State Planning and Research Program
Quarterly Report

PROJECT TITLE: ***Calculating Plow Cycle Times from AVL Data***

OBJECTIVES: To develop a methodology to calculate plow cycle times, considering various relevant factors; and use the methodology to create the framework for a visualization tool that agencies can format with their own electronic data.

PERIOD COVERED: January 1 to March 31, 2023

PARTICIPATING AGENCIES: Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee

PROJECT MANAGER: Hafiz Munir / Tom Peters **LEAD AGENCY**: MnDOT **PRINCIPAL INVESTIGATOR**: Ming-Shiun Lee, PhD, PE AECOM Technical Services, Inc.	**SP&R PROJECT NO**: MnDOT Contract No. 1047791 Federal Project Number: TPF-5(353)	PROJECT IS: ____ Planning __X__ Research & Development
ANNUAL BUDGET: $125,377.84	**PROJECT EXPENDITURES TO DATE**: $41,844.53	

WORK COMPLETED:

- Task 1: Project Management
  - Conducted a check-in meeting with project subcommittee to review AVL data samples, plow cycle time calculation variables and methodology, and the state of practice in dashboard tool usage.
- Task 2: Information Research
  - Gathered and analyzed additional AVL data samples.
- Task 3: User Stories Development
  - Finalized operational scenario user stories.
- Task 4: Methodology – Plow Cycle Time
  - Identified variables for calculating plow cycle times.
  - Developed cycle time calculation methodology.
- Task 5: Online Tool Framework
  - Performed a state of the practice review of online tools.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Task 1: Project Management
  - Conduct a check-in meeting with project subcommittee to review draft outline for tool framework and sample tool layout.
- Task 4: Methodology – Plow Cycle Time
  - Refine cycle time calculation methodology per subcommittee comments.
  - Prepare a hypothetical case study illustrating the use of the methodology.
- Task 5: Online Tool Framework
  - Develop a tool/dashboard framework.
  - Develop use cases and workflows for the online tool/dashboard framework.
  - Create tool/dashboard design.

STATUS AND COMPLETION DATE:

On schedule and budget. Expected project completion October 31, 2023.