

**MAASTO idea for federal Surface Transportation System Funding Alternatives program  
March 2017**

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**Title:** Examination and pilot of alternative registration fees for heavy trucks

**Objective:** This is a proposal for the MAASTO states to conduct research and submit a combined application to the federal Surface Transportation System Funding Alternatives (STFSA) program. The project would provide information and allow demonstrations of alternative truck registration-fee programs that encourage heavy-truck operators to use equipment with reduced axle loadings to increase pavement life, and better match road-user fees to costs imposed, without mandating additional tax filings or complicating enforcement.

**Detailed tasks:** The goal of the project would be to conduct research that would lead to pilot program opportunities for an axle-weight-based fee structure that would allow heavy truck operators to choose between the existing GVW-based fee structure and the axle weight based fee structure. The research phase would include the following:

- Relationship between truck axle loadings and pavement life
- Pavement design and environmental conditions in participating states
- Existing fee structure in participating states, or all states
- Recommended fee structure necessary to influence trailer-purchase decisions
- Likely impact on pavements and structure wear after adoption of the recommended fee structure
- Requirements of the International Registration Plan (IRP), to ensure compliance burdens are not significantly impacted
- Revenue impact (or revenue potential) resulting from the altered fee structure in participating states
- Required changes to enforcement protocol in participating states

For each participating MAASTO member, the initial research phase would identify barriers to adoption, implementation, and enforcement (and/or participation in a pilot program) of alternative registration fee structure.

The research would also develop model statutory and administrative language that could be used in MAASTO states, with customized statutory language for each participating state.

Finally, the research would provide a model pilot program structure / work plan that could be implemented in states, to include cost estimates, resource needs, deployment steps, evaluation measures and reporting structures. Future grants could then fund the actual pilot project deployment in individual states, and evaluation.

**Expected outputs:** Reference Material:

- Tables of allowable GVWs and axle loadings in participating states
- Existing weight-based road-user fee schedules in participating states
- Existing motor-carrier fuel taxes in participating states

Intermediate Variables:

- Tables of reductions in pavement life attributable to axle loadings of various weights, for relevant pavement designs used in participating states, given local conditions.
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- Valuations of reductions in pavement life per passage by axles of various weights.

Final Products:

- Recommended changes in fee for elected GVW per reductions in axle loading below allowable loading
- Estimates of potential impact on state revenues, and on truckers' costs and equipment decisions

**Observations from literature search:** Several states and researchers (in Wisconsin, Texas, and Indiana and possibly elsewhere) have made advances into relating loadings expressed in ESALs, subtractions from pavement life, environmental conditions, and overweight-permit fees. This work is applicable to fees paid by trucks of normal weight. International researchers are addressing the same issue in Europe and elsewhere.

Since 1990 the Oregon weight-distance tax has included an axle-load function that has some limited ability to influence equipment design, but at the cost of accounting for a fee separate from IRP and IFTA.

Oregon and Nevada have used the federal Highway Cost Allocation Study model to estimate the costs imposed by trucks of various axle loadings.

This project acts on the proposal made by Frank Turner to AASHTO in 1984 to extend the life of Interstate pavements by reducing truck axle loads.

**Anticipated stakeholders:**

This project will interest these groups:

- State highway agencies
- State legislatures
- Truck operators and shippers
- Truck and trailer manufacturers
- State truck-enforcement agencies
- State vehicle administrators and the International Registration Plan

Researchers may do some limited polling or querying of trucking firms or associations. Participating states will be expected to obtain information from affected agencies within each state.

**Estimated cost:** \$600,000 (research only) to \$4 million (pilot programs)

**Estimated timeline:** 12-18 months (research only) to 30-40 months (pilot program)

**External resources needed:** The research project would be executed with university / consultant services. Participating MAASTO members will need to facilitate coordination with other relevant agencies in their states.

**Resources needed from MAASTO members:** This project could be undertaken by a single state, but the greater benefit and utility to the federal alternative funding grant program and to heavy truck operators would be to provide recommended fee structure(s) that could be adopted in multiple states.

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### Research / pre-pilot phase

MAASTO may want to consider utilizing a federally-authorized transportation pooled fund (TPF) for the research phase. This approach has the following benefits:

1. Using a TPF would allow MAASTO to start this initiative without relying on an initial federal Surface Transportation System Funding Alternatives (STSFA) grant. US DOT / FHWA has not yet determined if or when the STSFA program will open for solicitations in FFY2017.
2. FHWA has indicated that STSFA may not be available for research or pre-pilot activities even when it is opened. While the FFY2016 program allowed for these activities, FHWA considered that to be an anomaly that did not conform to Congressional intent.
3. A pooled fund would allow states to use federal State Planning & Research (SPR) dollars for the research initiative with no non-federal share. There are also established mechanisms to collect funds for a TPF so MAASTO would not have to set up any new mechanisms.
4. Using a TPF to conduct the research / pre-deployment phase would then position MAASTO and/or individual states to pursue an STSFA grant for pilot projects for FFY2019 and/or FFY2020.

Under the TPF approach, one member state would need to serve as the lead for the project to collect and oversee funding and retain a researcher / consultant. This state would need to appoint a Project Manager with an anticipated 25% time commitment over the course of the study, including for pre-project activities such as work plan development and consultant selection. The lead state may also need to dedicate a small portion of oversight resources within the Research Program. Alternatively, MAASTO could hire a Project Manager, but this would add to the cost of the study and USDOT would still require a lead state agency.

Each participating state would be expected to contribute an equal share of its allotted federal SPR funds. Participants would each need to appoint a State Project Coordinator with an anticipated 10% time commitment over the course of the study, including for pre-project activities such as work plan development and consultant selection. The State Project Coordinator would facilitate in-state data collection and agency review.

If the research / pre-pilot phase were to be conducted via a TPF study, one additional output could be for the researcher to prepare materials that would support any future STSFA grant applications. However, since the TPF would use 100% federal funds, it likely would NOT be appropriate for the researcher to actually write any future STSFA grant application.

If a TPF project were used for this phase, it is anticipated that states would need to contribute \$50,000 - \$70,000 each, possibly spread over two federal fiscal years.

### Pilot project phase

After the research / pre-pilot phase is complete, individual states could self-determine interest in applying for an STSFA grant for pilot deployment. This could also be done with self-selected groups of states (or MAASTO as a whole).

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Per the rules of the federal grant program, any pilot project would require a 50% non-federal share. The research / pre-pilot phase would identify the staff resources a state would need for a pilot program, but they would likely involve significant effort from more than one individual in each participating state, and more than one agency.

Enabling legislation would be needed to actually adjust registration fees in participating states.

### Pilot-project evaluation phases

If pilot projects are undertaken in one or more states, after several years a preliminary evaluation could determine whether the alternative user-fee structure had impacts on the truck fleets registered in participating states, and on the truck-miles and axle loadings actually produced in participating states.

Considerable time might be needed to detect any impacts on actual pavement distress under altered axle loadings, but base-line data might be collected to facilitate future studies.

### **Key Decision Points:**

- 1) Does the MAASTO Board of Directors want to pursue this proposal?
- 2) If so, do we attempt to fund the entire effort with STSFA (50% state match) or do we want to utilize SPR funds to support the research portion (0% state match) with the intention to pursue an STSFA grant for pilot program deployment?
- 3) If we pursue this idea, which state will be the lead?

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