



129,000 Pound Evaluation of SH-39 M.P. 1.72 to M.P 52.92 (Case #201629HS39)

Executive Summary

Transystems, L.L.C. submitted a request for 129,000 pound trucking approval on State Highway (SH)-39 between mile post (MP) 1.72 and MP 52.92 for transportation of feed, fertilizer and farm commodities. The request projects up to 30 trips annually which is a 15-25% reduction from current operations. This section of US-26 is coded a "Red Route," where vehicles with 115-foot overall length and 6.5-foot off-track are authorized. ITD Bridge Section confirms the 16 bridges on the route will safely support 129,000 pound vehicles. District 5's evaluation shows the roadway is mostly rated good to fair condition with seven deficient sections of highway (21% of the route) based on cracking, roughness or rutting. Projects are scheduled in 2018 and 2020 to address the deficiencies. The Office of Highway Safety analysis shows this section of SH-39 has one Non-Interstate High Accident Intersection Location (HAL) at the intersection with US-26 and has ten HAL Clusters with details provided below. Department of Motor Vehicles, District 5, Materials Section, Highway Safety and Bridge Asset Management 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 route falls under one of the above categories and meets all length and off-tracking requirements for that route. **More specifically, the requested section of SH-39 from milepost 1.72 to 52.92 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 **16 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

Appendix D of AASHTO Guide for Design of Pavement Structures, American Association of State Highway and Transportation Officials, Washington, D.C., 1993, shows that 129,000 pound trucks with various axle configurations and varying pavement structural conditions have truck factors that range from about 2.4 to around 4.0. 105,500 pound trucks currently approved for this route have truck factors that range from about 1.7 to about 2.3 under the same pavement structural conditions. Although the truck factor for 129,000 pound trucks is 1.5 to 2 times that of the permitted 105,500 pound trucks, they are equal to or less than the standard 18-wheel 80,000 pound truck that the pavement was designed to carry. Most of this section of SH-39 is in good to fair condition and permitting the number of 129,000 pound trucks requested will not have a significant effect on the life of the pavement.

District Evaluation

This segment has been evaluated and the District recommends proceeding.

District Five has evaluated the roadway characteristics, pavement condition, and traffic volumes on SH-39 between milepost 1.72 and 52.92 in response to the request to make this segment a 129,000-pound trucking route to service Transystems. 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 1.72 – 49.12 and an urban principle arterial from MP 49.12 – 52.92. The roadway geometry is outlined in the table below.

Table 1. SH-39 Roadway Geometry

MILEPOST	THROUGH LANES	TWO-WAY LEFT TURN LANE (TWLTL)	SHOULDER	PARKING LANE
1.72 – 3.15	4 – 2 each direction	No	No	No
	12'	-	-	-
3.15 – 15.70	2 – 1 each direction	No	Yes	No
	12'	-	6'	-
15.70 – 16.28	4 – 2 each direction	Yes	No	Yes
	12'	14'	-	10'
16.28 – 44.00	2 – 1 each direction	No	Yes	No
	12'	-	6'	-
44.00 – 44.50	2 – 1 each direction	Yes	Yes	No
	12'	12'	6'	-
44.50 – 49.21	2 – 1 each direction	No	Yes	No
	12'	-	6'	-
49.21 – 49.57	4 – 2 each direction	No	Yes	No
	12'	-	6'	-
49.57 – 52.70	2 - 1 each direction	No	Yes	No
	12'	-	6'	-
52.70 – 52.92	4 – 2 each direction	No	Yes	No
	12'	-	6'	-

Pavement Condition

The road is asphalt pavement and is in good to poor condition and is deficient in cracking, roughness, or ruts in some areas (21%). The areas that are in poor condition or deficient do have projects scheduled in the next few years to correct these conditions:

- MP 1.72 – 10.962 is scheduled for an overlay in 2018
- MP 39.886 – 44.730 is scheduled for a mill and inlay in 2020
- MP 49.00 – 51.00 is scheduled to be widened in 2018
- The Peoples Canal Bridge at MP 45.4 is scheduled for replacement in 2018

In 2021 roadway sections in Power County will be seal coated and in 2022 roadway sections in Bingham County will be seal coated. Spring breakup limits do not pertain to this section at this time.

Table 1. 2015 TAMS Visual Survey Data

MILEPOST	DIRECTION	DEFICIENT* (YES/NO)	CONDITION* STATE
2.040 – 2.800	Asc.	Yes	Poor
2.800 – 3.153	Asc.	No	Good
1.720 – 2.040	Both	Yes	Poor
3.153 - 3.280	Both	No	Good
3.280 – 8.200	Both	No	Fair
8.200 – 10.962	Both	Yes	Poor
10.962 – 15.188	Both	No	Good
15.188 – 15.700	Both	Yes	Poor
15.700 – 16.282	Both	Yes	Poor
16.282 – 23.150	Both	No	Good
23.150 – 29.000	Both	Yes	Poor
29.000 – 36.200	Both	No	Fair
36.200 – 52.714	Both	No	Good
52.714 – 52.924	Both	Yes	Very Poor

*Based upon Cracking, ride and rutting.

Traffic Volumes

The speed limit of the highway varies from 40 - 65 mph. There are stop lights on the South end of the segment in the 40 mph area. The traffic volumes are provided below.

Table 2. 2015 Weighted Traffic Volumes

MILEPOST	AADT	CAADT	% TRUCKS
1.72 – 52.92	2320	380	16

Truck Ramps

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

Port of Entry (POE)

The POE maintains a rover site on this section of highway and conducts regular checks of the traffic.

Highway Safety Evaluation

This SH-39 segment has one Non-Interstate High Accident Intersection Location (HAL) at the intersection with US-26 and has ten HAL Clusters. The locations are shown in the table below with their statewide ranking.

Analyses of the 5-year accident data shows there were a total of 277 crashes involving 416 units (10 fatalities and 190 injuries) on SH-39 between MP 1.72 and MP 52.92 of which only 19 crashes involved tractor-trailer combinations. Of the crashes involving tractor trailers, the most prevalent contributing circumstances were inattention, driving left of center and improper turn. Eleven injuries and two fatalities are due to crashes with tractor trailers. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.

Table of HAL Segments SH-39:

Route	Statewide Rank	Milepost Range	Length (miles)	County
SH 39	177	52.924	Intersection	Bingham
SH 39	176	49.448 – 49.948	0.5	Bingham
SH 39	204	45.220 – 45.720	0.5	Bingham
SH 39	292.5	10.055 – 11.055	1.0	Bingham
SH 39	318	50.940 – 51.388	0.448	Bingham
SH 39	384.5	5.168 – 7.668	2.5	Power
SH 39	426.5	1.720 – 2.040	0.320	Power
SH 39	493	38.143 – 39.643	1.5	Bingham
SH 39	654	40.708 – 42.208	1.5	Bingham
SH 39	674	28.360 – 29.860	1.5	Bingham
SH 39	781	2.040 – 3.040	1.0	Power

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

Route Number: SH 39
Department: Bridge Asset Management
Date: 10/5/2016

Route	From:	American Falls, ID
	Milepost:	1.72
	To:	Blackfoot, ID
	Milepost:	52.920

Highway Number	Milepost Marker	Bridge Key	121
			Rating ^a (lbs)
I-86B	100.22	14140	208,000
39	2.85	14150	OK EJ
39	6.90	14154	OK EJ
39	6.91	14155	OK EJ
39	10.79	14160	216,000
39	12.98	14165	OK EJ
39	14.73	14170	216,000
39	16.41	14175	210,000
39	18.34	14180	214,000
39	24.71	14185	172,000
39	27.73	14190	190,000
39	28.44	14195	212,000
39	41.45	14200	202,000
39	45.40	14205	170,000
39	48.19	14210	OK EJ
39	51.44	14216	382,000

^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).