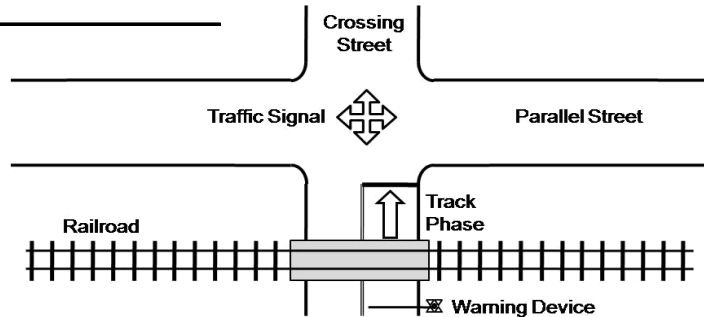
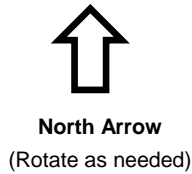




# OHIO DEPARTMENT OF TRANSPORTATION GUIDE FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

City Deer Park  
 County Hamilton  
 District 8

Date 2/14/2025  
 Completed by \_\_\_\_\_



Parallel Street Name  
Blue Ash Road  
 Crossing Street Name  
Webster Ave

Railroad I&O \_\_\_\_\_  
 DOT No. 525278F

Railroad Contact \_\_\_\_\_  
 Phone \_\_\_\_\_

Enter values in non-shaded boxes. Shaded boxes are calculated.

### SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

#### Preempt verification and response time

- |  |    |                                  |  |
|--|----|----------------------------------|--|
| 1. Programmed preempt delay time (sec) .....                             | 1. | <input type="text" value="1.0"/> | <b>Remarks</b><br>used at Matson<br>Controller type: <u>New Standard</u> |
| 2. Controller response time to preempt (sec) .....                       | 2. | <input type="text" value="0.0"/> |  |
| 3. Preempt verification and response time (sec): add lines 1 and 2 ..... | 3. | <input type="text" value="1.0"/> |  |

#### Worst-case conflicting vehicle time

- |   |    |   |                                  |
|---|----|---|----------------------------------|
| 4. Worst-case conflicting vehicle phase number(s) .....                   | 4. | <input type="text" value="2+6(NB+SB)"/> | <b>Remarks</b><br>used at Matson |
| 5. Minimum green time during right-of-way transfer (sec) .....            | 5. | <input type="text" value="4.0"/>        |                                  |
| 6. Other green time during right-of-way transfer (sec) .....              | 6. | <input type="text" value="0.0"/>        |                                  |
| 7. Yellow change time (sec) .....   | 7. | <input type="text" value="3.5"/>        |                                  |
| 8. Red clearance time (sec) .....   | 8. | <input type="text" value="3.0"/>        |                                  |
| 9. Worst-case conflicting vehicle time (sec): add lines 5 through 8 ..... | 9. | <input type="text" value="10.5"/>       |                                  |

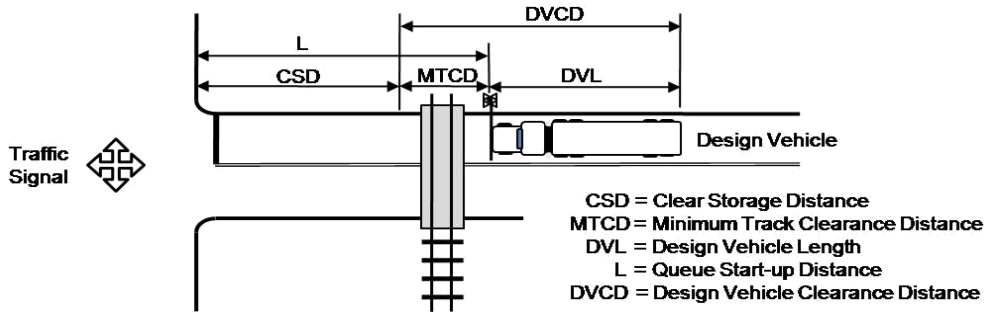
#### Worst-case conflicting pedestrian time

- |   |     |                                     |                                 |
|---|-----|-------------------------------------|---------------------------------|
| 10. Worst-case conflicting pedestrian phase number(s) .....                     | 10. | <input type="text" value="8 (EB)"/> | <b>Remarks</b><br>use at Matson |
| 11. Minimum walk time during right-of-way transfer (sec) .....                  | 11. | <input type="text" value="0.0"/>    |                                 |
| 12. Pedestrian clearance time during right-of-way transfer (sec) .....          | 12. | <input type="text" value="11.0"/>   |                                 |
| 13. Vehicle yellow change time, if not included on line 12 (sec) .....          | 13. | <input type="text" value="3.5"/>    |                                 |
| 14. Vehicle red clearance time, if not included on line 12 (sec) .....          | 14. | <input type="text" value="3.0"/>    |                                 |
| 15. Worst-case conflicting pedestrian time (sec): add lines 11 through 14 ..... | 15. | <input type="text" value="17.5"/>   |                                 |

#### Worst-case conflicting vehicle or pedestrian time

- |   |     |                                   |
|---|-----|-----------------------------------|
| 16. Worst-case conflicting vehicle or pedestrian time(sec): maximum of lines 9 and 15 ..... | 16. | <input type="text" value="17.5"/> |
| 17. Right-of-way transfer time (sec): add lines 3 and 16 .....                              | 17. | <input type="text" value="18.5"/> |

**SECTION 2: QUEUE CLEARANCE TIME CALCULATION**



		Remarks
18. Clear storage distance (CSD, feet) .....	18. <input type="text" value="29"/>	
19. Minimum track clearance distance (MTCD, feet) .....	19. <input type="text" value="49"/>	
20. Design vehicle length (DVL, feet) .....	20. <input type="text" value="65"/>	Design vehicle type: <u>Tractor-Trailer</u>
21. Average grade over crossing (%) .....	21. <input type="text" value="0.0%"/>	See instructions if L>400'
22. Queue start-up distance (L, feet): add lines 18 and 19 .....	22. <input type="text" value="78"/>	
23. Time required for design vehicle to start moving (sec): calculated as 2+(L/20) .....	23. <input type="text" value="5.9"/>	Remarks
24. Design vehicle clearance distance (DVCD, feet): add lines 19 and 20 .....	24. <input type="text" value="114"/>	
25. Time for design vehicle to accelerate through the DVCD (sec) .....	25. <input type="text" value="14.5"/>	From Fig. 2 and Table 2
26. Queue clearance time (sec): add lines 23 and 25 .....	26. <input type="text" value="20.4"/>	

**SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION**

		Remarks
27. Right-of-way transfer time (sec): line 17 .....	27. <input type="text" value="18.5"/>	
28. Queue clearance time (sec): line 26 .....	28. <input type="text" value="20.4"/>	
29. Desired minimum separation time (ST, sec) .....	29. <input type="text" value="4.0"/>	Minimum of 4 sec
30. Maximum preemption time (sec): add lines 27 through 29 .....	30. <input type="text" value="42.9"/>	

**SECTION 4: SUFFICIENT WARNING TIME CHECK**

		Remarks
31. Required minimum time (MT, sec), per regulations .....	31. <input type="text" value="20"/>	
32. Wide crossing clearance time (CT, sec): verify w/ railroad .....	32. <input type="text" value="2"/>	round up (MTCD-35)/10
33. Additional CT (sec): from railroad or public agency .....	33. <input type="text" value="10"/>	used at Matson
34. Minimum warning time provided by railroad (MWT, sec): add lines 31 thru 33 .....	34. <input type="text" value="32.0"/>	
35. Minimum amount of advance preemption time needed from railroad (sec): subtract line 34 from line 30, round up to nearest full second; enter zero (0) if less than zero .....	35. <input type="text" value="11"/>	

If the value on line 35 is greater than zero, this is the minimum advance preemption time that should be requested from the railroad. Alternatively, the maximum preemption time (line 30) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**SECTION 5: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)**

36. Right-of-way transfer time (sec): line 17.....	36.	<input type="text" value="18.5"/>	
37. Time required for design vehicle to start moving (sec): line 23.....	37.	<input type="text" value="5.9"/>	
38. Time required for design vehicle to accelerate through DVL (on line 20, sec).....	38.	<input type="text" value="10.9"/>	From Fig. 2 and Table 2
39. Time required for design vehicle to clear descending gate (sec): add lines 36 through 38.....	39.	<input type="text" value="35.3"/>	
			<b>Remarks</b>
40. Duration of flashing lights before gate descent start (sec): get from railroad.....	40.	<input type="text" value="3.0"/>	<u>NEED RR INPUT</u>
			<b>Remarks</b>
41. Full gate descent time (sec): get from railroad.....	41.	<input type="text" value="9.0"/>	<u>NEED RR INPUT</u>
42. Distance from center of gate support to design vehicle (ft).....	42.	<input type="text" value="15.0"/>	See Figure 4
43. Proportion of non-interaction gate descent time.....	43.	<input type="text" value="0.47"/>	From Figure 5
44. Non-interaction gate descent time (sec): multiply lines 41 and 43.....	44.	<input type="text" value="4.2"/>	
45. Time available for design vehicle to clear descending gate (sec): add lines 40 and 44.....	45.	<input type="text" value="7.2"/>	
46. Advance preemption time (APT) required to avoid design vehicle-gate interaction (sec): subtract line 45 from line 39, round up to nearest full second, enter zero (0) if less than zero.....	46.	<input type="text" value="29"/>	

Use Vehicle Gate Interaction ? **No**  
Is Gate Down Circuit Present ? **Yes**

**SECTION 6: TRACK CLEARANCE GREEN TIME CALCULATION**

**Preempt Trap Check (Use if gate-down circuit not present)**

47. Advance preemption time (APT) to be provided (sec) .....	47.	<input type="text" value="0"/>	<b>NA</b>	Enter APT from line 35 or line 46
48. Multiplier for maximum APT due to train deceleration .....	48.	<input type="text" value="2.00"/>	<b>NA</b>	See Instructions for details.
49. Maximum APT (sec): multiply line 47 and 48 .....	49.	<input type="text" value="0.0"/>	<b>NA</b>	<b>Remarks</b>
50. Time from start of flashing lights until gate is horizontal (sec) .....	50.	<input type="text" value="0.0"/>	<b>NA</b>	
51. Gates down after start of preemption (sec): add lines 49 and 50 .....	51.	<input type="text" value="0.0"/>	<b>NA</b>	
52. Preempt verification and response time (sec): line 3 .....	52.	<input type="text" value="0.0"/>	<b>NA</b>	<b>Remarks</b>
53. Best-case conflicting vehicle or pedestrian time (sec): usually zero (0) .....	53.	<input type="text" value="0.0"/>	<b>NA</b>	
54. Minimum right-of-way transfer time (sec): add lines 52 and 53 .....	54.	<input type="text" value="0.0"/>	<b>NA</b>	
55. Minimum track clearance green time (sec): subtract line 54 from line 51 .....	55.	<input type="text" value="0"/>	<b>NA</b>	

**CLEARING OF CLEAR STORAGE DISTANCE (OPTIONAL)**

56. Time required for design vehicle to start moving (sec): line 23 .....	56.	<input type="text" value="5.9"/>	
57. Design vehicle clearance distance (DVCD,feet): line 24 .....	57.	<input type="text" value="114"/>	<b>Remarks</b>
58. Portion of CSD to clear during track clearance green (feet) .....	58.	<input type="text"/>	
59. Design vehicle relocation distance (DVRD,feet): add lines 57and 58 .....	59.	<input type="text" value="114"/>	
60. Time required for design vehicle to accelerate through DVRD (sec) .....	60.	<input type="text" value="14.5"/>	From Fig. 2 and Table 2
61. Time to clear portion of clear storage distance (sec): add lines 56 and 60 .....	61.	<input type="text" value="20"/>	
62. Track clearance green interval (seconds): maximum of lines 26, 55, or 61, round up to full second .....	62.	<input type="text" value="21"/>	