



# 129,000 Pound Evaluation of SH-81S MP 0.000 to MP 0.338 (Case #202004SH81S)

## Executive Summary

Transystem LLC. is requesting State Highway 81 Spur (SH-81S) be designated as a 129,000 Pound route. SH-81S is in District 4 between mile post (MP) 0.000 to MP 0.338 (Jct I-84/Yale Road) near Declo, ID (Map 1). The purpose is to transport of sugar beats from regional farms to the Amalgamted Sugar processing plant in Paul, ID. This request links SH-81 and I-84 between Malta, ID and Declo, ID., and reduces annual truck trips by 23%. District 4, Department of Motor Vehicles, Office of Highway Safety and Bridge Assesment Management all recommend proceeding with this request.

MAP 1. SH-81S



SH-81S is flat with no curvature and is coded a “Red Route,” where vehicles with 115 foot overall vehicle length and a 6.50-foot off-track. ITD Bridge Section confirms one (1) bridge on this route which safely supports vehicles weighting up to 129,000 pound. This section is considered to have a very poor surface condition due to cracking. The Commercial Average Annual Daily Traffic (CAADT) constitutes approximately 14% of the Average Annual Daily Traffic (AADT). This segment of SH-81S has no Non-Interstate High Accident Intersection Locations (HAL) and no HAL Clusters. There were no crashes involving involving tractor-trailer combination.

## 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. **Specifically, the requested section of SH-81S 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 bridge pertaining to this request and has determined it 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 this bridge, see the Bridge Data chart below.

*Table 1. SH-81S, Bridge Data*

<b>ROUTE</b>	<b>FROM:</b>	SH-81 / SH-81S Jct
	<b>MILE POST:</b>	0.000
	<b>TO:</b>	SH-81S / I-84 Jct
	<b>MILE POST:</b>	0.338

HIGHWAY NUMBER	MILE POST	BRIDGE KEY	121K RATING (lbs)
SH-81S	0.26	16625	262,000

\*The bridge is adequate if it has a rating value greater than 129,000 pounds or is designated as "OK EJ" (okay by engineering judgment).

### ITD District 4 Evaluation

District 4 has evaluated the roadway characteristics, pavement condition, and traffic volumes in response to the request. The District has found no concerns with this action and recommends proceeding.

## Roadway Characteristics

This section of road is a rural major collector passing through an agricultural areas. The speed limit on this section of road is 35 mph. The requested route connects SH-81 to I-84 at Exit 228 and Yale Road in Cassia County. SH-81 and I-84 are approved 129K routes.

**Table 2. SH-81S, Roadway Geometry**

MILE POST	THROUGH LANES	TWO-WAY LEFT TURN LANE (TWLTL)	SHOULDER	PARKING LANE
0.000 – 0.338	2 - 1 each direction	No	Graded	No
	12'			

## Pavement Condition

The road is mostly asphalt pavement with a short section of concrete comprised of the bridge deck on the I-84 Exit 228 interchange structure. TAMS data is unavailable for this section of SH-81S. TAMS data readings are dated 2013 with a rehabilitation overlay was last applied in 2014. Therefore, the TAMS condition data for this section of road is not an accurate representation of current road conditions. This section was last reconstructed in 1962;

**Table 3. SH-81S, TAMS Visual Survey Data**

MILE POST	PAVEMENT TYPE	DEFICIENT (YES/NO)	CONDITION STATE	CRACKING INDEX	ROUGHNESS INDEX	RUT AVERAGE (IN)
0.000 – 0.338	Flexible	No	Fair	None	None	None

## Traffic Volumes

**Table 4. SH-81S, Traffic Volumes**

MILE POST	AADT	CAADT	% TRUCKS
0.000 – 0.338	604	87	14%

## Truck Ramps

No runaway truck ramps exist. The route is flat.

## Port of Entry (POE)

There are no POE rover sites along this route. Along I-84, the Cotterell POE is located immediately south. Along SH-81, there is a roving POE site located south of the junction.

## Safety Review

### Crash Data

SH-81S has no Non-Interstate High Accident Intersection Location (HAL) and has no HAL Clusters.

Analyses of the 5-year accident data (2015-2019) shows there were no crashes on SH-81S. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.

**Table 5. SH-81S, HAL Segments**

ROUTE	STATEWIDE RANK	MILE POST	LENGTH (MILES)	COUNTY
None				

*Table 6. SH-81S, Climate Data*

PRECIPITATION	ANNUAL AVERAGE
Rainfall	10.6"
Snowfall	22.1"
Days w/ Precipitation	76.6
Days w/ Sun	217

There are no recorded road closres due to weather conditions.

## END EVALUATION