

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

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 automation.

Project Accomplishments in 2020

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

Phase II Accomplishments in 2020:

Project Management

- Conducted biweekly status meetings with core team to discuss status, plans, and demonstration risks
- Continued to monitor potential impacts of COVID-19 on demonstration and partner/provider engagements
- Compiled and submitted 2019 Annual STSFA Report and four quarterly reports
- Updated risk register post-demonstration launch (**Attachment 1**)
- Supported a meeting with FHWA's Independent Evaluation Team to discuss demonstration status and plans
- Attended STSFA project discussion in conjunction with the Transportation Research Board's Annual Meeting

Technical Design

- Finalized technical and business requirements and interface control specifications for demonstration operations (**Attachment 2**)

- Developed test plan for unit, integration, and acceptance testing (**Attachment 3**)
- Executed unit, integration, and acceptance testing with SM providers
- Deployed DBF data repository for housing sanitized demonstration sanitized data from SM providers. Established access controls for each entity accessing the portal to prevent unauthorized data access across partners.
- Conducted successful unit, integration, and acceptance testing for each of the three participating SM service providers (**Attachment 4**)
- Analyzed data transfers from the SM service providers to the demonstration data repository for accuracy and conformance with interface specifications
- Identified test cases for C/AV research partner to perform over the course of the demonstration (i.e. Lane determination, In-State/Out-of-State Mileage Reporting, Occupancy Detection, etc.)

Demonstration Deployment

- Launched 12-month demonstration on April 1st, 2020
- Collected and evaluated demonstration operations datasets from SM Providers, including miles traveled and fuel purchased by vehicle
- Drafted demonstration DBF (simulated) revenue report template (**Attachment 5**)
- Reviewed simulated Revenue Reports generated by research partners and SM Providers for April thru December 2020 datasets
- Conducted three tests with C/AV research partner including 1) a high-occupancy vehicle lane test with passengers, 2) a high occupancy vehicle lane test without passengers, and 3) a state border crossing test
- Launched location-specific reporting for one SM provider while maintaining compliance and sensitivity to their personal privacy and data use policies
- Evaluated potential pricing schemes and tiered rate structures
- Developed Revenue Audit Guide to lay framework for conducting mock audits on SM Providers (**Attachment 6**)
- Evaluated the potential use of MnDOT fleet telematics operations and performance data to support objectives of the demonstration and overarching DBF program
- Facilitated a DBF rate visioning workshop with core project team to discuss a framework for rate setting under a DBF program (**Attachment 7**)

Communications and Outreach

- Held bi-weekly project team meetings and discussed ways to further communications strategies and efforts
- Developed and reviewed the Communications Strategy for determining the best ways to communicate demonstration status, risks, and plans for the demonstration and any potential future plans for DBF in Minnesota (**Attachments 8-10**)
- Identified “Challenging Questions” and associated responses for addressing public inquiries on DBF

- Held multiple communications strategy sessions with core team to shape overall communications strategy, messaging, and potential issues
- Established methods for reviewing, vetting, and administering DBF-related communications between MnDOT and shared mobility providers
- Updated the MnDOT DBF website (<https://dbf.dot.state.mn.us/>)
- Conducted and analyzed surveys distributed to members of the TAC
- Held three DBF Technical Advisory Committee meetings on June 10th, September 3rd, and December 9th (**Attachments 11-16**)
- Held Transportation Financing roundtable meeting with MnDOT on November 20th (**Attachment 17**)

Evaluation

- Developed and refined evaluation plan and criteria
- Conducted evaluation interviews with a SM Provider and the C/AV research partner to collect information regarding the costs incurred in the first quarter of the demonstration as well as their perceptions regarding the demonstration (**Attachment 18**)
- Conducted initial evaluation interview with the Minnesota Department of Revenue to collect information about collection, enforcement and compliance, and auditing costs of the current motor fuel tax, and their perceptions regarding the implementation of a DBF system

Looking forward to 2021, the following Phase II activities are anticipated:

- Complete the 12-month demonstration on March 31, 2021
- Perform project closeout activities required to close the demonstration
- Develop and submit the final report for the demonstration
- Host another Transportation Financing roundtable with transportation leaders and policymakers on the national landscape for transportation financing and DBF, and preliminary results from the demonstration
- Continue to hold regular TAC 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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