



129,000 Pound Evaluation of US-91 M.P. 9.21 to M.P 42.54 (Case #201638US91)

Executive Summary

Pocock Trucking submitted a request for 129,000 pound trucking approval on US-91 between mile post (MP) 9.21 (Preston) and MP 42.54 (I-86) for transportation of feed, fertilizer and farm commodities. The original request was from the Utah border to MP 42.54; however, the section from Utah to Preston was a previously approved highway. The request projects up to 30 trips annually which is a 15-20% 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 five bridges on the route will safely support 129,000 pound vehicles. District 5 analysis shows this section of road as a rural minor arterial in fair to good condition with no deficient sections. 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 no Non-Interstate High Accident Intersection Locations (HAL) and has no 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 9.207 to 42.54 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 **five 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 milepost 9.21- 42.54 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 a rural minor arterial from MP 9.21 – 42.54. 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
MP 9.21 – 42.54	2 – 1 each direction	No (Turn bays are present with some passing lanes)	Yes	No
	12'	-	Varies 5' – 6'	-

Pavement Condition

The road is asphalt pavement and is in good to fair condition with no deficient sections. Sections of this route have received multiple seal coats and other rehabilitations over the past 5 years. The entire section will be seal coated in 2017. 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)
9.215	13.283	Flexible	No	Fair	2.60	2.63	0.16
13.283	13.782	Flexible	No	Fair	3.00	3.53	0.07
13.782	14.406	Flexible	No	Good	4.90	3.37	0.10
14.406	14.652	Flexible	No	Good	4.70	3.68	0.12
14.746	14.971	Flexible	No	Fair	2.70	3.04	0.14
14.971	21.828	Flexible	No	Fair	2.60	3.50	0.13
21.828	29.697	Flexible	No	Good	3.60	3.62	0.11
29.697	30.078	Flexible	No	Fair	3.10	2.55	0.12
30.078	30.642	Flexible	No	Fair	3.10	2.53	0.10
30.642	34.668	Flexible	No	Good	3.10	3.70	0.12
34.668	37.075	Flexible	No	Fair	2.50	3.77	0.15
37.075	42.539	Flexible	No	Good	4.70	4.18	0.12

Traffic Volumes

The speed limit of the highway is 25 - 65 mph. There are stop lights located in Preston. The traffic volumes are provided below.

Table 3. 2016 Traffic Volumes

MP	MP	AADT	CAADT	% TRUCKS
9.210	13.283	2437	210	9
13.283	13.782	1700	210	12
13.782	14.406	1700	210	12
14.406	14.652	1700	210	12
14.746	14.971	1700	210	12
14.971	21.828	1615	210	13
21.828	29.697	1492	201	13
29.697	30.078	1500	200	13
30.078	30.642	1680	209	12
30.642	34.668	1731	225	13
34.668	37.075	1831	266	15
37.075	42.539	1875	273	15

Truck Ramps

No runaway truck ramps exist. There are passing lanes and other passing opportunities on the steeper grades.

Port of Entry (POE)

The POE maintains various rover sites on this section of highway.

1. Franklin Area – Approximately at MP 0.70
2. Preston Area – Various Locations

There is also monitoring at the Inkom POE site for vehicles using Interstate 15 toward Utah.

Highway Safety Evaluation

This US 91 segment has no Non-Interstate High Accident Intersection Locations (HALs) and has no HAL Clusters.

Analyses of the 5-year accident data (2011-2015) shows there were a total of 227 crashes involving 334 units (5 fatalities and 144 Injuries) on US 91 between MP 9.21 and MP 42.54 of which only 8 crashes involved tractor-trailer combinations. Of the crashes involving tractor trailers, the most prevalent contributing circumstance was failure to maintain lane. Five 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.

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

Route Number: US 91
Department: Bridge Asset Management
Date: 11/3/2016

Route	From:	Preston, ID
	Milepost:	9.21
	To:	Junction of I-15
	Milepost:	42.54

Highway Number	Milepost Marker	Bridge Key	121 Rating^a (lbs)
91	12.63	17466	316,000
91	13.61	17471	OK EJ
91	18.45	17475	358,000
91	29.99	17481	274,000
91	42.42	17485	174,000

^a: 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).