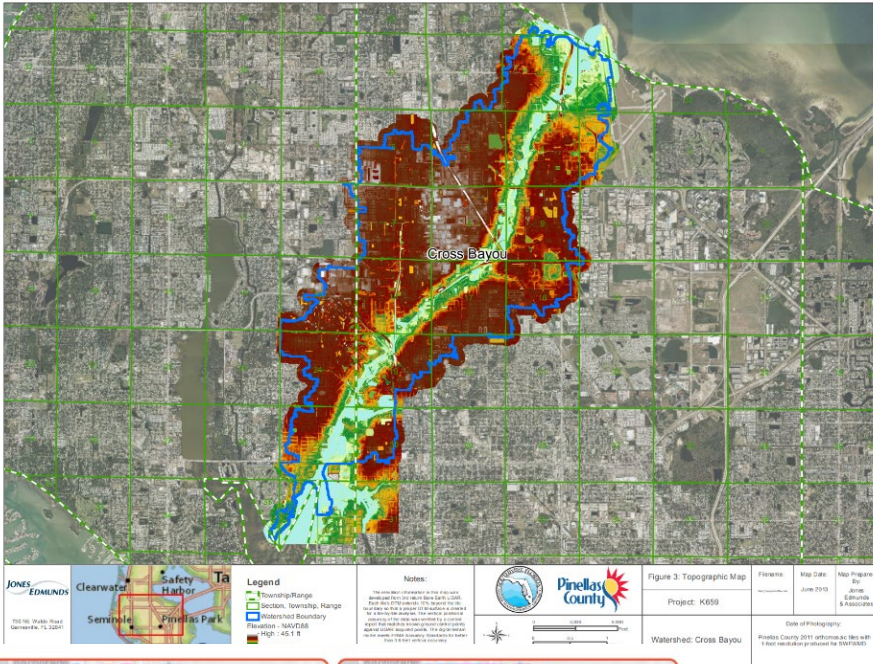
**Does the project reduce risk of flooding or sea level rise identified in a comprehensive vulnerability assessment or the comprehensive statewide flood vulnerability and sea level rise assessment? If yes, please explain. (Until July 1, 2024, applicants without a comprehensive vulnerability assessment 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 Cross Bayou Canal Improvements (PID 002124A & 002124B) (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 and storm surge scenarios impact this area, limiting stormwater capacity, and contributing to flooding. This condition is anticipated to worsen, with tidal effects becoming more prevalent over time, increasing localized flooding for each successive rainfall events.

**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 and tidal exposure was demonstrated in 100% of 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 aims to reduce the risk to several regionally significant assets within the project area. Among the 37 critical assets identified in the project benefit area are the Largo Wastewater Treatment Plant, the Pinellas County Correctional Facilities, 150th Ave N Bridge, Ulmerton Road Bridge, a bridge for US Highway 19, approach bridges for the FDOT Gateway Bridge, and the FDOT Gateway itself. Additionally, there are sanitary sewer crossings and potable water crossings along with commercial properties owned by the St. Pete -Clearwater Airport, which is owned by Pinellas County. By widening and deepening the canal, the improved conveyance capacity will allow for more efficient water flow thereby reducing the risk of flooding in adjacent areas during intense rain events. Over 540 critical assets were identified as at risk during the Phase 1 Vulnerability Assessment (Attachment X).

**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.)**

Based on the vulnerability assessment meeting FDEP requirements,, 88% of critical assets were identified as 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.**

The Cross Bayou Canal serves as the main conduit within the Cross Bayou Watershed, effectively acting as the spine of the entire watershed system. As the canal is the central drainage pathway for the entire 8,000-acre watershed, its condition and capacity significantly influence the functionality of upland areas within the watershed. When the Cross Bayou Canal is maintained at an appropriate level, it facilitates efficient drainage of stormwater runoff from the uplands to the receiving body of water, which in this case is the Cross Bayou. This function is crucial, especially during heavy rainfall events or storm surges, as it helps to prevent upland flooding and property damage by rapidly conveying excess water away from the higher ground. The strategic use of the proposed living shoreline of mangroves and other vegetation further

enhances the canal's capacity. The extensive root systems of mangroves act as a natural barrier, effectively stabilizing the canals edge and reducing the erosive impacts of storm surge and tidal action. In addition to flood control, the living shoreline also contributes to water filtration and coastal wildlife habitat.

## 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)**

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

**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)**

- Flooded greater than 1 foot in the current and each of the previous three calendar years, has been flooded for seven consecutive days or erosion is critical for the critical asset class.

**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.)**

Preliminary designs for project segments 1 and 2 are ongoing.

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

Fee simple parcels and/or easements are needed over three privately owned properties in Segment 1. There is an easement in progress with the Largo WWTP in Segment 1. Fee simple parcels and/or easements are needed over five private parcels in Segment 2. The project team will need to coordinate with Florida Department of Transportation (FDOT) on access to its parcels and purchase excess properties that were purchased for the Gateway project.

Pre application with SWFWMD took place 02.18.2020.

**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. The City of Largo has also committed to contribute \$3 million dollars toward the project to be used as match.

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

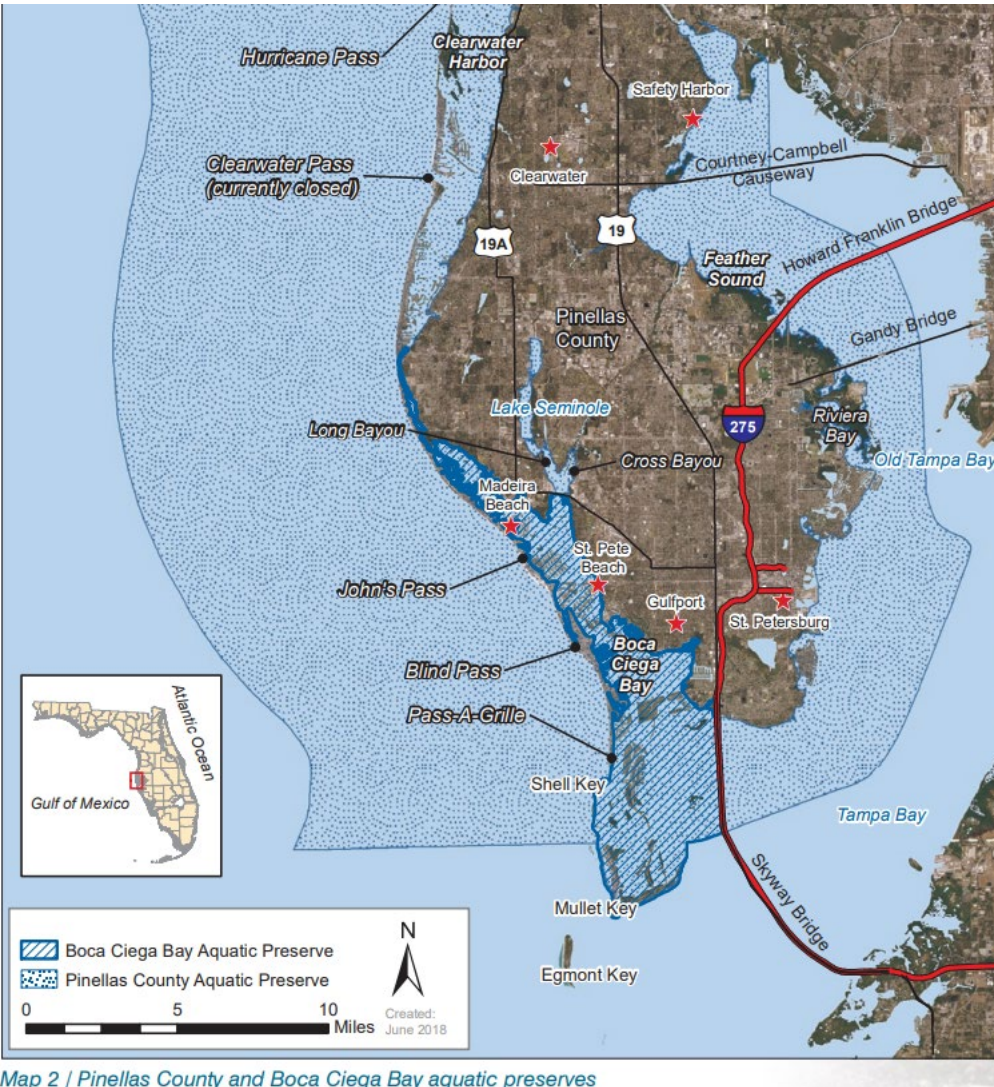
Yes, the project impact area includes environmental habitat enhancement and nature-based solutions. The strategic use of a living shoreline comprising mangroves and other vegetation serves as a nature-based solution for bank stabilization, erosion control, and flood mitigation along the Cross Bayou Canal. These natural features enhance wildlife habitat and biodiversity, providing nesting sites and shelter for coastal wildlife. Additionally, the vegetation acts as a natural filter, improving water quality by removing pollutants from stormwater runoff. The project's emphasis on minimal impacts to existing natural features, such as manatees, mangrove habitats, and large oak trees, underscores its commitment to environmental habitat enhancement. By incorporating these nature-based solutions, the project fosters a resilient ecosystem within the impact area while also addressing flood control and coastal protection needs.

**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.**

Yes. Several listed species including the West Indian manatee, the southern bald eagle, the wood stork, and little blue heron were observed onsite during the project's preliminary assessment.

Additionally, the project will provide benefits at the northernmost and southernmost boundaries of Cross Bayou Canal which enter into Pinellas County Aquatic Preserve and Boca Ciega Bay Aquatic Preserve. These areas which were designated under Section 258.36, Florida Statute with "the intent...of the Legislature" to set aside "state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value, as hereinafter described, be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations."





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

The proposed project is highly cost-effective due to its potential to save hundreds of millions of dollars in future expenditures on repairing damaged bridges, roadways, and other critical infrastructure. In this way, the project serves as a preventative measure that fortifies the canal's capacity and offers substantial long-term financial savings. 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 Purchasing Policy & Procedure Manual). Pinellas County will apply all appropriate Uniform Guidance and cost principles toward the use of funds associated with the project.

Preliminary project design has also investigated the use of hydraulic resurfacing methods rather than more traditional mechanical resurfacing methods. Hydraulic resurfacing processes have been found to

be more cost-effective and efficient throughout the duration of the project and will therefore be pursued as project design progresses.

### **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.**

Project costs are projected at \$26,074,000.00. A 50% cost share of \$13,037,000 has been secured. With \$3,000,000 through support from City of Largo and the remaining \$9,819,000.00 secured through the Penny for Pinellas (see attached). Additionally, the county has already allocated \$218,000 towards this project. The Penny for Pinellas 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.)**

No state funding has been previously awarded for the project.

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

The project is subject to stormwater regulations that are more stringent than those of the Florida Building Code, and it will exceed the requirements.

### **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, the proposed project includes innovative technology such as DredgeSOX<sup>®</sup>, a patented erosion control system. DredgeSOX<sup>®</sup> offers a unique and cost-effective solution for shoreline stabilization and erosion control. By utilizing a double layer of knitted polyethylene mesh with rip stop technology and a built-in structural channel, the system ensures a secure and

integrated living shoreline once anchored to the eroded embankment. One of the key innovative features of DredgeSOX® is its modular open containment system, which allows for the dredging of shallow sediment directly into the installation. This streamlined process not only stops erosion immediately but also creates a fully integrated and vegetated shoreline.

The adoption of DredgeSOX® technology offers significant cost-saving benefits for the project. Its efficient installation process minimizes construction time, and it costs less than some traditional erosion control methods.

**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).**

Yes. The canal runs downstream through a number of financially disadvantaged neighborhoods in Unincorporated Pinellas County and Pinellas Park which would benefit from project implementation. Many homes near the canal have been identified as low-income and have been placed on the repetitive flooding list. Financially disadvantaged residents cannot afford to continuously replace or repair their homes and cars from the repetitive flooding. By restoring the flood volume within the canal, flooding and associated costs should be reduced for those homes.

**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.**

While the project will not construct, upgrade, or expand facilities to provide waste treatment, it will reduce risk to County wastewater assets (lift stations, treatment facilities and other infrastructure) in addition to reducing risk to the nearby Largo Wastewater Treatment Plant.

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

No

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

Yes. The project has been submitted to the FY 2023 National Fish and Wildlife Foundation grant funding. The project was not selected.

**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 2029

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

A pre-application meeting with the Southwest Florida Water Management District verified that permitting will be required for the dredge material management areas (DMMA) but not for the overall project. February, 2020

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

Fee simple parcels and/or easements are needed over three privately owned properties in Phase 1. There is an easement in progress with the Largo WWTP in Phase 1. Fee simple parcels and/or easements are needed over five parcels in Phase 2. The project team will need to coordinate with FDOT on access to its parcels and purchase excess properties that were purchased for the Gateway project.

Standing drainage easement agreements have been included as attachments X and X.

#### **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?**

#### **Source of Match:**

Local Funds

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

Penny for Pinellas

**Local Project Phase:**

- Pre-construction (design, permitting, etc.)

**Project Work Plan**

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

Pinellas County will restore and enhance the Cross Bayou Canal to address flooding, erosion, and sea level rise across three basins within Pinellas County. Through resilient flood design, regional and critical community assets will have reduced risk. The incorporation of living shorelines will not only protect these assets, but also enhance the ecological habitat and species which rely on healthy coastal environments.

**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 restore and enhance the Cross Bayou Canal to address flooding, erosion, and sea level rise across three basins within Pinellas County. Through resilient flood design, regional and critical community assets (wastewater treatment facilities, stormwater, road, airport, and railway infrastructure) will have reduced risk. The project involves expanding, resurfacing, and stabilizing segments one and two of the Cross Bayou Canal, which traverse through both industrial and residential areas. By creating a flood resilient design, the project will enhance its capacity to handle stormwater and improve its conveyance function, thereby mitigating flood risks and safeguarding adjacent assets and properties from water-related damages. The revegetation and living shoreline components of the canal shoreline design serve to provide vital habitat for coastal wildlife, stabilize the shoreline to prevent erosion, and offer additional protection against storm surge and tidal flooding.

The broader goal of the project extends beyond canal enhancement (Phase 1 & 2). It envisions the fully reshaped and improved canal as a backbone for various community initiatives, facilitating a more connected and vibrant environment. One supporting initiative involves the establishment of a comprehensive trail connectivity network, allowing for easier access and navigation for pedestrians and cyclists throughout the county. The 2020 Forward Pinellas Gateway Master Plan envisions an eco-industrial-live-work district strategically located along a portion of the first segment of the canal (attachments X).