
SECTION 1

Literature Search



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Task 1 – Literature Search

This section describes the findings of the literature search on a national basis for studies that have been previously conducted regarding the potential economic, safety, and infrastructure impacts of vehicles carrying loads comparable in size, weight, and other characteristics to non-divisible loads of two or more precast concrete panels. The literature search considered studies that pertain to determining the impact of permitting extra-legal weight vehicles on state highways.

The Comprehensive Truck Size and Weight (TS&W) Study prepared for the U.S. Department of Transportation, Federal Highway Administration in 1995 was reviewed and is very comprehensive in terms of scope and breadth. The objectives of the TS&W study included evaluation of the impacts associated alternative configurations of different truck size and weight loads. Impact areas associated with truck configurations of different sizes and weights that are relevant to this study included safety, infrastructure, environment, and economic performance.

Also reviewed was the Federal Highway Cost Allocation Study of 1997 (HCAS). The TS&W study uses the analytical models developed for the HCAS to estimate the impacts of different truck size and weight scenarios on infrastructure, environmental, and other costs. The primary objective of the HCAS was to analyze highway-related costs attributable to different highway users.

Electronic databases including TRIS and NTIS were searched for papers and reports that are relevant to the study of nondivisible loads. The results of the literature search is organized by the following categories:

- Truck Weight and Relationship to Fatigue
- Relationship of Truck Weight to Costs, Economics
- Divisible Loads, Permit Loads

- Truck Weight and Relationship to Rating
- Truck Weight and Relationship to Environment

The results of the literature search are contained in Appendices 1A-E . Each category has a summary of citations at the beginning followed by the abstracts for all citations. The summary is sorted in reverse chronological order. Each citation has been given an identifying tag. Generally the tag is a combination of the author's name and year of publication. When there is no author, the first word of the title is used. The abstracts are sorted in alphabetical order of the identifying tags. The abstracts offer detailed information on the contents, lengths, and publishers of the documents.