

Research at a Glance

Technical Brief

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NJDOT Strategic Research Planning

This study developed an implementation and prioritization plan to address current and future research needs at NJDOT. In order to identify research needs, briefing books based on National Highway Cooperative 750 Series publications were assembled, internal surveys were conducted, and focus groups with NJDOT staff were held.

Research Problem Statement

The NJDOT is responsible for the complex task of managing and maintaining New Jersey's multi-modal transportation system. Simultaneously, the Department needs to accurately forecast and plan for shifting travel demand, new technologies, funding, external factors such as severe weather, and internal factors such as talent acquisition, retention and knowledge transfer. While these various factors add a further layer of complexity, they are also necessary to best positioning NJDOT to perform its core functions. The purpose of this project was to develop a strategic research plan, based on a foundation of insight into national best practices and internal agency employee knowledge, in order for NJDOT to best understand constantly shifting needs and travel demand.

Research Objectives & Methodology

The objective of this research was to develop an implementation and prioritization plan to address current and future research needs. The research involved collecting insight on national transportation-trends related to freight, climate change, technology, sustainability, energy, and socio-demographics based on the National Cooperative Highway Research Program's Foresight 750 Series. Next, surveys were sent out to select NJDOT staff and partner agencies to develop an understanding of how key internal and macroeconomic trends are expected to impact operations. Lastly, and based on the previous steps, focus groups were conducted to further develop insight. This information was then used to identify priority research topics by means of a gap assessment, and to develop an implementation plan.



**Research Project
Manager:
Christopher Titze**

Results

A gap assessment of conducted research and initiatives indicated the following as priority research needs:

Staffing: Research related to how NJDOT can continue to attract, retain, and effectively train new staff.

Project Delivery: Issues of compliance and effects on departmental operations and budgets based on federal requirements such as Buy America and Americans with Disabilities Act (ADA) compliance.

Technology Access & Guidance: In addition to the need for current and up-to-date technologies, guidance on how to use and maximize the benefits of such investments is deemed to be a significant research need.

Information on Freight Generators: Given that freight traffic is generated by private sector sources, research is needed on best practices in assembling and analyzing related data.

Streamlined Methods of Infrastructure Management: Improved decision making and support systems related to multi-modal infrastructure management are needed to optimize investments.

A number of secondary research needs were also identified including the impacts of transportation network companies (TNCs) on travel patterns, connected and autonomous vehicles, truck parking, and the impacts of climate change.

Based on these research needs, it is recommended that NJDOT develop a formalized implementation plan, intended to best position the department to meet ever-evolving needs.