

WORKING PAPER 88-12

COMPARISON OF METRA RIDERSHIP BEFORE  
AND DURING DAN RYAN RECONSTRUCTION

by

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The Dan Ryan reconstruction project has reduced the capacity of the northern three miles of expressway by 50%, resulting in increases in delay and travel time. These factors have caused many motorists to seek shorter travel times by using alternate routes and in some cases alternate modes of travel. The purpose of this report is to analyze the impact of the reconstruction on Metra ridership.

This analysis reviews Metra ridership data for the first four weeks of the reconstruction project, from Tuesday March 1, 1988 to Friday March 25, 1988. Six lines/branches were examined for ridership changes: the Chicago, South Shore and South Bend (CSSSB); Metra Electric Main Line, Metra Electric Blue Island branch, and Metra Electric South Chicago branch; Norfolk Southern (Norfolk and Western); and the Metra Rock Island District. The reason for including only these lines/branches is that they most closely parallel the Dan Ryan and alternate routes and provide reasonable alternatives to auto commuters.

During February 1988, the ridership of the six lines/branches was monitored by Metra to establish the average number of trips per weekday, nearly 92,000. The average ridership from February was then compared to the number of weekday passengers during March. Any resulting increases in ridership can reasonably be attributed to Dan Ryan motorists switching to commuter rail to avoid driving delays. The first day of construction saw ridership increases ranging from 6.4% to 11.5% with a mean of 8.5%. This indicates a significant number of motorists initially changed their mode of travel to commuter rail. The following paragraphs highlight ridership changes by line/branch. (For a detailed summary of these changes refer to the appendix.)

The Chicago, South Shore and South Bend had the largest percentage increase in ridership when the construction began and also has retained the highest percentage of new riders. On Tuesday March 1, 1988, when the barricades on the Dan Ryan were set in place, ridership increased 11.5%. During the first week of construction ridership was an average 9.1% higher than preconstruction. The second week averaged slightly fewer riders, with

an 8.0% increase over February. The third week of construction saw the full closure of the southbound lanes on the Dan Ryan and the beginning of two lane operation in each direction utilizing the northbound lanes. Ridership gains continued to decline during this week to an average of 6.7% greater than February. In week four the ridership appeared to stabilize. The number of riders for this week averaged 7.0% higher than the previous month. Although there are daily fluctuations in the number of passengers, approximately 800 additional trips are made each weekday on this line.

The ridership on the Electric main line increased 9.0% on the first day of construction. However, for the first week of the project, the increase averaged 5.9%. The second week of construction showed that there were slightly fewer riders, averaging 4.0% more than the previous month. Ridership in week three increased 0.8% to 4.8% more than February. These increases occurred at the same time as the closure of the southbound lanes, but appeared to be due more to St. Patrick's Day ridership than the reconstruction. The average increase in ridership for week four returned to 4.0%. The number of additional passengers appears to have stabilized at about 1,330.

The Blue Island branch ridership increased 9.4% on the first day of construction, but declined rapidly. The average ridership increase for the first week of the reconstruction was 4.4%. During the second week the ridership increase averaged 0.5%. During the third and fourth weeks the ridership stabilized, averaging 2.4% and 2.3% respectively. It appears that this branch has approximately 70 additional riders.

The South Chicago branch had a first day increase in ridership of 9.0%. The first week of construction showed ridership increases 8.1% higher than February levels. As on the Blue Island branch, ridership during week two decreased, averaging 2.6% above February. Week three of the project showed a reversal of the week two trend. Ridership for week three of the construction averaged 4.5% higher. The fourth week of construction was similar to the third, averaging a 4.1% increase. It appears that about 325 additional passengers are riding the South Chicago branch.

Ridership on the Norfolk Southern (Norfolk and Western) increased 9.9% on the first day of the project. However, ridership for the first week averaged 5.1% higher than February. The average ridership continued to decline in weeks two and three, averaging 2.0% and 1.6% respectively. By the fourth week there was no average increase over February levels.

The Metra Rock Island District (Rock Island) showed a pattern similar to the Norfolk Southern. On the first day of construction there was an increase of 6.4% and the first week averaged 5.1%. During week two of the construction the average ridership was 1.6% higher than February and week three was 1.3% higher. The average increase for week four was only 0.1%, which represents no essential change from February averages.

Overall, the lines/branches had an average weekday ridership of nearly 92,000 in February. On the first day of construction ridership increased 8.5%. During the first week of the project average ridership increased 6.1%. In weeks two, three and four the percentage increase averaged 3.3%, 3.5% and 3.3% respectively. The ridership changes are shown in Table 1 and illustrated in Figures 1 and 2.

Table 1

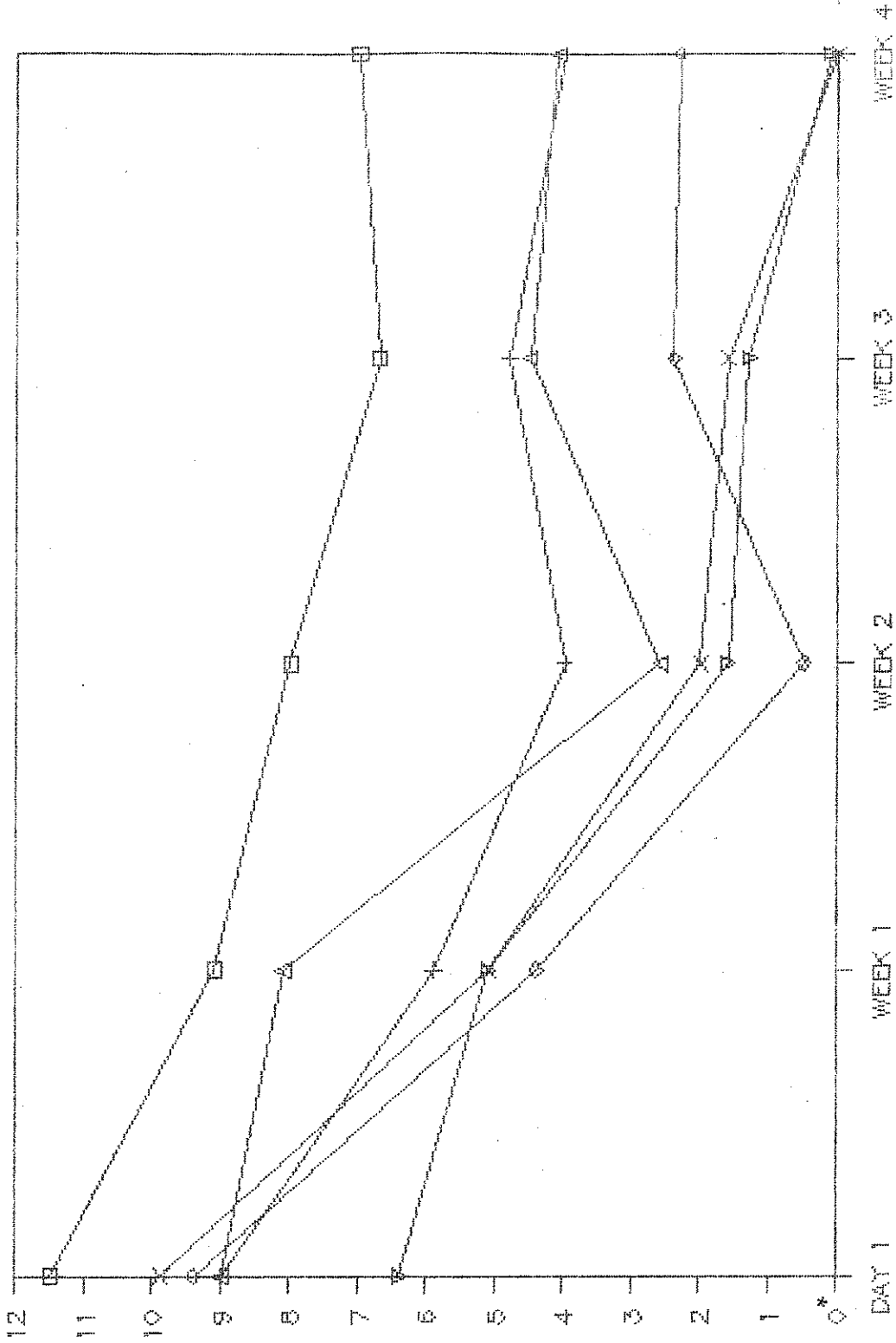
Weekly Ridership on Metra By Line/Branch  
Percent Change Preconstruction to During Construction

<u>Line</u>	<u>Day 1</u>	<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	<u>Week 4</u>	<u>Overall</u>
Chicago, South Shore & South Bend	11.5	9.1	8.0	6.7	7.0	7.7
Metra Electric main line	9.0	5.9	4.0	4.8	4.0	4.6
Metra Electric Blue Island branch	9.4	4.4	0.5	2.4	2.3	2.3
Metra Electric South Chicago branch	9.0	8.1	2.6	4.5	4.1	4.7
Norfolk Southern	9.9	5.1	2.0	1.6	0.0	2.0
Metra Rock Island District	6.4	5.1	1.6	1.3	0.1	1.8
Total	8.5	6.1	3.3	3.5	3.3	4.0

FIGURE 1.

# CHANGE IN METRA RIDERSHIP BY LINE

DURING CONSTRUCTION



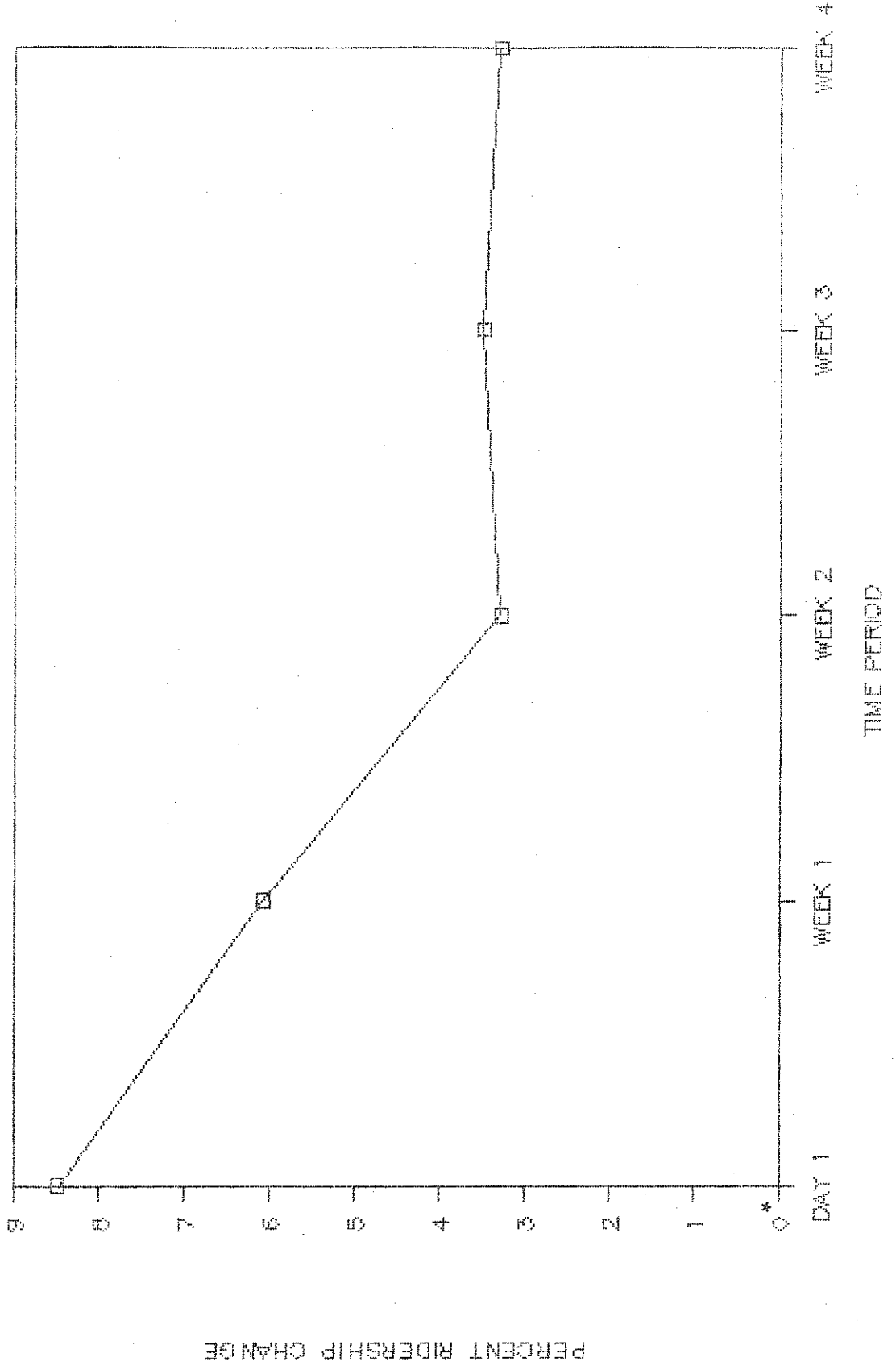
TIME PERIOD

□ C/SSSB ◇ METRA ELECTRIC △ BLUE ISLAND BRANCH × SOUTH CHICAGO BRANCH ▽ NORFOLK SOUTHERN / ROCK ISLAND

\* AVERAGE FEBRUARY 1988 RIDERSHIP

FIGURE 2

# OVERALL CHANGE IN METRA RIDERSHIP DURING CONSTRUCTION



\* AVERAGE FEBRUARY 1988 RIDERSHIP

The greatest passenger increase was on the Metra Electric Main Line, while the greatest percentage increase was on the Chicago, South Shore and South Bend. (See Appendix for complete breakdown by line/branch). The Norfolk Southern and Rock Island District had substantial passenger increases initially, but by the fourth week of the project exhibited essentially no change from average February weekday ridership. The passenger increase that seems attributable to the Dan Ryan project totals approximately 3,700 riders per day which is 4.0% greater than February.

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## APPENDIX

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP  
CHICAGO, SOUTH SHORE AND SOUND BEND

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	12,449	1,286	11.5
Wednesday	3/2/88	12,010	847	7.6
Thursday	3/3/88	12,176	1,013	9.1
Friday	3/4/88	12,091	928	8.3
WEEK ONE AVERAGE		12,181	1,019	9.1
Monday	3/7/88	11,870	707	6.3
Tuesday	3/8/88	12,163	1,000	9.0
Wednesday	3/9/88	12,153	990	8.9
Thursday	3/10/88	11,939	776	7.0
Friday	3/11/88	12,133	970	8.7
WEEK TWO AVERAGE		12,052	889	8.0
Monday	3/14/88	11,851	688	6.2
Tuesday	3/15/88	11,904	741	6.6
Wednesday	3/16/88	11,874	711	6.4
Thursday	3/17/88	12,231	1,068	9.6
Friday	3/18/88	11,704	541	4.8
WEEK THREE AVERAGE		11,913	750	6.7
Monday	3/21/88	11,744	581	5.2
Tuesday	3/22/88	12,007	844	7.6
Wednesday	3/23/88	11,998	835	7.5
Thursday	3/24/88	12,035	872	7.8
Friday	3/25/88	NA	-	-
WEEK FOUR AVERAGE		11,946	783	7.0
OVERALL AVERAGE		12,018	855	7.7

\*Based on Average Number of Trips in February = 11,163

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

METRA ELECTRIC MAIN LINE

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	36,096	2,993	9.0
Wednesday	3/2/88	35,243	2,140	6.5
Thursday	3/3/88	34,712	1,609	4.9
Friday	3/4/88	34,238	1,135	3.4
WEEK ONE AVERAGE		35,072	1,969	5.9
Monday	3/7/88	34,457	1,354	4.1
Tuesday	3/8/88	34,787	1,684	5.1
Wednesday	3/9/88	34,552	1,449	4.4
Thursday	3/10/88	34,246	1,143	3.5
Friday	3/11/88	34,108	1,005	3.0
WEEK TWO AVERAGE		34,430	1,327	4.0
Monday	3/14/88	34,730	1,627	4.9
Tuesday	3/15/88	34,619	1,516	4.6
Wednesday	3/16/88	34,528	1,425	4.3
Thursday	3/17/88	35,745	2,642	8.0
Friday	3/18/88	33,817	714	2.2
WEEK THREE AVERAGE		34,688	1,585	4.8
Monday	3/21/88	34,379	1,276	3.9
Tuesday	3/22/88	34,997	1,894	5.7
Wednesday	3/23/88	34,903	1,800	5.4
Thursday	3/24/88	34,516	1,413	4.3
Friday	3/25/88	33,375	272	0.8
WEEK FOUR AVERAGE		34,434	1,331	4.0
OVERALL AVERAGE		34,634	1,531	4.6

\*Based on Average Number of Trips in February = 33,103

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

METRA ELECTRIC BLUE ISLAND BRANCH

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	3,255	281	9.4
Wednesday	3/2/88	3,223	249	8.4
Thursday	3/3/88	3,014	40	1.3
Friday	3/4/88	2,930	(44)	(1.5)
WEEK ONE AVERAGE		3,105	131	4.4
Monday	3/7/88	2,991	17	0.6
Tuesday	3/8/88	2,963	(11)	(0.4)
Wednesday	3/9/88	3,082	108	3.6
Thursday	3/10/88	3,024	50	1.7
Friday	3/11/88	2,886	(88)	(3.0)
WEEK TWO AVERAGE		2,989	15	0.5
Monday	3/14/88	2,991	17	0.6
Tuesday	3/15/88	3,046	72	2.4
Wednesday	3/16/88	3,003	29	1.0
Thursday	3/17/88	3,221	247	8.3
Friday	3/18/88	2,969	(5)	(0.2)
WEEK THREE AVERAGE		3,046	72	2.4
Monday	3/21/88	3,143	169	5.7
Tuesday	3/22/88	3,099	125	4.2
Wednesday	3/23/88	3,020	46	1.5
Thursday	3/24/88	3,034	60	2.0
Friday	3/25/88	2,917	(57)	(1.9)
WEEK FOUR AVERAGE		3,043	69	2.3
OVERALL AVERAGE		3,043	69	2.3

\*Based on Average Number of Trips in February = 2,974

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

METRA ELECTRIC SOUTH CHICAGO BRANCH

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	8,544	708	9.0
Wednesday	3/2/88	8,522	686	8.8
Thursday	3/3/88	8,338	502	6.4
Friday	3/4/88	8,486	650	8.3
WEEK ONE AVERAGE		8,473	637	8.1
Monday	3/7/88	7,967	131	1.7
Tuesday	3/8/88	8,010	174	2.2
Wednesday	3/9/88	8,045	209	2.7
Thursday	3/10/88	8,231	395	5.0
Friday	3/11/88	7,943	107	1.4
WEEK TWO AVERAGE		8,039	203	2.6
Monday	3/14/88	8,288	452	5.8
Tuesday	3/15/88	8,181	345	4.4
Wednesday	3/16/88	8,267	431	5.5
Thursday	3/17/88	8,247	411	5.2
Friday	3/18/88	7,960	124	1.6
WEEK THREE AVERAGE		8,189	353	4.5
Monday	3/21/88	8,137	301	3.8
Tuesday	3/22/88	8,343	507	6.5
Wednesday	3/23/88	8,306	470	6.0
Thursday	3/24/88	8,179	343	4.4
Friday	3/25/88	7,828	(8)	(0.1)
WEEK FOUR AVERAGE		8,159	323	4.1
OVERALL AVERAGE		8,201	365	4.7

\*Based on Average Number of Trips in February = 7,836

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

NORFOLK SOUTHERN

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>	
Tuesday	3/1/88	6,019	543	9.9	
Wednesday	3/2/88	5,811	335	6.1	
Thursday	3/3/88	5,768	292	5.3	
Friday	3/4/88	5,429	(47)	(0.9)	
WEEK ONE AVERAGE			5,757	281	5.1
Monday	3/7/88	5,648	172	3.1	
Tuesday	3/8/88	5,691	215	3.9	
Wednesday	3/9/88	5,642	166	3.0	
Thursday	3/10/88	5,625	149	2.7	
Friday	3/11/88	5,327	(149)	(2.7)	
WEEK TWO AVERAGE			5,587	111	2.0
Monday	3/14/88	5,650	174	3.2	
Tuesday	3/15/88	5,663	187	3.4	
Wednesday	3/16/88	5,637	161	2.9	
Thursday	3/17/88	5,532	56	1.0	
Friday	3/18/88	5,326	(150)	(2.7)	
WEEK THREE AVERAGE			5,562	86	1.6
Monday	3/21/88	5,603	127	2.3	
Tuesday	3/22/88	5,507	31	0.6	
Wednesday	3/23/88	5,594	118	2.2	
Thursday	3/24/88	5,483	7	0.1	
Friday	3/25/88	5,187	(289)	(5.3)	
WEEK FOUR AVERAGE			5,475	(1)	(0.0)
OVERALL AVERAGE			5,586	110	2.0

\*Based on Average Number of Trips in February = 5,476

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

METRA ROCK ISLAND DISTRICT

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	33,285	2,008	6.4
Wednesday	3/2/88	33,319	2,042	6.5
Thursday	3/3/88	32,799	1,522	4.9
Friday	3/4/88	32,122	845	2.7
WEEK ONE AVERAGE		32,881	1,604	5.1
Monday	3/7/88	31,727	450	1.4
Tuesday	3/8/88	32,002	725	2.3
Wednesday	3/9/88	31,850	573	1.8
Thursday	3/10/88	31,764	487	1.6
Friday	3/11/88	31,570	293	0.9
WEEK TWO AVERAGE		31,783	506	1.6
Monday	3/14/88	31,835	558	1.8
Tuesday	3/15/88	31,591	314	1.0
Wednesday	3/16/88	31,772	495	1.6
Thursday	3/17/88	32,464	1,187	3.8
Friday	3/18/88	30,675	(602)	(1.9)
WEEK THREE AVERAGE		31,667	390	1.2
Monday	3/21/88	31,409	132	0.4
Tuesday	3/22/88	31,031	(246)	(0.8)
Wednesday	3/23/88	31,484	207	0.7
Thursday	3/24/88	31,329	52	0.2
Friday	3/25/88	31,024	(253)	(0.8)
WEEK FOUR AVERAGE		31,255	(22)	(0.1)
OVERALL AVERAGE		31,845	568	1.8

\*Based on Average Number of Trips in February = 31,277

Data Source: Metra Office of Planning & Analysis

DAN RYAN RECONSTRUCTION IMPACT ON METRA RIDERSHIP

TOTAL FOR THE SIX LINES/BRANCHES

<u>WEEKDAY</u>	<u>DATE</u>	<u>PASSENGERS</u>	<u>CHANGE IN PASSENGERS*</u>	<u>PERCENT CHANGE</u>
Tuesday	3/1/88	99,648	7,819	8.5
Wednesday	3/2/88	98,128	6,299	6.9
Thursday	3/3/88	96,807	4,978	5.4
Friday	3/4/88	95,296	3,467	3.8
WEEK ONE AVERAGE		97,470	5,641	6.1
Monday	3/7/88	94,660	2,831	3.1
Tuesday	3/8/88	95,616	3,787	4.1
Wednesday	3/9/88	95,324	3,495	3.8
Thursday	3/10/88	94,829	3,000	3.3
Friday	3/11/88	93,967	2,138	2.3
WEEK TWO AVERAGE		94,879	3,050	3.3
Monday	3/14/88	95,345	3,516	3.8
Tuesday	3/15/88	95,004	3,175	3.5
Wednesday	3/16/88	95,081	3,252	3.5
Thursday	3/17/88	97,440	5,611	6.1
Friday	3/18/88	92,451	622	0.7
WEEK THREE AVERAGE		95,064	3,235	3.5
Monday	3/21/88	94,415	2,586	2.8
Tuesday	3/22/88	94,984	3,155	3.4
Wednesday	3/23/88	95,305	3,476	3.8
Thursday	3/24/88	94,576	2,747	3.0
Friday	3/25/88	-	-	-
WEEK FOUR AVERAGE		94,820	2,991	3.3
OVERALL AVERAGE		95,493	3,664	4.0

\*Based on Average Number of Trips in February = 91,829

Data Source: Metra Office of Planning & Analysis

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