

Axle and Length Classification Factor Analysis and Effects on Annual Average Daily Traffic (AADT) Scope of Work – Phase II (Enhanced Version)

Time extension: 18 months (approx. November 15, 2017, through November 15, 2018)

Background: Phase 1 developed methods for factoring length-based vehicle classification data. The first method generates an axle factor and the second method factors length data into an axle-based classification scheme. Phase 1 determined performance metrics for these methods using sample data sets.

Phase 2 Objective: Implement and assess the use of the methods developed in Phase 1. Work with three agencies to demonstrate the methods' practical use and provide research implementation documentation that will assist agencies in assessing implementation feasibility and risk.

Task 1. Training Materials

Conduct a project kickoff meeting with the TAC to review the Phase 2 objectives and identify "beta test" agencies. The meeting will be a webinar.

Develop training materials for the axle factor and axle-based classification methods developed in Phase 1. The training materials will consist of a handbook, electronic files, and a training video demonstrating the use of the methods. These materials will explain the methods and in what situations they are useful. The materials will allow agency personnel to understand and implement the methods with their data.

Develop the training materials in a draft form and give them to three agencies to beta test with practitioners. Respond to beta tester questions and assist them with implementing the methods with their data.

Develop a survey for beta testers to provide feedback on the training materials. The survey will provide a mechanism for beta testers to evaluate the training materials and suggest improvements.

Meeting

Phase 2 Kickoff Meeting (webinar)

Deliverables

Draft training materials

Survey

Final Training Materials

Task 2. Implementation Assistance

Work with the beta test agencies to determine appropriate factoring methods for their use cases. Assist the agencies with analysis such as determining predetermined bin schemes that are appropriate for their needs. Provide onsite assistance at two beta test sites. This work will be documented in Task 4 - Case Studies.

Deliverable

Onsite assistance at two beta test sites

Remote assistance for other test sites

Summary of assistance performed

Task 3. Case Studies

Develop documentation that explains use cases where the methods can be used and the processes that they could replace. Changes in agency processes can impact various data uses. Interview the beta test agencies to understand how the methods could change their processes and the impacts of those changes. Conduct an onsite review at two beta test sites (onsite work will be done in conjunction with the travel for Task 2). Document the case studies including descriptions of:

- The current process
- The proposed process
- Data users
- Impacts to data users
- Risks

Meeting

Case Studies Review (webinar)

Deliverables

Onsite review at two beta test sites

Remote review of other test sites

Draft Case Studies Memorandum

Final Case Studies Memorandum

Task 4. Data Processing Tool

TTI will lead development of a technical tool that will support automated data processing. TTI will work with SRF and members of the project panel to determine specific user needs, input data elements, required data formats for inputs, required outputs, and recommended software platform to develop the automated data processing tool. Various formats will be considered, such as Excel spreadsheet with macros, a web-based tool, or an algorithm developed with open code. Development of an open code would allow vendors to integrate with their proprietary traffic database software. If the open approach, is selected Python and R software platforms will be explored.

TTI will develop and test a prototype of the automated data processing tool that meets the needs determined. TTI will distribute this prototype to SRF and project panel members for one round of evaluation and to determine requested changes. TTI will incorporate the changes requested and will develop a final version of the processing tool. TTI will provide documentation for the processing tool.

Deliverables

Memorandum of User Needs

Prototype Data Processing Tool

Final Data Processing Tool

Memorandum of Incorporated Changes

Data Processing Tool Documentation

Task 5. Phase 2 Final Report and Present findings at NATMEC

Develop a Draft Final Report that combines the findings of the previous tasks. Submit the Draft Final Report to the TAC for review and comment. Modify the Final Report to address TAC Comments and submit the Final Report.

Prepare presentation materials and present the findings of Phase 1 and Phase 2 of the project at NATMEC 2018.

Meeting

Project Closeout Meeting (in person and webinar)

Deliverables

Phase 2 Project Presentation

Draft Phase 2 Report

Final Phase 2 Report

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