



Evaluating the Impacts of I-24 Smart Corridor Strategies

Problem Description

The primary traffic improvement strategies traditionally consist of road widening type of major infrastructural undertakings. However, due to physical, environmental, and financial constraints, further widening is not feasible, nor will it permanently reduce congestion on the I-24 corridor. Instead, several smarter and often less expensive strategies are to be implemented in phased deployments in the corridor. This study will identify appropriate performance measures for gauging the conditions of corridor traffic operations and crash safety. By comparing these performance measures before and after the deployment of various countermeasure strategies, one could evaluate the effectiveness and benefits of different strategies, or the combination of them. The primary focuses here are on traffic operational condition and crash safety condition before and after the implementation of the strategies in Phases 1 and 2 of the I-24 Smart Corridor.

Research Objectives

This research will identify performance measures and the necessary data to determine the impacts of the strategies deployed as part of the I-24 Smart Corridor. The research will also review before conditions of all phases and after-conditions for Phases 1 and 2 of each strategy deployed, and it will provide a benefit-cost analysis of the Phase 1 and 2 strategies. The final report should provide information that will be useful in scoping future Smart Corridors. In general, the objectives of the research include:

- Establish performance metrics and identify data needed.
- Measure the performance metrics before and after all phases.
- Perform before/after and benefit/cost comparisons for all strategies.
- Transfer the success/experience to other corridors.

Potential Implementation and Expected Benefits

The study seeks to measure the performance improvement as SMART strategies are implemented in the I-24 corridor in Phases 1 and 2. The success of the study would bring about the following benefits: better understanding of the effectiveness of various SMART strategies in major freeway corridors in Tennessee, standardized framework for conducting before-after studies in Tennessee, tangible and monetized benefits of the implemented strategies, and recommendation list of corridors for future implementation of SMART strategies. Once all phases of the I-24 Smart Corridor are successfully completed, the standardized before-after and benefit/cost analysis procedures can be implemented elsewhere through a similar process.

PROJECT NUMBER:

RES2023-18

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PROJECT SCHEDULE:

August 2022 to July 2024