



129,000 Pound Evaluation of I-86BL

M.P. 4.08 to M.P. 4.61

M.P. 100.26 to M.P. 101.87

(Case #201630I86BL)

Executive Summary

K/K Transportation submitted a request for 129,000 pound trucking approval on I-86 Business Loop (BL) in American Falls between mile post (MP) 4.08 and MP 4.61 and MP 100.26 to MP 101.87 for transportation of liquid fertilizer. This route connects I-86 to SH-39. The request projects up to 120 trips annually which is a 15-20% reduction from current operations. The requested section of I-86BL 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 two 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 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 I-86BL has one 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 I-86BL from milepost 100.26 to 101.87 and 4.08 to 4.61 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 **two 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 5 has evaluated the roadway characteristics, pavement condition, and traffic volumes on I-86B between milepost 100.26 – 101.87 and 4.08 – 4.61 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 100.26 – 101.87 and 4.08 – 4.61. The roadway geometry is outlined in the table below.

Table 1. I-86B Roadway Geometry

	THROUGH LANES	TWO-WAY LEFT TURN LANE (TWLTL)	SHOULDER	PARKING LANE
MP 100.26 – 101.81	2 – 1 each direction	No (Turn bays are present)	Yes	No
	12'	-	3 - 4'	-
MP 4.08-4.61	2 – 1 each direction	Yes	Yes	No
	12'	14'	7'	-

Pavement Condition

The road is asphalt pavement and is in fair condition and is not deficient in cracking, roughness, or ruts. MP 4.08-4.61 was newly constructed in 2011, while the other section was new in 1992. The entire section had a seal coat in 2011. Another seal coat is scheduled for 2021. Spring breakup limits do not pertain to this section at this time.

Table 2. 2015 TAMS Visual Survey Data

	PAVEMENT TYPE	DEFICIENT (YES/NO)	CONDITION STATE	CRACKING INDEX	ROUGHNESS INDEX	RUT AVERAGE (IN)
MP 100.26 – 101.81	Flexible	No	Fair	4.7	2.68	0.20
MP 4.08 – 4.61	Flexible	No	Good	5.0	3.54	0.09

Traffic Volumes

The speed limit of the highway is 45 - 55 mph. There is no stop lights in this segment. The traffic volumes are provided below.

Table 3. 2016 Traffic Volumes

	AADT	CAADT	% TRUCKS
MP 100.26 – 101.81	3,240	730	22
MP 4.08 – 4.61	4,630	740	16

Truck Ramps

Due to the flat nature of this segment, no runaway truck ramps exist.

Port of Entry (POE)

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

Highway Safety Evaluation

This US-86BL segment has one Non-Interstate High Accident Intersection Location (HALs) at the intersection with Fort Hall Ave and has no HAL Clusters. The location is shown in the table below with its statewide ranking.

Analyses of the 5-year accident data (2011-2015) shows there were a total of 26 crashes involving 51 units (1 fatality and 17 Injuries) on I-86BL of which only 4 crashes involved tractor-trailer combinations.

Three injuries and the one fatality 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-86BL:

Route	Statewide Rank	Milepost Range	Length (miles)	County
I-86BL	77	101.15	Intersection	Power

Additional Data:

Bridge Data:

Route Number: I 86B
Department: Bridge Asset Management
Date: 11/3/2016

Route	From:	American Falls, ID
	Milepost:	100.26
	To:	American Falls, ID
	Milepost:	101.870

Highway Number	Milepost Marker	Bridge Key	121 Rating ^a (lbs)
I-86B	100.96	14138	256,000
I-86B	4.52	10926	246,000

^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).