

# **129,000 POUND PILOT PROJECT**

REPORT TO THE 62<sup>nd</sup> IDAHO STATE LEGISLATURE



**JANUARY 2013**

## EXECUTIVE SUMMARY

In 2003, the Idaho Legislature passed House Bill 395, which created a pilot project to test the effect of increasing the legal truck weights on State Highways. Trucks configured to increase gross vehicle weight (GVW) from 105,500 pounds to 129,000 pounds were permitted on 16 specified routes. In 2005 and 2007, an additional 19 routes were included for a total of 35 specified routes. At the time the Idaho pilot project began, four states that border Idaho (Montana, Utah, Nevada and Wyoming) already permitted trucks with gross vehicles weights greater than 105,500 pounds.

The Idaho Transportation Department (ITD) was tasked with studying the impacts of the pilot project on roadway safety, bridges, and pavement, and reporting to the Legislature every three years. Previous reports were submitted to the Legislature in 2007 and 2010. This is the final report of ITD's observations over the 10 years of the pilot project.

Between fiscal years 2004 and 2012, there were 264,169 pilot project trips made by 1,359 trucks from 127 different shipping companies. The main commodities hauled were sugar beets, hazardous waste, aggregates, agricultural feed, coal, and hay.



ITD did not observe any significant effect of the 129,000 pound pilot project trucks on pavements, bridges, or roadway safety. Project participants have reported economic benefits associated with this pilot project. Amalgamated Sugar Company estimated that they saved over \$2.5 million during the pilot project. US Ecology, Inc. estimated that they had a 6% reduction in the number of trips per year amounting to an estimated total of 7,800 loads since 2004 using pilot project trucks. Their estimated savings from trip reductions has been \$70,000-\$180,000 per year.



# 129,000 POUND PILOT PROJECT

## BACKGROUND

For years, the trucking industry has requested that the Legislature increase the maximum allowable gross vehicle weight on State routes. They asserted that this weight increase would reduce the number of trips, therefore reducing costs.

House Bill 623 established the first 129,000 pound pilot project in 1998, allowing 129,000 pound gross vehicle weight trucks on two State routes. It ran from 1998-2001, but because of very limited participation, the results of industry savings or effect on pavements, bridges, or safety were inconclusive. The trucking industry reported that because of the limited routes and short project time frame, it was not economically feasible to purchase specialized vehicles or convert any of their current fleet.

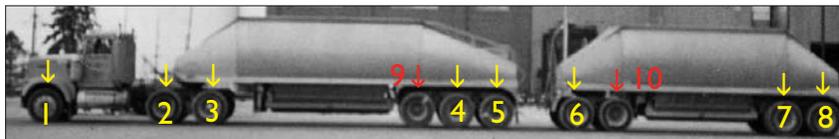
In 2003, the Idaho Legislature reestablished the 129,000 pound pilot project program with the passing of House Bill 395. The bill established a new 10-year study similar to the one implemented in 1998, providing haulers the option to transport heavier loads (up to a GVW of 129,000 pounds) if they purchased a special permit from ITD and used trucks specifically configured to carry the extra weight (see Figure 1 for typical truck configuration). The bill also granted local public highway agencies the authority to allow or disallow the pilot project vehicles on roads in their jurisdiction. Additional routes were added in 2005 (House Bill 146) and 2007 (Senate Bills 1138 and 1180), for a total of 35 designated routes. Senate Bill 1390 in 2008 revised the descriptions of some of the routes for clarification.

House Bill 395 directed the Idaho Transportation Department to “report to the Legislature on the effect of the pilot project program. The Department shall report on the results of its monitoring and evaluation of all important impacts, including impacts to safety, bridges, and pavement on all the State pilot project routes designated.” As required, previous reports were submitted to the Legislature in 2007 and 2010. This report is the final report including all observations over the past 10 years.

FIGURE 1



Typical truck configured for 105,500 pounds GVW. (8 axles)



Pilot project truck configured for 105,500 to 129,000 pounds GVW. (10 axles)

## NATIONAL RESEARCH

The National Cooperative Highway Research Program (NCHRP) developed a Directory of Significant Truck Size and Weight Research under NCHRP Project 20-07, Task 303 to provide a brief, well organized summary of significant research related to large truck size and weight for use by decision-makers. The Directory was published in October, 2011. This research generated some pertinent information on pavements, bridges, and safety summarized below.

For pavements, axle weight is a more significant determinant of pavement damage than gross vehicle weight. Truck weight limits that allow a higher GVW distributed over more axles do not necessarily lead to higher pavement costs and can even produce savings. Pavement damage typically varies by design/road classification; the same weight vehicle will do exponentially more damage to a rural road than an interstate highway.

For bridges, proposed increases to truck size and weight limits are consistently predicted to increase infrastructure costs. The number of axles on a truck has little impact on bridges; bridge stress is affected more by the total amount of load than by the number of axles. Bridge stress generally increases with axle group weight and, except on some continuous bridges with long spans, generally decreases with the separating distance.

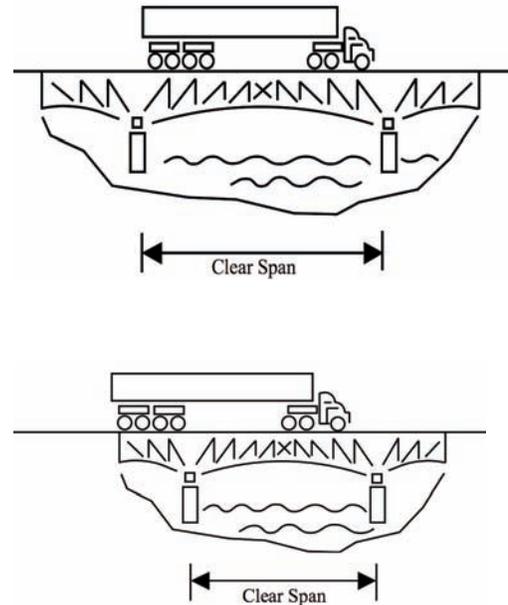
Regarding safety, with some consistency, heavier trucks were associated with less crashes due to fewer trucks needed, but higher crash severity. Oversized, overweight trucks were observed to have slightly higher crash rates due to vehicle handling and stability characteristics. Overall, results relating to truck configuration are inconclusive.

At the time the Idaho pilot project began, four states that border Idaho already permitted trucks with gross vehicle weights greater than 105,500 pounds. Because none of these states have changed their weight policies in many years, it is an indication that they do not consider the heavier trucks to be detrimental. Montana, Utah and Nevada allow gross weights of 129,000 pounds or higher using Federal Bridge Formula B. Wyoming allows 117,000 pounds on Interstate highways and higher gross weights for non-interstate routes. Federal Bridge Formula B is used to determine maximum axle weights and groups of axle weights as well as gross weight. These weight calculations are determined by the number of axles and the axle spacing of the vehicle configuration.

## ECONOMIC IMPACT

House Bill 395, which established the 129,000 pound pilot project in 2003 contained the following in its Statement of Purpose:

“Idaho's sugar beet, potato, wheat and grain, milk and phosphate industries have identified a small number of state highways in southwest, south-central and southeastern Idaho that they would use if selected as test routes under the new pilot project that this bill creates. These industries calcu-



late that over the 10 year life of the new pilot project they will save millions of dollars in transportation costs because heavier trucks substantially reduce the total number of truck trips necessary to transport their commodities. Because the routes in the bill will be used by these industries, the data necessary to fully evaluate the use of 129,000 pound trucks can finally be obtained.”

In order to determine how the pilot project has impacted industry, we looked at studies from other states and we received statements from the companies who have had the greatest participation in the pilot project.

According to the *Directory of Significant Truck Size and Weight Research*, increased truck size and weight limits consistently result in industry cost savings and the magnitude of industry cost savings varies by carrier type, the nature of transportation services offered, and typical commodities transported. Estimated industry cost savings — attributable to increased truck size and weight limits and subsequent use of alternative configurations — generally range from 1.4 to 11.4 percent of annual transport costs in the United States.

In a study titled *Infrastructure and Economic Impacts of Changes in Truck Weight Regulations in Montana* published by Montana State University in [Transportation Research Record 1653](#), the authors note:

“The infrastructure costs ... are but one way in which truck weight limits affect the state’s economy. The other economic effect, usually not addressed in truck size and weight studies, is the effect on economic productivity and its consequences.”

The Montana study also states “An increase in maximum GVW has a positive impact on the state’s economy.”

In Idaho, US Ecology, Incorporated (USEI) reported a 3% reduction in costs per year by reducing the number of trips and increasing the payload transported per load from 66,000 pounds to 78,000 pounds, while at the same time slightly reducing average axle weights. They estimate an approximate 6% reduction in the total number of trips per year amounting to an estimated total of 7,800 loads since 2004 using pilot project trucks. Their estimated savings from trip reductions has been \$70,000-\$180,000 per year. They also realized a large indirect benefit when the Mountain Home Highway District (MHHD) authorized pilot project trucks on roads under its jurisdiction in 2004. This provided an opportunity for USEI to partner with MHHD and the J.R. Simplot Company to pave Simco Road near their rail transfer facility in Elmore County. USEI was then able to bypass the city of Mountain Home and reduce truck-miles traveled, thereby reducing their costs. USEI has estimated their annual savings from paving Simco road to be \$1M – \$2.1M per year depending on their yearly volume.

The Amalgamated Sugar Company, LLC uses Transystems, Inc. to haul their sugar beets. They reported a total three-year savings of \$289,573 for the first three years of the pilot project (2004-2006); a yearly savings between \$250,000 and \$350,000 for each year from 2007-2009; and a savings of over \$450,000 for each year from 2010-2012. They reported that tonnage hauled on pilot project routes has increased from roughly three-quarters of a million tons each year to over 1.3 million tons over the course of the ten years. In the 2011-2012 crop year they reported an estimated 6,212 round trips reduced and an estimated 54,855 gallons of diesel fuel saved through use of pilot project trucks.



Burns Concrete 11-axle bulk cement powder transfer truck for pilot program routes.



Burns Concrete 10-axle aggregate transfer truck and trailer for pilot program routes.



Burns Concrete 5-axle truck and 5-axle pup for pilot program routes.

Several of the industries noted in the Statement of Purpose for House Bill 395 have not been able to participate in the pilot project because the inability to use Interstate Highway routes has limited connectivity to important destinations for these industries. Without the connectivity, they cannot achieve sufficient cost savings to justify the cost of acquiring new trucks or converting existing trucks to be able to haul the additional weight.

## DATA COLLECTION

### Trips

As a condition of their permit, trucking companies were required to enter into a database the commodity, trip date, origin, destination, and routes traveled for each pilot project load hauled. They entered the information via an online data collection form within 30 days of the trip. Descriptive statistics on this data is presented in Appendix B. During the first three years of the pilot project, trucking companies were sent questionnaires aimed at determining strengths and weaknesses of the program.

### Safety

The Office of Highway Safety continuously compiles crash data in an effort to identify disproportionately dangerous road segments and to track improvements in safety. Crashes are separated into categories of