Appendix M – MWRRI Planning Phase 5 Model for Annual Cyclic Capial Costs

HNTB **SUMMARY OF MIDWEST REGIONAL RAIL SYSTEM MAINTENANCE COSTS**

From	To	Through	Total Mileage	FRA Track Class 2	3	4	5	6	Total Track Mileage	ZT Maint Cost x Seg. Length x # of Annual Train Miles	Maximum Number of Pass. Trains	Highest Proposed Pass. Trn. Speed	Max. Corr. Freight Tonnage 2022	Cap. Cost Per Train Mile Times Total No. of Miles	Total Cost Capital Cost Plus Different. Maint. Cost
Chicago	Pontiac	Detroit	301.7	0.4	56.5	99.7	3.0	298.6	458.2	$ 8,855,515	30	110	125	$ 6,954,374	$ 15,809,889
Chicago	St. Louis	Springfield	283.5	5.0	25.2	96.2	0.0	206.5	332.9	$ 4,180,531	16	110	66	$ 3,048,106	$ 7,228,638
Chicago	St. Paul	Madison	443	3.8	28.6	71.8	187.0	598.6	889.8	$ 12,096,577	34	110	79	$ 7,451,580	$ 19,548,157
Port Huron	Battle Creek	Flint	158.4	0.8	36.8	187.7	0.0	0.0	225.3	$ 653,965	8	79	55	$ 1,290,964	$ 1,944,929
Holland	Kalamazoo	Grand Rapids	74.1	0.5	5.3	78.6	0.0	0.0	84.4	$ 316,581	8	79	27	$ 515,538	$ 832,118
Chicago	Cleveland	Fort Wayne	346.5	0.0	34.5	149.6	0.0	303.8	487.9	$ 7,412,032	18	110	10	$ 6,722,939	$ 14,134,971
Chicago	Quincy	Galesburg	258.6	0.0	48.5	17.2	404.4	0.0	470.1	$ 2,679,281	18	110	72	$ 2,189,523	$ 4,868,804
Chicago	Omaha	Quad Cities	475.1	0.0	77.5	514.2	204.0	0.0	795.7	$ 1,845,468	18	110	72	$ 3,567,492	$ 5,412,960
Chicago	Cincinnati	Indianapolis	309.9	4.6	60.8	202.7	0.0	181.1	449.2	$ 4,440,835	12	110	91	$ 4,720,840	$ 9,161,675
Milwaukee	Green Bay	West Bend	128.6	0.7	30.0	72.1	0.0	84.2	187.0	$ 1,525,099	14	110	70	$ 1,443,457	$ 2,968,556
St. Louis	Kansas City	Jefferson City	283.0	3.8	33.6	28.4	500.2	0.0	566.0	$ 4,577,004	8	90*	278	$ 3,242,064	$ 7,819,068
Chicago	Carbondale	Champaign	308.4	2.4	43.3	103.2	488.6	0.0	637.5	$ 3,576,150	10	90	50	$ 3,009,239	$ 6,585,388
Totals			3,370.7	22.0	480.6	1,621.4	1,787.2	1,672.8	5,584.0	$ 52,159,036	194			$ 44,156,117	$ 96,315,153

		Maintenance	Cyclic	Total
Estimated Number of Annual Train Miles at Full Buildout	**13,767,031**			
	Cost/TM	**$ 3.79**	**$ 3.21**	**$ 7.00**

Charlie Quandel of HNTB interpreted the FRA Technical Monograph dated January 2004; assured that infrastructure shown herein reflected the infrastructure used in the capital cost estimates; and calculated the maintenance and cyclic capital costs presented in this report

Robert Kollmar of Amtrak developed spreadsheet linkages, infrastructure build-up, and assembled freight information

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

R. A. Kollmar's Calculations | COMPLETE TEMS Calculations

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	TEMS 2010 Tons F	TEMS RR Escal. %	TEMS 2022 Tonnage P	TEMS 2022 Tonnage F	TEMS 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	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	##	##		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	##	##		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	##			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	##			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	##			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	##			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	##	##		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	##			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	##			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	##	##		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	##	##		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	##	##		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	

	2	3	4	5	6
	0.4				
		56.5			
			99.7		
				3.0	
					298.6

	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

HNTB
1-Feb-04
CHQ

Legend

(pink)	FRA Class 2	30 - 25		**FRT**	**PASS**	**550**
(orange)	FRA Class 3	60 - 40	**PP**	1	16	**5900**
(yellow)	FRA Class 4	80 - 60	**E**	2	16	
(light blue)	FRA Class 5	90 - 80	**PF**	6	16	1.170
(light green)	FRA Class 6	110 - 80				

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

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	COMPLETE 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	5-15	15-30	> 30	Curvature Lgt	Mod	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	##			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	##			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	##			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	##			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	##			158.7	181.8	23.1	23.1		E		16	4	3.0	0.015	2.7	4.0	6.7	23.4	0.014	0.7	27.6	28.3					23.1								$ 3.40	$ 3.98	$ 458,674	$ 2.28	$ 2.67	$ 307,581	$ 766,255	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	##			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	##			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	##			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
																																						$ 4,180,531	$ 45.01		$ 3,048,106	$ 7,228,638	

275.7 — Total Route Miles 283.5 — Total Track Miles 332.9

Track Miles By Class: 5.0 25.2 96.2 0.0 206.5

Matrix 41 — Matrix 41

HNTB
1-Feb-04
CHQ

	Note 1	Note 2
2	5.0	
3	25.2	
4	96.2	
5	0.0	
6	206.5	

Legend

FRA Class 2	30 - 25		**FRT'ASS**		**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				

	Maintenance	Capital	Total
High	$4,180,531	$3,048,106	$7,228,638
Median	$3,469,841	$2,529,928	$5,999,769
Low	$2,759,151	$2,011,750	$4,770,901

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	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	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	##	##	##	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	##	##	##	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	##	##	##	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	##	##	##	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	##	##	##	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	##	##		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	##	##		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	##			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	##			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	##			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)	##			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	##	##	##	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	##	##	##	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	##	##	##	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	

Total Route Mile 443.0

Total Track Mile 889.8

Note 1

Note 2

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

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

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	TEMS Calculations: COMPLETE 2010 Tons F	2010 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	$ 1.92	$ 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				0.8	36.8	187.7	0.0	0.0																			
																1																													
	HNTB					Total Track Mile		225.3								2																													
	1-Feb-04																			0.8																									
	CHQ																				36.8																								
																						187.7																							
																							0.0																						
																								0.0																					

	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	Station	Pass. 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	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
									R. A. Kollmar's Calculations											COMPLETE TEMS Calculations																							
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
1-Feb-04
CHQ

Total Track Mile		84.4
FRT	**PASS**	**550**
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

	Maintenance	Capital	Total
High	$316,581	$515,538	$832,118
Median	$262,762	$427,896	$690,658
Low	$208,943	$340,255	$549,198

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	3	4	5	6	MGT < 5	5-15	15-30	> 30	Curvature Lgt	Mod	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																																						
HNTB						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	
1-Feb-04										**Legend**																																			
CHQ						Total Track Miles		0.0																																				
																									0.0																				
																										34.5																		
																											149.6																	
																												0.0																
																													303.8															

	FRT	PASS
PP	1	16
E	2	16
PF	6	16

	FRA Class 2
	FRA Class 3
	FRA Class 4
	FRA Class 5
	FRA Class 6

	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	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	BNSF 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	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
	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		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	0.015	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	0.015	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	0.015	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	0.015	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	0.015	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	
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				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	0.015	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
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				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	0.015	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	
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				###									$ 1.19	$ 1.39	$ 378,058	$ 0.87	$ 1.02	$ 276,396	$ 654,454	MP 162.4 - Galesburg
	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		9.2											$ 0.45	$ 0.53	$ 12,089	$ 0.84	$ 0.98	$ 22,566	$ 34,655	
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				91.6									$ 1.19	$ 1.39	$ 318,292	$ 0.87	$ 1.02	$ 232,701	$ 550,992	MP 202.6 - McComb
	Quincy	Mississippi R.	60			258.6	258.6	0.0	0.0			F	8		37	0.015	1.4	49.1	50.5	49.7	0.014	8.4	58.7	67.1		0.0											$ 0.40	$ 0.47	$ -	$ 0.78	$ 0.91	$ -	$ -	MP 258.6 - Quiincy
																																							$ 2,679,281	$ 15.40		$ 2,189,523	$ 4,868,804	

Total Miles 258.6 470.1 Track Miles By Class Note 1 0.0 48.5 17.2 ### 0.0 Matrix 41 Matrix 41

Note 2

HNTB
1-Feb-04
CHQ

Total Track Mile 470.1

	FRT	PASS	
PP	1	16	5900
E	2	16	7500
PF	6	16	1.170

Legend

30 - 25	FRA Class 2	0.0
60 - 40	FRA Class 3	48.5
60 - 80	FRA Class 4	17.2
90 - 80	FRA Class 5	###
110 - 80	FRA Class 6	0.0

	Maintenance	Capital	Total
High	$2,679,281	$2,189,523	$4,868,804
Median	$2,223,803	$1,817,304	$4,041,107
Low	$1,768,325	$1,445,085	$3,213,410

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	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: 2010 Tons F	RR Escal. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	3	4	5	6	MGT < 5	5-15	15-30	> 30	Curvature Lgt	Mod	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
																								0.0	77.5	514.2	204.0	0.0																
		Total Miles by Segment					475.1																													**WYANET TO OMAHA**	$ 1,845,468	$ 41.74			$ 3,567,492	$ 5,412,960	
		Total Miles by Total Track						795.7																												***NIC in total is Chicago to Wyanet***							
		Total Miles by Track Class																																										

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	Note 1	Note 2
	3	4

Total Track Miles 0.0

	FRT	PASS	550
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

	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 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	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. %	2010 Tonnage P	2010 Tonnage F	2010 Tonnage Tot	FRA Track Class 2	3	4	5	6	MGT < 5	5-15	15-30	> 30	Curvature Lgt	Mod	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
			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 Terminal		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																		4.6	60.8	202.7	0.0	###										$ 4,440,835	$ 109.31		$ 4,720,840	$ 9,161,675	
							449.2								Note 1						Note 2																Matrix 41		Matrix 41					

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Total Track M 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

	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

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	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	5-15	15-30	> 30	Curvature Lgt	Mod	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	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	0.0	0.0015	5.8	0.0	5.8	0.3	0.6											$ 2.05	$ 2.40	$ 7,632	$ 2.53	$ 2.96	$ 28,258	$ 35,890	MP 85.7 - Milwaukee Station
	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							6.6										$ 0.30	$ 0.35	$ 8,191	$ 0.56	$ 0.66	$ 45,867	$ 54,058	
	Grand Avenue		35	35		88.2	88.3	0.1	0.2			F	14			0.03	2.4									0.2										$ 0.45	$ 0.53	$ 230	$ 0.84	$ 0.98	$ 858	$ 1,088	
			79	79		88.3	93.4	5.1	10.2	P			14				2.4										10.2									$ 2.15	$ 2.52	$ 56,031	$ 2.56	$ 2.99	$ 133,432	$ 189,463	
			110			94.1	95.0	0.9	0.9	P			14				2.4												0.9							$ 3.11	$ 3.64	$ 14,303	$ 2.60	$ 3.04	$ 11,957	$ 26,260	
	Granville, WI		110	110		95.0	100.0	5.0	10.0	P			14				2.4												10.0							$ 3.11	$ 3.64	$ 158,921	$ 2.60	$ 3.04	$ 132,860	$ 291,781	MP 99.4 - Granville Station
			110			100.0	100.6	0.6	0.6	P			14				2.4												0.6							$ 3.11	$ 3.64	$ 9,535	$ 2.60	$ 3.04	$ 7,972	$ 17,507	
			60			98.4	99.5	1.1	1.1	P			14				2.4									1.1										$ 2.15	$ 2.52	$ 12,085	$ 2.56	$ 2.99	$ 14,390	$ 26,475	
			110			99.5	114.4	14.9	14.9	P			14				2.4												14.9							$ 3.11	$ 3.64	$ 237,110	$ 2.60	$ 3.04	$ 198,227	$ 435,337	
			110			114.4	117.0	2.6	2.6	P			14				2.4												2.6							$ 3.11	$ 3.64	$ 41,002	$ 2.60	$ 3.04	$ 34,278	$ 75,279	
	West Bend, WI		60	60		117.0	119.0	2.0	4.0	P			14				2.4									4.0										$ 2.15	$ 2.52	$ 43,946	$ 2.56	$ 2.99	$ 52,326	$ 96,272	MP 118.8 - West Bend Station
50			110			119.0	138.2	19.2	19.2	P			14				2.4												19.2							$ 3.11	$ 3.64	$ 305,128	$ 2.60	$ 3.04	$ 255,091	$ 560,220	
			110	110		138.2	141.0	2.8	5.6	P			14				2.4												5.6							$ 3.11	$ 3.64	$ 88,996	$ 2.60	$ 3.04	$ 74,402	$ 163,397	
			110			141.0	145.5	4.5	4.5	P			14				2.4												4.5							$ 3.11	$ 3.64	$ 71,514	$ 2.60	$ 3.04	$ 59,787	$ 131,301	
			40			145.5	146.0	0.5	0.5			F	14				2.4									0.5										$ 0.42	$ 0.49	$ 1,159	$ 0.80	$ 0.94	$ 2,208	$ 3,366	
	Fond Du Lac, WI		45	45		155.0	160.4	5.4	10.8			F	14				2.4									10.8										$ 0.42	$ 0.49	$ 23,179	$ 0.80	$ 0.94	$ 44,150	$ 67,329	MP 148.5 - Fond du Lac Station
			110	110		160.4	168.8	8.4	16.8			F	14				2.4												16.8							$ 2.38	$ 2.78	$ 204,318	$ 1.07	$ 1.25	$ 91,857	$ 296,176	
	Oshkosh, WI		79	79		168.8	177.8	9.0	18.0			F	14				2.4										18.0									$ 0.42	$ 0.49	$ 38,632	$ 0.80	$ 0.94	$ 73,584	$ 112,216	MP 165.5 - Oshkosh Station
			110	110		177.8	180.0	2.2	4.4			F	14				2.4												4.4							$ 2.38	$ 2.78	$ 53,512	$ 1.07	$ 1.25	$ 24,058	$ 77,570	
			110			180.0	184.7	4.7	4.7			F	14				2.4												4.7							$ 2.38	$ 2.78	$ 57,160	$ 1.07	$ 1.25	$ 25,698	$ 82,859	
	Neenah, WI		45	45		184.7	187.5	2.8	5.6			F	14				2.4									5.6										$ 0.42	$ 0.49	$ 12,019	$ 0.80	$ 0.94	$ 22,893	$ 34,912	MP 177.5 - Neenah Station
			45			187.5	188.1	0.6	0.6			F	14				2.4									0.6										$ 0.42	$ 0.49	$ 1,180	$ 0.80	$ 0.94	$ 2,248	$ 3,429	
100	Appleton, WI		79			209.3	215.3	6.0	6.0			F	14				2.4										6.0									$ 0.42	$ 0.49	$ 12,877	$ 0.80	$ 0.94	$ 24,528	$ 37,405	MP 183.5 - Appleton Station
			79	79		215.3	220.5	5.2	10.4			F	14				2.4										10.4									$ 0.42	$ 0.49	$ 22,320	$ 0.80	$ 0.94	$ 42,515	$ 64,836	
			79			220.5	222.0	1.5	1.5			F	14				2.4										1.5									$ 0.42	$ 0.49	$ 3,219	$ 0.80	$ 0.94	$ 6,132	$ 9,351	
			79			222.0	236.3	14.3	14.3			F	14				2.4										14.3									$ 0.42	$ 0.49	$ 30,691	$ 0.80	$ 0.94	$ 58,458	$ 89,149	
			79	79		236.3	241.7	5.4	10.8			F	14				2.4										10.8									$ 0.42	$ 0.49	$ 23,179	$ 0.80	$ 0.94	$ 44,150	$ 67,329	
			79			241.7	242.6	0.9	0.9			F	14				2.4										0.9									$ 0.42	$ 0.49	$ 1,932	$ 0.80	$ 0.94	$ 3,679	$ 5,611	
128.6	Green Bay		10			242.6	243.0	0.4	0.4			F	14				2.4								0.4											$ 0.45	$ 0.53	$ 920	$ 0.84	$ 0.98	$ 1,717	$ 2,637	MP 213.5 - Green Bay Station
									99.4																											$46.34	$ 54.21	$ 1,525,099	$ 45.26		$ 1,443,457	$ 2,968,556	

99.4	Granville, WI	13.7
118.8	West Bend, WI	33.1
148.5	Fond Du Lac, WI	62.8
165.5	Oshkosh, WI	79.8
177.5	Neenah, WI	91.8
183.5	Appleton, WI	97.8
213.5	GREEN BAY, WI	127.8

HNTB
1-Feb-04
CHQ

Total Segment Miles	128.6		Note	7.7
Total Track Miles		187.0	1	6.5
Total Track Miles (by Class)		187.0	2	47.6
				33.1
				33.7
Total Track Mile	0.0			128.6

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: CP (Don Heron) Furnished 2002 Tonnage Data

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

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

	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

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										3.8	33.6	28.4	500.2	0.0								$ 188.74	$ 220.80	$ 4,577,004	$ 144.75		$3,242,064	$ 7,819,068	
										566.0																									Matrix 41					

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	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	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											$ 2.05	$ 2.40	$ 47,140	$ 2.53	$ 2.96	$ 58,177	$ 105,317	MP 0.0 - Chicago
	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										$ 2.05	$ 2.40	$ 68,839	$ 2.53	$ 2.96	$ 84,957	$ 153,796	
	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											$ 2.29	$ 2.68	$ 18,389	$ 2.60	$ 3.04	$ 20,878	$ 39,267	
	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										$ 2.05	$ 2.40	$ 22,448	$ 2.53	$ 2.96	$ 27,704	$ 50,151	
	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											$ 2.29	$ 2.68	$ 5,015	$ 2.60	$ 3.04	$ 5,694	$ 10,709	
	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										$ 2.05	$ 2.40	$ 44,895	$ 2.53	$ 2.96	$ 55,407	$ 100,302	
	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										$ 1.44	$ 1.68	$ 12,614	$ 2.18	$ 2.55	$ 19,097	$ 31,711	
	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										$ 0.96	$ 1.12	$ 65,174	$ 1.92	$ 2.25	$ 130,349	$ 195,523	
	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										$ 0.96	$ 1.12	$ 120,538	$ 1.92	$ 2.25	$ 241,075	$ 361,613	MP 17.9 - Homewood
	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									$ 2.85	$ 3.33	$ 372,410	$ 1.92	$ 2.25	$ 250,886	$ 623,296	
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										$ 0.96	$ 1.12	$ 39,946	$ 1.92	$ 2.25	$ 79,891	$ 119,837	
	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											$ 0.96	$ 1.12	$ 8,410	$ 1.92	$ 2.25	$ 16,819	$ 25,229	MP 55.3 - Kankankee
	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										$ 0.96	$ 1.12	$ 33,638	$ 1.92	$ 2.25	$ 67,277	$ 100,915	MP 61.1 - Gilman
	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									$ 2.85	$ 3.33	$ 401,537	$ 1.92	$ 2.25	$ 270,509	$ 672,045	
	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											$ 0.96	$ 1.12	$ 4,906	$ 1.92	$ 2.25	$ 9,811	$ 14,717	
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									$ 2.85	$ 3.33	$ 661,599	$ 1.92	$ 2.25	$ 445,709	$ 1,107,308	
	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											$ 0.96	$ 1.12	$ 7,008	$ 1.92	$ 2.25	$ 14,016	$ 21,024	MP 113.8 - Rantoul
	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										$ 0.96	$ 1.12	$ 12,614	$ 1.92	$ 2.25	$ 25,229	$ 37,843	
	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									$ 2.85	$ 3.33	$ 172,682	$ 1.92	$ 2.25	$ 116,333	$ 289,014	
	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										$ 0.96	$ 1.12	$ 12,614	$ 1.92	$ 2.25	$ 25,229	$ 37,843	
	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											$ 0.96	$ 1.12	$ 9,811	$ 1.92	$ 2.25	$ 19,622	$ 29,434	
	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										$ 0.96	$ 1.12	$ 4,906	$ 1.92	$ 2.25	$ 9,811	$ 14,717	MP 127.8 - Champaign
	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									$ 2.85	$ 3.33	$ 74,898	$ 1.92	$ 2.25	$ 50,458	$ 125,356	
	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											$ 0.96	$ 1.12	$ 561	$ 1.92	$ 2.25	$ 1,121	$ 1,682	
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									$ 2.85	$ 3.33	$ 292,102	$ 1.92	$ 2.25	$ 196,785	$ 488,887	
	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											$ 0.96	$ 1.12	$ 6,447	$ 1.92	$ 2.25	$ 12,895	$ 19,342	MP 172.4 - Mattoon
	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									$ 2.85	$ 3.33	$ 194,735	$ 1.92	$ 2.25	$ 131,190	$ 325,925	
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											$ 0.96	$ 1.12	$ 11,213	$ 1.92	$ 2.25	$ 22,426	$ 33,638	MP 199.2 - Effingham
	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									$ 2.85	$ 3.33	$ 350,356	$ 1.92	$ 2.25	$ 236,029	$ 586,386	
	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											$ 0.96	$ 1.12	$ 1,682	$ 1.92	$ 2.25	$ 3,364	$ 5,046	
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									$ 2.85	$ 3.33	$ 49,932	$ 1.92	$ 2.25	$ 33,638	$ 83,570	
	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											$ 0.96	$ 1.12	$ 3,644	$ 1.92	$ 2.25	$ 7,288	$ 10,932	
	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											$ 0.96	$ 1.12	$ 1,121	$ 1.92	$ 2.25	$ 2,243	$ 3,364	
	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											$ 0.96	$ 1.12	$ 1,962	$ 1.92	$ 2.25	$ 3,924	$ 5,887	
	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											$ 0.96	$ 1.12	$ 561	$ 1.92	$ 2.25	$ 1,121	$ 1,682	MP 253.2 - Centralia
	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									$ 2.85	$ 3.33	$ 213,875	$ 1.92	$ 2.25	$ 144,084	$ 357,960	
	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											$ 0.96	$ 1.12	$ 5,606	$ 1.92	$ 2.25	$ 11,213	$ 16,819	
	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									$ 2.85	$ 3.33	$ 54,925	$ 1.92	$ 2.25	$ 37,002	$ 91,927	MP 287.5 - Duquoin
	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											$ 0.96	$ 1.12	$ 3,084	$ 1.92	$ 2.25	$ 6,167	$ 9,251	
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									$ 2.85	$ 3.33	$ 158,950	$ 1.92	$ 2.25	$ 107,082	$ 266,032	
	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												$ 0.96	$ 1.12	$ 3,364	$ 1.92	$ 2.25	$ 6,728	$ 10,092	MP 308.1 - Carbondale
																																		$ -						
																																		$ -						
					Total Route Miles			308.4							Note 1	Note 2																$ 69.54	$ 81.35	$ 3,576,150			$ 3,009,239	$ 6,585,388	
					Total Track Miles				637.5											2.4	43.3																		
	HNTB								637.5													103.2																	
	1-Feb-04																						488.6																
	CHQ																							0.0															

	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

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

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