

Traffic Operations

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Project Title:
TPF-5(440) - Support for Urban
Mobility Analyses - Pooled Fund
Study (Continuation from TPF-
5(198)/Task ID 2081)

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TPF-5(440) - Support for Urban Mobility Analyses - Pooled Fund Study

Researchers are studying congestion reduction strategies in order to apply them in urban areas in an effort to improve mobility and reduce traffic congestion.

WHAT IS THE NEED?

Traffic congestion is a big problem in urban areas which degrades mobility. Research is needed in order to mitigate congestion and improve mobility.

WHAT ARE WE DOING?

All stake holders participating in this pool fund research formed a Steering Committee, which decides on the congestion reduction methods to include in the new methodology and which cities will be included in the study. Researchers will continuously refine the Traffic Congestion Index to include multi-modal operations on regional operational improvement programs (i.e., ITS service, incident detection and response, travel demand management, transportation systems management, and computerized signal control coordination). Additional urban areas will be included in this research as needed. Researchers will respond to requests for mobility data by stakeholders and will publish an annual Urban Mobility Report which describes the scope of the mobility problem and some of the potential improvement strategies users can implement to try and mitigate the congestion mobility problem.

WHAT IS OUR GOAL?

Our goal is to develop improved mobility strategies and implement them in order to be able to reduce traffic congestion and improve mobility on the roads.



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WHAT IS THE BENEFIT?

The Department can potentially benefit from the outcome of this research by implementing the improved urban mobility strategies results of this research. The public may benefit from the implementation of these improved mobility strategies which have the potential to reduce traffic congestion and improve mobility on the roads.

WHAT IS THE PROGRESS TO DATE?

Task 1: Successfully completed FY23 kickoff meetings which included 3 optional dates for attendance from Oct thru Nov. Prepared and completed a survey in November for SUMA participants to gauge interest on a Peer Exchange Program and a Mini-Analysis Toolkit to discuss their analysis needs. Coordinated survey respondents' participation for January 2023 webinar as part of this peer exchange program. Begin working on the presentation material for the first webinar in January.

Task 2: Continued research on performance measurement practices and emerging techniques pertaining to equity in transportation mobility. Began initial work on data analysis for comparison of six urban areas. Continued examination on current state-of-the-practice in equitable mobility performance measurement. Started reviewing Federal and state DOT practice/guidance in transportation equity. Continued review of syntheses and white papers relevant to this task. Continued brainstorming roadway mobility measures from allied areas of transportation.

Task 3: Tested FIXit tool and held internal meetings to discuss testing and tool development. Continued working on adding project types (with links to 1-pagers on the project types) and associated lane equivalents to the tool in a test environment. Updated the Excel tool to ensure consistency with the web tool calculations. Updated user interface of web tool to improve

layout for ease of user inputs. Worked on one-page summaries for project types in the tool that did not have one-pagers. Tested additional updates to the tool in Excel prior to updating the web tool. Developed a draft methodology to incorporate level-of-service into FIXit. Performed extensive testing of the tool and provided feedback to the tool developers. Updated the FIXit Tool (i.e., added value of time, a fuel consumption option for the user to override the default values; refactored part of the code for future features; fixed some bugs).

Task 4: Scheduled and performed two (2) equity feedback and brainstorm sessions with internal TTI equity experts to gain input on the draft equity roadmap for this task. Prepared meeting notes for the two (2) feedback sessions. Revised the working draft of the equity work plan based on input from the TTI subject area experts. Began to create a resource list of research and current practices for roadmap elements. Expanded the equity roadmap outline to include definitions and targets for each equity element. Brainstormed different ways to graphically display a path to equity and determined priorities (tiers) for actions within equity elements. Attended USDOT Justice40 webinar outlining the status of this federal initiative and how it is being implemented. Began planning a second listening session with equity experts to review the draft roadmap.

Task 5: Conducted additional sponsor communication and support via telephone calls and email correspondence.

Task 6: Conducted SUMA kickoff meeting sessions on Oct 17, Nov 1, and Nov 7, 2022. Sessions were conducted on three (3) dates to ensure attendance by at least one participant from every sponsoring agency. Delivered kickoff meeting session notes and the PPT slide deck to all sponsors on Nov 17, 2022.

Work this quarter has numerous positive impacts on sponsoring-agency decisionmaking including:
- Evaluating (and understanding) mobility datasets,

particularly origin/destination data (Task 1)
- Recognizing impacts of the COVID-19 pandemic on travel behavior (Task 2)
- Describing the methodology and updates to the FIXIT Tool that will also serve as a User Guide (Task 3)
- Defining transportation equity and the assessment impact on planning, policy, and processes (Task 4)

LEARN MORE

Websites:

- <https://pooledfund.org/Details/Study/664>
- <https://tti.tamu.edu/researcher/urban-mobility-pooled-fund-study-surpasses-two-decades-of-service-to-sponsors-nationwide/>
- <https://mobility.tamu.edu/project/support-for-urban-mobility-analyses/>