

**Project Number**

BDV29-977-42

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Incorporating Reliability Measures into the Freight Project Prioritization Decision Support System

July 2020

Current Situation

With demand for transportation projects outpacing budget increases, decision makers have begun to request more information about the cost effectiveness and expected job and economic growth potentials of transportation projects. Current methods of evaluating freight transportation projects as well as most benefit-cost analysis (BCA) methods do not capture these projects' wider economic benefits such as improved travel time reliability and logistic operation, better access to markets, better connectivity to intermodal facilities, employment opportunities and wages, sales, and the overall regional economy.

Research Objectives

Florida International University researchers identified and validated methods for quantifying the wider economic benefits (WEB) of freight transportation projects.

Project Activities

The researchers reviewed numerous methods, reports, and available tools used to understand the benefits and costs of transportation projects. They found that few of these approaches were able to capture the higher-order benefits of freight projects. The researchers identified two studies that offered valid analytical methods and associated tools for quantifying the WEB of freight projects. Beginning with these two studies, the researchers developed a procedural analysis framework that integrates these WEB methods into a standard benefit-cost analysis that is consistent with the requirements of federal funding agencies. The procedures developed cost estimation, travel demand forecasts, traveler benefits, economic impact, and risk analysis of freight transportation projects as well as WEB.

Three transportation projects with important implications for freight transportation were selected as case studies to demonstrate the use of the developed procedures in project prioritization: a new interchange on I-95 at Central Boulevard in Palm Beach County; improvements to an existing interchange on I-95 at 45th Street in Palm Beach County; and the Port of Miami Tunnel Project. The researchers used the case studies to demonstrate the flexibility of the developed procedures and their ability to highlight how each project would benefit freight transportation.

The researchers then developed a spreadsheet tool that would make the developed procedures readily accessible, the Freight BCA WEB Analysis Tool. The tool organizes data gathering for inputs such as project information, analysis parameters, and BCA inputs. It also has separate worksheets for reliability, accessibility, intermodal connectivity, costs calculation, travel time savings, operation costs, incident costs, and emission costs.

Project Benefits

The results of this project will result in better project prioritization for transportation projects that affect freight and better freight flow in Florida.

For more information, please see www.fdot.gov/research/.



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