

# Engineering With Nature Project Fact Sheet



## ***Building an Engineering With Nature Business Case for Natural and Nature Based Features***

### ***Background***

The wide range of prospective benefits that can be achieved by incorporating elements of EWN cannot currently be accounted for in USACE planning practices. In particular, underutilization of Natural and Nature-Based Features (NNBF) is a missed opportunity for the agency to mainstream resilience thinking throughout its practices. Improving the business case for NNBF and other innovative strategies can provide the basis for the evolution of USACE practice to support selection of alternatives that reflect current agency stated values and priorities.



*Recreational trail alongside wetlands*

### ***Objectives***

The objective of the project is to address existing barriers in USACE practice that inhibit favorable outcomes that result in increased implementation of NNBF with a multi-criteria decision analysis method that integrates additional costs and benefits associated with performance factors not yet considered in the traditional analysis. A key component is performance of alternatives with respect to resilience in order to account for additional benefits including those that may be delivered in light of uncertain climate futures through adaptive management of projects.



*Weigh costs with diverse project benefits*

### ***Approach***

The technical approach will include effort to gain understanding of barriers to NNBF uptake associated with planning practices and where successes have been achieved; examine the standard methods for anticipating project performance and explore additional metrics and models that can account NNBF performance including with respect to resilience; and consider alternate lifecycle cost schedules to operationalize resilience management in project implementation and accommodate projects that evolve. Components of the resulting method will be tested and refined through application to a case study.

### ***Outcomes***

This project will produce a new methodology to be proposed for use in the analysis of alternatives with NNBF. The methodology is expected to accommodate performance of NNBF along a variety of metrics including resilience. The methodology will be documented along with recommendations for how USACE districts can adopt it into the existing planning process. The findings of the research about barriers, opportunities, and future directions will be composed in a technical note and/or other publication forms. Additional outreach will be conducted via presentations to Communities of Practice and other interested parties.

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