



Evaluation of Idaho 13 Milepost 0.0 to Milepost 26.39 (Case #201511SH13)

Executive Summary

Arlo G. Lott Trucking submitted a request for 129,000 pound trucking approval on State Highway (SH)-13 for transporting primarily lumber. The request projects up to 1,040 loads annually. District 2, the Department of Motor Vehicles (DMV) and Bridge Asset Management all recommend proceeding with the request.

Because SH-13 is coded as a "Blue Route" the vehicle(s) will be required to make a 5.5-foot off-track and operate at or under the 95-foot maximum overall length. The roadway and bridges will however safely support 129,000 pound vehicles. The requested roadways are rated from poor to good condition with Commercial Average Annual Daily Traffic (CAADT) being light relative to the Average Annual Daily Traffic (AADT). This corridor has two High Accident Location (HAL) non-interstate segments. Analysis of the 5-year accident data beginning in 2010 shows there were a total of 100 accidents involving 140 units. There were 49 injury accidents and 3 fatal accidents. Of the total, there were 8 truck related accidents for this section of highway. Of the 8 truck accidents, 5 involved a truck and a passenger vehicle. Further breakdown shows that of the 5 truck and passenger vehicles mishaps, there were 3 in which the truck was at fault and 2 where the passenger vehicle was at fault. The truck caused accidents were attributed to improper turn, vision obstruction and inattention. No truck ramps exist along this route, and Harpster Grade, located between M.P. 5.5. (top) and M.P. 11.0 (bottom), varies from 5.0 to 5.5%.

Although this request begins at MP 0.0, the actual trucking start point is the Idaho Forest Group located on US-95 on the northwest side of Grangeville, Idaho. US-95 in that region was previously approved for 129,000 pound trucks and connects directly to SH-13.

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 the requested routes fall under one of the above categories and meet all length and off-tracking requirements for that route. More specifically, SH-13 is designated a blue route and as such all trucks must adhere to the 5.5-foot off-track and 95-foot overall vehicle length criteria.**

Bridge Review

Bridges on all publicly owned routes in Idaho 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 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.

District 2 Evaluation

This segment has been evaluated and the District recommends proceeding.

General: The roadway is in generally good condition with 11 foot lanes and 1-2 foot paved shoulders. The route is a winding roadway that parallels the South Fork of the Clearwater River and traverses the Harpster Grade. CAADT would be rated as light relative to AADT. This route has various posted speed limits as listed below:

| <u>M.P. Range</u> | <u>Location</u> | <u>Speed Limit(s)</u> |
|-------------------|-----------------|-----------------------|
| 0.0 -1.12 | Grangeville, ID | 25/35 mph |
| 1.12-5.55 | Highway | 50 mph |
| 5.55 -11.0 | Harpster Grade | 35 mph |
| 11.0-12.42 | Highway | 50 mph |
| 12.42-13.38 | Harpster, ID | 35 mph |
| 13.38-21.89 | Highway | 50 mph |
| 21.89-22.74 | Stites, ID | 35/25/35 mph |
| 22.74-25.09 | Highway | 55 mph |
| 25.09-26.39 | Kooskia, Id | 35/25/35 mph |

This request ends in Kooskia at M.P. 26.39 at the junction of US-12 and S.H. 13. Limitation on travel time is not warranted. Although spring breakup limits have not been imposed in institutional memory, there may be an occasion to invoke such limits from M.P. 0.0 – 5.8 as this section of roadway is in poor condition. Chain-up locations are currently limited.

Updates: Noted here are projects completed or proposed on S.H. 13 with descriptions, location, and year. A cold-in-place recycle with an overlay was done in 2010 from M.P. 18.7 to 25.4. The project also widened a narrow curve and added new guardrail. A cold-in-place recycle with an overlay was also constructed in 2011 from M.P. 11.3 to 18.7. The project also widened a few narrow curves and added new guardrail. M.P. 11.3 to 25.4 was seal coated in 2012 and 2013. Future projects scheduled are; the Grangeville Main Street Paving project from M.P. 0.0 to 1.2 which is a grind and inlay project (FY17).

Operations field review: The route begins in District 2 at M.P. 0.00 and carries through to M.P. 26.39 in Kooskia at the junction of U.S. 12 and S.H. 13. This roadway resides in two foremen areas. The foremen for this route reported that their concerns reside with off tracking of current tractor trailer combinations. An onsite review of all vehicle combinations will determine if this is a road geometric issue or an operator issue. It was also reported the portion from milepost 0.0– 5.8 (Grangeville to the Top of Harpster Grade) that the roadway is in distress and could suffer additionally if truck traffic picks up.

Safety: This corridor has two High Accident Location (HAL) non-interstate segments, which are shown in the table below and ranked both by State and District. An analyses of five years' worth of accident data beginning in 2010 shows there were a total of 100 accidents involving 140 units. There were 49 injury accidents and 3 fatal accidents. Of the total accidents, there were 8

truck related accidents for this section of highway. Of the 8 truck accidents, 5 involved a truck and a passenger vehicle. Breaking this further down, of the 5 truck and passenger vehicles, there were 3 of these in which the truck was at fault and 2 where the passenger vehicle was at fault. The truck-caused accidents were attributed to improper turn, vision obstruction and inattention.

Based on this information, the addition of the 129,000 pound capacity tractor trailer combinations should not have a significant impact on safety.

Table of HAL Segments US-95

| Line # | State Rank | District Rank | Route | Segment Code | Milepost Range | Length (in miles) | County | Project |
|--------|------------|---------------|-------|--------------|-----------------|-------------------|--------|---------|
| 1 | 24 | 5 | 13 | 001960 | 23.349 – 23.849 | 0.500 | Idaho | NAT |
| 2 | 142 | 29 | 13 | 001960 | 0.323 – 0.621 | 0.298 | Idaho | *1 |

NAT: Denotes No project proposed at this Time.

*1 - Grangeville Main Street Paving project from M.P. 0.0 to 1.2 which is a grind and inlay project.

Mobility: There are no passing lanes on this road section including Harpster Grade.

Public Concerns: There have been a few concerns made by the public of the need for passing opportunities on Harpster Grade M.P. 5.5 (Top) and M.P. 11.0 (Bottom).

Truck Ramps: No truck ramps exist along this route. Harpster Grade is located between M.P. 5.5. (top) and M.P. 11.0 (bottom) is approximately 6 miles in length varies from 5.0 to 5.5%. The speed limit on the grade is 35 mph. The District is unaware of any runaway trucks in the past on this section.

Port of Entry: The POE has been contacted and they believe there are adequate locations along the route to monitor commercial vehicles for compliance. POE also stated that because S.H. 13 is coded as a "Blue Route," the vehicle(s) would still be required to make a 5.50 off-track and operate at or under the 95-foot maximum overall length.



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Additional Data:

Tams Data:

| Year | Route | BMP | EMP | Lenth | Pavement Type | Deficient (Y/N) | Functional Class | Deficient Reason | CI | RI | Rut Ave (in) | Condition State | AADT | CAADT | Speed Limit |
|------|-------|--------|--------|-------|---------------|-----------------|----------------------|------------------|-----|------|--------------|-----------------|------|-------|-------------|
| 2014 | SH013 | 0.000 | 1.120 | 1.120 | Flexible | Yes | Rural Minor Arterial | RI | 3.6 | 2.12 | 0.28 | Poor | 5527 | 638 | 25 |
| 2014 | SH013 | 1.120 | 6.600 | 5.480 | Flexible | Yes | Rural Minor Arterial | CI and RI | 2.2 | 2.32 | 0.30 | Poor | 1453 | 213 | 50 |
| 2014 | SH013 | 6.600 | 11.000 | 4.400 | Flexible | No | Rural Minor Arterial | None | 2.8 | 2.70 | 0.27 | Fair | 1300 | 150 | 35 |
| 2014 | SH013 | 11.000 | 11.257 | 0.257 | Flexible | No | Rural Minor Arterial | None | 3.3 | 2.62 | 0.20 | Fair | 1200 | 100 | 50 |
| 2014 | SH013 | 11.257 | 18.711 | 7.454 | Flexible | No | Rural Minor Arterial | None | 5 | 3.44 | 0.12 | Good | 1248 | 119 | 50 |
| 2014 | SH013 | 18.711 | 24.000 | 5.289 | Flexible | No | Rural Minor Arterial | None | 5 | 3.85 | 0.13 | Good | 1689 | 144 | 50 |
| 2014 | SH013 | 24.000 | 24.300 | 0.300 | Flexible | No | Rural Minor Arterial | None | 5 | 3.29 | 0.16 | Good | 2500 | 150 | 55 |
| 2014 | SH013 | 24.300 | 25.406 | 1.106 | Flexible | No | Rural Minor Arterial | None | 5 | 3.76 | 0.19 | Good | 2524 | 150 | 55 |
| 2014 | SH013 | 25.406 | 25.840 | 0.434 | Flexible | Yes | Rural Minor Arterial | RI | 4.8 | 2.46 | 0.23 | Poor | 3569 | 150 | 25 |
| 2014 | SH013 | 25.840 | 26.390 | 0.550 | Flexible | Yes | Rural Minor Arterial | RI | 4.3 | 2.23 | 0.25 | Poor | 3536 | 226 | 35 |



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Bridge Data:

Route Number: SH 13
Department: Bridge Asset Management
Date: 6/24/2015
From: Grangeville, ID
Milepost: 0.00
To: Kooskia, ID
Milepost: 26.39

| Highway Number | Milepost Marker | Bridge Key | 121 Rating^a (lbs) |
|-----------------------|------------------------|-------------------|-------------------------------------|
| 13 | 3.56 | 10530 | 298,000 |
| 13 | 11.22 | 10535 | 256,000 |
| 13 | 12.62 | 10541 | OK EJ |
| 13 | 15.08 | 10543 | OK EJ |
| 13 | 18.68 | 10545 | 336,000 |
| 13 | 20.46 | 10550 | 386,000 |
| 13 | 26.17 | 10556 | 230,000 |

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).