Research Problem Statement

ODOT Research Section
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I. TITLE

[Provide a unique title that represents the research idea]

17-059 Role of Special Hauling Vehicles on Bridge Safety

II. PROBLEM

Recent changes to the AASHTO Manual for Bridge Evaluation requires bridges be rated for Special Hauling Vehicles (SHV). SHVs are short length vehicles that meet the Federal Formula B requirements and are thus legal and can operate without permits. Due to the short wheelbase and relatively heavy loads, SHVs can produce large load effects on some bridges. In this way, SHVs can limit the bridge rating and/or require bridge posting. Because they are legal vehicles, posting by necessity may be overly restrictive to other truck configurations that would otherwise be permissible. The operation of SHVs in Oregon is uncertain, as they typically operate on short-haul runs and are not thought to commonly cross the array of weigh-in-motion stations located on Oregon's major highways and interstates. ODOT uses state-specific load factors for rating bridges which requires quantification of the likelihood of heavy trucks side-by-side on bridges. Due to the lack of data on the numbers and dispersion of SHVs on Oregon's highway system, it is uncertain if they impact the controlling loading conditions on Oregon bridges and thus control the rating and posting decisions.

III. PROPOSED RESEARCH, DEVELOPMENT, OR TECHNICAL TRANSFER ACTIVITY

Surveys of SHV-type truck operators will be conducted to identify the types and ranges of SHV trucks on Oregon's highways. The Oregon Trucking Association will be engaged to help identify members with SHVs. WIM data at all ODOT stations will be reviewed to identify SHVs on the system. From the membership and WIM surveys, truck configurations, axle loads, and spacings will be quantified and the load effects produced on canonical bridge types and spans lengths in Oregon will be determined. The bridge networks in which these trucks operate will be identified and field observations will be conducted to identify side-by-side occurrences and probabilities. Oregon-specific load factors will be produced for typical SHV configurations operating in the state.

IV. POTENTIAL BENEFITS

SHVs could control bridge rating and posting, but it is currently unknown due to lack of data. This project will enable ODOT to understand how many and where SHVs are operating in the state and make rational rating and posting decisions. Without this research, it is unknown if or how SHVs are influencing the safety of Oregon's bridges.

V. IMPLEMENTATION

Meetings and workshops will be held with ODOT Bridge section personnel to present research findings in-progress as well as summary findings. Background information and findings will be described in reports, papers, and peer-reviewed journals. Design examples will be provided for the methods developed. Web-based access to in-progress test data and images, analytical methods, and summary findings will be available on-line where appropriate.

VI. LIST OF REFERENCES *(optional)*

[List the references you identified when you searched for completed and current research.]

VII. CONTACT INFORMATION

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