

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 Mminutes 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.