



129,000 Pound Evaluation of SH-69 MP 1.43 to MP 9.28 and MP 67.86 to MP 68.03 (Case #201802SH69)

Executive Summary

Idaho Materials and Construction submitted a request for 129,000 pound trucking approval on SH-69 between I-84 and N. Orchard Avenue in Kuna. While this is a single stretch of highway, it is defined using two distinct segment codes resulting in two sets of mileposts (MP). The applicable MPs are from N. Orchard Avenue at MP 1.43 to MP 9.28 and MP 67.86 to MP 68.03 at I-84. The requestor will transport asphalt and milling material associated with road construction. This section of SH-69 is designated a “red route” requiring all trucks to adhere to 6.5-foot off-track and 115-foot overall vehicle length criteria. ITD Bridge Section evaluated the eight bridges on the requested section of highway and confirms all are capable of supporting 129,000 pound vehicles. District 3 evaluation describes the route as asphalt pavement in good to fair condition with no deficient sections. The Office of Highway Safety analysis shows this section of SH-69 has four Non-Interstate High Accident Intersection Locations (HAL) and no HAL clusters. Division of Motor Vehicles, Bridge Asset Management, Office of Highway Safety 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 route falls under one of the above categories and meets all length and off-tracking requirements for that route. **More specifically, the requested sections of SH-69 from MP 1.43 to MP 9.28 and MP 67.86 to MP 68.03 are 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 Section 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 **eight** 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 approval.

District Three has evaluated the roadway characteristics, pavement condition, and traffic volumes on SH-69 between MP 1.43 – MP 68.03 in response to the request to make this segment a 129,000-pound trucking route to service Idaho Materials & Construction.

The basis of this request is to reduce the number of loads hauled during the duration a construction project between August and September of 2018. Details of the evaluation are provided below.

Roadway Characteristics

State Highway 69 is an 8 mile long rural arterial connecting the City of Kuna with the City of Meridian and Interstate 84. The requested section covers the entirety of SH-69 which is divided into two separate segment codes with noncontiguous mile posting.

The roadway is four lanes with a center turn bay that runs primarily through agricultural land. There are many housing developments built along the local roads intersecting SH-69. There are seven main intersections, six of which are signalized.

The road is primarily straight with one gradual corner posted with an advisory speed of 40 MPH. There are several short grades with no defined passing lanes due to the highway being four lanes wide. The grades are not of sufficient length or slope to warrant runaway truck escape ramps.

The roadway geometry is outlined in the table below.



Table 1. SH-69 Roadway Geometry

| MILEPOSTS | THROUGH LANES | TWO-WAY LEFT TURN LANE (TWLTL) | SHOULDER | PARKING LANE |
|-----------------|----------------------|--------------------------------|----------|--------------|
| 1.432 – 7.210 | 4 – 2 each direction | Yes | Yes | No |
| | 12' | 14' | 10' | - |
| 7.210 – 9.278 | 4 – 2 each direction | Yes | Yes | No |
| | 12' | 14' | 8' | - |
| 67.860 – 68.029 | 4 - 2 each direction | yes | Yes | No |
| | 12' | 14' | 2' - 3' | - |

Pavement Condition

The road is asphalt pavement and is in good to fair condition; it is not considered deficient in cracking, rutting or ride. Milepost 67.860 to 68.029 encompasses the new Interchange 44 on I-84 at Meridian.

Table 2. 2018 TAMS Visual Survey Data

| MILEPOSTS | PAVEMENT TYPE | DEFICIENT (YES/NO) | CONDITION STATE | CRACKING INDEX | ROUGHNESS INDEX | RUT AVERAGE (IN) |
|-----------------|---------------|--------------------|-----------------|----------------|-----------------|------------------|
| 1.432 – 7.210 | Flexible | No | Good | 3.5 | 3.37 | .22 |
| 7.210 – 9.278 | Flexible | No | Fair | 3.8 | 3.62 | .39 |
| 67.860 – 68.029 | Flexible | No | Good | 4.7 | 2.50 | .08 |

Traffic Volumes

The speed limit of the highway varies between 35 and 55 mph with six stop lights on this segment. The traffic is made up of light vehicle and local commercial traffic.

Table 3. 2016 Traffic Volumes

| MILEPOSTS | AADT | CAADT | % TRUCKS |
|-----------------|-------|-------|----------|
| 1.432 – 7.210 | 14283 | 476 | 3.3 |
| 7.210 – 9.278 | 24581 | 693 | 2.8 |
| 67.860 – 68.029 | 37000 | 650 | 1.7 |

Truck Ramps

No runaway truck ramps exist.

Port of Entry (POE)

There are no provisions for a roving P.O.E station.



Highway Safety Evaluation

This section of SH-69 has four HALs and has no HAL clusters.

Analyses of the 5-year accident data (2012-2016) shows there were a total of 373 crashes involving 766 units (2 fatalities and 243 injuries) on SH-69 between MP 1.43 to MP 68.034 (N. Orchard Road to I-84) of which nine crashes involved a tractor-trailer combination. Of the crashes involving tractor trailers, the contributing circumstances included vehicle defect and failure to maintain lane. The crashes involving tractor-trailers resulted in one injury and no fatalities. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.

Table 4. Table of HAL Segments – SH-69

| Route | Statewide Rank | Milepost Range | Length (miles) | County |
|-------|----------------|----------------|----------------|--------|
| SH 69 | 9 | 9.146 | Intersection | Ada |
| SH 69 | 44 | 8.141 | Intersection | Ada |
| SH 69 | 70.5 | 3.116 | Intersection | Ada |
| SH 69 | 89 | 6.131 | Intersection | Ada |





Additional Data:

Bridge Data:

Route Number: SH 69
Department: Bridge Asset Management
Date: 7/23/2018

| | | |
|--------------|------------------|---------------|
| Route | From: | Kuna, ID |
| | Milepost: | 1.43 |
| | To: | I-84 Junction |
| | Milepost: | 68.03 |

| Highway Number | Milepost Marker | Bridge Key | 121 Rating^a (lbs) |
|---------------------------|----------------------------|-----------------------|---|
| 69 | 2.26 | 15120 | 384,000 |
| 69 | 3.23 | 15125 | 244,000 |
| 69 | 4.57 | 15130 | 232,000 |
| 69 | 6.27 | 15135 | 263,800 |
| 69 | 8.07 | 15140 | 422,000 |
| 69 | 8.65 | 15145 | 334,000 |
| 69 | 9.24 | 15150 | 291,800 |
| 69 | 67.94 | 15156 | 212,000 |

^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).