



# 129,000 Pound Evaluation of US-91

## M.P. 77.89 to M.P 80.00

(Case #201640US91)

### Executive Summary

WinCo Foods submitted a request for 129,000 pound trucking approval on US-91 between mile post (MP) 77.89 (Alameda Road) and MP 80.00 (I-86) for transportation of dry and perishable grocery items to their Pocatello store. The request projects up to approximately 500 - 550 trips annually which is a 20-25% reduction from current operations. The requested section of US-91 is designated as a red route and as such all trucks must adhere to the 6.5-foot off-track and 115-foot overall vehicle length criteria. ITD Bridge Section confirms the three bridges on the route will safely support 129,000 pound vehicles. District 5 analysis shows this section of road as an urban principal arterial in good condition with no deficiencies. The Department's Materials Section evaluation shows that increased vehicle weight with a corresponding increased number of axles will reduce loads per axle compared to 80,000 or 105,500 pound vehicles and thereby produce lower loads on the road surface and subsurface resulting in equal or lesser damage. The Office of Highway Safety analysis shows this section of US-91 has five Non-Interstate High Accident Intersection Locations (HAL) and has five HAL clusters. Department of Motor Vehicles, Materials Section, Highway Safety, Bridge Asset Management and District 5 all recommend proceeding with this request.

### Detailed Analysis

#### **Department of Motor Vehicles (DMV) Review**

All Idaho Transportation Department routes are currently categorized by their ability to handle various extra-length vehicle combinations and their off-tracking allowances. The categories used when considering allowing vehicle combinations to carry increased axle weights above 105,500 pounds and up to 129,000 pounds are:

- Blue routes at 95 foot overall vehicle length and a 5.50-foot off-track
- Red routes at 115 foot overall vehicle length and a 6.50-foot off-track.

Off-tracking is the turning radius of the vehicle combination, which assists in keeping them safely in their lane of travel. Off-tracking occurs because the rear wheels of trailer trucks do not pivot, and therefore will not follow the same path as the front wheels. The greater the distance between the front wheels and the rear wheels of the vehicle, the greater the amount of off-track. The DMV confirms that the requested routes falls under one of the above categories and meets all length and off-tracking requirements for that route. **More specifically, the requested section of US-91 from milepost 77.89 to 80.00 is designated as a red route and as such all trucks must adhere to the 6.5-foot off-track and 115-foot overall vehicle length criteria.**

## Bridge Review

Bridges on all publicly owned routes in Idaho, with the exception of those meeting specific criteria, are inspected every two years at a minimum to ensure they can safely accommodate vehicles. A variety of inspections may be performed including routine inspections, in-depth inspections, underwater inspections, and complex bridge inspections. All are done to track the current condition of a bridge and make repairs if needed.

When determining the truck-carrying capacity of a bridge, consideration is given to the types of vehicles that routinely use the bridge and the condition of the bridge. Load limits may be placed on a bridge if, through engineering analysis, it is determined the bridge cannot carry legal truck loads.

ITD Bridge Asset Management has reviewed the **three bridges** pertaining to this request and has determined they will safely support the 129,000-pound truck load, provided the truck's axle configuration conforms to legal requirements. To review load rating data for each of the bridges, see the Bridge Data chart below.

## Materials Section Review

The Idaho Transportation Department's 129,000 pound pilot project report to the Idaho State Legislature in 2013 states, "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." Based on the increased number of axles required for 129,000 pound vehicles to maintain legal axle weights, the equivalent single axle loads (ESAL) for 129,000 pound vehicles are lower than for 80,000 pound and 105,500 pound vehicles. The implementation of the 129,000 pound configuration also reduces the number of truck trips compared to performing the same work with 80,000 or 105,000 pound trucks. The reduction in truck traffic further reduces the pavement wear. Therefore, for this section of roadway, our assessment is the increased vehicle weight with a corresponding increased number of axles will reduce loads per axle compared to 80,000 or 105,500 pound vehicles and thereby produce lower loads on the road surface and subsurface resulting in equal or lesser damage.

## ITD District 5 Evaluation

This segment has been evaluated and the District recommends proceeding.

District Five has evaluated the roadway characteristics, pavement condition, and traffic volumes on US-91 between MP 77.89 - 80.00 in response to the request to make this segment a 129,000-pound trucking route. The District has found no concerns with this action and recommends proceeding. Details of the evaluation are provided below.

## Roadway Characteristics

This section of road is an urban principal arterial from MP 77.89 – 80.00. The roadway geometry is outlined in the table below.

**Table 1. US-91 Roadway Geometry**

	THROUGH LANES	TWO-WAY LEFT TURN LANE (TWLTL)	SHOULDER	PARKING LANE
<b>MP 77.89 – 79.66</b>	4 – 2 each direction	Yes	No	No
	12'	14'	Curb	-
<b>MP 79.66 – 80.00</b>	6 – 3 each direction	Yes	No	No
	12'	14'	Curb	-

**Pavement Condition**

The road is asphalt and concrete pavement and is in good condition and is not deficient in cracking, roughness, or ruts. The section from MP 77.89 – 78.76 was reconstructed in 2014. The section from MP 78.76 – 79.66 was rehabilitated in 2016. The section from MP 79.66 – 80.00 was reconstructed and widened in 2013. Spring breakup limits do not pertain to this section at this time.

**Table 2. 2015 TAMS Visual Survey Data**

MP	MP	PAVEMENT TYPE	DEFICIENT (YES/NO)	CONDITION STATE	CRACKING INDEX	ROUGHNESS INDEX	RUT AVERAGE (IN)
77.890	78.209	Flexible	No	Good	5.0	2.31	0.00
77.209	78.800	Flexible	No	Good	5.0	2.41	0.00
78.800	79.360	Rigid	No	Good	5.0	1.65	0.07
79.360	79.690	Flexible	No	Good	5.0	2.22	0.00
79.960	79.912	Flexible	No	Good	5.0	2.31	0.16
79.912	80.000	Rigid	No	Good	5.0	1.72	0.00

**Traffic Volumes**

The speed limit of the highway is 35 mph. There are various stop lights in this segment. The traffic volumes are provided below.

**Table 3. 2015 Traffic Volumes**

MP	MP	AADT	CAADT	% TRUCKS
77.890	78.209	23082	330	1.40
77.209	78.800	24787	440	1.77
78.800	79.360	21848	493	2.26
79.360	79.690	21706	493	2.27
79.960	79.912	29628	650	2.20
79.912	80.000	14644	426	2.90

**Truck Ramps**

No runaway truck ramps exist due to the fact that is in city, speed is low, and no steep grades.

**Port of Entry (POE)**

The POE maintains no rover sites on this section of highway. There is no monitoring site on I-86. There is monitoring at the Inkom POE site for vehicles using Interstate 15 toward Utah.

## Highway Safety Evaluation

This US-91 segment has five Non-Interstate High Accident Intersection Locations (HALs) and has five HAL Clusters. The locations are shown in the table below with their statewide ranking.

Analyses of the 5-year accident data (2011-2015) shows there were a total of 423 crashes involving 889 units (0 fatalities and 237 Injuries) on US-91 between MP 77.89 and MP 79.912 of which only 7 crashes involved tractor-trailer combinations. Of the crashes involving tractor trailers, the most prevalent contributing circumstances were improper turn and improper lane change. No injuries and no fatalities resulted from the crashes with tractor trailers. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.

Table of HAL Segments US-91:

Route	Statewide Rank	Milepost Range	Length (miles)	County
US 91	23.5	77.89	Intersection	Bannock
US 91	35	79.912	Intersection	Bannock
US 91	89	78.865	Intersection	Bannock
US 91	138	78.414	Intersection	Bannock
US 91	214	78.183	Intersection	Bannock
US 91	9	79.690-79.912	0.222	Bannock
US 91	70	77.890-78.183	0.293	Bannock
US 91	77	78.890-78.819	0.133	Bannock
US 91	159	78.813-78.414	0.231	Bannock
US 91	165	78.414-78.686	0.272	Bannock

**Additional Data:*****Bridge Data:***

**Route Number:** US 91  
**Department:** Bridge Asset Management  
**Date:** 12/8/2016

<b>Route</b>	<b>From:</b>	Alameda Rd
	<b>Milepost:</b>	77.89
	<b>To:</b>	I-86
	<b>Milepost:</b>	80.00

<b>Highway Number</b>	<b>Milepost Marker</b>	<b>Bridge Key</b>	<b>121 Rating<sup>a</sup> (lbs)</b>
91	79.16	17490	256,000
91	79.91	17496	258,000
91	79.91	17498	260,000

<sup>a</sup>: The bridge is adequate if it has a rating value greater than 121,000 pounds or is designated as "OK EJ" (okay by engineering judgment).