

Instructions for WisDOT Railroad Preemption Inspection Form 1b (to be completed by the Railroad Operating Company)

Background:

A joint annual inspection is required at all traffic signals interconnected with highway-railroad grade crossings in Wisconsin. The inspection shall include at least one representative from the traffic signal operating agency and one representative from the railroad operating company. The purpose of the inspection is to verify that the interconnected system operates as designed. The traffic signal operating agency is responsible for completing form 1a and submitting it to the railroad. The railroad operating company is responsible for completing form 1b, combining it with form 1a in a singular PDF document and submitting it to the [OCR E-Services Portal](#).

BE ADVISED! This document is a guide for how to complete form 1b. This document **IS NOT** a guide on how to conduct a joint railroad preemption inspection. Additionally, this generic document will need to be modified for non-standard applications, such as when the railroad crosses two legs of an intersection, and both are preempted.

This document is organized by sections matching the form. Under each section, you will see a header in bold representing each field to be completed in that section. The final page of this document is an example of a completed form.

Section 1 – Review Team:

Railroad Inspection Completed By: Record the name(s) of the representative(s) participating in the inspection on behalf of the railroad operating company.

Inspection Date: Record the date of the inspection.

Signature: Representative from the railroad operating company vouching for the accuracy of the form. If this individual is not listed under the 'Railroad Inspection Completed By' section of the form, include a printed version of the name as well.

Date of Last Inspection: Record the date of the previous inspection.

Section 2 – Location Data:

Highway Intersection: Record the highway intersection controlled by the traffic signal that is interconnected with the railroad.

Municipality: Record the municipality that the traffic signal and railroad crossing are located within.

County: Record the county that the traffic signal and railroad crossing are located within.

Traffic Signal Operating Agency: Record the agency responsible for operating the traffic signal.

Signal ID: Record the identification number for the traffic signal (if applicable). Contact the traffic signal operating agency to acquire this number, if unknown.

Signal Contact: Record the name of the contact responsible for coordinating the preemption inspection on behalf of the traffic signal operating agency.

Signal Contact Phone: Record the phone number for the traffic signal agency contact.

Railroad Operating Company: Record the name of the railroad operating company for the crossing.

RR Crossing ID: Record the railroad crossing ID.

Railroad Contact: Record the name of the contact responsible for coordinating the preemption inspection on behalf of the railroad operating agency.

RR Contact Phone: Record the phone number for the railroad contact.

Traffic Signal Emergency Contact Number: Record the emergency contact number(s) for the traffic signal operating agency. This number(s) should also be posted inside the railroad bungalow.

Railroad Emergency Contact Number: Record the emergency contact number for the railroad. This number should also be located inside the traffic signal cabinet and on the Emergency Notification Sign (ENS) posted at the crossing.

Section 3 – Railroad Data:

Active Warning Devices: Select the box(es) next to any active warning devices present in the field. Select none if it is a passive crossing.

Maximum Train Speed: Record the maximum train speed.

Speed Range Over Crossing: Record the speed range over the crossing.

Number of Trains per Day: Record the average number of trains per day.

Number of Tracks: Record the number of tracks present at the crossing.

Available Circuits: Select the box next to each type of circuit available within the bungalow.

- APP = Advance Pedestrian Preemption
- AP = Advance Preemption
- GD = Gate Down
- HC = Health Circuit
- SIM = Simultaneous
- SUP = Supervisor
- XR = Crossing Active

Used Circuits: Select the box next to each type of circuit in use (defined as being interconnected with the traffic signal cabinet) at the bungalow. Not all available circuits within the bungalow may be in use if the traffic signal cabinet is not set up to receive them.

- APP = Advance Pedestrian Preemption
- AP = Advance Preemption
- GD = Gate Down
- HC = Health Circuit
- SIM = Simultaneous

- SUP = Supervisor
- XR = Crossing Active

Section 4 – Railroad Equipment Timing:

This section is to be populated with information related to the design of the preemption system as well as information that reflects a review of actual train movements. Timing values reflected under the “designed” column should reflect values as indicated on the circuit drawing and/or as programmed in the railroad crossing predictor. Values recorded under the “measured” heading are determined by analyzing recent train movements. This is typically accomplished by reviewing the data from the bungalow’s event recorder, however if no event recorder is present, then the railroad must establish an alternative method for validating these values (such as utilizing a stopwatch during actual train movements). When determining the total number of train movements to analyze, be sure to include movements in both directions and on all tracks (if multiple tracks are present at the crossing or on the approach. If there is a yard nearby, or if trains slow and/or stop on the approach regularly, be sure that through train movements as well as slowing/stopped train movements are included in the analysis. Since multiple train movements are being analyzed, report out the minimum, average, and the maximum value for each of the settings.

Finally, not all settings apply to all crossings. In those situations, designate with an N/A so it is clear that it does not apply at this interconnected crossing.

Equipment Reaction Time (ERT): Time provided for the crossing equipment to determine the speed of an oncoming train.

Advance Pedestrian Preemption Time (APPT): An amount of time in advance of the advance preemption that allows a traffic signal controller to serve some or all of the pedestrian clearance time.

Advance Preemption Time (APT): An amount of time in advance of the initiation of the flashing light signals (XR Circuit) that triggers the traffic signal operation to transition in order to address the approaching train.

Minimum Warning Time (MWT): The minimum amount of time required to lapse between the activation of the flashing light signals and the arrival of a train.

Clearance Time (CT): Additional time that may be provided to account for longer crossing time at wide (i.e., multi-track crossings) or skewed-angle crossings.

Buffer Time (BT): Additional time provided to account for trains that may accelerate on the approach to the crossing.

Total Warning Time: The total amount of time that is provided between the onset of the flashing light signals and the arrival of the train. It is the sum of the minimum warning time (MWT) and clearance time (CT).

Total Time: The total amount of time between the initial notification to the traffic signal controller of the approach of the train to the arrival of the train. Summation of any of the following which are included in the design of the system: APPT, APT, MWT and CT.

Notes: Use this area for minor notes or to direct the reader to section 6 for additional information.

Total Train Movements Analyzed: When reporting out on the measured values, this is the total number of train movements that were analyzed to develop the values (minimums, averages, and maximums) reported for each railroad setting. When this value is low, so too is the confidence in the values provided. By reviewing more movements, the statistical significance of the reported values increases.

Date Range for Train Movements: Indicate the date range of the train movements that were analyzed to develop the values provided in the measured (minimum, average, maximum) section of this form.

Section 5 – Field Testing and Inspection:

Do the flashing light signals operate as expected? During the test preemption sequence, do the flashing light signals begin flashing and stop flashing as expected? Use N/A if it is a passive crossing and there are no flashing light signals present. Add notes, if necessary, to provide clarity to your response.

Do the railroad gates operate as expected? During the test preemption sequence, do the gates lower and raise as expected? Use N/A if gates are not installed at the crossing. Add notes, if necessary, to provide clarity to your response.

Is emergency contact information posted inside the bungalow? Is the emergency contact number for the traffic signal operating agency (as listed above under heading 2) posted inside the bungalow in case there is an emergency, and the traffic signal operating agency needs to be contacted? Add notes, if necessary, to provide clarity to your response.

Section 6 – Other Information / Notes:

Use this section of the form to document important details regarding the annual test. Summarize any issues that were addressed and any that need to be addressed in the future.

WisDOT RAILROAD PREEMPTION INSPECTION FORM 1b

(to be completed by the RAILROAD OPERATING COMPANY)

1. REVIEW TEAM

RAILROAD INSPECTION COMPLETED BY:	John Smith	INSPECTION DATE:	11/6/24
SIGNATURE:	<i>John Smith</i>	DATE OF LAST INSPECTION:	10/17/23

2. LOCATION DATA

HIGHWAY INTERSECTION:		MUNICIPALITY:		COUNTY:
WIS 32 (Ashland Avenue) & Cormier Road (CTH H)		Ashwaubenon		Brown
TRAFFIC SIGNAL OPERATING AGENCY:	SIGNAL ID:	SIGNAL CONTACT:	SIGNAL CONTACT PHONE:	
WisDOT	S05-0125	Ann Johnson	(555) 777-9999	
RAILROAD OPERATING COMPANY:	RR CROSSING ID:	RAILROAD CONTACT:	RR CONTACT PHONE:	
Canadian National	180091C	John Smith	(555) 222-3333	
TRAFFIC SIGNAL EMERGENCY CONTACT NUMBER:		RAILROAD EMERGENCY CONTACT NUMBER:		
800-375-7302		800-465-9239		

3. RAILROAD DATA

ACTIVE WARNING DEVICES:	<input type="checkbox"/> 3 or 4-Quadrant Gates	<input checked="" type="checkbox"/> 2-Quadrant Gates	<input checked="" type="checkbox"/> Flashing Light Signals	<input type="checkbox"/> None
MAXIMUM TRAIN SPEED (MPH):	49	SPEED RANGE OVER CROSSING (MPH):	1-40	
NUMBER OF TRAINS PER DAY:	4	NUMBER OF TRACKS:	2	
AVAILABLE CIRCUITS:		USED CIRCUITS:		
<input type="checkbox"/> APP	<input checked="" type="checkbox"/> AP	<input checked="" type="checkbox"/> GD	<input type="checkbox"/> HC	<input type="checkbox"/> SIM
<input type="checkbox"/> SIM	<input checked="" type="checkbox"/> SUP	<input type="checkbox"/> XR	<input type="checkbox"/> APP	<input checked="" type="checkbox"/> AP
			<input checked="" type="checkbox"/> GD	<input type="checkbox"/> HC
			<input type="checkbox"/> SIM	<input type="checkbox"/> SUP
			<input type="checkbox"/> SUP	<input type="checkbox"/> XR

4. RAILROAD EQUIPMENT TIMING

RAILROAD SETTINGS	DESIGNED	MEASURED (sec.)			NOTES
		MIN	AVG	MAX	
Equipment Reaction Time (ERT):	0 sec.				
Advance Pedestrian Preemption Time (APPT):	NA sec.	N/A	N/A	N/A	
Advance Preemption Time (APT):	37 sec.	21	35	37	
Minimum Warning Time (MWT):	20 sec.				
Clearance Time (CT):	2 sec.				
Buffer Time (BT):	10 sec.				
Total Warning Time (MWT + CT):	22 sec.	23	32	52	
Total Time (APPT + APT + MWT + CT):	59 sec.	44	68	89	
TOTAL TRAIN MOVEMENTS ANALYZED:	50	DATE RANGE FOR TRAIN MOVEMENTS:			10/28 to 11/5

5. FIELD TESTING AND INSPECTION

	NOTES
Do the flashing light signals operate as expected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Do the railroad gates operate as expected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is emergency contact information posted in the bungalow?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

6. OTHER INFORMATION/NOTES

5 train movements (10% of the total analyzed) did not provide the total time as designed.

These trains had stopped and restarted on the approach.