

Community-driven Coastal Watershed Resilience Planning to Maximize Flood and Habitat Benefits

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PROJECT IN PROGRESS

Why? To enhance regional adaptive capacity for addressing increasing challenges of flooding and degraded habitat, and build more resilient communities and economies, a more comprehensive approach to watershed management that is rooted in community engagement is needed.

Our overall goal is to identify and prioritize Nature-based Solutions (NBS) that maximize flood protection and habitat benefits together with a diverse set of stakeholders (residents, business owners alongside NGO leaders, local and state agency flood and water quality management practitioners) to accelerate coastal watershed-scale resilience planning and outcomes. In this project, we address the overarching question: What are the stakeholder-driven flood protection alternatives that can improve and maximize habitat benefits, based on deployment of existing policy tools (e.g., “green elements” of the CRS program) to accelerate adoption and funding of NBS? Our objectives are to:

- a. Identify NBS that can contribute to coastal watershed resilience for an urban environment and explore different alternatives and configurations with diverse stakeholders.
- b. Apply, refine, and integrate existing modeling to develop and simulate watershed resilience scenarios that implement different combinations of NBS (CRS green elements and LID features) and local to regional scale drainage infrastructure across low and high elevation areas under different projections of sea level rise (SLR) and design storm conditions.
- c. Quantify and assess benefits across watershed resilience scenarios from both flood protection and water quality perspectives and quantify wildlife benefits.

The scenarios will leverage previous work (Bouwer et al. 2017) funded by the SFWMD under the FPLOS Program that evaluated gray infrastructure alternatives. Thus, much of the underlying modeling required is already available for our use (see SFWMD and MDC DERM LoCs).