



129,000 Pound Evaluation of SH-38

M.P. 0.0 to M.P. 0.69

M.P. 1.33 to M.P. 23.44

(Case #201701SH38)

Executive Summary

Mid Crystal Farms submitted a request for 129,000 pound trucking approval on SH-38 between milepost (MP) 0.0 (I-15 at Malad City) and MP 23.44 (Holbrook) for transportation of wheat. The request is broken into two sections since the section from MP 0.69 to MP 1.33 was previously approved through the 129K pound trucking pilot project. The request projects up to 130 trips annually which is a 15-20% reduction from current operations. The requested section of SH-38 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 there are no bridges on the route. District 5 analysis shows this section of road as a rural major collector which is in poor to fair condition with approximately 62% being rated as deficient for cracking or ruts. The section from MP 0.00 to MP 0.60 is scheduled for a mill and inlay in 2019. Other sections of the road are currently not programmed for improvements but, are continuously monitored. 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 SH-38 has no 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 SH-38 from following mileposts 0.00 to 0.69 and from mileposts 1.33 to 23.44 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 Review

ITD Bridge Asset Management confirms there are no bridges on this section of highway.

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 Five has evaluated the roadway characteristics, pavement condition, and traffic volumes on SH-38 between milepost 0.0 – 0.69 and 1.33 – 23.44 in response to the request to make this segment a 129,000-pound trucking route to service Mid Crystal Farms. 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 major collector from MP 0.00 – 23.44. The roadway geometry is outlined in the table below.

Table 1. SH-38 Roadway Geometry

| MILEPOSTS | THROUGH LANES | TWO-WAY LEFT TURN LANE (TWLTL) | SHOULDER | PARKING LANE |
|------------------------|----------------------|--------------------------------|----------|--------------|
| 0.00 – 0.322 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 6' | - |
| 0.322 – 0.623 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 6' | - |
| 0.623 – 0.690 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 6' | - |
| 1.33 – 6.310 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |
| 6.310 – 12.326 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |
| 12.326 – 14.567 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |

| | | | | |
|------------------------|----------------------|----|---------|----|
| 14.567 – 18.662 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |
| 18.662 – 22.547 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |
| 22.547 – 23.440 | 2 – 1 each direction | No | Yes | No |
| | 12' | - | 2' - 3' | - |

Pavement Condition

The road is asphalt pavement and is in fair to poor condition and sections are deficient in cracking or ruts but, not in ride. MP 0 - 0.690 was reconstructed in 1976 and has received multiple seal coats. MP 1.33 – 23.440 was reconstructed in 1999 and has received multiple seal coats. The most recent seal coat for all sections was completed during the summer of 2016. The section from 0.00 – 0.60 is scheduled for a mill and inlay in 2019. Other sections of the road are currently not programmed but, are continuously monitored. Spring breakup limits do not pertain to this section at this time.

Table 2. 2015 TAMS Visual Survey Data

| MILEPOSTS | PAVEMENT TYPE | DEFICIENT (YES/NO) | CONDITION STATE | CRACKING INDEX | ROUGHNESS INDEX | RUT AVERAGE (IN) |
|------------------------|---------------|--------------------|-----------------|----------------|-----------------|------------------|
| 0.00 – 0.322 | Flexible | Yes | Poor | 1.7 | 1.65 | 0.13 |
| 0.322 – 0.623 | Flexible | Yes | Poor | 1.7 | 2.13 | 0.08 |
| 0.623 – 0.690 | Flexible | Yes | Poor | 4.2 | 2.31 | 0.07 |
| 1.33 – 6.310 | Flexible | Yes | Poor | 1.7 | 3.12 | 0.09 |
| 6.310 – 12.326 | Flexible | Yes | Poor | 2.0 | 3.00 | 0.10 |
| 12.326 – 14.567 | Flexible | Yes | Poor | 2.0 | 3.33 | 0.10 |
| 14.567 – 18.662 | Flexible | No | Fair | 2.2 | 3.36 | 0.10 |
| 18.662 – 22.547 | Flexible | No | Fair | 2.2 | 2.81 | 0.06 |
| 22.547 – 23.44 | Flexible | No | Fair | 2.2 | 2.83 | 0.08 |

Traffic Volumes

The speed limit of the highway varies between 35 and 60 mph. There are no stop lights in this segment. The traffic volumes are provided below. The route is made up of mostly of agricultural traffic.

Table 3. 2015 Traffic Volumes

| MILEPOSTS | AADT | CAADT | % TRUCKS |
|------------------------|------|-------|----------|
| 0.00 – 0.322 | 2087 | 135 | 6.5 |
| 0.322 – 0.623 | 2919 | 167 | 5.7 |
| 0.623 – 0.690 | 1798 | 72 | 4.0 |
| 1.33 – 6.310 | 755 | 68 | 9.0 |
| 6.310 – 12.326 | 281 | 41 | 15.0 |
| 12.326 – 14.567 | 250 | 40 | 16.0 |
| 14.567 – 18.662 | 250 | 40 | 16.0 |
| 18.662 – 22.547 | 205 | 40 | 19.5 |
| 22.547 – 23.44 | 200 | 40 | 20.0 |

Truck Ramps

No runaway truck ramps exist however; the highway does have a steep grade on Holbrook Summit at 8%.

Port of Entry (POE)

The POE does maintain one rover sites on this section of highway at Milepost 23.44 in Holbrook. If the trucks head North on I-15 there is a POE at Inkom (MP 59 on I-15). If the truck heads South on I-15 there are no POE's in Idaho.

Highway Safety Evaluation

This SH-38 segment has no Non-Interstate High Accident Intersection Location (HAL) and has no HAL Clusters.

Analyses of the 5-year accident data (2011-2015) shows there were a total of 38 crashes involving 52 units (0 fatalities and 11 Injuries) on SH-38 between MP 0.0 to MP 23.438 of which only one crash involved a tractor-trailer combination in which the contributing circumstances were following too close and inattention. There were no injuries in the crash. Implementation of 129,000 pound trucking is projected to reduce truck traffic on this route.