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Heavy Vehicle Weight Study: An Overview

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Study Background

- Interest in the extent of highway and bridge damage caused by heavy trucks vs. other vehicle types
- Three bills in the 2007 General Assembly mandate studies of specific types of overweight/over axle weight trucks

2007 General Assembly Bills

- SB1321: Establishes \$800 fee for overweight petroleum tank wagon trucks for one year
- Allowable axle weights increased from 20,000 to 24,000 lbs.
- Commissioner to establish a fee schedule for them based on a study of overweight trucks

2007 Bills, cont

- HB2917: extends no-cost overweight permits for trucks hauling sand, gravel, crushed stone, or liquids from oil or gas wells in coal severance counties until July 1, 2009
- VDOT and the CTB to recommend legislation for these overweight trucks

2007 Bills, cont.

- HB1645: Overweight permits for water blasting and hydro-excavating trucks with GVW of 64,000 pounds or less
- 20 of these trucks in the state
- VDOT and the CTB to recommend legislation regarding operation of these trucks

Cost Allocation Studies Generally

- Studies typically compare the maintenance and/or construction *costs* attributable to vehicle classes with the *revenues* (user fees) each class contributes
- Yields “equity ratios” that may indicate under- or overpayment by vehicle classes relative to their share of costs
- Last done in Virginia in 1991

Cost Allocation Studies, cont.

- Major Federal cost allocation study in 1997
- Some cost allocation studies done by individual states (KY, OR, TX)
- Studies identify categories of maintenance expenditures and use *allocators* to calculate vehicle classes' shares of each expenditure category
- Vehicle miles of travel (VMT) is a common allocator for costs that do not vary by vehicle weight (e.g., signage)

Cost Allocation Studies, cont.

- Other allocators may be used to capture the differing effects of vehicle loads
 - Equivalent single axle load (ESAL) is a load-related allocator for pavements
 - Comparable load-related allocator for bridges is the AASHTO fatigue design truck

Study Plan

- Develop detailed methodology focusing on FY06 and FY07
 - Identify all types of user fees paid by different vehicle classes. Much of this data is DMV's.
 - Identify weight- and non-weight related activity categories in Asset Management's needs-based maintenance budgets
 - Focus on state-maintained highways

Study Plan, cont.

- Use of maintenance budgets best captures infrastructure condition
- Key part of the study is to obtain vehicle operating weight data and link it to registered weight, number of axles, and axle configuration
- Operating weights are more predictive than registered weights in assessing maintenance impacts of vehicle classes

Study Plan, cont.

- Convene and regularly brief stakeholder panel with broad industry representation (e.g., trucking and coal associations, petroleum and convenience association)
- Interim report: September, 2007
- Final report: December, 2007

Study Staffing

- Co-leads: Amy O’Leary, Ph.D. (VTRC) and Ken Jennings (DMV)
- Brian Diefenderfer, Ph.D., P.E.; Jose Gomez, Ph.D., P.E.; Michael Brown, Ph.D, P.E.; Dan Roosevelt, Audrey Moruza and Jim Gillespie (VTRC)
- E. Cris Andersen (VDOT Culpeper District)
- VDOT Staff from Asset Management, Materials and Bridge Divisions



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