Project Title: Tampa Bay Coastal Master Plan (TBCMP)

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Geographic Description: The Tampa Bay region, located on the Gulf coast of Florida, covers an area of approximately 2,200 square miles and is characterized by its extensive coastal waterways and urban centers at typical elevations of 2-10 m above mean sea level. The region is home to 3.8 million. Tampa, St. Petersburg, and Clearwater are the largest and most prominent cities within the Tampa Bay metropolitan area, although there are nearly 60 municipalities, many of which are active members of the Tampa Bay Regional Planning Council (TBRPC). The region's population is growing rapidly and protection and planning is needed to address compounding environmental stressors.

Participating Jurisdictions: Citrus, Hernando, Pasco, Pinellas, Hillsborough, and Manatee Counties and their municipalities

Confirmed Collaborators: All participating jurisdictions, Tampa Bay Estuary Program, National Wildlife Federation, University of Florida (UF) & Florida Sea Grant, University of South Florida (USF), University of Central Florida (UCF), Tampa Bay Watch, MacDill Air Force Base, Hillsborough Planning Commission, Ecosphere Restoration Institute, Progress Village Civic Council, Florida Clinicians for Climate Action, Alianza for Progress, Institute for Equitable Development, Environmental Protection Commission of Hillsborough County, US Fish and Wildlife Service, Tampa Bay Waterkeeper

Period of Performance: October 1, 2024 – September 30, 2028 (estimated; dependent on funding)

Resilience Vision

The Tampa Bay region envisions resilience as the ability and enduring capacity of its diverse coastal communities and habitats to mitigate and adapt to the risks posed by long-term climatic changes and short-term weather extremes. As groundwater and sea levels rise, and the pace and extent of coastal flooding and erosion accelerates, communities throughout the Tampa Bay region are faced with the difficult challenge of deciding how to prepare for and adapt to these changing conditions, especially with our most vulnerable residents. Adaptation strategies can range from building and fortifying infrastructure, to habitat restoration and incorporating nature-based solutions, to planned community or asset relocation. Each approach comes with its own costs, benefits and trade-offs, and community members and asset managers must engage in thoughtful discussions about risk and which mitigation strategies are most appropriate for their specific circumstances.

In the proposed project, the Tampa Bay Regional Planning Council (TBRPC) and its partners will facilitate a cross-jurisdictional and multi-stakeholder planning process to develop a Coastal Master Plan for the Tampa Bay region that illustrates how the Gulf coast will change over time, proposing a coordinated suite of enduring, local adaptation pathways in response to the many risks to our diverse communities. The plan will equip the region with a prioritized list of feasible restoration and risk reduction project concepts,

both structural and nonstructural, that will serve as guidance to equitably address the many challenges posed by high-tide flooding, storm surge, rainfall-related flooding, and future sea level rise in vulnerable areas, particularly historically marginalized, underserved, and underrepresented communities. This four-year planning process and the resulting plan will be grounded by extensive community engagement, regional collaboration, the latest scientific information, and key social and ecological metrics, as well as pertinent tools, studies, and cost considerations. The project team will leverage existing resources and collaboratives, including the Tampa Bay Regional Resiliency Coalition, as well as build new community connections, to catalyze crucial conversations about risks from flood and storm surge exposure, and practical, equitable initiatives to adapt more than 700 miles of coastline in the Tampa Bay area. This approach will create a cohesive, enduring strategy that will mobilize the region's broader resiliency vision and goals, while supporting local and regional efforts to fund and implement resilience and adaptation actions.

Regional Context

The Tampa Bay region is home to 3.8 million people (about twice the population of Nebraska despite being 10 times smaller in size) spread across communities of diverse cultures, socioeconomic backgrounds, and geographies. The region is also home to world-renowned Gulf beaches and Florida's largest open-water estuary, which are inextricably linked to the local economy and livelihoods of residents. Water is vital to the region, but it also puts our communities at significant risk of coastal and inland flooding. According to *The 3rd National Risk Assessment* from First Street Foundation (2021), many of the Tampa Bay region's counties face major to severe flood risk today, and are among those in the state with the highest projected growth in flood risk over the next 30 years. Local governments in the Tampa Bay region tend to carry out projects as the need arises, and resilience considerations are commonly integrated into existing capital improvement projects. Local governments are beginning to pursue resilience projects for their own sake, but there is little coordination across the region and there is no current strategic plan for long-term coastal adaptation at a regional scale. The proposed planning project will build upon existing regional collaboratives to engage more communities and advance joint actions that will accelerate the region's climate resilience and adaptation practices.

Since 1962, the TBRPC has convened local governments and gubernatorial appointees to plan for and coordinate intergovernmental solutions to complex, large-scale issues. The TBRPC membership includes 21 municipalities from within the six-county Tampa Bay region—Citrus, Hernando, Pasco, Pinellas, Hillsborough, and Manatee Counties — as well as gubernatorial appointees and state agencies. An integral part of the TBRPC since 1985, the Agency on Bay Management is a committee that serves as a broad-based forum for open discussion of the issues involving the Tampa Bay estuary, and a voice for protection, restoration, and wise use of its natural resources by the entire region.

Under the leadership of the TBRPC, the Tampa Bay Regional Resiliency Coalition (the Coalition) was formed in 2018 to synchronize climate adaptation and mitigation activities and provide access to resources to advance local and regional responses to disruptions resulting from the impacts of climate change. In five years, the Coalition has grown to 33 member governments and more than 90 resilience partners. The Coalition adopted the first Regional Resiliency Action Plan (RRAP) in 2022 to serve as a five-year roadmap of general local and regional adaptation and mitigation actions. The proposed regional-scale coastal master plan will complement the RRAP in building local governments' capacity and progress towards implementation, while promoting efficient, well-informed decision-making as well as pre-positioning them for other funding opportunities. The resulting plan will serve as an adaptation resource and guide for decision-makers to maximize enduring community benefits that support a thriving coast where people can continue to live, work, and enjoy the region's unique features.

Proposed Activities and Outcomes

The Tampa Bay Coastal Master Plan (TBCMP) will guide investments in coastal restoration, resilience, and risk reduction across the region by effectively communicating anticipated landscape and hydrologic changes and proposing a suite of potential projects to advance the region's adaptation to current and future flood impacts. As the first of its kind in the state, the TBCMP will foster the ongoing, iterative process of adaptive management to ensure long-term capacity building and progress to advance adaptation actions across the Tampa Bay region. The activities include: (1) convening stakeholders to identify a four-year

planning process; (2) regional flood risk analysis; (3) solicitation of adaptation projects; (4) iterative review and evaluation of projects; (5) report publication.

Essential stakeholders and community members will be convened to identify a shared vision, goals, and methodology for the plan's development. With input from community leaders and other stakeholders, project partners will develop a four-year planning process and outreach strategies to maximize regional coordination, transparency, and innovation. Ad hoc technical and community advisory workgroups will be established to support deliberative discussions throughout the process, ensuring that iterative engagement and shared goals are achieved. The planning process and outreach efforts will be designed to support future replication and enduring capacity for adaptation.

The inclusive planning process of the TBCMP will reach beyond governmental partners, a common barrier for large-scale planning efforts, to deeply engage underserved communities to ensure the project and its outcomes equitably reflect the interests, values, and priorities of all residents. Key stakeholders will include community members, business owners, scientists, health professionals, resilience experts, local, state, and federal agencies, and other interested parties. The TBCMP outreach effort will leverage the existing stakeholder network of the Coalition and the Agency on Bay Management, as well as the recommendations of the Tampa Bay Estuary Program's Equity Strategy. Additionally, outreach to new stakeholders, especially historically underrepresented communities, will be prioritized to build inclusivity and diversity into the master plan process. As much as possible, engagement will begin at existing community-based meetings and events to ensure the greatest reach and inclusive dialogue. Relationship-building will engage diverse community leaders, such as faith-based leaders and community champions, who will be compensated for participating in project meetings. The TBCMP team will engage with stakeholders throughout the entire process and beyond, further fostering enduring capacity to advance adaptation efforts.

Outcomes include: (1) regional advisory workgroups with diverse membership; (2) equitable outreach strategy; (3) four-year replicable planning process and timeline that underpins a shared vision and goals; (4) relationship-building and increased community awareness and participation in coastal resilience efforts; (5) historically underserved communities engaged in community meetings and represented in the workgroups.

Existing data, tools, and local knowledge will be compiled and adapted, as needed, to conduct a region-wide risk analysis identifying areas with high exposure to flooding. A regional risk assessment will help to analyze current and future flood risk and community vulnerabilities to inform proactive measures that provide resiliency and adaptation from storm surges and other flooding events. Through modeling, the project team will develop probabilistic flood maps for the Tampa Bay region by incorporating the effects of storm surge, sea level rise and rainfall on coastal and riverine flooding. Jurisdictions throughout the region have completed or are in the process of completing risk assessments that provide readily available data for regional critical assets and mitigation focus areas. In addition, the project team will leverage available tools and modeling resources developed by local and state agencies including the Florida Flood Hub for Applied Research and Innovation, University of Florida, University of South Florida, and University of Central Florida, such as the Adaptation of Coastal Urban and Natural Ecosystems (ACUNE) Geo Tool, the Tampa Bay Water Integrated Hydrologic Model, and the Tampa Bay Coastal Ocean Model (TBCOM). One or more local universities will be contracted to perform the modeling needed for the risk assessment and subsequent project evaluations.

At-risk communities, both waterfront (gulf, bay, and riverine) and inland, will be identified across the region's coastal counties using existing public resources and local knowledge. Underserved and marginalized communities will be identified and prioritized in the assessment using resident insights and tools such as the USC's Social Vulnerability Index, CDC/ATSDR Social Vulnerability Index, FEMA National Risk Index, EPA's Environmental Justice Screening and Mapping tool, the Tampa Bay Estuary Program's Equity Strategy (expanded to the entire region), and University of South Florida's Community Resiliency Information System (CRIS) platform. This approach will help prioritize locations for adaptation projects that maximize the equitable flow of benefits to underserved communities across the region. The planning process will facilitate interactive engagement such as community coastal mapping exercises and deliberative community discussions about residents' experiences with flooding, their risks, and the trade-offs associated with actions we can take now to achieve a more resilient future.

Outcomes include: (1) regional maps illustrating current and future flood risks; (2) identification of at-risk communities, especially underserved, to inform project locations; (3) community meetings and risk messaging for the public.

Potential project concepts will be solicited from the public, members of advisory groups, and Coalition members to address key coastal and inland flooding concerns across the region. Informed by the risk assessment, the TBCMP team will work with public and private sector partners to solicit new project ideas, refine project concepts, and listen to residents to identify areas of need. Regional meetings will foster innovation and multi-jurisdictional consensus on new potential coastal protection project concepts, including restoration and structural and non-structural risk reduction projects. Structural risk reduction projects encompass large-scale infrastructure changes to reduce flooding and enhance coastal protection; emphasis will be on nature-based solutions. Nonstructural measures can be applied across all communities, such as elevating residences, commercial floodproofing, and resilience policies. In addition, the plan will include approaches to restore, create, and sustain ecosystems for resilience benefits that align with the project vision and regional restoration goals. Project concepts will leverage existing resources, like beneficial reuse of sediment from the Army Corps of Engineers' maintenance dredging, to lower costs and increase feasibility of implementation.

Components of ongoing county-level Adaptation Plans that have regional potential, whether by design or expansion through TBCMP-related evaluations, may also become candidate project concepts for inclusion in the TBCMP. The project team will prioritize engagement with underrepresented communities throughout the process to ensure their values and concerns are reflected in the plan and to empower engagement in the planning process by increasing awareness about current risks and brainstorming potential solutions. Underrepresented community members (compensated for their time) and local government staff will participate in professional development workshops –hosted by the University of Florida and HBCU Florida A&M University– and become integral in co-developing structural and nonstructural project ideas to advance through the assessment process as suggested in the NAAEE Community Guidelines for Excellence. Outreach themes, highlights, priorities, takeaways, and outcomes will be tracked and reflected in the final TBCMP.

Outcomes include: (1) broad list of adaptation project concepts around the region, including those developed by communities; (2) through workshops and deliberative community discussions, local government staff will be better equipped to more effectively understand and communicate risk and co-design solutions with those most impacted communities.

Candidate projects will be iteratively reviewed and evaluated to determine their effectiveness at reducing flood risks, producing equitable outcomes, and feasibility for implementation. By evaluating restoration or risk reduction project concepts and advancing promising ideas, the master plan process will support more comprehensive implementation efforts. An engineering firm will be contracted to refine the project concepts for further evaluation. Candidate projects will be evaluated with geospatial land loss and inundation models (as funding allows), cost benefit analyses, as well as other impacts on important social and ecological metrics (such as navigation, equity, health, housing, habitat impacts, and community vulnerability) and other residents' concerns. Furthermore, the master plan will use data of current and future conditions and estimates of flood-related damages to the region's communities and assets to assess the potential benefits of restoration and risk reduction projects, identifying those projects that most effectively support flexible adaptation pathways.

Outcomes include: (1) project assessment methodology, including modeling, cost benefit analyses, and qualitative indicator matrix; (2) prioritized list of effective restoration and risk reduction projects.

A final Tampa Bay Coastal Master Plan will communicate flood risks around the region, and prioritize risk reduction and restoration projects to support enduring adaptation. The planning process and results will be detailed in a final report summarizing future landscape changes and tangible adaptation pathways that provide co-benefits to the region's most vulnerable communities and ecosystems. The project team will host community and advisory group meetings to gather feedback on the draft plan, ensuring it reflects the shared vision. Subsequent meetings and outreach sessions will facilitate the dissemination of the final plan and related resources. A dashboard will complement the master plan, enabling full access to data, information, and visuals developed through the planning process. Three-dimensional (3D) renderings of vulnerable areas with and without the proposed projects will be created to illustrate site-specific flood risks

and feasible solutions. These visuals will help communicate risk to residents and other public and private partners, highlighting how pilot project concepts across the region will progress adaptation efforts and enhance community resilience.

This TBCMP planning process and final report will facilitate project identification and advancement to allow expedited execution of projects as funding becomes available, such as the NOAA Transformational Habitat Restoration and Coastal Resilience Grants. The TBCMP will not be too prescriptive about project details so that designs can be customized, and appropriately engineered, to site-specific conditions when implemented. To ensure enduring capacity for implementation, the project team will identify sources of potential funding to be incorporated within the plan. The TBCMP will provide a valuable communication resource for underserved and underrepresented communities to better understand their flood exposure, how the coast will change over time, and place-based adaptation pathways. Educational resources, such as engagement best practices and outreach materials, developed throughout the project by the National Wildlife Federation and University of Florida, will help ensure staff continue to engage the community through deliberative discussions about risk and the ongoing process of adaptation. Finally, the TBCMP will be updated on a six-year cycle so efforts are sustained.

Outcomes include (1) a published plan illustrating flood risks over time and corresponding restoration and risk reduction projects; (2) an interactive dashboard and select 3D renderings of projects will assist in communication efforts; (3) regional coordination and community support to advance concerted adaptation actions; (4) local government staff, especially in under resourced northern counties of the region, will have more capacity to take efficient and effective action when implementation funds become available; (5) nature-based projects will provide resilience co-benefits to habitats and communities; (6) the region's underserved communities will have new adaptation resources and be better positioned to receive large-scale risk reduction projects.

Budget

Total - $3,000,000-$5,000,000

Requested to date –
$2,000,000 NOAA Climate Resilience Regional Challenge (2024) - TBD