

Research Project Title

A FRAMEWORK FOR QUANTITATIVE ASSESSMENT OF THE ENVIRONMENTAL, SOCIAL, AND ECONOMIC BENEFITS OF TDOT INFRASTRUCTURE PROJECTS

Purpose of the Project

To develop resources and tools that can be used by TDOT and other State DOTs in long term planning of green and gray infrastructure and integrated infrastructure management.

Scope and Significance

- Develop a searchable database of applicable GIs for possible field conditions of transportation projects to aid selection of suitable GI projects for different locations
- Quantification of GI benefits
- Generation of a step by step framework for evaluation of GI benefits and construction of S²T-PE²S benefit framework to aid decision making
- Demonstration of framework using multiple case studies from within and outside the state
- Conduct workshop to TDOT personnel to explain structure and functioning of framework/tool

Expected Outcomes

At the conclusion of this research project we expect to:

- Generate a repository of GI with attributes detailing the applicability and benefits of each possible GI for DOT projects
- Create a benefit analysis tool that will be built on detailed assessment of economic, environmental, and social benefits to quantify total benefits of GI for planners,
- Create an additional tool from the quantification framework and calculable for infrastructure projects under TDOT’s purview
- Generate a step-by-step guidance manual for using the developed tool for assessing total benefits of a GI (demonstrated using case studies of selected TDOT GI projects) , and
- Provide in-person workshops to introduce guidelines and assist in implementation of the tools

Time Period

September 1, 2020 – August 31, 2022

Contact Information

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