

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 Crossing of the Union Pacific Railroad Co. Tracks with CTH 'T' (Davis Street) in the Town of Hammond, St. Croix County

9040-RX-1224

FINDINGS OF FACT AND ORDER

On November 23, 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 crossing of the Union Pacific Railroad Co. (UP) tracks with CTH 'T' (Davis Street) in the Town of Hammond, St. Croix County (Crossing No. 183 857S / MP 35.77).

An OCR investigator inspected the crossing in 2006. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

CTH 'T' (Davis Street) is 22' wide with gravel shoulders in the vicinity of the crossing and intersects the railroad tracks at an angle of 80°. CTH 'T' (Davis Street) carried an average daily traffic (ADT) of 5000 according to 2004 DOT records at a speed limit of 25 mph.

The UP operates 8 train movements per day over the crossing at a timetable speed of 30 mph. The crossing consists of one mainline track.

A motorist traveling at 25 mph requires a safe stopping distance of 187'. The crossing is visible from more than 187' in each direction. The approach sight distance is adequate.

Assuming a train speed of 30 mph, a motorist traveling at 25 mph needs to see a train when it is 315' 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: 50' northwest quadrant, 120' northeast quadrant, 160' southwest quadrant and 140' southeast quadrant. Corner sight distance is inadequate in all 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 CTH 'T' (Davis Street) crossing is 675'. The available clearing sight distance is more than 675'. Clearing sight distance is adequate.

The exposure factor at this crossing is 40,000. 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.

Four train-vehicle accidents have occurred at this crossing since 1973. The crashes occurred in 1979, 1980, 1982, and 1994.

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 'T' (Davis Street) crossing has a net benefit of about \$955,700. The benefit-cost ratio is about 5.09 meaning that the public will receive \$5.09 in safety benefits for each dollar expended.

The crossing is presently protected with 12" incandescent automatic flashing lights. Conditions warrant upgrading the warning devices when safety funding becomes available. 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 restricted corner sight distances, the exposure factor, and the 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 state and federal OCR safety funds.

#### 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 CTH 'T' (Davis Street) in the Town of Hammond, St. Croix 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, 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 **CTH 'T' (Davis Street)** at-grade in the Town of Hammond, St. Croix County by **December 31, 2009** (Crossing No. 183 857S / MP 35.77).

2. 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.

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 **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.

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, (June 13, 2008).

By the Office of the Commissioner of Railroads.

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Roger Breske  
Commissioner of Railroads