A9: Capital Cost Estimates

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TABLE A

Midwest Regional Rail System Phase 5

Summary of Infrastructure Costs

Revision Date: 4/18/03

(All numbers in thousands)

No.	Route	Cost Estimate Phase 5 Year 2002 Dollars	Cost Estimate Phase 3B Year 2002 Dollars
a	Chicago Terminal Area	$ 1,152,115	$ 475,059
b	System Maintenance Facility	$ 45,351	N. A.
c	Chicago Union Station	$ 15,000	N. A.
1	Porter to Detroit / Pontiac	$ 329,771	$ 214,963
2	Battle Creek to Port Huron	$ 67,029	$ 59,700
3	Kalamazoo to Grand Rapids / Holland	$ 27,178	$ 21,942
4	Tolleston to Cleveland	$ 1,087,640	$ 599,559
5	Tolleston to Cincinnati	$ 507,468	$ 386,489
6	Grand Crossing to Carbondale	$ 219,878	$ 265,864
7	Joliet to St. Louis	$ 243,256	$ 195,138
8	St. Louis to Kansas City	$ 314,318	$ 295,937
9	Aurora to Quincy	$ 257,362	$ 219,641
10	Wyanet to Omaha	$ 360,207	$ 225,767
11	Rondout to St. Paul	$ 1,049,791	$ 733,191
12	Milwaukee to Green Bay	$ 311,717	$ 35,864
TOTAL		**$ 5,988,079**	**$ 3,729,114**

Notes:

This MWRRI Phase 5 Cost Estimate represents an update of the original Phase 3B Estimate prepared in 1997.

Data for track lengths, alignment, and location of bridges and grade crossings was taken from Trackfiles prepared by TEMS.

Input regarding Maintenance Facility, Service and Inspection Facility and Layover Facility locations and costs were provided by Amtrak.

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TABLE B

MWRRI PHASE 5

CHICAGO TERMINAL AREA LIMITS

Revision Date: 3/30/03

Segment			Lump Sum Cost (in Thousands)
South of the Lake Corridor:			
Chicago to Buffington Harbor	$ 265,000		
Buffingon Harbor to Tolleston	$ 64,000		
Buffington Harbor to Porter	$ 315,000		
Total South of the Lake Corridor			$ 644,000
Grand Crossing Improvements			$ 12,000
Chicago to Joliet			
Joliet Interlocking and Tunnel / Station		$20,000	
Corwith to Argo		$ 901	
Argo to Lemont		$ 8,533	
Lemont to Joliet		$ 3,381	
Metra Heritage Corridor Grade Separation		$168,300	
Total Chicago to Joliet			$ 201,115
Chicago to Aurora			$ 20,000
Chicago to Rondout (from 1995 Chicago to Milwaukee Study)			$ 275,000
TOTAL			$ 1,152,115

The Chicago end of the Detroit, Cleveland, Cincinnati and Carbondale routes are under further detailed study as a part of the South-of-the-Lake corridor study by Amtrak, MDOT and INDOT. From Chicago Union Station (CUS) to Englewood and Grand Crossing, these four routes will continue to share the corridor along the NS right-of-way. From Englewood to Grand Crossing, construction of new double track is proposed. The South-of-the-Lake Corridor infrastructure cost estimate from CUS to Grand Crossing is about $161.5 million.

An additional $12 million placeholder is included in the MWRRS cost estimates for a new track connection at Grand Crossing to the CN/IC tracks toward Carbondale.

The St. Louis route will continue share Metra's route from CUS to Joliet. The proposed passenger service will co-mingle with Metra and the host freight carrier trains at maximum speeds of 79 mph through this segment. Amtrak has proposed that the passenger platforms at the Joliet station be reconfigured to improve freight and passenger train movements through the interlocking. A $20 million placeholder cost is included in the estimates to cover a new interlocking, platforms and tunnels at the Metra/Amtrak Station in Joliet. Additonally, a placeholder of $168 million has been included for the Metra Heritage Corridor grade separation program.
Capital cost estimates for the St Louis to Kansas City route and the Cleveland to Toledo segment are subject to change
The Quincy route will continue to share Metra's route from CUS to Aurora. The proposed passenger service will co-mingle with Metra and the host freight carrier trains at maximum speeds of 79 mph through this segment. A $20 million placeholder cost is included in the estimates for track and signal improvements, including new interlockings and crossovers.

For the Chicago to Rondout segment, cost estimates from the 1995 Tri-State study were used for the MWRRS estimate. Since 1995, Metra traffic volume has increased and new Metra stations have been added along this segment. To account for these developments, the 1995 costs were inflated to 2002 dollars and further increased by 50%.

Chicago to Milwaukee Costs from 1995 Chicago to Milwaukee Study	
Total Cost (in 1993 Dollars, includes 7% Engineering and 15% Contingencies)	143,793,074
Inflate to 2002 costs	183,235,514
Add 50%	91,617,757
TOTAL	274,853,271

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TABLE C

MWRRI PHASE 5

Itemized Costs by Route

Revision Date: 3/24/03

Item No.	Description	Unit	YR 2002 Unit Cost (1000s)	Chicago Terminal Limits Quantity	Chicago Terminal Limits Amount	Porter to Detroit / Pontiac Quantity	Porter to Detroit / Pontiac Amount	Battle Creek to Port Huron Quantity	Battle Creek to Port Huron Amount	Kalamazoo to Grand Rapids / Holland Quantity	Kalamazoo to Grand Rapids / Holland Amount	Tolleston to Cleveland Quantity	Tolleston to Cleveland Amount	Tolleston to Cincinnati Quantity	Tolleston to Cincinnati Amount	Grand Crossing to Carbondale Quantity	Grand Crossing to Carbondale Amount
Maximum Authorized Speed				110 mph		110 mph		79 mph		79 mph		110 mph		110 mph		90 mph	
Trackwork																	
1.1	HSR on Existing Roadbed	per mile	$ 993			26	25,818	12.0	11,916	-	-	-	-	-	-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059			-	-	-	-	-	-	33	34,534	123	130,469	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492			-	-	-	-	-	-	91	135,623	-	-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674			-	-	-	-	-	-	-	-	-	-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222			48	10,567	157.6	34,987	78.3	17,372	83	18,426	106	23,488	331	73,413
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			152	50,147	-	-	-	-	135	44,794	56	18,569	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354			99	35,081	-	-	-	-	-	-	20	7,080	-	-
1.6	Freight Siding	per mile	$ 912			2	1,824	-	-	1.0	912	-	-	7	6,384	-	-
1.65	Passenger Siding	per mile	$ 1,376			17	23,392	-	-	-	-	62	85,312	31	42,656	13	17,888
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			189	9,633	-	-	-	-	229	11,689	228	11,632	239	12,199
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			57	8,723	-	-	-	-	80	12,259	43	6,543	45	6,862
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175			-	-	-	-	-	-	-	-	-	-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			12	4,651	-	-	-	-	15	5,940	14	5,616	15	5,890
Total Track Costs							$ 169,836		$ 46,903		$ 18,284		$ 348,577		$ 252,437		$ 116,253
Turnouts and Crossovers																	
4.1	#24 High Speed Turnout	each	$ 450			6	2,700	-	-	-	-	26	11,700	10	4,500	2	900
4.2	#20 Turnout Timber	each	$ 124			14	1,736	18.0	2,232	-	-	43	5,332.0	20	2,480	12	1,488
4.3	#10 Turnout Timber	each	$ 69			-	-	-	-	-	-	64	4,416.0	8	552	-	-
4.4	#20 Turnout Concrete	each	$ 249			-	-	-	-	-	-	25	6,225.0	-	-	-	-
4.5	#10 Turnout Concrete	each	$ 118			-	-	-	-	-	-	10	1,180.0	-	-	-	-
Total Turnouts Cost							$ 4,436		$ 2,232		$ -		$ 28,853		$ 7,532		$ 2,388
Curves																	
9.1	Elevate & Surface Curves	per mile	$ 58			30	1,729	-	-	-	-	3.6	206	20	1,137	5	318
9.3	Elastic Fasteners	per mile	$ 82			30	2,445	-	-	-	-	3.6	291	20	1,607	5	450
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	varies			-	2,879	-	-	-	-	-	214	-	2,932	-	307
Total Curves Cost							$ 7,053		$ -		$ -		$ 711		$ 5,676		$ 1,075
Signals																	
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			4	5,072	-	-	-	-	13	16,484	4	5,072	1	1,268
8.2	Install CTC System (Single Track)	per mile	$ 183			-	-	-	-	-	-	285.2	52,197.1	285	52,173	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300			-	-	-	-	-	-	12.0	3,600	-	-	-	-
8.3	Install PTC System	per mile	$ 197			143	28,191	-	-	-	-	268	52,841	163	32,013	299	58,903
8.4	Electric Lock for Industry Turnout	each	$ 103			-	-	-	-	-	-	74.0	7,622	14	1,442	-	-
8.5	Signals for Crossover	each	$ 700			6	4,200	5.0	3,500	-	-	15.0	10,500	4	2,800	4	2,800
8.6	Signals for Turnout	each	$ 400			2	800	8.0	3,200	-	-	10.0	4,000	10	4,000	4	1,600
Total Signals Cost							$ 38,263		$ 6,700		$ -		$ 147,244		$ 97,500		$ 64,571

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TABLE C

MWRRI PHASE 5

Itemized Costs by Route

Revision Date: 3/24/03

Item No.	Description	Unit	YR 2002 Unit Cost (1000s)	Chicago Terminal Limits Quantity	Chicago Terminal Limits Amount	Porter to Detroit / Pontiac Quantity	Porter to Detroit / Pontiac Amount	Battle Creek to Port Huron Quantity	Battle Creek to Port Huron Amount	Kalamazoo to Grand Rapids / Holland Quantity	Kalamazoo to Grand Rapids / Holland Amount	Tolleston to Cleveland Quantity	Tolleston to Cleveland Amount	Tolleston to Cincinnati Quantity	Tolleston to Cincinnati Amount	Grand Crossing to Carbondale Quantity	Grand Crossing to Carbondale Amount
	Maximum Authorized Speed			110 mph		110 mph		79 mph		79 mph		110 mph		110 mph		90 mph	
Stations / Facilities																	
2.1	Full Service - New	each	$ 1,000			-	-	-	-	-	-	1.0	1,000.0	-	-	1	1,000
2.2	Full Service - Renovated	each	$ 500			11	5,500	4	2,000	2	1,000	2	1,000	4	2,000	7	3,500
2.3	Terminal - New	each	$ 2,000			-	-	-	-	-	-	1	2,000	-	-	-	-
2.4	Terminal - Renovated	each	$ 1,000			1	1,000	1	1,000	-	-	6	6,000	2	2,000	1	1,000
2.6	Layover Facility	lump sum	varies			-	-	1	5,544	1	5,544	-	-	-	-	1	5,544
2.7	Service & Inspection Facility	lump sum	varies			-	-	-	-	-	-	1	18,974	1	17,682	-	-
Total Station Cost							$ 6,500		$ 8,544		$ 6,544		$ 28,974		$ 21,682		$ 11,044
Bridges-under																	
5.1	Four Lane Urban Expressway	each	$ 4,835			-	-	-	-	-	-	-	-	-	-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-	-	-	-	-	-	-	-	-	-	-	-
5.3	Two Lane Highway	each	$ 3,054			11	33,594	-	-	-	-	6	18,324	-	-	-	-
5.4	Rail	each	$ 3,054			-	-	-	-	-	-	-	-	3	9,162	-	-
5.5	Minor river	each	$ 810			-	-	-	-	-	-	45	36,450	11	8,910	-	-
5.6	Major River	each	$ 8,098			-	-	-	-	-	-	-	-	-	-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7			-	-	-	-	-	-	-	-	3,510	16,415	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-	-	-	-	-	-	-	-	-	-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0			-	-	-	-	-	-	3,100	18,600	-	-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0			-	-	-	-	-	-	6,500	19,500	-	-	-	-
Total Bridges-under Cost							$ 33,594		$ -		$ -		$ 92,874		$ 34,487		$ -
Bridges-over																	
6.1	Four Lane Urban Expressway	each	$ 2,087			-	-	-	-	-	-	3	6,261	-	-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-	-	-	-	-	-	3	8,787	-	-	-	-
6.3	Two Lane Highway	each	$ 1,903			-	-	-	-	-	-	2	3,806	-	-	-	-
6.4	Rail	each	$ 6,110			-	-	-	-	-	-	1	6,110	-	-	-	-
Total Bridges-over Cost							$ -		$ -		$ -		$ 24,964		$ -		$ -
Crossings																	
7.1	Private Closure	each	$ 83			22	1,826	-	-	-	-	21	1,743	27	2,241	29	2,407
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-	-	-	-	-	-	46	22,632	11	5,412	-	-
7.3	Four Quadrant Gates	each	$ 288			9	2,592	-	-	-	-	69	19,872	31	8,928	-	-
7.31	Convert Dual Gates to Quad Gates	each	$ 150			47	7,050	-	-	-	-	-	-	27	4,050	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			49	8,134	-	-	-	-	195	32,370	144	23,904	90	14,940
7.4b	Conventional Gates double mainline track	each	$ 205			12	2,460	-	-	-	-	14	2,870	-	-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50			10	500	53.0	2,650	47	2,350	29	1,450	25	1,250	-	-
7.5a	Single Gate with Median Barrier	each	$ 180			46	8,280	-	-	-	-	-	-	32	5,760	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15			45	675	-	-	-	-	-	-	84	1,260	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80			-	-	-	-	-	-	16	1,280	262	20,960	90	7,200
7.72	Precast Panels with Rdway Improvements	each	$ 150			-	-	-	-	-	-	311	46,650	87	13,050	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15			218	3,270	-	-	-	-		-	-	-		-
															-		
Total Crossings Cost							34,787		2,650		2,350		128,867		86,815		24,547
Subtotals					**294,469**		**67,029**		**27,178**		**801,064**		**506,129**		**219,878**		
Placeholders				**1,152,115**	**35,302**						**314,268**		**29,030**				
Adjustment for Allocation of Tolleston to Wanatah											**-27,691**		**-27,691**				
TOTAL				**1,152,115**	**329,771**		**67,029**		**27,178**		**1,087,640**		**507,468**		**219,878**		

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TABLE C

MWRRI PHASE 5

Itemized Costs by Route

Revision Date: 3/24/03

Item No.	Description	Unit	YR 2002 Unit Cost (1000s)	Joliet to St. Louis Quantity	Joliet to St. Louis Amount	St. Louis to Kansas City Quantity	St. Louis to Kansas City Amount	Aurora to Quincy Quantity	Aurora to Quincy Amount	Wyanet to Omaha Quantity	Wyanet to Omaha Amount	Rondout to St. Paul Quantity	Rondout to St. Paul Amount	Milwaukee to Green Bay Quantity	Milwaukee to Green Bay Amount	Total Quantity	Total Amount
	Maximum Authorized Speed			110 mph		90 mph		90 mph		79 mph		110 mph		110 mph			
Trackwork																	
1.1	HSR on Existing Roadbed	per mile	$ 993	-	-	-	-	-	-	-	-	-	-	-	-	38	$ 37,734
1.2a	HSR on New Roadbed	per mile	$ 1,059	-	-	-	-	-	-	-	-	75	79,531	38	40,242	269	$ 284,776
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492	-	-	-	-	3	4,476	-	-	26	38,941	51	76,092	171	$ 255,132
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674	-	-	-	-	-	-	-	-	-	-	10	26,740	10	$ 26,740
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222	48	10,638	-	-	341	75,613	-	-	234	51,881	22	4,884	1,447	$ 321,270
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331	-	-	388	128,564	-	-	325	107,410	-	-	-	-	1,056	$ 349,483
1.5	Relay Track w/ 136# CWR	per mile	$ 354	-	-	-	-	-	-	54	19,116	-	-	-	-	173	$ 61,277
1.6	Freight Siding	per mile	$ 912	-	-	-	-	5	4,560	3	2,736	-	-	10	9,120	28	$ 25,536
1.65	Passenger Siding	per mile	$ 1,376	-	-	-	-	18	24,768	19	26,144	50	68,800	-	-	210	$ 288,960
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51	31	1,603	-	-	159	8,109	-	-	211	10,747	68	3,468	1,355	$ 69,081
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153	8	1,208	-	-	70	10,710	-	-	40	6,045	21	3,213	363	$ 55,563
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175	2	344	-	-	-	-	-	-	-	-	-	-	2	$ 344
1.74	Decorative Fencing (both sides)	per mile	$ 394	1	394	-	-	30	11,820	-	-	13	5,189	5	1,970	105	$ 41,470
Total Track Costs					$ 14,187		$128,564		$140,056		$ 155,406		$ 261,134		$ 165,729		$ 1,817,366
Turnouts and Crossovers																	
4.1	#24 High Speed Turnout	each	$ 450	-	-	22	9,900	4	1,800	8	3,600	10	4,500	4	1,800	92	$ 41,400
4.2	#20 Turnout Timber	each	$ 124	4	496	-	-	16	1,984	2	248	-	-	-	-	129	$ 15,996
4.3	#10 Turnout Timber	each	$ 69	-	-	-	-	12	828	8	552	-	-	-	-	92	$ 6,348
4.4	#20 Turnout Concrete	each	$ 249	-	-	-	-	-	-	-	-	-	-	-	-	25	$ 6,225
4.5	#10 Turnout Concrete	each	$ 118	-	-	-	-	-	-	-	-	-	-	-	-	10	$ 1,180
Total Turnouts Cost					$ 496		$ 9,900		$ 4,612		$ 4,400		$ 4,500		$ 1,800		$ 71,149
Curves																	
9.1	Elevate & Surface Curves	per mile	$ 58	2	99	85	4,921	25	1,436	-	-	41	2,381	6	348	217	$ 12,574
9.3	Elastic Fasteners	per mile	$ 82	2	139	85	6,957	25	2,030	-	-	41	3,366	6	492	217	$ 17,778
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	varies	-	198	-	20,368	-	1,560	-	-	-	10,975	-	629	-	$ 40,061
Total Curves Cost					$ 436		$ 32,245		$ 5,027		$ -		$ 16,722		$ 1,469		$ 70,413
Signals																	
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268	-	-	-	-	4	5,072	-	-	5	6,340	2	2,536	33	$ 41,844
8.2	Install CTC System (Single Track)	per mile	$ 183	-	-	-	-	-	-	325	59,384	-	-	60	10,980	955	$ 174,734
8.21	Install CTC System (Double Track)	per mile	$ 300	-	-	-	-	-	-	-	-	84	25,110	-	-	96	$ 28,710
8.3	Install PTC System	per mile	$ 197	37	7,269	282	55,635	218	43,017	-	-	224	44,128	83	16,351	1,718	$ 338,348
8.4	Electric Lock for Industry Turnout	each	$ 103	-	-	-	-	-	-	8	824	-	-	-	-	96	$ 9,888
8.5	Signals for Crossover	each	$ 700	-	-	-	-	7	4,900	-	-	-	-	-	-	41	$ 28,700
8.6	Signals for Turnout	each	$ 400	-	-	22	8,800	4	1,600	16	6,400	-	-	-	-	76	$ 30,400
Total Signals Cost					$ 7,269		$ 64,435		$ 54,589		$ 66,608		$ 75,578		$ 29,867		$ 652,623

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TABLE C

MWRRI PHASE 5

Itemized Costs by Route

Revision Date: 3/24/03

Item No.	Description	Unit	YR 2002 Unit Cost (1000s)	Joliet to St. Louis Quantity	Joliet to St. Louis Amount	St. Louis to Kansas City Quantity	St. Louis to Kansas City Amount	Aurora to Quincy Quantity	Aurora to Quincy Amount	Wyanet to Omaha Quantity	Wyanet to Omaha Amount	Rondout to St. Paul Quantity	Rondout to St. Paul Amount	Milwaukee to Green Bay Quantity	Milwaukee to Green Bay Amount	Total Quantity	Total Amount
	Maximum Authorized Speed			110 mph		90 mph		90 mph		79 mph		110 mph		110 mph			
Stations / Facilities																	
2.1	Full Service - New	each	$ 1,000	-	-	-	-	-	-	-	-	1	1,000	6	6,000	9	$ 9,000
2.2	Full Service - Renovated	each	$ 500	7	3,500	8	4,000	7	3,500	5	2,500	11	5,500	1	500	69	$ 34,500
2.3	Terminal - New	each	$ 2,000	-	-	-	-	-	-	-	-	1	2,000	-	-	2	$ 4,000
2.4	Terminal - Renovated	each	$ 1,000	1	1,000	1	1,000	-	-	1	1,000	-	-	-	-	14	$ 14,000
2.6	Layover Facility	lump sum	varies	-	-	1	5,544	1	5,544	1	6,536	1	6,536	1	6,536	8	$ 47,328
2.7	Service & Inspection Facility	lump sum	varies	1	21,406	-	-	-	-	1	17,069	2	35,362	-	-	6	$ 110,494
Total Station Cost					$ 25,906		$ 10,544		$ 9,044		$ 27,105		$ 50,398		$ 13,036		$ 219,322
Bridges-under																	
5.1	Four Lane Urban Expressway	each	$ 4,835	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
5.2	Four Lane Rural Expressway	each	$ 4,025	-	-	-	-	-	-	-	-	-	-	-	-	-	$ -
5.3	Two Lane Highway	each	$ 3,054	-	-	-	-	-	-	-	-	1	3,054	10	30,540	28	$ 85,512
5.4	Rail	each	$ 3,054	-	-	-	-	-	-	-	-	-	-	1	3,054	4	$ 12,216
5.5	Minor river	each	$ 810	-	-	-	-	-	-	-	-	-	-	9	7,290	65	$ 52,650
5.6	Major River	each	$ 8,098	-	-	-	-	-	-	-	-	-	-	1	8,098	1	$ 8,098
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7	-		-	-	570	2,666	-	-	720	3,367	-	-	4,800	$ 22,448
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4	180	1,684	-	-	600	5,612	-	-	1,170	10,943	-	-	1,950	$ 18,239
5.73	Single Track on Flyover Structure	per LF	$ 6.0	-	-	-	-	-	-	-	-	-	-	-	-	3,100	$ 18,600
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0	-	-	-	-	-	-	-	-	-	-	-	-	6,500	$ 19,500
Total Bridges-under Cost					$ 1,684		$ -		$ 8,278		$ -		$ 17,365		$ 48,982		$ 237,263
Bridges-over																	
6.1	Four Lane Urban Expressway	each	$ 2,087	-	-	-	-	-	-	-	-	-	-	-	-	3	$ 6,261
6.2	Four Lane Rural Expressway	each	$ 2,929	-	-	-	-	-	-	-	-	-	-	2	5,858	5	$ 14,645
6.3	Two Lane Highway	each	$ 1,903	-	-	-	-	-	-	-	-	-	-	2	3,806	4	$ 7,612
6.4	Rail	each	$ 6,110	-	-	-	-	-	-	-	-	-	-	-	-	1	$ 6,110
Total Bridges-over Cost					$ -		$ -		$ -		$ -		$ -		$ 9,664		$ 34,628
Crossings																	
7.1	Private Closure	each	$ 83	2	166	28	2,324	22	1,826	-	-	30	2,490	46	3,818	227	$ 18,841
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492	-	-	-	-	-	-	-	-	-	-	-	-	57	$ 28,044
7.3	Four Quadrant Gates	each	$ 288	15	4,320	55	15,840	-	-	-	-	144	41,472	34	9,792	357	$ 102,816
7.31	Convert Dual Gates to Quad Gates	each	$ 150	6	900	86	12,900	-	-	-	-	17	2,550	-	-	183	$ 27,450
7.4a	Conventional Gates single mainline track	each	$ 166	5	830	66	10,956	10	1,660	149	24,734	81	13,446	-	-	789	$ 130,974
7.4b	Conventional Gates double mainline track	each	$ 205	-	-	-	-	154	31,570	-	-	-	-	-	-	180	$ 36,900
7.41	Convert Flashers Only to Dual Gate	each	$ 50	9	450	1	50	11	550	79	3,950	20	1,000	-	-	284	$ 14,200
7.5a	Single Gate with Median Barrier	each	$ 180	-	-	-	-	-	-	-	-	-	-	74	13,320	152	$ 27,360
7.5b	Convert Single Gate to Extended Arm	each	$ 15	-	-	-	-	-	-	-	-	-	-	-	-	129	$ 1,935
7.71	Precast Panels without Rdway Improvements	each	$ 80	20	1,600	207	16,560	-	-	-	-	40	3,200	28	2,240	663	$ 53,040
7.72	Precast Panels with Rdway Improvements	each	$ 150	-	-	-	-	-	-	-	-	222	33,300	80	12,000	700	$ 105,000
7.8	Michigan Type Grade Crossing Surface	each	$ 15		-			10	150	149	2,235					377	$ 5,655
Total Crossings Cost					8,266		58,630		35,756		30,919		97,458		41,170		$ 552,215
Subtotals					**58,244**		**304,318**		**257,362**		**284,437**		**523,156**		**311,717**		**3,654,980**
Placeholders					**185,011**		**10,000**				**75,770**		**526,635**				**2,328,130**
Adjustment for Allocation of Tolleston to Wanatah																	**-55,383**
TOTAL					**243,256**		**314,318**		**257,362**		**360,207**		**1,049,791**		**311,717**		**5,927,728**

HNTB

TABLE D-1

MWRRI PHASE 5

Chicago to Detroit

Revision Date: 3/24/03

Chicago Terminal Area Limit

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Porter NS MP 523 to MP 482.21 40.79 miles 110 mph		Segment 2 Porter to Kalamazoo Amtrak MP 241 - MP 143 98.0 miles 110 mph		Segment 3 Kalamazoo to Battle Ck NS MP 143 - MP 121.5 21.5 miles 110 mph		Segment 4 Battle Ck to W Det NS MP 119.6 to MP 3 116.6 miles 110 mph		Segment 5 W. Detroit to Milw. Jct. CR Shared Assets MP 3 to MP 4.2 5.3 miles 60 mph		Segment 6 Milw. Jct. to Pontiac CN MP 4.2 to MP 25.8 21.6 miles 79 mph		Total 303.8 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																			
1.1	HSR on Existing Roadbed	per mile	$ 993		-	25	24,825	1	993		-		-		-	26	25,818
1.2a	HSR on New Roadbed	per mile	$ 1,059		-		-		-		-		-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492		-		-		-		-		-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674		-		-		-		-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222		-		-		-	26	5,772		-	21.6	4,795	48	10,567
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331		-	38.5	12,744	22.4	7,414	90.6	29,989		-		-	152	50,147
1.5	Relay Track w/ 136# CWR	per mile	$ 354		-	8.5	3,009		-	90.6	32,072		-		-	99	35,081
1.6	Freight Siding	per mile	$ 912		-		-		-	2	1,824		-		-	2	1,824
1.65	Passenger Siding	per mile	$ 1,376		-	15	20,640		-	2	2,752		-		-	17	23,392
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51		-	78	3,998	17	877	93	4,757		-		-	189	9,633
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153		-	15	2,249	3	493	17	2,676		-	21.6	3,305	57	8,723
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175		-		-		-		-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394		-	5	1,931	1	424	6	2,297		-		-	12	4,651
Total Track Costs					-		69,396		10,202		82,139		-		8,100		169,836
Turnouts																	
4.1	#24 High Speed Turnout	each	$ 450		-	4	1,800	2	900		-		-		-	6	2,700
4.2	#20 Turnout Timber	each	$ 124		-	4	496		-	10	1,240		-		-	14	1,736
4.3	#10 Turnout Timber	each	$ 69		-		-		-		-		-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249		-		-		-		-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118		-		-		-		-		-		-	-	-
Total Turnouts Cost					-		2,296		900		1,240		-		-		4,436
Curves																	
9.1	Elevate & Surface Curves	per mile	$ 58		-	12.2	708	4.0	229	13.7	792		-		-	30	1,729
9.3	Elastic Fasteners	per mile	$ 82		-	12.2	1,001	4.0	324	13.7	1,119		-		-	30	2,445
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -		-		721		642		1,517		-		-	-	2,879
Total Curves Cost					-		2,430		1,195		3,428		-		-		7,053
Signals																	
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268		-	2	2,536	1	1,268		-		-	1	1,268	4	5,072
8.2	Install CTC System (Single Track)	per mile	$ 183		-		-		-		-		-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300		-		-		-		-		-		-	-	-
8.3	Install PTC System	per mile	$ 197		-	38	7,486	14.5	2,857	90.6	17,848		-		-	143	28,191
8.4	Electric Lock for Industry Turnout	each	$ 103		-		-		-		-		-		-	-	-
8.5	Signals for Crossover	each	$ 700		-	2	1,400		-	4	2,800		-		-	6	4,200
8.6	Signals for Turnout	each	$ 400		-		-		-	2	800		-		-	2	800
Total Signals Cost					-		11,422		4,125		21,448		-		1,268		38,263
Stations / Facilities																	
2.1	Full Service - New	each	$ 1,000		-		-		-		-		-		-	-	-
2.2	Full Service - Renovated	each	$ 500		-	4	2,000	1	500	4	2,000		-	2	1,000	11	5,500
2.3	Terminal - New	each	$ 2,000		-		-		-		-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000		-		-		-		-		-	1	1,000	1	1,000
2.6	Layover Facility	lump sum	$ -		-		-		-		-		-		-	-	-
2.7	Service & Inspection Facility	lump sum	$ -		-		-		-		-		-		-	-	-
Total Station Cost					-		2,000		500		2,000		-		2,000		6,500

HNTB

TABLE D-1

MWRRI PHASE 5

Chicago to Detroit

Revision Date: 3/24/03

Chicago Terminal Area Limit

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Porter NS MP 523 to MP 482.21 40.79 miles 110 mph		Segment 2 Porter to Kalamazoo Amtrak MP 241 - MP 143 98.0 miles 110 mph		Segment 3 Kalamazoo to Battle Ck NS MP 143 - MP 121.5 21.5 miles 110 mph		Segment 4 Battle Ck to W Det NS MP 119.6 to MP 3 116.6 miles 110 mph		Segment 5 W. Detroit to Milw. Jct. CR Shared Assets MP 3 to MP 4.2 5.3 miles 60 mph		Segment 6 Milw. Jct. to Pontiac CN MP 4.2 to MP 25.8 21.6 miles 79 mph		Total 303.8 miles	
						Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																			
5.1	Four Lane Urban Expressway	each	$ 4,835		-		-		-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025		-		-		-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054		-	6	18,324		-	5	15,270		-		-		-	11	33,594
5.4	Rail	each	$ 3,054		-		-		-		-		-		-		-	-	-
5.5	Minor river	each	$ 810		-		-		-		-		-		-		-	-	-
5.6	Major River	each	$ 8,098		-		-		-		-		-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7		-		-		-		-		-		-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4		-		-		-		-		-		-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0		-		-		-		-		-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0		-		-		-		-		-		-		-	-	-
Total Bridges-under Cost					-		18,324		-		15,270		-		-		-		33,594
Bridges-over																			
6.1	Four Lane Urban Expressway	each	$ 2,087		-		-		-		-		-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929		-		-		-		-		-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903		-		-		-		-		-		-		-	-	-
6.4	Rail	each	$ 6,110		-		-		-		-		-		-		-	-	-
Total Bridges-over Cost					-		-		-		-		-		-		-		-
Crossings																			
7.1	Private Closure	each	$ 83		-	7	581	4	332	11	913		-		-		-	22	1,826
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492		-		-		-		-		-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288		-	5	1,440	0	-	4	1,152		-		-		-	9	2,592
7.31	Convert Dual Gates to Quad Gates	each	$ 150		-	22	3,300	4	600	21	3,150		-		-		-	47	7,050
7.4a	Conventional Gates single mainline track	each	$ 166		-	18	2,988		-	31	5,146		-		-		-	49	8,134
7.4b	Conventional Gates double mainline track	each	$ 205		-		-	12	2,460		-		-		-		-	12	2,460
7.41	Convert Flashers Only to Dual Gate	each	$ 50		-	0	-	0	-	10	500		-		-		-	10	500
7.5a	Single Gate with Median Barrier	each	$ 180		-	22	3,960	4	720	20	3,600		-		-		-	46	8,280
7.5b	Convert Single Gate to Extended Arm	each	$ 15		-	22	330	3	45	20	300		-		-		-	45	675
7.71	Precast Panels without Rdway Improvements	each	$ 80		-		-		-		-		-		-		-	-	-
7.72	Precast Panels with Rdway Improvements	each	$ 150		-		-		-		-		-		-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15		-	89	1,335	23	345	106	1,590		-		-		-	218	3,270
Total Crossings Cost					-		13,934		4,502		16,351		-		-		-		34,787
Segment Totals							**119,801**		**21,423**		**141,877**				**11,368**				**294,469**
Placeholder																			
	Battle Creek Baron to Gord Improvements								15,000										15,000
	West Detroit to Beaubien Costs (from Lansing to Detroit Study)												15,302						15,302
	Track Improvements												5,000						5,000
TOTAL							**119,801**		**36,423**		**141,877**		**20,302**		**11,368**				**329,771**

NOTES

Installation of PTC system does not include locomotive equipment and dispatch equipme
Cost Estimate does not include utility relocation.
Corridor access with frieght railroads to be negotiated; costs not included
Station costs are MWRRS allocation amounts
Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
Four Quandrant Gates all public crossings at speeds > 79mph
Conventional Gates all public crossings at speeds </= 79mph
Michigan Type Grade Crossing surface used at all crossings
Precast Panels with Rdway Improvements installed where track embankment is replaced
Precast Panels without Rdway Improvements installed where track embankment is not replaced
Assume 26' offset for new mainline track construction for speeds above 79 mph

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 228	Michigan Cit	Full Service - Renovated
MP 192	Niles	Full Service - Renovated
MP 179.5	Dowagiac	Full Service - Renovated
MP 143.5	Kalamazoo	Full Service - Renovated
MP 120.8	Battle Creek	Full Service - Renovated
MP 95.9	Albion	Full Service - Renovated
MP 75	Jackson	Full Service - Renovated
MP 38	Ann Arbor	Full Service - Renovated
MP 8	Dearborn	Full Service - Renovated
MP 5.6	DETROIT	Full Service - Renovated
MP 13.2	Royal Oak	Full Service - Renovated
MP 17.5	Birmingham	Full Service - Renovated
MP 25.8	Pontiac	Terminal - Renovated

HNTB

TABLE D-2

MWRRI PHASE 5

Battle Creek to Port Huron

Revision Date: 3/24/03

				Segment No.	Segment 1		Segment 2		Segment 3		Total	
				From - To	Battle Creek to E. Lansing		E. Lansing to Flint		Flint to Port Huron			
				Host Carrier	CN		CN		CN			
				Mileposts	MP 176.6 to MP 223.9		MP 223.9 to MP 280		MP 280 to MP 334.2			
				Track Miles	47.3 miles		56.1 miles		54.2 miles		157.6 miles	
				Maximum Authorized Speed	79 mph		79 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork												
1.1	HSR on Existing Roadbed	per mile	$ 993		2	1,986	2	1,986	8	7,944	12	11,916
1.2a	HSR on New Roadbed	per mile	$ 1,059			-		-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492			-		-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674			-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222		47.3	10,501	$ 56	12,454	54.2	12,032	157.6	34,987
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			-		-		-	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354			-		-		-	-	-
1.6	Freight Siding	per mile	$ 912			-		-		-	-	-
1.65	Passenger Siding	per mile	$ 1,376			-		-		-	-	-
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			-		-		-	-	-
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			-		-		-	-	-
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175			-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			-		-		-	-	-
Total Track Costs						12,487		14,440		19,976		46,903
Turnouts												
4.1	#24 High Speed Turnout	each	$ 450			-		-		-	-	-
4.2	#20 Turnout Timber	each	$ 124		6	744	8	992	4	496	18	2,232
4.3	#10 Turnout Timber	each	$ 69			-		-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249			-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118			-		-		-	-	-
Total Turnouts Cost						744		992		496		2,232
Curves												
9.1	Elevate & Surface Curves	per mile	$ 58			-		-		-	-	-
9.2	Curvature Reduction	per mile	$ 393			-		-		-	-	-
9.3	Elastic Fasteners	per mile	$ 82			-		-		-	-	-
Total Curves Cost						-		-		-		-
Signals												
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			-		-		-	-	-
8.2	Install CTC System (Single Track)	per mile	$ 183			-		-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300			-		-		-	-	-
8.3	Install PTC System	per mile	$ 197			-		-		-	-	-
8.4	Electric Lock for Industry Turnout	each	$ 103			-		-		-	-	-
8.5	Signals for Crossover	each	$ 700		2	1,400	3	2,100		-	5	3,500
8.6	Signals for Turnout	each	$ 400		2	800	2	800	4	1,600	8	3,200
Total Signals Cost						2,200		2,900		1,600		6,700
Stations / Facilities												
2.1	Full Service - New	each	$ 1,000			-		-		-	-	-
2.2	Full Service - Renovated	each	$ 500			-	3	1,500	1	500	4	2,000
2.3	Terminal - New	each	$ 2,000			-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000			-		-	1	1,000	1	1,000
2.6	Layover Facility in Port Huron	lump sum	$ 5,544			-		-	1	5,544	1	5,544
2.7	Service & Inspection Facility	lump sum	$ -			-		-		-	-	-
Total Station Cost						-		1,500		7,044		8,544

HNTB

TABLE D-2

MWRRI PHASE 5

Battle Creek to Port Huron

Revision Date: 3/24/03

				Segment No.	Segment 1		Segment 2		Segment 3		Total	
				From - To	Battle Creek to E. Lansing		E. Lansing to Flint		Flint to Port Huron			
				Host Carrier	CN		CN		CN			
				Mileposts	MP 176.6 to MP 223.9		MP 223.9 to MP 280		MP 280 to MP 334.2			
				Track Miles	47.3 miles		56.1 miles		54.2 miles		157.6 miles	
				Maximum Authorized Speed	79 mph		79 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under												
5.1	Four Lane Urban Expressway	each	$ 4,835			-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054			-		-		-	-	-
5.4	Rail	each	$ 3,054			-		-		-	-	-
5.5	Minor river	each	$ 810			-		-		-	-	-
5.6	Major River	each	$ 8,098			-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7			-		-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-		-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0			-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0			-		-		-	-	-
Total Bridges-under Cost						-		-		-		-
Bridges-over												
6.1	Four Lane Urban Expressway	each	$ 2,087			-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903			-		-		-	-	-
6.4	Rail	each	$ 6,110			-		-		-	-	-
Total Bridges-over Cost						-		-		-		-
Crossings												
7.1	Private Closure	each	$ 83			-		-		-	-	-
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288			-		-		-	-	-
7.31	Convert Dual Gates to Quad Gates	each	$ 150			-		-		-	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			-		-		-	-	-
7.4b	Conventional Gates double mainline track	each	$ 205			-		-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50	12	600	13	650	28	1,400	53	2,650	
7.5a	Single Gate with Median Barrier	each	$ 180			-		-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15			-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80			-		-		-	-	-
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15			-		-		-	-	-
Total Crossings Cost					600		650		1,400		2,650	
Segment Totals					**16,031**		**20,482**		**30,516**		**67,029**	

NOTES

- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public crossings at speeds </= 79mph
- Michigan Type Grade Crossing surface used at all crossings
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 176.6	Battle Creek	* Included in Detroit route
MP 223.9	East Lansing	Full Service - Renovated
MP 253.3	Durand	Full Service - Renovated
MP 280	Flint	Full Service - Renovated
MP 290	Lapeer	Full Service - Renovated
MP 334.2	Port Huron	Terminal - Renovated

TABLE D-3

MWRRI PHASE 5

Kalamazoo to Grand Rapids

Revision Date: 3/24/03

				Segment No.	Segment 1		Segment 2		Total	
				From - To	Kalamazoo to Grand Rapid		Grand Rapids to Holland			
				Host Carrier	NS		CSXT			
				Mileposts	MP 143.5 to MP 0.3		MP 0.3 to MP 25.3			
				Track Miles	53.25 miles		25.0 miles		78.3 miles	
				Maximum Authorized Speed	79 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork										
1.1	HSR on Existing Roadbed	per mile	$ 993			-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059			-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492			-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674			-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222		53.25	11,822	25.0	5,550	78	17,372
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			-		-	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354			-		-	-	-
1.6	Freight Siding	per mile	$ 912		1	912		-	1	912
1.65	Passenger Siding	per mile	$ 1,376			-		-	-	-
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			-		-	-	-
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			-		-	-	-
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175			-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			-		-	-	-
Total Track Costs						12,734		5,550		18,284
Turnouts										
4.1	#24 High Speed Turnout	each	$ 450			-		-	-	-
4.2	#20 Turnout Timber	each	$ 124			-		-	-	-
4.3	#10 Turnout Timber	each	$ 69			-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249			-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118			-		-	-	-
Total Turnouts Cost						-		-		-
Curves										
9.1	Elevate & Surface Curves	per mile	$ 58			-		-	-	-
9.3	Elastic Fasteners	per mile	$ 82			-		-	-	-
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -					-	-	-
Total Curves Cost						-		-		-
Signals										
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			-		-	-	-
8.2	Install CTC System (Single Track)	per mile	$ 183			-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300			-		-	-	-
8.3	Install PTC System	per mile	$ 197					-		-
8.4	Electric Lock for Industry Turnout	each	$ 103			-		-	-	-
8.5	Signals for Crossover	each	$ 700			-		-	-	-
8.6	Signals for Turnout	each	$ 400			-		-	-	-
Total Signals Cost						-		-		-
Stations / Facilities										
2.1	Full Service - New	each	$ 1,000			-		-	-	-
2.2	Full Service - Renovated	each	$ 500		1	500	1	500	2	1,000
2.3	Terminal - New	each	$ 2,000			-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000			-		-	-	-
2.6	Layover Facility in Holland	lump sum	$ 5,544			-	1	5,544	1	5,544
2.7	Service & Inspection Facility	lump sum	$ -			-		-	-	-
Total Station Cost						500		6,044		6,544

HNTB

TABLE D-3

MWRRI PHASE 5

Kalamazoo to Grand Rapids

Revision Date: 3/24/03

				Segment No.	Segment 1		Segment 2		Total	
				From - To	Kalamazoo to Grand Rapid		Grand Rapids to Holland			
				Host Carrier	NS		CSXT			
				Mileposts	MP 143.5 to MP 0.3		MP 0.3 to MP 25.3			
				Track Miles	53.25 miles		25.0 miles		78.3 miles	
				Maximum Authorized Speed	79 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under										
5.1	Four Lane Urban Expressway	each	$ 4,835			-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-		-	-	-
5.3	Two Lane Highway	each	$ 3,054			-		-	-	-
5.4	Rail	each	$ 3,054			-		-	-	-
5.5	Minor river	each	$ 810			-		-	-	-
5.6	Major River	each	$ 8,098			-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7			-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6			-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0			-		-	-	-
Total Bridges-under Cost						-		-		-
Bridges-over										
6.1	Four Lane Urban Expressway	each	$ 2,087			-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-		-	-	-
6.3	Two Lane Highway	each	$ 1,903			-		-	-	-
6.4	Rail	each	$ 6,110			-		-	-	-
Total Bridges-over Cost						-		-		-
Crossings										
7.1	Private Closure	each	$ 83			-		-	-	-
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-		-	-	-
7.3	Four Quadrant Gates	each	$ 288			-		-	-	-
7.31	Convert Dual Gates to Quad Gates	each	$ 150			-		-	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			-		-	-	-
7.4b	Conventional Gates double mainline track	each	$ 205			-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50		32	1,600	15	750	47	2,350
7.5a	Single Gate with Median Barrier	each	$ 180			-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15			-		-	-	-
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-	-	-
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15			-		-	-	-
Total Crossings Cost						1,600		750		2,350
Segment Totals						**14,834**		**12,344**		**27,178**

NOTES

- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
- Estimate average span of underbridge is 40 feet.
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public crossings at speeds </= 79mph
- Michigan Type Grade Crossing surface used at all crossings
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 25.3	Holland	Full Service - Renovated
MP 0.3	Grand Rapids	Full Service - Renovated
MP 143.5	Kalamazoo	* Included in Detroit route

HNTB

TABLE D-4

MWRRI PHASE 5

Chicago to Cleveland (via Fort Wayne)

Revision Date: 3/24/03

Chicago Terminal Area Limit

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Tolleston South-of-the-Lake Corridor Study 26.6 miles		Segment 2 Tolleston to Wanatah CSX MP 442.5 - MP 414.9 27.6 miles 110 mph		Segment 3 Wanatah to Mike CSX & NS SX MP 414.9 - NS MP 146 95.6 miles 110 mph		Segment 4 Mike to New Haven NS MP 146.1 - MP 363.94 6.86 miles 79 mph		Segment 5 New Haven to Liberty Ctr. NS & M&W MP 87.19 - MP 30.25 56.94 miles 110 mph		Segment 6 Liberty Center to Delta I&O MP 82.5 - MP 74.27 8.23 miles 79 mph		Segment 7 Delta to Toledo NS MP 314.4 - 288.5 25.9 miles 110 mph		Segment 8 Toledo to Berea NS MP 288.5 - MP 194 94.5 miles 110 mph		Segment 9 Berea to Cleveland NS MP 194 - MP182 12.0 miles 79 mph		Total 342.3 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																									
1.1	HSR on Existing Roadbed	per mile	$ 993						-		-		-		-		-		-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059						-		-	3.61	3,823		-		-		-	17	18,003	12	12,708	33	34,534
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492						-		-	2	2,984		-		-	23.9	35,659	53	79,076	12	17,904	91	135,623
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674						-		-		-		-		-		-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222						-		-		-		-		-		-	83	18,426		-	83	18,426
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			27.6	9,136	95.6	31,644	2	662		-	8.23	2,724	1.9	629		-		-	135	44,794
1.5	Relay Track w/ 136# CWR	per mile	$ 354						-		-		-		-		-		-		-		-	-	-
1.6	Freight Siding	per mile	$ 912						-		-		-		-		-		-		-		-	-	-
1.65	Passenger Siding	per mile	$ 1,376			5	6,880	20	27,520		-	10	13,760	2	2,752	5	6,880	20	27,520		-	62	85,312
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			22.08	1,126	76.48	3,900	5.49	280	45.55	2,323	4	204		-	76	3,856		-	229	11,689
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			4.14	633	14.34	2,194	1.03	157	8.54	1,307		-	25.9	3,963	14	2,169	12	1,836	80	12,259
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175				-		-		-		-		-		-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			1.38	544	4.78	1,883	0.34	135	2.85	1,122		-		-	5	1,862	1	394	15	5,940
Total Track Costs							18,319		67,141		8,041		18,512		5,680		47,130		150,911		32,842		348,577
Turnouts																									
4.1	#24 High Speed Turnout	each	$ 450			2	900	10	4,500		-	4	1,800		-	2	900	8	3,600		-	26	11,700
4.2	#20 Turnout Timber	each	$ 124			2	248	8	992	2	248	14	1,736	2	248	2	248	9	1,116	4	496	43	5,332
4.3	#10 Turnout Timber	each	$ 69			3	207	23	1,587	9	621	29	2,001		-		-		-		-	64	4,416
4.4	#20 Turnout Concrete	each	$ 249				-		-		-		-		-	2	498	9	2,241	14	3,486	25	6,225
4.5	#10 Turnout Concrete	each	$ 118				-		-		-		-		-	2	236	4	472	4	472	10	1,180
Total Turnouts Cost							1,355		7,079		869		5,537		248		1,882		7,429		4,454		28,853
Curves																									
9.1	Elevate & Surface Curves	per mile	$ 58															3.6	206		-	4	206
9.3	Elastic Fasteners	per mile	$ 82															3.6	291		-	4	291
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -																214			-	214
Total Curves Cost																			711		-		711
Signals																									
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			1	1,268	4	5,072		-	2	2,536		-	1	1,268	4	5,072	1	1,268	13	16,484
8.2	Install CTC System (Single Track)	per mile	$ 183			27.6	5,051	95.6	17,495	6.86	1,255	56.94	10,420	8.23	1,506	20	3,660	70	12,810		-	285	52,197
8.21	Install CTC System (Double Track)	per mile	$ 300				-		-		-		-		-		-		-	12	3,600	12	3,600
8.3	Install PTC System	per mile	$ 197			27.6	5,437	95.6	18,833	6.86	1,351	56.94	11,217	8.23	1,621	20	3,940	53	10,441		-	268	52,841
8.4	Electric Lock for Industry Turnout	each	$ 103			3	309	23	2,369	9	927	29	2,987		-	2	206	4	412	4	412	74	7,622
8.5	Signals for Crossover	each	$ 700				-		-		-		-		-	2	1,400	9	6,300	4	2,800	15	10,500
8.6	Signals for Turnout	each	$ 400				-		-		-		-		-		-		-	10	4,000	10	4,000
Total Signals Cost							12,065		43,769		3,534		27,160		3,127		10,474		35,035		12,080		147,244
Stations / Facilities																									
2.1	Full Service - New	each	$ 1,000				-		-		-		-		-		-		-	1	1,000	1	1,000
2.2	Full Service - Renovated	each	$ 500				-		-		-		-		-		-	2	1,000		-	2	1,000
2.3	Terminal - New	each	$ 2,000				-	1	2,000		-		-		-		-		-		-	1	2,000
2.4	Terminal - Renovated	each	$ 1,000			1	1,000	2	2,000		-	1	1,000		-		-	1	1,000	1	1,000	6	6,000
2.6	Layover Facility	lump sum	$ -				-		-		-		-		-		-		-		-	-	-
2.7	Service & Inspection Facility in Cleveland	lump sum	$ 18,973				-		-		-		-		-		-		-	1	18,973	1	18,974
Total Station Cost							1,000		4,000		-		1,000		-		-		2,000		20,973		28,974

HNTB

TABLE D-4

MWRRI PHASE 5

Chicago to Cleveland (via Fort Wayne)

Revision Date: 3/24/03

Chicago Terminal Area Limit

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Tolleston South-of-the-Lake Corridor Study 26.6 miles		Segment 2 Tolleston to Wanatah CSX MP 442.5 - MP 414.9 27.6 miles 110 mph		Segment 3 Wanatah to Mike CSX & NS SX MP 414.9 - NS MP 146 95.6 miles 110 mph		Segment 4 Mike to New Haven NS MP 146.1 - MP 363.94 6.86 miles 79 mph		Segment 5 New Haven to Liberty Ctr. NS & M&W MP 87.19 - MP 30.25 56.94 miles 110 mph		Segment 6 Liberty Center to Delta I&O MP 82.5 - MP 74.27 8.23 miles 79 mph		Segment 7 Delta to Toledo NS MP 314.4 - 288.5 25.9 miles 110 mph		Segment 8 Toledo to Berea NS MP 288.5 - MP 194 94.5 miles 110 mph		Segment 9 Berea to Cleveland NS MP 194 - MP182 12.0 miles 79 mph		Total 342.3 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																									
5.1	Four Lane Urban Expressway	each	$ 4,835				-		-		-		-		-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025				-		-		-		-		-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054				-		-		-		-		-	4	12,216	2	6,108		-	6	18,324
5.4	Rail	each	$ 3,054				-		-		-		-		-		-		-		-	-	-
5.5	Minor river	each	$ 810				-		-		-	21	17,010		-	8	6,480	16	12,960		-	45	36,450
5.6	Major River	each	$ 8,098				-		-		-		-		-		-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7				-		-		-		-		-		-		-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4				-		-		-		-		-		-		-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0				-		-	2,100	12,600	1,000	6,000		-		-		-		-	3,100	18,600
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0				-		-	4,500	13,500	2,000	6,000		-		-		-		-	6,500	19,500
Total Bridges-under Cost							-		-		26,100		29,010		-		18,696		19,068		-		92,874
Bridges-over																									
6.1	Four Lane Urban Expressway	each	$ 2,087				-		-							1	2,087	2	4,174		-	3	6,261
6.2	Four Lane Rural Expressway	each	$ 2,929				-		-							1	2,929	2	5,858		-	3	8,787
6.3	Two Lane Highway	each	$ 1,903				-		-								-	2	3,806		-	2	3,806
6.4	Rail	each	$ 6,110				-		-								-	1	6,110		-	1	6,110
Total Bridges-over Cost							-		-								5,016		19,948		-		24,964
Crossings																									
7.1	Private Closure	each	$ 83			2	166	6	498		-	6	498	1	83	1	83	5	415		-	21	1,743
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			11	5,412	15	7,380	2	984	15	7,380		-	3	1,476		-		-	46	22,632
7.3	Four Quadrant Gates	each	$ 288			17	4,896	14	4,032	2	576	16	4,608		-	3	864	17	4,896		-	69	19,872
7.31	Convert Dual Gates to Quad Gates	each	$ 150				-		-		-		-		-		-		-		-	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			15	2,490	76	12,616	5	830	80	13,280	3	498	16	2,656		-		-	195	32,370
7.4b	Conventional Gates double mainline track	each	$ 205				-		-		-		-		-		-	14	2,870		-	14	2,870
7.41	Convert Flashers Only to Dual Gate	each	$ 50			5	250	7	350	3	150	11	550		-		-	1	50	2	100	29	1,450
7.5a	Single Gate with Median Barrier	each	$ 180				-		-		-		-		-		-		-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15				-		-		-		-		-		-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80				-		-		-		-		-		-	16	1,280		-	16	1,280
7.72	Precast Panels with Rdway Improvements	each	$ 150			43	6,450	105	15,750	9	1,350	111	16,650	3	450	22	3,300	16	2,400	2	300	311	46,650
7.8	Michigan Type Grade Crossing Surface	each	$ 15				-		-		-		-		-		-		-		-	-	-
Total Crossings Cost							19,664		40,626		3,890		42,966		1,031		8,379		11,911		400		128,867
Segment Totals							**52,403**		**162,615**		**42,434**		**124,185**		**10,087**		**91,577**		**247,013**		**70,749**		**801,064**
Placeholders																									
	Longitudinal Drainage Improvements	per mile	50			27.6	1,380	95.6	4,780		-		-	8.23	412		-					131	6,572
	Land Acquisition Urban	per mile	327				-		-	1.25	409		-		-		-					1	409
	HSR on New Roadbed with Embankment Widening	per mile	1,350				-		-		-	56.37	76,100		-		-					56	76,100
	Land Acquisition Rural	per mile	109				-		-		-		-	1	55		-					1	55
	Track Connection from M&W to I&O	per mile	1,492				-		-		-		-	0	298		-					0	298
	Track Connection from I&O to NS	per LF	3				-		-		-		-	1,500	4,500		-					1,500	4,500
	Rehabilitation of Bridge over River at Defiance	LS	$ 1,000				-		-		-	1	1,000		-		-					1	1,000
	Depress Roadway under RR (Rte 24 east of Napoleon)	LS	$ 4,835				-		-		-	1	4,835		-		-					1	4,835
	Bridge Rehabilitation	each	$ 200			8	1,600	34	6,800	14	2,800		-	11	2,200		-					67	13,400
	Culvert	each	$ 100				-		-		-	50	5,000	1	100		-					51	5,100
	Toledo Improvements (Airline Yard, Amtrak Access, NS improvements)	lump sum	40,000				-		-		-		-		-	1	40,000					1	40,000
	Maumee River Bridge crossing	lump sum	50,000				-		-		-		-		-		-	1	50,000			1	50,000
	CSX / NS grade separation near Toledo	lump sum	40,000				-		-		-		-		-		-	1	40,000			1	40,000
	Brookpark Improvements (Ford Plant, Rockport Yard)	lump sum	20,000				-		-		-		-		-		-			1	20,000	1	20,000
	Cuyahoga River Bridge	lump sum	52,000				-		-		-		-		-		-			1	52,000	1	52,000
TOTAL							**55,383**																
ADJUSTED TOTAL (ALLOCATE 50% OF TOLLESTON TO WANATAH)							**27,691**		**174,195**		**45,643**		**211,119**		**17,651**		**131,577**		**337,013**		**142,749**		**1,087,639**

NOTES

- Cleveland buildout includes capacity for proposed commuter service
- It is assumed that the embankment fits within NS right-of-way
- Assume 26' offset for new mainline track construction for speeds above 79 mph
- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS

Gary
Plymouth
Warsaw
Fort Wayne
Defiance
Toledo
Sandusky
Elyria
Cleveland Airport
Cleveland Downtown

HNTB

TABLE D-5

MWRRI PHASE 5

Chicago to Cincinnati (via Tolleston)

Revision Date: 4/17/03

Chicago Terminal Area Limits

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Tolleston South-of-the-Lake Corridor Study 26.6 miles		Segment 2 Tolleston to Wanatah CSX MP 442.5 - MP 414.9 27.6 miles 110 mph		Segment 3 Wanatah to Monon CSX MP 40 to MP 0 40.0 miles 110 mph		Segment 4 Monon to Lafayette CSX MP 88.5 to MP 121 32.5 miles 79 mph		Segment 5 Lafayette to Ames CSX MP 121 - MP 149 28.0 miles 79 mph		Segment 6 Ames to Indianapolis CSX MP 46.3 to MP 1 45.3 miles 79 mph		Segment 7 Indianapolis to Shelbyville CSX MP 124.5 - MP 83 28.5 miles 110 mph		Segment 8 Shelbyville to Cinncinnati CIND MP 83 - MP 0.3 83.2 miles 110 mph		Total 311.7 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																							
1.1	HSR on Existing Roadbed	per mile	$ 993						-		-		-		-		-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059						-	40.0	42,360		-		-		-		-	83.2	88,109	123	130,469
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492						-		-		-		-		-		-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674						-		-		-		-		-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222						-		-	32.5	7,215	28.0	6,216	45.3	10,057		-		-	106	23,488
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331					27.6	9,136		-		-		-		-	28.5	9,434		-	56	18,569
1.5	Relay Track w/ 136# CWR	per mile	$ 354						-		-	20	7,080		-		-		-		-	20	7,080
1.6	Freight Siding	per mile	$ 912						-		-		-	5	4,560		-		-	2	1,824	7	6,384
1.65	Passenger Siding	per mile	$ 1,376					5	6,880	5	6,880	12	16,512		-	4	5,504		-	5	6,880	31	42,656
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51					22.08	1,126	32.0	1,632	26.0	1,326	22.4	1,142	36.2	1,848	22.8	1,163	66.6	3,395	228	11,632
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153					4.14	633	6.0	918	4.9	746	4.2	643	6.8	1,040	4.3	654	12.5	1,909	43	6,543
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175						-		-		-		-		-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394					1.38	544	2.0	788	1.6	640	1.4	552	2.3	892	1.4	561	4.2	1,639	14	5,616
Total Track Costs									18,319		52,578		33,519		13,113		19,341		11,812		103,756		252,437
Turnouts																							
4.1	#24 High Speed Turnout	each	$ 450					2	900		-	2	900	2	900	2	900		-	2	900	10	4,500
4.2	#20 Turnout Timber	each	$ 124					2	248	2	248	4	496	6	744		-		-	6	744	20	2,480
4.3	#10 Turnout Timber	each	$ 69					3	207		-	1	69	2	138		-		-	2	138	8	552
4.4	#20 Turnout Concrete	each	$ 249						-		-		-		-		-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118						-		-		-		-		-		-		-	-	-
Total Turnouts Cost									1,355		248		1,465		1,782		900		-		1,782		7,532
Curves																							
9.1	Elevate & Surface Curves	per mile	$ 58															0.5	26	19.2	1,111	20	1,137
9.3	Elastic Fasteners	per mile	$ 82															0.5	37	19.2	1,570	20	1,607
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -																68		2,864	-	2,932
Total Curves Cost																			131		5,545		5,676
Signals																							
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268					1	1,268		-	1	1,268		-	1	1,268		-	1	1,268	4	5,072
8.2	Install CTC System (Single Track)	per mile	$ 183					27.6	5,051	40	7,320	32.50	5,948	28	5,124	45.3	8,290	28.5	5,216	83.2	15,226	285	52,173
8.21	Install CTC System (Double Track)	per mile	$ 300						-		-		-		-		-		-		-	-	-
8.3	Install PTC System	per mile	$ 197					27.6	5,437	40	7,880		-		-		-	20	3,920	75	14,775	163	32,013
8.4	Electric Lock for Industry Turnout	each	$ 103					3	309		-		-		-	3	309		-	8	824	14	1,442
8.5	Signals for Crossover	each	$ 700						-		-	2	1,400	1	700		-		-	1	700	4	2,800
8.6	Signals for Turnout	each	$ 400						-	2	800		-	4	1,600		-		-	4	1,600	10	4,000
Total Signals Cost									12,065		16,000		8,616		7,424		9,867		9,136		34,393		97,500
Stations / Facilities																							
2.1	Full Service - New	each	$ 1,000						-		-		-		-		-		-		-	-	-
2.2	Full Service - Renovated	each	$ 500						-		-	1	500	1	500		-	1	500	1	500	4	2,000
2.3	Terminal - New	each	$ 2,000						-		-		-		-		-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000					1	1,000		-		-		-		-		-	1	1,000	2	2,000
2.6	Layover Facility	lump sum	$ -						-		-		-		-		-		-		-	-	-
2.7	Service & Inspection Facility in Cincinnati	lump sum	$ 17,681						-		-		-		-		-		-	1	17,681	1	17,682
Total Station Cost									1,000		-		500		500		-		500		19,181		21,682

HNTB

TABLE D-5

MWRRI PHASE 5

Chicago to Cincinnati (via Tolleston)

Revision Date: 4/17/03

Chicago Terminal Area Limits

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Chicago to Tolleston South-of-the-Lake Corridor Study 26.6 miles		Segment 2 Tolleston to Wanatah CSX MP 442.5 - MP 414.9 27.6 miles 110 mph		Segment 3 Wanatah to Monon CSX MP 40 to MP 0 40.0 miles 110 mph		Segment 4 Monon to Lafayette CSX MP 88.5 to MP 121 32.5 miles 79 mph		Segment 5 Lafayette to Ames CSX MP 121 - MP 149 28.0 miles 79 mph		Segment 6 Ames to Indianapolis CSX MP 46.3 to MP 1 45.3 miles 79 mph		Segment 7 Indianapolis to Shelbyville CSX MP 124.5 - MP 83 28.5 miles 110 mph		Segment 8 Shelbyville to Cinncinnati CIND MP 83 - MP 0.3 83.2 miles 110 mph		Total 311.7 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																							
5.1	Four Lane Urban Expressway	each	$ 4,835						-		-		-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025						-		-		-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054						-		-		-		-		-		-		-	-	-
5.4	Rail	each	$ 3,054						-	3	9,162		-		-		-		-		-	3	9,162
5.5	Minor river	each	$ 810						-	11	8,910		-		-		-		-		-	11	8,910
5.6	Major River	each	$ 8,098						-		-		-		-		-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7						-		-		-		-		-	600	2,806	2910	13,609	3,510	16,415
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4						-		-		-		-		-		-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0						-		-		-		-		-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0						-		-		-		-		-		-		-	-	-
Total Bridges-under Cost									-		18,072		-		-		-		2,806		13,609		34,487
Bridges-over																							
6.1	Four Lane Urban Expressway	each	$ 2,087						-		-		-		-		-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929						-		-		-		-		-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903						-		-		-		-		-		-		-	-	-
6.4	Rail	each	$ 6,110						-		-		-		-		-		-		-	-	-
Total Bridges-over Cost									-		-		-		-		-		-		-		-
Crossings																							
7.1	Private Closure	each	$ 83					2	166		-	3	249	5	415	5	415	3	249	9	747	27	2,241
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492					11	5,412		-		-		-		-		-		-	11	5,412
7.3	Four Quadrant Gates	each	$ 288					17	4,896	12	3,456		-		-		-		-	2	576	31	8,928
7.31	Convert Dual Gates to Quad Gates	each	$ 150						-		-		-		-		-	7	1,050	20	3,000	27	4,050
7.4a	Conventional Gates single mainline track	each	$ 166					15	2,490		-	35	5,810	27	4,482	33	5,478	8	1,328	26	4,316	144	23,904
7.4b	Conventional Gates double mainline track	each	$ 205						-		-		-		-		-		-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50					5	250		-	3	150	5	250	10	500	1	50	1	50	25	1,250
7.5a	Single Gate with Median Barrier	each	$ 180						-	32	5,760		-		-		-		-		-	32	5,760
7.5b	Convert Single Gate to Extended Arm	each	$ 15						-		-		-		-		-	24	360	60	900	84	1,260
7.71	Precast Panels without Rdway Improvements	each	$ 80						-		-	38	3,040	32	2,560	43	3,440	40	3,200	109	8,720	262	20,960
7.72	Precast Panels with Rdway Improvements	each	$ 150					43	6,450	44	6,600		-		-		-		-		-	87	13,050
7.8	Michigan Type Grade Crossing Surface	each	$ 15						-		-		-		-		-		-		-	-	-
Total Crossings Cost									19,664		15,816		9,249		7,707		9,833		6,237		18,309		86,815
Segment Totals									**52,403**		**102,714**		**53,349**		**30,526**		**39,941**		**30,622**		**196,575**		**506,129**
Placeholders																							
	Longitudinal Drainiage Improvements	per mile	$ 50					27.6	1,380		-		-		-		-	1	50		-	29	1,430
	Bridge Rehabilitation	each	$ 200					8	1,600													8	1,600
	IU Interlocking	lump sum	$ 10,000						-		-		-		-		-	1	10,000		-	1	10,000
	Upgrade Bridges	each	$ 500						-		-		-		-		-		-	32	16,000	32	16,000
									55,383														
ADJUSTED TOTAL (ALLOCATE 50% OF TOLLESTON TO WANATAH)									**27,691**		**102,714**		**53,349**		**30,526**		**39,941**		**40,672**		**212,575**		**507,467**

NOTES

- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
- Estimate average span of underbridge is 40 feet.
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 120.1	Lafayette	Full Service - Renovated
MP 147.25	Crawfordsville	Full Service - Renovated
MP 124.5	Indianapolis	Full Service - Renovated
MP 83	Shelbyville	Full Service - Renovated
MP 0.3	Cincinnati	Terminal - Renovated

TABLE D-6

MWRRI PHASE 5

Chicago to Carbondale

Revision Date: 3/30/03

Item		Unit	YR 2002 Unit Cost (1000s)	Chicago Terminal Area Included in SOLR Study		Segment 1 Chicago to Grand Crossing NS MP 0 - MP 513.4 9.7 miles		Segment 2 Grand Crossing to Kankakee CN(ICRR) MP 10 - MP 55.3 45.3 miles 90 mph		Segment 3 Kankakee to Champaign CN(ICRR) MP 55.3 - MP 127.8 72.5 miles 90 mph		Segment 4 Champaign to Effingham CN(ICRR) MP 127.8 - MP 199.2 71.4 miles 90 mph		Segment 5 Effingham to Carbondale CN(ICRR) MP 199.2 - MP 309 109.8 miles 90 mph		Total 299.0 miles	
						Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																	
1.1	HSR on Existing Roadbed	per mile	$ 993				-		-		-		-		-	-	
1.2a	HSR on New Roadbed	per mile	$ 1,059				-		-		-		-		-	-	
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492				-		-		-		-		-	-	
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674				-		-		-		-		-	-	
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222			45.3	10,057	83.1	18,448	71.4	15,851	130.9	29,058	331	73,413		
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331				-		-		-		-	-	-		
1.5	Relay Track w/ 136# CWR	per mile	$ 354				-		-		-		-	-	-		
1.6	Freight Siding	per mile	$ 912				-		-		-		-	-	-		
1.65	Passenger Siding	per mile	$ 1,376			2	2,752	11	15,136		-		-	13	17,888		
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			36	1,848	58	2,958	57	2,913	88	4,480	239	12,199		
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			7	1,040	11	1,664	11	1,639	16	2,520	45	6,862		
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175				-		-		-		-	-	-		
1.74	Decorative Fencing (both sides)	per mile	$ 394			2	892	4	1,428	4	1,407	5	2,163	15	5,890		
Total Track Costs							16,589		39,634		21,809		38,220		116,253		
Turnouts																	
4.1	#24 High Speed Turnout	each	$ 450				-	2	900		-		-	2	900		
4.2	#20 Turnout Timber	each	$ 124			6	744	6	744		-		-	12	1,488		
4.3	#10 Turnout Timber	each	$ 69				-		-		-		-	-	-		
4.4	#20 Turnout Concrete	each	$ 249				-		-		-		-	-	-		
4.5	#10 Turnout Concrete	each	$ 118				-		-		-		-	-	-		
Total Turnouts Cost							744		1,644		-		-		2,388		
Curves																	
9.1	Elevate & Surface Curves	per mile	$ 58			0.3	19	0.4	23	1.1	63	3.7	213	5	318		
9.3	Elastic Fasteners	per mile	$ 82			0.3	27	0.4	33	1.1	89	3.7	301	5	450		
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum							51		34		221		307		
Total Curves Cost							46		107		187		735		1,075		
Signals																	
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268				-	1	1,268		-		-	1	1,268		
8.2	Install CTC System (Single Track)	per mile	$ 183				-		-		-		-	-	-		
8.21	Install CTC System (Double Track)	per mile	$ 300				-		-		-		-	-	-		
8.3	Install PTC System	per mile	$ 197			45.30	8,924	72.50	14,283	71.40	14,066	109.80	21,631	299	58,903		
8.4	Electric Lock for Industry Turnout	each	$ 103				-		-		-		-	-	-		
8.5	Signals for Crossover	each	$ 700			2	1,400	2	1,400		-		-	4	2,800		
8.6	Signals for Turnout	each	$ 400			2	800	2	800		-		-	4	1,600		
Total Signals Cost							11,124		17,751		14,066		21,631		64,571		
Stations / Facilities																	
2.1	Full Service - New	each	$ 1,000				-		-		-	1	1,000	1	1,000		
2.2	Full Service - Renovated	each	$ 500			1	500	2	1,000	3	1,500	1	500	7	3,500		
2.3	Terminal - New	each	$ 2,000				-		-		-		-	-	-		
2.4	Terminal - Renovated	each	$ 1,000				-		-		-	1	1,000	1	1,000		
2.6	Layover Facility in Carbondale	lump sum	$ 5,544				-		-		-	1	5,544	1	5,544		
2.7	Service & Inspection Facility	lump sum	$ -				-		-		-		-	-	-		
Total Station Cost							500		1,000		1,500		8,044		11,044		

TABLE D-6

MWRRI PHASE 5

Chicago to Carbondale

Revision Date: 3/30/03

Item		Unit	YR 2002 Unit Cost (1000s)	Chicago Terminal Area Included in SOLR Study		Segment 1 Chicago to Grand Crossing NS MP 0 - MP 513.4 9.7 miles		Segment 2 Grand Crossing to Kankakee CN(ICRR) MP 10 - MP 55.3 45.3 miles 90 mph		Segment 3 Kankakee to Champaign CN(ICRR) MP 55.3 - MP 127.8 72.5 miles 90 mph		Segment 4 Champaign to Effingham CN(ICRR) MP 127.8 - MP 199.2 71.4 miles 90 mph		Segment 5 Effingham to Carbondale CN(ICRR) MP 199.2 - MP 309 109.8 miles 90 mph		Total 299.0 miles	
						Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																	
5.1	Four Lane Urban Expressway	each	$ 4,835				-		-		-		-		-	-	
5.2	Four Lane Rural Expressway	each	$ 4,025				-		-		-		-		-	-	
5.3	Two Lane Highway	each	$ 3,054				-		-		-		-		-	-	
5.4	Rail	each	$ 3,054				-		-		-		-		-	-	
5.5	Minor river	each	$ 810				-		-		-		-		-	-	
5.6	Major River	each	$ 8,098				-		-		-		-		-	-	
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7				-		-		-		-		-	-	
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4				-		-		-		-		-	-	
5.73	Single Track on Flyover Structure	per LF	$ 6.0				-		-		-		-		-	-	
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0				-		-		-		-		-	-	
Total Bridges-under Cost							-		-		-		-		-		-
Bridges-over																	
6.1	Four Lane Urban Expressway	each	$ 2,087				-		-		-		-		-	-	
6.2	Four Lane Rural Expressway	each	$ 2,929				-		-		-		-		-	-	
6.3	Two Lane Highway	each	$ 1,903				-		-		-		-		-	-	
6.4	Rail	each	$ 6,110				-		-		-		-		-	-	
Total Bridges-over Cost							-		-		-		-		-		-
Crossings																	
7.1	Private Closure	each	$ 83			2	166	9	747	6	498	12	996	29	2,407		
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492				-		-		-		-	-	-		
7.3	Four Quadrant Gates	each	$ 288				-		-		-		-	-	-		
7.31	Convert Dual Gates to Quad Gates	each	$ 150				-		-		-		-		-		
7.4a	Conventional Gates single mainline track	each	$ 166			3	498	27	4,482	20	3,320	40	6,640	90	14,940		
7.4b	Conventional Gates double mainline track	each	$ 205				-		-		-		-		-		
7.41	Convert Flashers Only to Dual Gate	each	$ 50				-		-		-		-		-		
7.5a	Single Gate with Median Barrier	each	$ 180				-		-		-		-	-	-		
7.5b	Convert Single Gate to Extended Arm	each	$ 15				-		-		-		-	-	-		
7.71	Precast Panels without Rdway Improvements	each	$ 80			3	240	27	2,160	20	1,600	40	3,200	90	7,200		
7.72	Precast Panels with Rdway Improvements	each	$ 150				-		-		-		-	-	-		
7.8	Michigan Type Grade Crossing Surface	each	$ 15				-		-		-		-	-	-		
Total Crossings Cost							904		7,389		5,418		10,836		24,547		
Segment Totals							**29,907**		**67,525**		**42,980**		**79,466**		**219,878**		

NOTES

- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
- Estimate average span of underbridge is 40 feet.
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public and private crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 23.5	Homewood	Full Service - Renovated
MP 55.9	Kankakee	Full Service - Renovated
MP 113.9	Rantoul	Full Service - Renovated
MP 127.8	Champaign-Urbana	Full Service - Renovated
MP 172.4	Mattoon	Full Service - Renovated
MP 199.2	Effingham	Full Service - Renovated
MP 252.4	Centralia	Full Service - New
MP 287.8	Du Quoin	Full Service - Renovated
MP 308.1	Carbondale	Terminal - Renovated

HNTB

TABLE D-7

MWRRI PHASE 5

Chicago to St. Louis

Revision Date: 3/24/03

				Chicago Terminal Area				From IDOT Estimates				From IDOT Estimates				
			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Total
			From - To	Chicago to Joliet		Joliet to Mazonia		Mazonia to Springfield		Springfield		Springfield to Q Tower		Q Tower to St. Louis		
			Host Carrier	CN		UP		UP		UP		UP		UP		
			Mileposts	MP 0 - MP 36.7		MP 36.7 - MP 62.6		MP 62.6 - MP 180.78		MP 180.78 - MP 189.4		MP 189.4 - MP 281		MP 281 - MP 283.4		
			Track Miles	36.7 miles		36.9 miles		118.18 miles		8.62 miles		89.19 miles		2.4 miles		292.0 miles
			Maximum Authorized Speed	79 mph		110 mph		110 mph		45 mph		110 mph		45 mph		
Item		Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																	
1.1	HSR on Existing Roadbed	per mile	$ 993		-		-		-		-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059		-		-		-		-		-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492		-		-		-		-		-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674		-		-		-		-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222		-	36.9	8,192		-	8.6	1,914		-	2.4	533	48	10,638
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331		-		-		-		-		-		-	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354		-		-		-		-		-		-	-	-
1.6	Freight Siding	per mile	$ 912		-		-		-		-		-		-	-	-
1.65	Passenger Siding	per mile	$ 1,376		-		-		-		-		-		-	-	-
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51		-	29.52	1,506		-		-		-	1.92	98	31	1,603
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153		-	5.54	847		-	2	306		-	0.36	55	8	1,208
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175		-		-		-		-		-		21	2	344
1.74	Decorative Fencing (both sides)	per mile	$ 394		-	1.85	727		-	1	394		-	0.12	47	1	394
Total Track Costs					-		11,271		-		2,614		-		754		14,187
Turnouts																	
4.1	#24 High Speed Turnout	each	$ 450		-		-		-		-		-		-	-	-
4.2	#20 Turnout Timber	each	$ 124		-	4	496		-		-		-		-	4	496
4.3	#10 Turnout Timber	each	$ 69		-		-		-		-		-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249		-		-		-		-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118		-		-		-		-		-		-	-	-
Total Turnouts Cost					-		496		-		-		-		-		496
Curves																	
9.1	Elevate & Surface Curves	per mile	$ 58		-	1.7	99		-		-		-		-	2	99
9.3	Elastic Fasteners	per mile	$ 82		-	1.7	139		-		-		-		-	2	139
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum					198									-	198
Total Curves Cost					-		436		-		-		-		-		436
Signals																	
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268		-		-		-		-		-		-	-	-
8.2	Install CTC System (Single Track)	per mile	$ 183		-		-		-		-		-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300		-		-		-		-		-		-	-	-
8.3	Install PTC System	per mile	$ 197		-	36.9	7,269		-		-		-		-	37	7,269
8.4	Electric Lock for Industry Turnout	each	$ 103		-		-		-		-		-		-	-	-
8.5	Signals for Crossover	each	$ 700		-		-		-		-		-		-	-	-
8.6	Signals for Turnout	each	$ 400		-		-		-		-		-		-	-	-
Total Signals Cost					-		7,269		-		-		-		-		7,269
Stations / Facilities																	
2.1	Full Service - New	each	$ 1,000		-		-		-		-		-		-	-	-
2.2	Full Service - Renovated	each	$ 500		-	4	2,000		-	1	500		-	2	1,000	7	3,500
2.3	Terminal - New	each	$ 2,000		-		-		-		-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000		-		-		-		-		-	1	1,000	1	1,000
2.6	Layover Facility	lump sum	$ -		-		-		-		-		-		-	-	-
2.7	Service & Inspection Facility in St. Louis	lump sum	$ 21,405		-		-		-		-		-	1	21,405	1	21,406
Total Station Cost					-		2,000		-		500		-		23,405		25,906

HNTB

TABLE D-7

MWRRI PHASE 5

Chicago to St. Louis

Revision Date: 3/24/03

				Chicago Terminal Area				From IDOT Estimates				From IDOT Estimates				
			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Total
			From - To	Chicago to Joliet		Joliet to Mazonia		Mazonia to Springfield		Springfield		Springfield to Q Tower		Q Tower to St. Louis		
			Host Carrier	CN		UP		UP		UP		UP		UP		
			Mileposts	MP 0 - MP 36.7		MP 36.7 - MP 62.6		MP 62.6 - MP 180.78		MP 180.78 - MP 189.4		MP 189.4 - MP 281		MP 281 - MP 283.4		292.0 miles
			Track Miles	36.7 miles		36.9 miles		118.18 miles		8.62 miles		89.19 miles		2.4 miles		
			Maximum Authorized Speed	79 mph		110 mph		110 mph		45 mph		110 mph		45 mph		
Item		Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																	
5.1	Four Lane Urban Expressway	each	$ 4,835		-		-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025		-		-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054		-		-		-		-		-		-	-	-
5.4	Rail	each	$ 3,054		-		-		-		-		-		-	-	-
5.5	Minor river	each	$ 810		-		-		-		-		-		-	-	-
5.6	Major River	each	$ 8,098		-		-		-		-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7		-		-		-		-		-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4		-	180	1,684		-		-		-		-	180	1,684
5.73	Single Track on Flyover Structure	per LF	$ 6.0		-		-		-		-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0		-		-		-		-		-		-	-	-
Total Bridges-under Cost					-		1,684		-		-		-		-		1,684
Bridges-over																	
6.1	Four Lane Urban Expressway	each	$ 2,087		-		-		-		-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929		-		-		-		-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903		-		-		-		-		-		-	-	-
6.4	Rail	each	$ 6,110		-		-		-		-		-		-	-	-
Total Bridges-over Cost					-		-		-		-		-		-		-
Crossings																	
7.1	Private Closure	each	$ 83		-	2	166		-		-		-		-	2	166
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492		-		-		-		-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288		-	15	4,320		-		-		-		-	15	4,320
7.31	Convert Dual Gates to Quad Gates	each	$ 150		-	6	900		-		-		-		-	6	900
7.4a	Conventional Gates single mainline track	each	$ 166		-	4	664		-	1	166		-		-	5	830
7.4b	Conventional Gates double mainline track	each	$ 205		-		-		-		-		-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50		-		-		-	9	450		-		-	9	450
7.5a	Single Gate with Median Barrier	each	$ 180		-		-		-		-		-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15		-		-		-		-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80		-	19	1,520		-	1	80		-		-	20	1,600
7.72	Precast Panels with Rdway Improvements	each	$ 150		-		-		-		-		-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15		-		-		-		-		-		-	-	-
Total Crossings Cost					-		7,570		-		696		-		-		8,266
Segment Totals							**30,726**				**3,810**				**24,159**		**58,244**
Placeholders																	
	IDOT Estimate	lump sum						49,864				63,915					113,780
	Additional Grade Crossings not included in IDOT Estimate	lump sum						16,000									16,000
	Add 31 % Soft Costs to IDOT Estimate	lump sum						20,418				19,814					40,232
	St. Louis Area Track & Signal Improvements	lump sum	15,000											1	15,000		15,000
TOTAL							**30,726**		**86,282**		**3,810**		**83,729**		**39,159**		**243,256**

NOTES

- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
- Estimate average span of underbridge is 40 feet.
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public and private crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 37..5	Joliet	In Chicago Terminal Area
MP 73.6	Dwight	Full Service - Renovated
MP 92.15	Pontiac	Full Service - Renovated
MP 124.1	Bloomington-Normal	Full Service - Renovated
MP 156.4	Lincoln	Full Service - Renovated
MP 185.15	Springfield	Full Service - Renovated
MP 223.8	Carlinville	Full Service - Renovated
MP 256.8	Alton	Full Service - Renovated
MP 283.4	St. Louis	Terminal - Renovated

HNTB

TABLE D-8

MWRRI PHASE 5

St. Louis to Kansas City

Revision Date: 3/24/03

				Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed	Segment 1 St. Louis to Jefferson City UP MP 0.59 to MP 125.5 124.9 miles 90 mph		Segment 2 Jefferson City to Kansas City UP MP 125.5 to MP 283 157.5 miles 90 mph		Total 282.4 miles	
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork										
1.1	HSR on Existing Roadbed	per mile	$ 993			-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059			-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492			-		-	-	-
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674			-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222			-		-	-	-
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331		230.9	76,431	157.5	52,133	388	128,564
1.5	Relay Track w/ 136# CWR	per mile	$ 354			-		-	-	-
1.6	Freight Siding	per mile	$ 912			-		-	-	-
1.65	Passenger Siding	per mile	$ 1,376			-		-	-	-
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			-		-	-	-
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			-		-	-	-
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175			-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			-		-	-	-
Total Track Costs						76,431		52,133		128,564
Turnouts										
4.1	#24 High Speed Turnout	each	$ 450		10	4,500	12	5,400	22	9,900
4.2	#20 Turnout Timber	each	$ 124			-		-	-	-
4.3	#10 Turnout Timber	each	$ 69			-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249			-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118			-		-	-	-
Total Turnouts Cost						4,500		5,400		9,900
Curves										
9.1	Elevate & Surface Curves	per mile	$ 58		32.73	1,898	52.11	3,022	85	4,921
9.3	Elastic Fasteners	per mile	$ 82		32.73	2,684	52.11	4,273	85	6,957
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -			10,180		10,188	-	20,368
Total Curves Cost						14,762		17,483		32,245
Signals										
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			-		-	-	-
8.2	Install CTC System (Single Track)	per mile	$ 183			-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300			-		-	-	-
8.3	Install PTC System	per mile	$ 197		124.91	24,607	157.50	31,028	282	55,635
8.4	Electric Lock for Industry Turnout	each	$ 103			-		-	-	-
8.5	Signals for Crossover	each	$ 700			-		-	-	-
8.6	Signals for Turnout	each	$ 400		10	4,000	12	4,800	22	8,800
Total Signals Cost						28,607		35,828		64,435
Stations / Facilities										
2.1	Full Service - New	each	$ 1,000			-		-	-	-
2.2	Full Service - Renovated	each	$ 500		4	2,000	4	2,000	8	4,000
2.3	Terminal - New	each	$ 2,000			-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000			-	1	1,000	1	1,000
2.6	Layover Facility in Kansas City	lump sum	$ 5,544			-	1	5,544	1	5,544
2.7	Service & Inspection Facility	lump sum	$ -			-		-	-	-
Total Station Cost						2,000		8,544		10,544

HNTB

TABLE D-8

MWRRI PHASE 5

St. Louis to Kansas City

Revision Date: 3/24/03

				Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed	Segment 1 St. Louis to Jefferson City UP MP 0.59 to MP 125.5 124.9 miles 90 mph		Segment 2 Jefferson City to Kansas City UP MP 125.5 to MP 283 157.5 miles 90 mph		Total 282.4 miles	
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under										
5.1	Four Lane Urban Expressway	each	$ 4,835			-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-		-	-	-
5.3	Two Lane Highway	each	$ 3,054			-		-	-	-
5.4	Rail	each	$ 3,054			-		-	-	-
5.5	Minor river	each	$ 810			-		-	-	-
5.6	Major River	each	$ 8,098			-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7			-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0			-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0			-		-	-	-
Total Bridges-under Cost						-		-		-
Bridges-over										
6.1	Four Lane Urban Expressway	each	$ 2,087			-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-		-	-	-
6.3	Two Lane Highway	each	$ 1,903			-		-	-	-
6.4	Rail	each	$ 6,110			-		-	-	-
Total Bridges-over Cost						-		-		-
Crossings										
7.1	Private Closure	each	$ 83		10	830	18	1,494	28	2,324
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-		-	-	-
7.3	Four Quadrant Gates	each	$ 288		11	3,168	44	12,672	55	15,840
7.31	Convert Dual Gates to Quad Gates	each	$ 150		19	2,850	67	10,050	86	12,900
7.4a	Conventional Gates single mainline track	each	$ 166		27	4,482	39	6,474	66	10,956
7.4b	Conventional Gates double mainline track	each	$ 205			-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50		1	50		-	1	50
7.5a	Single Gate with Median Barrier	each	$ 180			-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15			-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80		57	4,560	150	12,000	207	16,560
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15			-		-	-	-
Total Crossings Cost						15,940		42,690		58,630
Segment Totals						**142,240**		**162,077**		**304,318**
Placeholders										
	KC Access Cost	lump sum	10,000				1	10,000	1	10,000
TOTAL						**142,240**		**172,077**		**314,318**

NOTES

Costs for capacity mitigation not included.
Installation of PTC system does not include locomotive equipment and dispatch equipment.
Cost Estimate does not include utility relocation.
Corridor access with frieght railroads to be negotiated; costs not included
Station costs are MWRRS allocation amounts
Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
Estimate average span of underbridge is 40 feet.
Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
Four Quandrant Gates all public crossings at speeds > 79mph
Conventional Gates all public and private crossings at speeds </= 79mph
Precast Panels with Rdway Improvements installed where track embankment is replaced
Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 0.59	St. Louis	included in St. Louis route
MP 13.21	Kirkwood	Full Service - Renovated
MP 51.70	Washington	Full Service - Renovated
MP 80.92	Hermann	Full Service - Renovated
MP 125.5	Jefferson City	Full Service - Renovated
MP 188.9	Sedalia	Full Service - Renovated
MP 218.4	Warrensburg	Full Service - Renovated
MP 258.03	Lee's Summit	Full Service - Renovated
MP 271.2	Independence	Full Service - Renovated
MP 283	Kansas CIty	Terminal - Renovated

HNTB

TABLE D-9

MWRRI PHASE 5

Chicago to Quincy

Revision Date: 3/30/03

				Chicago Terminal Area									
			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Total	
			From - To	Chicago to Aurora		Aurora to Wyanet		Wyanet to Galesburg		Galesburg to Quincy			
			Host Carrier	BNSF		BNSF		BNSF		BNSF			
			Mileposts	MP 0 - MP 40.2		MP 40.2 - MP 110.7		MP 110.7 - MP 162.4		MP 162.4 - MP 258.56			
			Track Miles	40.2 miles		70.5 miles		51.7 miles		96.2 miles		218.4 miles	
			Maximum Authorized Speed	79 mph		90 mph		90 mph		90 mph			
	Item	Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork													
1.1	HSR on Existing Roadbed	per mile	$ 993				-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059				-		-		-	-	-
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492				-	3	4,476		-	3	4,476
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674				-		-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222			141	31,302	103.4	22,955	96	21,356	341	75,613
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331				-		-		-	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354				-		-		-	-	-
1.6	Freight Siding	per mile	$ 912			2	1,824		-	3	2,736	5	4,560
1.65	Passenger Siding	per mile	$ 1,376			10	13,760		-	8	11,008	18	24,768
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			66	3,366		-	93	4,743	159	8,109
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			30	4,590		-	40	6,120	70	10,710
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175				-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			15	5,910		-	15	5,910	30	11,820
Total Track Costs							60,752		27,431		51,873		140,056
Turnouts													
4.1	#24 High Speed Turnout	each	$ 450			2	900	2	900		-	4	1,800
4.2	#20 Turnout Timber	each	$ 124			10	1,240		-	6	744	16	1,984
4.3	#10 Turnout Timber	each	$ 69			6	414		-	6	414	12	828
4.4	#20 Turnout Concrete	each	$ 249				-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118				-		-		-	-	-
Total Turnouts Cost							2,554		900		1,158		4,612
Curves													
9.1	Elevate & Surface Curves	per mile	$ 58			1.6	93	6.52	378	16.64	965	25	1,436
9.3	Elastic Fasteners	per mile	$ 82			1.6	131	6.52	535	16.64	1,365	25	2,030
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum					224		238		1,098		1,560
Total Curves Cost							448		1,151		3,427		5,027
Signals													
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			1	1,268	1	1,268	2	2,536	4	5,072
8.2	Install CTC System (Single Track)	per mile	$ 183				-		-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300				-		-		-	-	-
8.3	Install PTC System	per mile	$ 197			70.5	13,889	51.7	10,185	96.16	18,944	218	43,017
8.4	Electric Lock for Industry Turnout	each	$ 103				-		-		-	-	-
8.5	Signals for Crossover	each	$ 700			5	3,500		-	2	1,400	7	4,900
8.6	Signals for Turnout	each	$ 400			2	800		-	2	800	4	1,600
Total Signals Cost							19,457		11,453		23,680		54,589
Stations / Facilities													
2.1	Full Service - New	each	$ 1,000				-		-		-	-	-
2.2	Full Service - Renovated	each	$ 500			3	1,500	2	1,000	2	1,000	7	3,500
2.3	Terminal - New	each	$ 2,000				-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000				-		-		-	-	-
2.6	Layover Facility in Quincy	lump sum	$ 5,544				-		-	1	5,544	1	5,544
2.7	Service & Inspection Facility	lump sum	$ -				-		-		-	-	-
Total Station Cost							1,500		1,000		6,544		9,044

TABLE D-9

MWRRI PHASE 5

Chicago to Quincy

Revision Date: 3/30/03

				Chicago Terminal Area									
			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Total	
			From - To	Chicago to Aurora		Aurora to Wyanet		Wyanet to Galesburg		Galesburg to Quincy			
			Host Carrier	BNSF		BNSF		BNSF		BNSF			
			Mileposts	MP 0 - MP 40.2		MP 40.2 - MP 110.7		MP 110.7 - MP 162.4		MP 162.4 - MP 258.56			
			Track Miles	40.2 miles		70.5 miles		51.7 miles		96.2 miles		218.4 miles	
			Maximum Authorized Speed	79 mph		90 mph		90 mph		90 mph			
Item		Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under													
5.1	Four Lane Urban Expressway	each	$ 4,835				-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025				-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054				-		-		-	-	-
5.4	Rail	each	$ 3,054				-		-		-	-	-
5.5	Minor river	each	$ 810				-		-		-	-	-
5.6	Major River	each	$ 8,098				-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7				-		-	570	2,666	570	2,666
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			330	3,087	270	2,525		-	600	5,612
5.73	Single Track on Flyover Structure	per LF	$ 6.0				-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0				-		-		-	-	-
Total Bridges-under Cost							3,087		2,525		2,666		8,278
Bridges-over													
6.1	Four Lane Urban Expressway	each	$ 2,087				-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929				-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903				-		-		-	-	-
6.4	Rail	each	$ 6,110				-		-		-	-	-
Total Bridges-over Cost							-		-		-		-
Crossings													
7.1	Private Closure	each	$ 83			10	830	8	664	4	332	22	1,826
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492				-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288				-		-		-	-	-
7.31	Convert Dual Gates to Quad Gates	each	$ 150				-		-		-	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			0	-	0	-	10	1,660	10	1,660
7.4b	Conventional Gates double mainline track	each	$ 205			41.00	8,405	31.00	6,355	82.00	16,810	154	31,570
7.41	Convert Flashers Only to Dual Gate	each	$ 50				-		-	11	550	11	550
7.5a	Single Gate with Median Barrier	each	$ 180				-		-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15				-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80				-		-		-	-	-
7.72	Precast Panels with Rdway Improvements	each	$ 150				-		-		-	-	-
7.8	Michigan Type Grade Crossing Surface	each	$ 15			0	-	0	-	10	150	10	150
Total Crossings Cost							9,235		7,019		19,502		35,756
Segment Totals							**97,032**		**51,479**		**108,850**		**257,362**

NOTES

- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Siding improvements incorporate recommendations from TEMS Ideal Day Analysis Report (Dated March 8, 2002)
- Assume 75% of underbridges need to be upgraded where speeds are above 79 mph
- Estimate average span of underbridge is 40 feet.
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public and private crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 13.7	La Grange	Full Service - Renovated
MP 28.4	Naperville	Full Service - Renovated
MP 51.5	Plano	Full Service - Renovated
MP 82.6	Mendota	Full Service - Renovated
MP 104.35	Princeton	Full Service - Renovated
MP 131.1	Kewanee	Full Service - Renovated
MP 162.4	Galesburg	Full Service - Renovated
MP 202.3	Macomb	Full Service - Renovated
MP 258.56	Quincy	Full Service - Renovated

HNTB

TABLE D-10

MWRRI PHASE 5

Wyanet to Omaha

Revision Date: 3/24/03

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Wyanet to Quad Cities BNSF MP 129.5 - MP 180.5 51.0 miles 79 mph		Segment 2 Quad Cities to Iowa City IAIS MP 180.5 - MP 236.75 56.3 miles 79 mph		Segment 3 Iowa City to Des Moines IAIS MP 236.75 - MP 357.7 121.0 miles 79 mph		Segment 4 Des Moines to Omaha IAIS MP 357.7 - MP 505 147.3 miles 79 mph		Total 375.5 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork															
1.1	HSR on Existing Roadbed	per mile	$ 993				-		-		-	-	-		
1.2a	HSR on New Roadbed	per mile	$ 1,059				-		-		-	-	-		
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492				-		-		-	-	-		
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674				-		-		-	-	-		
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222				-		-		-	-	-		
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			56.3	18,619	121.0	40,034	147.3	48,756	325	107,410		
1.5	Relay Track w/ 136# CWR	per mile	$ 354			17	6,018	20	7,080	17	6,018	54	19,116		
1.6	Freight Siding	per mile	$ 912			1	912	1	912	1	912	3	2,736		
1.65	Passenger Siding	per mile	$ 1,376			4	5,504	10	13,760	5	6,880	19	26,144		
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51				-		-		-	-	-		
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153				-		-		-	-	-		
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175				-		-		-	-	-		
1.74	Decorative Fencing (both sides)	per mile	$ 394				-		-		-	-	-		
Total Track Costs							31,053		61,786		62,566				155,406
Turnouts															
4.1	#24 High Speed Turnout	each	$ 450			2	900	4	1,800	2	900	8	3,600		
4.2	#20 Turnout Timber	each	$ 124			2	248		-		-	2	248		
4.3	#10 Turnout Timber	each	$ 69				-	2	138	6	414	8	552		
4.4	#20 Turnout Concrete	each	$ 249				-		-		-	-	-		
4.5	#10 Turnout Concrete	each	$ 118				-		-		-	-	-		
Total Turnouts Cost					-		1,148		1,938		1,314				4,400
Curves															
9.1	Elevate & Surface Curves	per mile	$ 58				-		-		-	-	-		
9.3	Elastic Fasteners	per mile	$ 82				-		-		-	-	-		
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -									-	-		
Total Curves Cost					-		-		-		-				-
Signals															
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268				-		-		-	-	-		
8.2	Install CTC System (Single Track)	per mile	$ 183			56.3	10,294	121.0	22,134	147.3	26,956	325	59,384		
8.21	Install CTC System (Double Track)	per mile	$ 300				-		-		-	-	-		
8.3	Install PTC System	per mile	$ 197				-		-		-	-	-		
8.4	Electric Lock for Industry Turnout	each	$ 103			2	206	4	412	2	206	8	824		
8.5	Signals for Crossover	each	$ 700				-		-		-	-	-		
8.6	Signals for Turnout	each	$ 400			4	1,600	6	2,400	6	2,400	16	6,400		
Total Signals Cost					-		12,100		24,946		29,562				66,608
Stations / Facilities															
2.1	Full Service - New	each	$ 1,000				-		-		-	-	-		
2.2	Full Service - Renovated	each	$ 500			2	1,000	2	1,000	1	500	5	2,500		
2.3	Terminal - New	each	$ 2,000				-		-		-	-	-		
2.4	Terminal - Renovated	each	$ 1,000				-		-	1	1,000	1	1,000		
2.6	Layover Facility in Quad Cities	lump sum	$ 6,536			1	6,536		-		-	1	6,536		
2.7	Service & Inspection Facility in Omaha	lump sum	$ 17,069				-		-	1	17,069	1	17,069		
Total Station Cost					-		7,536		1,000		18,569				27,105

HNTB

TABLE D-10

MWRRI PHASE 5

Wyanet to Omaha

Revision Date: 3/24/03

Item		Unit	YR 2002 Unit Cost (1000s)	Segment No. From - To Host Carrier Mileposts Track Miles Maximum Authorized Speed		Segment 1 Wyanet to Quad Cities BNSF MP 129.5 - MP 180.5 51.0 miles 79 mph		Segment 2 Quad Cities to Iowa City IAIS MP 180.5 - MP 236.75 56.3 miles 79 mph		Segment 3 Iowa City to Des Moines IAIS MP 236.75 - MP 357.7 121.0 miles 79 mph		Segment 4 Des Moines to Omaha IAIS MP 357.7 - MP 505 147.3 miles 79 mph		Total 375.5 miles	
				Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under															
5.1	Four Lane Urban Expressway	each	$ 4,835				-		-		-	-	-		
5.2	Four Lane Rural Expressway	each	$ 4,025				-		-		-	-	-		
5.3	Two Lane Highway	each	$ 3,054				-		-		-	-	-		
5.4	Rail	each	$ 3,054				-		-		-	-	-		
5.5	Minor river	each	$ 810				-		-		-	-	-		
5.6	Major River	each	$ 8,098				-		-		-	-	-		
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7				-		-		-	-	-		
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4				-		-		-	-	-		
5.73	Single Track on Flyover Structure	per LF	$ 6.0				-		-		-	-	-		
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0				-		-		-	-	-		
Total Bridges-under Cost					-		-		-		-		-		-
Bridges-over															
6.1	Four Lane Urban Expressway	each	$ 2,087				-		-		-	-	-		
6.2	Four Lane Rural Expressway	each	$ 2,929				-		-		-	-	-		
6.3	Two Lane Highway	each	$ 1,903				-		-		-	-	-		
6.4	Rail	each	$ 6,110				-		-		-	-	-		
Total Bridges-over Cost					-		-		-		-		-		-
Crossings															
7.1	Private Closure	each	$ 83				-		-		-	-	-		
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492				-		-		-	-	-		
7.3	Four Quadrant Gates	each	$ 288				-		-		-	-	-		
7.31	Convert Dual Gates to Quad Gates	each	$ 150				-		-		-	-	-		
7.4a	Conventional Gates single mainline track	each	$ 166			20	3,320	63	10,458	66	10,956	149	24,734		
7.4b	Conventional Gates double mainline track	each	$ 205				-		-		-	-	-		
7.41	Convert Flashers Only to Dual Gate	each	$ 50			19	950	34	1,700	26	1,300	79	3,950		
7.5a	Single Gate with Median Barrier	each	$ 180				-		-		-	-	-		
7.5b	Convert Single Gate to Extended Arm	each	$ 15				-		-		-	-	-		
7.71	Precast Panels without Rdway Improvements	each	$ 80				-		-		-	-	-		
7.72	Precast Panels with Rdway Improvements	each	$ 150				-		-		-	-	-		
7.8	Michigan Type Grade Crossing Surface	each	$ 15			20	300	63	945	66	990	149	2,235		
Total Crossings Cost					-		4,570		13,103		13,246		30,919		
Segment Totals					**0**		**56,407**		**102,773**		**125,257**		**284,437**		
Placeholders															
	BNSF/IAIS Connection Cost (From Design Nine Report)	lump sum			3,990								3,990		
	IAIS Rehab Cost (From Design Nine Report)	lump sum			28,957								28,957		
	Add Soft Costs (31%)	lump sum			10,213								10,213		
	Bridge Upgrade Costs (From 3B Estimate)	lump sum					3,673		7,131		11,806		22,610		
	Track & Signal Improvements at Omaha	lump sum	$ 10,000							1	10,000	1	10,000		
TOTAL					**43,159**		**60,080**		**109,904**		**147,064**		**360,207**		

NOTES

- Installation of PTC system does not include locomotive equipment and dispatch equipment.
- Cost Estimate does not include utility relocation.
- Corridor access with frieght railroads to be negotiated; costs not included
- Station costs are MWRRS allocation amounts
- Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
- Four Quandrant Gates all public crossings at speeds > 79mph
- Conventional Gates all public and private crossings at speeds </= 79mph
- Precast Panels with Rdway Improvements installed where track embankment is replaced
- Precast Panels without Rdway Improvements installed where track embankment is not replaced

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 181.2	Rock Island	Full Service - New
MP 182.8	Davenport	Full Service - Renovated
MP 236.75	Iowa City	Full Service - New
MP 322.5	Newton	Full Service - New
MP 357.7	Des Moines	Full Service - New
MP 439.95	Atlantic	Full Service - New
MP 503.1	Omaha	Terminal - Renovated

Grade Crossing Data:

TYPE	segment 1	segment 2	segment 3	segment 4
Fl & G	33	20	28	8
Fl	9	19	34	26
SO	24	20	63	66
TOTAL	66	59	125	100

HNTB

TABLE D-11
MWRRI PHASE 5
Chicago to St. Paul

Revision Date: 3/24/03

Chicago Terminal Area Limit
<----------From Chicago to Milwaukee Study 1995----------> From Milwaukee-Madison

			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Total	
			From - To	Chicago to Rondout		Rondout to IL/WI Line		IL/WI Line to Milwaukee		Milwaukee to Madison		Madison to Portage		Portage to LaCrosse		LaCrosse to St. Paul			
			Host Carrier	CP		CP		CP		CP		CP		CP		CP			
			Mileposts	MP 0 - MP 37.5		MP 37.5 - MP 47		MP 47 - MP 85		MP 85 - MP 169.2		MP 29.7 to MP 0		MP 179.9 - MP 288		MP 288 - MP 410.2			
			Track Miles	37.5 miles		9.5 miles		38.7 miles		84.2 miles		29.7 miles		111.5 miles		122.2 miles		433.30 miles	
			Maximum Authorized Speed	79 mph		110 mph		110 mph		110 mph		110 mph		110 mph		110 mph			
Item		Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																			
1.1	HSR on Existing Roadbed	per mile	$ 993		-		-		-		-		-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059		-		-		-		-	21.1	22,345	22	23,298	32	33,888	75	79,531
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492		-		-		-		-	8.6	12,831		-	17.5	26,110	26.1	38,941
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674		-		-		-		-		-	-	-		-	-	-
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222		-		-		-		-		-	111.5	24,753	122.2	27,128	234	51,881
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331		-		-		-		-		-		-		-	-	-
1.5	Relay Track w/ 136# CWR	per mile	$ 354		-		-		-		-		-		-		-	-	-
1.6	Freight Siding	per mile	$ 912		-		-		-		-		-		-		-	-	-
1.65	Passenger Siding	per mile	$ 1,376		-		-		-		-		-	20	27,520	30	41,280	50	68,800
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51		-		-		-		-	23.8	1,212	89.2	4,549	97.8	4,986	211	10,747
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153		-		-		-		-	4	682	17	2,559	18	2,804	40	6,045
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175		-		-		-		-		-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394		-		-		-		-	1	585	6	2,197	6	2,407	13	5,189
Total Track Costs					-		-		-		-		37,655		84,876		138,604		261,134
Turnouts																			
4.1	#24 High Speed Turnout	each	$ 450		-		-		-		-		-	4	1,800	6	2,700	10	4,500
4.2	#20 Turnout Timber	each	$ 124		-		-		-		-		-		-		-	-	-
4.3	#10 Turnout Timber	each	$ 69		-		-		-		-		-		-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249		-		-		-		-		-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118		-		-		-		-		-		-		-	-	-
Total Turnouts Cost					-		-		-		-		-		1,800		2,700		4,500
Curves																			
9.1	Elevate & Surface Curves	per mile	$ 58		-		-		-		-	1.3	73	13.1	759	26.7	1,549	41	2,381
9.3	Elastic Fasteners	per mile	$ 82		-		-		-		-	1.3	103	13.1	1,073	26.7	2,190	41	3,366
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -		-		-		-		-		85		2,051		8,839	-	10,975
Total Curves Cost					-		-		-		-		260		3,884		12,578		16,722
Signals																			
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268		-		-		-		-		-	2	2,536	3	3,804	5	6,340
8.2	Install CTC System (Single Track)	per mile	$ 183		-		-		-		-		-		-		-	-	-
8.21	Install CTC System (Double Track)	per mile	$ 300		-		-		-		-	29.7	8,910	22	6,600	32	9,600	84	25,110
8.3	Install PTC System	per mile	$ 197		-		-		-		-	24	4,728	100	19,700	100	19,700	224	44,128
8.4	Electric Lock for Industry Turnout	each	$ 103		-		-		-		-		-		-		-	-	-
8.5	Signals for Crossover	each	$ 700		-		-		-		-		-		-		-	-	-
8.6	Signals for Turnout	each	$ 400		-		-		-		-		-		-		-	-	-
Total Signals Cost					-		-		-		-		13,638		28,836		33,104		75,578
Stations / Facilities																			
2.1	Full Service - New	each	$ 1,000		-		-		-		-		-	1	1,000		-	1	1,000
2.2	Full Service - Renovated	each	$ 500		-		-		-	6	3,000	1	500	2	1,000	2	1,000	11	5,500
2.3	Terminal - New	each	$ 2,000		-		-		-		-		-		-	1	2,000	1	2,000
2.4	Terminal - Renovated	each	$ 1,000		-		-		-		-		-		-		-	-	-
2.6	Layover Facility in Milwaukee	lump sum	$ 6,536		-		-		-	1	6,536		-		-		-	1	6,536
2.7	Service & Inspection Facility in Madison & MInneapolis	lump sum	$ 17,681		-		-		-	1	17,681		-		-	1	17,681	2	35,362
Total Station Cost					-		-		-		27,217		500		2,000		20,681		50,398

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TABLE D-11
MWRRI PHASE 5
Chicago to St. Paul

Revision Date: 3/24/03

Chicago Terminal Area Limit
<----------From Chicago to Milwaukee Study 1995---------->
From Milwaukee-Madison

				Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Total	
				From - To	Chicago to Rondout		Rondout to IL/WI Line		IL/WI Line to Milwaukee		Milwaukee to Madison		Madison to Portage		Portage to LaCrosse		LaCrosse to St. Paul			
				Host Carrier	CP		CP		CP		CP		CP		CP		CP			
				Mileposts	MP 0 - MP 37.5		MP 37.5 - MP 47		MP 47 - MP 85		MP 85 - MP 169.2		MP 29.7 to MP 0		MP 179.9 - MP 288		MP 288 - MP 410.2			
				Track Miles	37.5 miles		9.5 miles		38.7 miles		84.2 miles		29.7 miles		111.5 miles		122.2 miles		433.30 miles	
				Maximum Authorized Speed	79 mph		110 mph		110 mph		110 mph		110 mph		110 mph		110 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																				
5.1	Four Lane Urban Expressway	each	$ 4,835			-		-		-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-		-		-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054			-		-		-		-	1	3,054		-		-	1	3,054
5.4	Rail	each	$ 3,054			-		-		-		-		-		-		-	-	-
5.5	Minor river	each	$ 810			-		-		-		-		-		-		-	-	-
5.6	Major River	each	$ 8,098			-		-		-		-		-		-		-	-	-
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7			-		-		-		-		-	300	1,403	420	1,964	720	3,367
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-		-		-		-		-	510	4,770	660	6,173	1,170	10,943
5.73	Single Track on Flyover Structure	per LF	$ 6			-		-		-		-		-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3			-		-		-		-		-		-		-	-	-
Total Bridges-under Cost						-		-		-		-		3,054		6,173		8,137		17,365
Bridges-over																				
6.1	Four Lane Urban Expressway	each	$ 2,087			-		-		-		-		-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-		-		-		-		-		-		-	-	-
6.3	Two Lane Highway	each	$ 1,903			-		-		-		-		-		-		-	-	-
6.4	Rail	each	$ 6,110			-		-		-		-		-		-		-	-	-
Total Bridges-over Cost						-		-		-		-		-		-		-		-
Crossings																				
7.1	Private Closure	each	$ 83			-		-		-		-	6	498	12	996	12	996	30	2,490
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-		-		-		-		-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288			-		-		-		-	37	10,656	70	20,160	37	10,656	144	41,472
7.31	Convert Dual Gates to Quad Gates	each	$ 150			-		-		-		-	1	150	3	450	13	1,950	17	2,550
7.4a	Conventional Gates single mainline track	each	$ 166			-		-		-		-	15	2,490	33	5,478	33	5,478	81	13,446
7.4b	Conventional Gates double mainline track	each	$ 205			-		-		-		-		-		-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50			-		-		-		-		-	3	150	17	850	20	1,000
7.5a	Single Gate with Median Barrier	each	$ 180			-		-		-		-		-		-		-	-	-
7.5b	Convert Single Gate to Extended Arm	each	$ 15			-		-		-		-		-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80			-		-		-		-	40	3,200		-		-	40	3,200
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-		-		-	13	1,950	109	16,350	100	15,000	222	33,300
7.8	Michigan Type Grade Crossing Surface	each	$ 15			-		-		-		-		-		-		-	-	-
Total Crossings Cost						-		-		-		-		18,944		43,584		34,930		97,458
Segment Totals												**27,217**		**74,051**		**171,153**		**250,735**		**523,156**
Placeholders																				
	From Chicago to Milwaukee Study						14,235		285,819											300,053
	From Milwaukee to Madison Study										226,582									226,582
TOTAL							**14,235**		**285,819**		**253,799**		**74,051**		**171,153**		**250,735**			**1,049,791**

NOTES

Installation of PTC system does not include locomotive equipment and dispatch equipment.
Cost Estimate does not include utility relocation.
Corridor access with frieght railroads to be negotiated; costs not included
Station costs are MWRRS allocation amounts
Siding improvements incorporate recommendations from TEMS Capacity Analysis Report (Dated September, 2001) for the Milwaukee to Madison Passenger Rail Corridor Study
Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate
Four Quandrant Gates all public crossings at speeds > 79mph

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 17.2	Glenview	included in the Chicago to Milwaukee Study Cost Estimates
MP 61.5	Sturtevant	included in the Chicago to Milwaukee Study Cost Estimates
MP 78.5	GMIA	included in the Chicago to Milwaukee Study Cost Estimates
MP 85.93	Milwaukee	Full Service - Renovated
MP 100.00	Brookfield	Full Service - Renovated
MP 117.5	Oconomowoc	Full Service - Renovated
MP 131.2	Watertown	Full Service - Renovated

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TABLE D-11

MWRRI PHASE 5

Chicago to St. Paul

Revision Date: 3/24/03

Chicago Terminal Area Limit

<----------From Chicago to Milwaukee Study 1995----------> From Milwaukee-Madison

			Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Total	
Segment No.			Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Total	
From - To			Chicago to Rondout		Rondout to IL/WI Line		IL/WI Line to Milwaukee		Milwaukee to Madison		Madison to Portage		Portage to LaCrosse		LaCrosse to St. Paul			
Host Carrier			CP		CP		CP		CP		CP		CP		CP			
Mileposts			MP 0 - MP 37.5		MP 37.5 - MP 47		MP 47 - MP 85		MP 85 - MP 169.2		MP 29.7 to MP 0		MP 179.9 - MP 288		MP 288 - MP 410.2			
Track Miles			37.5 miles		9.5 miles		38.7 miles		84.2 miles		29.7 miles		111.5 miles		122.2 miles		433.30 miles	
Maximum Authorized Speed			79 mph		110 mph		110 mph		110 mph		110 mph		110 mph		110 mph			
Item	Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Conventional Gates all public crossings at speeds </= 79mph																		
Precast Panels with Rdway Improvements installed where track embankment is replaced																		
Precast Panels without Rdway Improvements installed where track embankment is not replaced																		

MP 5.5	Madison Airport	Full Service - Renovated
MP 30.0	New Madison	Full Service - Renovated
MP 178.5	Portage	Full Service - Renovated
MP 195.0	Wisconsin Dells	Full Service - Renovated
MP 240.0	Tomah	Full Service - Renovated
MP 281.50	La Crosse	Full Service - Renovated
MP 308.5	Winona	Full Service - Renovated
MP 370.6	Red WIng	Full Service - Renovated
MP 410.2	St. Paul - Minneapolis	Terminal - Renovated

Segments 2 & 3: Chicago to Milwaukee Costs from 1995 Chicago to Milwaukee Study	Segment 2	Segment 3
Total Cost (in 1993 Dollars, includes 7% Engineering and 15% Contingencies)	$ 11,170,583	$ 140,327,100
Inflate to 2002 costs	$ 14,234,674	$ 178,818,824
Additional Capacity Improvements KK Jct to Muskego Yd on UP		$ 107,000,000
TOTAL	$ 14,234,674	$ 285,818,824

Segment 4: From Milwaukee-Madison Study				
Segment	Begin MP	End MP	Cost	
Milwaukee Station to Dayton St.	85	132.1	$ 92,655,000	(includes double track from MP 104.2 to MP 131)
Dayton St. to Waterloo Malting	132.1	145.2	$ 50,517,780	
Waterloo Malting to Lien Rd.	145.2	161.9	$ 50,952,810	
Lien Rd. to E. Johnson St.	161.9	166	$ 12,074,648	
E. Johnson St. to Airport	166	169.2	$ 8,508,025	
Total			$ 214,708,263	
(in 2000 Dollars, includes 7% engr, 5% proj mgmt, 4% construction contingencies)				
Inflate to 2002 costs			$ 226,581,630	

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TABLE D-12

MWRRI PHASE 5

Milwaukee to Green Bay

Revision Date: 3/24/03

					<----------From Milwaukee to Green Bay Alternatives Analysis Report November 2001--------->									
				Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Total	
				From - To	Milwaukee to Grand Ave.		Grand Ave. to West Bend		West Bend to Fond du Lac		Fond Du Lac to Appleton		Appleton to Green Bay			
				Host Carrier	CP		CP		CN(WC)		CN(WC)		CN(WC)			
				Mileposts	MP 85.8 - MP 88.3		MP 88.3 to MP 119.6		MP 119.6 to MP 155.0		MP 160.4 - MP 215		MP 213 - MP 243			
				Track Miles	2.5 miles		37.2 miles		28.0 miles		33.0 miles		28.0 miles		128.7 miles	
				Maximum Authorized Speed			110 mph		110.0 miles		110 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Trackwork																
1.10	HSR on Existing Roadbed	per mile	$ 993			-		-		-		-		-	-	-
1.2a	HSR on New Roadbed	per mile	$ 1,059			-	32	33,888		-		-	6	6,354	38	40,242
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492			-		-	18	26,856	33	49,236		-	51	76,092
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674			-		-	10	26,740		-		-	10	26,740
1.30	Timber & Surface w/ 33% Tie replacement	per mile	$ 222			-		-		-		-	22	4,884	22	4,884
1.40	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331			-		-		-		-		-	-	-
1.50	Relay Track w/ 136# CWR	per mile	$ 354			-		-		-		-		-	-	-
1.60	Freight Siding	per mile	$ 912			-		-		-	10	9,120		-	10	9,120
1.65	Passenger Siding	per mile	$ 1,376			-		-		-		-		-	-	-
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51			-	20	1,020	18	918	30	1,530		-	68	3,468
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153			-	10	1,530	8	1,224	3	459		-	21	3,213
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175			-		-		-		-		-	-	-
1.74	Decorative Fencing (both sides)	per mile	$ 394			-	2	788	2	788	1	394		-	5	1,970
Total Track Costs						-		37,226		56,526		60,739		11,238		165,729
Turnouts and Crossovers																
4.1	#24 High Speed Turnout	each	$ 450			-		-	2	900	2	900		-	4	1,800
4.2	#20 Turnout Timber	each	$ 124			-		-		-		-		-	-	-
4.3	#10 Turnout Timber	each	$ 69			-		-		-		-		-	-	-
4.4	#20 Turnout Concrete	each	$ 249			-		-		-		-		-	-	-
4.5	#10 Turnout Concrete	each	$ 118			-		-		-		-		-	-	-
Total Turnouts Cost						-		-		900		900		-		1,800
Curves																
9.1	Elevate & Surface Curves	per mile	$ 58			-	3	174	3	174				-	6	348
9.3	Elastic Fasteners	per mile	$ 82			-	3	246	3	246				-	6	492
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	$ -			-		314		314				-	-	629
Total Curves Cost						-		734		734		-		-		1,469
Signals																
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268			-		-	2	2,536		-		-	2	2,536
8.2	Install CTC System (Single Track)	per mile	$ 183			-	32	5,856	28	5,124		-		-	60	10,980
8.21	Install CTC System (Double Track)	per mile	$ 300			-		-		-		-		-	-	-
8.3	Install PTC System	per mile	$ 197			-	24	4,728	26	5,122	33	6,501		-	83	16,351
8.4	Electric Lock for Industry Turnout	each	$ 103			-		-		-		-		-	-	-
8.5	Signals for Crossover	each	$ 700			-		-		-		-		-	-	-
8.6	Signals for Turnout	each	$ 400			-		-		-		-		-	-	-
Total Signals Cost						-		10,584		12,782		6,501		-		29,867

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TABLE D-12

MWRRI PHASE 5

Milwaukee to Green Bay

Revision Date: 3/24/03

						<----------From Milwaukee to Green Bay Alternatives Analysis Report November 2001--------->									
				Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Total	
				From - To	Milwaukee to Grand Ave.		Grand Ave. to West Bend		West Bend to Fond du Lac		Fond Du Lac to Appleton		Appleton to Green Bay			
				Host Carrier	CP		CP		CN(WC)		CN(WC)		CN(WC)			
				Mileposts	MP 85.8 - MP 88.3		MP 88.3 to MP 119.6		MP 119.6 to MP 155.0		MP 160.4 - MP 215		MP 213 - MP 243			
				Track Miles	2.5 miles		37.2 miles		28.0 miles		33.0 miles		28.0 miles		128.7 miles	
				Maximum Authorized Speed			110 mph		110.0 miles		110 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Stations / Facilities																
2.1	Full Service - New	each	$ 1,000			-	2	2,000		-	3	3,000	1	1,000	6	6,000
2.2	Full Service - Renovated	each	$ 500			-		-		-	1	500		-	1	500
2.3	Terminal - New	each	$ 2,000			-		-		-		-		-	-	-
2.4	Terminal - Renovated	each	$ 1,000			-		-		-		-		-	-	-
2.6	Layover Facility in Green Bay	lump sum	$ 6,536			-		-		-		-	1	6,536	1	6,536
2.7	Service & Inspection Facility	lump sum	$ -			-		-		-		-		-	-	-
Total Station Cost						-		2,000		-		3,500		7,536		13,036

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TABLE D-12

MWRRI PHASE 5

Milwaukee to Green Bay

Revision Date: 3/24/03

<----------From Milwaukee to Green Bay Alternatives Analysis Report November 2001--------->

				Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Total	
				From - To	Milwaukee to Grand Ave.		Grand Ave. to West Bend		West Bend to Fond du Lac		Fond Du Lac to Appleton		Appleton to Green Bay			
				Host Carrier	CP		CP		CN(WC)		CN(WC)		CN(WC)			
				Mileposts	MP 85.8 - MP 88.3		MP 88.3 to MP 119.6		MP 119.6 to MP 155.0		MP 160.4 - MP 215		MP 213 - MP 243			
				Track Miles	2.5 miles		37.2 miles		28.0 miles		33.0 miles		28.0 miles		128.7 miles	
				Maximum Authorized Speed			110 mph		110.0 miles		110 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)		Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
Bridges-under																
5.1	Four Lane Urban Expressway	each	$ 4,835			-		-		-		-		-	-	-
5.2	Four Lane Rural Expressway	each	$ 4,025			-		-		-		-		-	-	-
5.3	Two Lane Highway	each	$ 3,054			-	7	21,378	1	3,054		-	2	6,108	10	30,540
5.4	Rail	each	$ 3,054			-	1	3,054		-		-		-	1	3,054
5.5	Minor river	each	$ 810			-	5	4,050	4	3,240		-		-	9	7,290
5.6	Major River	each	$ 8,098			-		-		-	1	8,098		-	1	8,098
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 5			-		-		-		-		-	-	-
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4			-		-		-		-		-	-	-
5.73	Single Track on Flyover Structure	per LF	$ 6.0			-		-		-		-		-	-	-
5.8	Single Track on Approach Embankment w/ Retaining Wall	per LF	$ 3.0			-		-		-		-		-	-	-
Total Bridges-under Cost						-		28,482		6,294		8,098		6,108		48,982
Bridges-over																
6.1	Four Lane Urban Expressway	each	$ 2,087			-		-		-		-		-	-	-
6.2	Four Lane Rural Expressway	each	$ 2,929			-		-		-	2	5,858		-	2	5,858
6.3	Two Lane Highway	each	$ 1,903			-		-		-	2	3,806		-	2	3,806
6.4	Rail	each	$ 6,110			-		-		-		-		-	-	-
Total Bridges-over Cost						-		-		-		9,664		-		9,664
Crossings																
7.1	Private Closure	each	$ 83			-	12	996	26	2,158	8	664		-	46	3,818
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492			-		-		-		-		-	-	-
7.3	Four Quadrant Gates	each	$ 288			-	8	2,304	7	2,016	19	5,472		-	34	9,792
7.31	Convert Dual Gates to Quad Gates	each	$ 150			-		-		-		-		-	-	-
7.4a	Conventional Gates single mainline track	each	$ 166			-		-		-		-		-	-	-
7.4b	Conventional Gates double mainline track	each	$ 205			-		-		-		-		-	-	-
7.41	Convert Flashers Only to Dual Gate	each	$ 50			-		-		-		-		-	-	-
7.5a	Single Gate with Median Barrier	each	$ 180			-	20	3,600	28	5,040	26	4,680		-	74	13,320
7.5b	Convert Single Gate to Extended Arm	each	$ 15			-		-		-		-		-	-	-
7.71	Precast Panels without Rdway Improvements	each	$ 80			-	28	2,240		-		-		-	28	2,240
7.72	Precast Panels with Rdway Improvements	each	$ 150			-		-	35	5,250	45	6,750		-	80	12,000
7.8	Michigan Type Grade Crossing Surface	each	$ 15			-		-		-		-		-	-	-
Total Crossings Cost						-		9,140		14,464		17,566		-		41,170
Segment Totals								**88,166**		**91,700**		**106,968**		**24,882**		**311,717**

NOTES

Milwaukee to Grand Ave. costs are included in the Chicago to St. Paul Route
Some train meets are at stations
Installation of PTC system does not include locomotive equipment and dispatch equipment.

ASSUMED STATION LOCATIONS AND IMPROVEMENTS:

MP 100	Granville	New Full Service Station
MP 117.5	West Bend	New Full Service Station
MP 156.5	Fond du Lac	Full Service Renovated

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TABLE D-12

MWRRI PHASE 5

Milwaukee to Green Bay

Revision Date: 3/24/03

<----------From Milwaukee to Green Bay Alternatives Analysis Report November 2001--------->

			Segment No.	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Total	
			From - To	Milwaukee to Grand Ave.		Grand Ave. to West Bend		West Bend to Fond du Lac		Fond Du Lac to Appleton		Appleton to Green Bay			
			Host Carrier	CP		CP		CN(WC)		CN(WC)		CN(WC)			
			Mileposts	MP 85.8 - MP 88.3		MP 88.3 to MP 119.6		MP 119.6 to MP 155.0		MP 160.4 - MP 215		MP 213 - MP 243			
			Track Miles	2.5 miles		37.2 miles		28.0 miles		33.0 miles		28.0 miles		128.7 miles	
			Maximum Authorized Speed			110 mph		110.0 miles		110 mph		79 mph			
Item		Unit	YR 2002 Unit Cost (1000s)	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
	Cost Estimate does not include utility relocation.									MP 173.5	Oshkosh		New Full Service Station		
	Corridor access with frieght railroads to be negotiated; costs not included									MP 186.5	Neenah		New Full Service Station		
	Station costs are MWRRS allocation amounts									MP 213	Appleton		New Full Service Station		
	Close 25% of all private crossings where speeds are above 79 mph; remainder are Conventional Gate									MP 243	Green Bay		New Full Service Station		
	Four Quandrant Gates all public crossings at speeds > 79mph														
	Conventional Gates all public crossings at speeds </= 79mph														
	Precast Panels with Rdway Improvements installed where track embankment is replaced														
	Precast Panels without Rdway Improvements installed where track embankment is not replaced														

HNTB

TABLE E

MWRRI PHASE 5

Summary of Unit Costs

Revision Date: 6/3/02

Item No	Description	Unit	2002 Unit Cost (in 1000s)
Trackwork			
1.1	HSR on Existing Roadbed	per mile	$ 993
1.2a	HSR on New Roadbed	per mile	$ 1,059
1.2b	HSR on New Roadbed & New Embankment	per mile	$ 1,492
1.2c	HSR on New Roadbed & New Embankment (Double Track)	per mile	$ 2,674
1.3	Timber & Surface w/ 33% Tie replacement	per mile	$ 222
1.4	Timber & Surface w/ 66% Tie Replacement	per mile	$ 331
1.5	Relay Track w/ 136# CWR	per mile	$ 354
1.6	Freight Siding	per mile	$ 912
1.65	Passenger Siding	per mile	$ 1,376
1.71	Fencing, 4 ft Woven Wire (both sides)	per mile	$ 51
1.72	Fencing, 6 ft Chain Link (both sides)	per mile	$ 153
1.73	Fencing, 10 ft Chain Link (both sides)	per mile	$ 175
1.74	Decorative Fencing (both sides)	per mile	$ 394
1.8	Drainage Improvements	per mile	$ 66
1.9a	Land Acquisition Urban	per mile	$ 327
1.9b	Land Acquisition Rural	per mile	$ 109
Curves			
9.1	Elevate & Surface Curves	per mile	$ 58
9.2	Curvature Reduction	per mile	$ 393
9.3	Elastic Fasteners	per mile	$ 82
9.5	Realign Track for Curves (See Table G6 for Costs)	lump sum	
Signals			
8.1	Signals for Siding w/ High Speed Turnout	each	$ 1,268
8.2	Install CTC System (Single Track)	per mile	$ 183
8.21	Install CTC System (Double Track)	per mile	$ 300
8.3	Install PTC System	per mile	$ 197
8.4	Electric Lock for Industry Turnout	each	$ 103
8.5	Signals for Crossover	each	$ 700
8.6	Signals for Turnout	each	$ 400
Stations / Facilities			
2.1	Full Service - New	each	$ 1,000
2.2	Full Service - Renovated	each	$ 500
2.3	Terminal - New	each	$ 2,000
2.4	Terminal - Renovated	each	$ 1,000
2.5a	Maintenance (110 MPH technology)	each	$ 10,000
2.5b	Maintenance (150 MPH technology)	each	$ 86,000
2.5c	Maintenance (185 MPH technology)	each	$ 162,000
2.5	Maintenance Facility	each	$ 45,351
2.6	Layover Facility	lump sum	
2.7	Service & Inspection Facility	lump sum	
Turnouts			
4.1	#24 High Speed Turnout	each	$ 450
4.2	#20 Turnout Timber	each	$ 124
4.3	#10 Turnout Timber	each	$ 69
4.4	#20 Turnout Concrete	each	$ 249
4.5	#10 Turnout Concrete	each	$ 118
4.6	#33 Crossover	each	$ 1,136
4.7	#20 Crossover	each	$ 710
Bridges-under			
5.1	Four Lane Urban Expressway	each	$ 4,835
5.2	Four Lane Rural Expressway	each	$ 4,025
5.3	Two Lane Highway	each	$ 3,054
5.4	Rail	each	$ 3,054
5.5	Minor river	each	$ 810
5.6	Major River	each	$ 8,098
5.65	Double Track High (50') Level Bridge	per LF	$ -
5.70	Rehab for 110	per LF	$ 14
5.71	Convert open deck bridge to ballast deck (single track)	per LF	$ 4.7
5.72	Convert open deck bridge to ballast deck (double track)	per LF	$ 9.4
5.73	Single Track on Flyover Structure	per LF	$ 6
5.8	Single Track on Approach Embankment w/ Retaining Wal	per LF	$ 3
	Ballasted Concrete Deck Replacement Bridge	per LF	$ 2.1
	Land Bridges	per LF	$ 1.5
Bridges-over			
6.1	Four Lane Urban Expressway	each	$ 2,087
6.2	Four Lane Rural Expressway	each	$ 2,929
6.3	Two Lane Highway	each	$ 1,903
6.4	Rail	each	$ 6,110
Crossings			
7.1	Private Closure	each	$ 83
7.2	Four Quadrant Gates w/ Trapped Vehicle Detector	each	$ 492
7.3	Four Quadrant Gates	each	$ 288
7.31	Convert Dual Gates to Quad Gates	each	$ 150
7.4a	Conventional Gates single mainline track	each	$ 166
7.4b	Conventional Gates double mainline track	each	$ 205
7.41	Convert Flashers Only to Dual Gate	each	$ 50
7.5a	Single Gate with Median Barrier	each	$ 180
7.5b	Convert Single Gate to Extended Arm	each	$ 15
7.71	Precast Panels without Rdway Improvements	each	$ 80
7.72	Precast Panels with Rdway Improvements	each	$ 150
7.8	Michigan Type Grade Crossing Surface	each	$ 15

CHICAGO - KALAMAZOO - BATTLE CREEK - DEARBORN - DETROIT - PONTIAC

									R. A. Kollmar's Calculations											COMPLETE TEMS Calculations																								
Global	From	To	Main			MP	MP	Segment	Total Track	Predom. Traffic			No of Trains		Curr Tons	RR Escal.	2022 Tonnage			2010 Tons	RR Escal.	2022 Tonnage			FRA Track Class					MGT				Curvature			Matrix 41	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	
MP	Station	Station	#1	#2	#3	Begin	End	Length	Miles	P	E	F	P	F	F	%	P	F	Tot	F	%	P	F	Tot	2	3	4	5	6	< 5	5-15	15-30	> 30	Lgt	Mod	Sev	Cost/Mile							Comments
0	Chicago	21 Street	45	45	45	523.0	520.9	2.1	6.3	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8		6.3				▨				▨			$ 2.05	$ 2.40	$ 131,991	$ 2.53	$ 2.96	$ 162,897	$ 294,888	MP 0.0 - Chicago
	21 Street	Englewood	79	79		520.9	516.3	4.6	9.2	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			9.2			▨				▨			$ 2.05	$ 2.40	$ 192,749	$ 2.53	$ 2.96	$ 237,881	$ 430,630	
	Englewood	Englewood	45	45		516.3	515.2	1.1	2.2	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8		2.2				▨						▨	$ 2.29	$ 2.68	$ 51,488	$ 2.60	$ 3.04	$ 58,458	$ 109,947	
	Englewood	Gr. Xing	79	79		515.2	513.7	1.5	3.0	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			3.0			▨				▨			$ 2.05	$ 2.40	$ 62,853	$ 2.53	$ 2.96	$ 77,570	$ 140,423	Current NS ML Tonnage = 122.4
	Gr. Xing	Cal River	79	79		513.7	509.8	3.9	7.8	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			7.8			▨				▨			$ 2.05	$ 2.40	$ 163,418	$ 2.53	$ 2.96	$ 201,681	$ 365,099	
	Cal R. Br.	Cal R. Br.	79	79		509.8	509.5	0.3	0.6	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			0.6			▨				▨			$ 2.05	$ 2.40	$ 12,571	$ 2.53	$ 2.96	$ 15,514	$ 28,085	
	Cal River	Hick	110	110		509.5	503.4	6.1	12.2	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8					12.2	▨				▨			$ 3.11	$ 3.64	$ 387,767	$ 2.60	$ 3.04	$ 324,178	$ 711,946	MP 507.0 - Hammond
	Hick Br.	Hick Br.	79	79		503.4	503.0	0.4	0.8	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			0.8			▨				▨			$ 2.05	$ 2.40	$ 16,761	$ 2.53	$ 2.96	$ 20,685	$ 37,446	
	Hick Br.	NS Flyover	79	79		503.0	501.6	1.4	2.8	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			2.8			▨				▨			$ 2.05	$ 2.40	$ 58,663	$ 2.53	$ 2.96	$ 72,398	$ 131,061	Current NS ML Tonnage = 122.4
	NS Flyover	NS Flyover	60	60		501.6	500.5	1.1	2.2	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8		2.2				▨					▨		$ 2.15	$ 2.52	$ 48,341	$ 2.56	$ 2.99	$ 57,559	$ 105,900	
	NS Flyover	CP 483	110	110		500.5	483.6	16.9	33.8	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8					33.8	▨				▨			$ 3.11	$ 3.64	$ 1,074,306	$ 2.60	$ 3.04	$ 898,134	$ 1,972,440	
	CP 483	CP 482	79	79		483.6	482.0	1.6	3.2	P			28	0	0	0.0015	4.8	0.0	4.8	0	0.1400	4.8	0.0	4.8			3.2			▨				▨			$ 2.05	$ 2.40	$ 67,043	$ 2.53	$ 2.96	$ 82,741	$ 149,784	
	CP 482	Porter	60	60		241.0	240.0	1.0	2.0	P			28	2	0.6	0.0015	4.8	0.8	5.6	0	0.1400	4.8	0.0	4.8		2.0					▨					▨	$ 2.29	$ 2.68	$ 46,808	$ 2.60	$ 3.04	$ 53,144	$ 99,952	
50	Porter	Mich City	110			240.0	229.9	10.1	10.1	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	11.1	15.9					10.1		▨			▨			$ 3.11	$ 3.64	$ 321,020	$ 2.60	$ 3.04	$ 268,377	$ 589,398	
	Mich City	Mich City	50			229.9	228.4	1.5	1.5	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3		1.5					▨				▨		$ 2.15	$ 2.52	$ 32,960	$ 2.56	$ 2.99	$ 39,245	$ 72,204	
	Mich City	Buchanan	110			228.4	198.9	29.5	29.5	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3					29.5		▨			▨			$ 3.11	$ 3.64	$ 937,634	$ 2.60	$ 3.04	$ 783,874	$ 1,721,508	
	Buchanan	Niles	93			198.9	197.2	1.7	1.7	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3					1.7		▨				▨		$ 3.26	$ 3.81	$ 56,639	$ 2.63	$ 3.08	$ 45,694	$ 102,333	
	Niles	Niles	85			197.2	196.6	0.6	0.6	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3				0.6			▨				▨		$ 2.66	$ 3.11	$ 16,311	$ 2.56	$ 2.99	$ 15,698	$ 32,009	
	Niles	Niles	90			196.6	194.2	2.4	2.4	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3				2.4			▨				▨		$ 2.66	$ 3.11	$ 65,244	$ 2.56	$ 2.99	$ 62,792	$ 128,036	
	Niles	Niles	80			194.2	193.6	0.6	0.6	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3			0.6				▨				▨		$ 2.15	$ 2.52	$ 13,184	$ 2.56	$ 2.99	$ 15,698	$ 28,882	
	Niles	Niles	75			193.6	191.5	2.1	2.1	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3			2.1				▨				▨		$ 2.15	$ 2.52	$ 46,143	$ 2.56	$ 2.99	$ 54,943	$ 101,086	MP 192.0 - Niles
100	Niles	Oshtemo	110			191.5	150.7	40.8	40.8	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3					40.8		▨			▨			$ 3.11	$ 3.64	$ 1,296,795	$ 2.60	$ 3.04	$ 1,084,138	$ 2,380,933	
	Oshtemo	Kalamazoo	79	79		150.7	145.0	5.7	11.4	P			28	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3			11.4				▨			▨			$ 2.05	$ 2.40	$ 238,841	$ 2.53	$ 2.96	$ 294,765	$ 533,607	MP 179.5 - Dowagiac
	Kalamazoo	Kalamazoo	50	50		145.0	144.0	1.0	2.0	P			30	2	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3		2.0					▨			▨			$ 2.05	$ 2.40	$ 44,895	$ 2.53	$ 2.96	$ 55,407	$ 100,302	MP 143.4 - Kalamazoo
	Kalamazoo	BO Tower	35	35		144.0	142.9	1.1	2.2	P			28	6	0.6	0.0015	4.8	0.8	5.6	9.4	0.1400	4.8	12.5	17.3		2.2					▨			▨			$ 2.05	$ 2.40	$ 46,092	$ 2.53	$ 2.96	$ 56,885	$ 102,977	
	BO Tower	CP 140	60	60		142.9	139.9	3.0	6.0			F	28	6	7.0	0.0015	4.8	9.3	14.1	19.3	0.1400	4.8	25.6	30.4		6.0					▨				▨		$ 0.42	$ 0.49	$ 25,754	$ 0.80	$ 0.94	$ 49,056	$ 74,810	
150	CP 140	CP Custer	110			139.9	124.4	15.5	15.5			F	28	6	7.0	0.0015	4.8	9.3	14.1	19.3	0.1400	4.8	25.6	30.4					15.5		▨				▨		$ 2.50	$ 2.92	$ 396,025	$ 1.10	$ 1.29	$ 174,251	$ 570,276	
	CP Custer	Battle Crk	110	110		124.4	121.0	3.4	6.8			F	28	6	7.0	0.0015	4.8	9.3	14.1	19.3	0.1400	4.8	25.6	30.4					6.8		▨				▨		$ 2.50	$ 2.92	$ 173,740	$ 1.10	$ 1.29	$ 76,446	$ 250,186	
	Battle Crk	Baron	45			121.0	119.6	1.4	2.8			F	28	28	30.8	0.03	4.8	54.0	58.8	19.3	0.1400	4.8	25.6	30.4		2.8							▨	▨			$ 0.28	$ 0.33	$ 8,012	$ 0.54	$ 0.63	$ 15,453	$ 23,465	MP 120.7 - Battle Creek
	Baron	CP Levitt	60	60		119.6	116.3	3.3	3.3			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6		3.3							▨	▨			$ 0.28	$ 0.33	$ 6,745	$ 0.54	$ 0.63	$ 13,009	$ 19,754	
	CP Levitt	Levittown	79			116.3	114.3	2.0	2.0			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6			2.0						▨	▨			$ 0.28	$ 0.33	$ 4,088	$ 0.54	$ 0.63	$ 7,884	$ 11,972	
	Levittown	Hartung	110			114.3	96.2	18.1	18.1			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6					18.1				▨	▨			$ 2.38	$ 2.78	$ 314,469	$ 1.07	$ 1.25	$ 141,379	$ 455,849	
	Hartung	Albion	45			96.2	94.5	1.7	1.7			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6		1.7							▨	▨			$ 0.40	$ 0.47	$ 4,964	$ 0.78	$ 0.91	$ 9,680	$ 14,644	
200	Albion	Parma	110			94.5	80.6	13.9	13.9			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6					13.9				▨	▨			$ 2.38	$ 2.78	$ 241,499	$ 1.07	$ 1.25	$ 108,573	$ 350,072	MP 95.5 - Albion
	Parma	Jackson	79			80.6	78.5	2.1	2.1			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6			2.1						▨	▨			$ 0.40	$ 0.47	$ 6,132	$ 0.78	$ 0.91	$ 11,957	$ 18,089	
	Jackson	Jackson	60	60		78.5	74.0	4.5	9.0			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6		9.0						▨		▨			$ 0.40	$ 0.47	$ 26,280	$ 0.78	$ 0.91	$ 51,246	$ 77,526	MP 74.4 - Jackson
	Jackson	E. Jackson	79			74.0	70.5	3.5	3.5			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6			3.5						▨	▨			$ 0.40	$ 0.47	$ 10,220	$ 0.78	$ 0.91	$ 19,929	$ 30,149	
250	E. Jackson	Ypsi	110	110		70.5	29.8	40.7	81.4			F	20	2	6.6	0.0015	4.8	8.8	13.6	17.9	0.1400	4.8	23.8	28.6					81.4				▨	▨			$ 2.38	$ 2.78	$ 1,414,244	$ 1.07	$ 1.25	$ 635,815	$ 2,050,059	
	Jackson	Ypsi	60			29.8	28.9	0.9	0.9			F	20	2	6.6	0.0015	3.4	8.8	12.2	17.9	0.1400	3.4	23.8	27.2		0.9					▨				▨		$ 0.42	$ 0.49	$ 2,759	$ 0.80	$ 0.94	$ 5,256	$ 8,015	MP 37.4 - Ann Arbor
	Ypsi	Wayne	110	110		28.9	18.0	10.9	21.8			F	20	2	6.6	0.0015	3.4	8.8	12.2	17.9	0.1400	3.4	23.8	27.2					21.8			▨			▨		$ 2.50	$ 2.92	$ 397,850	$ 1.10	$ 1.29	$ 175,054	$ 572,904	
	Wayne	Town Line	110	110		18.0	11.5	6.5	13.0			F	20	2	6.6	0.0015	3.4	8.8	12.2	17.9	0.1400	3.4	23.8	27.2					13.0			▨		▨			$ 2.38	$ 2.78	$ 225,862	$ 1.07	$ 1.25	$ 101,543	$ 327,405	
	Town Line	W. Det.	79	79		11.5	3.2	8.3	16.6			F	20	2	6.6	0.0015	3.4	8.8	12.2	17.9	0.1400	3.4	23.8	27.2			16.6					▨		▨			$ 0.40	$ 0.47	$ 48,472	$ 0.78	$ 0.91	$ 94,520	$ 142,992	MP 9.0 - Dearborn
	W. Det.	W. Det.	45	45		3.2	3.2	0.3	0.3	P			20	2	0.0	0	3.4	0.0	3.4	0.0	0.1400	3.4	0.0	3.4		0.3						▨		▨			$ 0.40	$ 0.47	$ 876	$ 0.78	$ 0.91	$ 1,708	$ 2,584	
	W. Det.	MKE Jct.	60	60	60	3.2	6.5	3.3	9.9			F	20	20	71.4	0.03	3.4	125.2	128.6	19.6	0.1400	3.4	26.0	29.4		9.9						▨		▨			$ 0.40	$ 0.47	$ 28,908	$ 0.78	$ 0.91	$ 56,371	$ 85,279	MP 5.0 - Detroit
	MKE Jct.	MKE Jct.	15	15		6.5	6.7	0.2	0.4			F	14	20	71.4	0.03	2.4	125.2	127.6	45.4	0.1400	2.4	60.2	62.6	0.4							▨				▨	$ 0.45	$ 0.53	$ 920	$ 0.84	$ 0.98	$ 1,717	$ 2,637	
	MKE Jct.	Royal Oak	79	79		6.7	12.4	5.7	11.4			F	14	20	9.4	0.03	2.4	16.5	18.9	19.0	0.1400	2.4	25.2	27.6			11.4			▨						▨	$ 0.45	$ 0.53	$ 26,214	$ 0.84	$ 0.98	$ 48,933	$ 75,148	
	Royal Oak	Birmingham	45	45		12.4	13.2	0.8	1.6			F	14	20	9.4	0.03	2.4	16.5	18.9	19.0	0.1400	2.4	25.2	27.6		1.6				▨						▨	$ 0.45	$ 0.53	$ 3,679	$ 0.84	$ 0.98	$ 6,868	$ 10,547	
300	Birmingham	Pontiac	79	79		13.2	24.5	11.3	22.6			F	14	20	9.4	0.03	2.4	16.5	18.9	19.0	0.1400	2.4	25.2	27.6			22.6			▨						▨	$ 0.45	$ 0.53	$ 51,969	$ 0.84	$ 0.98	$ 97,008	$ 148,977	
	Pontiac		45	45		24.5	25.8	1.3	2.6			F	14	20	9.4	0.03	2.4	16.5	18.9	19.0	0.1400	2.4	25.2	27.6		2.6				▨				▨			$ 0.40	$ 0.47	$ 5,314	$ 0.78	$ 0.91	$ 10,363	$ 15,677	MP 25.8 - Pontiac
																																							$ 8,855,515	$ 84.42		$ 6,954,374	$ 15,809,889	NS Tonnage per NS 121003
																																							Matrix 41	Matrix 42				CN Tonnage per CN 120503

Total Rpute Mile 301.7 458.2

Total Track Miles 458.2

Track Miles By Class 0.4 56.5 99.7 3.0 298.6

Notes	Notes
1	3
2	
4	

HNTB

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CHQ

Legend

🟥	FRA Class 2	30 - 25		**FRT**	**PASS**	**550**
🟧	FRA Class 3	60 - 40	**PP**	1	16	**5900**
🟨	FRA Class 4	80 - 60	**E**	2	16	
🟦	FRA Class 5	90 - 80	**PF**	6	16	1.170
🟩	FRA Class 6	110 - 80				

0.4

56.5

99.7

3.0

298.6

Notes
1. Norfolk Southern furnished data
2. Canadian National (O'Brien) Furnished Data 12-05-03 and Annual Growth Data 01-05-04
3. RA Kollmar estimate of annual growth
4. Conrail Shared Assets furnished data

	Maintenance	Capital	Total
High	$8,855,515	$6,954,374	$15,809,889
Median	$7,350,077	$5,772,131	$13,122,208
Low	$5,844,640	$4,589,887	$10,434,527

CHICAGO - JOLIET - SPRINGFIELD - ST. LOUIS

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R.A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	RR Escall. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	TEMS Calculations: 2010 Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	FRA Track Class 2	3	4	5	6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
0	Chicago	21st Street	45	45	45	0.0	1.8	1.8	3.6	P			16		0.0	0.015	2.7	0.0	2.7	41.4	0.014	0.0	54.9	54.9		3.6											$ 2.05	$ 2.40	$ 43,099	$ 2.53	$ 2.96	$ 53,191	$ 96,290	MP 0.0 - Chicago
	21st Street	Bridgeport	45	45		1.8	3.5	1.7	3.4	P			16		10.0	0.02	2.7	14.6	17.3	41.4	0.014	2.5	48.9	51.4		3.4											$ 2.15	$ 2.52	$ 42,690	$ 2.56	$ 2.99	$ 50,831	$ 93,522	
	Bridgeport	Bridgeport	30	30		3.5	3.8	0.3	0.6	P			16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		0.6											$ 2.29	$ 2.68	$ 8,024	$ 2.60	$ 3.04	$ 9,110	$ 17,135	
	Bridgeport	Brighton Park	60	60		3.8	5.1	1.3	2.6	P			16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		2.6											$ 2.15	$ 2.52	$ 32,646	$ 2.56	$ 2.99	$ 38,871	$ 71,517	
	Brighton Park	Brighton Park	40	40		5.1	5.3	0.2	0.4			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		0.4											$ 0.42	$ 0.49	$ 981	$ 0.80	$ 0.94	$ 1,869	$ 2,850	
	Brighton Park	Corwith	60	60		5.3	6.7	1.4	2.8			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		2.8											$ 0.40	$ 0.47	$ 6,541	$ 0.78	$ 0.91	$ 12,755	$ 19,295	
	Corwith	Corwith	45	45		6.7	7.0	0.3	0.6			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		0.6											$ 0.42	$ 0.49	$ 1,472	$ 0.80	$ 0.94	$ 2,803	$ 4,275	
	Corwith	Lemoyne	79	79		7.0	7.9	0.9	1.8			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4			1.8										$ 0.40	$ 0.47	$ 4,205	$ 0.78	$ 0.91	$ 8,199	$ 12,404	
	Lemoyne	Lemoyne	60	60		7.9	8.0	0.1	0.2			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		0.2											$ 0.40	$ 0.47	$ 467	$ 0.78	$ 0.91	$ 911	$ 1,378	
	Lemoyne	Argo	79	79		8.0	12.4	4.4	8.8			F	16	2	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4			8.8										$ 0.40	$ 0.47	$ 20,557	$ 0.78	$ 0.91	$ 40,086	$ 60,643	MP 12.0 - Summit
	Argo	Argo	60	60		12.4	13.2	0.8	1.6			F	16	6	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		1.6											$ 0.40	$ 0.47	$ 3,738	$ 0.78	$ 0.91	$ 7,288	$ 11,026	
	Argo	Lemont	79	79		13.2	26.2	13.0	26.0			F	16	6	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4			26.0										$ 0.42	$ 0.49	$ 63,773	$ 0.80	$ 0.94	$ 121,472	$ 185,245	
	Lemont	Lemont	60	60		26.2	26.3	0.1	0.2			F	16	6	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		0.2											$ 0.42	$ 0.49	$ 491	$ 0.80	$ 0.94	$ 934	$ 1,425	
	Lemont	Joliet	79	79		26.3	36.9	10.6	21.2			F	16	6	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4			21.2										$ 0.42	$ 0.49	$ 51,999	$ 0.80	$ 0.94	$ 99,046	$ 151,046	
	UD Tower	UD Tower	60	60		36.9	37.5	0.6	1.2			F	16	8	18.0	0.02	2.7	26.2	29.0	41.4	0.014	4.5	48.9	53.4		1.2											$ 0.45	$ 0.53	$ 3,154	$ 0.84	$ 0.98	$ 5,887	$ 9,040	
	Joliet	South Joliet	65	65		37.5	38.7	1.2	2.4		E		16	16	0.8	0.015	2.7	1.1	3.8	10.2	0.014	0.2	12.1	12.2			2.4										$ 1.51	$ 1.77	$ 21,178	$ 2.20	$ 2.57	$ 30,835	$ 52,013	MP 37.5 - Joliet
50	South Joliet	Mazonia	110			38.7	59.2	20.5	20.5		E		16	2	0.8	0.015	2.7	1.1	3.8	10.2	0.014	0.2	12.1	12.2					20.5								$ 3.40	$ 3.98	$ 407,048	$ 2.28	$ 2.67	$ 272,962	$ 680,010	
100	Mazonia	Towanda	110			59.2	121.5	62.3	62.3		E		16	2	0.8	0.015	2.7	1.1	3.8	10.2	0.014	0.2	12.1	12.2					62.3								$ 3.40	$ 3.98	$ 1,237,029	$ 2.28	$ 2.67	$ 829,537	$ 2,066,566	MP 73.6 - Dwight
	Towanda	Normal	110			121.5	123.9	2.4	2.4		E		16	2	0.8	0.015	2.7	1.1	3.8	10.2	0.014	0.2	12.1	12.2					2.4								$ 3.40	$ 3.98	$ 47,654	$ 2.28	$ 2.67	$ 31,956	$ 79,611	
	Normal	Bloomington	50	50		123.9	126.8	2.9	5.8		E		16	4	0.8	0.015	2.7	1.1	3.8	23.4	0.014	0.2	27.6	27.8		5.8											$ 1.51	$ 1.77	$ 51,147	$ 2.20	$ 2.57	$ 74,518	$ 125,665	MP 124.1 - Normal
150	Bloomington	Athol	110			126.8	154.9	28.1	28.1		E		16	4	3.0	0.015	2.7	4.0	6.7	23.4	0.014	0.7	27.6	28.3					28.1								$ 3.40	$ 3.98	$ 557,954	$ 2.28	$ 2.67	$ 374,157	$ 932,111	
	Athol	Lincoln	79			154.9	158.7	3.8	3.8		E		16	4	3.0	0.015	2.7	4.0	6.7	23.4	0.014	0.7	27.6	28.3			3.8										$ 1.44	$ 1.68	$ 31,956	$ 2.18	$ 2.55	$ 48,379	$ 80,335	
200	Lincoln	Ridgley	110			130.3	181.8	51.5	51.5		E		16	4	3.0	0.015	2.7	4.0	6.7	23.4	0.014	0.7	27.6	28.3					51.5								$ 3.40	$ 3.98	$ 1,022,584	$ 2.28	$ 2.67	$ 685,733	$ 1,708,317	MP 156.1 - Lincoln
	Ridgley	Hazel Del	60			181.8	189.5	7.7	7.7			F	16	4	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5			7.7										$ 0.42	$ 0.49	$ 18,887	$ 0.80	$ 0.94	$ 35,974	$ 54,861	MP 185.2 - Springfield
250	Hazel Del	Carlinville	110			189.5	227.6	38.1	38.1			F	16	4	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5					38.1								$ 2.38	$ 2.78	$ 529,560	$ 1.07	$ 1.25	$ 238,079	$ 767,639	MP 223.8 - Carlinville
	Carlinville	Shipman	79			227.6	236.4	8.8	8.8			F	16	4	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5			8.8										$ 0.40	$ 0.47	$ 20,557	$ 0.78	$ 0.91	$ 40,086	$ 60,643	
	Shipman	Godfrey	110			236.4	248.3	11.9	11.9			F	16	4	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5					11.9								$ 2.38	$ 2.78	$ 165,400	$ 1.07	$ 1.25	$ 74,361	$ 239,761	
	Godfrey	Upper Alton	79			248.3	255.6	7.3	7.3			F	16	4	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5			7.3										$ 0.40	$ 0.47	$ 17,053	$ 0.78	$ 0.91	$ 33,253	$ 50,306	MP 256.8 - Upper Alton
300	Upper Alton	Lennox	110			255.6	275.7	20.1	20.1			F	16	16	8.0	0.015	2.7	10.6	13.4	23.4	0.014	1.8	27.6	29.5					20.1								$ 2.50	$ 2.92	$ 293,460	$ 1.10	$ 1.29	$ 129,122	$ 422,582	
	Lennox	Q Tower	79	79		275.7	279.9	4.2	8.4			F	16	16	36.0	0.015	2.7	47.8	50.5	23.4	0.014	8.2	27.6	35.8			8.4										$ 0.42	$ 0.49	$ 20,604	$ 0.80	$ 0.94	$ 39,245	$ 59,848	
	Q Tower	McArthur Br.	40	40		279.9	281.0	1.1	2.2			F	16	20	15.0	0.015	2.7	19.9	22.6	23.4	0.014	3.4	27.6	31.1	2.2												$ 0.42	$ 0.49	$ 5,396	$ 0.80	$ 0.94	$ 10,278	$ 15,675	
	McArthur Br.	St. Louis	25	25		281.0	283.5	2.5	5.0			F	16	60	66.0	0.015	2.7	87.6	90.3	23.4	0.014	15.0	27.6	42.7	5.0												$ 0.45	$ 0.53	$ 13,140	$ 0.84	$ 0.98	$ 24,528	$ 37,668	MP 280.9 - St. Louis
																																						$ 4,744,442	$ 45.01		$ 3,426,258	$ 8,170,700	

304.1 — Total Route Miles 311.9 — Total Track Miles 361.3 — Track Miles By Class: 5.0 (2), 25.2 (3), 96.2 (4), 0.0 (5), 234.9 (6) — Matrix 41 — Matrix 41

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	Note 1	Note 2
2		5.0
3		25.2
4		96.2
5		0.0
6		234.9

	Maintenance	Capital	Total
High	$4,744,442	$3,426,258	$8,170,700
Median	$3,937,887	$2,843,794	$6,781,681
Low	$3,131,332	$2,261,330	$5,392,662

Legend

FRA Class 2	30 - 25	FRT²ASS	550
FRA Class 3	60 - 40	PP 1 16	5900
FRA Class 4	80 - 60	E 2 16	
FRA Class 5	90 - 80	PF 6 16	1.170
FRA Class 6	110 - 80		

Note 1: BNSF Furnished 2002 Tonnage Data
Note 2: RA Kollmar Estimate of Annual Growth

CHICAGO - MILWAUKEE - MADISON - PORTAGE - ST. PAUL

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R. A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	RR Escall. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	COMPLETE TEMS Calculations: 2000 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
0	Chicago	Lake Street	20	20	20	0.0	1.0	1.0	3.0	P			34	0	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9	3.0												2.29	2.68	$ 85,257	$ 2.60	$ 3.04	$ 96,798	$ 182,055	MP 0.0 - Chicago
	Lake Street	Western Avenue	60	60	60	1.0	2.9	1.9	5.7	P			34	0	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9			5.7										2.15	2.52	$ 152,085	$ 2.56	$ 2.99	$ 181,087	$ 333,171	
	Western Avenue	Tower 4	40	40	40	2.9	3.8	0.9	2.7	P			34	2	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9		2.7											2.29	2.68	$ 76,731	$ 2.60	$ 3.04	$ 87,118	$ 163,849	
	Tower 4	Pacific Junction	110	110	110	2.9	8.5	5.6	16.8	P			34	2	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9					16.8								3.11	3.64	$ 648,398	$ 2.60	$ 3.04	$ 542,069	$ 1,190,466	
	Pacific Junction	Mayfair	110	110	110	8.5	10.3	1.8	5.4	P			34	2	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9					5.4								3.11	3.64	$ 208,414	$ 2.60	$ 3.04	$ 174,236	$ 382,650	
	Mayfair	Techny	110	110	110	10.3	20.0	9.7	29.1	P			34	2	1.0	0.03	5.8	1.8	7.6	11.6	0.016	0.3	13.6	13.9					29.1								3.11	3.64	$ 1,123,117	$ 2.60	$ 3.04	$ 938,941	$ 2,062,058	MP 17.2 - Glenview
50	Techny	MP 51.7	110	110	110	20.0	51.7	42.8	128.4			F	34	28	35.9	0.03	5.8	63.0	68.8	31.9	0.016	10.8	37.4	48.2					128.4								1.68	1.97	$ 2,676,986	$ 0.76	$ 0.89	$ 1,211,017	$ 3,888,003	
	MP 51.7	MP 62.8	79	79		51.7	62.8	11.1	22.2			F	34	28	36.9	0.03	5.8	64.7	70.5	20.1	0.016	11.1	23.6	34.7			22.2										0.28	0.33	$ 77,141	$ 0.54	$ 0.63	$ 148,771	$ 225,912	MP 61.5 - Sturtevant
	MP 62.8	GMIA Airport Station	110	110	110	62.8	80.5	17.7	53.1			F	34	28	36.9	0.03	5.8	64.7	70.5	20.1	0.016	11.1	23.6	34.7					53.1								1.68	1.97	$ 1,107,071	$ 0.76	$ 0.89	$ 500,818	$ 1,607,889	MP 78 - GMIA
	GMIA Airport Station	KK Bridge	90	90	90	80.5	84.1	3.6	10.8			F	34	28	37.3	0.03	5.8	65.4	71.2	20.1	0.016	11.2	23.6	34.8				10.8									0.84	0.98	$ 112,584	$ 0.62	$ 0.73	$ 83,097	$ 195,681	
	KK Bridge	National Avenue	45	45		84.1	85.7	1.6	3.2			F	34	28	3.0	0.03	5.8	5.3	11.1	20.1	0.016	0.9	23.6	24.5		3.2											0.32	0.37	$ 12,708	$ 0.60	$ 0.70	$ 23,827	$ 36,535	
	National Avenue	Milwaukee Station	20	20		85.7	86.0	0.3	0.6			F	34	4	3.0	0.03	5.8	5.3	11.1	22.1	0.016	0.9	25.9	26.8	0.6												0.32	0.37	$ 2,383	$ 0.60	$ 0.70	$ 4,468	$ 6,850	MP 85.8 - Milwaukee
	Milwaukee Station	Wauwatosa	60	60	60	86.0	90.8	4.8	14.4			F	20	4	36.7	0.03	3.4	64.4	67.8	20.3	0.016	11.0	23.8	34.8			14.4										0.30	0.35	$ 31,536	$ 0.56	$ 0.66	$ 58,867	$ 90,403	
100	Wauwatosa	Elm Grove	90	90		90.8	95.4	4.6	9.2			F	20	4	36.7	0.03	3.4	64.4	67.8	23.9	0.016	11.0	28.0	39.1				9.2									0.93	1.09	$ 62,459	$ 0.68	$ 0.80	$ 45,669	$ 108,128	
	Elm Grove	MP 117.2	110	110		95.4	117.2	21.8	43.6			F	20	4	36.7	0.03	3.4	64.4	67.8	23.9	0.016	11.0	28.0	39.1					43.6								1.76	2.06	$ 560,173	$ 0.79	$ 0.92	$ 251,441	$ 811,614	MP 100 - Brookfield
	MP 117.2	MP 118.7	79	79		117.2	118.8	1.6	3.2			F	20	4	36.7	0.03	3.4	64.4	67.8	23.9	0.016	11.0	28.0	39.1			3.2										0.28	0.33	$ 6,541	$ 0.54	$ 0.63	$ 12,614	$ 19,155	MP 117.5 - Oconomowoc
	MP 118.7	MP 129.3	110	110		118.8	129.3	10.5	21.0			F	20	32	36.7	0.03	3.4	64.4	67.8	23.9	0.016	11.0	28.0	39.1					21.0								1.76	2.06	$ 269,808	$ 0.79	$ 0.92	$ 121,107	$ 390,915	MP 130 - Watertown
	MP 129.3	Watertown	79	79		129.3	130.9	1.6	3.2			F	20	32	36.7	0.03	3.4	64.4	67.8	23.9	0.016	11.0	28.0	39.1			3.2										0.30	0.35	$ 7,008	$ 0.56	$ 0.66	$ 13,082	$ 20,090	
	Watertown	Watertown	45	45		130.9	131.2	0.3	0.6	P			20	32	0.3	0.03	3.4	0.6	4.0	23.9	0.016	0.1	28.0	28.1		0.6											0.32	0.37	$ 1,402	$ 0.60	$ 0.70	$ 2,628	$ 4,030	
150	Watertown	MP 161.8	110			131.2	161.8	30.6	30.6	P			20	2	0.3	0.03	3.4	0.6	4.0	2.0	0.016	0.1	2.3	2.4					30.6								3.11	3.64	$ 694,712	$ 2.60	$ 3.04	$ 580,788	$ 1,275,500	
	MP 161.8	Junction A	60			161.8	164.4	2.6	2.6	P			20	2	0.3	0.03	3.4	0.6	4.0	2.0	0.016	0.1	2.3	2.4		2.6											2.15	2.52	$ 40,807	$ 2.56	$ 2.99	$ 48,589	$ 89,396	
	Junction A	Junction A	20			164.4	164.6	0.2	0.2	P			20	2	0.3	0.03	3.4	0.6	4.0	2.0	0.016	0.1	2.3	2.4	0.2												2.29	2.68	$ 3,343	$ 2.60	$ 3.04	$ 3,796	$ 7,139	
	Junction A	Madison Shop	45			79.5	81.0	1.5	1.5		E		12	2	2.5	0.03	2.1	4.4	6.4	2.0	0.016	0.7	2.3	3.1		1.5											1.61	1.88	$ 10,578	$ 2.24	$ 2.62	$ 14,717	$ 25,295	
	Madison Shop	Madison Airport	60	60		32.9	30.0	2.9	5.8		E		12	2	2.5	0.03	2.1	4.4	6.4	2.0	0.016	0.7	2.3	3.1		5.8											1.51	1.77	$ 38,360	$ 2.20	$ 2.57	$ 55,889	$ 94,249	MP 30.0 - Madison
200	Madison Airport	Portage	110			30.0	0.0	30.0	30.0		E		12	2	2.5	0.03	2.1	4.4	6.4	2.0	0.016	0.7	2.3	3.1					30.0								3.57	4.18	$ 469,098	$ 2.31	$ 2.70	$ 303,534	$ 772,632	
250	Portage	Camp Douglas	110			176.9	243.4	66.5	66.5			F	12	32	40.0	0.03	2.1	70.1	72.2	31.0	0.016	12.0	36.3	48.4					66.5								2.50	2.92	$ 728,175	$ 1.10	$ 1.29	$ 320,397	$ 1,048,572	MP 178 - Portage
	Camp Douglas	Camp Douglas	35	35		243.4	243.8	0.4	0.8			F	12	32	42.1	0.03	2.1	73.8	75.9	31.0	0.016	12.7	36.3	49.0		0.8											0.45	0.53	$ 1,577	$ 0.84	$ 0.98	$ 2,943	$ 4,520	Tunnel
300	Camp Douglas	Grand Crossing (BNSF)	110			243.8	280.0	36.2	72.4			F	12	32	42.1	0.03	2.1	73.8	75.9	26.6	0.016	12.7	31.2	43.8					72.4								2.50	2.92	$ 792,780	$ 1.10	$ 1.29	$ 348,823	$ 1,141,603	La Crosse
	Grand Crossing (BNSF)	La Crosse Station	45	45	45	280.0	283.8	3.8	11.4			F	12	42	42.1	0.03	2.1	73.8	75.9	40.6	0.016	12.7	47.6	60.3		11.4											0.45	0.53	$ 22,469	$ 0.84	$ 0.98	$ 41,943	$ 64,412	Mississippi River Bridge
	La Crosse Station	MP 288.0	110	110	110	283.8	288.0	4.2	12.6			F	12	36	43.8	0.03	2.1	76.8	78.9	40.6	0.016	13.2	47.6	60.8					12.6								2.50	2.92	$ 137,970	$ 1.10	$ 1.29	$ 60,707	$ 198,677	River Junction
400	MP 288.0	Red Wing Station	90	90		288.0	371.5	83.5	167.0			F	12	36	40.6	0.03	2.1	71.2	73.3	26.5	0.016	12.2	31.1	43.3					####								1.25	1.46	$ 914,325	$ 0.90	$ 1.05	$ 658,314	$ 1,572,639	
	Red Wing Station	East Hastings	110	110	110	371.5	389.8	18.3	54.9			F	12	36	40.6	0.03	2.1	71.2	73.3	67.8	0.016	12.2	79.5	91.7					54.9								2.50	2.92	$ 601,155	$ 1.10	$ 1.29	$ 264,508	$ 865,663	
	East Hastings	St. Croix Junction	79	79	79	389.8	396.0	6.2	18.6			F	12	48	40.6	0.03	2.1	71.2	73.3	54.2	0.016	12.2	63.5	75.7			18.6										0.45	0.53	$ 36,661	$ 0.84	$ 0.98	$ 68,433	$ 105,094	
	St. Croix Junction	St. Paul Yard	110	110	110	396.0	407.4	11.4	34.2			F	12	48	40.6	0.03	2.1	71.2	73.3	54.2	0.016	12.2	63.5	75.7					34.2								2.50	2.92	$ 374,490	$ 1.10	$ 1.29	$ 164,776	$ 539,266	
	St. Paul Yard	St. Paul Station	70	70	70	407.4	408.9	1.5	4.5			F	12	52	40.6	0.03	2.1	71.2	73.3	4.1	0.016	12.2	4.8	17.0			4.5										0.42	0.49	$ 8,278	$ 0.80	$ 0.94	$ 15,768	$ 24,046	MP 408.9 - St. Paul
																																							$ -					
																																							$ -					
																																							$ 12,096,577	$ 48.19		$ 7,451,580	$ 19,548,157	

Track Miles By Class: 3.8 | 28.6 | 71.8 | #### | 598.6

Total Route Mile 443.0

Total Track Mile 889.8

Note 1

Note 2

HNTB
1-Feb-04
CHQ

	Maintenance	Capital	Total
High	$12,096,577	$7,451,580	$19,548,157
Median	$10,040,159	$6,184,811	$16,224,970
Low	$7,983,741	$4,918,043	$12,901,783

Legend

FRA Class 2	30 - 25	**FRTPASS**		
FRA Class 3	60 - 40	**PP**	1	16
FRA Class 4	80 - 60	**E**	2	16
FRA Class 5	90 - 80	**PF**	6	16
FRA Class 6	110 - 80			

550
5900
1.170

Note 1: CP Rail Furnished 2002 Tonnage and Growth Data (Heron 12-15-03; 01-05-04)
Note 2: RA Kollmar Estimate of Growth

PORT HURON TO BATTLE CREEK

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R. A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	COMPLETE TEMS Calculations: 2010 Tons F	2010 Tons RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4.0	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Remarks
320	Port Huron	Tappan			45	334.2	332.1	2.1	2.1	P			8	0	0.0	0.03	1.4	0.0	1.4	32.7	0.014	0.0	38.6	38.6		2.1										$ 2.05	$ 2.40	$ 12,571	$ 1.92	$ 2.25	$ 11,773	$ 24,344	MP 334.2 - Port Huron
	Tappan		65	65		332.1	331.7	0.4	0.8			F	8	44	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			0.8								$ 0.96	$ 1.12	$ 2,243	$ 1.92	$ 2.25	$ 3,834	$ 6,076	
			55	55		331.7	330.7	1.0	2.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9		2.0										$ 0.96	$ 1.12	$ 5,606	$ 1.92	$ 2.25	$ 11,213	$ 16,819	
		West Tappan	65	65		330.7	329.0	1.7	3.4			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			3.4								$ 0.96	$ 1.12	$ 9,531	$ 1.92	$ 2.25	$ 19,062	$ 28,593	
	West Tappan		70			329.0	326.0	3.0	3.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			3.0								$ 0.96	$ 1.12	$ 8,410	$ 1.92	$ 2.25	$ 16,819	$ 25,229	MP 270.0 - Flint
			79			326.0	323.6	2.4	2.4			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			2.4								$ 0.96	$ 1.12	$ 6,728	$ 1.92	$ 2.25	$ 13,455	$ 20,183	
			65			323.6	321.4	2.2	2.2			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			2.2								$ 0.96	$ 1.12	$ 6,167	$ 1.92	$ 2.25	$ 12,334	$ 18,501	MP 253 - Durand
	Emmett		79			321.4	314.2	7.2	7.2			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			7.2								$ 0.96	$ 1.12	$ 20,183	$ 1.92	$ 2.25	$ 40,366	$ 60,549	
300			65			314.2	312.5	1.7	1.7			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			1.7								$ 0.96	$ 1.12	$ 4,765	$ 1.92	$ 2.25	$ 9,531	$ 14,296	
			79			312.5	303.1	9.4	9.4			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			9.4								$ 0.96	$ 1.12	$ 26,350	$ 1.92	$ 2.25	$ 52,700	$ 79,050	
			65			303.1	303.1	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			0.0								$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	Imlay City		75			303.1	300.5	2.6	2.6			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			2.6								$ 0.96	$ 1.12	$ 7,288	$ 1.92	$ 2.25	$ 14,577	$ 21,865	
			79			300.5	299.5	1.0	1.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			1.0								$ 0.96	$ 1.12	$ 2,803	$ 1.92	$ 2.25	$ 5,606	$ 8,410	MP 222 - East Lansing
			70			299.5	295.0	4.5	4.5			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			4.5								$ 0.96	$ 1.12	$ 12,614	$ 1.92	$ 2.25	$ 25,229	$ 37,843	
	Lapeer	East Flint	65	65		295.0	276.7	18.3	36.6			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			36.6								$ 0.96	$ 1.12	$ 102,597	$ 1.92	$ 2.25	$ 205,194	$ 307,791	
	East Flint		40	40		276.7	276.7	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9		0.0										$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	Belsay		65	65		276.7	272.5	4.2	8.4			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			8.4								$ 0.96	$ 1.12	$ 23,547	$ 1.92	$ 2.25	$ 47,094	$ 70,641	
		Kearsley	55	55		272.5	271.8	0.7	1.4			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9		1.4										$ 0.96	$ 1.12	$ 3,924	$ 1.92	$ 2.25	$ 7,849	$ 11,773	
	Kearsley	Kearsley	55	55		271.8	271.8	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			0.0								$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	Kearsley	Flint	65	65		271.8	270.0	1.8	3.6			F	8	40	30.8	0.03	1.4	54.0	55.4	32.7	0.014	9.3	38.6	47.9			3.6								$ 0.96	$ 1.12	$ 10,092	$ 1.92	$ 2.25	$ 20,183	$ 30,275	
	Flint		65			270.0	267.0	3.0	3.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			3.0								$ 0.96	$ 1.12	$ 8,410	$ 1.92	$ 2.25	$ 16,819	$ 25,229	
			50			267.0	265.5	1.5	1.5			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8		1.5										$ 0.96	$ 1.12	$ 4,205	$ 1.92	$ 2.25	$ 8,410	$ 12,614	
250		West Flint	79			265.5	263.8	1.7	1.7			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			1.7								$ 0.96	$ 1.12	$ 4,765	$ 1.92	$ 2.25	$ 9,531	$ 14,296	
	West Flint	West Flint	40			263.8	263.8	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8		0.0										$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	West Flint		65			263.8	259.8	4.0	4.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			4.0								$ 0.96	$ 1.12	$ 11,213	$ 1.92	$ 2.25	$ 22,426	$ 33,638	
			79			259.8	255.7	4.1	4.1			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			4.1								$ 0.96	$ 1.12	$ 11,493	$ 1.92	$ 2.25	$ 22,986	$ 34,479	
		East Durand	65			255.7	255.4	0.3	0.3			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			0.3								$ 0.96	$ 1.12	$ 841	$ 1.92	$ 2.25	$ 1,682	$ 2,523	
	East Durand	East Durand	40			255.4	255.4	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8		0.0										$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	East Durand		65			255.4	253.6	1.8	1.8			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			1.8								$ 0.96	$ 1.12	$ 5,046	$ 1.92	$ 2.25	$ 10,092	$ 15,137	
		Durand	65	65		253.6	253.3	0.3	0.6			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8			0.6								$ 0.96	$ 1.12	$ 1,682	$ 1.92	$ 2.25	$ 3,364	$ 5,046	
	Durand	Durand	45	45		253.3	253.3	0.0	0.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.9	0.014	9.3	36.5	45.8		0.0										$ 0.96	$ 1.12	$ -	$ 1.92	$ 2.25	$ -	$ -	
	Durand		45	45		253.3	253.0	0.3	0.6			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		0.6										$ 0.96	$ 1.12	$ 1,682	$ 1.92	$ 2.25	$ 3,364	$ 5,046	
	Vernon	Bancroft	65	65		253.0	248.7	4.3	8.6			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			8.6								$ 0.96	$ 1.12	$ 24,108	$ 1.92	$ 2.25	$ 48,215	$ 72,323	
	Bancroft	Shaftsburg	55			248.7	233.8	14.9	14.9			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		14.9										$ 0.96	$ 1.12	$ 41,768	$ 1.92	$ 2.25	$ 83,535	$ 125,303	
	Shaftsburg	Okemos	65			233.8	227.5	6.3	6.3			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			6.3								$ 0.96	$ 1.12	$ 17,660	$ 1.92	$ 2.25	$ 35,320	$ 52,980	
	Okemos		50	50		227.5	225.7	1.8	3.6			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		3.6										$ 0.96	$ 1.12	$ 10,092	$ 1.92	$ 2.25	$ 20,183	$ 30,275	
			65	65		225.7	224.0	1.7	3.4			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			3.4								$ 0.96	$ 1.12	$ 9,531	$ 1.92	$ 2.25	$ 19,062	$ 28,593	
		Trowbridge	50	50		224.0	223.5	0.5	1.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		1.0										$ 0.96	$ 1.12	$ 2,803	$ 1.92	$ 2.25	$ 5,606	$ 8,410	
	Trowbridge	Cedar	79	79		223.5	221.5	2.0	4.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			4.0								$ 0.96	$ 1.12	$ 11,213	$ 1.92	$ 2.25	$ 22,426	$ 33,638	
	Cedar		50			221.5	219.0	2.5	2.5			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		2.5										$ 0.96	$ 1.12	$ 7,008	$ 1.92	$ 2.25	$ 14,016	$ 21,024	
			45			219.0	218.5	0.5	0.5			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		0.5										$ 0.96	$ 1.12	$ 1,402	$ 1.92	$ 2.25	$ 2,803	$ 4,205	
	Hope	Mill	65			218.5	215.0	3.5	3.5			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			3.5								$ 0.96	$ 1.12	$ 9,811	$ 1.92	$ 2.25	$ 19,622	$ 29,434	
200	Mill	Potterville	65	65		215.0	208.3	6.7	13.4			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			13.4								$ 0.96	$ 1.12	$ 37,563	$ 1.92	$ 2.25	$ 75,126	$ 112,689	
	Potterville	Charlotte	65			208.3	202.5	5.8	5.8			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			5.8								$ 0.96	$ 1.12	$ 16,259	$ 1.92	$ 2.25	$ 32,517	$ 48,776	
	Charlotte		45			202.5	201.8	0.7	0.7			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		0.7										$ 1.08	$ 1.26	$ 2,208	$ 1.97	$ 2.30	$ 4,027	$ 6,234	
		Walton	65			201.8	197.0	4.8	4.8			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			4.8								$ 0.96	$ 1.12	$ 13,455	$ 1.92	$ 2.25	$ 26,911	$ 40,366	
	Walton		65	65		197.0	193.5	3.5	7.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			7.0								$ 0.96	$ 1.12	$ 19,622	$ 1.92	$ 2.25	$ 39,245	$ 58,867	
		Lacy	70	70		193.5	190.5	3.0	6.0			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			6.0								$ 0.96	$ 1.12	$ 16,819	$ 1.92	$ 2.25	$ 33,638	$ 50,458	
	Lacy	McAllister	65	65		190.5	179.2	11.3	22.6			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3			22.6								$ 0.96	$ 1.12	$ 63,352	$ 1.92	$ 2.25	$ 126,705	$ 190,057	
	McAllister		25	25		179.2	178.8	0.4	0.8			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3	0.8										$ 0.96	$ 1.12	$ 2,243	$ 1.92	$ 2.25	$ 4,485	$ 6,728	
		Emmett Street	35	35		178.8	178.6	0.2	0.4			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		0.4										$ 1.01	$ 1.18	$ 1,180	$ 1.94	$ 2.27	$ 2,266	$ 3,446	
	Emmett Street	Baron	45	45		178.6	176.7	1.9	3.8			F	8	40	30.8	0.03	1.4	54.0	55.4	30.5	0.014	9.3	36.0	45.3		3.8										$ 1.01	$ 1.18	$ 11,207	$ 1.94	$ 2.27	$ 21,526	$ 32,733	
	Baron	Battle Creek	45	45		176.7	175.8	0.9	1.8			F	30	44	30.8	0.03	5.1	54.0	59.2	30.5	0.014	9.3	36.0	45.3		1.8										$ 1.01	$ 1.18	$ 19,907	$ 1.94	$ 2.27	$ 38,237	$ 58,144	MP 175.8 - Battle Creek
161.0	Battle Creek	Chicago																																									
																																					$ 653,965	$ 101.87		$ 1,290,964	$ 1,944,929	

Total Miles 158.4 — Track Miles By Class — Note 1 — 0.8 | 36.8 | 187.7 | 0.0 | 0.0

Total Track Miles 225.3 — Note 2

0.8 | 36.8 | 187.7 | 0.0 | 0.0

HNTB
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	Maintenance	Capital	Total
High	$653,965	$1,290,964	$1,944,929
Median	$542,791	$1,071,500	$1,614,291
Low	$431,617	$852,036	$1,283,653

Legend

FRA Class 2	30 - 25	FRT	PASS	550
FRA Class 3	60 - 40	PP	1 16	5900
FRA Class 4	80 - 60	E	2 16	
FRA Class 5	90 - 80	PF	6 16	1.170
FRA Class 6	110 - 80			

Notes
1 CN (O'Brien) Furnished Tonnage Data 12-05-03
2 CN (O'Brien) Furnished Annual Growth Forecast Percentage 01-05-04

KALAMAZOO - GRAND RAPIDS - HOLLAND

Global MP		Pass. Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R.A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	COMPLETE TEMS Calculations: 2010 Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Remarks
0	Kalamazoo	Kalamazoo	30			0.0	0.5	0.5	0.5	P			8	0	2.45	0.015	1.4	3.3	4.6	10.00	0.014	0.2	11.8	12.1	0.5												2.29	2.68	$ 3,343	$ 2.60	$ 3.04	$ 3,796	$ 7,139	MP 0.0 - Kalamazoo
	Kalamazoo	Kalamazoo	60	60		0.5	2.0	1.5	3.0		E		8	2	2.45	0.015	1.4	3.3	4.6	10.00	0.014	0.2	11.8	12.1		3.0											1.61	1.88	$ 14,104	$ 2.24	$ 2.62	$ 19,622	$ 33,726	2.4 MGT from NS 121003
	Kalamazoo	Plainwell	79			2.0	12.2	10.2	10.2		E		8	2	2.45	0.015	1.4	3.3	4.6	10.00	0.014	0.2	11.8	12.1			10.2										1.44	1.68	$ 42,889	$ 2.18	$ 2.55	$ 64,929	$ 107,818	MP 12.2 - Plainwell Station
50	Plainwell	Grand Rapids	79			12.2	46.8	34.6	34.6		E		8	2	2.45	0.015	1.4	3.3	4.6	10.00	0.014	0.2	11.8	12.1			34.6										1.44	1.68	$ 145,486	$ 2.18	$ 2.55	$ 220,250	$ 365,736	MP 46.8 - NS / CSXT Switch
	Grand Rapids	Grand Rapids	30	30		46.8	48.8	2.0	4.0		E		8	2	2.45	0.015	1.4	3.3	4.6	10.00	0.014	0.2	11.8	12.1			4.0										1.61	1.88	$ 18,805	$ 2.24	$ 2.62	$ 26,163	$ 44,968	MP 0 & MP 48.8 - Grand Rapids Station
	Grand Rapids	Grand Rapids	30	30		0.0	2.0	2.0	4.0			F	8	2	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1			4.0										1.08	1.26	$ 12,614	$ 1.97	$ 2.30	$ 23,010	$ 35,624	
	Grand Rapids	Grandville	50	50		2.0	5.7	3.7	7.4			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1			7.4										0.96	1.12	$ 20,744	$ 1.92	$ 2.25	$ 41,487	$ 62,231	MP 6.0 - Grandville
	Grandville	Jenison	60			5.7	7.3	1.6	1.6			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1			1.6										1.01	1.18	$ 4,719	$ 1.94	$ 2.27	$ 9,064	$ 13,782	MP 7.3 - Jenison
	Jenison	Hudsonville	79			7.3	12.1	4.8	4.8			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1			4.8										0.96	1.12	$ 13,455	$ 1.92	$ 2.25	$ 26,911	$ 40,366	MP 12.0 - Hudsonville
	Hudsonville	Hudsonville	60	60		12.1	13.2	1.1	2.2			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1		2.2											1.01	1.18	$ 6,488	$ 1.94	$ 2.27	$ 12,463	$ 18,951	2.45 MGT from NS 121003
	Hudsonville	Holland	79			13.2	25.2	12.0	12.0			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1			12.0										0.96	1.12	$ 33,638	$ 1.92	$ 2.25	$ 67,277	$ 100,915	MP 20.7 - Zeeland
74.1	Holland		60			25.2	25.3	0.1	0.1			F	8	14	15.6	0.03	1.4	27.4	28.7	10.00	0.014	0.2	11.8	12.1		0.1											1.01	1.18	$ 295	$ 1.94	$ 2.27	$ 566	$ 861	MP 24.4 - Waverly
																																										MP 25.3 - Holland
															NOTE	NOTE																											
		Total Miles						74.1	84.4	Track Miles By Class					1.00	2								0.5	5.3	78.6	0.0	0.0											$ 316,581	$ 24.99		$ 515,538	$ 832,118	
																1.50%																											

HNTB
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		Maintenance	Capital	Total
Total Track Mile	84.4	**High**	$316,581	$515,538	$832,118
		Median	$262,762	$427,896	$690,658
FRT	**PASS**	**Low**	$208,943	$340,255	$549,198
1	16	**5900**			
2	16	7500			
6	16	1.170			

Legend

30 - 25	FRA Class 2
60 - 40	FRA Class 3
80 - 60	FRA Class 4
90 - 80	FRA Class 5
110 - 80	FRA Class 6

Note 1 Tonnage and annual escallation furnished by NS and CSXT.
Note 2 RA Kollmar estimate of annual tonnage growth percentage.

		2.4
PP	1.015	2.436
E		2.47254
PF		2.509628

CHICAGO - FORT WAYNE - TOLEDO - CLEVELAND

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R. A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	INCOMPLETE TEMS Calculations: 2000 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
0	Chicago	21 Street	45	45	45	523.0	520.9	2.1	6.3	P			16	0	0.0	0.0	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		6.3											$ 2.05	$ 2.40	$ 75,424	$ 2.53	$ 2.96	$93,084	$168,507	MP 0.0 - Chicago
	21 Street	Englewood	79	79		520.9	516.3	4.6	9.2	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			9.2										$ 2.05	$ 2.40	$ 110,142	$ 2.53	$ 2.96	$135,932	$246,074	
	Englewood	Englewood	45	45		516.3	515.2	1.1	2.2	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8		2.2											$ 2.29	$ 2.68	$ 29,422	$ 2.60	$ 3.04	$33,405	$62,827	
	Englewood	Gr. Xing	79	79		515.2	513.7	1.5	3.0	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			3.0										$ 2.05	$ 2.40	$ 35,916	$ 2.53	$ 2.96	$44,326	$80,242	Current NS ML Tonnage = 122.4
	Gr. Xing	Cal River	79	79		513.7	509.8	3.9	7.8	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			7.8										$ 2.05	$ 2.40	$ 93,382	$ 2.53	$ 2.96	$115,247	$208,628	
	Cal R. Br.	Cal R. Br.	79	79		509.8	509.5	0.3	0.6	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			0.6										$ 2.05	$ 2.40	$ 7,183	$ 2.53	$ 2.96	$8,865	$16,048	
	Cal River	Hick	110	110		509.5	503.4	6.1	12.2	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8					12.2								$ 3.11	$ 3.64	$ 221,581	$ 2.60	$ 3.04	$185,245	$406,826	MP 507.0 - Hammond Station
	Hick Br.	Hick Br.	79	79		503.4	503.0	0.4	0.8	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			0.8										$ 2.05	$ 2.40	$ 9,578	$ 2.53	$ 2.96	$11,820	$21,398	
	Hick Br.	NS Flyover	79	79		503.0	501.6	1.4	2.8	P			16	0	122.4	0.037	4.8	244.1	248.9	0	0.0015	4.8	0.0	4.8			2.8										$ 2.05	$ 2.40	$ 33,522	$ 2.53	$ 2.96	$41,371	$74,892	Current NS ML Tonnage = 122.4
	NS Flyover	NS Flyover	60	60		501.6	500.5	1.1	2.2	P			16	0	0.0	0.0	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		2.2											$ 2.15	$ 2.52	$ 27,623	$ 2.56	$ 2.99	$32,891	$60,514	
	NS Flyover	Tolleston	79	79		15.0	19.0	4.0	8.0	P			16	0	0.0	0.0	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			8.0										$ 2.05	$ 2.40	$ 95,776	$ 2.53	$ 2.96	$118,202	$213,978	
	Tolleston	E. Gary	60			442.5	440.0	2.5	2.5		E		16	0	2.9	0.0	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8		2.5											$ 1.44	$ 1.68	$ 21,024	$ 2.18	$ 2.55	$31,828	$52,852	
	E. Gary		110			440.0	430.0	10.0	10.0		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					10.0								$ 3.57	$ 4.18	$ 208,488	$ 2.31	$ 2.70	$134,904	$343,392	
	Passing Siding	Passing Siding	110	110		430.0	425.0	5.0	10.0		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					10.0								$ 3.57	$ 4.18	$ 208,488	$ 2.31	$ 2.70	$134,904	$343,392	
		Valparaiso	110			425.0	414.9	10.1	10.1		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					10.1								$ 3.40	$ 3.98	$ 200,546	$ 2.28	$ 2.67	$134,484	$335,029	MP 414.9 - Valparaiso Station
		Wanatah	110			414.9	385.0	29.9	29.9		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					29.9								$ 3.57	$ 4.18	$ 623,379	$ 2.31	$ 2.70	$403,363	$1,026,742	
	Passing Siding	Passing Siding	110	110		385.0	375.0	10.0	20.0		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					20.0								$ 3.57	$ 4.18	$ 416,976	$ 2.31	$ 2.70	$269,808	$686,784	
			110			375.0	350.0	25.0	25.0		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					25.0								$ 3.40	$ 3.98	$ 496,400	$ 2.28	$ 2.67	$332,880	$829,280	
	Passing Siding	Passing Siding	110	110		350.0	340.0	10.0	20.0		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					20.0								$ 3.40	$ 3.98	$ 397,120	$ 2.28	$ 2.67	$266,304	$663,424	
			110			340.0	321.4	18.6	18.6		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8					18.6								$ 3.40	$ 3.98	$ 369,322	$ 2.28	$ 2.67	$247,663	$616,984	
		CP Jct/ CP MKE	60			321.4	319.9	1.5	1.5		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8		1.5											$ 1.61	$ 1.88	$ 14,292	$ 2.24	$ 2.62	$19,884	$34,176	
		Lake Sub	60			146.6	144.8	1.8	1.8		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8		1.8											$ 1.44	$ 1.68	$ 15,474	$ 2.18	$ 2.55	$23,425	$38,899	
		Ft Wayne	79			144.8	140.7	4.1	4.1		E		16	0	2.9	0.03	4.8	5.1	9.9	0	0.0015	4.8	0.0	4.8			4.1										$ 1.44	$ 1.68	$ 34,479	$ 2.18	$ 2.55	$52,198	$86,677	MP 140.7 - Ft. Wayne Station
			79			365.4	363.9	1.5	1.5	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			1.5										$ 2.05	$ 2.40	$ 17,479	$ 2.53	$ 2.96	$21,572	$39,051	
		New Haven	60			87.2	85.0	2.2	2.2	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		2.2											$ 2.05	$ 2.40	$ 26,219	$ 2.53	$ 2.96	$32,358	$58,576	
		New Haven	110			85.0	79.0	6.0	6.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					6.0								$ 3.11	$ 3.64	$ 108,974	$ 2.60	$ 3.04	$91,104	$200,078	
	Passing Siding	Passing Siding	110	110		79.0	74.0	5.0	10.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 181,624	$ 2.60	$ 3.04	$151,840	$333,464	
		Ft Wayne Liberty	110			74.0	72.0	2.0	2.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					2.0								$ 3.11	$ 3.64	$ 36,325	$ 2.60	$ 3.04	$30,368	$66,693	
		Antwerp	79			72.0	71.0	1.0	1.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			1.0										$ 2.05	$ 2.40	$ 11,972	$ 2.53	$ 2.96	$14,775	$26,747	
			110			71.0	61.0	10.0	10.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 181,624	$ 2.60	$ 3.04	$151,840	$333,464	
	Passing Siding	Passing Siding	110	110		61.0	56.0	5.0	10.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 181,624	$ 2.60	$ 3.04	$151,840	$333,464	
			110			56.0	51.0	5.0	5.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					5.0								$ 3.11	$ 3.64	$ 90,812	$ 2.60	$ 3.04	$75,920	$166,732	
		Defiance	60			61.0	50.0	11.0	11.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		11.0											$ 2.05	$ 2.40	$ 131,692	$ 2.53	$ 2.96	$162,527	$294,219	
			110			50.0	30.5	19.5	19.5	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					19.5								$ 3.11	$ 3.64	$ 354,167	$ 2.60	$ 3.04	$296,088	$650,255	
		Liberty Center	60			30.5	30.3	0.3	0.3	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		0.3											$ 2.05	$ 2.40	$ 2,993	$ 2.53	$ 2.96	$3,694	$6,687	
			79			84.5	80.5	4.0	4.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			4.0										$ 2.05	$ 2.40	$ 47,888	$ 2.53	$ 2.96	$59,101	$106,989	
	Passing Siding	Passing Siding	79	79		80.5	78.5	2.0	4.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			4.0										$ 2.05	$ 2.40	$ 47,888	$ 2.53	$ 2.96	$59,101	$106,989	
			79			78.5	74.5	4.0	4.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			4.0										$ 2.05	$ 2.40	$ 47,888	$ 2.53	$ 2.96	$59,101	$106,989	
		Connect to NS	45			74.5	74.3	0.2	0.2	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		0.2											$ 2.05	$ 2.40	$ 2,754	$ 2.53	$ 2.96	$3,398	$6,152	
		Connect to NS	45			314.4	314.2	0.2	0.2	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		0.2											$ 2.05	$ 2.40	$ 2,394	$ 2.53	$ 2.96	$2,955	$5,349	
		28 ft northside	110			314.2	312.2	2.0	2.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					2.0								$ 3.11	$ 3.64	$ 36,325	$ 2.60	$ 3.04	$30,368	$66,693	
	Passing Siding	Passing Siding	110	110		312.2	307.2	5.0	10.0	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 181,624	$ 2.60	$ 3.04	$151,840	$333,464	
		28 ft Northside	110			307.2	294.5	12.7	12.7	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8					12.7								$ 3.11	$ 3.64	$ 230,662	$ 2.60	$ 3.04	$192,837	$423,499	
		14 ft northside	79			294.5	290.3	4.2	4.2	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8			4.2										$ 2.15	$ 2.52	$ 52,735	$ 2.46	$ 2.88	$60,339	$113,074	
		3 track structure	60	60	60	290.3	288.5	1.8	5.4	P			16	0	0.0	0.03	4.8	0.0	4.8	0	0.0015	4.8	0.0	4.8		5.4											$ 2.05	$ 2.40	$ 64,649	$ 2.53	$ 2.96	$79,786	$144,435	
		Toledo	60	60		288.5	286.0	2.5	5.0			F	16	0	112.0	0.037	4.8	223.4	228.2	0	0.0015	4.8	0.0	4.8		5.0											$ 0.96	$ 1.12	$ 28,032	$ 1.92	$ 2.25	$56,064	$84,096	MP 286.0 - Toledo Station
			79	79		286.0	280.7	5.3	10.6			F	18	0	112.0	0.037	4.8	223.4	228.2	0	0.0015	4.8	0.0	4.8			10.6										$ 0.96	$ 1.12	$ 66,856	$ 1.92	$ 2.25	$133,713	$200,569	
		28 ft Northside	110			280.7	266.1	14.6	14.6	P			18	0	110.7	0.037	4.8	220.8	225.6	0	0.0015	4.8	0.0	4.8					14.6								$ 2.05	$ 2.40	$ 196,640	$ 2.53	$ 2.96	$242,683	$439,323	
	Passing Siding	Passing Siding	110	110		266.1	256.1	10.0	20.0	P			18	0	77.0	0.037	4.8	153.6	158.4	0	0.0015	4.8	0.0	4.8					20.0								$ 2.05	$ 2.40	$ 269,370	$ 2.53	$ 2.96	$332,442	$601,812	
		Port Clinton	79	79		256.1	248.3	7.8	15.6			F	18	0	77.0	0.037	4.8	153.6	158.4	0	0.0015	4.8	0.0	4.8			15.6										$ 0.40	$ 0.47	$ 40,997	$ 0.78	$ 0.91	$79,944	$120,941	
			60	60		248.3	247.2	1.1	2.2			F	18	0	77.0	0.037	4.8	153.6	158.4	0	0.0015	4.8	0.0	4.8		2.2											$ 0.40	$ 0.47	$ 5,782	$ 0.78	$ 0.91	$11,274	$17,056	
		Sandusky	79	79		247.2	240.6	6.6	13.2			F	18	0	77.0	0.037	4.8	153.6	158.4	0	0.0015	4.8	0.0	4.8			13.2										$ 0.40	$ 0.47	$ 34,690	$ 0.78	$ 0.91	$67,645	$102,334	MP 240.6 - Sandusky Station
		28 ft northside	110			240.6	233.0	7.6	7.6	P			18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8					7.6								$ 3.11	$ 3.64	$ 155,289	$ 2.60	$ 3.04	$129,823	$285,112	
		Huron	79	79		233.0	231.0	2.0	4.0			F	18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8			4.0										$ 0.40	$ 0.47	$ 10,512	$ 0.78	$ 0.91	$20,498	$31,010	
		28 ft northside	110			231.0	229.0	2.0	2.0	P			18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8					2.0								$ 3.11	$ 3.64	$ 40,865	$ 2.60	$ 3.04	$34,164	$75,029	
	Passing Siding	Passing Siding	110	110		229.0	224.0	5.0	10.0	P			18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 204,327	$ 2.60	$ 3.04	$170,820	$375,147	
		28 ft northside	110			224.0	221.0	3.0	3.0	P			18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8					3.0								$ 3.11	$ 3.64	$ 61,298	$ 2.60	$ 3.04	$51,246	$112,544	
		Vermillion River	79	79		221.0	220.5	0.5	1.0			F	18	0	83.0	0.037	4.8	165.5	170.3	0	0.0015	4.8	0.0	4.8			1.0										$ 0.40	$ 0.47	$ 2,628	$ 0.78	$ 0.91	$5,125	$7,753	
		14 ft Northside	79	79	79	220.5	205.1	15.4	46.2			F	18	0	107.5	0.037	4.8	214.4	219.2	0	0.0015	4.8	0.0	4.8			46.2										$ 0.40	$ 0.47	$ 121,414	$ 0.78	$ 0.91	$236,757	$358,170	
		28 ft northside	110			205.1	199.3	5.8	5.8	P			18	0	105.9	0.037	4.8	211.2	216.0	0	0.0015	4.8	0.0	4.8					5.8								$ 3.11	$ 3.64	$ 118,510	$ 2.60	$ 3.04	$99,076	$217,585	
	Passing Siding	Passing Siding	110	110		199.3	194.3	5.0	10.0	P			18	0	105.9	0.037	4.8	211.2	216.0	0	0.0015	4.8	0.0	4.8					10.0								$ 3.11	$ 3.64	$ 204,327	$ 2.60	$ 3.04	$170,820	$375,147	
		Berea	79	79		194.3	194.0	0.3	0.6			F	18	0	105.9	0.037	4.8	211.2	216.0	0	0.0015	4.8	0.0	4.8			0.6										$ 0.40	$ 0.47	$ 1,577	$ 0.78	$ 0.91	$3,075	$4,652	MP 194.0 - Berea Station
	Berea	West Park	79	79		194.0	188.0	6.0	12.0			F	18	0	92.0	0.037	4.8	183.5	188.3	0	0.0015	4.8	0.0	4.8			12.0										$ 0.40	$ 0.47	$ 31,536	$ 0.78	$ 0.91	$61,495	$93,031	
	West Park	Cleveland	79	79		188.0	182.0	6.0	12.0			F	18	0	14.0	0.020	4.8	20.4	25.2	0	0.0015	4.8	0.0	4.8			12.0										$ 0.40	$ 0.47	$ 31,536	$ 0.78	$ 0.91	$61,495	$93,031	MP 182.0 - Cleveland Station
						0.0																																						
						0.0																																						
						Total Miles		346.49	487.89	Track Miles By Class															0.0	34.5	149.6	0.0	303.8								$ 141.84	$ 165.93	$ 7,412,032	$ 142.95		$ 6,722,939	$ 14,134,971	

HNTB
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Total Track Miles 0.0

Legend

	FRT	PASS
PP	1	16
E	2	16
PF	6	16

Legend	Track Miles
FRA Class 2	0.0
FRA Class 3	34.5
FRA Class 4	149.6
FRA Class 5	0.0
FRA Class 6	303.8

	Maintenance	Capital	Total
High	$7,412,032	$6,722,939	$14,134,971
Median	$6,151,987	$5,580,039	$11,732,026
Low	$4,891,941	$4,437,140	$9,329,081

CHICAGO - GALESBURG - QUINCY

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	BNSF Escall. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	2010 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot
										R. A. Kollmar's Calculations										COMPLETE TEMS Calculations				
	Chicago	Union Avenue	45	45	45	0.0	1.6	1.6	4.8	P			18		0	0.015	3.1	0.0	3.1	50.7	0.014	0.0	59.9	59.9
	Union Avenue	Western Ave.	60	60	60	1.6	4.0	2.4	9.6	P			18		25	0.015	3.1	33.2	36.3	50.7	0.014	5.7	59.9	65.6
	Western Ave.	Cicero	90	90	90	4.0	7.3	3.3	13.2			F	18		50	0.015	3.1	66.3	69.4	50.7	0.014	11.4	59.9	71.3
	Cicero	Clyde	90	90	90	7.3	9.6	2.3	6.9			F	18		72	0.015	3.1	95.5	98.6	50.7	0.014	16.4	59.9	76.3
	Clyde	Aurora	90	90	90	9.6	28.1	18.5	55.5			F	18		72	0.015	3.1	95.5	98.6	50.7	0.014	16.4	59.9	76.3
	Aurora	CP Aurora	60	60	60	28.1	38.8	10.7	32.1			F	18		72	0.015	3.1	95.5	98.6	34.9	0.014	16.4	41.2	57.6
50	CP Aurora	Mendota	90	90		38.8	82.0	43.2	86.4			F	18		44	0.015	3.1	58.4	61.5	35.3	0.014	10.0	41.7	51.7
	Mendota	Mendota	40	40		82.0	83.2	1.2	2.4			F	18		44	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0
100	Mendota	Princeton	90	90		83.2	104.2	21.0	42.0			F	18		44	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0
	Princeton	Wyanet	79	79		104.2	108.0	3.8	7.6			F	18		44	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0
150	Wyanet	Galesburg	90	90		108.0	162.4	54.4	108.8			F	8		44	0.015	1.4	58.4	59.8	44.0	0.014	10.0	52.0	62.0
	Galesburg	Waterman	50	50		162.4	167.0	4.6	9.2			F	8		60	0.015	1.4	79.6	81.0	49.7	0.014	13.7	58.7	72.4
250	Waterman	Quincy	90			167.0	258.6	91.6	91.6			F	8		37	0.015	1.4	49.1	50.5	49.7	0.014	8.4	58.7	67.1
	Quincy	Mississippi R.	60			258.6	262.8	4.2	4.2			F	8		37	0.015	1.4	49.1	50.5	49.7	0.014	8.4	58.7	67.1

From Station	FRA Track Class 2	3	4	5	6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Remarks
Chicago		4.8											$ 2.05	$ 2.40	$ 64,649	$ 2.53	$ 2.96	$ 79,786	$ 144,435	MP 0.0 - Chicago
Union Avenue			9.6										$ 2.05	$ 2.40	$ 129,298	$ 2.53	$ 2.96	$ 159,572	$ 288,870	
Western Ave.				13.2									$ 1.33	$ 1.56	$ 115,343	$ 0.94	$ 1.10	$ 81,521	$ 196,863	
Cicero				6.9									$ 1.33	$ 1.56	$ 60,293	$ 0.94	$ 1.10	$ 42,613	$ 102,906	
Clyde				55.5									$ 1.33	$ 1.56	$ 484,965	$ 0.94	$ 1.10	$ 342,757	$ 827,721	MP 24.4 - Naperville
Aurora		32.1											$ 0.40	$ 0.47	$ 84,359	$ 0.78	$ 0.91	$ 164,500	$ 248,858	
CP Aurora				86.4									$ 1.19	$ 1.39	$ 675,501	$ 0.87	$ 1.02	$ 493,854	$ 1,169,355	
Mendota		2.4											$ 0.45	$ 0.53	$ 7,096	$ 0.84	$ 0.98	$ 13,245	$ 20,341	MP 83.0 - Mendota
Mendota				42.0									$ 1.19	$ 1.39	$ 328,369	$ 0.87	$ 1.02	$ 240,068	$ 568,436	MP 104.2 - Princeton
Princeton			7.6										$ 0.42	$ 0.49	$ 20,971	$ 0.80	$ 0.94	$ 39,946	$ 60,917	
Wyanet				####									$ 1.19	$ 1.39	$ 378,058	$ 0.87	$ 1.02	$ 276,396	$ 654,454	MP 162.4 - Galesburg
Galesburg		9.2											$ 0.45	$ 0.53	$ 12,089	$ 0.84	$ 0.98	$ 22,566	$ 34,655	
Waterman				91.6									$ 1.19	$ 1.39	$ 318,292	$ 0.87	$ 1.02	$ 232,701	$ 550,992	MP 202.6 - McComb
Quincy		4.2											$ 0.40	$ 0.47	$ 4,906	$ 0.78	$ 0.91	$ 9,566	$ 14,472	MP 258.6 - Quiincy
															$ 2,684,187	$ 15.40		$ 2,199,089	$ 4,883,275	
Track Miles By Class	0.0	52.7	17.2	####	0.0								Matrix 41		Matrix 41					

Total Miles 262.8 474.3 Track Miles By Class

Note
1
2

HNTB
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Total Track Mile: 474.3

Legend

FRT	PASS		Range	Legend
			30 - 25	FRA Class 2
		550	60 - 40	FRA Class 3
PP 1	16	**5900**	80 - 60	FRA Class 4
E 2	16	7500	90 - 80	FRA Class 5
PF 6	16	1.170	110 - 80	FRA Class 6

0.0
52.7
17.2
####
0.0

	Maintenance	Capital	Total
High	$2,684,187	$2,199,089	$4,883,275
Median	$2,227,875	$1,825,243	$4,053,118
Low	$1,771,563	$1,451,398	$3,222,962

Note 1: BNSF Furnished 2002 Tonnage Data
Note 2: RA Kollmar Estimate of Growth of 1.5% Annual

CHICAGO - WYANET - QUAD CITIES - OMAHA

From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	Total Track Miles	R. A. Kollmar's Calculations: Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr. Tons F	RR Escall. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	COMPLETE TEMS Calculations: 2010 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	3	4	5	6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Remarks
Chicago	Union Avenue	45	45	45	0.0	1.6	1.6	4.8	P			18		0.0	0.015	3.1	0.0	3.1	50.7	0.014	0.0	59.9	59.9		4.8											$ 2.05	$ 2.40	$ 64,649	$ 2.53	$ 2.96	$ 79,786	$ 144,435	MP 0.0 - Chicago
Union Avenue	Western Ave.	60	60	60	1.6	4.0	2.4	9.6	P			18		25.0	0.015	3.1	33.2	36.3	50.7	0.014	5.7	59.9	65.6			9.6										$ 2.05	$ 2.40	$ 129,298	$ 2.53	$ 2.96	$ 159,572	$ 288,870	
Western Ave.	Cicero	90	90	90	4.0	7.3	3.3	13.2			F	18		50.0	0.015	3.1	66.3	69.4	50.7	0.014	11.4	59.9	71.3				13.2										$ 1.33	$ 1.56	$ 115,343	$ 0.94	$ 1.10	$ 81,521	$ 196,863	
Cicero	Clyde	90	90	90	7.3	9.6	2.3	6.9			F	18		72.0	0.015	3.1	95.5	98.6	50.7	0.014	16.4	59.9	76.3				6.9										$ 1.33	$ 1.56	$ 60,293	$ 0.94	$ 1.10	$ 42,613	$ 102,906	
Clyde	Aurora	90	90	90	9.6	28.1	18.5	55.5			F	18		72.0	0.015	3.1	95.5	98.6	50.7	0.014	16.4	59.9	76.3				55.5										$ 1.33	$ 1.56	$ 484,965	$ 0.94	$ 1.10	$ 342,757	$ 827,721	MP 24.4 - Naperville
Aurora	CP Aurora	60	60	60	28.1	38.8	10.7	32.1			F	18		72.0	0.015	3.1	95.5	98.6	34.9	0.014	16.4	41.2	57.6		32.1											$ 0.40	$ 0.47	$ 84,359	$ 0.78	$ 0.91	$ 164,500	$ 248,858	
CP Aurora	Mendota	90	90		38.8	82.0	43.2	86.4			F	18		44.0	0.015	3.1	58.4	61.5	35.3	0.014	10.0	41.7	51.7				86.4										$ 1.19	$ 1.39	$ 675,501	$ 0.87	$ 1.02	$ 493,854	$ 1,169,355	
Mendota	Mendota	40	40		82.0	83.2	1.2	2.4			F	18		44.0	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0		2.4											$ 0.45	$ 0.53	$ 7,096	$ 0.84	$ 0.98	$ 13,245	$ 20,341	MP 83.0 - Mendota
Mendota	Princeton	90	90		83.2	104.2	21.0	42.0			F	18		44.0	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0				42.0										$ 1.19	$ 1.39	$ 328,369	$ 0.87	$ 1.02	$ 240,068	$ 568,436	MP 104.2 - Princeton
Princeton	Wyanet	79	79		104.2	108.0	3.8	7.6			F	18		44.0	0.015	3.1	58.4	61.5	44.0	0.014	10.0	52.0	62.0			7.6										$ 0.42	$ 0.49	$ 20,971	$ 0.80	$ 0.94	$ 39,946	$ 60,917	
Wyanet Conn.	Wyanet Conn.	60			108.0	109.0	1.0	1.0	P			10		0.0	0.015	1.7	0.0	1.7	0.0	0.014	0.0	0.0	0.0		1.0											$ 2.29	$ 2.68	$ 8,359	$ 2.60	$ 3.04	$ 9,490	$ 17,849	
Wyanet	Quad Cities	79			129.5	180.5	51.0	51.0			F	10		6.5	0.030	1.7	11.4	13.1	11.7	0.014	2.0	13.8	15.8			51.0										$ 0.96	$ 1.12	$ 178,704	$ 1.92	$ 2.25	$ 357,408	$ 536,112	MP 1
Quad Cities	Quad Cities	60	60		180.5	183.5	3.0	6.0			F	10		8.0	0.030	1.7	14.0	15.7	11.7	0.014	2.4	13.8	16.2		6.0											$ 1.01	$ 1.18	$ 22,119	$ 1.94	$ 2.27	$ 42,486	$ 64,605	MP 2
Quad Cities	Iowa City	79			183.5	200.0	16.5	33.0			F	10		8.0	0.030	1.7	14.0	15.7	11.7	0.014	2.4	13.8	16.2			33.0										$ 1.01	$ 1.18	$ 121,655	$ 1.94	$ 2.27	$ 233,673	$ 355,328	
		79	79		200.0	205.0	5.0	10.0			F	10		8.0	0.030	1.7	14.0	15.7	11.7	0.014	2.4	13.8	16.2			10.0										$ 1.01	$ 1.18	$ 36,865	$ 1.94	$ 2.27	$ 70,810	$ 107,675	
		79			205.0	234.0	29.0	29.0			F	10		8.0	0.030	1.7	14.0	15.7	11.7	0.014	2.4	13.8	16.2			29.0										$ 1.01	$ 1.18	$ 106,909	$ 1.94	$ 2.27	$ 205,349	$ 312,258	
Iowa City	Iowa City	60			234.0	237.0	3.0	6.0			F	10		8.0	0.030	1.7	14.0	15.7	11.7	0.014	2.4	13.8	16.2		6.0											$ 1.01	$ 1.18	$ 22,119	$ 1.94	$ 2.27	$ 42,486	$ 64,605	
		79			237.0	287.0	50.0	100.0			F	10		4.5	0.030	1.7	7.9	9.6	9.8	0.014	1.4	11.6	12.9			100.0										$ 1.01	$ 1.18	$ 368,650	$ 1.94	$ 2.27	$ 708,100	$ 1,076,750	
		79	79		287.0	297.0	10.0	20.0			F	10		4.5	0.030	1.7	7.9	9.6	9.8	0.014	1.4	11.6	12.9			20.0										$ 1.01	$ 1.18	$ 73,730	$ 1.94	$ 2.27	$ 141,620	$ 215,350	
	Des Moines	79			297.0	355.0	58.0	116.0			F	10		4.5	0.030	1.7	7.9	9.6	9.8	0.014	1.4	11.6	12.9			116.0										$ 1.01	$ 1.18	$ 427,634	$ 1.94	$ 2.27	$ 821,396	$ 1,249,030	
Des Moines	Des Moines	60			355.0	360.0	5.0	10.0			F	10		4.5	0.030	1.7	7.9	9.6	9.8	0.014	1.4	11.6	12.9		10.0											$ 1.01	$ 1.18	$ 36,865	$ 1.94	$ 2.27	$ 70,810	$ 107,675	
		79			360.0	425.0	65.0	65.0			F	8		4.5	0.030	1.4	7.9	9.3	9.8	0.014	1.4	11.6	12.9			65.0										$ 1.01	$ 1.18	$ 191,698	$ 1.94	$ 2.27	$ 368,212	$ 559,910	
		79	79		425.0	435.0	10.0	20.0			F	8		4.5	0.030	1.4	7.9	9.3	9.8	0.014	1.4	11.6	12.9			20.0										$ 1.01	$ 1.18	$ 58,984	$ 1.94	$ 2.27	$ 113,296	$ 172,280	
	Omaha	79			435.0	488.0	53.0	53.0			F	8		4.5	0.030	1.4	7.9	9.3	9.8	0.014	1.4	11.6	12.9			53.0										$ 0.96	$ 1.12	$ 148,570	$ 1.92	$ 2.25	$ 297,139	$ 445,709	MP 3
Omaha	Omaha	60	60		497.4	505.0	7.6	15.2			F	8		4.5	0.030	1.4	7.9	9.3	9.8	0.014	1.4	11.6	12.9		15.2											$ 0.96	$ 1.12	$ 42,609	$ 1.92	$ 2.25	$ 85,217	$ 127,826	MP 400 - Omaha
		Total Miles by Segment					475.1																	0.0	77.5	514.2	204.0	0.0																
		Total Miles by Total Track						795.7																																				
		Total Miles by Track Class																																									

WYANET TO OMAHA $ 1,845,468 $ 41.74 $ 3,567,492 $ 5,412,960

NIC in total is Chicago to Wyanet

HNTB
1-Feb-04
CHQ

	Wyanet to Omaha Maintenance	Capital	Total
High	$1,845,468	$3,567,492	$5,412,960
Median	$1,531,738	$2,961,019	$4,492,757
Low	$1,218,009	$2,354,545	$3,572,554

	Note	Note
	1	3
	2	4

Total Track Miles 0.0

Legend

	FRT	PASS	
PP	1	16	5900
E	2	16	
PF	6	16	1.170

30 - 25	FRA Class 2
60 - 40	FRA Class 3
80 - 60	FRA Class 4
90 - 80	FRA Class 5
110 - 80	FRA Class 6

0.0	
77.5	
514.2	
204.0	
0.0	

Note 1: BNSF (Rich Wessler) Furnished 2002 Tonnage Data
Note 2: Iowa Interstate (Pat Sheldon) Furnished 2002 Tonnage Data 12-29-03
Note 3: RA Kollmar Estimate of Growth of 1.5% Annual
Note 4: Iowa Interstate (Pat Sheldon) Furnished Tonnage Growth Estimate 12-29-03

CHICAGO - INDIANAPOLIS - CINCINNATI

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	Total Track Miles	R. A. Kollmar's Calculations: Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	COMPLETE TEMS Calculations: 2010 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
0	Chicago	21 Street	45	45	45	523.0	520.9	2.1	6.3	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0015	2.1	0.0	2.1		6.3											$ 2.05	$ 2.40	$ 56,568	$ 2.53	$ 2.96	$ 69,813	$ 126,381	MP 0.0 - Chicago
	21 Street	Englewood	79	79		520.9	516.3	4.6	9.2	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0015	2.1	0.0	2.1			9.2										$ 2.05	$ 2.40	$ 82,607	$ 2.53	$ 2.96	$ 101,949	$ 184,556	
	Englewood	Englewood	45	45		516.3	515.2	1.1	2.2	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0015	2.1	0.0	2.1		2.2											$ 2.29	$ 2.68	$ 22,066	$ 2.60	$ 3.04	$ 25,054	$ 47,120	
	Englewood	Gr. Xing	79	79		515.2	513.7	1.5	3.0	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0015	2.1	0.0	2.1			3.0										$ 2.05	$ 2.40	$ 26,937	$ 2.53	$ 2.96	$ 33,244	$ 60,181	Current NS ML Tonnage = 122.4
	Gr. Xing	Cal River	79	79		513.7	509.8	3.9	7.8	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0015	2.1	0.0	2.1			7.8										$ 2.05	$ 2.40	$ 70,036	$ 2.53	$ 2.96	$ 86,435	$ 156,471	
	Cal R. Br.	Cal R. Br.	79	79		509.8	509.5	0.3	0.6	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1			0.6										$ 2.05	$ 2.40	$ 5,387	$ 2.53	$ 2.96	$ 6,649	$ 12,036	
	Cal River	Hick	110	110		509.5	503.4	6.1	12.2	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1					12.2								$ 3.11	$ 3.64	$ 166,186	$ 2.60	$ 3.04	$ 138,934	$ 305,120	MP 507.0 - Hammond
	Hick Br.	Hick Br.	79	79		503.4	503.0	0.4	0.8	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1			0.8										$ 2.05	$ 2.40	$ 7,183	$ 2.53	$ 2.96	$ 8,865	$ 16,048	
	Hick Br.	NS Flyover	79	79		503.0	501.6	1.4	2.8	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1			2.8										$ 2.05	$ 2.40	$ 25,141	$ 2.53	$ 2.96	$ 31,028	$ 56,169	Current NS ML Tonnage = 122.4
	NS Flyover	NS Flyover	60	60		501.6	500.5	1.1	2.2	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1		2.2											$ 2.15	$ 2.52	$ 20,717	$ 2.56	$ 2.99	$ 24,668	$ 45,386	
	NS Flyover	Tolleston	79	79		15.0	19.0	4.0	8.0	P			12	0	0	0.0015	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1			8.0										$ 2.05	$ 2.40	$ 71,832	$ 2.53	$ 2.96	$ 88,651	$ 160,483	
50	Tolleston	Gary	45			442.5	440.0	2.5	2.5		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1			2.5										$ 1.44	$ 1.68	$ 15,768	$ 2.18	$ 2.55	$ 23,871	$ 39,639	
	Gary		110			440.0	435.4	4.6	4.6		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					4.6								$ 3.40	$ 3.98	$ 69,248	$ 2.28	$ 2.67	$ 46,437	$ 115,685	
100			110			435.4	430.0	5.4	5.4		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					5.4								$ 3.40	$ 3.98	$ 79,672	$ 2.28	$ 2.67	$ 53,427	$ 133,099	
			110	110		430.0	425.0	5.0	10.0		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					10.0								$ 3.40	$ 3.98	$ 148,920	$ 2.28	$ 2.67	$ 99,864	$ 248,784	
			110			425.0	423.5	1.5	1.5		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					1.5								$ 3.40	$ 3.98	$ 22,338	$ 2.28	$ 2.67	$ 14,980	$ 37,318	
			110			423.6	423.5	0.1	0.1		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					0.1								$ 3.40	$ 3.98	$ 1,489	$ 2.28	$ 2.67	$ 999	$ 2,488	
		Wanatah	110			423.5	415.4	8.1	8.1		E		12	4	2.9	0.03	4.8	5.1	9.9	0.0	0.0014	2.1	0.0	2.1					8.1								$ 3.40	$ 3.98	$ 120,625	$ 2.28	$ 2.67	$ 80,890	$ 201,515	
	Wanatah	Wanatah	45			415.4	38.1	1.0	1.0	P			12	0	0.0	0	4.8	0.0	4.8	0.0	0.0014	2.1	0.0	2.1		1.0											$ 2.29	$ 2.68	$ 10,030	$ 2.60	$ 3.04	$ 11,388	$ 21,418	
	Wanatah	Monon	110			38.1	0.0	38.1	38.1	P			12	0	0	0	4.8	0.0	4.8	1.8	0.0014	2.1	2.1	4.2					38.1								$ 3.11	$ 3.64	$ 518,991	$ 2.60	$ 3.04	$ 433,883	$ 952,873	
	Monon		79			88.5	112.5	24.0	24.0		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			24.0										$ 1.51	$ 1.77	$ 158,731	$ 2.20	$ 2.57	$ 231,264	$ 389,995	Lafayette
		Ames Connection	40	40		112.5	113.3	0.8	1.6		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			1.6										$ 1.61	$ 1.88	$ 11,283	$ 2.24	$ 2.62	$ 15,698	$ 26,981	
		Ames Connection	79	79		113.3	117.0	3.7	7.4		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			7.4										$ 1.44	$ 1.68	$ 46,673	$ 2.18	$ 2.55	$ 70,658	$ 117,331	
	Ames Connection	Ames Connection	25	25		117.0	119.3	2.3	4.6		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9	4.6											$ 1.61	$ 1.88	$ 32,438	$ 2.24	$ 2.62	$ 45,132	$ 77,570	
	Ames Connection	Ames	40	40		119.3	120.7	1.4	2.8		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9		2.8										$ 1.44	$ 1.68	$ 17,660	$ 2.18	$ 2.55	$ 26,736	$ 44,396	
			50	50		120.7	121.0	0.3	0.6		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9		0.6										$ 1.44	$ 1.68	$ 3,784	$ 2.18	$ 2.55	$ 5,729	$ 9,513	
150			79	79		121.0	149.0	28.0	56.0		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			56.0									$ 1.44	$ 1.68	$ 353,203	$ 2.18	$ 2.55	$ 534,710	$ 887,914	
		Indianapolis	79	79		46.3	7.0	39.3	78.6		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			78.6									$ 1.44	$ 1.68	$ 495,746	$ 2.18	$ 2.55	$ 750,504	$ 1,246,250	Indianapolis International Airport
	Indianapolis	Indianapolis	79	79		7.0	6.0	1.0	2.0		E		12	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.1	11.8	13.9			2.0									$ 1.51	$ 1.77	$ 13,228	$ 2.20	$ 2.57	$ 19,272	$ 32,500	
	Indianapolis	Indianapolis	45	45		6.0	1.0	5.0	10.0		E		14	4	2.9	0.03	4.8	5.1	9.9	10.0	0.0014	2.4	11.8	14.2		10.0										$ 1.61	$ 1.88	$ 82,271	$ 2.24	$ 2.62	$ 114,464	$ 196,735	Indianapolis
200	Indianapolis	Hamilton	45	45		124.5	127.0	2.5	5.0		E		12	4	2.9	0.03	4.8	5.1	9.9	3.2	0.0014	2.1	3.8	5.8		5.0										$ 1.44	$ 1.68	$ 31,536	$ 2.18	$ 2.55	$ 47,742	$ 79,278	
			45			109.1	108.9	0.2	0.2	P			12	4	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8		0.2										$ 2.05	$ 2.40	$ 1,796	$ 2.53	$ 2.96	$ 2,216	$ 4,012	
			60	60		108.9	106.9	1.9	3.9	P			12	4	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8		3.9										$ 2.05	$ 2.40	$ 35,018	$ 2.53	$ 2.96	$ 43,217	$ 78,236	
			60	60		106.9	103.6	3.3	6.6	P			12	4	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8		6.6										$ 2.05	$ 2.40	$ 59,261	$ 2.53	$ 2.96	$ 73,137	$ 132,399	
			110			103.6	83.7	19.9	19.9	P			12	2	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8					19.9								$ 3.11	$ 3.64	$ 271,074	$ 2.60	$ 3.04	$ 226,621	$ 497,695	
			40	40		83.7	82.8	0.9	1.8	P			12	2	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8		1.8										$ 2.05	$ 2.40	$ 16,162	$ 2.53	$ 2.96	$ 19,947	$ 36,109	
		Shelbyville	110			82.8	63.5	19.4	19.4	P			12	2	1.9	0.0015	4.8	2.5	7.3	3.2	0.0014	2.1	3.8	5.8					19.4								$ 3.11	$ 3.64	$ 263,582	$ 2.60	$ 3.04	$ 220,358	$ 483,940	
250	Shelbyville	Shelbyville	60	60		63.5	61.9	1.6	3.2	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4		3.2										$ 2.05	$ 2.40	$ 28,733	$ 2.53	$ 2.96	$ 35,460	$ 64,193	Shelbyville
	Shelbyville		110			61.9	40.0	21.9	21.9	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4					21.9								$ 3.11	$ 3.64	$ 297,636	$ 2.60	$ 3.04	$ 248,828	$ 546,464	
			110	110		40.0	35.0	5.0	10.0	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4					10.0								$ 3.11	$ 3.64	$ 136,218	$ 2.60	$ 3.04	$ 113,880	$ 250,098	
			110			35.0	16.0	19.0	19.0	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4					19.0								$ 3.11	$ 3.64	$ 258,814	$ 2.60	$ 3.04	$ 216,372	$ 475,186	
			110			16.0	13.0	3.0	3.0	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4					3.0								$ 3.11	$ 3.64	$ 40,865	$ 2.60	$ 3.04	$ 34,164	$ 75,029	
300			110			13.0	5.0	8.0	8.0	P			12	2	1.9	0.0015	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4					8.0								$ 3.11	$ 3.64	$ 108,974	$ 2.60	$ 3.04	$ 91,104	$ 200,078	
			45	45		5.0	0.5	4.5	9.0	P			12	6	64.8	0.03	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4		9.0										$ 2.29	$ 2.68	$ 90,272	$ 2.60	$ 3.04	$ 102,492	$ 192,764	
	Cincinnati Termina		50	50		0.5	0.3	0.2	4.4	P			12	6	64.8	0.03	4.8	2.5	7.3	2.0	0.0014	2.1	2.4	4.4		4.4										$ 2.29	$ 2.68	$ 44,133	$ 2.60	$ 3.04	$ 50,107	$ 94,240	Cincinnati
								309.9	449.2				Note 1											4.6	60.8	202.7	0.0	####									$ 4,440,835	$ 109.31		$ 4,720,840	$ 9,161,675	
									449.2				Note 2								Note															Matrix 41	Matrix 41						

HNTB
1-Feb-04
CHQ

	Maintenance	Capital	Total
High	$4,440,835	$4,720,840	$9,161,675
Median	$3,685,893	$3,918,297	$7,604,190
Low	$2,930,951	$3,115,754	$6,046,706

Total Track Miles 0.0

	FRT	PASS		
PP	1	16	5900	
E	2	16		
PF	6	16	1.170	

Legend

30 - 25	FRA Class 2
60 - 40	FRA Class 3
80 - 60	FRA Class 4
90 - 80	FRA Class 5
110 - 80	FRA Class 6

Note 1: Norfolk Southern (John Irwin) Furnished 2002 Tonnage Data
Note 2: CSXT (Earl Wacker) Furnished 2002 Tonnage Data 01-05-04
Note 3: RA Kollmar Estimate of Growth of 1.5% Annual

MILWAUKEE TO GREEN BAY

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	R. A. Kollmar's Calculations: Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot
0	Milwaukee Station	Milwaukee Station	20	45	45	85.7	86.0	0.3	0.9	P			34	0	3.0	0.03	5.8	4.0	9.8
	Milwaukee Station	Grand Avenue	60	60	60	86.0	88.2	2.2	6.6			F	34	4	36.7	0.03	5.8	64.4	70.2
	Grand Avenue		35	35		88.2	88.3	0.1	0.2			F	14			0.03	2.4		
			79	79		88.3	93.4	5.1	10.2	P			14				2.4		
			110			94.1	95.0	0.9	0.9	P			14				2.4		
	Granville, WI		110	110		95.0	100.0	5.0	10.0	P			14				2.4		
			110			100.0	100.6	0.6	0.6	P			14				2.4		
			60			98.4	99.5	1.1	1.1	P			14				2.4		
			110			99.5	114.4	14.9	14.9	P			14				2.4		
			110			114.4	117.0	2.6	2.6	P			14				2.4		
	West Bend, WI		60	60		117.0	119.0	2.0	4.0	P			14				2.4		
50			110			119.0	138.2	19.2	19.2	P			14				2.4		
			110	110		138.2	141.0	2.8	5.6	P			14				2.4		
			110			141.0	145.5	4.5	4.5	P			14				2.4		
			40			145.5	146.0	0.5	0.5			F	14				2.4		
	Fond Du Lac, WI		45	45		155.0	160.4	5.4	10.8			F	14				2.4		
			110	110		160.4	168.8	8.4	16.8			F	14				2.4		
	Oshkosh, WI		79	79		168.8	177.8	9.0	18.0			F	14				2.4		
			110	110		177.8	180.0	2.2	4.4			F	14				2.4		
			110			180.0	184.7	4.7	4.7			F	14				2.4		
	Neenah, WI		45	45		184.7	187.5	2.8	5.6			F	14				2.4		
			45			187.5	188.1	0.6	0.6			F	14				2.4		
100	Appleton, WI		79			209.3	215.3	6.0	6.0			F	14				2.4		
			79	79		215.3	220.5	5.2	10.4			F	14				2.4		
			79			220.5	222.0	1.5	1.5			F	14				2.4		
			79			222.0	236.3	14.3	14.3			F	14				2.4		
			79	79		236.3	241.7	5.4	10.8			F	14				2.4		
			79			241.7	242.6	0.9	0.9			F	14				2.4		
128.6	Green Bay		10			242.6	243.0	0.4	0.4			F	14				2.4		

MP Begin	COMPLETE TEMS Calculations: 2010 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev
85.7	0.0	0.0015	5.8	0.0	5.8	0.3	0.6										
86.0							6.6										
88.2							0.2										
88.3								10.2									
94.1										0.9							
95.0										10.0							
100.0										0.6							
98.4							1.1										
99.5										14.9							
114.4										2.6							
117.0							4.0										
119.0										19.2							
138.2										5.6							
141.0										4.5							
145.5							0.5										
155.0							10.8										
160.4										16.8							
168.8								18.0									
177.8										4.4							
180.0										4.7							
184.7							5.6										
187.5							0.6										
209.3								6.0									
215.3								10.4									
220.5								1.5									
222.0								14.3									
236.3								10.8									
241.7								0.9									
242.6						0.4											

MP Begin	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
85.7	$ 2.05	$ 2.40	$ 7,632	$ 2.53	$ 2.96	$ 28,258	$ 35,890	MP 85.7 - Milwaukee Station
86.0	$ 0.30	$ 0.35	$ 8,191	$ 0.56	$ 0.66	$ 45,867	$ 54,058	
88.2	$ 0.45	$ 0.53	$ 230	$ 0.84	$ 0.98	$ 858	$ 1,088	
88.3	$ 2.15	$ 2.52	$ 56,031	$ 2.56	$ 2.99	$ 133,432	$ 189,463	
94.1	$ 3.11	$ 3.64	$ 14,303	$ 2.60	$ 3.04	$ 11,957	$ 26,260	
95.0	$ 3.11	$ 3.64	$ 158,921	$ 2.60	$ 3.04	$ 132,860	$ 291,781	MP 99.4 - Granville Station
100.0	$ 3.11	$ 3.64	$ 9,535	$ 2.60	$ 3.04	$ 7,972	$ 17,507	
98.4	$ 2.15	$ 2.52	$ 12,085	$ 2.56	$ 2.99	$ 14,390	$ 26,475	
99.5	$ 3.11	$ 3.64	$ 237,110	$ 2.60	$ 3.04	$ 198,227	$ 435,337	
114.4	$ 3.11	$ 3.64	$ 41,002	$ 2.60	$ 3.04	$ 34,278	$ 75,279	
117.0	$ 2.15	$ 2.52	$ 43,946	$ 2.56	$ 2.99	$ 52,326	$ 96,272	MP 118.8 - West Bend Station
119.0	$ 3.11	$ 3.64	$ 305,128	$ 2.60	$ 3.04	$ 255,091	$ 560,220	
138.2	$ 3.11	$ 3.64	$ 88,996	$ 2.60	$ 3.04	$ 74,402	$ 163,397	
141.0	$ 3.11	$ 3.64	$ 71,514	$ 2.60	$ 3.04	$ 59,787	$ 131,301	
145.5	$ 0.42	$ 0.49	$ 1,159	$ 0.80	$ 0.94	$ 2,208	$ 3,366	
155.0	$ 0.42	$ 0.49	$ 23,179	$ 0.80	$ 0.94	$ 44,150	$ 67,329	MP 148.5 - Fond du Lac Station
160.4	$ 2.38	$ 2.78	$ 204,318	$ 1.07	$ 1.25	$ 91,857	$ 296,176	
168.8	$ 0.42	$ 0.49	$ 38,632	$ 0.80	$ 0.94	$ 73,584	$ 112,216	MP 165.5 - Oshkosh Station
177.8	$ 2.38	$ 2.78	$ 53,512	$ 1.07	$ 1.25	$ 24,058	$ 77,570	
180.0	$ 2.38	$ 2.78	$ 57,160	$ 1.07	$ 1.25	$ 25,698	$ 82,859	
184.7	$ 0.42	$ 0.49	$ 12,019	$ 0.80	$ 0.94	$ 22,893	$ 34,912	MP 177.5 - Neenah Station
187.5	$ 0.42	$ 0.49	$ 1,180	$ 0.80	$ 0.94	$ 2,248	$ 3,429	
209.3	$ 0.42	$ 0.49	$ 12,877	$ 0.80	$ 0.94	$ 24,528	$ 37,405	MP 183.5 - Appleton Station
215.3	$ 0.42	$ 0.49	$ 22,320	$ 0.80	$ 0.94	$ 42,515	$ 64,836	
220.5	$ 0.42	$ 0.49	$ 3,219	$ 0.80	$ 0.94	$ 6,132	$ 9,351	
222.0	$ 0.42	$ 0.49	$ 30,691	$ 0.80	$ 0.94	$ 58,458	$ 89,149	
236.3	$ 0.42	$ 0.49	$ 23,179	$ 0.80	$ 0.94	$ 44,150	$ 67,329	
241.7	$ 0.42	$ 0.49	$ 1,932	$ 0.80	$ 0.94	$ 3,679	$ 5,611	
242.6	$ 0.45	$ 0.53	$ 920	$ 0.84	$ 0.98	$ 1,717	$ 2,637	MP 213.5 - Green Bay Station
	$46.34	$ 54.21	$ 1,525,099	$ 45.26		$ 1,443,457	$ 2,968,556	

Totals are for Grand Ave to Green Bay. NIC is Milwaukee to Grand Ave

				99.4	Note	7.7	
99.4	Granville, WI	13.7	Total Segment Miles	128.6	1	6.5	
118.8	West Bend, WI	33.1	Total Track Miles	187.0	2	47.6	
148.5	Fond Du Lac, WI	62.8	Total Track Miles (by Class)	187.0		33.1	
165.5	Oshkosh, WI	79.8				33.7	
177.5	Neenah, WI	91.8	Total Track Miles	0.0		128.6	
183.5	Appleton, WI	97.8					
213.5	GREEN BAY, WI	127.8					

	FRT	PASS	550
PP	1	16	**5900**
E	2	16	
PF	6	16	1.170

HNTB
1-Feb-04
CHQ

Legend

30 - 25	FRA Class 2
60 - 40	FRA Class 3
80 - 60	FRA Class 4
90 - 80	FRA Class 5
110 - 80	FRA Class 6

Track Miles By Class 0.7 30.0 72.1 0.0 84.2

CHQ - MGT estimate Fond du Lac to Green Bay from October 22, 1999 Inspection Trip
Provided by WCL

	Maintenance	Capital	Total
High	$1,525,099	$1,443,457	$2,968,556
Median	$1,265,832	$1,198,070	$2,463,902
Low	$1,006,565	$952,682	$1,959,247

Note 1: CP (Don Heron) Furnished 2002 Tonnage Data

ST. LOUIS TO KANSAS CITY

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr Tons F	RR Escal. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Comments
0	St. Louis	Grand Avenue	30	30		0.0	1.0	1.0	2.0	P			8	0	110	0.05	1.4		1.4	2.0												$ 2.15	$ 2.52	$ 12,556	$ 2.56	$ 2.99	$14,950	$27,506	MP 0.0 - St. Louis Station
	Grand Avenue	0	60	60		1.0	3.7	2.7	5.4			F	8		110		1.4	278.0	279.3		5.4											$ 1.01	$ 1.18	$ 15,926	$ 1.94	$ 2.27	$30,590	$46,516	
		Maplewood	60	60		3.7	7	3.3	6.6			F	8		110		1.4	278.0	279.3		6.6											$ 1.01	$ 1.18	$ 19,465	$ 1.94	$ 2.27	$37,388	$56,852	
	Maplewood	Kirkwood Station	79	79		7.0	13.3	6.3	12.6			F	8		110		1.4	278.0	279.3			12.6										$ 1.01	$ 1.18	$ 37,160	$ 1.94	$ 2.27	$71,376	$108,536	
	Kirkwood Station	0	30	30		13.3	13.7	0.4	0.8			F	8		110		1.4	278.0	279.3	0.8												$ 1.01	$ 1.18	$ 2,359	$ 1.94	$ 2.27	$4,532	$6,891	MP 13.3 - Kirkwood Station
		0	90	90		13.7	14	0.3	0.6			F	8		110		1.4	278.0	279.3				0.6									$ 2.99	$ 3.50	$ 5,238	$ 1.95	$ 2.28	$3,416	$8,655	
		0	90	90		14.0	15.4	1.4	2.8			F	8		110		1.4	278.0	279.3				2.8									$ 2.99	$ 3.50	$ 24,446	$ 1.95	$ 2.28	$15,943	$40,389	
		0	90	90		15.4	15.7	0.3	0.6			F	8		110		1.4	278.0	279.3				0.6									$ 2.99	$ 3.50	$ 5,238	$ 1.95	$ 2.28	$3,416	$8,655	
		Barretts	90	90		15.7	17.1	1.4	2.8			F	8		110		1.4	278.0	279.3				2.8									$ 2.99	$ 3.50	$ 24,446	$ 1.95	$ 2.28	$15,943	$40,389	
	Barretts	CPM 021 - Keffer Creek	90	90		17.1	21	3.9	7.8			F	8		110		1.4	278.0	279.3				7.8									$ 2.99	$ 3.50	$ 68,100	$ 1.95	$ 2.28	$44,413	$112,513	MP 18.8 - Valley Park
	CPM 021 - Keffer Creek	0	90	90		21.0	21.7	0.7	1.4			F	8		110		1.4	278.0	279.3				1.4									$ 2.99	$ 3.50	$ 12,223	$ 1.95	$ 2.28	$7,972	$20,195	
		0	90	90		21.7	23.3	1.6	3.2			F	8		110		1.4	278.0	279.3				3.2									$ 2.99	$ 3.50	$ 27,939	$ 1.95	$ 2.28	$18,221	$46,159	
			90	90		23.3	27.1	3.8	7.6			F	8		110		1.4	278.0	279.3				7.6									$ 2.99	$ 3.50	$ 66,354	$ 1.95	$ 2.28	$43,274	$109,628	
		0	90	90		27.1	27.7	0.6	1.2			F	8		110		1.4	278.0	279.3				1.2									$ 2.99	$ 3.50	$ 10,477	$ 1.95	$ 2.28	$6,833	$17,310	
		0	90	90		27.7	30.6	2.9	5.8			F	8		110		1.4	278.0	279.3				5.8									$ 2.99	$ 3.50	$ 50,639	$ 1.95	$ 2.28	$33,025	$83,664	MP 28.8 - Eureka
		0	90	90		30.6	31.3	0.7	1.4			F	8		110		1.4	278.0	279.3				1.4									$ 2.99	$ 3.50	$ 12,223	$ 1.95	$ 2.28	$7,972	$20,195	
		CPM 032 - Dozier	90	90		31.3	32.7	1.4	2.8			F	8		110		1.4	278.0	279.3				2.8									$ 2.99	$ 3.50	$ 24,446	$ 1.95	$ 2.28	$15,943	$40,389	
	CPM 032 - Dozier	0	90	90		32.7	33.9	1.2	2.4			F	8		110		1.4	278.0	279.3				2.4									$ 2.99	$ 3.50	$ 20,954	$ 1.95	$ 2.28	$13,666	$34,620	
		0	90	90		33.9	34.8	0.9	1.8			F	8		110		1.4	278.0	279.3				1.8									$ 2.99	$ 3.50	$ 15,715	$ 1.95	$ 2.28	$10,249	$25,965	
		CPM 037 - Summit	90	90		34.8	35.9	1.1	2.2			F	8		110		1.4	278.0	279.3				2.2									$ 2.99	$ 3.50	$ 19,208	$ 1.95	$ 2.28	$12,527	$31,735	
	CPM 037 - Summit	West Labadie	90	90		35.9	44.4	8.5	17.0			F	8		110		1.4	278.0	279.3				17.0									$ 2.99	$ 3.50	$ 148,424	$ 1.95	$ 2.28	$96,798	$245,222	MP 39 - Grey's Summit
	West Labadie	South Point	90	90		44.4	48.9	4.5	9.0			F	8		110		1.4	278.0	279.3				9.0									$ 2.99	$ 3.50	$ 78,577	$ 1.95	$ 2.28	$51,246	$129,823	
	South Point	0	90	90		48.9	49.8	0.9	1.8			F	8		110		1.4	278.0	279.3				1.8									$ 2.99	$ 3.50	$ 15,715	$ 1.95	$ 2.28	$10,249	$25,965	
50		Washington Station	90	90		49.8	55.5	5.7	11.4			F	8		110		1.4	278.0	279.3				11.4									$ 2.99	$ 3.50	$ 99,531	$ 1.95	$ 2.28	$64,912	$164,443	MP 52.2 - Washington Station
	Washington Station	CPM 058	90	90		55.5	58.5	3.0	6.0			F	8		110		1.4	278.0	279.3				6.0									$ 2.99	$ 3.50	$ 52,385	$ 1.95	$ 2.28	$34,164	$86,549	
	CPM 058	0	90	90		58.5	59	0.5	1.0			F	8		110		1.4	278.0	279.3				1.0									$ 2.99	$ 3.50	$ 8,731	$ 1.95	$ 2.28	$5,694	$14,425	
		0	90	90		59.0	61.8	2.8	5.6			F	8		110		1.4	278.0	279.3				5.6									$ 2.99	$ 3.50	$ 48,892	$ 1.95	$ 2.28	$31,886	$80,779	
		New Haven	90	90		61.8	67	5.2	10.4			F	8		110		1.4	278.0	279.3				10.4									$ 2.99	$ 3.50	$ 90,800	$ 1.95	$ 2.28	$59,218	$150,018	
	New Haven	New Haven	90	90		67.0	67.2	0.2	0.4			F	8		110		1.4	278.0	279.3				0.4									$ 2.99	$ 3.50	$ 3,492	$ 1.95	$ 2.28	$2,278	$5,770	
	New Haven	0	90	90		67.2	70.7	3.5	7.0			F	8		110		1.4	278.0	279.3				7.0									$ 2.99	$ 3.50	$ 61,116	$ 1.95	$ 2.28	$39,858	$100,974	
		0	90	90		70.7	71.3	0.6	1.2			F	8		110		1.4	278.0	279.3				1.2									$ 2.99	$ 3.50	$ 10,477	$ 1.95	$ 2.28	$6,833	$17,310	
		Berger	90	90		71.3	72.2	0.9	1.8			F	8		110		1.4	278.0	279.3				1.8									$ 2.99	$ 3.50	$ 15,715	$ 1.95	$ 2.28	$10,249	$25,965	
	Berger	0	90	90		72.2	75.8	3.6	7.2			F	8		110		1.4	278.0	279.3				7.2									$ 2.99	$ 3.50	$ 62,862	$ 1.95	$ 2.28	$40,997	$103,859	
		0	90	90		75.8	80.3	4.5	9.0			F	8		110		1.4	278.0	279.3				9.0									$ 2.99	$ 3.50	$ 78,577	$ 1.95	$ 2.28	$51,246	$129,823	
		Herman	90	90		80.3	81.5	1.2	2.4			F	8		110		1.4	278.0	279.3				2.4									$ 2.99	$ 3.50	$ 20,954	$ 1.95	$ 2.28	$13,666	$34,620	MP 81.1 - Herman Station
	Herman	0	90	90		81.5	83.9	2.4	4.8			F	8		110		1.4	278.0	279.3				4.8									$ 2.99	$ 3.50	$ 41,908	$ 1.95	$ 2.28	$27,331	$69,239	
		0	90	90		83.9	85	1.1	2.2			F	8		110		1.4	278.0	279.3				2.2									$ 2.99	$ 3.50	$ 19,208	$ 1.95	$ 2.28	$12,527	$31,735	
		Gasconde Junction	90	90		85.0	86.2	1.2	2.4			F	8		110		1.4	278.0	279.3				2.4									$ 2.99	$ 3.50	$ 20,954	$ 1.95	$ 2.28	$13,666	$34,620	
	Gasconde Junction	Gasconde	90	90		86.2	88	1.8	3.6			F	8		110		1.4	278.0	279.3				3.6									$ 2.99	$ 3.50	$ 31,431	$ 1.95	$ 2.28	$20,498	$51,929	
	Gasconde	Gasconde	60	60		88.0	88.1	0.1	0.2			F	8		110		1.4	278.0	279.3		0.2											$ 1.01	$ 1.18	$ 590	$ 1.94	$ 2.27	$1,133	$1,723	
	Gasconde	0	79	79		88.1	89.3	1.2	2.4			F	8		110		1.4	278.0	279.3			2.4										$ 1.01	$ 1.18	$ 7,078	$ 1.94	$ 2.27	$13,596	$20,674	
		0	79	79		89.3	89.8	0.5	1.0			F	8		110		1.4	278.0	279.3			1.0										$ 1.01	$ 1.18	$ 2,949	$ 1.94	$ 2.27	$5,665	$8,614	
		0	79	79		89.8	90.5	0.7	1.4			F	8		110		1.4	278.0	279.3			1.4										$ 1.01	$ 1.18	$ 4,129	$ 1.94	$ 2.27	$7,931	$12,060	
		Morrison Junction	60	60		90.5	90.6	0.1	0.2			F	8		110		1.4	278.0	279.3		0.2											$ 1.01	$ 1.18	$ 590	$ 1.94	$ 2.27	$1,133	$1,723	
	Morrison Junction	0	90	90		90.6	93.1	2.5	5.0			F	8		110		1.4	278.0	279.3				5.0									$ 2.99	$ 3.50	$ 43,654	$ 1.95	$ 2.28	$28,470	$72,124	
		0	90	90		93.1	94.4	1.3	2.6			F	8		110		1.4	278.0	279.3				2.6									$ 2.99	$ 3.50	$ 22,700	$ 1.95	$ 2.28	$14,804	$37,504	
		0	90	90		94.4	94.5	0.1	0.2			F	8		110		1.4	278.0	279.3				0.2									$ 2.99	$ 3.50	$ 1,746	$ 1.95	$ 2.28	$1,139	$2,885	
		0	90	90		94.5	95.2	0.7	1.4			F	8		110		1.4	278.0	279.3				1.4									$ 2.99	$ 3.50	$ 12,223	$ 1.95	$ 2.28	$7,972	$20,195	
		0	90	90		95.2	97.6	2.4	4.8			F	8		110		1.4	278.0	279.3				4.8									$ 2.99	$ 3.50	$ 41,908	$ 1.95	$ 2.28	$27,331	$69,239	
		Chamois	90	90		97.6	97.9	0.3	0.6			F	8		110		1.4	278.0	279.3				0.6									$ 2.99	$ 3.50	$ 5,238	$ 1.95	$ 2.28	$3,416	$8,655	
100	Chamois	Ames	90	90		97.9	106.9	9.0	18.0			F	8		110		1.4	278.0	279.3				18.0									$ 2.99	$ 3.50	$ 157,154	$ 1.95	$ 2.28	$102,492	$259,646	
	Ames	0	90	90		106.9	107.1	0.2	0.4			F	8		110		1.4	278.0	279.3				0.4									$ 2.99	$ 3.50	$ 3,492	$ 1.95	$ 2.28	$2,278	$5,770	
		0	90	90		107.1	108.9	1.8	3.6			F	8		110		1.4	278.0	279.3				3.6									$ 2.99	$ 3.50	$ 31,431	$ 1.95	$ 2.28	$20,498	$51,929	
		0	90	90		108.9	109.1	0.2	0.4			F	8		110		1.4	278.0	279.3				0.4									$ 2.99	$ 3.50	$ 3,492	$ 1.95	$ 2.28	$2,278	$5,770	
		0	90	90		109.1	109.9	0.8	1.6			F	8		110		1.4	278.0	279.3				1.6									$ 2.99	$ 3.50	$ 13,969	$ 1.95	$ 2.28	$9,110	$23,080	
		0	90	90		109.9	113.9	4.0	8.0			F	8		110		1.4	278.0	279.3				8.0									$ 2.99	$ 3.50	$ 69,846	$ 1.95	$ 2.28	$45,552	$115,398	
		0	90	90		113.9	114.1	0.2	0.4			F	8		110		1.4	278.0	279.3				0.4									$ 2.99	$ 3.50	$ 3,492	$ 1.95	$ 2.28	$2,278	$5,770	
		0	90	90		114.1	115.6	1.5	3.0			F	8		110		1.4	278.0	279.3				3.0									$ 2.99	$ 3.50	$ 26,192	$ 1.95	$ 2.28	$17,082	$43,274	
		Bonnot Junction	90	90		115.6	116.8	1.2	2.4			F	8		110		1.4	278.0	279.3				2.4									$ 2.99	$ 3.50	$ 20,954	$ 1.95	$ 2.28	$13,666	$34,620	
	Bonnot Junction	0	60	60		116.8	117.1	0.3	0.6			F	8		110		1.4	278.0	279.3		0.6											$ 1.01	$ 1.18	$ 1,770	$ 1.94	$ 2.27	$3,399	$5,168	
		0	90	90		117.1	121.6	4.5	9.0			F	8		110		1.4	278.0	279.3				9.0									$ 2.99	$ 3.50	$ 78,577	$ 1.95	$ 2.28	$51,246	$129,823	
		Moreau	90	90		121.6	123.7	2.1	4.2			F	8		110		1.4	278.0	279.3				4.2									$ 2.99	$ 3.50	$ 36,669	$ 1.95	$ 2.28	$23,915	$60,584	
	Moreau	Jefferson City	90	90		123.7	124.3	0.6	1.2			F	8		110		1.4	278.0	279.3				1.2									$ 2.99	$ 3.50	$ 10,477	$ 1.95	$ 2.28	$6,833	$17,310	
	Jefferson City	Jefferson City	60	60		124.3	128.1	3.8	7.6			F	8		110		1.4	278.0	279.3		7.6											$ 1.01	$ 1.18	$ 22,414	$ 1.94	$ 2.27	$43,052	$65,466	MP 125.5 - Jefferson City Station
	Jefferson City	River Junction	90	90		128.1	128.4	0.3	0.6			F	8		87		1.4	219.8	221.2				0.6									$ 2.99	$ 3.50	$ 5,238	$ 1.95	$ 2.28	$3,416	$8,655	
	River Junction	River Terminal	90	90		128.4	129.9	1.5	3.0			F	8		87		1.4	219.8	221.2				3.0									$ 2.99	$ 3.50	$ 26,192	$ 1.95	$ 2.28	$17,082	$43,274	
	River Terminal	0	90	90		129.9	132.3	2.4	4.8			F	8		87		1.4	219.8	221.2				4.8									$ 2.99	$ 3.50	$ 41,908	$ 1.95	$ 2.28	$27,331	$69,239	
150		Sedalia	90	90		132.3	188.9	56.6	113.2			F	8		87		1.4	219.8	221.2				113.2									$ 2.99	$ 3.50	$ 988,327	$ 1.95	$ 2.28	$644,561	$1,632,887	MP 140 - Centertown
	Sedalia	Sedalia	60	60		188.9	189.6	0.7	1.4			F	8		87		1.4	219.8	221.2		1.4											$ 1.01	$ 1.18	$ 4,129	$ 1.94	$ 2.27	$7,931	$12,060	MP 188.9 - Sedalia Station
250	Sedalia	Independence	90	90		189.6	271.2	81.6	163.2			F	8		87		1.4	219.8	221.2				163.2									$ 2.99	$ 3.50	1,424,867	$ 1.95	$ 2.28	$929,261	$2,354,127	MP 259.8 - Lees Summit Station
	Independence	Independence	60	60		271.2	271.3	0.1	0.2			F	8		87		1.4	219.8	221.2		0.2											$ 1.01	$ 1.18	$ 590	$ 1.94	$ 2.27	$1,133	$1,723	
	Independence	Rock Creek	79	79		271.3	276.8	5.5	11.0			F	8		87		1.4	219.8	221.2			11.0										$ 1.01	$ 1.18	$ 32,441	$ 1.94	$ 2.27	$62,313	$94,754	MP 273.2 - Independence Station
	Rock Creek	Broadway	60	60		276.8	282.5	5.7	11.4			F	10		125		1.7	315.9	317.6		11.4											$ 1.01	$ 1.18	$ 42,026	$ 1.94	$ 2.27	$80,723	$122,750	
	Broadway	Kansas City	30	30		282.5	283	0.5	1.0			F	10		125		1.7	315.9	317.6	1.0												$ 1.01	$ 1.18	$ 3,687	$ 1.94	$ 2.27	$7,081	$10,768	MP 273.0 - Kansas City Station
								283.0	566.0																													
									566.0											3.8	33.6	28.4	500.2	0.0									$ 188.74	$ 220.80	$ 4,577,004 Matrix 41	$ 144.75		$3,242,064	$ 7,819,068	

Note: Infrastructure and speeds assumed to "ballpark" maintenance and cyclic capital costs. Capacity anaylis required to determine infrastructure required.
*State of Missouri Specified Maximum Authorized Train Speed
Amtrak believes that UPRR will permit a Maximum Authorized Train Speed of 79 mph.

HNTB
1-Feb-04
CHQ

	Maintenance	Capital	Total
High	$4,577,004	$3,242,064	$7,819,068
Median	$3,798,913	$2,690,913	$6,489,826
Low	$3,020,822	$2,139,762	$5,160,585

CHICAGO TO CARBONDALE

Global MP	From Station	To Station	Main #1	Main #2	Main #3	MP Begin	MP End	Segment Length	Total Track Miles	Predom. Traffic P	Predom. Traffic E	Predom. Traffic F	No of Trains P	No of Trains F	Curr Tons F	RR Escall. %	2022 Tonnage P	2022 Tonnage F	2022 Tonnage Tot	FRA Track Class 2	FRA Track Class 3	FRA Track Class 4	FRA Track Class 5	FRA Track Class 6
0	Chicago	21 Street	45	45	45	523.0	520.9	2.1	6.3	P			10	0	0.0	0.015	1.7	0.0	1.7		6.3			
	21 Street	Englewood	79	79		520.9	516.3	4.6	9.2	P			10	0	0.0	0.015	1.7	0.0	1.7			9.2		
	Englewood	Englewood	45	45		516.3	515.2	1.1	2.2	P			10	0	0.0	0.015	1.7	0.0	1.7		2.2			
	Englewood	Gr. Xing	79	79		515.2	513.7	1.5	3.0	P			10	0	0.0	0.015	1.7	0.0	1.7			3.0		
	Gr. Xing	Gr. Xing	45	45		513.7	513.4	0.3	0.6	P			10	0	0.0	0.00	1.7	0.0	1.7		0.6			
	Gr. Xing	N. Kensington	79	79		10.0	13.0	3.0	6.0	P			10	0	0.0	0.02	1.7	0.0	1.7			6.0		
	N. Kensington	Kensington	79	79		13.0	14.2	1.2	2.4		E		10	1	0.8	0.02	1.7	1.2	2.9			2.4		
	Kensington	CN Junction	79	79		14.2	23.5	9.3	18.6			F	10		11.2	0.02	1.7	16.3	18.0			18.6		
	CN Junction	Stuenkel	79	79		14.4	31.6	17.2	34.4			F	10		24.6	0.02	1.7	35.8	37.5			34.4		
	Stuenkel	Manteno	90	90		31.6	49.5	17.9	35.8			F	10		34.7	0.02	1.7	50.6	52.3				35.8	
50	Manteno	Kankankee	79	79		49.5	55.2	5.7	11.4			F	10		34.7	0.02	1.7	50.6	52.3			11.4		
	Kankankee	Kankankee	50	50		55.2	56.4	1.2	2.4			F	10		34.7	0.02	1.7	50.6	52.3		2.4			
	Kankankee	S. Otto	79	79		56.4	61.2	4.8	9.6			F	10		34.7	0.02	1.7	50.6	52.3			9.6		
	S. Otto	Gilman	90	90		61.2	80.5	19.3	38.6			F	10		34.7	0.02	1.7	50.6	52.3				38.6	
	Gilman	Gilman	60	60		80.5	81.2	0.7	1.4			F	10		36.4	0.02	1.7	53.0	54.7		1.4			
100	Gilman	Rantoul	90	90		81.2	113.0	31.8	63.6			F	10		36.4	0.02	1.7	53.0	54.7				63.6	
	Rantoul	Rantoul	60	60		113.0	114.0	1.0	2.0			F	10		36.4	0.02	1.7	53.0	54.7		2.0			
	Rantoul	Rantoul	79	79		114.0	115.8	1.8	3.6			F	10		38.0	0.02	1.7	55.4	57.1			3.6		
	Rantoul	Leverett	90	90		115.8	124.1	8.3	16.6			F	10		38.0	0.02	1.7	55.4	57.1				16.6	
	Leverett	Leverett	79	79		124.1	125.9	1.8	3.6			F	10		38.0	0.02	1.7	55.4	57.1			3.6		
	Leverett	Champaign	60	60		125.9	127.3	1.4	2.8			F	10		38.0	0.02	1.7	55.4	57.1		2.8			
	Champaign	Champaign	79	79		127.3	128.0	0.7	1.4			F	10		38.0	0.02	1.7	55.4	57.1			1.4		
	Champaign	Tolono	90	90		128.0	137.0	9.0	18.0			F	4		38.0	0.02	0.7	55.4	56.0				18.0	
	Tolono	Tolono	60	60		137.0	137.2	0.2	0.4			F	4		39.7	0.02	0.7	57.8	58.5		0.4			
150	Tolono	Mattoon	90	90		137.2	172.3	35.1	70.2			F	4		40.7	0.02	0.7	59.3	60.0				70.2	
	Mattoon	Mattoon	60	60		172.3	174.6	2.3	4.6			F	4		43.5	0.02	0.7	63.4	64.1		4.6			
	Mattoon	N. Effingham	90	90		174.6	198.0	23.4	46.8			F	4		43.5	0.02	0.7	63.4	64.1				46.8	
200	N. Effingham	Effingham	60	60		198.0	202.0	4.0	8.0			F	4		43.5	0.02	0.7	63.4	64.1		8.0			
	Effingham	Odin	90	90		202.0	244.1	42.1	84.2			F	4		49.5	0.02	0.7	72.1	72.8				84.2	
	Odin	Odin	60	60		244.1	244.7	0.6	1.2			F	4		36.2	0.02	0.7	52.7	53.4		1.2			
250	Odin	Sandoval	90	90		244.7	250.7	6.0	12.0			F	4		36.2	0.02	0.7	52.7	53.4				12.0	
	Sandoval	Centralia	60	60		250.7	252.0	1.3	2.6			F	4		28.4	0.02	0.7	41.4	42.1		2.6			
	Centralia	Centralia	35	35		252.0	252.4	0.4	0.8			F	4		28.4	0.02	0.7	41.4	42.1		0.8			
	Centralia	Centralia	60	60		252.4	253.1	0.7	1.4			F	4		28.4	0.02	0.7	41.4	42.1		1.4			
	Centralia	31 Switch	60	60		253.1	253.3	0.2	0.4			F	4		34.6	0.02	0.7	50.4	51.1		0.4			
	31 Switch	Tamarda	90	90		253.3	279.0	25.7	51.4			F	4		34.7	0.02	0.7	50.6	51.2				51.4	
	Tamarda	Tamarda	60	60		279.0	281.0	2.0	4.0			F	4		36.0	0.02	0.7	52.4	53.1		4.0			
	Tamarda	Duquoin	90	90		281.0	287.6	6.6	13.2			F	4		36.0	0.02	0.7	52.4	53.1				13.2	
	Duquoin	Eldorado	60	60		287.6	288.7	1.1	2.2			F	4		36.0	0.02	0.7	52.4	53.1		2.2			
300	Eldorado	Carbondale	90	90		288.7	307.8	19.1	38.2			F	4		36.0	0.02	0.7	52.4	53.1				38.2	
	Carbondale	Carbondale	20	20		307.8	309.0	1.2	2.4			F	4		36.4	0.02	0.7	53.0	53.7	2.4				
							Total Route Miles	308.4							Note 1	Note 2				2.4	43.3	103.2	488.6	0.0
							Total Track Miles		637.5															
									637.5															

From Station	To Station	MGT < 5	MGT 5-15	MGT 15-30	MGT > 30	Curvature Lgt	Curvature Mod	Curvature Sev	Matrix 41 Cost/Mile	Convert Cost/Mile to a 312 day year	ZT Maint Cost x Track Miles x # of Annual Train Miles	Cyclic Capital Cost Per Train Mile Wood (Max) Z-T Matrix 42	Convert Cost/Mile to a 312 day year	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Maint. Cost	Remarks
Chicago	21 Street								$ 2.05	$ 2.40	$ 47,140	$ 2.53	$ 2.96	$ 58,177	$ 105,317	MP 0.0 - Chicago
21 Street	Englewood								$ 2.05	$ 2.40	$ 68,839	$ 2.53	$ 2.96	$ 84,957	$ 153,796	
Englewood	Englewood								$ 2.29	$ 2.68	$ 18,389	$ 2.60	$ 3.04	$ 20,878	$ 39,267	
Englewood	Gr. Xing								$ 2.05	$ 2.40	$ 22,448	$ 2.53	$ 2.96	$ 27,704	$ 50,151	
Gr. Xing	Gr. Xing								$ 2.29	$ 2.68	$ 5,015	$ 2.60	$ 3.04	$ 5,694	$ 10,709	
Gr. Xing	N. Kensington								$ 2.05	$ 2.40	$ 44,895	$ 2.53	$ 2.96	$ 55,407	$ 100,302	
N. Kensington	Kensington								$ 1.44	$ 1.68	$ 12,614	$ 2.18	$ 2.55	$ 19,097	$ 31,711	
Kensington	CN Junction								$ 0.96	$ 1.12	$ 65,174	$ 1.92	$ 2.25	$ 130,349	$ 195,523	
CN Junction	Stuenkel								$ 0.96	$ 1.12	$ 120,538	$ 1.92	$ 2.25	$ 241,075	$ 361,613	MP 17.9 - Homewood
Stuenkel	Manteno								$ 2.85	$ 3.33	$ 372,410	$ 1.92	$ 2.25	$ 250,886	$ 623,296	
Manteno	Kankankee								$ 0.96	$ 1.12	$ 39,946	$ 1.92	$ 2.25	$ 79,891	$ 119,837	
Kankankee	Kankankee								$ 0.96	$ 1.12	$ 8,410	$ 1.92	$ 2.25	$ 16,819	$ 25,229	MP 55.3 - Kankankee
Kankankee	S. Otto								$ 0.96	$ 1.12	$ 33,638	$ 1.92	$ 2.25	$ 67,277	$ 100,915	MP 61.1 - Gilman
S. Otto	Gilman								$ 2.85	$ 3.33	$ 401,537	$ 1.92	$ 2.25	$ 270,509	$ 672,045	
Gilman	Gilman								$ 0.96	$ 1.12	$ 4,906	$ 1.92	$ 2.25	$ 9,811	$ 14,717	
Gilman	Rantoul								$ 2.85	$ 3.33	$ 661,599	$ 1.92	$ 2.25	$ 445,709	$ 1,107,308	
Rantoul	Rantoul								$ 0.96	$ 1.12	$ 7,008	$ 1.92	$ 2.25	$ 14,016	$ 21,024	MP 113.8 - Rantoul
Rantoul	Rantoul								$ 0.96	$ 1.12	$ 12,614	$ 1.92	$ 2.25	$ 25,229	$ 37,843	
Rantoul	Leverett								$ 2.85	$ 3.33	$ 172,682	$ 1.92	$ 2.25	$ 116,333	$ 289,014	
Leverett	Leverett								$ 0.96	$ 1.12	$ 12,614	$ 1.92	$ 2.25	$ 25,229	$ 37,843	
Leverett	Champaign								$ 0.96	$ 1.12	$ 9,811	$ 1.92	$ 2.25	$ 19,622	$ 29,434	
Champaign	Champaign								$ 0.96	$ 1.12	$ 4,906	$ 1.92	$ 2.25	$ 9,811	$ 14,717	MP 127.8 - Champaign
Champaign	Tolono								$ 2.85	$ 3.33	$ 74,898	$ 1.92	$ 2.25	$ 50,458	$ 125,356	
Tolono	Tolono								$ 0.96	$ 1.12	$ 561	$ 1.92	$ 2.25	$ 1,121	$ 1,682	
Tolono	Mattoon								$ 2.85	$ 3.33	$ 292,102	$ 1.92	$ 2.25	$ 196,785	$ 488,887	
Mattoon	Mattoon								$ 0.96	$ 1.12	$ 6,447	$ 1.92	$ 2.25	$ 12,895	$ 19,342	MP 172.4 - Mattoon
Mattoon	N. Effingham								$ 2.85	$ 3.33	$ 194,735	$ 1.92	$ 2.25	$ 131,190	$ 325,925	
N. Effingham	Effingham								$ 0.96	$ 1.12	$ 11,213	$ 1.92	$ 2.25	$ 22,426	$ 33,638	MP 199.2 - Effingham
Effingham	Odin								$ 2.85	$ 3.33	$ 350,356	$ 1.92	$ 2.25	$ 236,029	$ 586,386	
Odin	Odin								$ 0.96	$ 1.12	$ 1,682	$ 1.92	$ 2.25	$ 3,364	$ 5,046	
Odin	Sandoval								$ 2.85	$ 3.33	$ 49,932	$ 1.92	$ 2.25	$ 33,638	$ 83,570	
Sandoval	Centralia								$ 0.96	$ 1.12	$ 3,644	$ 1.92	$ 2.25	$ 7,288	$ 10,932	
Centralia	Centralia								$ 0.96	$ 1.12	$ 1,121	$ 1.92	$ 2.25	$ 2,243	$ 3,364	
Centralia	Centralia								$ 0.96	$ 1.12	$ 1,962	$ 1.92	$ 2.25	$ 3,924	$ 5,887	
Centralia	31 Switch								$ 0.96	$ 1.12	$ 561	$ 1.92	$ 2.25	$ 1,121	$ 1,682	MP 253.2 - Centralia
31 Switch	Tamarda								$ 2.85	$ 3.33	$ 213,875	$ 1.92	$ 2.25	$ 144,084	$ 357,960	
Tamarda	Tamarda								$ 0.96	$ 1.12	$ 5,606	$ 1.92	$ 2.25	$ 11,213	$ 16,819	
Tamarda	Duquoin								$ 2.85	$ 3.33	$ 54,925	$ 1.92	$ 2.25	$ 37,002	$ 91,927	MP 287.5 - Duquoin
Duquoin	Eldorado								$ 0.96	$ 1.12	$ 3,084	$ 1.92	$ 2.25	$ 6,167	$ 9,251	
Eldorado	Carbondale								$ 2.85	$ 3.33	$ 158,950	$ 1.92	$ 2.25	$ 107,082	$ 266,032	
Carbondale	Carbondale								$ 0.96	$ 1.12	$ 3,364	$ 1.92	$ 2.25	$ 6,728	$ 10,092	MP 308.1 - Carbondale
											$ -					
											$ -					
									$ 69.54	$ 81.35	$ 3,576,150			$ 3,009,239	$ 6,585,388	

HNTB
1-Feb-04
CHQ

FRA Class	Speeds	
FRA Class 2	30 - 25	
FRA Class 3	60 - 40	
FRA Class 4	80 - 60	
FRA Class 5	90 - 80	
FRA Class 6	110 - 80	

	FRT	PASS	
			550
PP	1	16	**5900**
E	2	16	
PF	6	16	1.170

	Maintenance	Capital	Total
High	$3,576,150	$3,009,239	$6,585,388
Median	$2,968,204	$2,497,668	$5,465,872
Low	$2,360,259	$1,986,098	$4,346,356

Note 1: CN (O'Brien) Furnished 2002 Tonnage Data 12-05-03
Note 2: CN (O'Brien) Furnished Annual Growth Figures 01-05-04