# Motorist Delay at Public Highway-Rail Grade Crossings in Northeastern Illinois

## 2011 Update

### SUMMARY

The 2011 ICC motorist delay analysis found that public highway-rail grade crossings (crossings) are in use by railroads for a total of 1,214 *(1,509 in 2002)* hours on a typical weekday. This estimated "gate down" time directly affects 384,037 *(463,438 in 2002)* motorists who are collectively delayed a total of 7,817 *(10,982 in 2002)* hours on a typical weekday.

The update shows fewer vehicles impacted by delay and fewer total hours of motorist delay. This is due largely to the fact that there are fewer crossings open as of July 2011 compared to 2002 *(1,468 versus 1,732).* Train counts and annual average daily traffic (AADT) are also generally lower and more accurate since much effort has been placed on updating the information in the crossing inventory.

Motorist delay is concentrated at relatively few locations. In 2011, 62.5% percent *(69.6% in 2002)* of the region's crossings delay 100 or fewer vehicles on a typical weekday. Likewise, 57.4 percent *(64.2% in 2002)* of the region's crossings experience less than one hour of total motorist delay per weekday. Table 1 lists the ten crossings with the greatest amount of motorist delay in 2011.

*Table 1. Top 10 Public Highway-Rail Grade Crossings That Cause the Greatest Amount of Motorist Delay.*

| Street | DOT# | RR | City | 2011 Total Daily Trains | 2011 Vehicles Delayed | 2011 Avg Delay per Motorist in Minutes | 2011 Total Hours of Aggregate Delay | Rank 2011 | Rank 2002 | StHwy |
|---|---|---|---|---|---|---|---|---|---|---|
| MORGAN ST | 243177N | NS | CHICAGO | 50 | 3,194 | 7.2 | 384 | 1 | 70 | No |
| PULASKI RD | 289809Y | IC | CHICAGO | 24 | 3,102 | 4.4 | 226 | 2 | 227 | Yes |
| ARCHER AVE | 843806F | BRC | CHICAGO | 32 | 3,348 | 2.9 | 161 | 3 | 9 | Yes |
| 55TH ST | 843807M | BRC | CHICAGO | 32 | 3,068 | 2.9 | 148 | 4 | 12 | No |
| 55TH ST | 326917X | BRC | CHICAGO | 26 | 2,493 | 2.9 | 120 | 5 | 100 | No |
| 119TH ST | 163422T | CSX | CHICAGO | 38 | 1,974 | 3.6 | 119 | 6 | 13 | No |
| 47TH ST | 326851A | IHB | LAGRANGE | 50 | 2,206 | 2.9 | 106 | 7 | 30 | Yes |
| RACINE AVE | 243205P | NS | CHICAGO | 50 | 798 | 7.2 | 96 | 8 | 629 | No |
| MUSKEGON AVE | 869201U | BRC | CHICAGO | 30 | 1,586 | 3.6 | 95 | 9 | 279 | No |
| CENTRAL AVE | 326918E | BRC | CHICAGO | 26 | 1,972 | 2.9 | 95 | 10 | 3 | Yes |
| | | | | | **23,741** | | **1,550** | **Top 10 Total in 2011** | | |
| | | | | | **384,037** | | **7,817** | **Total** | | |
| | | | | | **6.2%** | | **19.8%** | **%of Total** | | |

## BACKGROUND

The data for this study, including such key items as: operating railroad, line code, quantity of daily trains, train speed and the quantity of highway vehicles (AADT) was drawn from the ICC's Rail Information and Location Information System known as RAILS. The study covers all railroad lines within Cook, DuPage, Kane, Lake, McHenry, and Will counties in northeastern Illinois. The goal of the analysis is to estimate the number of vehicles that are delayed and the total amount of time that motorists are collectively delayed at each crossing.

## METHODOLOGY

The methodology is documented in the ICC report *"Motorist Delay at Public Highway-Rail Grade Crossings in Northeastern Illinois"* published July 2002.

## RESULTS

On a typical weekday an estimated 7,817 hours of delay are experienced by 384,037 motorists at crossings in northeastern Illinois. Table 2 illustrates that in 2011, 62.5% percent *(69.6% in 2002)* of the region's crossings delay 100 or fewer vehicles on a typical weekday while 106 locations delay 1,001 or more vehicles.

*Table 2. Number of Vehicles Delayed Summary.*

| Number of Vehicles Delayed | Crossings 11 | % | Crossings 02 | % |
|---|---|---|---|---|
| Zero | 148 | 10.1% | 319 | 18.4% |
| 1 to 100 | 769 | 52.4% | 887 | 51.2% |
| 101 to 250 | 161 | 11.0% | 143 | 8.3% |
| 251 to 500 | 147 | 10.0% | 112 | 6.5% |
| 501 to 1,000 | 137 | 9.3% | 128 | 7.4% |
| 1,001 to 2,000 | 79 | 5.4% | 92 | 5.3% |
| 2,001 or greater | 27 | 1.8% | 51 | 2.9% |
| **Total** | **1,468** | **100.0%** | **1,732** | **100.0%** |

Likewise, Table 3 indicates that in 2011, 57.4 percent *(64.2% in 2002)* of the region's crossings experience less than one hour of total motorist delay per weekday while 75 locations result in 21 or more hours of motorist delay.

*Table 3. Hours of Motorist Delay Summary.*

| Hours of Total Motorist Delay | Crossings 11 | % | Crossings 02 | % |
|---|---|---|---|---|
| Less than 1 | 842 | 57.4% | 1,112 | 64.2% |
| 1 to 5 | 306 | 20.8% | 275 | 15.9% |
| 6 to 10 | 147 | 10.0% | 104 | 6.0% |
| 11 to 20 | 98 | 6.7% | 102 | 5.9% |
| 21 to 50 | 51 | 3.5% | 87 | 5.0% |
| 51 or greater | 24 | 1.6% | 52 | 3.0% |
| **Total** | **1,468** | **100.0%** | **1,732** | **100.0%** |

Table 4 shows that crossings owned by Metra (NIRC) account for the largest amount of motorist delay.

*Table 4. Hours of Motorist Delay by Railroad.*

| Railroad | Crossings | Crossings Percent | AADT | AADT Percent | Vehicles Delayed | Vehicles Delayed Percent | Avg Gate Down Time Per Train in Mnutes Per Crossing | Avg Delay Per Motorist in Minutes Per Crossing | Total Hours of Aggregate Delay | Total Hours of Aggregate Delay Percent |
|---|---|---|---|---|---|---|---|---|---|---|
| NIRC | 254 | 17.3% | 2,088,199 | 19.9% | 117,055 | 30.5% | 1.4 | 0.8 | 1,516.1 | 19.4% |
| UP | 345 | 23.5% | 2,338,039 | 22.3% | 97,322 | 25.3% | 1.3 | 0.7 | 1,385.4 | 17.7% |
| BRC | 39 | 2.7% | 300,373 | 2.9% | 22,729 | 5.9% | 3.3 | 1.8 | 1,106.6 | 14.2% |
| NS | 33 | 2.2% | 197,126 | 1.9% | 9,637 | 2.5% | 2.5 | 1.4 | 642.5 | 8.2% |
| BNSF | 174 | 11.9% | 966,023 | 9.2% | 45,063 | 11.7% | 1.4 | 0.8 | 634.0 | 8.1% |
| IHB | 43 | 2.9% | 332,528 | 3.2% | 14,856 | 3.9% | 2.8 | 1.5 | 625.0 | 8.0% |
| CSX | 74 | 5.0% | 526,821 | 5.0% | 17,145 | 4.5% | 2.3 | 1.3 | 598.9 | 7.7% |
| EJE | 123 | 8.4% | 913,803 | 8.7% | 12,909 | 3.4% | 2.0 | 1.1 | 318.2 | 4.1% |
| IC | 35 | 2.4% | 169,665 | 1.6% | 4,723 | 1.2% | 1.4 | 0.8 | 244.3 | 3.1% |
| WC | 68 | 4.6% | 690,804 | 6.6% | 18,476 | 4.8% | 1.7 | 0.9 | 243.5 | 3.1% |
| CC | 57 | 3.9% | 588,160 | 5.6% | 8,781 | 2.3% | 1.8 | 1.0 | 177.1 | 2.3% |
| SOO | 35 | 2.4% | 226,222 | 2.2% | 7,637 | 2.0% | 1.1 | 0.6 | 156.8 | 2.0% |
| GTW | 44 | 3.0% | 463,690 | 4.4% | 5,916 | 1.5% | 2.4 | 1.3 | 141.1 | 1.8% |
| ATK | 2 | 0.1% | 2,318 | 0.0% | 585 | 0.2% | 2.1 | 1.2 | 10.2 | 0.1% |
| NICD | 2 | 0.1% | 14,909 | 0.1% | 434 | 0.1% | 1.4 | 0.7 | 6.5 | 0.1% |
| CTM | 78 | 5.3% | 375,941 | 3.6% | 361 | 0.1% | 1.4 | 0.8 | 4.9 | 0.1% |
| WSOR | 13 | 0.9% | 31,834 | 0.3% | 86 | 0.0% | 1.6 | 0.9 | 1.7 | 0.0% |
| DME | 7 | 0.5% | 9,738 | 0.1% | 118 | 0.0% | 1.6 | 0.9 | 1.7 | 0.0% |
| CRL | 16 | 1.1% | 98,442 | 0.9% | 92 | 0.0% | 1.2 | 0.7 | 1.2 | 0.0% |
| CHTT | 18 | 1.2% | 130,072 | 1.2% | 86 | 0.0% | 1.0 | 0.6 | 0.8 | 0.0% |
| SCIH | 2 | 0.1% | 20,500 | 0.2% | 21 | 0.0% | 1.5 | 0.8 | 0.3 | 0.0% |
| CCUO | 5 | 0.3% | 3,934 | 0.0% | 2 | 0.0% | 0.9 | 0.5 | 0.0 | 0.0% |
| MJ | 1 | 0.1% | 550 | 0.0% | 1 | 0.0% | 1.8 | 1.0 | 0.0 | 0.0% |
| **Total** | **1,468** | **100.0%** | **10,489,691** | **100.0%** | **384,037** | **100.0%** | **1.65** | **0.91** | **7,816.8** | **100.0%** |

Table 5 shows that the twenty rail line segments that cause the greatest amount of motorist delay account for 83.5 percent of all motorist delay in northeastern Illinois. The BNSF line between Cicero and Aurora causes the most delay on a typical weekday.

*Table 5. Hours of Motorist Delay by Line Segment.*

| Railroad Line Segment Name | Crossings | Crossings Percent | AADT | AADT Percent | Vehicles Delayed | Vehicles Delayed Percent | Hours of Aggregated Delay to All Motorists | Hours of Aggregated Delay to All Motorists Percent |
|---|---|---|---|---|---|---|---|---|
| BNSF-[BN]-CICERO TO AURORA | 35 | 2.4% | 237,954 | 2.3% | 41,237 | 10.7% | **569.8** | **7.3%** |
| CSX-MAIN LINE BLUE ISLAND TO 59TH ST | 25 | 1.7% | 206,761 | 2.0% | 16,383 | 4.3% | **561.8** | **7.2%** |
| BELT-CLEARING TO CRAGIN | 6 | 0.4% | 97,500 | 0.9% | 11,375 | 3.0% | **547.4** | **7.0%** |
| NS-ASHLAND AVE MAIN | 2 | 0.1% | 8,759 | 0.1% | 3,992 | 1.0% | **480.3** | **6.1%** |
| UP-[CNW]-METRA HARVARD SUB | 75 | 5.1% | 618,986 | 5.9% | 36,996 | 9.6% | **478.6** | **6.1%** |
| UP-[CNW]-METRA WEST LINE | 37 | 2.5% | 267,668 | 2.6% | 32,210 | 8.4% | **442.2** | **5.7%** |
| CN/IC-[CCP]-MAIN LINE WEST | 45 | 3.1% | 522,001 | 5.0% | 11,853 | 3.1% | **403.6** | **5.2%** |
| IHB-MCCOOK TO FRANKLIN PARK | 7 | 0.5% | 52,359 | 0.5% | 8,353 | 2.2% | **367.2** | **4.7%** |
| BELT/IHB-NORTHSIDE CLEARING | 9 | 0.6% | 79,736 | 0.8% | 7,558 | 2.0% | **363.7** | **4.7%** |
| METRA-MILWAUKEE WEST LINE | 46 | 3.1% | 360,663 | 3.4% | 26,685 | 6.9% | **347.8** | **4.4%** |
| METRA-MILWAUKEE NORTH LINE | 25 | 1.7% | 376,709 | 3.6% | 27,742 | 7.2% | **311.0** | **4.0%** |
| METRA-ELECTRIC-SOUTH CHICAGO | 37 | 2.5% | 278,885 | 2.7% | 18,120 | 4.7% | **270.3** | **3.5%** |
| CN/IC-[WC] NCS MAIN LINE | 56 | 3.8% | 621,759 | 5.9% | 17,443 | 4.5% | **211.2** | **2.7%** |
| UP-[CWI-CEI]-MAIN LINE | 44 | 3.0% | 229,413 | 2.2% | 10,799 | 2.8% | **210.8** | **2.7%** |
| EJE-WEST MAIN LINE | 64 | 4.4% | 579,768 | 5.5% | 7,993 | 2.1% | **187.7** | **2.4%** |
| BELT-SOUTH CHICAGO TO CLEARING | 2 | 0.1% | 21,600 | 0.2% | 2,953 | 0.8% | **177.6** | **2.3%** |
| IHB-CALUMET PARK TO BLUE ISLAND | 5 | 0.3% | 25,898 | 0.2% | 3,142 | 0.8% | **171.3** | **2.2%** |
| NS-MAIN LINE | 5 | 0.3% | 47,159 | 0.4% | 5,347 | 1.4% | **157.9** | **2.0%** |
| CN/IC-[GTW] MAIN LINE | 44 | 3.0% | 463,690 | 4.4% | 5,916 | 1.5% | **141.1** | **1.8%** |
| EJE-EAST MAIN LINE | 32 | 2.2% | 220,177 | 2.1% | 4,618 | 1.2% | **126.9** | **1.6%** |
| **Top 20 Line Segment Sub-Total** | **601** | **40.9%** | **5,317,445** | **50.7%** | **300,714** | **78.3%** | **6,528.5** | **83.5%** |
| **Other 102 Line Segments** | **867** | **59.1%** | **5,172,246** | **49.3%** | **83,323** | **21.7%** | **1,288.3** | **16.5%** |
| **Grand Total** | **1,468** | **100.0%** | **10,489,691** | **100.0%** | **384,037** | **100.0%** | **7,816.8** | **100.0%** |

Grade crossing delay, like the railroad network itself, is concentrated in Cook County. Table 6 shows that Cook County has 55 percent of the region's crossings and 78.1 percent of the total motorist delay.

*Table 6. Hours of Motorist Delay by County.*

| County | Crossings | Crossings Percent | AADT | AADT Percent | Vehicles Delayed | Vehicles Delayed Percent | Total Hours of Aggregate Delay Percent | Avg Total Hours of Aggregate Delay Per Crossing |
|---|---|---|---|---|---|---|---|---|
| Cook | 808 | 55.0% | 6,533,108 | 62.3% | 266,770 | 69.5% | 78.1% | 7.56 |
| Du Page | 142 | 9.7% | 1,075,670 | 10.3% | 55,526 | 14.5% | 10.7% | 5.91 |
| Kane | 128 | 8.7% | 681,893 | 6.5% | 9,298 | 2.4% | 1.5% | 0.93 |
| Lake | 139 | 9.5% | 1,122,869 | 10.7% | 31,710 | 8.3% | 5.2% | 2.94 |
| McHenry | 87 | 5.9% | 362,409 | 3.5% | 7,576 | 2.0% | 1.3% | 1.16 |
| Will | 164 | 11.2% | 713,742 | 6.8% | 13,157 | 3.4% | 3.1% | 1.46 |
| **Region Total** | **1,468** | **100.0%** | **10,489,691** | **100.0%** | **384,037** | **100.0%** | **100.0%** | **5.32** |

Finally, Table 7 indicates the twenty cities with the greatest amount of motorist delay account for approximately 68 percent of the total motorist delay in northeastern Illinois.

*Table 7. Hours of Motorist Delay by City.*

| City | Crossings | Crossing Percent | AADT | AADT Percent | Vehicles Delayed | Vehicles Delayed Percent | Total Hours of Aggregate Delay | Total Hours of Aggregate Delay Percent |
|---|---|---|---|---|---|---|---|---|
| CHICAGO | 336 | 22.9% | 2,459,026 | 23.4% | 104,083 | 27.1% | 3178.3 | 40.7% |
| LAGRANGE | 9 | 0.6% | 55,127 | 0.5% | 9,808 | 2.6% | 265.5 | 3.4% |
| DES PLAINES | 33 | 2.2% | 488,150 | 4.7% | 13,972 | 3.6% | 205.2 | 2.6% |
| BLUE ISLAND | 23 | 1.6% | 114,719 | 1.1% | 5,717 | 1.5% | 166.4 | 2.1% |
| DOWNERS GROVE | 6 | 0.4% | 65,500 | 0.6% | 11,051 | 2.9% | 147.5 | 1.9% |
| BENSENVILLE | 12 | 0.8% | 100,877 | 1.0% | 4,078 | 1.1% | 123.5 | 1.6% |
| NORTHBROOK | 5 | 0.3% | 174,200 | 1.7% | 11,120 | 2.9% | 121.0 | 1.5% |
| DIXMOOR | 8 | 0.5% | 28,536 | 0.3% | 2,032 | 0.5% | 118.9 | 1.5% |
| MC COOK | 6 | 0.4% | 53,827 | 0.5% | 2,907 | 0.8% | 109.8 | 1.4% |
| RIVERSIDE | 5 | 0.3% | 63,618 | 0.6% | 6,639 | 1.7% | 99.0 | 1.3% |
| LA GRANGE PARK | 2 | 0.1% | 21,550 | 0.2% | 2,736 | 0.7% | 96.9 | 1.2% |
| JOLIET | 33 | 2.2% | 165,325 | 1.6% | 2,592 | 0.7% | 93.3 | 1.2% |
| RIVERDALE | 3 | 0.2% | 11,468 | 0.1% | 1,507 | 0.4% | 80.8 | 1.0% |
| MAYWOOD | 3 | 0.2% | 40,109 | 0.4% | 5,358 | 1.4% | 78.9 | 1.0% |
| BERWYN | 6 | 0.4% | 25,968 | 0.2% | 4,416 | 1.1% | 74.7 | 1.0% |
| CHICAGO HEIGHTS | 31 | 2.1% | 200,003 | 1.9% | 2,551 | 0.7% | 73.9 | 0.9% |
| RIVER GROVE | 5 | 0.3% | 89,900 | 0.9% | 4,748 | 1.2% | 73.2 | 0.9% |
| ARLINGTON HTS | 10 | 0.7% | 98,150 | 0.9% | 5,367 | 1.4% | 73.0 | 0.9% |
| DOLTON | 6 | 0.4% | 21,837 | 0.2% | 2,034 | 0.5% | 69.1 | 0.9% |
| WHEATON | 9 | 0.6% | 47,100 | 0.4% | 5,306 | 1.4% | 67.9 | 0.9% |
| **Top 20 Sub-Total** | **551** | **37.5%** | **4,324,990** | **41.2%** | **208,021** | **54.2%** | **5,316.7** | **68.0%** |
| **Other 174 Cities** | **917** | **62.5%** | **6,164,701** | **58.8%** | **176,016** | **45.8%** | **2,500.1** | **32.0%** |
| **Grand Total** | **1,468** | **100.0%** | **10,489,691** | **100.0%** | **384,037** | **100.0%** | **7,816.8** | **100.0%** |

## CONCLUSION

Motorist delay is concentrated at a small number of the region's crossings. The top 100 public highway-rail grade crossings account for 60.7 percent of motorist delay and the top ten locations account for 19.8 percent of motorist delay.