

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at the Grade Crossings of the Union Pacific Railroad Co. Tracks with Three Highways in the Town of Necedah, Juneau County

9040-RX-1204

FINDINGS OF FACT AND ORDER

On March 16, 2005, the Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossings of the Union Pacific Railroad Co. (UP) tracks with 16th Avenue, 18th Avenue, and CTH 'G' in the Town of Necedah, Juneau County (Crossing Nos. 179 270W, 179 268V, 179 266G).

An OCR investigator inspected the crossings in December 2005. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

The Union Pacific Railroad Co. operates 6 through train movements per day over each crossing at a timetable speed of 40 mph. Each crossing consists of one mainline track.

Accidents that occur at any of these crossings will likely be quite serious if a through train is involved due to their 40 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

16th Avenue Crossing No. 179 270W / MP 136.97

16th Avenue is about 20' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of about 45° (left-hand forward). The roadway approaches ascend to the crossing at a grade of about 3%. 16th Avenue carried an average daily traffic (ADT) of 341 according to a special 2004 traffic count at a legal speed limit of 55 mph.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 527' in each direction. Assuming a train speed of 40 mph, a motorist traveling at 55 mph needs to see a train when it is 420' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is inadequate.

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 16th Avenue crossing is 895'. The available clearing sight distance is less than 895'.

The exposure factor at this crossing is about 2050. 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.

Two train-vehicle accidents have occurred at this crossing since 1973. The accidents occurred in 1999 and 2000.

The crossing is presently protected with reflective crossbucks, advance warning signs and stop signs. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12' LED automatic flashing lights with gates and constant warning time circuitry are needed.

18th Avenue

Crossing No. 179 268V / MP 135.74

18th Avenue is about 20' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of about 45° (left-hand forward). The roadway approaches ascend to the crossing at a grade of about 2%. 18th Avenue carried 317 ADT according to a special 2004 traffic count at a legal speed limit of 55 mph.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 527' in each direction. Assuming a train speed of 40 mph, a motorist traveling at 55 mph needs to see a train when it is 420' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is inadequate.

The necessary clearing sight distance at the 18th Avenue crossing is 895'. The available clearing sight distance is less than 895'.

The exposure factor at this crossing is about 1900.

No train-vehicle accidents have occurred at this crossing since 1973.

The crossing is presently protected with reflective crossbucks, advance warning signs and stop signs. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12' LED automatic flashing lights with gates and constant warning time circuitry are needed.

CTH 'G'

Crossing No. 179 266G / MP 133.92

CTH 'G' is about 22' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of 45° (left-hand forward). The roadway approaches to the crossing are essentially level. CTH 'G' carries 1200 ADT at a legal speed limit of 55 mph.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 527' in each direction. Assuming a train speed of 40 mph, a motorist traveling at 55 mph needs to see a train when it is 420' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is inadequate.

The necessary clearing sight distance at the CTH 'G' crossing is 895'. The available clearing sight distance is less than 895'.

The exposure factor at this crossing is 7200.

One train-vehicle accident has occurred at this crossing since 1973. The accident occurred in 2001.

The crossing is presently protected with reflective crossbucks, advance warning signs and stop signs. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12' LED automatic flashing lights with gates and constant warning time circuitry are needed.

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 Funds: The signal materials and installation shall be split as follows: The OCR will use state and federal safety funds to pay 80% of the cost (up to a **maximum public contribution of \$120,000 per crossing**) and the Union Pacific Railroad Co. shall pay the remaining 20% of the cost. Notwithstanding this cap on the public contributions, the UP may recover its proportionate share of its demonstrated actual reasonable and necessary costs.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of the Union Pacific Railroad Co. with 16th Avenue, 18th Avenue, and CTH 'G' in the Town of Necedah, Juneau 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. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Union Pacific Railroad Co.** shall install and maintain 12" LED automatic flashing lights with gates, constant warning time circuitry and other 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 **16th Avenue** at-grade in the Town of Necedah, Juneau County by **December 31, 2007** (Crossing No. 179 270V / MP 136.97).

2. That the **Union Pacific Railroad Co.** shall install and maintain 12" LED automatic flashing lights with gates, constant warning time circuitry and other 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 **18th Avenue** at-grade in the Town of Necedah, Juneau County by **December 31, 2007** (Crossing No. 179 268V / MP 135.74).

3. That the **Union Pacific Railroad Co.** shall install and maintain 12" LED automatic flashing lights with gates, constant warning time circuitry and other 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 **CTH 'G'** at-grade in the Town of Necedah, Juneau County by **December 31, 2007** (Crossing No. 179 266G / MP 133.92).

4. That the **Union Pacific Railroad Co.** 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.

5. 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.

6. That the **State of Wisconsin** shall pay 80% of the cost (up to a **maximum contribution of \$120,000 per crossing**) and the **Union Pacific Railroad Co.** shall bear 20% of the cost of the crossing signal materials and labor. In addition, the **Union Pacific Railroad Co.** shall pay 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. The maximum funding provided by the **State of Wisconsin** may be adjusted to reflect the actual reasonable and necessary cost of the materials and installation. The actual reasonable and necessary costs shall be determined by the **Office of the Commissioner of Railroads** after hearing, if necessary.

7. 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.

8. That jurisdiction is retained.

Dated at Madison, Wisconsin, (February 9, 2006).

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads

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