

Minnesota's 2021 Annual Report to the FHWA On the Surface Transportation System Funding Alternatives Program, January 2022

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 2021

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 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 continued to build on this foundation to design, develop, deploy, operate, and evaluate the 12-month demonstration.

Phase II Accomplishments in 2021:

Project Management

- Conducted biweekly status meetings with core team to discuss status, plans, and demonstration risks
- Compiled and submitted 2020 Annual STSFA Report and four quarterly reports
- Executed extension of system integrator consultant and university research partner contracts to support continued demonstration evaluation, reporting, communications, and planning for future studies

Demonstration Operations

- Collected and evaluated 12 months (April 2020 – March 2021) of demonstration operations datasets from SM Providers. Sixty-four vehicles from two Shared Mobility partners and the AV research partner participated in the demonstration. The

demonstration resulted in the successful capture of 565,839 miles, 18,068.83 gallons of fuel purchased, \$15,358.67 in simulated gross DBF revenues, and \$6,884.47 in simulated net DBF revenues.

- Collected location-specific reporting for one SM provider while maintaining compliance and sensitivity to their personal privacy and data use policies
- Conducted analysis of MnDOT fleet telematics data to support objectives of the demonstration and overarching DBF program (**Attachment 1**)
- Developed a DBF Rate Setting Framework (**Attachment 2**) that provides categorical guidelines and considerations for assessing DBF rate schedules.
- Conducted a mock audit of the DBF system and financial reports with Minnesota Department of Revenue and Transportation. Audit results are provided as part of a Technical Memorandum (**Attachment 3**), with a matrix of QA/QC Audit Results (**Attachment 4**). The guide used to conduct the audit is provided in **Attachment 5**.
- Developed the Demonstration Final Report DRAFT (**Attachment 6**) following feedback from MnDOT, Core Team, and TAC members
- Purged all demonstration data from the shared data repository as of June 30, 2021

Communications and Outreach

- Launched the updated Minnesota Distance Based Fee Program website (<https://dbf.dot.state.mn.us/>)
- Met with Representative Steve Elkins to discuss the Minnesota Distance Based Fee Program and how it aligns with Elkins' introduced HF0523.0 bill (**Attachment 7**)
- Led meetings with the Technical Advisory Committee on March 2nd, April 22nd, and June 23rd. Presentations are included as **Attachments 8, 9, and 10** respectively.
- Led a joint roundtable with the University of Minnesota and the Mileage-Based User Fee Alliance titled "*Transition to Distance-Based Fees: Where do We Go from Here?*" on June 14th. The agenda and topics for this roundtable discussion are provided as **Attachment 11**.
- Conducted interviews with key Technical Advisory Members to gauge their satisfaction with the demonstration results, as well as capture their opinions and thoughts on distance-based fees to be incorporated into the final evaluation and final report. Some of the key findings included:
 - There is disparity between the need for a DBF. Some members fully support DBF, but others prefer to raise the motor fuel tax
 - Those that support a DBF feel it should not solely focus on electric vehicles but EVs could serve as a starting point
 - DBF will need to be seen as fair, reliable, and support environmental goals
 - The story should focus on declining revenues
 - Levying a DBF on commercial vehicles makes more sense as they cause more damage to the roadways
 - Administrative costs and equality when setting rates are the biggest challenges
 - Public education is key

- Privacy concerns could be addressed through choice, including a non-technology manual option, and a low-technology option that does not include GPS
- Reliability and trustworthiness with the state is key
- Equity is a consideration but through choices, options, and adjustable rates, equity concerns can be overcome
- Submitted a technical project whitepaper on distance-based fees for the Transportation Research Board's 2022 Annual Meeting (**Attachment 12**). This paper was subsequently accepted and will be presented at the TRB Annual Meeting in mid-January 2022
- Project team presented on "Demonstrating Distance-Based Fees Through a Shared Mobility Model" at the University of Minnesota Center for Transportation Studies 2021 Annual Conference (**Attachment 13 – Agenda; presentation is concurrent session #6**)
- Submitted a STSFA grant application on November 1st for 2021 extended grant round
- Begun planning and storyboarding for two informational/educational DBF videos

Evaluation

- Developed technical memorandums on three key topics:
 - Modal Equity (**Attachment 14**)
 - Rural / Urban Equity (**Attachment 15**)
 - Collection and Administration Costs (**Attachment 16**)
- Completed the FINAL DBF Demonstration Evaluation Report (**Attachment 17**)

Looking forward to 2022, MnDOT will finalize the final demonstration report, refine the rate setting framework, develop informational/educational videos, and evaluate future DBF research considerations and concepts.

For more information contact:

Kenneth R. Buckeye, Program Manager
 Minnesota Department of Transportation
 395 John Ireland Blvd
 St. Paul, Minnesota 55155
 Ph. 651-366-3737
 M: 612-388-1672