

PINELLAS COUNTY RESTORE ACT DIRECT COMPONENT PROJECT PROPOSAL SUBMITTAL FORM

Based on the Transocean settlement and until the BP trial ends, it is estimated by March 31, 2015, \$1,542,888 will be available in the Gulf Coast Restoration Trust fund for distribution to Pinellas County under the Direct Component allocation.

As a guideline, Pinellas County anticipates funding 3 to 7 projects not to exceed a total of \$1,542,888 as part of the initial multiyear implementation plan (MYIP). It's anticipated that projects selected for MYIP inclusion that receive funding would not begin until after December 2015.

Please read through all the questions before beginning.

- Submitted projects must address one or more of the five Gulf Coast Ecosystem Restoration Council goals and one or more RESTORE Act-eligible activities.
- Projects submitted by FEBRUARY 6, 2015 will be eligible for inclusion in the initial Multiyear Implementation Plan (MYIP)
- The "Steps" and "Criteria" numbers in the application refer to questions that address the steps and criteria for selection and ranking projects. The selection and ranking criteria can be viewed at www.pinellascounty.org/restore/pdf/project-selection.pdf
- Answer each of the 29 questions as completely as possible, but keep responses focused.
- Submit one form per project.
- Once the form is successfully submitted, you will be contacted by Pinellas County.
- Send associated maps, charts, images, and budget information along with the title of your project in a Portable Document File (PDF) to restore@pinellascounty.org.
- Direct questions to restore@pinellascounty.org

Applicant Name: *(Include at least one Point of Contact (POC), phone number, email address, and organization name, if applicable):*

1. POC Name: LIZ FREEMAN

2. POC Organization: PINELLAS COUNTY PLANNING DEPARTMENT

3. POC Title: PLANNING DIVISION MANAGER

4. POC Email: efreeman@pinellascounty.org

5. POC Phone: (727) 464-8200

6. Proposed Activity Name: PINELLAS COUNTY ASSESSMENT OF VULNERABILITY TO THE IMPACTS OF SEA LEVEL RISE AND INFRASTRUCTURE RESILIENCY PLAN

7. Restoration Council Goals Addressed:

(Step 1 and Step 2 - Criteria 1 and 2)

List which of the following goal(s) will be addressed and how each goal will be addressed.

- A. Restore and Conserve Habitat
- B. Restore Water Quality
- C. Replenish and Protect Living Coastal and Marine Resources
- D. Enhance Community Resilience
- E. Build and Revitalize the Gulf Economy

The project will address all of the Restoration Council Goals (i.e., Goals A through E), either directly or indirectly.

Those goals addressed directly include *Enhance Community Resilience and Build and Revitalize the Gulf Economy*. The project will enhance community resilience by identifying coastal infrastructure assets that are vulnerable to the impacts of climate change/rising sea levels and by formulating adaptation/mitigation strategies to better protect those assets. Importantly, a more resilient community leads to a more sustainable and robust local economy. A less resilient community adds economic risk that will make it more difficult to attract and retain target industries and the high-wage employers that are essential to a healthy economy.

Those goals addressed more indirectly include *Restore and Conserve Habitat, Restore Water Quality, and Replenish and Protect Living Coastal and Marine Resources*. It is anticipated that the adaptation/mitigation strategies derived from the project will consider utilization of the natural environment as a buffer to protect vulnerable infrastructure. That utilization will likely include restoration and conservation of habitat which leads to the restoration of water quality and the replenishment and protection of living coastal and marine resources, as all three of these environmental-related goals are intertwined. In addition, the enhanced resilience of coastal infrastructure will lead to more efficient stormwater systems that will help restore water quality and positively impact the other related environmental goals.

8. RESTORE Act Eligible Activities Addressed:

(Step 1 and Step 2 - Criteria 3 and 4)

List which of the following activities will be addressed and how each activity will be addressed.

- 1. Restoration/protection of natural resources, ecosystems, fisheries, marine wildlife habitats, beaches, and coastal wetlands.

Response: *This is anticipated to be a side benefit of enhancing community resilience. The restoration and protection of natural resources can provide important buffers to help protect coastal infrastructure.*

2. Mitigation of damage to fish, wildlife, and natural resources.
Response: *See above. The mitigation of damage to fish, wildlife and natural resources would be a side benefit of adaptive or mitigative strategies that relied on enhancement of natural resources to help protect coastal infrastructure.*
3. Implementation of Federally-approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring.
Response: *NA*
4. Workforce development and job creation.
Response: *A more resilient community leads to less financial risk for companies to invest in the area and do business here. This will support investment in workforce development and job creation. In addition, some of the mitigation activities themselves will provide job creation.*
5. Improvements to or on State parks in coastal areas affected by Deepwater Horizon oil spill.
Response: *NA*
6. Infrastructure projects benefitting the economy or ecological resources, including port infrastructure.
Response: *More resilient infrastructure will better protect ecological resources (e.g. stormwater management systems), lead to a more sustainable economy and directly create jobs (e.g. those projects to make infrastructure more resilient will require investment and jobs – some high paying although temporary).*
7. Coastal flood protection and related infrastructure.
Response: *the primary purpose of the project is to identify at-risk and critical infrastructure subject to sea level rise and inundation threats, as well as potential adaptive and mitigative strategies.*
8. Promotion of Gulf Coast Region tourism, including recreational fishing.
Response: *A more resilient community, and in particular strategies for a more resilient transportation system, will lead to a more sustainable tourist economy.*
9. Promotion of the consumption of seafood harvesting from the Gulf Coast Region.
Response: *NA*
10. Planning assistance.
Response: The \$300,000 being requested for the proposed project plan.

9. Previous Claim:

Is the proposed activity included in any claim for compensation paid out by the Oil Spill Liability Trust Fund after July 6, 2012? If yes, this activity is not eligible for Direct Component grant.

Yes:

No: X

10. RESTORE Act Pinellas County priorities addressed:

(Step 2 - Criteria 5 and 6)

List which of the following priorities will be addressed and how each priority will be addressed.

a. Protect and restore native habitats

***Response:** This is anticipated to be a side benefit of enhancing community resilience. The restoration and protection of natural resources can provide important buffers to help protect coastal infrastructure.*

b. Provide stormwater quality improvements

***Response:** The identification of stormwater improvements or retrofits may result from this project.*

c. Create policies, programs, and/or mechanisms to remediate environmental and/or economic damages

Response: NA

d. Create policies, programs, and/or mechanisms to protect against future environmental and/or economic vulnerability

***Response:** The planned economic analysis of the project will facilitate long-term/sustainability and cost-benefit-driven decision-making and prioritization by local governments, including the opportunity to identify key projects that may be eligible for infrastructure sales tax funding. The project will broadly assess the economic impact of certain infrastructure losses and scenarios in order to better plan and prioritize resiliency, mitigation and adaptation investments. The project will also provide the means to better facilitate the allocation of finite capital over time to the key infrastructure needed to sustain (both economically and environmentally) the Pinellas community, using a systems method of planning and analysis. The project will support better understanding of the connection between infrastructure resiliency and economic development, helping to facilitate policy development and the prioritization of certain public investments, including the identification of key resiliency projects that could be funded by a Penny for Pinellas extension.*

e. Provide climate change/sea-level rise planning, adaptation and/or related community engagement

Response: This project is intended to identify at-risk assets as well as selected adaptation/mitigation strategies that should make those asset-types more resilient to a changing climate. Essential elements of the project include ongoing participation and collaboration in the regional climate science and planning initiatives underway, as well as strategic public engagement to inform citizens, business community, etc. of the project purpose and solicit targeted input along the way. A key goal of the project is to generate collaborative and ongoing momentum for countywide resiliency planning, including arriving at a common understanding and agreement on critical infrastructure vulnerabilities.

- f. Provide flood and storm protection to infrastructure and other publically owned assets that consider resilience and changing sea levels

Response: *A key goal of the project is to better facilitate decision-making and the allocation of finite capital to the key infrastructure needed to support a more climate-resilient Pinellas community, using a systems method of planning and analysis that can be applied to annual capital improvement planning and programming.*

- g. Implement or further actions in the Pinellas County Post Disaster Redevelopment Plan
Link to Plan: <http://www.postdisasterplan.org/pdrp.shtml>

Response: The project will implement components of the County's post-disaster redevelopment plan (PDRP) - The Environmental Action Plan and the Infrastructure Action Plan. Broadly, the PDRP both acknowledges and recognizes the need to plan for coastal resiliency and sea level rise. In particular, the Infrastructure Restoration Action Plan includes the following Strategy: "incorporate the potential for, and adaption to, sea level rise in infrastructure build back policies," and Action C9.1.1 states: "identify the potential for sea level rise under different scenarios" and Action C9.1.2 states "Determine the cost-benefit to adaptive strategies." The Environmental Action Plan (Action D2.1.4.) states: "Work with federal and state partners to identify potential sea level rise scenarios for west Florida. " This project will build on the partnership and collaboration already underway (which is further described throughout this application). In the 2015 Pinellas County Local Mitigation Strategy (LMS), sea level rise is recognized as an emerging hazard warranting attention in the LMS, but the decision was made to wait until local studies were accomplished with locally-specific data before including mitigation and adaptation projects in the document. This project will help facilitate this next step.

- h. Diversify and improve the economy including tourism

Response: *A more resilient community, and in particular strategies for a more resilient transportation system, will lead to a more sustainable tourist economy.*

- i. Promote sustainable recreational fishing and consumption of seafood dependent on Gulf ecosystem, and/or protect or promote working waterfronts

Response: NA

11. Project Location

(Step 1)

As applicable, describe the location, attach a map and indicate the address, city, zip code, longitude/latitude, and watershed:

The project location is the Pinellas County peninsula, comprised of 25 local governments, located on the western-most coast of Central Florida, with the Gulf of Mexico on its western edge and Tampa Bay on its eastern and southern edges. Please refer to the attached map of Pinellas County, as well as a watershed map of the overall County (there are 55 watersheds within the Pinellas County boundary). General latitude and longitude is: 27°36'41.31" N and 28°10'23.73" N Latitude; 82°35'15.56" W and 82°51'06.52" W Longitude

Region or Geographic Area Impacted by Project

(Step 1 and Step 2 - Criterion 7)

Provide a description of the project area or region in which environmental or economic benefits will be realized. Be as specific as possible by listing cities or geographical boundaries and why.

The geographic area for the project encompasses all of the 25 local government jurisdictions within the boundaries of Pinellas County. These include:

- Belleair
- Belleair Beach
- Belleair Bluffs
- Belleair Shore
- Clearwater
- Dunedin
- Gulfport
- Indian Rocks Beach
- Indian Shores
- Kenneth City
- Largo
- Madeira Beach
- North Redington Beach
- Oldsmar
- Pinellas Park

- Redington Beach
- Redington Shores
- Safety Harbor
- Seminole
- South Pasadena
- St. Pete Beach
- St. Petersburg
- Tarpon Springs
- Treasure Island
- Unincorporated Pinellas County

As a small peninsular county surrounded by water and made up of 25 local governments, planning separately community by community when faced with a collective challenge is counter-productive logistically and fiscally, particularly when the benefits of this project are intended to serve the citizens and business owners of the entire Pinellas Community.

The impacts of sea level rise will not recognize jurisdictional boundaries. The existing network of roads and utility infrastructure already transcends individual local government limits; flooding and inundation events do not respect county or municipal limits. Responding collaboratively to the collective challenge of sea level rise only makes sense.

Eventually, other communities within the region could also benefit from the project outcomes, as the results and methodologies used should be transferable to neighboring communities who wish to undertake similar resiliency analyses (Hillsborough, Manatee and Pasco counties encompass the area served by the Tampa Bay Regional Planning Council).

Discussion of Specific Activity

Describe the project by responding to each of the following topics.

12. Project Description – Discuss the essential elements of the project. Include what is proposed, clearly list major project tasks or program milestones, the project duration, and why it should be done.

This project is timely for the following reasons: current average global temperatures, based on current science, are warmer by about +0.8 degrees Celsius compared to 100 years ago. The 2014 United States National Climate Assessment (NCA) and the Intergovernmental Panel on Climate Change (IPCC) report of 2013-2014 forecasts accelerating global warming with increases of +2 to +5 degrees Celsius by 2100. As a result of warming global temperatures, global sea levels are rising. This rise is

anticipated to accelerate in the future due to two factors: 1) warmer global temperatures will result a higher rate of ice melt for mountain snow caps, glaciers and land ice in Greenland and Antarctica and 2) warmer global temperatures will result in the thermal expansion of the world's oceans.

Local data measured at the St. Petersburg tide gauge station (Station ID 8726520) shows that sea levels in Tampa Bay have already increased approximately 6.6 inches since 1947, when water levels were first recorded at this tide gauge. This rate of change (approximately 2.54 mm/year or 10 inches per 100 years) has accelerated in recent decades. Recent reports indicate that not only will global mean sea level (MSL) continue to rise during the 21st century, but that rate of increase is likely to accelerate due to additional ocean warming and the loss of land-based glaciers and ice sheets.

Pinellas County's ties to the water are extensive. Because of its small geographic size and unique peninsular location separating the Gulf of Mexico from Tampa Bay, no areas within its boundaries are more than just a few miles from the coastline. Unfortunately, Pinellas County has numerous coastal infrastructure assets that serve the public and these facilities may be vulnerable to rising sea levels. This project is important as it will identify these assets as well as adaptation/mitigation strategies that will make the County more resilient, physically and economically, to a changing climate.

Essential elements of the project include building upon previous resiliency planning work performed in the region, eventually facilitating the systematic incorporation of climate risk and resiliency information into local and countywide infrastructure planning and investment processes. Specifically, this project will involve, among several tasks, the creation of a Geographic Information System (GIS) that utilizes an agreed-upon sea level rise projection methodology for various time scales and scenarios, the latest topographic data (DEM/LiDAR) and the location of existing and planned transportation, utilities and public safety infrastructure in Pinellas County [i.e., for the unincorporated county, municipal data and relevant infrastructure data from other stakeholders (e.g., FDOT)]. This GIS-based decision support tool will be used to generate scenarios related to timelines and change, and facilitate assessment of realistic adaptation and mitigation strategies. Additionally, the planned economic analysis will facilitate long-term/sustainability and cost-benefit-driven decision-making and prioritization by local governments, including the opportunity to identify key projects that may be eligible for infrastructure sales tax funding. More specifically, **Key goals of the project include:**

- To generate collaborative and ongoing momentum for countywide resiliency planning, including arriving at a common understanding and agreement on critical infrastructure vulnerabilities.
- To build on the post-disaster redevelopment planning work done to date and begin to link sea level and climate planning to the Local Mitigation Strategy.

- To broadly assess the economic impact of certain infrastructure losses and scenarios in order to better plan and prioritize resiliency, mitigation and adaptation investments.
- To create a robust countywide GIS network(s) and database supporting resiliency and infrastructure planning.
- To better facilitate the allocation of finite capital over time to the key infrastructure needed to sustain (both economically and environmentally) the Pinellas community, using a systems method of planning and analysis.
- To facilitate the identification of adaptation strategies for incorporation into the MPO's 2040 Long Range Transportation Plan.
- To support better understanding of the connection between infrastructure resiliency and economic development, helping to facilitate policy development and the prioritization of certain public investments, including the identification of key resiliency projects that could be funded by a Penny for Pinellas extension.

The Project is intended to be phased as follows:

PHASE 1 - PROJECT KICKOFF: est. 2 month duration

The objective of this Phase is to initiate the project and on-board the consultant, as well as confirm the project goals and objectives. Key tasks include:

Task 1.1: *Release Request for Proposals; retain technical consultant services; convene lead project team and identify key collaborators/subject matter experts*

Task 1.2: *Confirm project goals and objectives with project partners and identify/establish planning teams(s)*

PHASE 2 – DATA COLLECTION AND ANALYSIS (countywide): est. 8 month duration

The objective of this phase of the project is to identify and synthesize existing sea level rise data, studies, and findings relevant to this project and as necessary, to generate supplementary data to facilitate the assessment of vulnerabilities. The Consultant will work with the lead team to perform the following tasks:

Task 2.1: *Determine climate and sea level data/methodology to be used*

Task 2.2: *Identify other relevant data (topographic, environmental, etc.); identify data gaps*

Task 2.3: *Collect/assess/verify asset inventory (at a minimum, transportation, utilities and stormwater); includes relevant infrastructure data from county, municipal as well as non-municipal and county providers.*

Task 2.4: *Initiate GIS database design and development*

The Consultant will work with the lead team, project partners and stakeholders to obtain the best available, regionally-scaled transportation, utilities, stormwater, climate data, Flood Insurance Rate Maps (FIRMs), and topographic data (LiDAR/DEMs) from local, regional, state, and national agencies, etc. This task will leverage previous work performed by and/or relevant to Pinellas County, including the FDOT's Sketch Planning Tool, Local Mitigation Strategy (LMS), watershed plans, etc. Data collection, analysis and outreach are primary elements of this task. The TBRPC and Pinellas County will lead GIS database development. Existing and planned Infrastructure networks/layers will be collected and integrated into the GIS geodatabase. The focus of the infrastructure data collection will be facilities of countywide significance, but all readily-available data will be integrated if relevant. Existing data on sea level rise and inland flooding will be collected. The best available LiDAR/Digital Elevation Model(s) will be used/integrated into the GIS geodatabase to facilitate the asset exposure analysis. Data and information gaps will be assessed. Other environmental data which may impact infrastructure vulnerability assessment or identification of mitigation and adaptation strategies will be identified for inclusion in the analysis. Additional climate data is likely to include scenarios of sea level rise, developed based on specific analysis years and impact thresholds required for infrastructure vulnerability analysis. Available plans and studies that are relevant to the analysis will also be identified at this time (e.g., Long Range Transportation Plan, Local Mitigation Strategy, Watershed Plans, etc.)

PHASE 3 - DATA ANALYSIS: est. 12 month duration

The objective of this Phase is to verify critical infrastructure, and identify at-risk critical infrastructure for further analysis. Once the infrastructure subsets are identified, detailed analysis will be undertaken to better assess specific vulnerabilities, to refine data, verify assumptions and findings, and begin to test scenarios and strategies. For the critical infrastructure assets identified for detailed analysis, the potential fiscal impact of specific facility threats and inundation will be initiated using, among other methods, the REMI model. Key tasks include:

Task 3.1: *Identify critical infrastructure*

Task 3.2: *GIS-based scenario planning/vulnerability assessments on identified critical assets*

Task 3.3: Consider relationships/opportunities presented via interplay between the natural and built environment

Task 3.4: Initiate economic analysis [e.g., TBRPC's Regional Economic Model (REMI) tool and analysis]

PHASE 4 – STRATEGY DEVELOPMENT: est. 10 month duration

The objective of this task is to assess Phase 3 results and begin to apply mitigation and adaptation strategies to the critical assets. The consultant will identify and develop effective, feasible, and cost-sensitive adaptation strategies for impacted assets identified in Task 4.2. Primary emphasis will be placed on orienting strategies to coincide with the regular asset renewal cycle (mainstreaming). Adaptation alternatives will be developed through guided stakeholder outreach, supported by a customized decision-making matrix and expert guidance from consultant planners, scientists, and engineers. For a selection of preferred alternatives (e.g., for the 10-20 assets identified in Task 4.2), order of magnitude costs will be developed to facilitate consideration by the lead team. Key tasks include:

Task 4.1: Identification and testing of mitigation and adaptation strategies, alternatives and scenarios

Task 4.2: Decision and long range planning tools for assessing cost-benefit of adaptation and/or mitigation proposals for critical infrastructure; includes estimates of economic impact and economic damage where feasible for integration into the decision-making/prioritization approach, as appropriate.

Task 4.3: Final Report, including summary economic analysis, key infrastructure vulnerabilities and opportunities, as well as policy recommendations, priority recommendations and a recommended action plan. The final report will, at a minimum:

- Document the screening process for prioritizing critical infrastructure including a GIS geodatabase and tabular inventory of selected asset types
- Document the potential climate vulnerabilities and risks due to sea level rise (and related effects such as storm surge, flooding, etc.)
- Identify candidate adaptation projects, including rationales and justifications (economic and otherwise) for inclusion in local government capital planning and programming
- Recommendations for further development of the GIS decision-support tool
- Recommendations for the future advancement of regional climate resiliency activities in the transportation, utilities and stormwater sectors
- An executive summary and web content, summarizing the science, results and recommendations.

Resiliency assessments are a key tool for informing adaptation planning and enabling infrastructure managers to make such sound judgments and investment decisions. A sea level rise resiliency assessment provides two essential contributions to adaptation planning. Specifically, it helps in; 1) identifying which infrastructure is most likely to be most impacted by projected changes in sea levels; and 2) understanding how to adapt existing and future infrastructure to new environmental conditions. Determining which infrastructure sectors are most vulnerable enables managers to better set priorities for investment decisions, while understanding why they are vulnerable provides a basis for developing appropriate adaptation and mitigation strategies.

13. Project Manager and Key Project Team Members - include credentials and experience doing similar work.

Project Partners: Pinellas County Government, Tampa Bay Regional Planning Council, Pinellas County Metropolitan Planning Council

Key Staff/Lead Project Team includes: *(each of the team members below have been assembled for their experience and a multi-year history of involvement in local government planning, project management, scientific studies, environmental science, water and natural systems management, infrastructure planning and design, as well as several years' experience monitoring climate findings and science, and participating in, among other related activities, the climate and sea level collaborations described elsewhere in this application)*

- Elizabeth Freeman, Long Range Planning Manager - Pinellas County Planning Department
- Kelli Levy, Natural Resources Division Manager, Pinellas County Public Works
- Nan Bennett, Engineering Support, Pinellas County Utilities
- Maya Burke, Senior Planner (Environmental), TBRPC
- Brady Smith, Principal Planner (Emergency Management), TBRPC
- Rodney Chatman, Planning Section Manager, Pinellas County MPO

A consultant will complete the project with direction and assistance from the project team.

14. Environmental and/or Economic Benefits - Describe environmental and/or economic benefits of the project.

The project will provide key information towards formulating strategies and future actions required to make the County more resilient and sustainable in the face of a changing climate and rising sea levels. A physically more resilient County leads to a more economically resilient County, particularly as economic interests may become reluctant to invest in areas that are perceived to be risky and vulnerable. Specifically, the project

findings and results will enable more sustainable capital and financial decisions by local governments in Pinellas County, with capital spending decisions considering specific infrastructure risk and vulnerability over incremental periods of time, using cost-benefit and “full-cost accounting” regarding the cost of actions today versus the cost tomorrow. Additionally, building on the economic impact work done by the Hillsborough County MPO, this project will enable looking at transportation infrastructure on a multi-county scale, and enable a better regional assessment of transportation impacts and potential consequences to the commuting public and regional economy. On the environmental side, benefits are likely to derive from consideration of the natural system (and its protection or enhancement) as an integral part of the buffer and defense system for the built environment.

15. Technical Feasibility - Describe technologies and relevant past experience or proven success with similar projects.

Pinellas County has monitored the sea level work and science in South Florida for several years, including the collaboration towards the Southeast Florida Regional Climate Compact and the preliminary technical assessments of vulnerability done in association with development of the Compact, as well as planning and technical work underway in South Florida (e.g., the Broward County MPO is assessing the vulnerability of transportation infrastructure; Broward County government is starting to look at protection and mitigation strategies, as well as design standards, Miami-Dade has adopted a resolution requiring consideration of sea level rise in all infrastructure planning decisions, etc.). The County has convened an internal multi-disciplinary climate team and has been building up background in climate planning and science. Over the past year, the County has engaged the assistance of UF/Florida SeaGrant to assess the level of knowledge and interest among the Pinellas municipalities in planning collaboratively for climate and sea level change locally.

The Tampa Bay Regional Planning Council has taken the initiative to form the One Bay Resilient Communities Working Group, along with participating in a technical team of area scientists, (the Tampa Bay Climate Advisory Panel) facilitated by UF/Florida Sea Grant staff, focused on evaluating current sea level science and facilitating agreement on sea level rise projections for the region, and involving examination of the most recent Army Corp of Engineering (ACOE) and National Oceanographic and Atmospheric Administration (NOAA) modeling and scenarios. The Hillsborough County Metropolitan Planning Organization recently initiated an assessment of transportation infrastructure and sea level vulnerability using the FDOT Sketch Planning Tool, developed by UF/GeoPlan Center, for assessment of their transportation system vulnerability. This provides an excellent model as a starting place for Pinellas County’s assessment.

The Pinellas County project intends to build on the scientific work done to date (including the work in Hillsborough County), using professional technical consultant

assistance, in order to conduct a comprehensive and collaborative assessment of infrastructure vulnerability, economic impact, and evaluation of mitigative and adaptive strategies in Pinellas County.

Additionally, the TBRPC operates a sophisticated economic modeling and analysis operation through its regional information center, using Regional Economic Models, Inc. (or REMI) - they are equipped to conduct a variety of scenarios and economic analyses specific to individual counties and the region as a whole, and in fact provided technical support to the Hillsborough initiative. Their work will be coupled with the work of the Tampa Bay Climate Adaptation Science Advisory Panel and be translatable at the county, regional and State level. County and TBRPC staff are also involved in the sea level planning work underway by the Tampa Bay Estuary Program. Each of the partners to this project have identified success in managing large and comprehensive technical projects, and managing large consultant contracts. All three partners routinely manage large planning and technical consultant contracts.

16. Public Acceptance - Describe any known or potential public approval or opposition to the project.

In early 2014, the Pinellas County Board of County Commissioners identified planning for sea level rise and climate change as a priority. At that time, they acknowledged that an assessment of vulnerability is an important first step in understanding what steps are required to better plan for a resilient environment, economy and community. Since that time, County staff engaged the assistance of UF/Florida Sea Grant to conduct an informal conversation with each of the other local governments in Pinellas County, assessing their interest, needs and awareness of the sea level rise challenge, and gauging the desire to start planning together. While the project is not complete, we are advised that there is interest among other governments in working together on the sea level rise challenge. For this reason, municipal representatives will be critical partners on the project team.

Economic development officials have emphasized that the message not be one of doom and gloom, as the viability of the local economy is essential to the sustainability of a quality Pinellas community. New investment and business growth must not be scared away by planning scenarios and maps. The project goal and message will need to be clear that planning for a more resilient community supports quality investment opportunities in the future.

17. Project Activity Budget Justification:

Provide the total project cost and costs by identified tasks for the following items. Provide specific justification for all that apply.

Identified Task	Estimated Cost
Personnel and fringe:	\$0
Travel including the number of trips and estimated cost per trip:	\$0
All equipment greater than \$1,000:	\$0
Supplies including a list of major types of supplies:	\$0
Contractual costs:	\$300,000
Administrative costs not to exceed 3% of the total award:	\$0
Future costs related to maintaining the project, the funding source, and responsible entity:	\$0

18. Describe how the project will utilize a collaborative approach that incorporates partnerships, if applicable.

(Step 2 - Criterion 8) List any project partners and briefly describe their involvement and contribution to the project.

The Tampa Bay Regional Planning Council (TBRPC) will be a key partner to the project. They have been instrumental in convening governments in the region to begin to assess and address the impacts of a changing climate, and in fact TBRPC recently initiated a two year project to facilitate knowledge-sharing and help develop decision support tools that will improve the regional capacity to withstand the effects of sea level rise and coastal hazards. Through this forum, they are also promoting the recommendations of the scientific panel currently studying the sea level rise models and local data pertinent to the Tampa Bay Region, and will be working to promote regional climate resilience policy. Additionally, they house considerable disaster management, economic and GIS technical expertise in-house which will be committed to the project, and will be part of the lead project team.

The Pinellas County Metropolitan Planning Organization (MPO) is a countywide body responsible for long range planning for the County's transportation network. They administer the Countywide Long Range Transportation Plan and its cost feasible component. They have been monitoring the work done around the State regarding transportation infrastructure resiliency and are ready to undertake a local initiative. They will commit staff and resources to the project, and will be part of the lead project team.

19. Describe how the project will support, further, or help implement one or more Pinellas County Comprehensive Plan Element goal(s) as identified in the overarching project goals, if applicable. Clearly list each Comprehensive Plan Element goal addressed. (Step 2 - Criterion 9)

The proposed project is supported by and furthers the following Principles, Goals, Objectives and Policies of the Pinellas County Comprehensive Plan:

Planning to Stay Element

The Ethic of Sustainability is Fundamental to Every County Policy, Decision and Plan

Principal 1: Sustainability is fundamental to every County policy, plan and decision, to ensure that our actions today do not compromise the quality of our future.

Work Together at the Local, Regional and Global Level for a Sustainable Future

Principle 1: Pinellas County will work cooperatively with other governments, agencies, and community stakeholders to promote the social, environmental and economic conditions necessary to achieve a sustainable community.

Prepare for Disasters and Plan for Change

Principle 1: Planning for development must respect the restrictions imposed by the County's susceptibility to natural disasters, and should anticipate potential alterations to the urban and natural environment induced by long-term changes in the climate.

Natural Resource Conservation and Management Element

Goal Seven: Pinellas County will be a leader in environmentally sustainable government operations, a proponent of smart and sustainable growth management practices and will have a strong economy supported by sound environmental principles, programs and practices.

Objective 7.2: Pinellas County will plan responsibly for climate change and will educate citizens and stakeholders so that they are partners in determining the County's future.

Policy 7.2.3: In association with the update to the Land Development Code, determine whether there is a need to further amend the Comprehensive Plan and land development regulations to protect public and private coastal infrastructure and investment from the inland advancement of coastal waters, and to coordinate land use planning decisions with the expectations of sea level rise.

Coastal Management Element

Goal One: Pinellas County will protect human life, private property and public investment from the effects of hurricanes and other natural disasters.

Goal Four: Land use designations and decisions in the coastal planning area shall be consistent with the Future Land Use and Quality Communities Element of this Comprehensive Plan and compatible with protection of the County's natural and historic resources, reflecting the need for long-term sustainability, continued economic vitality and consideration for the vulnerability of the County's coastal location.

Objective 4.6: In an effort to ensure the long-term viability and sustainability of its coastal resources and land use, Pinellas County will remain apprised of, and plan where appropriate for rising sea levels.

Policy 4.6.1: Pinellas County will evaluate the data and findings regarding sea level rise on at least a five-year basis.

Policy 4.6.2: Based on the evaluations directed by Policy 4.6.1, Pinellas County will continue to refine and incorporate long-term planning strategies, and amend land development regulations as necessary, to responsibly plan for the effects of rising sea levels.

Policy 4.6.4: Pinellas County will encourage, and participate in, coordinated intergovernmental and interagency efforts to develop responsible strategies for addressing the potential negative effects of rising sea levels.

Policy 4.6.5: Pinellas County will share information with local municipalities regarding the implications of sea level rise and development decisions along the coast and other vulnerable areas.

Economic Element

Goal One: To facilitate a strong and robust local economy that provides growth opportunities for existing businesses, attracts new high-wage primary employers and promotes a diverse range of industries through innovative, sustainable methods that, in a responsible manner, enhance the County's vitality and the quality of life for residents and visitors.

20. Describe the benefits the project will provide, for how long, and why:

(Step 2 - Criterion 10)

Benefits may be economic, social, and/or environmental. Explain how the benefits will or could be identified, assessed, and/or measured. Describe and quantify environmental and/or economic benefits as applicable [e.g., area restored (acres, linear feet), improved ecosystem services, jobs created/preserved, pollutants and/or nutrients removed (e.g., kg, pounds, tons)].

As indicated in question 14, the project is intended to generate strategies and potential mitigative actions and adaptive measures designed to make the County more resilient and sustainable in the face of a changing climate and rising sea levels into the foreseeable future. Specifically, project findings and results will enable more sustainable capital and financial decisions by local governments in Pinellas County, facilitating capital spending decisions that incorporate infrastructure risk and vulnerability over incremental periods of time, using cost-benefit and “full-cost accounting” regarding the cost of actions today versus the cost of action or inaction tomorrow. The results and decision-tools can be used annually in budgeting as well as in long range planning. On the environmental side, long term benefits are likely to derive from consideration of the natural system (and its protection or enhancement) as an integral part of the buffer and defense system for the built environment. Economic benefits relating to sustained private investments and dependent jobs are difficult to measure in the short term, but the economic and social benefit of local government capital investments towards resiliency should be more readily quantifiable by comparing the cost of the improvement to the cost of specific infrastructure losses. Additionally, through the REMI analysis, the social/economic costs associated with, for example, an inability to get to work due to road inundation or loss, or other public facility failures or impacts, compared to the cost of mitigation, facility relocation and/or adaptation, are more quantifiable. Where relevant, any natural system enhancements recommended in order to provide ancillary infrastructure protection are also likely quantifiable as to their contributory habitat value as well as economic value.

21. Possible material risks to implement and maintain the proposed activity:

List possible material risks, e.g., operational, legal, regulatory, budgetary or ecological. Include brief description of mitigation strategy to address each identified risk.

There are no specific material risks anticipated at this point; however, the results of the vulnerability assessment, and the identification of potential mitigative/adaptive strategies will likely inspire much discussion by elected officials and the community regarding priorities, strategies and the consequences of action versus no action.

Key to managing technical results and implications is the ongoing dialogue that must take place at the TBRPC-level, the MPO-level and the local government level. Also, the engagement of the Pinellas County community, including the business community, is critical to achieving a meaningful project outcome. Therefore, the public involvement component of the project is a critical priority; it will be designed to periodically engage stakeholders for input and to test and validate findings and refine project direction. To date however, the work done by Thomas Ruppert with UF/Florida SeaGrant for Pinellas County indicates a desire among most local governments to move forward with planning for sea level rise. In early 2014, the Pinellas County Board of County Commissioners prioritized planning for sea level rise, but recommended that it be done collaboratively. The TBRPC, made up of local elected officials, has embraced the need to plan for a resilient community by establishing its collaborative One Bay initiative. The Pinellas MPO has monitored the progress by the

Hillsborough MPO and is ready to embark on a similar assessment. For all these reasons, broad material risk is not anticipated.

22. Best Available Science:

Only answer if proposed activity will serve to protect or restore natural resources, otherwise, indicate "Not Applicable." Briefly describe how the project will use best available science with respect to peer reviewed literature, objective(s), and methodologically sound literature sources that support the scope of work, when available.

Not Applicable*

**Note that although this project is not intended to focus on the protection or restoration of natural resources, the contribution of the natural system to the resiliency of the community could be considered as a mitigative and adaptive strategy and may be addressed in the identification of policy and actions.*

23. Matching/Other funding

(Step 2 - Criterion 11)

Indicate:

- The amount and percent of the total project cost secured and the source of each matching fund secured. Restore Act funds can be matched with other federal sources of funding. NA
- If matching funds are not secured, specify the amount of matching funds requested or expected. NA
- The date the amount of secured funds will be known. NA

Readiness for Implementation

(Step 3)

Complete the following:

24. Will the project be completed within 5 years from date funding is confirmed?

Yes: X

No: ___

25. Identify each project milestones and proposed duration (no. of months) to complete each step and the total number of months or years to complete the project.

PHASE 1 – PROJECT KICKOFF MILESTONE: estimated 2 -3 month duration from project award

PHASE 2 – DATA COLLECTION AND ANALYSIS MILESTONE: (countywide): estimated 8-10 month duration

PHASE 3 - DATA ANALYSIS MILESTONE: estimated 12 month duration

PHASE 4 – STRATEGY DEVELOPMENT MILESTONE: 10 -12 month duration

TOTAL TIMELINE: ≤ 3 YEARS

26. How long before the project can start after funds are available (months)?

Upon notice of award, a Request for Proposal is expected to be released within two months, with the expectation that a technical consultant will be onboard within six months to commence the project with the project team.

27. Describe project design work, permit requirements and hurdles (federal, state, or local), and/or permitting that is in progress (*attach applicable permits or design work*).

No project design work or permitting is required.

28. Describe any issues or reasons that may delay project start or completion.

None.

END OF QUESTIONS

LIST OF ATTACHMENTS

LOCATION MAP – PINELLAS COUNTY

MAP OF MUNICIPALITIES IN PINELLAS COUNTY (*unincorporated area depicted in gray*)

WATERSHEDS IN PINELLAS COUNTY

LETTERS OF SUPPORT FROM PROJECT PARTNERS:

Tampa Bay Regional Planning Council
Pinellas County Metropolitan Planning Organization



Gulf of Mexico

Old Tampa Bay

1. ANCLOTE RIVER
2. KLOSTERMAN BAYOU
3. LAKE TARPON
4. BROOKER CREEK
5. OLDSMAR
6. SOUTH CREEK
7. SUTHERLAND BAYOU
8. SMITH BAYOU
9. CEDAR CREEK
10. CURLEW CREEK
11. POSSUM BRANCH
12. BISHOP CREEK
13. MULLET CREEK
14. ALLIGATOR CREEK
15. SPRING BRANCH
16. COASTAL ZONE 4
17. COASTAL ZONE 1
18. STEVENSONS CREEK
19. ALLENS CREEK
20. COASTAL ZONE 2
21. COASTAL ZONE 3
22. LONG BRANCH
23. ROOSEVELT CREEK
24. CROSS BAYOU
25. STARKEY ROAD
26. LAKE SEMINOLE
27. MCKAY CREEK
28. COASTAL ZONE 5
29. PINELLAS PARK DITCH #1
30. SAWGRASS LAKE
31. TINNEY CREEK
32. NE ST PETERSBURG
33. 70TH AVE NORTH CANAL
34. 54TH AVE EAST CANAL
35. JOES CREEK
36. LONG BAYOU
37. PASADENA LAKE
38. SW ST PETERSBURG
39. BEAR CREEK
40. BOOKER CREEK
41. NORTH COFFEE POT
42. 45TH AVE NORTH EAST CANAL
43. COFFEE POT BAYOU
44. ALBERT WHITTED
45. 34TH STREET
46. CLAM BAYOU
47. GULFPORT
48. FRENCHMAN CREEK
49. LAKE MAGGIORE/SALT CREEK
50. BIG BAYOU
51. LITTLE BAYOU CREEK
52. PINELLAS POINT

Figure 1
WATERSHEDS
IN
PINELLAS COUNTY
MARCH 2007

Tampa Bay





LOCAL MITIGATION STRATEGY

Location Map

**Pinellas
County**



0 25 50 75 100 Miles

Map Created: July 2014





Commissioner Victor Crist
Chair

Mayor Woody Brown
Vice-Chair

Councilman Patrick Roff
Secretary/Treasurer

Mr. Andy Núñez
Immediate Past Chair

Manny L. Pumariega
Executive Director

February 2, 2015

Elizabeth Freeman
Planning Manager
Pinellas County Planning Department
310 Court Street
Clearwater, FL 33756

RE: Support for Pinellas County Infrastructure Sea Level Vulnerability Assessment and Resiliency Plan

Dear Ms. Freeman:

Tampa Bay Regional Planning Council supports the development of an Infrastructure Sea Level Vulnerability Assessment and Resiliency Plan for Pinellas County. TBRPC would be delighted to engage as a member of the project team to conduct an assessment and develop a resiliency plan.

As outlined in the project description, TBRPC has been engaged in assessing the region's resiliency and beginning to identify ways the region and local governments can address the impacts of a changing climate – particularly regarding sea level rise. TBRPC recently began a two year project under the leadership of NOAA to facilitate community dialogue on rising sea levels and planning our community's long term response.

The Council has several *best in class* resources that we can utilize to enhance the project such as our Geographic Information System (GIS), Econometric Model (REMI PI+), and Audience Response System. TBRPC staff has vast experience using these tools in decision support scenarios as well as public participation settings. We are pleased to partner with Pinellas County government and the Pinellas County Metropolitan Planning Organization on this important project.

Sincerely,

Wm. Avera Wynne, AICP
Planning Director



February 5, 2015

Elizabeth Freeman, Division Manager
Pinellas County Planning Department
310 Court Street
Clearwater, Florida 33756

RE: Letter of Support for Pinellas County's Infrastructure Sea Level Vulnerability Assessment and Resiliency Plan

Dear Ms. Freeman:

The Pinellas County Metropolitan Planning Organization (MPO) strongly supports your application for funding through the Restore Act-Direct Component fund for the above referenced plan. This application is to develop a GIS-based decision support tool, vulnerability assessment and resiliency plan to assess the economic impact of infrastructure losses at various sea level rise scenarios and time scales. We believe there is great value in this initiative due to its potential to provide key data that can assist all Pinellas County local governments in their long range infrastructure planning.

The MPO's 2040 Long Range Transportation Plan (LRTP) acknowledges the importance of planning and adapting to the potential impacts of rising sea levels and climate change on the transportation system as called for in Objective 6.2. The identification of vulnerable infrastructure and development of appropriate mitigation strategies will preserve the mobility of our residents and visitors as well as the movement of goods and access to the County's largest employment centers. The resiliency of the existing and future infrastructure systems will enhance economic development opportunities, transportation mode options, user safety, and quality of life.

Thank you for your effort in preparing this application, which, when funded, will further our ongoing goal to provide a safer, more efficient multi-modal transportation system.

Sincerely,

A handwritten signature in cursive script, reading "Sarah Ward".

Sarah Ward, Interim Executive Director
Pinellas County Metropolitan Planning Organization

SW:af

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