POOLED FUND PROPOSAL:
TPF AXLE AND LENGTH CLASSIFICATION FACTOR ANALYSIS AND EFFECTS ON AADT

Overview

State DOTs face ongoing challenges to ensure quality and soundness of traffic data. The multitude of traffic count equipment/software on the market, data collection best practices, number of length bins, and data processing hurdles are the usual topics talked about when discussing data quality.

Axle factors are used to estimate annual average daily traffic (AADT) volume. Classification and length sites are used to determine axle factors. To fully understand the relationship of classification *versus* length data when generating axle factors will require analysis of millions of traffic records.

The Wisconsin DOT is leading a pooled fund to utilize resources and expertise to research and analyze the complex issue of how length-based data affects axle factoring and leverage more cost-effective traffic data collection methods to support factor generation.

Wisconsin has completed an initial study on this topic with High Desert Traffic that provides a foundation to build upon. The Wisconsin study also examined the use of individual vehicle records to calculate updated average axles for each length classification binning scheme used. This study continued the ground work done in the *TPF 5-192 Minnesota DOT led pooled-fund* program to address the multifaceted issues of developing reliable axle factors from length-based classification data.

Participation in this pooled fund presents opportunity for partner agencies to take advantage of a wide range of expertise in *axle* and *length* classification traffic data and factor generation analysis to ensure their programs are efficient, cost effective, and provide sound traffic data.

Objectives

1. Assemble State DOTs and industry experts to conduct research and statistical analysis on millions of traffic data records in order to provide guidance and understanding on the variability of how axle and length classification data affect AADT, specifically with regard to the creation of axle factors.

2. Gain a quantitative understanding on how length classification traffic data affects the calculation of AADT. Length classification sites are more cost effective than axle classification sites from installation to maintenance. This objective will allow State DOTs to fully understand the statistical significance and soundness when using this cost-effective data collection option.

3. Gain a quantitative understanding of how axle and length classification traffic data interact and affect the calculation of AADT. State DOTs that have both these types of continuous

classification traffic site installations or State DOTs who are considering including the lesser expensive length classification sites to their continuous program will understand advantages and distinctions of utilizing these combined data sources.

Organizational Structure

TECHNICAL COMMITTEE – State Department of Transportation Agencies

Lead State – Wisconsin DOT

- Agency proposing the pooled fund
- Act as the sponsoring agency
- Receive invoices from the selected vendor
- Assist in soliciting new pooled fund partners

Participating States

- Review, comment on, and recommend for approval all project proposals generated through their participation on the Technical Committee
- Make final decisions of the approval of any project proposal
- Participating states, including the lead state, will have one vote on the Technical Committee

Selected Vendor

- Prepare invoices to be sent to Wisconsin DOT for research activities
- Plan, coordinate, and facilitate meetings of the Technical Committee using teleconferencing and other available technologies, as well as face-to-face meetings
- Prepare draft proposals that include work plans and budgets to be presented to the Technical Committee for review, comment, and approval
- Prepare quarterly reports to be submitted to the Technical Committee and the Wisconsin DOT

Scope of Work

PARTICIPATING MEMBERS

1. Each project partner will review project implementation to make sure project outputs will be useful
2. Review project methodology and provide feedback
3. Selected States will provide traffic data for statistical analysis
4. Participate in quarterly teleconference or scheduled face-to-face meeting
5. Provide timely review of quarterly and final report

VENDOR/CONSULTANT

1. Identify current literature on axle and length classification data collection characteristics
    - Identify strengths and weaknesses from data quality, usage, and monetary standpoint
2. Outline method to collect data for the project and any processing concerns
3. Review participating State DOT traffic programs to select pilot states
4. Identify sample size possibly 3-5 states that will provide confidence in outcomes
5. Conduct statistical analysis and compile draft summary findings
6. Produce quarterly and final reports

PROJECT SCHEDULE

Task	Description	Date Begin	Date Complete
0	Select Vendor and Award Contract	TBD	TBD
1	Identify Current Literature on Axle & Length	TBD	TBD
2	Outline Method to Collect Data and Considerations	TBD	TBD
3	Select Participating State DOT Pilot States	TBD	TBD
4	Identify and Agree on Sample Size	TBD	TBD
5	Conduct Statistical Analysis and Compile Draft Findings	TBD	TBD
6	Produce Quarterly and Final Reports	TBD	TBD

Commitment

- **Sponsoring Agency:** Wisconsin Department of Transportation
- **Lead State Agency:** Wisconsin DOT
- **Commitments Required:** $125,000 - $150,000
- **Minimum State Commitment:** $12,500 per year
- **Commitment Start Year:** FFY 2016
- **Duration:** maximum of 14 months