

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 CTH 'EF' and Winnebago Street in the Town of Randolph, Columbia County

9040-RX-1171

FINDINGS OF FACT AND ORDER

On June 19, 2003, 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 CTH 'EF' and Winnebago Street in the Town of Randolph, Columbia County (Crossing No. 179 190D / MP 249.99 and 179 188C / MP 250.25).

An OCR investigator inspected the crossings. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

The UP operates 8 through train movements per day over both crossings at a timetable speed of 50 mph. Each crossing consists of one mainline track.

CTH 'EF' Crossing No. 179 190D / MP 249.99

CTH 'EF' is 21' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of about 45° left-hand forward. The roadway approaches to the crossing are relatively flat. CTH 'EF' carried an average daily traffic (ADT) of 710 according to 2003 DOT records at a legal speed limit of 25 mph.

A motorist traveling at 25 mph requires a safe stopping distance of 187'. The crossing is visible from 187' in each direction. Assuming a train speed of 50 mph, a motorist traveling at 25 mph needs to see a train when it is 525' from the crossing from a point 187' down the highway. The corner sight distance is inadequate in the northeast and southeast quadrants due to trees, brush and terrain.

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 CTH 'EF' crossing is 1120'. The available clearing sight distance is inadequate.

The exposure factor at this crossing is about 5600. 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.

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

Accidents that do occur here will likely be quite serious if a through train is involved due to their 50 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+.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the CTH 'EF' crossing has a net benefit of about \$606,000. The benefit-cost ratio is about 3.64 meaning that the public will receive \$3.64 in safety benefits for each dollar expended.

The crossing is presently protected with 12" incandescent automatic flashing lights and advance warning 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 because of the inadequate corner sight distance, inadequate clearing sight distance, and projected net benefit.

Winnebago Street Crossing No. 179 188C / MP 250.25

Winnebago Street is 22' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of 10° right-hand forward. The roadway approaches the crossing at a slight uphill grade on both approaches. Winnebago Street carried an ADT of 250 according to DOT records at a legal speed limit of 25 mph.

A motorist traveling at 25 mph requires a safe stopping distance of 187'. The crossing is visible from 187' in each direction. Assuming a train speed of 50 mph, a motorist traveling at 25 mph needs to see a train when it is 525' from the crossing from a point 187' down the highway. The sight distance available is inadequate in three of the four quadrants due to buildings, trees and the curvature of the track.

The necessary clearing sight distance at the Winnebago Street crossing is 1120'. The available clearing sight distance is 600' at a maximum and is inadequate.

The exposure factor at this crossing is about 2000.

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

Accidents that do occur here will likely be quite serious if a through train is involved due to their 40 mph speed.

Installing new automatic flashing lights with gates and constant warning time circuitry at the Winnebago Street crossing has a net benefit of about \$316,000. The benefit-cost ratio is about 2.38 meaning that the public will receive \$2.38 safety benefits for each dollar expended.

The crossing is presently protected with 12" incandescent automatic flashing lights and advance warning 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 because of inadequate corner sight distance, inadequate clearing sight distance and projected net benefit.

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 OCR's allocated state and federal safety funds.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

1. 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 CTH 'EF' in the Town of Randolph, Columbia County.

2. 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 Winnebago Street in the Town of Randolph, Columbia 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 **CTH 'EF'** at-grade in the Town of Randolph, Columbia County by **December 31, 2010** (Crossing No. 179 190D / MP 249.99).

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 **Winnebago Street** at-grade in the Town of Randolph, Columbia County by **December 31, 2010** (Crossing No. 179 188C / MP 250.25).

3. 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.

4. 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.

5. That the **Union Pacific Railroad Co.** shall bear no part of the cost of the crossing signals 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.

6. 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.

7. That jurisdiction is retained.

Dated at Madison, Wisconsin, (November 6, 2008).

By the Office of the Commissioner of Railroads.

Roger Breske
Commissioner of Railroads

