

## 10. Financial Analysis

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### 10.1 Introduction

The MWRRS financial analysis was revised to incorporate the results of the updated operating plan and implementation schedule. The financial analysis incorporates many of the same financial assumptions contained in the studies conducted from 1998 through 2000. This update incorporates a sensitivity analysis with respect to federal funding levels and the application for TIFIA funds to offset ramp-up operating losses.

The financial analysis for the MWRRS was prepared at the system level and reflects the economies of scale inherent in a large regional passenger rail service. This approach maximizes the financial performance of the rail service during the ten-year start-up period and lessens the impact of short-term, ramp-up period operating revenue shortfalls on specific corridors.

The financial analysis was performed to provide insight into the viability of the proposed MWRRS and as a basis for reviewing the direct financial merit of the project and possible public bond financing alternatives. The financial analysis also provides state and federal decision-makers with sufficient information to enable them to judge the fiscal practicality of the proposed system.

The financial analysis integrates the capital, operating and maintenance costs along with the revenue projections for 2008 through 2040 and addresses financing alternatives. The analysis was based on the following components:

- Operating and implementation plans for the MWRRS passenger rail service
- Cost estimates for operations, infrastructure and acquisition of rolling stock
- Ridership and revenue estimates based on projected travel demand and assumptions regarding fare levels and other services
- Cash flow analysis that includes statements of revenues and expenses as well as sources and uses of funds, including the impact of the financing alternatives

Two measures of economic benefit were used to evaluate the alternative options. These are net present value (NPV) and cost benefit ratio. The measures are defined as follows:

$$\text{Net Present Value} = \text{Present Value of Total Benefits} - \text{Present Values of Total Costs}$$

$$\text{Cost Benefit Ratio} = \frac{\text{Present Value of Benefits}}{\text{Present Value of Costs}}$$

Where Present Value is defined as

$$PV = \sum C_t / (1 + r)^t$$

Where

$$\begin{aligned} PV &= \text{Present value of all future cash flows} \\ C_t &= \text{Cash flow for period } t \\ r &= \text{Opportunity cost of money} \\ t &= \text{Time} \end{aligned}$$

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## **10.2 Key Assumptions**

Operating costs and revenues are expressed in the financial model as base year (2002) dollars, by calendar year. The analysis projects travel demand, operating revenues<sup>1</sup> and operating and maintenance costs for all years from 2008 through 2040. Following GAO guidelines, the financial analysis has been conducted in real terms using constant 2002 dollars. Accordingly, no inflation factor has been included. Revenues have also been projected in constant dollars over the time frame of the financial analysis. A summary of key inputs are presented below:

### **10.2.1 Ridership and Revenue Forecasts**

Ridership and revenue forecasts were prepared for the years of 2003, 2010, 2020 and 2040. Operating costs and revenues in intervening years are projected based on interpolations, reflecting the projected growth in ridership. Revenue includes passenger fares, air connectivity and onboard services. The economic scenario for the ridership forecasts assumes the continuation of existing socioeconomic trends for income, population and employment growth throughout the region; the competitive market analysis assumes the continuation of current trends in the auto, air and bus modes. Operating ratios were estimated both *with* and *without* supplementary express parcel service. However, at the direction of the MWRRRI Steering Committee, the financial plan was conservatively based on the result *without* the express parcel service.

### **10.2.2 Capital Costs**

Capital costs include rolling stock, track, bridges, fencing, signaling, grade crossings, maintenance facilities and station improvements. The capital costs used in the financial analysis incorporate the related start-up costs for project management and preliminary engineering and design during each of the implementation phases. The capital cost projections are based on year-by-year projections of each cost element.

### **10.2.3 Operating Expenses**

Major operating and maintenance expenses include equipment maintenance, track and right-of-way maintenance, administration, fuel and energy, train crew and other relevant expenses. A profit factor is included for all expenses including the primary work of the system operator.

### **10.2.4 Implementation Period**

The MWRRS has a planning and implementation period of approximately ten years. The financial analysis is based on the assumption that some planning and preliminary engineering for the project began as early as 2000. This reflects, for example the completion of the Milwaukee-Madison Environmental Assessment and corridor investments already made by Illinois and Michigan. Except for improvements to the Springfield-St. Louis segment that are already underway, construction is scheduled to begin in 2006 and operations on three corridors (Implementation Phase 1) begin in 2008. The financial analysis incorporates revenue and cost assumptions in accordance with the implementation plan described in Chapter 8. Full corridor service, with respect to revenues and costs, is assumed to begin on the first day of the year following completion of construction.

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<sup>1</sup> Operating revenues include passenger revenue, air connect revenues, on-board services revenue, and optionally express package revenue.

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## 10.3 Results of Operations

### 10.3.1 MWRI System

Exhibit 10-1 shows MWRI net revenue and operating expenses and the resultant cash flows. During the first two years of the implementation period, start-up operating expenses – at the system level – are below operating revenues. By the third year of implementation, net operating revenues (revenues less costs) are positive and continue to accelerate at a faster rate than operating costs. After full implementation of the system, ridership, revenues and costs continue to slowly increase because of the effect of forecast population growth and income changes. With additional ridership, costs increase at a much slower pace since train-mile costs are held essentially fixed. Since operations are held constant after Phase 7, the financial model predicts an improving operating ratio over time.

**Exhibit 10-1**  
**Net Operating Revenues and Expenses**

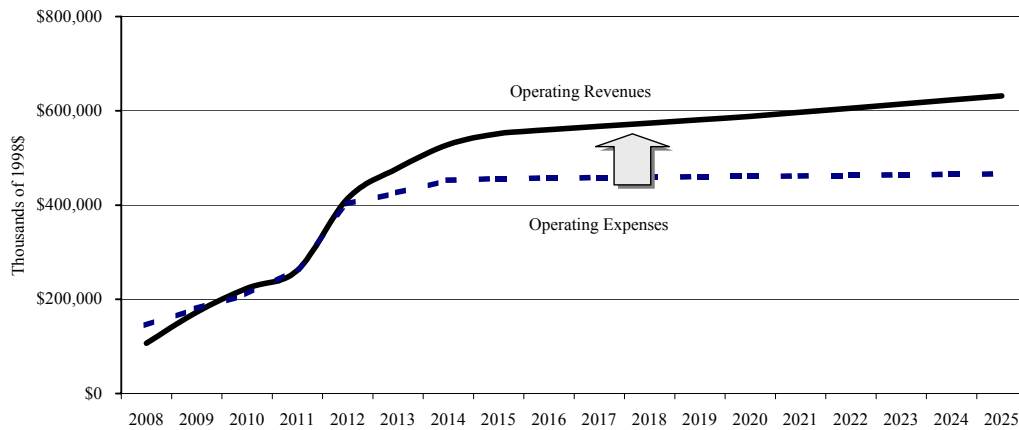


Exhibit 10-2 provides a detailed Pro Forma Statement of Operations for the thirty-three year planning period 2008 through 2040.

**Exhibit 10-2**  
**Midwest Regional Rail System**  
**Statement of Operations, Year 2008 – 2040 (Thousands of 2002\$)**

	Total to 2040	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Revenues</b>												
Fare Box Revenue	<b>\$17,584,584</b>	\$98,405	\$158,554	\$205,681	\$240,453	\$380,650	\$438,283	\$483,991	\$505,191	\$512,822	\$519,288	\$525,753
On Board Revenue	<b>1,395,879</b>	7,826	12,600	16,330	19,084	30,219	34,800	38,422	40,101	40,707	41,220	41,733
Express Parcel Svc (Net Rev)	<b>0</b>	0	0	0	0	0	0	0	0	0	0	0
Bus Feeder System	<b>220,722</b>	<u>398</u>	<u>1,095</u>	<u>1,539</u>	<u>1,898</u>	<u>3,159</u>	<u>5,216</u>	<u>5,964</u>	<u>6,218</u>	<u>6,361</u>	<u>6,467</u>	<u>6,575</u>
<b>Total Revenues</b>	<b>18,980,463</b>	106,628	172,249	223,550	261,435	414,028	478,299	528,377	551,511	559,890	566,975	574,061
<b>Train Operating Expenses</b>												
Energy and Fuel	<b>965,994</b>	7,827	10,026	11,625	16,204	28,172	29,773	31,940	31,940	31,940	31,940	31,940
Train Equipment Maintenance	<b>4,109,638</b>	33,300	42,652	49,458	68,938	119,851	126,663	135,881	135,881	135,881	135,881	135,881
Train Crew	<b>1,645,551</b>	13,334	17,078	19,803	27,603	47,990	50,718	54,408	54,408	54,408	54,408	54,408
On Board Services Crew	<b>1,334,461</b>	9,071	12,906	15,825	20,219	33,673	37,018	40,257	41,097	41,399	41,656	41,913
Service Administration	<b>942,294</b>	20,296	23,195	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994
Operating Profit	<b>621,640</b>	<u>7,202</u>	<u>8,654</u>	<u>10,220</u>	<u>12,070</u>	<u>17,131</u>	<u>18,102</u>	<u>19,183</u>	<u>19,412</u>	<u>19,483</u>	<u>19,542</u>	<u>19,600</u>
<b>Total Train Operating Expenses</b>	<b>9,619,578</b>	91,029	114,511	135,926	174,028	275,811	291,268	310,662	311,731	312,105	312,420	312,735
<b>Other Operating Expenses</b>												
Track & ROW Maintenance	<b>1,802,585</b>	22,942	27,403	30,143	39,790	55,557	56,272	58,166	58,166	58,166	58,166	58,166
Station Costs	<b>818,250</b>	14,001	14,767	16,165	18,965	24,719	25,119	26,093	26,093	26,093	26,093	26,093
Sales & Marketing	<b>987,206</b>	11,620	13,972	15,940	17,519	23,435	25,823	27,876	28,808	29,154	29,430	29,706
Insurance Liability	<b>857,110</b>	4,943	7,503	9,676	11,415	18,004	20,596	22,523	23,880	24,243	24,553	24,863
Bus Feeder	<b>221,295</b>	<u>482</u>	<u>2,124</u>	<u>2,241</u>	<u>2,815</u>	<u>5,055</u>	<u>7,105</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>
<b>Total Other Operating Expenses</b>	<b>4,465,151</b>	<u>53,988</u>	<u>65,769</u>	<u>74,165</u>	<u>90,504</u>	<u>126,771</u>	<u>134,914</u>	<u>142,120</u>	<u>144,410</u>	<u>145,118</u>	<u>145,704</u>	<u>146,290</u>
<b>Total Operating Expenses</b>	<b>14,084,729</b>	<u>145,018</u>	<u>180,281</u>	<u>210,090</u>	<u>264,532</u>	<u>402,582</u>	<u>426,182</u>	<u>452,782</u>	<u>456,141</u>	<u>457,223</u>	<u>458,124</u>	<u>459,025</u>
<b>Cash Flow From Operations</b>	<b>4,895,734</b>	<u>(\$38,389)</u>	<u>(\$8,031)</u>	<u>\$13,459</u>	<u>(\$3,097)</u>	<u>\$11,446</u>	<u>\$52,117</u>	<u>\$75,595</u>	<u>\$95,370</u>	<u>\$102,668</u>	<u>\$108,851</u>	<u>\$115,037</u>
<b>Operating Ratio</b>	<b>1.35</b>	0.74	0.96	1.06	0.99	1.03	1.12	1.17	1.21	1.22	1.24	1.25

**Exhibit 10-2 (continued)**  
**Midwest Regional Rail System**  
**Statement of Operations, Year 2008-2040 (Thousands of 2002\$)**

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Revenues</b>												
Fare Box Revenue	\$532,219	\$538,684	\$546,641	\$554,598	\$562,555	\$570,511	\$578,468	\$586,425	\$594,382	\$602,339	\$610,295	\$618,252
On Board Revenue	42,247	42,760	43,391	44,023	44,655	45,286	45,918	46,549	47,181	47,812	48,444	49,076
Express Parcel Service (Net Rev)	0	0	0	0	0	0	0	0	0	0	0	0
Bus Feeder System	<u>6,684</u>	<u>6,795</u>	<u>6,908</u>	<u>7,023</u>	<u>7,140</u>	<u>7,259</u>	<u>7,380</u>	<u>7,503</u>	<u>7,627</u>	<u>7,754</u>	<u>7,883</u>	<u>8,015</u>
<b>Total Revenues</b>	581,149	588,239	596,941	605,644	614,349	623,056	631,766	640,477	649,190	657,905	666,623	675,342
<b>Train Operating Expenses</b>												
Energy and Fuel	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940
Train Equipment Maintenance	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881
Train Crew	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408
On Board Services Crew	42,169	42,426	42,742	43,057	43,373	43,689	44,005	44,321	44,636	44,952	45,268	45,584
Service Administration	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994
Operating Profit	<u>19,659</u>	<u>19,718</u>	<u>19,784</u>	<u>19,851</u>	<u>19,917</u>	<u>19,984</u>	<u>20,050</u>	<u>20,144</u>	<u>20,239</u>	<u>20,333</u>	<u>20,428</u>	<u>20,522</u>
<b>Total Train Operating Expenses</b>	313,050	313,365	313,748	314,130	314,512	314,895	315,277	315,687	316,097	316,507	316,918	317,328
<b>Other Operating Expenses</b>												
Track & ROW Maintenance	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166
Station Costs	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093
Sales & Marketing	29,982	30,258	30,544	30,829	31,114	31,400	31,685	32,042	32,399	32,756	33,113	33,470
Insurance Liability	25,172	25,482	25,862	26,242	26,621	27,001	27,381	27,968	28,555	29,142	29,729	30,316
Bus Feeder	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>
<b>Total Other Operating Expenses</b>	146,876	147,461	148,126	148,792	149,457	150,122	150,787	151,731	152,675	153,619	154,562	155,506
<b>Total Operating Expenses</b>	<u>459,926</u>	<u>460,827</u>	<u>461,874</u>	<u>462,921</u>	<u>463,969</u>	<u>465,016</u>	<u>466,064</u>	<u>467,418</u>	<u>468,772</u>	<u>470,126</u>	<u>471,480</u>	<u>472,834</u>
<b>Cash Flow From Operations</b>	<u>\$121,224</u>	<u>\$127,412</u>	<u>\$135,067</u>	<u>\$142,723</u>	<u>\$150,380</u>	<u>\$158,040</u>	<u>\$165,702</u>	<u>\$173,059</u>	<u>\$180,418</u>	<u>\$187,779</u>	<u>\$195,143</u>	<u>\$202,508</u>
<b>Operating Ratio</b>	1.26	1.28	1.29	1.31	1.32	1.34	1.36	1.37	1.38	1.40	1.41	1.43

**Exhibit 10-2 (continued)**  
**Midwest Regional Rail System**  
**Statement of Operations, Year 2008 – 2040 (Thousands of 2002\$)**

	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Revenues</b>									
Fare Box Revenue	\$634,166	\$642,122	\$650,079	\$658,036	\$665,993	\$673,950	\$681,906	\$689,863	\$697,820
On Board Revenue	50,339	50,970	51,602	52,234	52,865	53,497	54,128	54,760	55,392
Express Parcel Service (Net Rev)	0	0	0	0	0	0	0	0	0
Bus Feeder System	<u>8,284</u>	<u>8,421</u>	<u>8,561</u>	<u>8,704</u>	<u>8,849</u>	<u>8,996</u>	<u>9,146</u>	<u>9,298</u>	<u>9,453</u>
<b>Total Revenues</b>	692,788	701,514	710,243	718,974	727,707	736,443	745,181	753,921	762,664
<b>Train Operating Expenses</b>									
Energy and Fuel	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940	31,940
Train Equipment Maintenance	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881	135,881
Train Crew	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408	54,408
On Board Services Crew	46,215	46,531	46,847	47,163	47,478	47,794	48,110	48,426	48,742
Service Administration	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994	28,994
Operating Profit	<u>20,711</u>	<u>20,805</u>	<u>20,900</u>	<u>20,994</u>	<u>21,088</u>	<u>21,183</u>	<u>21,277</u>	<u>21,372</u>	<u>21,466</u>
<b>Total Train Operating Expenses</b>	318,148	318,558	318,969	319,379	319,789	320,199	320,609	321,019	321,430
<b>Other Operating Expenses</b>									
Track & ROW Maintenance	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166	58,166
Station Costs	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093	26,093
Sales & Marketing	34,184	34,541	34,898	35,255	35,612	35,969	36,326	36,682	37,039
Insurance Liability	31,490	32,077	32,664	33,251	33,838	34,425	35,012	35,599	36,185
Bus Feeder	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>	<u>7,462</u>
<b>Total Other Operating Expenses</b>	157,394	158,338	159,282	160,226	161,170	162,114	163,058	164,002	164,946
<b>Total Operating Expenses</b>	<u>475,542</u>	<u>476,897</u>	<u>478,251</u>	<u>479,605</u>	<u>480,959</u>	<u>482,313</u>	<u>483,667</u>	<u>485,021</u>	<u>486,375</u>
<b>Cash Flow From Operations</b>	<u>\$217,246</u>	<u>\$224,618</u>	<u>\$231,992</u>	<u>\$239,369</u>	<u>\$246,748</u>	<u>\$254,129</u>	<u>\$261,513</u>	<u>\$268,900</u>	<u>\$276,289</u>
<b>Operating Ratio</b>	1.46	1.47	1.49	1.50	1.51	1.53	1.54	1.55	1.57

### 10.3.2 Corridor Level Performance

Operating performance on a corridor basis both *with* and *without* the express parcel service, showing operating revenue, costs and ratios is presented in Exhibit 10-3 and 10-4 respectively. Adding the express parcel service clearly improves the financial performance of the MWRRS, but is not critical to meeting the FRA requirement described in Chapter 9 that each route must show a positive operating ratio after the ramp-up period. O&M costs do not increase with the addition of the express parcel service, since express parcel costs are accounted for here in a separate financial statement. Only the net contribution of the express parcel service is brought forward into the operating ratio calculations of Exhibit 10-4.

**Exhibit 10-3**  
**Operating Revenues, Costs and Ratios without the Express Parcel Service**

<i>MWRRS Summary Financial Statistics</i>	<i>Operating Revenue</i>		<i>O&amp;M Cost</i>		<i>Operating Ratio</i>	
	<i>(Millions of 2002\$)</i>		<i>(Millions of 2002\$)</i>			
	<i>2014</i>	<i>2025</i>	<i>2014</i>	<i>2025</i>	<i>2014</i>	<i>2025</i>
Chicago-Detroit/Grand Rapids/Port Huron	\$113	\$129	\$95	\$97	1.18	1.32
Chicago-Cleveland	\$50	\$66	\$56	\$58	0.88	1.15
Chicago-Cincinnati	\$53	\$61	\$40	\$41	1.32	1.49
Chicago-Carbondale	\$22	\$25	\$22	\$22	0.99	1.11
Chicago-St. Louis	\$61	\$71	\$47	\$49	1.30	1.46
St Louis-Kansas City	\$35	\$47	\$34	\$35	1.05	1.32
Chicago-Quincy Omaha	\$53	\$61	\$59	\$60	0.90	1.02
Chicago-Minneapolis /Green Bay	\$141	\$172	\$99	\$104	1.42	1.65
<b>Midwest Regional Rail System Total</b>	<b>\$528</b>	<b>\$632</b>	<b>\$453</b>	<b>\$466</b>	<b>1.17</b>	<b>1.36</b>

**Exhibit 10-4**  
**Operating Revenues, Costs and Ratios with the Express Parcel Service**

<i>Corridor</i>	<i>Operating Revenue including Express Parcel Service (2002\$ Million)</i>		<i>Operating Cost (2002\$ Million)</i>		<i>Operating Ratio</i>	
	<i>2014</i>	<i>2025</i>	<i>2014</i>	<i>2025</i>	<i>2014</i>	<i>2025</i>
Chicago-Detroit/Grand Rapids/Port Huron	\$118	\$137	\$95	\$97	1.24	1.40
Chicago-Cleveland	\$54	\$73	\$56	\$58	0.96	1.27
Chicago-Cincinnati	\$57	\$66	\$40	\$41	1.40	1.61
Chicago-Carbondale	\$22	\$25	\$22	\$22	1.00	1.13
Chicago-St. Louis	\$64	\$76	\$47	\$49	1.36	1.55
St Louis-Kansas City	\$37	\$49	\$34	\$35	1.09	1.38
Chicago-Quincy-Omaha	\$54	\$62	\$59	\$60	0.92	1.04
Chicago-Minneapolis /Green Bay	\$149	\$185	\$99	\$104	1.51	1.77
<b>Midwest Regional Rail System Total</b>	<b>\$555</b>	<b>\$672</b>	<b>\$453</b>	<b>\$466</b>	<b>1.23</b>	<b>1.44</b>

### 10.3.3 Net Operating Revenue/Losses

As shown in Exhibit 10-5, total operating losses during the seven-year implementation period amount to \$206.1 million, on a corridor basis. With this approach, each corridor operates independently from the others and there is no cross-subsidy between corridors. However, on a system-wide basis, total operating losses are only \$49.5 million, less than one-fourth the amount of the individual corridors. The improved *net* financial performance, when viewed on the system-wide basis, results from the stronger established corridors covering some initial start-up costs of the weaker routes that are not yet fully ramped-up. The financial analysis assumes that TIFIA assistance, rather than a direct state subsidy, will be used to cover the ramp-up operating losses. A system-wide approach dramatically reduces the level of TIFIA assistance needed.

**Exhibit 10-5**  
**Net Operating Revenue**  
**(Thousands of 2002\$)**

<i>Cash Flow</i> <i>(Thousands of 2002\$)</i>		<i>Implementation Period</i>						
		<i>Phase 1</i> <i>2008</i>	<i>Phase 2</i> <i>2009</i>	<i>Phase 3</i> <i>2010</i>	<i>Phase 4</i> <i>2011</i>	<i>Phase 5</i> <i>2012</i>	<i>Phase 6</i> <i>2013</i>	<i>Phase 7</i> <i>2014</i>
<i>Corridor</i>	<i>Total Losses</i>							
Michigan	(\$53,395)	(\$21,286)	(\$13,256)	(\$10,836)	(\$8,018)	\$2,112	\$12,338	\$17,506
Cleveland	(\$47,648)	\$0	\$0	\$0	\$0	(\$28,478)	(\$12,434)	(\$6,736)
Cincinnati	(\$10,243)	\$0	\$0	\$0	\$0	(\$10,243)	\$7,998	\$12,908
Carbondale	(\$11,256)	\$0	\$0	\$0	(\$7,884)	(\$2,201)	(\$947)	(\$224)
St. Louis	(\$11,571)	(\$11,571)	\$1,038	\$4,986	\$2,555	\$11,859	\$12,711	\$14,234
Kansas City	(\$11,164)	\$0	\$0	\$0	(\$9,022)	\$2,927	(\$2,142)	\$1,546
Quincy-Omaha	(\$55,299)	\$0	\$0	(\$5,199)	(\$15,167)	(\$13,802)	(\$15,430)	(\$5,702)
Green Bay-St. Paul	(\$5,533)	(\$5,533)	\$4,187	\$24,508	\$34,438	\$49,271	\$50,023	\$42,062
<b>Total by Corridor</b>	<b>(\$206,109)</b>							
<b>Total by System</b>	<b>(\$49,518)</b>	<b>(\$38,389)</b>	<b>(\$8,031)</b>	<b>\$13,459</b>	<b>(\$3,097)</b>	<b>\$11,446</b>	<b>\$52,117</b>	<b>\$75,595</b>

Applying the cost assumptions discussed previously in this report, the operational analysis projects that the MWRRS produces an operating surplus – on a system-wide operating basis – in 2012, the fifth year of implementation. By the end of the first four years, the performance of the corridor segments completed in Phase 1 through Phase 4 is strong enough to *carry* projected operating losses through the remainder of the implementation period.

In the operating projections, all operating costs are incurred in the first year of each corridor's operation. However, revenue levels do not achieve full potential until the third year of operations. This assumption allows for a reasonable ramp-up period and takes into account the lag in market responsiveness to this new service. Revenues are projected at 50 percent of full operations in the first year and at 90 percent in the second year. Therefore, even with increases in variable costs resulting from increased ridership levels, the overall operating cost ratio for the system improves from 0.74 in 2008 to 1.06 in 2010 and to 1.17 in 2014. Projected annualized revenues by 2014, the first full year in which all corridor segments are in operation, are expected to exceed \$528 million with net operating cash flows of approximately \$75 million.

Projected operating revenues and costs are incorporated into each financing alternative and are estimated over a twenty-year period. Net revenues are defined as farebox, onboard, express parcel service revenues, less operating and maintenance costs. The cash flow projections assume that five percent of any positive net cash flow from operations, on a system-wide basis, is diverted to a capital reserve account and used for system expansion, preservation or other purposes. The balance of annual net revenues would be disbursed to the participating states based on an agreed-upon allocation method.

### 10.3.4 Operating Cost Ratio

In terms of the objectives set by the MWRRI Steering Committee, the ratio of revenues to operating costs, the *operating cost ratio*, provides the key financial measure of the merits of the MWRRS. Specifically, the operating cost ratio measures whether the system will generate enough revenues to cover its operating costs. Thus, the operating cost ratio measures the MWRRS' ability to be self-supporting, if the capital costs of the system are provided as grants. The operating cost ratio for the MWRRS achieves a ratio above 1.0 (revenues greater than costs) by 2006 and is projected to achieve a ratio of 1.17 by 2014 when the system is fully operational.

With the exception of the Chicago-Omaha/Quincy route, each corridor achieves a positive operating cost ratio (greater than 1.0) by 2015, the year after full system implementation. The Chicago-Omaha segment, which is not completed until Phase 6, does not reach self-sufficiency until 2024. Exhibit 10-6 presents the forecasted operating cost ratio for each corridor in 2014 and 2025.

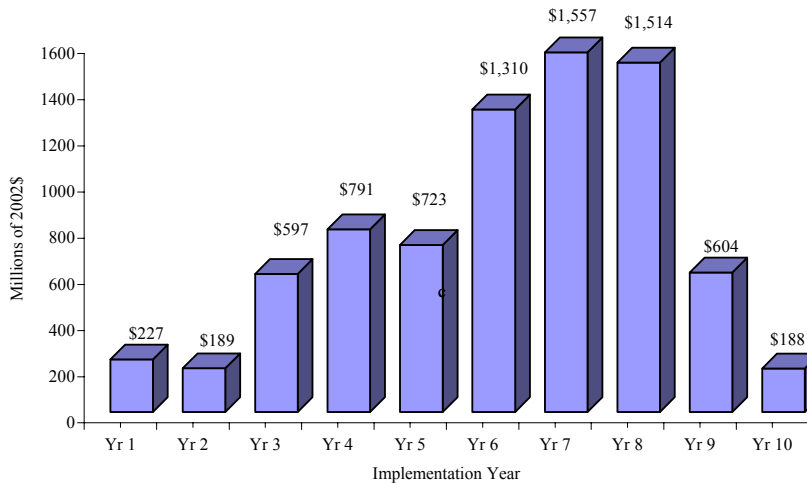
**Exhibit 10-6  
Operating Cost Ratios in 2014 and 2025**

<i>MWRRS Summary Financial Statistics</i>	<i>2014</i>	<i>2025</i>
Chicago Detroit/Grand Rapids/ Port Huron	1.18	1.32
Chicago Cleveland	0.88	1.15
Chicago Cincinnati	1.32	1.49
Chicago Carbondale	0.99	1.11
Chicago St. Louis	1.30	1.46
St Louis Kansas City	1.05	1.32
Chicago Quincy Omaha	0.90	1.02
Chicago Minneapolis /Green Bay	1.42	1.65
<b>Midwest Regional Rail System Total</b>	<b>1.17</b>	<b>1.36</b>

## 10.4 Capital Funding Requirements

The capital funding requirements are derived from the implementation plan and are assessed on a corridor basis by implementation phase. The annual capital requirement for the years 2004-2013 is shown in Exhibit 10-7. The three peak years of capital requirements are years six, seven and eight, during which time an average of over \$1.4 billion dollars are needed each year.

**Exhibit 10-7  
Capital Funding Requirements**



## ***10.5 Finance Plan Analysis***

The following section describes the key assumptions related to financing alternatives, the analysis methodology and the results of the financial analysis.

### ***10.5.1 Financing Alternative Assumptions***

#### ***Funding Sources***

Either direct state grants or General Obligation Bonds are the principal source of financing for the state matching funds considered in this analysis. Interest rates vary depending on the type of bond issued (general obligation, tax-exempt revenue bonds, taxable revenue bonds) and total investment costs are affected by the choice of debt instruments. Previous MWRRRI studies analyzed the impact that various bond structures had on the financial results to support investment strategies for the MWRRS.

The MWRRS funding plan is based upon the assumption of 80 percent federal and 20 percent state funding. However, since federal appropriations fluctuate annually, the level of federal funds required to support the project's cash flow might fall below the 80 percent level even with a full funding agreement. Consequently, additional funding mechanisms will be required to maintain the funding level necessary to support the project, including short-term credit options. Short-term debt instruments include Grant Anticipation Notes (GANs) and other revenue anticipation notes along with TIFIA assistance. By project closeout, the federal contribution is required to equal 80 percent of eligible project costs.

The financial plan assumes that federal funds will be allocated based on capital costs for each year of the implementation period. It was also assumed that TIFIA assistance would be used to obtain loans that will be applied to operating revenue deficits in the early phases of the implementation plan. The MWRRRI states will be responsible for repayment of debt service and principal on any bonds issued to fund their matching shares. Cash flow from operations would be

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the source of repayment for short-term debt as well as any longer-term TIFIA assistance. During the construction period, GANs can be repaid with unused federal funding.

This analysis continues the two cash management techniques applied in earlier studies – delayed state match and the use of GANs. GANs, or other similar short-term debt instruments, offer the states an ability to raise up-front capital based on receiving future federal funds. The benefit of issuing GANs is that implementation could proceed as scheduled, even though the flow of federal funding does not follow the contract obligation or project cash flow requirements. GANs are used to make up the difference between funds available and funds required. For example, GANs may be used in 2010 to allow the construction of \$1.56 billion of infrastructure and rolling stock even though only \$400 million is available from federal sources. These debt instruments are incorporated into the financial projections to provide for any cash shortfalls that may occur.

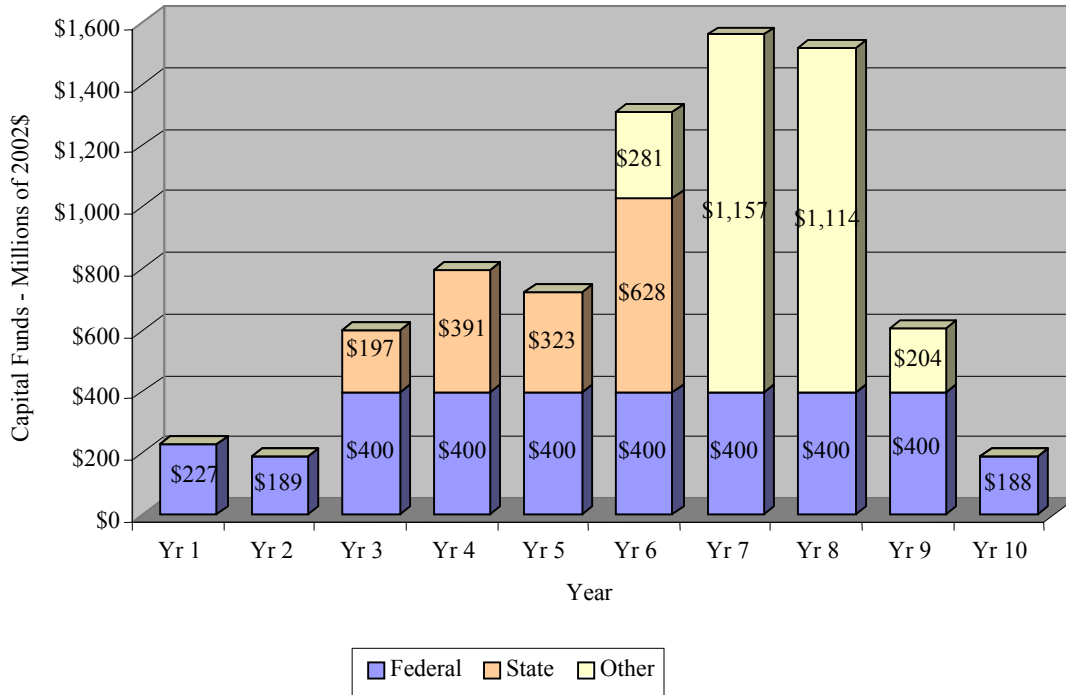
### ***Estimated Level of Debt***

The amount of debt is based on the projected capital requirements for infrastructure and rolling stock. The financial plan assumes that 80 percent of projected capital requirements is contributed by federal funding sources and 20 percent by the participating states. Additional factors include issuance costs, debt service reserve fund requirements and interest earned on the reserve funds.

Federal and state funding is combined with TIFIA assistance and GANs to meet the annual capital cost and financial requirements during the project's implementation phases. At this time, it is considered that the MWRRS might attract approximately \$400 million per year in federal funding. This would be consistent with federal support for major infrastructure projects of this type.

Exhibit 10-8 is an example of projected cash flow requirements and the resulting mix of funding sources when federal funds granted to the project are capped at \$400 million per year. This exhibit is only a construct of the funding strategy whose state funds are spent prior to any GANs being used. This construct has been approved by a major Wall Street firm.

**Exhibit 10-8**  
**Cash Flow Requirements Utilizing GANs and Delayed State Match**  
**(Millions of 2002\$)**



<i>Year</i>	<i>Total Capital Cost</i>	<i>Federal Grant 80%</i>	<i>State Funds 20%</i>	<i>Actual Federal Outlay</i>	<i>Actual State Funds</i>	<i>Other Funds (GANS)</i>	<i>Total Funds Available</i>
Yr 1	227.1	181.7	45.4	227.1	0.0	0.0	227.1
Yr 2	188.5	150.8	37.7	188.5	0.0	0.0	188.5
Yr 3	597.2	477.7	119.4	400.0	197.2	0.0	597.2
Yr 4	791.2	633.0	158.2	400.0	391.2	0.0	791.2
Yr 5	723.2	578.6	144.6	400.0	323.2	0.0	723.2
Yr 6	1309.9	1047.9	262.0	400.0	628.4	281.5	1309.9
Yr 7	1557.3	1245.8	311.5	400.0	0.0	1157.3	1557.3
Yr 8	1513.5	1210.8	302.7	400.0	0.0	1113.5	1513.5
Yr 9	604.1	483.3	120.8	400.0	0.0	204.1	604.1
Yr 10	187.8	150.3	37.6	187.8	0.0	0.0	187.8
Total	7699.9	6159.9	1540.0	3403.5	1540.0	2756.4	7699.9

**Investment Rates**

The short-term investment rate is set at two percent. This was left unchanged from the previous analysis, as lending rates have been stable over the past two years. The long-term investment rate is also set at 2 percent.

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### ***Borrowing Term***

The MWRRRI states may issue bonds for their matching 20 percent contribution for federal funds. Bond maturity terms are frequently matched to the useful lives of the revenue-producing assets that are funded, in this case rolling stock. The projections assume the bonds mature in twenty years.

### ***Borrowing Rates***

Projected interest rates on the bonds were based on an analysis of the market rates for revenue bonds and their relationship to the 30-year Treasury Bond. Based on this analysis, the rate for general obligation bonds is 5.5 percent, 5.0 percent for GANs, and 5.5 percent for TIFIA. The lower rate on GANs takes into account its risk-free nature since its payback is guaranteed by federal funds.

### ***Issuance Fees***

The issuance fees for the GANs are set at 1.0 percent.

The financing assumptions are summarized in Exhibit 10-9.

**Exhibit 10-9  
Updated Financial Assumptions**

<i>Category</i>	<i>Financial Assumptions</i>
Construction Period	10 years Phase 1 operations begin in 2008 Full operations - 2014 onwards
Capital Funding	\$7.7 billion
Contribution to Reinvestment fund	5 percent of cash flow after TIFIA repayment
Interest income on Reinvestment fund	2 percent
Principal Deferment on GANs	2-5 years, as necessary
Issuance Cost	GANs – 1.0 percent of issuance amount
Interest Rates	
Grant Anticipation Notes (GANs)	5.0 percent
TIFIA Loan Assistance	5.5 percent
Annual Federal Grant Obligation	80 percent of capital cost
Annual Federal Grant Obligation	\$400 million (moderate level)
Operating Losses During Ramp-Up	TIFIA assistance

## ***10.6 Methodology***

A financial model for the MWRRS was developed to evaluate alternative financial strategies. The model was used to assess projected cash flows from the service based on the implementation

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– planned and projected funding requirements. The following sections describe the results of the analysis.

### ***10.6.1 Financial Results of the Analysis of Financing Alternatives***

The sources of the funds required to meet the capital costs and the implementation plan are summarized in Exhibit 10-10.

**Exhibit 10-10**  
**Sources and Amounts of Funds Required**  
**(Millions of 2002\$)**

	<i>Amount</i>
Federal Contribution	\$3,403
State Contribution	\$1,540
GANs	\$2,756
TIFIA Loan	\$427
Total Funds contributed	\$8,127

Notes:

(1) Actual federal grants used during the construction period are only \$3,403 million out of the total \$6,160 million (80 percent) due to the \$400 million annual disbursement cap.

(2) GANs in the amount of \$2,756 million are completely paid back with late federal contributions not disbursed during the construction period due to the \$400 million annual cap, thus making the total Federal contribution \$6,160 million.

(3) TIFIA funds are used for financing ramp-up operating losses, initial working capital contribution, and GANs interest and issuance fees

The distribution of the sources and the uses of funds by year during the implementation period are shown in Exhibit 10-11.

**Exhibit 10-11**  
**Midwest Regional Rail System - Sources and Uses of Funds**  
(Millions of 2002\$)

	<b>Total</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Sources of Funds:</b>											
<b>Financing</b>											
State Contribution	\$1,540.0			\$197.2	\$391.2	\$323.2	\$628.4				
Short-term loan/GANS	\$2,756.4						\$281.5	\$1,157.3	\$1,113.5	\$204.1	
Initial Working Capital Contribution	\$30.0					\$30.0					
TIFIA Loans for Ramp-up Operating Losses	\$49.5					\$38.4	\$8.0		\$3.1		
TIFIA Loans for Accrued Interest/Issuance Fees on GANs	\$347.9						\$46.4	\$159.8	\$124.3	\$17.5	
<i>Total TIFIA Funds</i>	\$427.5					\$68.4	\$54.4	\$159.8	\$127.4	\$17.5	
Federal Contribution	\$6,159.9	\$227.1	\$188.5	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0
<b>Total Sources of Funds</b>	<b>\$10,883.8</b>	<b>\$227.1</b>	<b>\$188.5</b>	<b>\$597.2</b>	<b>\$791.2</b>	<b>\$791.6</b>	<b>\$1,364.3</b>	<b>\$1,717.1</b>	<b>\$1,640.9</b>	<b>\$621.6</b>	<b>\$400.0</b>
<b>Uses of Funds</b>											
Infrastructure Capital Costs	\$6,572.2	\$227.1	\$188.5	\$418.2	\$612.2	\$544.2	\$1,130.9	\$1,378.3	\$1,334.5	\$550.4	\$187.8
Rolling Stock Costs	\$1,127.7	\$0.0	\$0.0	\$179.0	\$179.0	\$179.0	\$179.0	\$179.0	\$179.0	\$53.7	
<i>Total Capital Costs</i>	\$7,699.9	\$227.1	\$188.5	\$597.2	\$791.2	\$723.2	\$1,309.9	\$1,557.3	\$1,513.5	\$604.1	\$187.8
<b>TIFIA Uses of Funds</b>											
Start-up Costs	\$30.0					\$30.0					
Ramp-up Operating Costs	\$49.5					\$38.4	\$8.0		\$3.1		
Accrued Interest on GANs	\$320.4						\$43.6	\$148.2	\$113.2	\$15.4	
GAN Issuance Fees	\$27.6						\$2.8	\$11.6	\$11.1	\$2.0	
<i>Total TIFIA Funds Uses</i>	\$427.5					\$68.4	\$54.4	\$159.8	\$127.4	\$17.5	
Repayment of GANS	\$2,756.4										212.2
<b>Total Uses of Funds</b>	<b>\$10,883.8</b>	<b>\$227.1</b>	<b>\$188.5</b>	<b>\$597.2</b>	<b>\$791.2</b>	<b>\$791.6</b>	<b>\$1,364.3</b>	<b>\$1,717.1</b>	<b>\$1,640.9</b>	<b>\$621.6</b>	<b>\$400.0</b>

**Exhibit 10-11 (continued)**  
**Midwest Regional Rail System - Sources and Uses of Funds**  
(Millions of 2002\$)

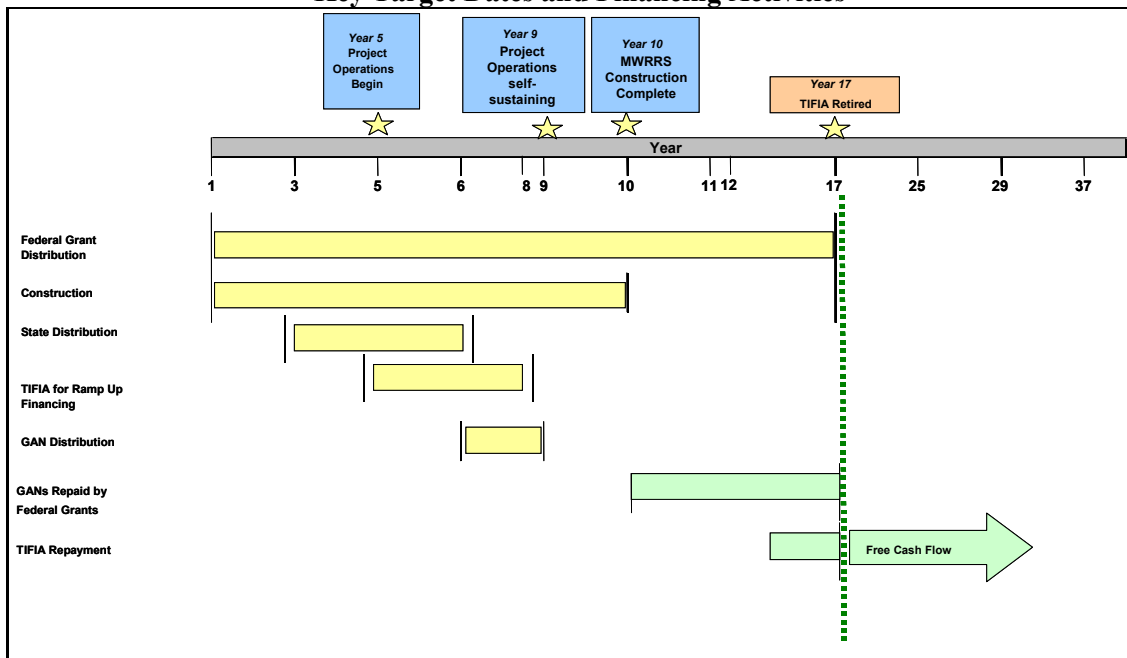
	2014	2015	2016	2017	2018	2019	2020
<b>Sources of Funds:</b>							
<b>Financing</b>							
State Contribution							
Short-term loan/GANS							
Initial Working Capital Contribution							
TIFIA Loans for Ramp-up Operating							
Losses							
TIFIA Loans for Accrued Interest/Issuance							
Fees on GANS							
<i>Total TIFIA Funds</i>							
Federal Contribution	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0	\$400.0	\$144.3
<b>Total Sources of Funds</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$144.3</b>
<b>Uses of Funds</b>							
Infrastructure Capital Costs							
Rolling Stock Costs							
<i>Total Capital Costs</i>							
<b>TIFIA Uses of Funds</b>							
Start-up Costs							
Ramp-up Operating Costs							
Accrued Interest on GANS							
GAN Issuance Fees							
<i>Total TIFIA Funds Uses</i>							
Repayment of GANS	400.0	400.0	400.0	400.0	400.0	400.0	144.3
<b>Total Uses of Funds</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$400.0</b>	<b>\$144.3</b>

Financial feasibility is demonstrated by a positive Net Present Value (NPV). The NPV analysis is presented in Exhibit 10-12. Key financial milestones are shown in Exhibit 10-13.

**Exhibit 10-12**  
**Net Present Value**  
**\$400 Million Annual Federal Obligation**

	<i>2008-2040</i>	<i>2008-2025</i>
<b>Sources of Cash:</b>		
Operating Cash Flow	\$2,160,987	\$927,186
TIFIA Loan for Ramp-Up Operating Losses	\$47,045	\$47,045
Interest Income on Capital Reserve Fund (2 percent)	\$1,640	\$407
<b>Gross Cash Flow</b>	<b>\$2,209,673</b>	<b>\$974,638</b>
<b>Applications of Cash:</b>		
Capital MofW Financing by MWRRS	\$368,872	\$138,460
Contribution to Reinvestment Fund (5 percent)	\$82,024	\$20,334
<b>Net Cash Flow</b>	<b>\$1,758,777</b>	<b>\$815,844</b>
<b>TIFIA Debt Service by MWRRS</b>	<b>\$443,601</b>	<b>\$443,601</b>
<b>Net Cash Flow After TIFIA Re-payment</b>	<b>\$1,315,176</b>	<b>\$372,243</b>

**Exhibit 10-13**  
**Key Target Dates and Financing Activities**



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The financial plan results in a positive net cash flow by 2012 that is sufficient to retire the TIFIA obligations by 2020. A detailed presentation of the financial plan results is shown in Exhibit 10-14. The total project costs are summarized in Exhibit 10-15. Detailed system and corridor results are given in Appendix A11.

**Exhibit 10-14**  
**Cash Flow Analysis - General Obligations Bonds - \$400 Million Annual Federal Obligation**

(Thousands of 2002\$)	Total	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Sources of Cash:</b>										
Operating Cash Flow	\$4,895,162	(\$38,389)	(\$8,031)	\$13,459	(\$3,097)	\$11,446	\$52,117	\$75,595	\$95,370	\$102,668
TIFIA Loan for Ramp-Up Operating Losses	\$49,518	\$38,389	\$8,031	\$0	\$3,097	\$0				
Interest Income on Reinvestment Fund (2 percent)	\$4,121	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Gross Cash Flow</b>	<b>\$4,948,801</b>	<b>\$0</b>	<b>\$0</b>	<b>\$13,459</b>	<b>\$0</b>	<b>\$11,446</b>	<b>\$52,117</b>	<b>\$75,595</b>	<b>\$95,370</b>	<b>\$102,668</b>
<b>Applications of Cash:</b>										
Capital MofW Financing by MWRRRI	\$854,327	\$0	\$0	\$0	\$0	\$3,928	\$3,928	\$5,370	\$9,782	\$12,071
Contribution to Reinvestment Fund (5 percent)	\$206,075	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>Net Cash Flow</b>	<b>\$3,888,399</b>	<b>\$0</b>	<b>\$0</b>	<b>\$13,459</b>	<b>\$0</b>	<b>\$7,518</b>	<b>\$48,189</b>	<b>\$70,225</b>	<b>\$85,588</b>	<b>\$90,597</b>
<b>Change in Cash Balance (Pro forma):</b>										
Beginning Cash Balance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Increase/(Decrease) in Cash		<u>\$0</u>	<u>\$0</u>	<u>\$13,459</u>	<u>\$0</u>	<u>\$7,518</u>	<u>\$48,189</u>	<u>\$70,225</u>	<u>\$85,588</u>	<u>\$90,597</u>
<b>Ending Cash Balance</b>		<b>\$0</b>	<b>\$0</b>	<b>\$13,459</b>	<b>\$0</b>	<b>\$7,518</b>	<b>\$48,189</b>	<b>\$70,225</b>	<b>\$85,588</b>	<b>\$90,597</b>
<b>Net Cash Flow after TIFIA Debt Service</b>	<b>\$3,888,399</b>	<b>\$0</b>	<b>\$0</b>	<b>\$13,459</b>	<b>\$0</b>	<b>\$7,518</b>	<b>\$48,189</b>	<b>\$70,225</b>	<b>\$85,588</b>	<b>\$90,597</b>
<b>TIFIA loans Outstanding:</b>										
Beginning Balance		\$0	\$72,151	\$133,553	\$295,987	\$446,670	\$482,154	\$460,483	\$415,584	\$352,854
Ramp-up Operating Loss	\$49,518	\$38,389	\$8,031	\$0	\$3,097	\$0				
Working Capital Deposit	\$30,000	\$30,000								
GANs Int./Iss Loans	\$347,944	=	<u>46,409</u>	<u>\$159,761</u>	<u>\$124,300</u>	<u>17,474</u>	=	=	=	=
Total Outstanding TIFIA Loans		68,389	126,591	293,314	423,384	464,144	482,154	460,483	415,584	352,854
Accrued Interest	\$203,623	\$3,761	\$6,962	\$16,132	\$23,286	\$25,528	\$26,518	\$25,327	\$22,857	\$19,407
TIFIA payment	(\$631,084)	\$0	\$0	(\$13,459)	\$0	(\$7,518)	(\$48,189)	(\$70,225)	(\$85,588)	(\$90,597)
Ending Balance	\$3,274,771	72,151	133,553	295,987	446,670	482,154	460,483	415,584	352,854	281,664
<b>Net Cash Flow After TIFIA Re-payment</b>	<b>\$3,257,315</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

**Exhibit 10-14 (continued)**

(Thousands of 2002\$)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Sources of Cash:</b>										
Operating Cash Flow	\$102,668	\$108,851	\$115,037	\$121,224	\$127,412	\$135,067	\$142,723	\$150,380	\$158,040	\$165,702
TIFIA Loan for Ramp-Up Operating Losses										
Interest Income on Reinvestment Fund (2 percent)	\$0	\$0	\$0	\$0	\$0	\$135	\$143	\$150	\$158	\$166
<b>Gross Cash Flow</b>	<b>\$102,668</b>	<b>\$108,851</b>	<b>\$115,037</b>	<b>\$121,224</b>	<b>\$127,412</b>	<b>\$135,202</b>	<b>\$142,865</b>	<b>\$150,531</b>	<b>\$158,198</b>	<b>\$165,868</b>
<b>Applications of Cash:</b>										
Capital MofW Financing by MWRRI	\$12,071	\$12,936	\$17,036	\$18,753	\$19,618	\$20,555	\$22,272	\$27,542	\$27,542	\$28,984
Contribution to Reinvestment Fund (5 percent)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$6,753</u>	<u>\$7,136</u>	<u>\$7,519</u>	<u>\$7,902</u>	<u>\$8,285</u>
<b>Net Cash Flow</b>	<b>\$90,597</b>	<b>\$95,915</b>	<b>\$98,000</b>	<b>\$102,471</b>	<b>\$107,795</b>	<b>\$107,893</b>	<b>\$113,457</b>	<b>\$115,469</b>	<b>\$122,754</b>	<b>\$128,599</b>
<b>Change in Cash Balance (Pro forma):</b>										
Beginning Cash Balance	\$0	\$0	\$0	\$0	\$0	\$88,674	\$107,893	\$113,457	\$115,469	\$122,754
Increase/(Decrease) in Cash	<u>\$90,597</u>	<u>\$95,915</u>	<u>\$98,000</u>	<u>\$102,471</u>	<u>\$107,795</u>	<u>\$107,893</u>	<u>\$113,457</u>	<u>\$115,469</u>	<u>\$122,754</u>	<u>\$128,599</u>
<b>Ending Cash Balance</b>	<b>\$90,597</b>	<b>\$95,915</b>	<b>\$98,000</b>	<b>\$102,471</b>	<b>\$107,795</b>	<b>\$196,567</b>	<b>\$221,350</b>	<b>\$228,927</b>	<b>\$238,223</b>	<b>\$251,353</b>
<b>Net Cash Flow after TIFIA Debt Service</b>	<b>\$90,597</b>	<b>\$95,915</b>	<b>\$98,000</b>	<b>\$102,471</b>	<b>\$107,795</b>	<b>\$107,893</b>	<b>\$113,457</b>	<b>\$115,469</b>	<b>\$122,754</b>	<b>\$128,599</b>
<b>TIFIA loans Outstanding:</b>										
Beginning Balance	\$352,854	\$281,664	\$201,240	\$114,308	\$18,124	\$0	\$0	\$0	\$0	\$0
Ramp-up Operating Loss										
Working Capital Deposit										
GANs Int./Iss Loans	=	=	=	=	=	=	=	=	=	=
Total Outstanding TIFIA Loans	352,854	281,664	201,240	114,308	18,124	-	-	-	-	-
Accrued Interest	\$19,407	\$15,492	\$11,068	\$6,287	\$997	\$0	\$0	\$0	\$0	\$0
TIFIA payment	(\$90,597)	(\$95,915)	(\$98,000)	(\$102,471)	(\$19,121)	\$0	\$0	\$0	\$0	\$0
Ending Balance	281,664	201,240	114,308	18,124	-	-	-	-	-	-
<b>Net Cash Flow After TIFIA Re-payment</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$88,674</b>	<b>\$107,893</b>	<b>\$113,457</b>	<b>\$115,469</b>	<b>\$122,754</b>	<b>\$128,599</b>

**Exhibit 10-14 (continued)**

(Thousands of 2002\$)	2026	2027	2028	2029	2030	2031	2032
<b>Sources of Cash:</b>							
Operating Cash Flow	\$173,059	\$180,418	\$187,779	\$195,143	\$202,508	\$209,876	\$217,246
TIFIA Loan for Ramp-Up Operating Losses							
Interest Income on Reinvestment Fund (2 percent)	\$173	\$180	\$188	\$195	\$203	\$210	\$217
<b>Gross Cash Flow</b>	\$173,232	\$180,599	\$187,967	\$195,338	\$202,711	\$210,086	\$217,463
<b>Applications of Cash:</b>							
Capital MofW Financing by MWRI	\$30,547	\$33,408	\$38,678	\$38,678	\$40,120	\$41,683	\$44,544
Contribution to Reinvestment Fund (5 percent)	<u>\$8,653</u>	<u>\$9,021</u>	<u>\$9,389</u>	<u>\$9,757</u>	<u>\$10,125</u>	<u>\$10,494</u>	<u>\$10,862</u>
<b>Net Cash Flow</b>	\$134,032	\$138,170	\$139,900	\$146,902	\$152,465	\$157,909	\$162,057
<b>Change in Cash Balance (Pro forma):</b>							
Beginning Cash Balance	\$128,599	\$134,032	\$138,170	\$139,900	\$146,902	\$152,465	\$157,909
Increase/(Decrease) in Cash	<u>\$134,032</u>	<u>\$138,170</u>	<u>\$139,900</u>	<u>\$146,902</u>	<u>\$152,465</u>	<u>\$157,909</u>	<u>\$162,057</u>
<b>Ending Cash Balance</b>	\$262,631	\$272,202	\$278,070	\$286,802	\$299,368	\$310,374	\$319,966
<b>Net Cash Flow after TIFIA Debt Service</b>	<b>\$134,032</b>	<b>\$138,170</b>	<b>\$139,900</b>	<b>\$146,902</b>	<b>\$152,465</b>	<b>\$157,909</b>	<b>\$162,057</b>
<b>TIFIA loans Outstanding:</b>							
Beginning Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ramp-up Operating Loss							
Working Capital Deposit							
GANs Int./Iss Loans							
Total Outstanding TIFIA Loans	≡	≡	≡	≡	≡	≡	≡
Accrued Interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TIFIA payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ending Balance	-	-	-	-	-	-	-
<b>Net Cash Flow After TIFIA Re-payment</b>	<b>\$134,032</b>	<b>\$138,170</b>	<b>\$139,900</b>	<b>\$146,902</b>	<b>\$152,465</b>	<b>\$157,909</b>	<b>\$162,057</b>

**Exhibit 10-14 (continued)**

(Thousands of 2002\$)	2033	2034	2035	2036	2037	2038	2039	2040
<b>Sources of Cash:</b>								
Operating Cash Flow	\$224,618	\$231,992	\$239,369	\$246,748	\$254,129	\$261,513	\$268,900	\$276,289
TIFIA Loan for Ramp-Up Operating Losses								
Interest Income on Reinvestment Fund (2 percent)	\$225	\$232	\$239	\$247	\$254	\$262	\$269	\$276
<b>Gross Cash Flow</b>	<b>\$224,842</b>	<b>\$232,224</b>	<b>\$239,608</b>	<b>\$246,995</b>	<b>\$254,384</b>	<b>\$261,775</b>	<b>\$269,169</b>	<b>\$276,565</b>
<b>Applications of Cash:</b>								
Capital MofW Financing by MWRRRI	\$44,544	\$44,544	\$44,544	\$44,544	\$44,544	\$44,544	\$44,544	\$44,544
Contribution to Reinvestment Fund (5 percent)	<u>\$11,231</u>	<u>\$11,600</u>	<u>\$11,968</u>	<u>\$12,337</u>	<u>\$12,706</u>	<u>\$13,076</u>	<u>\$13,445</u>	<u>\$13,814</u>
<b>Net Cash Flow</b>	<b>\$169,068</b>	<b>\$176,081</b>	<b>\$183,096</b>	<b>\$190,113</b>	<b>\$197,133</b>	<b>\$204,155</b>	<b>\$211,180</b>	<b>\$218,207</b>
<b>Change in Cash Balance (Pro forma):</b>								
Beginning Cash Balance	\$162,057	\$169,068	\$176,081	\$183,096	\$190,113	\$197,133	\$204,155	\$211,180
Increase/(Decrease) in Cash	<u>\$169,068</u>	<u>\$176,081</u>	<u>\$183,096</u>	<u>\$190,113</u>	<u>\$197,133</u>	<u>\$204,155</u>	<u>\$211,180</u>	<u>\$218,207</u>
<b>Ending Cash Balance</b>	<b>\$331,124</b>	<b>\$345,148</b>	<b>\$359,177</b>	<b>\$373,209</b>	<b>\$387,247</b>	<b>\$401,289</b>	<b>\$415,335</b>	<b>\$429,387</b>
<b>Net Cash Flow after TIFIA Debt Service</b>	<b>\$169,068</b>	<b>\$176,081</b>	<b>\$183,096</b>	<b>\$190,113</b>	<b>\$197,133</b>	<b>\$204,155</b>	<b>\$211,180</b>	<b>\$218,207</b>
<b>TIFIA loans Outstanding:</b>								
Beginning Balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ramp-up Operating Loss								
Working Capital Deposit								
GANs Int./Iss Loans								
Total Outstanding TIFIA Loans	=	=	=	=	=	=	=	=
Accrued Interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TIFIA payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ending Balance	-	-	-	-	-	-	-	-
<b>Net Cash Flow After TIFIA Re-payment</b>	<b>\$169,068</b>	<b>\$176,081</b>	<b>\$183,096</b>	<b>\$190,113</b>	<b>\$197,133</b>	<b>\$204,155</b>	<b>\$211,180</b>	<b>\$218,207</b>

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**Exhibit 10-15**  
**Total Project Costs (Millions of 2002\$)**

<i>Capital Costs</i>	
Infrastructure & Rolling Stock	\$7,699.9
Initial Working Capital	\$30.0
<b>Total Capital</b>	<b>\$7,729.9</b>
<i>Interest Costs</i>	
TIFIA	\$203.6
GANs	\$320.4
<b>Total Interest</b>	<b>\$524.0</b>
<i>Other Costs</i>	
GANs Issuance Fees	\$27.6
<b>Total Project Costs</b>	<b>\$8,281.4</b>

### ***10.7 Risks to the Financial Plan and Strategic Financing Issues***

A number of risks to the financial plan were identified in conducting the financial analysis. The most significant risk factor is the availability of federal grant programs. Once federal grant funds are identified and secured, the availability of state funds, as well as the ability to obtain secondary sources of short-term financing to cover start-up operating losses need to be secured. Federal and state funding programs are discussed in Chapter 9.

Given that funding requirements are met, the actual level of annual appropriations from Federal sources will have a large impact on the need for short-term loans (GANs, TIFIA) to cover any gap in construction costs. Any additional financing will increase the total project costs. The impact of various annual federal obligation levels is shown in Exhibit 10-16. As seen in the exhibit, the increase in federal annual cap results in a decrease in the GANs requirement. If the annual federal funding cap is increased to \$947 million from \$400 million, assumed as moderate level in base case, GANs will not be required since federal funds disbursement would cover 80 percent of the project's cost during the construction period.

**Exhibit 10-16**  
**Alternative Federal Obligation Levels**  
**(Million of 2002\$)**

<b>Total Capital Cost</b>		<b>\$7,700</b>		
Maximum Federal Grant (80 percent)		\$6,160		
Maximum State Bond (20 percent)		\$1,540		
<i>Annual Federal Obligation Level</i>	<i>Total Capital Cost</i>	<i>Available Federal Grants</i>	<i>State Bonds</i>	<i>Additional Funds</i>
\$300	\$7,700	\$2,703	\$1,540	\$3,456
\$400	\$7,700	\$3,403	\$1,540	\$2,756
\$500	\$7,700	\$4,103	\$1,540	\$2,056
\$600	\$7,700	\$4,801	\$1,540	\$1,359
\$700	\$7,700	\$5,305	\$1,540	\$855
\$800	\$7,700	\$5,719	\$1,540	\$441
\$900	\$7,700	\$6,019	\$1,540	\$141
\$947	\$7,700	\$6,160	\$1,540	\$0

Another factor that would influence the overall financial results is the level of financial accountability with respect to a system-wide or a corridor-based financing structure. Total MWRRS net revenue losses are minimized when summed across the system. Additional risk factors are related to interest rates and other borrowing costs, unanticipated construction delays, and many other factors.

### ***10.8 Sensitivity Analysis***

Finance-related uncertainties and alternative funding strategies could affect the results of the financial analysis. These include factors beyond the control of the states such as interest rates, capital and operating costs and revenue growth. An analysis was conducted to assess the sensitivity of the financial analysis based on changes to the underlying assumptions, which were given in Exhibit 10-8.

Exhibit 10-17 presents the changes in financial results based on variations in operating cost and revenue assumptions. The analysis indicates that net cash flow is more sensitive to changes in revenues than operating costs. For example, a 10 percent decline in projected ticket revenues in base case results in a \$14.9 million reduction (197 percent) in cash flow in year 2009. In comparison, a 10 percent increase in track and right-of-way maintenance costs results in a 34 percent decline in the 2009 cash flow.

**Exhibit 10-17**  
**Financial Sensitivity – Changes in Operating Assumptions**  
**(Thousands of 2002\$)**

	<i>Operating Subsidy Required</i>								
	<i>2008</i>		<i>2009</i>		<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
<i>Base Case:</i>	<b>(\$38,389)</b>		<b>(\$8,031)</b>		<b>\$13,459</b>	<b>(\$3,097)</b>	<b>\$11,446</b>	<b>\$52,117</b>	<b>\$75,595</b>
	<i>\$ Required</i>	<i>Percent</i>	<i>\$ Required</i>	<i>Percent</i>	<i>\$ Required</i>	<i>\$ Required</i>	<i>\$ Required</i>	<i>\$ Required</i>	<i>\$ Required</i>
Personnel Costs + 10 percent	(\$43,821)	14 percent	(\$14,746)	84 percent	\$5,403	(\$12,531)	(\$1,963)	\$37,862	\$60,442
Personnel Costs – 10 percent	(\$32,957)	-14 percent	(\$1,316)	-84 percent	\$21,516	\$6,336	\$24,855	\$66,372	\$90,749
Train Equipment Maintenance + 10 percent	(\$41,719)	9 percent	(\$12,296)	53 percent	\$8,514	(\$9,991)	(\$539)	\$39,451	\$62,007
Train Equipment Maintenance – 10 percent	(\$35,059)	-9 percent	(\$3,766)	-53 percent	\$18,405	\$3,797	\$23,431	\$64,784	\$89,183
Track and ROW Maintenance + 10 percent	(\$40,683)	6 percent	(\$10,772)	34 percent	\$10,445	(\$7,076)	\$5,890	\$46,490	\$69,779
Track and ROW Maintenance – 10 percent	(\$36,095)	-6 percent	(\$5,291)	-34 percent	\$16,474	\$882	\$17,002	\$57,744	\$81,412
Operating Costs + 10 percent	(\$52,891)	38 percent	(\$26,059)	224 percent	(\$7,550)	(\$29,550)	(\$28,812)	\$9,499	\$30,317
Operating Costs – 10 percent	(\$23,887)	-38 percent	\$9,997	-224 percent	\$34,468	\$23,356	\$51,704	\$94,735	\$120,873
Ticket Revenue +10 percent	(\$28,549)	-26 percent	\$7,824	-197 percent	\$34,027	\$20,948	\$49,511	\$95,946	\$123,994
Ticket Revenue – 10 percent	(\$48,230)	26 percent	(\$23,887)	197 percent	(\$7,109)	(\$27,143)	(\$26,619)	\$8,289	\$27,196
Ticket Revenue – 20 percent	(\$58,070)	51 percent	(\$39,742)	395 percent	(\$27,677)	(\$51,188)	(\$64,684)	(\$35,539)	(\$21,203)
Ticket Revenue – 30 percent	(\$67,911)	77 percent	(\$55,598)	592 percent	(\$48,245)	(\$75,233)	(\$102,749)	(\$79,368)	(\$69,602)
Total Revenue + 10 percent	(\$27,726)	-28 percent	\$9,194	-214 percent	\$35,814	\$23,046	\$52,849	\$99,947	\$128,433
Total Revenue – 10 percent	(\$49,052)	28 percent	(\$25,256)	214 percent	(\$8,896)	(\$29,241)	(\$29,957)	\$4,287	\$22,757

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Based on the projections, the operating subsidies required during 2008, 2009 and 2011, which total approximately \$49.5 million, are recovered by 2013. As was shown in Exhibit 10-15, if there is a 10 percent decrease in the projected revenues, the operating subsidy would increase by 188 percent. The cumulative subsidy resulting from the decrease in revenues would be recovered beyond 2014 or by 2017. A 10 percent decrease in projected revenues would shift the year in which the MWRRS achieves a 1.0 or break-even operating revenue cost ratio on a system-wide basis.

The above results provide an indication of how the underlying assumptions affect the financial results for the MWRRS. Public sector as well as private sector contributions toward projected capital costs (*e.g.*, stations) can have a positive impact on the cash flow requirements of the financing alternative chosen. With bonds as the state financing vehicle, an increase in capital costs or interest rates or a decrease in annual federal grant obligations can have a significant impact on the level of state revenues required to be pledged for repayment on bonds.

## ***10.9 MWRRS Internal and External Risk Analysis***

### ***10.9.1 Specific MWRRS Risks***

Although the MWRRS is not an inherently risky project, it should be understood that project risk could occur anywhere during the development, implementation or the operational life cycle. Risk affects construction goals and timetables, project funding, project launch and operational performance. Risks can be internal – occurring at the MWRRS level and external – caused by forces or parties outside of the MWRRS. Risk may include event, management, technology, ridership, freight railroad, inflation and interest rate risks. Ignoring these issues early in the project can lead to delays in delivery dates and budget overages that severely undermine confidence in the project and in the project manager. While any project accepts a certain level of risk, regular and rigorous risk analysis and management techniques serve to defuse problems before they arise.

#### ***Business Risks***

*Management Risk:* A major concern for the success of the MWRRS is the quality of the management team selected to operate the system. Potential operators must be thoroughly evaluated prior to selection. A management team that is well-respected, seasoned and has a distinguished track record of operating success as reflected by evidence of cost control, annual surpluses, support of the financial community and customer satisfaction should be selected. While Amtrak is currently considered a preferred operator of the MWRRS, the MWRRS should have a full understanding of other potential operators prior to making its selection. Operators from other transportation sectors, including airline and cruise ship, should be considered since they often have the marketing and operating infrastructure in place and a record of financial discipline to ensure that revenues are generated and costs are controlled in order to meet the financial obligations of the system. Failure to enlist a strong operator and management team could threaten the financial success of the MWRRS.

*Construction Risk:* With any construction project, there are numerous critical points where risk can occur. However, rail construction is a proven, low-risk endeavor with a long history of success in this country. Although not all risks will be identified here, the MWRRS should be

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aware of some construction risks associated with the project, which may include contractor, vendor, inclement weather, schedule, cost overrun and quality risks. Hiring a reputable general contractor to oversee construction can minimize these risks. The MWRR could also consider employing contracting vehicles that shift some of the construction risk to a general contractor. Such contracts could include *cost plus incentive fee*, *fixed price* and *incentive fee*, etc. In addition, dividing segments or corridors amongst several contractors can reduce the overall risk of the MWRRS.

*Inflation Risk:* Inflation can be defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every dollar you own buys a smaller percentage of a good or service. Inflation can be measured by the Consumer Price Index and the Producer Price Index. Over time, as the cost of goods and services increase, the value of a dollar will fall because it will not be able to purchase the same amount of goods or service it once did. While the annual rate of inflation has fluctuated greatly over the last half century, ranging from nearly 0 to 23 percent, the Federal Reserve Board actively tries to maintain a specific rate of inflation. This rate is usually 2-3 percent but can vary depending upon circumstances. Inflation can have a significant impact on the MWRRS financial plan because the costs of labor and capital can rise faster than the current funding strategy has accounted for. A significant rise in inflation could negatively impact MWRRS funding; conservative inflation figures were used in the financial analyses.

*Interest Rate Risk:* The price that a debt security (bond) will fall due to increases in interest rates is known as *interest rate risk*. It is also called *funding risk* because changes in interest rates resulting in higher funding costs can impact a project's cash flow. Whereas this is a high cost project, interest rates could affect the progress of the MWRRS.

*Technology Risk:* The proposed train technologies for the MWRRS are proven; therefore, technology risk is rather low. However, when working with a vendor in equipment procurement, there can be several risk factors associated with its deployment. These include schedule and cost risks, operating risks and performance risk. When Amtrak introduced the Acela train, there were issues with excessive wheel wear and cracking of the suspension stabilization device. These issues increased maintenance costs and the out-of-service ratio. The rolling stock suggested for the MWRRS has been successfully deployed in other areas and therefore, this risk is not expected. However, MWRRS management should be aware of all risks associated with the deployment of the rolling stock.

*Inclement Weather Risk:* The Midwest region is prone to severe winter weather, creating disruptions to schedule and operating conditions. A blizzard could shut down the rail system for brief periods; however, rail service is more reliable than air or highway travel during inclement weather and could reap benefits from stormy weather in the region.

*Ridership Risk:* Revenue generated by the MWRRS is dependent upon the number of riders using the system. Some of the risk associated with ridership levels has already been mitigated by the approach taken to demand forecasting. Forecasts were developed using very conservative estimates for modal choice, demographic growth and economic growth. In addition, an error range of +/- 20 percent is associated with ridership forecasts. There is low risk associated with under-forecasting, however, risk factors that could affect ridership forecasts include a dramatic

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slowdown in the economic growth of the Midwest region and the level of reliability and quality of service as detailed in this plan.

*Freight Railroad Risks:* The MWRRS will provide for enough railroad capacity for reliable operation of both passenger and freight trains, however, since MWRRS trains will share track with freight trains, there is some risk that MWRRS operating speed and schedules could be affected by freight train operation. Agreements need to be made with the freight railroad companies giving right-of-way to MWRRS passenger trains and the freight trains moving into sidings to allow an MWRRS train to pass. MWRRS running times would be maintained, and risk minimized, through well coordinated, timely dispatch support and the mitigation of line congestion due to siding capacity issues. Risk is also a factor should agreements concerning track maintenance costs and access fees not be reached.

### ***Event Risk***

*Security Risk:* Security and terrorism risks must be considered in the deployment of the MWRRS. A terrorist could choose to disrupt the system at many critical points including damaging tracks, bridges, rolling stock or stations. However, unlike aviation or waterborne targets, damage to a portion of the railroad is not necessarily catastrophic. For example, track can be replaced in a matter of days; a bridge can be repaired in a matter of weeks. Terrorists often select targets where many people congregate, making the MWRRS' stations *high value* targets. Many of the MWRRS' security vulnerabilities can be mitigated by coordinating early-on with the Department of Homeland Security and the Transportation Security Administration and through the use of new technologies to *harden* the stations and therefore make them as secure as possible.

### ***10.10 Express Parcel Financial Model***

This section develops a financial model for the performance of an optional MWRRS express parcel service. A separate financial statement has been developed for the proposed express parcel service, so that the impact of this service can be easily identified, and separated, from the main results, if desired. A net profit figure has to be developed for each year from 2008 through 2040 to integrate this result into the overall MWRRS business plan.

It is recommended that the MWRRS express parcel service be franchised on an exclusive basis. This approach would allow use of the parcel compartment in return for a share of revenues developed by the parcel service. The agreement should require the parcel franchisee to commit to using the parcel compartment on a *take or pay* basis for *all* shipments they handle. There is a real risk that a parcel operator may use MWRRS service as a method of building volume, then try to switch over to a lower-cost highway provider once sufficient volume develops. The franchising structure can prevent this by requiring that MWRRS have a share of *all* revenues developed by the parcel service. In return, the parcel operator would receive:

- Exclusive use of the parcel compartment on MWRRS trains,
- The right to use station facilities provided by the MWRRS states, and
- The ability to contract for conductor-provided service to smaller stations on the MWRRS network, should the passenger operator choose to cooperate in making this service available.

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The financial structure proposed for the MWRRS express parcel service, is modeled after the contractual framework that the European operator *Esprit* has already negotiated with its U.K. rail operators. The operating approach is consistent with that of the European rail operators for the *Esprit* and *Expressgods*, as well as that of Greyhound and U.S. airlines who offer a similar service.

- After deducting the cost of local courier service, *Esprit* splits its revenue 50/50 with the passenger train operator. *Esprit's* payment for the rail line haul includes all necessary station support services. However, this business plan assumes that the MWRRS parcel operator must provide its own station support services.
- This 50 percent revenue share would show as additional revenue on the MWRRS passenger operator's income statement and is associated with very little additional operating cost. This payment is treated as an operating expense to the parcel operator.

This financial plan is predicated on the following assumptions:

- The MWRRS parcel operator is responsible for the cost of its own station operations; call center operations and the CUS parcel sorting room. The capital cost of outlying station facilities is funded by the MWRRS states; however, the parcel operator must pay a market-based rental rate for any space used at CUS as its parcel sorting room.
- The MWRRS parcel operator pays the passenger train operator 50 percent of its revenue, net of cost for local courier service, outlying station operations, and purchased highway or air service. The parcel operator is responsible for covering its own costs for call center operations, the CUS parcel sorting room, sales and marketing, and corporate overhead out of its remaining 50 percent revenue share.

This MWRRS express parcel business plan is developed from the viewpoint of the *parcel franchisee* and not the MWRRS train operator. This plan shows the ability of the parcel franchisee to operate profitably, while sharing 50 percent of its revenues (net of certain costs) with the passenger train operator. With the franchising structure proposed here, parcel service would generate substantial revenue with very few added costs to the passenger train operator. The costs of providing the parcel service would be paid by the parcel operator, and covered by the parcel operator's remaining 50 percent revenue share.

### ***10.11 Express Parcel Service Costs***

Following are assumptions incorporated into the parcel franchisee's pro-forma financials. The following are considered largely fixed costs:

- Headquarters and management salaries, including office rental, are budgeted initially at \$2.9 million per year.
- Sales and marketing expenses are budgeted initially at \$3.1 million per year, which includes \$1 million per year for advertising
- Even though traffic volumes are light enough to be handled manually, large parcel room (100 x 40 feet) is being provided at CUS. This room would be large enough to accommodate an automated package-sorting machine should the need arise. Space for the mailroom is leased from CUS at an annual cost of nearly \$1 million.
- Each of the other 22 main MWRRS stations are staffed by one full-time parcel position, two

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shifts a day with extra board coverage for vacancies and vacation relief.<sup>2</sup> Staffing these 22 stations plus 8 positions at CUS costs \$3.5 million per year.

- This total of \$10.5 million is considered about 30 percent variable and 70 percent fixed.

The following are considered variable costs, with totals given based on a volume of 5,200 packages per day:

- The cost of courier service consumes 70 percent of the door-to-door revenue, or \$117 per package. Only \$50 per package remains after paying local couriers for providing local pickup and delivery service. This price level was confirmed based on Internet real time price quotes from several airline web sites.
- Call center costs are the largest line-item expense after the cost of local courier service. At 10 minutes per package, talk-time would cost \$17.1 million per year.
- An additional \$2 million per year is allocated for station and shipping supplies.

The direct cost of providing the MWRRS express parcel service was modeled as \$7.49 million per year fixed, plus a \$16.28 per package variable. This does not include the payment to the MWRRS passenger operator for use of the parcel compartments.

Because of the high \$7.49 million fixed cost, a minimum volume must be reached before the express parcel service can become profitable. Operating a profitable service requires a rail network of a reasonable size. To prevent large start-up losses, it has been assumed that parcel service would not start until 2012, the fifth year of MWRRS implementation. By this time, most of the core network will be in place.

Although all available data suggests that the express parcel business should maintain a high growth rate for the foreseeable future, it is a highly competitive business. A high growth rate has been projected for the parcel service in the early years, followed by a gradual tapering as market penetration is established. Given however a forecast growth rate of 6-8 percent per year for the industry for the foreseeable future, it is clear that the market potential for parcel service will most likely be much *larger* than the forecasts given in Exhibit 10-18.

**Exhibit 10-18**  
**Growth Rates Used for**  
**Express Parcel Service Financial Plan**

Growth Rate from 1999 – 2010	10 percent
Growth Rate from 2010 – 2020	4 percent
Growth Rate from 2020 – 2040	3 percent

The MWRRS passenger operator's payment would be computed according to a contractual formula that calls for a 50/50 revenue split, after deducting the cost of couriers and a few other specific, allowable expenses. The financial result including the cost of payments to the MWRRS

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<sup>2</sup> \$60,000 is the full cost for parcel handling personnel employed by the parcel franchisee, including benefits. This is a reasonable cost for a private franchise operator hiring low-skilled labor at competitive market rates. Higher-skilled call center personnel are paid at a higher rate.

passenger operator<sup>3</sup> is given in Exhibit 10-19. This analysis shows that express parcel service is well able to contribute significant ancillary revenues to the MWRRS bottom line, while still affording a very comfortable profit margin to the parcel operator. The parcel operator's profit margin is quite reasonable, since the majority of the capital investment in trains and stations will be provided by the MWRRS. The passenger operator's share, which is much larger than the parcel operator's profit margin, can be considered an equitable payment for the right to use the capital investment and train services provided by the MWRRS.

**Exhibit 10-19**  
**Parcel Service Financial Results (2002\$)**

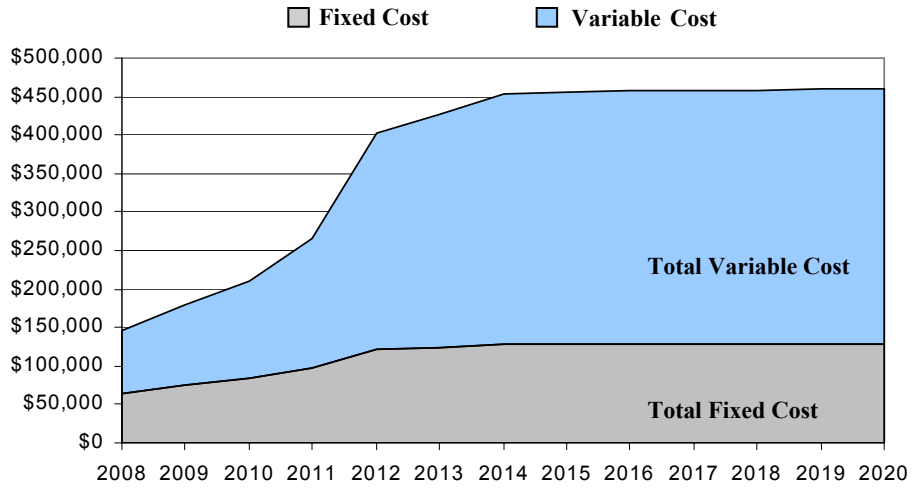
YEAR	2012	2013	2014	2015	2025	2040
REVENUE AFTER COURIER COST	\$26.85	\$41.88	\$58.08	\$60.40	\$85.19	\$132.73
DAILY PARCEL COUNT	2,065	3,222	4,468	4,646	6,553	10,210
PARCEL OPERATOR'S COST	\$16.23	\$21.13	\$26.40	\$27.16	\$35.23	\$50.71
<b>PASSENGER OPERATOR'S SHARE</b>	<b>\$5.00</b>	<b>\$19.07</b>	<b>\$27.04</b>	<b>\$28.19</b>	<b>\$40.40</b>	<b>\$63.81</b>
PARCEL OPERATOR PROFIT	\$5.62	\$1.69	\$4.64	\$5.06	\$9.57	\$18.22
<b>PASSENGER OPERATOR'S SHARE</b>						
Allocated to Routes (\$Mill)						
Michigan	\$0.96	\$3.67	\$5.20	\$5.42	\$7.77	\$12.27
Cleveland	\$0.87	\$3.31	\$4.69	\$4.89	\$7.00	\$11.06
Cincinnati	\$0.61	\$2.34	\$3.32	\$3.46	\$4.96	\$7.83
Carbondale	\$0.06	\$0.22	\$0.32	\$0.33	\$0.47	\$0.75
St. Louis	\$0.54	\$2.05	\$2.91	\$3.04	\$4.35	\$6.87
Kansas City	\$0.29	\$1.09	\$1.54	\$1.61	\$2.31	\$3.65
Quincy - Omaha	\$0.16	\$0.60	\$0.85	\$0.89	\$1.27	\$2.01
Green Bay - St. Paul	\$1.52	\$5.79	\$8.21	\$8.56	\$12.26	\$19.37

### 10.12 Cost Implications

During the initial years of service, while ramping up to full implementation, the MWRRS will incur higher unit operating costs than in later years due to economies of scale. The system-wide MWRRS operating costs are shown in Exhibit 10-20. Total operating costs rise from \$145 million in 2008, to \$453 million by 2014. Fixed costs become a smaller portion of total costs as the system is expanded. In Phase 5 in 2012, total costs allocated to established corridors, such as Chicago-Twin Cities and Chicago-St. Louis *actually drop* as some fixed costs are reallocated to Michigan and new-start corridors. As the number of train-miles increases from 3.4 million to 2008 to 12.1 million in 2012, the average cost per train-mile decreases from \$42.98 to \$33.15, a 23 percent reduction, as shown in Exhibits 10-20 and 10-21.

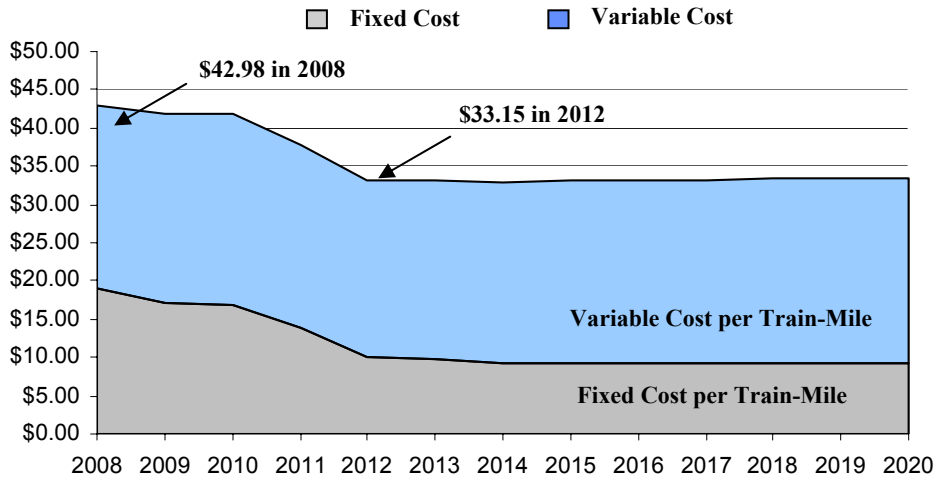
<sup>3</sup> To help the parcel operator overcome start-up expenses, this payment is capped at \$5 million in 2012, the first year of operations. After that, a 50 percent of revenue formula is used.

**Exhibit 10-20  
Total Fixed and Variable Cost\***



Fixed and variable operating costs do not include capital costs, interest or depreciation expense. Only direct operating expenses that are included in the Operating Ratio calculation, as defined by the FRA *Commercial Feasibility Study* are included.

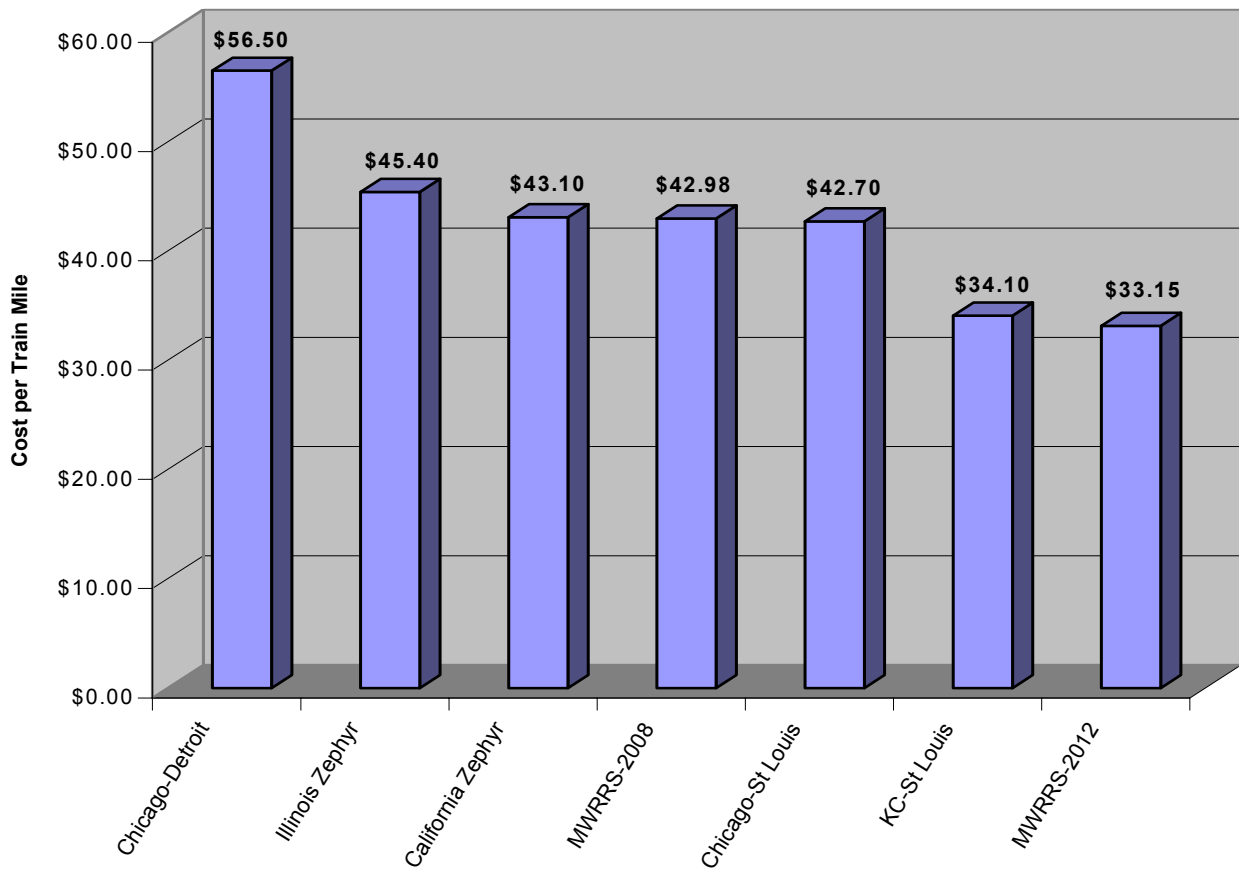
**Exhibit 10-21  
Fixed and Variable Costs per Train-Mile \***



\* Variable cost per mile changes slightly because it includes components that vary by passenger volumes and passenger miles

Comparing these projected MWRRS costs to fully-allocated Amtrak costs<sup>4</sup>, as seen in Exhibit 10-22, it should be apparent that they are approximately in the same range – in fact, the MWRRS 2008 projected cost of \$42.98 is slightly higher than Amtrak’s fully-allocated RPS cost for the Chicago-St. Louis corridor. Amtrak’s costs for the Chicago-Detroit corridor are higher because of the high cost of maintaining the dedicated passenger trackage, spread over a relatively few train miles operated. Spreading MWRRS’ fixed cost over a larger number of train-miles reduces this average cost to \$33.15 by 2012. This cost is somewhat lower than Amtrak’s costs today, but is still in the range of some existing services in the Midwest region, and is roughly comparable to the level of costs now being allocated to the St. Louis-Kansas City route.

**Exhibit 10-22**  
**Comparison: Projected MWRRS vs. Amtrak RPS Costs**



<sup>4</sup> 1997 Amtrak costs adjusted for inflation to 2002, excluding depreciation. Source: *Intercity Passenger Rail: Financial Performance of Amtrak’s routes*, U.S. General Accounting Office, May 1998.