



129,000 Pound Evaluation of SH-16 M.P. 100.0 to M.P 113.9 (Case #201704SH16)

Executive Summary

Savage Services Corporation submitted a request for 129,000 pound trucking approval on SH-16 between milepost (MP) 100.0 at the intersection with SH-44 and MP 113.9 at the intersection with SH-52 for transportation of sand for metal castings. The request projects approximately 195-205 trips annually which is a 20-25% reduction from current operations. The requested section of SH-16 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 seven bridges on the route will safely support 129,000 pound vehicles. District 3 analysis shows this section of road as a principal arterial in good condition with one section, 0.8 miles in length, rated poor and deficient. The Office of Highway Safety analysis shows this section of SH-16 has two Non-Interstate High Accident Intersection Locations (HAL) and has no HAL clusters. Department of Motor Vehicles, Highway Safety, Bridge Asset Management and District 3 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 SH-16 from milepost 100.0 to 113.9 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 **seven 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.

ITD District 3 Evaluation

This segment has been evaluated and the District recommends proceeding.

District Three evaluated the roadway characteristics, pavement condition, and traffic volumes on SH-16 between MP 100.0 – MP 113.90 in response to the request to make this segment a 129,000-pound trucking route. The District has no concerns with approving SH-16 as a 129K pound trucking route.

Roadway Characteristics

This roadway is a rural principle arterial from MP 100.0 to MP 109.0 and an urban principle arterial from MP 109.0 to MP 113.9. There are some minor hills with a grade south of Emmett and several passing lanes along the requested section of highway. There is a short passing at the base of the grade for traffic traveling southbound and up the hill. There are three traffic signals on this section; one is at the bottom of a long grade. The roadway geometry from MP 100.0 – MP 113.90 is outlined in the table below.

Table 1. SH-16 Roadway Geometry

Mileposts		Lane Width (ft)	Terrain	Left Turn Lane Type	Right Turn Lane Type	Right Paved Shoulder Width (ft)	Parking
100.000	100.840	12.00	Flat	A single left turning bay/lane	None	6	No
100.840	103.800	12.00	Flat	A single left turning bay/lane	None	6	No
103.800	104.500	12.00	Rolling	None	None	6	No
104.500	105.400	12.00	Rolling	A single left turning bay/lane	A single right turning bay/lane	6	No
105.400	109.000	12.00	Rolling	A single left turning bay/lane	None	6	No
109.000	111.600	12.00	Rolling	A single left turning bay/lane	None	5	No
111.600	111.960	12.00	Rolling	A single left turning bay/lane	A single right turning bay/lane	5	No
111.960	112.300	12.00	Rolling	Multiple left turn lanes/bays	Multiple right turn lanes/bays	5	No
112.300	112.600	12.00	Flat	A single left turning bay/lane	A single right turning bay/lane	5	No
112.600	113.907	12.00	Flat	A single left turning bay/lane	A single right turning bay	3	No

Pavement Condition

The requested section of highway is asphalt and is in generally good condition with one section from MP 100.0 – 100.84 rated in poor condition and deficient for cracking. Spring breakup limits do not pertain to this section at this time.

Table 2. 2016 TAMS Visual Survey Data

Mileposts		Pavement Type	Deficient	Condition	Cracking Index	Roughness Index	Rut Average (in)
100.000	100.840	Flexible	Yes	Poor	2.20	3.70	0.07
100.840	103.800	Flexible	No	Good	4.90	4.12	0.09
103.800	104.500	Flexible	No	Good	4.90	3.75	0.08
104.500	105.400	Flexible	No	Good	4.90	3.83	0.09
105.400	109.000	Flexible	No	Good	4.90	3.75	0.10
109.000	111.600	Flexible	No	Good	4.90	3.73	0.06
111.600	111.960	Flexible	No	Good	4.90	3.92	0.08
111.960	112.300	Flexible	No	Good	4.90	3.60	0.07
112.300	112.600	Flexible	No	Good	4.90	3.61	0.08
112.600	113.907	Flexible	No	Good	5.00	4.08	0.09

Traffic Volumes

The speed limit of the highway varies between 35 and 65 mph. There are three stop lights in this segment. The traffic volumes are provided below. The route is made up of commuter, commercial and agricultural traffic.

Table 3. 2016 Traffic Volumes

Mileposts		AADT	CAADT	% TRUCKS
100.000	100.840	7800	600	8%
100.840	103.800	8057	544	7%
103.800	104.500	8700	420	5%
104.500	105.400	8700	420	5%
105.400	109.000	7657	420	5%
109.000	111.600	7584	420	6%
111.600	111.960	7800	420	5%
111.960	112.300	7800	420	5%
112.300	112.600	7766	420	5%
112.600	113.907	7545	434	6%

Truck Ramps

No runaway truck ramps exist.

Port of Entry (POE)

The POE does not maintain any rover sites on this section of highway.

Highway Safety Evaluation

This SH-16 section has two Non-Interstate High Accident Intersection Locations (HAL) in the top 100 and has no HAL clusters.

Analyses of the 5-year accident data (2012-2016) shows there were a total of 135 crashes involving 206 units (4 fatalities and 99 Injuries) on SH-16 between MP 100.0 to MP 113.91 (SH 44 to SH 52) of which only four crashes involved a tractor-trailer combination. The tractor trailer crashes involved contributing circumstances of inattention, failure to maintain lane, and improper backing. These crashes resulted in three injuries. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.

Table 4. SH-16 HALs an HAL Segments

Route	Statewide Rank	Milepost Range	Length (miles)	County
SH-16	37	100.0	Intersection	Ada
SH-16	87	102.035	Intersection	Ada

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

Route Number: SH 16
Department: Bridge Asset Management
Date: 7/12/2018

Route	From:	SH 44 Junction
	Milepost:	100.00
	To:	Emmett, ID
	Milepost:	113.90

Highway Number	Milepost Marker	Bridge Key	121 Rating^a (lbs)
16	100.65	12135	218,000
16	100.84	12140	366,000
16	101.21	12145	308,000
16	103.19	12150	228,000
16	106.37	12156	258,000
16	112.06	12160	280,000
16	112.93	12165	346,000

^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).