

Minnesota's Annual Report to the FHWA On the Surface Transportation System Funding Alternatives Program, January 2020

Minnesota Distance Based Fee (DBF) Demonstration

The Minnesota Department of Transportation (MnDOT) is demonstrating a user based fee mechanism with fleet-operated Shared Mobility (SM) service providers. SM includes a range of new travel forms that promise greater efficiency, safety, and enhanced mobility to the traveling public. It also provides a platform to explore a practical and implementable path toward wider deployment of distance-based user fees as a replacement for the motor fuel tax on appropriately equipped vehicles. By leveraging the advanced technology that has become a standard of SM service providers, MnDOT will advance the user-based fee mechanism using existing embedded vehicle technology. This project will prepare Minnesota for the convergence of shared mobility with broad adoption of vehicle electrification as well as coming vehicle automation.

Project Accomplishments in 2019

On February 12, 2019 the FHWA awarded Minnesota STSFA Program FY 2018 grant funds to plan, design, deploy, administer, communicate, and evaluate a 12-month DBF demonstration on SM vehicle fleets. This awarded project (Phase II) builds upon the planning and high-level design efforts of Phase I (STSFA FY 2016 award).

Phase I Accomplishments in 2019:

- Completed the Proof of Concept – a 3-month focused test aimed to prove that DBF-related data can be accurately and securely transferred between a SM provider and the State. **(Attachment 1)**
- Conducted a survey with SM customers to measure respondents' understanding of the DBF concept, support for the concept, understanding of what data is collected and how it may be used, and any concerns they may have with the concept at an individual or policy level. **(Attachment 2)**
- Developed the initial Demonstration Implementation Plan, defining the demonstration goals and objectives, key milestones and deliverables, evaluation strategy, and stakeholder roles and responsibilities. **(Attachment 3)**

Phase II Accomplishments in 2019:

- Amended the MnDOT/FHWA Cooperative Agreement to implement Phase II activities
- Executed a contract with the University of Minnesota, Humphrey School of Public Affairs to provide support and expertise during Phase II of the project

- Identify policy considerations and develop policy briefs
- Conduct financial analyses from demonstration data and develop a revenue model
- Conduct outreach education, including transportation finance round tables with stakeholders, legislators, and interested parties
- Conduct an evaluation of the demonstration to evaluate feasibility, adequacy, equity, and efficiency of the DBF concept
- Executed a contract with WSP USA to provide systems integration and expertise during Phase II of the project
 - Design, deploy and manage the 12-month demonstration
 - Manage SM service provider and C/AV research partner relationships
 - Provide stakeholder and STSFA program reporting support
 - Support the Humphrey School in financial analyses, communications efforts and demonstration evaluation strategy development
 - Develop a business case of potential DBF deployment scenarios
- Created a “Minnesota DBUF Demonstration 101” packet to provide information to SM providers and other key stakeholders a summary of Phase 1 activities and next steps for the Phase II demonstration. **(Attachment 4)**
- Updated the Concept of Operations to detail Proof of Concept results and also refine Demonstration objectives, architecture and operational scenarios. **(Attachment 5)**
- Drafted Technical Advisory Committee charter and membership roster. **(Attachment 6)**
- Secured SM service providers and a connected/automated vehicle (C/AV) research partner to operate the demonstration.
 - SM service providers will utilize existing vehicle and data collection capabilities to compile data sets and reports to assess simulated DBFs on SM fleet vehicles
 - The C/AV research partner will execute dedicated test cases to collect detailed travel and location data, to be used for rate setting and pricing scheme analysis
- Finalized model Non-disclosure Agreements, Data Use Agreements, and Memorandums of Understanding to be executed with Shared Mobility Providers. (Available upon request.)
- Developed Communications Plans for policymakers, national stakeholders, and users, defining communications strategies, tactics and key messages **(Attachments 7-9)**
- Hosted “Transportation Financing in Changing Times”, the first of a series of roundtables (hosted by the State and Humphrey School), focusing on familiarizing state transportation and policy leaders with the concept of DBF and Minnesota’s role in what is happening nationally. **(Attachment 10)**
- Conducted coordination activities with the Minnesota’s connected and automated vehicles initiative (CAV-X) as the effort relates to future revenue generation models.

Phase I of the project established the foundation for conducting a DBF demonstration, assessing simulated DBFs on participating SM vehicle fleets and exploring the nexus between shared mobility, vehicle electrification and vehicle automation. Phase II continues to build on this foundation to design, develop, deploy, operate and evaluate the 12-month demonstration.

Looking forward to 2020, the following Phase II activities are anticipated:

- Launch 12-month demonstration on April 1, 2020 – to run through March 31, 2021.
- Host two Transportation Financing roundtables with transportation leaders and policymakers on the national landscape for transportation financing and DBF, and preliminary results from the demonstration.
- Execute focused test cases with the C/AV research partner to explore time of day and location based pricing schemes and considerations.
- Draft the business case and revenue model for potential future DBF deployment scenarios.
- Establish the TAC and hold regular meetings to communicate demonstration status, evaluate policy considerations, identify communications opportunities, and help set the direction of DBF throughout the state.

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