

## I. PROJECT INFORMATION

Project Title*	Planning for Community-engaged Design of Climate-resilient Nature-based Solutions along Vulnerable Hillsborough River, Tampa, Florida
Project Director*	Ping Wang
Project Location*	City of Tampa
Project Summary*	<p>This planning proposal, developed in close collaboration with the City of Tampa, aims at engaging vulnerable and diverse communities along the lower Hillsborough River toward the design of nature-based solutions (NBS) to improve resilience against sea-level rise and storm impact. The low-lying project area is identified by the City as a crucial area highly vulnerable to sea-level rise. The Tampa metropolitan area has not experienced a direct hurricane hit with a significant storm surge in over 100 years, although the region has a high exposure to tropical storms. The project team will work closely with the City to engage at-risk communities. The project area includes the entire 17-km stretch of the tidally influenced Hillsborough River downstream of the reservoir dam, which meanders through most of the City. Initial field investigation indicates that nearly the entire stretch of the river is armored with poorly designed and disorganized seawalls and ripraps. Most infrastructures were constructed at a lower sea level and have not been tested by a major storm. This planning study included three consecutive stages. Stage 1 will be devoted to literature research on the communities and infrastructures. Stage 2 will identify three at-risk communities. Stage 3 will focus on building trust with the communities, understanding their resiliency needs, communicating potential impacts of sea-level rise and storm surge, and discussing benefits of NBS. All three stages will be conducted in close coordination with the City. The product of this project is a full proposal for a community-engaged phase-2 design of NBS.</p>

## II. PROGRESS REPORT QUESTIONS

**1. Please revisit your proposal and review your goals and the outcomes you were seeking to achieve through this grant. How successful were you in meeting your goals? Please assess your success against the criteria you set in your proposal and use any combination of anecdotes, stories, graphs, charts, visuals as well as data to explain your success. Upload supporting files if you choose.\***

We have successfully met all the goals. Specially:

- 1) we have engaged the at-risk communities and collected crucial data for the phase 2 NBS design.
- 2) We have engaged various stakeholders, collected valuable input, and established collaborations for the phase 2 NBS design.
- 3) We have selected three project sites based on community and stakeholder input for the phase 2 design.
- 4) We have collected background physical data, including detailed bathymetry, shoreline conditions, and bottom sediment samples.
- 5) We have documented the existing infrastructures along the Hillsborough River, including existing shore-protection structures such as ripraps and walls, in addition to stormwater drains into the river.
- 6) We have established a numerical model for Hillsborough River capable of computing tide- and discharge-driven flow velocities and water levels.
- 7) We have completed and submitted the phase 2 full proposal.

The tasks and goals were summarized in detail in the full proposal. The submitted project description is attached here. Graphic information compiled in a PPT file is included in the Supplemental Report Materials. The PPT file compiles presentations to various stakeholders, field photos, and photos of community engagements.

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#### Optional File Upload

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**2. How has your work benefited your organization, professional field, community, or other stakeholders?\***

As stated in the Strategic Plan (2022-2027), my organization, the University of South Florida (USF), emphasize strongly on sustainability, environmental, and oceanographic sciences, with community engagement as a core commitment. This work aligns well with USF's sustainability mission. In addition, the project site, the Hillsborough River, is located practically in the backyard of USF. During our community of stakeholder engagements, we represented USF's expertise on coastal resilience building. Therefore, in addition to contributing to the USF sponsored research programs, this work on improving the urban Hillsborough River also raised a positive image in the greater USF neighborhood.

For the professional fields of the Project Director and the Team Members, this work represents a multi-disciplinary, cutting-edge, and forward-looking research direction. The resiliency issues associated Hillsborough River are common among many urban streams. Our findings should be broadly applicable. We plan to publish our findings in peer-reviewed journals and present our study at various professional conferences.

For the community and various stakeholders, this work has identified three at-risk communities/sites that can benefit directly and tremendously from NBS. During the phase 1 study, we have introduced and promoted the concept of NBS at various community and stakeholder events. We found that the communities were largely receptive of NBS as a modern adaptive approach to climate change. For the phase 2 study, if funded, we plan to engage the community in the detailed design of NBS.

**3. Are there any other successes related more broadly to this project that you would like to share with us?\***

Although we have stated in the Project Summary, we would like to emphasize again here that our success in this study can be attributed greatly to the successful collaboration with the City of Tampa. All our three selected project sites are popular City parks. The support and collaboration from the City are essential to the success of the phase 1 study and phase 2 study, if funded.

**4. What did you learn (positive or negative) as a result of this grant? What lessons would you share with other organizations or the field at large?\***

As a result of this grant, we learned that NBS indeed represent the future of coastal resilience building and the communities appear to be quite receptive, at least conceptual-wise. Although NBS should be designed and constructed one site at a time, a holistic approach considering the entire system should be adopted. We would like to share the above with the field at large.

**5. How do you characterize your relationship with GRP and what suggestions do you have for improvement?\***

Our relationship with GRP is very constructive. GRP responded to all our questions promptly during the entire study period. We cannot think of any suggestions for improvement.

**6. Please provide any other feedback or comments you have for the GRP.\***

At this point, we do not have any other feedback for the GRP.

**7. If applicable, please identify and describe the ways you or your organization leveraged GRP's grant (e.g., other funders, volunteers who worked on the program, in-kind donations etc.) Please specify the value and/or number/hours of volunteers if possible.**

Not applicable.