

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

Petition of the Wisconsin Department of Transportation for a Determination of the Adequacy of Warning Devices at the Grade Crossing of the BNSF Railway Company Tracks with STH 105 (Central Avenue) in the City of Superior, Douglas County

9020-RX-161

FINDINGS OF FACT AND ORDER

By letter dated September 20, 2007, the Wisconsin Department of Transportation (DOT) filed a petition with the Office of the Commissioner of Railroads (OCR) for a determination under §195.28, Stats., of the adequacy of warning devices at the grade crossing of the BNSF Railway Company (BNSF) tracks with STH 105 (Central Avenue) in the City of Superior, Douglas County (Crossing No. 082 634W / MP 8.33). (**Note:** DOT identifies the roadway as Central Avenue, but OCR and Federal Railroad Administration (FRA) records identify the roadway as 61st Street.).

Findings of Fact

THE COMMISSIONER FINDS:

The Wisconsin Department of Transportation (DOT) and the city of Superior plan to mill and overlay STH 105 between the Oliver Bridge in the Town of Oliver and STH 35 (Tower Avenue) in the city of Superior during the 2008 construction season. DOT proposes the installation of 12" LED automatic flashing lights with gates and constant warning time circuitry.

STH 105 is 24' wide with 8'-wide shoulders in the vicinity of the crossing and intersects the railroad tracks at an angle of 90°. Reconstructed STH 105 will be 44' between curbs. STH 105 carried an average daily traffic (ADT) of 2400 according to 2002 DOT records at a posted speed limit of 25 mph. DOT projects 2800 ADT in 2027.

The BNSF operates 8-10 through train movements and 15 switch movements per day over the crossing at a speed of 10 mph. The crossing consists of one mainline track.

A motorist traveling at 25 mph requires a safe stopping distance of 187'. The crossing warning devices are visible from more than 1000' in each direction. Assuming a train speed of 10 mph, a motorist traveling at 25 mph needs to see a train when it is 105' from the crossing from a point 187' down the highway. The sight distance available in each quadrant from the safe stopping distance is as follows: 150' northwest quadrant, 100' northeast quadrant, 115' southwest quadrant and 150' southeast quadrant. Sight distance is inadequate in the northeast quadrant and marginally adequate in the other quadrants.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the STH 105 crossing is 225'. The available clearing sight distance is over 600'. Clearing sight distance is adequate in all quadrants.

The exposure factor at this crossing is 55,000. The exposure factor at this crossing will exceed 60,000 in the design year assuming 23 train movements per day. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

One train-vehicle accident has occurred at this crossing since 1973. The crash occurred in 1979.

The crossing has 12" LED automatic flashing lights and advance warning signs for warning devices. Conditions warrant upgrading the warning devices at this crossing. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry are needed based on the roadway width, marginal corner sight distance, and exposure factor.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) lamps replace incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The signal materials and installation shall be paid from DOT highway project funds (including the local match, if any).

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of the BNSF Railway Company with STH 105 in the City of Superior, Douglas County.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. The Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **BNSF Railway Company** shall install and maintain cantilevered 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with **STH 105** at-grade in the City of Superior, Douglas County by **December 31, 2008** (Crossing No. 082 634W / MP 8.33).

2. That the **BNSF Railway Company** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

4. That the **BNSF Railway Company** shall bear no part of the cost of the crossing signals materials or installation, except for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.

5. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

6. That jurisdiction is retained.

Dated at Madison, Wisconsin, (November 26, 2007).

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads