

**Grant Application
Capital Assistance To States – Intercity Passenger Rail Service Program
Federal Railroad Administration**

**Title: Midwest Regional Rail Initiative Phase 7 Alternatives Analysis,
Plan Update and Public Information Activities.**

Project Summary

The Wisconsin Department of Transportation, acting as Secretariat for the Midwest Regional Rail Initiative (MWRRI) Steering Committee, representing the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin, requests federal grant funds in the amount of \$297,000 from the Federal Railroad Administration’s “Capital Assistance To States – Intercity Passenger Rail Service Program” for on-going planning, engineering and environmental work.

This planning work is intended continue the MWRRI on the path to implementation by updating and refining key MWRRI plan elements and public information materials and completing corridor alternatives analysis work called for in the FRA Rail Corridor Transportation Plan Guidance Manual. This work will also provide basic information for the participating states as they proceed with meeting the requirements of the federal NEPA process for the preparation of a programmatic Environmental Impact Statement for route selection in MWRRI corridors. The MWRRI Plan provides the basic blueprint for all state implementation efforts in the region and insures regional consistency in each state’s efforts as well as the efficient use of state and federal implementation funding. Because this work is being done as a cooperative effort by the MWRRI states, rather than individually, it offers FRA substantial cost savings associated with scale and mobilization economies and reduced duplication of work in separate projects.

The participating MWRRI states and Amtrak will provide matching funds in the amount of \$297,000 for this work for a total project cost of \$594,000, which will be conducted over a three-year period.

1) Point of Contact:

- a. Randall Wade
Passenger Rail Manager
Wisconsin Department of Transportation
PO Box 7914
Madison, WI
608 266-9498
randall.wade@dot.state.wi.us

2) Standard Form 424 Application for Federal Assistance:

- a. Filed through grants.gov

3) Identify and provide background information on the intercity passenger rail services that the proposed project is intended to benefit.

Background on Existing Service

The Midwest Regional Rail Initiative (MWRRI) system is a 3,000-mile system providing improved intercity passenger rail service using Chicago as a regional hub. Regionally Amtrak provides existing corridor and long-distance intercity passenger rail service, freight rail service is provided by over 10 freight railroad companies, and commuter rail service in the Chicago area is provided by Metra and Northern Indiana Commuter Transportation District (South Shore Line). The right-of-way of throughout the system is largely owned by the freight railroads (with some stretches owned by Metra and Amtrak). For the most part, the current maximum speed is 79 mph, with the exception of portions of the Chicago-Detroit route, which currently operates in revenue service at 95 mph maximum speed. Existing Amtrak service is detailed in Table 1. Service frequency and travel times are detailed in Table 2. Ridership is detailed in Table 3, and On-time performance is shown in Table 4.

Planned Amtrak service expansion that may be implemented in the near future includes several routes out of Chicago, including Chicago to Quad Cities and Chicago to Dubuque. In addition, a new commuter rail service is under construction from Minneapolis to Big Lake, MN, known as Northstar.

The region also has extensive commercial air service with 4 major international hub airports: Chicago O’hare, Detroit, Minneapolis, and St. Louis. Other major airports include Milwaukee, Chicago Midway, Cleveland, Cincinnati, Omaha, Kansas City, and Indianapolis. In addition, there are numerous regional airports in each of the 9 states. Congestion at O’hare International Airport affects flights throughout this region, and the country. Regional flights to/from O’hare are often cancelled or delayed.

Table 1: Existing Amtrak Service

Amtrak Service	Route Description	State Supported
<i>Short Distance</i>		
Hiawatha Service	Milwaukee-Chicago	✓
Illinois Zephyr/Carl Sandburg	Quincy-Chicago	✓
Lincoln Service	St. Louis-Springfield-Bloomington/Normal-Chicago	✓
Kansas City Mule/Ann Rutledge	Kansas City-Jefferson City-St. Louis	✓
Illini/Saluki	Carbondale-Champaign/Urbana-Chicago	✓
Hoosier State	Indianapolis-Chicago	
Wolverine	Pontiac-Detroit-Battle Creek-Chicago	

Blue Water	Port Huron-East Lansing-Battle Creek-Chicago	✓
Pere Marquette	Grand Rapids-Chicago	✓
<i>Long Distance</i>		
Empire Builder	Seattle/Portland-Mpls/St. Paul-Milwaukee-Chicago	
California Zephyr	San Francisco-Denver-Omaha-Chicago	
Southwest Chief	Los Angeles-Albuquerque-Kansas City-Chicago	
Texas Eagle	Los Angeles-San Antonio-St. Louis-Chicago	
City of New Orleans	New Orleans-Memphis-Carbondale-Chicago	
Cardinal	New York-Washington-Cincinnati-Indianapolis-Chicago	
Capitol Limited	Washington-Pittsburgh-Cleveland-Toledo-Chicago	
Lake Shore Limited	New York/Boston-Cleveland-Toledo-Chicago	

Table 2: Amtrak Service Frequency and Travel Times

Amtrak Service	Route Segment	Trip Frequency (Round trips per day)	Average Travel Time (Hours: Minutes)
<i>Short Distance</i>			
Hiawatha Service	Milwaukee-Chicago	7*	1:29
Illinois Zephyr/Carl Sandburg	Quincy-Chicago	2	4:23
Lincoln Service	St. Louis-Chicago	4	5:32
Kansas City Mule/Ann Rutledge	Kansas City-St. Louis	2	5:40
Illini/Saluki	Carbondale-Chicago	2	5:30
Hoosier State	Indianapolis-Chicago	< 1*	5:05
Wolverine	Pontiac-Chicago	3	6:29
Blue Water	Port Huron-Chicago	1	7:01
Pere Marquette	Grand Rapids-Chicago	1	3:57
<i>Long Distance</i>			
Empire Builder	Twin Cities-Chicago	1	8:10
California Zephyr	Omaha-Chicago	1	9:02
Southwest Chief	Kansas City-Chicago	1	7:15
Texas Eagle	St. Louis-Chicago	1	5:40
City of New Orleans	Carbondale-Chicago	1	5:32
Cardinal	Cincinnati-Chicago	< 1*	9:28
Capitol Limited	Cleveland-Chicago	1	6:32
Lake Shore Limited	Cleveland-Chicago	1	7:16
*Hiawatha Service operates 6 RT on Sunday *Hoosier State operates 4 days per week *Cardinal operates 3 days per week Source: Amtrak			

Table 3: Amtrak Service Ridership

Amtrak Service	Annual Ridership				Average Annual % Growth (2004-2007)
	FFY 2004	FFY 2005	FFY 2006	FFY 2007	
<i>Short Distance</i>					
Hiawatha Service	460,430	525,239	580,333	595,336	8.9%
Illinois Zephyr/Carl Sandburg	108,856	118,493	119,719	169,258	15.9%
Lincoln Service*	212,999	242,144	262,320	408,807	24.3%
Illini/Saluki	113,281	127,808	136,640	228,695	26.4%
Kansas City Mule/Ann Rutledge**	128,084	136,701	119,257	116,517	-3.1%
Hoosier State	17,934	20,191	20,096	26,347	13.7%
Wolverine	366,291	406,499	438,529	449,107	7.0%
Blue Water	94,378	111,630	123,823	127,642	10.6%
Pere Marquette	87,767	96,471	101,932	104,819	6.1%
<i>Long Distance</i>					
Empire Builder	437,191	476,531	497,020	504,977	4.9%
California Zephyr	335,764	347,856	335,443	329,840	-0.6%
Southwest Chief	290,003	295,515	300,416	316,668	3.0%
Texas Eagle	234,619	239,276	232,654	218,321	-2.4%
City of New Orleans	190,017	183,237	175,237	180,473	-1.7%
Cardinal	88,930	90,542	95,076	96,896	2.9%
Capitol Limited	180,810	195,051	198,044	193,748	2.3%
Lake Shore Limited	279,662	312,779	323,480	312,643	3.8%

*STL-CHI ridership

**KCY-STL ridership

Source: Amtrak

Table 4: Amtrak Service On-Time Performance

Amtrak Service	On-Time Performance (% On-Time)			
	FFY 2004	FFY 2005	FFY 2006	FFY 2007
<i>Short Distance</i>				
Hiawatha Service	93.0	91.6	89.7	89.2
Illinois Service	58.7*	69.4*	69.0	55.3
Missouri Service	58.7*	69.4*	33.2	27.9
Hoosier State	53.0	49.8	50.4	42.7
Michigan Service	54.9	43.6	41.5	31.4
<i>Long Distance</i>				
Empire Builder	63.4	68.3	60.1	73.4
California Zephyr	25.7	24.4	6.9	10.2
Southwest Chief	56.4	71.6	73.0	60.1
Texas Eagle	62.6	53.1	19.7	26.8
City of New Orleans	67.6	83.0	84.4	86.2
Cardinal	43.5	38.0	27.2	39.0
Capitol Limited	33.3	26.4	11.4	23.4

Lake Shore Limited	25.3	20.3	23.1	32.4
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*On-time performance for Illinois and Missouri service combined
Source: Amtrak

Background on Future Service Improvements

The Midwest Regional Rail Initiative (MWRRI) system encompasses a rail network of more than 3,000 route miles (that includes the existing Amtrak short-distance corridor routes) and serves nine states with a combined population of 60 million people (See Figure 1). The frequent service proposed for the MWRRI system serves intermediate sized cities on each corridor, such as Jefferson City, Springfield, Des Moines, Indianapolis, Madison and Toledo, as well as their respective larger endpoint cities such as Kansas City, St. Louis, Omaha, Cincinnati, Twin Cities and Cleveland. Mainline service to destinations such as Detroit and Twin Cities is supplemented by branch line services to Lansing, Grand Rapids and Green Bay.



Figure 1: Midwest Regional Rail System

Five of the MWRRI system corridors are federally designated high-speed corridors (See Figure 2).

Compared to existing service, the MWRRI system service will have improved reliability, higher speeds of up to 110 mph, reduced travel times, increased safety (improved signaling and infrastructure, safer crossings etc.), improved on-time performance, higher frequency, and more comfort (modern trains with amenities such as comfortable seating, food service, at-seat power outlets, etc.).

The MWRRI will be implemented over a 10-year period and will:

- Improve existing rail corridors owned by freight, commuter railroads, and Amtrak to accommodate both passenger and freight trains
- Use Chicago as the network hub
- Use state-of-the-art train equipment to provide improved reliability, speed and passenger comfort
- Provide frequent service
- Operate at speeds up to 110-mph
- Include new or remodeled stations
- Use a coordinated intercity/feeder bus service to connect to additional communities
- Link, wherever possible, with air, intercity bus, transit, taxi service, and bicycle and pedestrian modes

More details on the MWRRI system operation are described in item 6 of this application.

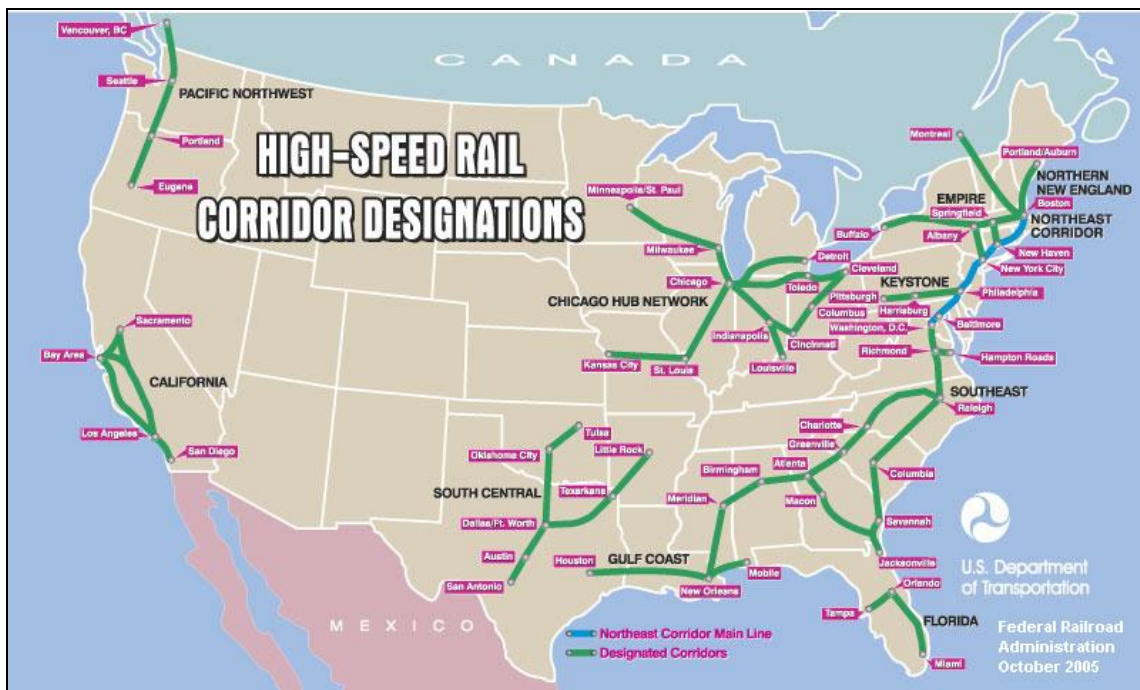


Figure 2: Federally-designated High Speed Rail Corridors

The MWRRI Steering Committee has undertaken extensive planning work over 6 phases to date. The MWRRI began in 1996 under the auspices of the Mississippi Valley

Conference – a regional division of the American Association of State Highway and Transportation Officials (AASHTO). Sponsors of the MWRRI include the States of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin, Amtrak, and the Federal Railroad Administration. A steering committee comprised of representatives from Amtrak and the nine states was developed to provide organizational structure. The steering committee supplied oversight and direction to the consultant team, which started research into the viability of an enhanced Midwest rail system. Based on favorable results from these early 1990's corridor-specific studies, a vision emerged for developing an integrated Chicago Hub regional rail system. An integrated system would allow MWRRI to benefit from reduced costs from economies of scale and better equipment utilization, as well as increase its interconnecting passenger revenues.

In 1998, the MWRRI consortium in cooperation with the consultant team released a draft “1998 Plan” report outlining estimated costs and detailing the potential benefits of the rail network. This analysis evaluated alternative speed options: 79-mph, 100-mph and 125-mph. Intensive market research and stated preference surveys resulted in development of an initial demand forecast for the feasibility study. This study determined that a 110-mph system was the best fit to the Midwest region's needs, and that this “intermediate speed” option would provide an affordable and operationally and economically viable system.

In 1999, the “2000 Plan” efforts were begun. This phase focused on 110-mph operations, resulting in considerable refinement to the operating and cost assumptions. An institutional workshop was held to develop alternatives for system financing and governance. A detailed financial plan, ramp-up plan, branch line analysis and an express parcel market assessment were also developed. An equipment vendors' workshop was held to refine vehicle life cycle costs with Talgo, Bombardier and Adtranz participating. The 2000 Plan report presented, at a feasibility level, a complete assessment of MWRRI market potential, delineated expected system operating and capital costs, outlined a strategy for funding capital needs, suggested a financing plan, and provided a cost-benefit analysis. The 2000 Plan report was delivered to the MWRRI participants in 2002.

From 2002-2004, the “2004 Plan” recognized that the MWRRI will share infrastructure with freight railroads, therefore, this portion of the planning process was undertaken largely to address freight railroads' concerns. During this phase, substantial line capacity simulation work was performed, route-specific track maintenance costs were developed, the infrastructure capital plan was further refined, and a detailed feeder bus and express parcel operations plans were developed. This most recent comprehensive update is summarized in the “Midwest Regional Rail System Executive Report – A Transportation Network for the 21st. Century” (September 2004). It can be downloaded at: <http://www.dot.wisconsin.gov/projects/state/docs/railmidwest.pdf>

Recent tasks completed as part of Phase 6 of the MWRRI are described in item # 4 below.

4) Define scope of work

The Midwest Regional Rail Initiative (MWRRI) Phase 7 work tasks continue the planning work of Phase 6, and move the MWRRI closer to implementation by establishing a framework for completing a Rail Corridor Transportation Plan and NEPA documents for MWRRI system corridors. Tasks completed in Phase 6 and previous phases provided deliverables that will be used to implement the MWRRI system in future phases including:

- A technical memorandum outlining potential Segments of Independent Utility, identifying segments of the MWRRI that could be advanced individually into project development,
- A scope of work and estimated costs for a project level EIS and elements of the required Rail Corridor Transportation Plan for Phase I of the MWRRI,
- Work plans for completing the MWRRI Phase I EIS and a template PEIS,
- A draft Purpose and Need statement for Phase I of the MWRRI; the purpose and need also establishes a framework for other MWRRI NEPA documents,
- A scope of work and estimated cost for a PEIS and elements of the Rail Corridor Transportation Plan for a corridor or combinations of corridors in any portion of the MWRRI system,
- A model Memorandum of Understanding for states that jointly prepare a NEPA document for MWRRI system corridors,
- A quality audit of the ridership, revenue, capital and operating costs and financial plan confirming conclusions of previous MWRRI phases,
- A model GIS database that can be utilized for the entire MWRRI system.

Examples of these above Phase 6 work items are provided in attached appendices as separate files (appendices 4 – 13). They are also available for fast and immediate download under in the WisDOT ftp site in folder “MWRRI Phase 6” at:
<ftp://ftp.dot.state.wi.us/pub/>

The tasks in Phase 7 will be conducted over a three-year period during years 2009, 2010 and 2011. Phase 7 tasks are tailored to continue moving the MWRRI on the path to implementation by initiating steps required for the FRA’s Rail Corridor Transportation Plan, and to meet the requirements of the federal NEPA process for the preparation of a programmatic Environmental Impact Statement for route selection in MWRRI corridors. This work will include alternatives analysis and updating MWRRI system costs, equipment and operational plans to stay current with changing regional and national conditions. Phase 7 also includes the preparation of public outreach materials to continue to inform and educate elected officials and the public on the cost and benefits of the MWRRI, particularly from an energy and air quality perspective as required by NEPA.

The following tasks identify the key work elements of Phase 7.

Task 1 Program Management

The MWRRI Steering Committee intends to engage a consultant team to assist the Steering Committee with day-to-day program management and prepare deliverables for committee review and approval. The consultant will prepare a project management plan (PMP), describing all tasks, responsibilities for these tasks, a task schedule, budget, deliverables and quality control procedures.

The consultant will schedule and arrange quarterly Steering Committee meetings over the three-year term of the contract. In preparation for the meetings, the consultant will provide documentation describing activities accomplished during the preceding quarter, as well as work scheduled for the current quarter. Progress will be documented and assessed in accordance with the overall project schedule. Any discrepancies with the planned timetable will be addressed in the report. Major issues affecting the progress of the work will be identified and suggestions for their resolution presented.

The consultant will work with the steering committee to set the quarterly meeting agenda. The consultant will make materials available to the steering committee members in advance of the meeting, and will produce meeting minutes and distribute to each steering committee member for review and comment within one week of the meeting.

The consultant will perform all tasks necessary to guide, schedule and coordinate the project activities and study deliverables. The consultant will schedule and arrange Steering Committee conference calls, as appropriate, prepare minutes and follow up on agreed upon actions. The consultant will also meet with the steering committee's chairperson, as needed, to discuss concerns, task scheduling, procedural issues, deliverable reviews, outreach and community issues.

All deliverables will be prepared in draft (10 copies) and delivered to the steering committee for review and comment prior to finalizing. Schedule review periods will be set forth in the task schedule developed in the PMP. The consultant will modify, when necessary, each deliverable based upon one consolidated set of review comments from the steering committee.

The consultant will perform project management and administrative activities including coordination, preparation of monthly progress reports and invoices.

Deliverable: Project Management Plan, meeting minutes, deliverables as described in tasks 2-8, invoices and progress reports.

Task 2 Rail Corridor Alternatives Analysis South of the Lake

This task is a conceptual design update of the 1994, 1999 and 2004 reports on the South of the Lake (SOL) corridor, between Chicago, Illinois and Porter, Indiana. The update is

to reflect changed conditions in the corridor. The task will be the start of a preliminary analysis of alternative routes, as called for in the FRA Railroad Corridor Transportation Plans: A Guidance Manual, Section II. Route Selection – Preliminary Analysis. The goal of this task will be to reduce the number of routes for future evaluation and environmental documentation. Routes to be evaluated will include the current Norfolk Southern and CSX alternatives, as well as the historic routes discussed in previous studies.

The consultant will identify and analyze the variety of historical routes that can connect Chicago and Porter. The consultant will assemble past plans, relevant resultants from Tasks 4,5,6 and 7 below and other appropriate background materials. The consultant will convene a workshop with stakeholders to develop a list of broad criteria, evaluate routes against the criteria and select one or more routes for further study in a future NEPA document. The evaluation criteria will be based on the needs identified in the Phase I MWRRI Draft Purpose and Need document that was prepared in prior Phase 6 MWRRI planning work. The consultant will re-evaluate improvements and capital cost estimates of the feasible alternatives. The consultant will document the evaluation process and conclusions in a summary report.

The consultant will prepare track schematics for existing and proposed conditions for the routes selected for further study (in accord with FRA Railroad Corridor Transportation Plans: A Guidance Manual, Section III. Physical Characteristics of the Rail Line – Existing and Proposed).

Deliverable: Summary Report of SOL Route Evaluation and track schematics of routes selected for further study.

Task 3 Rail Corridor Alternatives Analysis other MWRRI Corridors

This task will be the start of a preliminary analysis of alternative routes of other MWRRI corridors outside of the South of the Lake Corridor. The goal of this task again will be to reduce the number of routes for future evaluation and environmental documentation. The preliminary analysis will be done per the requirements of the FRA Railroad Corridor Transportation Plans: A Guidance Manual, Section II. Route Selection – Preliminary Analysis. The evaluated routes will be fully addressed in a future NEPA PEIS, EA and EIS documents and related Railroad Corridor Transportation Plans.

The consultant will gather available previous corridor studies from the MWRRI states and identify and analyze the variety of historical routes that can connect nodes in the MWRRI system. The outputs of Tasks 4,5,6, and 7 below will be used to support this analysis. The consultant will evaluate and identify reasonable alternatives for any given route to arrive at one or more routes in a corridor. Routes anticipated to be evaluated include:

Chicago-Toledo-Cleveland Corridor

- NYC: Porter - South Bend - Elkhart - Waterloo - Toledo, NS to Cleveland, NS

- PRR: Gary-Wanatah-Warsaw-Ft. Wayne, WAB: Ft Wayne-New Haven-Defiance-Toledo, NYC: Toledo-Millbury-Sandusky-Vermillion-Cleveland
- PRR: Gary-Wanatah-Warsaw-Ft. Wayne, WAB: Ft Wayne-New Haven-Defiance-Toledo, NYC: Toledo-Millbury-Norwalk-Elyria-Cleveland
- IHB: Gary-Tolleston, CSX: Tolleston-Willow Creek-Alida-Wanatah, PRR: Warsaw-Ft. Wayne, WAB: Ft Wayne-New Haven-Defiance-Toledo, NYC: Toledo-Millbury-Sandusky-Vermillion-Cleveland
- IHB: Gary-Tolleston, CSX: Tolleston-Willow Creek-Alida-Wanatah, PRR: Warsaw-Ft. Wayne, WAB: Ft Wayne-New Haven-Defiance-Toledo, NYC: Toledo-Millbury-Norwalk-Elyria-Cleveland
- PRR: Gary-Wanatah-Warsaw-Ft. Wayne-Lima-Crestline, Big Four: Crestline-Cleveland

Chicago-Indianapolis-Cincinnati Corridor

Chicago-Indianapolis

- IHB: Gary-Tolleston, CSX Tolleston-Willow Creek-Alida, Monon: Alida-Lafayette, CSX: Lafayette-Lebanon-Indianapolis
- PRR: Gary-Tolleston-Wanatah, Monon: Wanatah-Lafayette, CSX: Lafayette-Lebanon-Indianapolis
- IC: Chicago-Kankakee, Big Four: Kankakee-Sheldon-Lafayette-Lebanon-Indianapolis

Indianapolis-Cincinnati

- Big Four: Indianapolis-Greensburg-Cincinnati
- B&O: Indianapolis-Rushville-Cincinnati
- PRR: Indianapolis-Richmond-Cincinnati

Chicago-Champaign-Carbondale Corridor

- IC: Grand Crossing-Champaign-Mattoon-Centralia-Carbondale

St. Louis-Jefferson City-Kansas City Corridor

- MP: St. Louis-Kirkwood-Jefferson City-Sedalia-Pleasant Hill-Independence-Kansas City (Existing Amtrak route)

- MP: St. Louis-Kirkwood-Jefferson City-Boonville-Marshall-Lexington-Independence-Kansas City
- RI: St Louis-Eldon-Windsor-Pleasant Hill-Kansas City
- WAB: St. Louis-St. Charles-Mexico-Moberly-Carrollton-Kansas City

Chicago-Quincy/Des Moines-Omaha Corridor

- UP: Chicago-Geneva-Dixon-Clinton-Cedar Rapids-Ames-Carroll-Denison-Omaha
- BNSF: Chicago-Aurora-Wyanet, IAIS: Wyanet-Rock Island-Davenport-Iowa City-Des Moines-Atlantic-Omaha
- CN: Chicago-Rockford-Dubuque-Waterloo-Ft Dodge-Dennison-Omaha
- BNSF: Chicago-Aurora-Wyanet-Galesburg-Burlington-Ottumwa-Osceola-Creston-Omaha

Chicago-Milwaukee-Minneapolis/St. Paul-Green Bay Corridor

Milwaukee-Green Bay

- C&NW: Milwaukee-Fond Du Lac-Oshkosh-Green Bay
- C&NW: Milwaukee-Sheboygan-Manitowoc-Green Bay
- MLW: Milwaukee-Plymouth-Green Bay

Milwaukee-Minneapolis/St Paul

- MLW: Milwaukee-Watertown-Portage-Tomah-La Crosse-Red Wing-St Paul-Minneapolis
- MLW: Milwaukee-Watertown-Madison-Portage-Tomah-La Crosse-Red Wing-St Paul-Minneapolis
- C&NW: Milwaukee-Randolph-Wyeville-Eau Claire-St Paul-Minneapolis

The consultant team will convene multiple one-day workshops with stakeholders to develop a list of broad criteria, evaluate routes against the criteria and select one or more routes for further study in a future NEPA document. The evaluation criteria will be based on the needs identified in the Phase I MWRRI Draft Purpose and Need document that was prepared in Phase 6 of the MWRRI planning work. The consultant will re-evaluate improvements, capital costs, operating plans and benefits of the feasible alternatives using outputs from Tasks 4,5,6 and 7 below. The consultant will document the evaluation process and conclusions in a summary report.

Deliverable: Summary Report of MWRRI Route Evaluation selected for further study.

Task 4 Update MWRRI System Capital Costs

The goal of this task is to ensure that MWRRI states have the most current data for inclusion in future Rail Corridor Transportation Plans and NEPA documents. This updated cost information will also be critical to elected officials as they work with the public to set funding priorities. The consultant will update previous capital cost estimates to current year dollars. The capital cost updates will be provided as follows:

- By corridor and corridor phasing segments, as appropriate for each MWRRI state,
- By improvement type (note: costs for advanced train control will be obtained from Task 6 below), and
- For operating equipment (note: costs for MWRRI train equipment will be obtained from Task 5 below).

The consultant will use proper AAR, ENR cost indices, as appropriate, and adjust corridor improvement levels to account for speed changes (IDOT), on-going capacity analysis (MoDOT, WisDOT) and other system changes. These updated costs will be required for Task 2 and Task 3 above. The consultant will recommend a cost estimate format that can be updated as needed in future phases.

Deliverable: Capital cost estimates in a standard format.

Task 5 MWRRI Operating Equipment Configurations and Performance Standards

The goal of this task is to coordinate with vendors to provide updated information and confirm states' agreement on the next generation equipment pool. The findings of Task 5 will be used to develop equipment cost estimates for Task 4 above and for the corridor analyses in Tasks 2 and 3. Task 5 equipment type selection and cost estimates will be used to complete Rail Corridor Transportation Plans and NEPA documents in future MWRRI phases.

The consultant will coordinate with the Steering Committee and equipment vendors to conduct a workshop to:

- Review MWRRI System service performance standards,
- Review coach equipment types: single level, bi-level, tilt (passive and active), new vs. refurbished, interior configurations, food service cars, trolley etc.,
- Review power requirements: push pull, locomotive and cab car, existing Amtrak or freight power, MWRRI high-speed power,
- Confirm or refine MWRRI operating equipment recommendations for next generation equipment that will allow top speeds of up to 110 mph.,
- Update cost estimates for Task 4 above

Deliverable: Summary report of review findings and working cost estimates

Task 6 Advanced Train Control for MWRRRI 110 mph operations

This task will initiate preliminary work to support the requirements of the RCTP and NEPA documents in future phases. For this task, the MWRRRI Steering Committee assumes that future MWRRRI train control technology will overlay with train control systems that freight railroads have in place. The consultant will coordinate with the MWRRRI Steering Committee to meet with AAR, freight railroads and FRA to review the current status of train control technology studies and implementation activities.

The consultant will:

- Review options available nationally from the Phase 6 MWRRRI PTC Seminar and the ongoing WisDOT PTC Study,
- Review and provide an update on ITCS implementation in Chicago-Detroit Corridor, and
- Review and provide an update on IDOT plans for train control in Chicago-St. Louis Corridor.
- Contact each of the freight railroads in the MWRRRI region to obtain information on advanced train control implementation and development activities specific to each railroad.

In consultation with the freight railroads and the MWRRRI Steering Committee, the consultant will identify alternatives for inter-operable and MWRRRI system-wide advanced train control technologies in the short and long term which can be used in Tasks 2 and 3 above, and to develop estimated costs for Task 4 above.

Deliverable: Summary report of review findings and working cost estimates

Task 7 Public Information and Outreach

This task uses data developed in previous MWRRRI phases to estimate energy and emissions benefits that can be used to support future NEPA documents and to support MWRRRI public outreach activities conducted by the states. The consultant will use proposed operating plans developed from previous MWRRRI phases along with updated energy and emissions data from engine manufacturers and US EPA to calculate energy consumption and emissions by state and for the entire MWRRRI system. The consultant will incorporate technical findings to prepare an issue paper on the potential energy and greenhouse gas emission benefits of MWRRRI system implementation for use in MWRRRI NEPA documents.

The consultant will develop a 4-sided color brochure summarizing the MWRRRI system costs (from Task 4 above) and benefits (from Task 7). The consultant will develop a similar 4-sided color brochure for each state. The consultant will develop a MWRRRI website design that MWRRRI states can use as the official source for MWRRRI plan recommendations, public information materials, corridor implementation updates, and links to member state sites. The MWRRRI states will determine the appropriate host site

for the MWRRI web page. This task budget will assume printing costs for 10,000 system-wide brochures and 1,000 state-specific brochures each for the MWRRI states.

Deliverable: Technical paper summarizing energy consumption, greenhouse gas emissions and related benefits. 10,000 system-wide brochures and 1,000 state-specific brochures for each state.

Task 8 Other Studies

As state and federal funding is sought, and states move towards project implementation, there are likely to be many emerging issues of interest to states individually and collectively not addressed in Phase 7 of the MWRRI in sufficient detail and that may be necessary in completion of the Rail Corridor Transportation Plan and/or NEPA documents. Possible topics include responses to freight railroad concerns; alternative institutional and organization structures; and analysis of specific federal funding program proposals with regard to their applicability to the MWRRI. The consultant will prepare reports on these planning and implementation issues over the three-year work period as requested by the Steering Committee, subject to contractual budget constraints.

5) Present a detailed budget

The total project budget for this application under the Federal Railroad Administration’s Capital Assistance To States – Intercity Passenger Rail Service Program is \$594,000. The federal share is \$297,000 with the eight states of the Midwest Regional Rail Initiative (MWRRI) and Amtrak providing \$297,000 in matching funds. The project budget detail is shown below.

1)	Administrative and legal expenses (Task 1)	\$60,000
2.)	Land, structures, rights-of-way and appraisals	N/A
3)	Relocation expenses and payments	N/A
4)	Architectural and engineering fees (total)	\$509,000
	Task 2 South of Lake Corridor Analysis	\$125,000
	Task 3 Other MWRRI Corridor Analysis	\$150,000
	Task 4 Update Capital Costs	\$60,000
	Task 5 Operating Equipment Configuration/Performance Stds.	\$50,000
	Task 6 Train Control Evaluation	\$40,000
	Task 7 Public Information and Outreach	\$84,000
5)	Project inspection fees	N/A
6)	Site work	N/A
7)	Demolition and removal	N/A
8)	Construction labor, supervision, and management	N/A
9)	Materials, by type (e.g. ties, rail, signals, switches, rolling stock)	N/A
10)	Equipment	N/A
11)	Miscellaneous	N/A
12)	Contingencies (Task 8-Other Studies)	\$25,000
	Total	\$594,000

6) Describe operating changes to targeted intercity passenger rail services

This grant application will build off previous work conducted by the MWRRI. The MWRRI system represents a paradigm shift in intercity passenger rail service in the Midwest. The following elements will improve travel in the Midwest.

- The MWRRI system is a 3,000-mile multi-state “hub-and-spoke” system providing service to and through Chicago to locations throughout the Midwest (See Figure 3 below).
- The MWRRI system is forecast to annually attract approximately 13.6 million passengers, which is four times greater than would occur if existing passenger train service were to be continued without improvement.
- MWRRI system operation will include thru-trains and connecting service in Chicago for more efficient operations. Some maintenance facilities will be at the end of the spokes (as opposed to just at the Chicago hub), which will create efficiencies with the thru-trains.
- The greatly increased passenger train miles in the region will enable a more efficient operation and use of equipment, and reduce the fixed operating cost per train mile.
- The operating plan includes much faster travel times compared with existing service, made possible by capacity improvements and higher speeds up to 110 mph.

Reduction of Travel Times			
City Pairs	MWRRI System	Current Service	Time Reduction
Chicago-Detroit	3 hr 46 min	5 hr 36 min	1 hr 50 min
Chicago-Cleveland	4 hr 22 min	6 hr 24 min	2 hr 02 min
Chicago-Cincinnati	4 hr 08 min	8 hr 10 min	4 hr 02 min
Chicago-Carbondale	4 hr 22 min	5 hr 30 min	1 hr 08 min
Chicago-St. Louis	3 hr 49 min	5 hr 20 min	1 hr 31 min
St. Louis-Kansas City	4 hr 14 min	5 hr 40 min	1 hr 26 min
Chicago-Omaha	7 hr 02 min	8 hr 37 min	1 hr 35 min
Chicago-St. Paul	5 hr 31 min	8 hr 05 min	2 hr 34 min
Chicago-Milwaukee	1 hr 04 min	1 hr 29 min	25 min

- Frequencies will increase significantly on all Midwest corridors.

Increased Frequencies (Round-trips)		
MWRRI System Corridors/City Pairs	Current Amtrak Service	Fully Implemented MWRRI System

Chicago-Detroit/Grand Rapids/Port Huron		
Chicago-Detroit	3	9
Chicago-Kalamazoo/Niles	4	14
Kalamazoo/Niles-Ann Arbor	3	10
Ann Arbor-Detroit	3	10
Detroit-Pontiac	3	7
Kalamazoo-Grand Rapids Holland	0	4
Battle Creek-Port Huron	1	4
Chicago-Cleveland	2*	8**
Chicago-Fort Wayne	0	8
Fort Wayne-Toledo	0	8
Toledo-Cleveland	2*	9
Chicago-Cincinnati	1*	5
Chicago-Indianapolis	1*	6
Indianapolis-Cincinnati	1*	6**
Chicago-Carbondale	2*	2
Chicago-Champaign	2*	5
Chicago-Carbondale	2*	2
Chicago-St. Louis	3*	8
Chicago-Dwight	3*	8
Dwight-Springfield	3*	8
Springfield-St. Louis	3*	8
St. Louis-Kansas City	2	6
Chicago-Quincy	1	4
Chicago-Omaha	1*	4**
Chicago-Naperville	3*	9
Naperville-Rock Island	0	5
Rock Island-Iowa City	0	5
Iowa City-Des Moines	0	5
Des Moines-Omaha	0	4
Chicago-Milwaukee-St. Paul	1*	6
Chicago-Milwaukee	8*	17
Milwaukee-Madison	0	10**
Madison-St. Paul	0	6
Chicago-Milwaukee-Green Bay	0	7

- Improved on-time performance and reliability will be achieved through capacity and signal systems improvements.

- New trains with modern amenities and better acceleration and deceleration will result in more efficient operations.
- A system of coordinated feeder bus service will create a larger network, improving access to and expanding the reach of the MWRRRI system. An estimated 10% of riders will come from feeder bus.
- The system will also include connections with the region's major airports to improve system access.
- The MWRRRI system and feeder bus system will reach 90% of the population in the Midwest region (Approximately 90% of the population will be within 1 hour of a train station or 30 minutes of a feeder bus station).
- The MWRRRI will be cost effective and have a strong financial performance as the system matures. This is achieved in part by optimizing fares to maximize revenues. Average MWRRRI system fares are estimated to be up to 50% higher than current Amtrak fares to reflect improved services.
- Travel times will be competitive with driving and air for trips of 500 miles or less achieved with a maximum speed of 110 miles-per-hour. Over 80% of all trips are greater than 100 miles and less than 500 miles.
- In addition to offering operations and maintenance cost savings, the new train equipment will offer on-board amenities for business and leisure travelers such as comfortable seating, food service, and plug-ins for cell phones and computers.
- MWRRRI system will include a state-of-the-art train control system as a collision avoidance and traffic management tool, and will be designed to improve safety, track capacity, and coordination among intercity passenger freight, and commute rail operations.

Figure 3: The Midwest Regional Rail System



In the past six phases of the MWRRI, states have refined the operating plan and capital cost estimates. Specifically, the states have examined the following:

- Track charts, stringlines, TPC and capacity modeling have been undertaken and used to develop schedule and capacity improvements.
- MWRRI Steering Committee evaluated infrastructure needs to allow improved service without negatively impacting freight rail and commuter rail service
 - Ideal day and typical day capacity analysis. Ideal day capacity analysis is a more general analysis that was done on low-density corridors. The typical day analysis that was completed is a more detailed analysis for high-density corridors.
 - MWRRI train schedules were developed using a train performance calculator
 - More detailed engineering was conducted in certain corridor segments (Madison-Milwaukee, St. Louis - Chicago).
- MWRRI estimated fleet sizing are based on developed schedules.
- MWRRI estimated train capacity needs are based on ridership forecasts.
- MWRRI developed a maintenance plan with maintenance provided in several satellite facilities.

- MWRRI evaluated station access issues including Chicago Union Station.
- The 2004 MWRRI Project Notebook has additional details. Please contact applicant for copies.

Increased train frequencies and speeds are expected to reduce travel times in the MWRRI system in the range of 30% to 50%. Investment in equipment and infrastructure are expected to increase On-Time performance to approximately 95%. The combination of improved frequency, service and reliability are expected to increase annual ridership to 13.6 passengers, a nearly four-fold increase over existing ridership.¹ In addition, major capital investments in rail infrastructure will improve passenger and freight train safety and reliability on shared rights-of-way.

As it is currently planned, the MWRRI system will be cost-effective to operate and its financial performance is expected to improve as the system matures. The anticipated operating ratio of the MWRRI system in its initial year of operation is expected to be 1.17. Under full build out, the MWRRI system would have an operating ratio of 1.36.

As portions of the MWRRI are implemented the MWRRI Steering Committee will complete the operating plan requirements outlined in the FRA's RCTP guidance. Phase 7 of the MWRRI, which this planning grant request would fund, will begin to comply with RCTP requirements through the initial route alternatives analyses.

Key to achieving the measures in the MWRRI operating plan is to maintain and/or increase the capacity of the infrastructure that the system would largely share with freight railroads. A goal of the MWRRI is to develop cooperative agreements with freight railroads to allow increased passenger rail service. These cooperative agreements need to include additional capacity to ensure that the freight railroads can maintain their own train service. Other improvements that would increase capacity include upgrading signaling systems and the construction of additional tracks, railroad yard bypasses, and freight sidings.

The MWRRI is planned for phased implementation of the system. This serves to minimize risk by implementing the strongest (highest population density) corridors first; specifically, initiating MWRRI Phase 1 corridors (Chicago-Milwaukee-Madison, Chicago-Detroit, and Chicago-St. Louis) where existing service largely exists. Successful operations in these corridors can support future MWRRI system expansion and set protocols for working with railroad operators to meet capacity and operational needs for all operations in the MWRRI system corridors.

¹ Detailed proposed timetables for the MWRRI system are available upon request from the 2004 MWRRI Project Notebook Appendices.

7) Describe any additional planning activities or capital improvements required

This grant application is for planning activities that will support the development of a FRA Rail Corridor Transportation Plan, and ultimately future NEPA documents for each corridor in the MWRRI. The scope of work and cost estimates for the NEPA documentation that will be required system wide is described in appendix documents that describe prior Phase 6 work of the MWRRI Steering Committee. For example, this prior work estimates that remaining EA and EIS and Rail Corridor Transportation Plan work in the “Phase I MWRRI Corridors” of Chicago-Milwaukee-Madison, Chicago-St. Louis, and Chicago-Detroit will total over \$10 million. More detail is also provided under in the Scope of Work under Item 4 above and the discussion of Environmental Documentation under Item 15 below. After environmental approvals, projects will proceed to final design and then construction with a mix of federal, state, local, railroad and private sector funding depending on the characteristics of the improvements needed in each corridor. The total capital cost for infrastructure and train equipment needed to implement the 3,000 mile MWRRI System is estimated to be \$7.7 billion (2002\$)

8) Describe project implementation and project management

Per the executed MWRRI Memorandum of Agreement (MOA) among the states, the Wisconsin Department of Transportation (WisDOT) serves as the Secretariat for the MWRRI Steering Committee (The MOA is attached as appendix 14). WisDOT is thus making this grant application on behalf of the states and manages and accounts for state, federal and Amtrak contributions. WisDOT procurement regulations and procedures will be used for procuring consultant services needed for this grant work. The MWRRI Steering Committee will advise the WisDOT on consultant selection, management of consultant work and work products per the terms of the MOA

9) Present a financial plan reflecting financial performance of benefiting service

A goal of the MWRRI is to improve intercity passenger rail service with public investments in infrastructure and equipment to the point that the need for public operating subsidies are minimized if not entirely eliminated. All MWRRI system corridors are projected to generate sufficient operating revenues to cover operating costs by the year 2025 after the system matures, assuming that the entire system is fully operational and that the MWRRI system operating and financial forecasts are achieved.

During the construction and start-up phases, system revenues will not be sufficient to cover all system operating costs. As a result, during this ramp-up period, operating subsidies will be required to support the proposed level of service. A Transportation Infrastructure Finance and Innovation Act (TIFIA) loan is the suggested mechanism that should be used to cover operating losses during the initial start-up years. The 35-

year payback permitted by this federal program enables the loan to be retired using future system revenues.

Retail space rental and commercial advertising within larger passenger stations, as well as same day express parcel delivery service have the potential to generate additional revenue not included in the MWRRI financial forecast. These revenue-producing sources will further strengthen the MWRRI system's financial viability.

As planned, the MWRRI system will be a cost-effective system to operate, and its financial performance is expected to improve as the system matures. The regional connectivity of the MWRRI in general, and the efficiencies of its operating plan in particular, are the foremost reasons why the system is expected to be cost-effective. Reduced travel times result in operating more train miles per hour of service. The largest component of annual operating costs is attributable to labor; consequently, when labor is used more productively, operating costs decline on a train-mile basis.

The use of advanced train technology reduces per mile operating costs and maintenance costs. Although system operating costs incorporate current Amtrak labor work rules and labor rates, service-related productivity improvements, such as lower equipment maintenance costs, faster equipment turnarounds, and better crew utilization serve to contain operating costs. Operating cost estimates have been carefully reviewed and updated to reflect the latest industry experience. Particular emphasis has been given to refining train equipment maintenance and track maintenance costs, two major operating cost items.

Operating Revenues, Costs, and Operating Ratio						
MWRRS Summary Financial Statistics	Operating Revenue (Millions of 2002 \$)		Operating and Maintenance Cost (Millions of 2002 \$)		Operating Ratio*	
	2014	2025	2014	2025	2014	2025
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-Milwaukee-St. Paul/Green Bay	\$141	\$172	\$99	\$104	1.42	1.65
Midwest Regional Rail System Total	\$528	\$632	\$453	\$466	1.17	1.36
*Operating revenue divided by operating and maintenance costs						

An economic analysis was completed for the MWRRI in 2006 using the same criteria and structure used by FRA in its 1997 study, *High-Speed Ground Transportation for America*. This MWRRI analysis generated a benefit to cost ratio of 1.8. The FRA, in the above study, independently confirmed that a Midwest rail passenger system offers the highest level of economic benefit associated with rail investment anywhere in the United States except for Amtrak's Northeast Corridor.

The MWRRI system will also generate resource savings in automobile operating costs, airport and highway congestion relief, and reduced energy usage and exhaust emissions. The extensive regional passenger rail network and connectivity that it provides will afford an attractive travel choice that could result in reduced automobile trips for commuting, business, and leisure purposes.

With full implementation in 2025, the MWRRI system is forecast to annually attract approximately 13.6 million passengers. This level of ridership is estimated to be four times greater than would occur if the existing passenger train service were to be continued without improvement.

10) Describe benefits

Overview of MWRRI Benefits and Infrastructure Improvements

The goal of MWRRI capital plan is to construct a high-performance passenger rail system that creates productivity benefits as a catalyst for economic growth and development. The MWRRI expands railroad capacity in order to provide competitive train travel times, system-wide connectivity, and fast, frequent and reliable passenger services that offer an attractive transportation option for travelers throughout the Midwest region.

The success of the MWRRI to attract ridership is closely linked to providing on-time performance that is competitive with airline on-time performance. The MWRRI will improve reliability through corridor improvements including construction and upgrades of signals and interlocking, bridges, sidings, crossovers, flyovers, turnouts and the construction of additional mainline tracks. The MWRRI assumes that the rolling stock will meet stringent long-term performance specifications to meet reliability requirements for operations and train maintenance.

Numerous benefits will be derived from MWRRI-related infrastructure improvements including:

- Operation of reliable and on-time passenger services
- Construction of new FRA Class 6 track for passenger train speeds up to 110-MPH
- Upgraded freight tracks and increased railroad capacity for operational fluidity
- Reliable, frequent, and convenient passenger train arrivals and departures as a result of improved railroad efficiency

- Operational safety benefits from upgraded track and train control and signal systems
- Safety improvements and upgrades to warning devices at highway-railroad grade crossings
- Corridor crossing consolidation and grade crossing closures
- System operations consistent with freight railroad policy and FRA safety regulations
- Modern and spacious station facilities and amenities for passengers

It will be necessary to coordinate freight and MWRRRI passenger operations, to permit joint service to share the same track and to improve and maintain operating on-time performance. Therefore, a state-of-the-art train control system is proposed both as a collision avoidance and train control management tool. The development and selection of a MWRRRI train control system will be subject to review and acceptance by the FRA and the freight railroads; but the MWRRRI Steering Committee has assumed that Positive Train Control (PTC) technology will be applied to all routes with speeds over 80-mph. As part of its Phase 7 Work Plan, the MWRRRI Steering Committee will review the status of the research and development of advanced train control technology and will recommend an approach over the short and long term.

MWRRRI System Highway-Railroad Grade Crossing Safety Benefits

The upgrade of grade crossings to accommodate 110-mph operations is a major consideration in planning the MWRRRI high-speed rail system. The goal is to improve the overall grade crossing safety along all of the MWRRRI rail corridors. Highway/railroad crossing safety will play a critical role in future project development phases and a variety of devices will be considered to improve safety including roadway geometric improvements, median barriers, barrier gates, traffic channelization devices, wayside horns, fencing and the potential closure of crossings. The MWRRRI adopted a policy to install the most sophisticated traffic control/warning devices compatible with and appropriate for the location of the crossing.

The FRA guidelines require the use of four quadrant gates with constant warning time activation at public crossings subject to 110-mph passenger operations. Constant-warning time systems are essential to accommodate the large differential in speed between freight and passenger trains. The treatment and design of improved safety and warning devices will need further development to identify specifications and various approaches that may be advanced as part of an integrated MWRRRI safety program.

There are numerous grade crossings through downtown business areas and residential communities. For many of these, speed restrictions have been assumed, but there are others where high-speed operations are essential to the success of the MWRRRI. The recommended treatment of a grade crossing is a function of average daily traffic through the crossing, proximity of parallel roadways, width of roadway, and presence of pedestrian crossings.

Private crossings are numerous throughout the Midwest. The MWRRI Steering Committee has accepted the guideline to close five percent of private crossings per year, subject to public approval.

Grade crossing improvements are a significant component of the capital cost estimates for passenger rail service in this study. A variety of unit costs have been developed to address the required improvements. The following strategy has been employed to develop the estimates for improving crossing safety:

- Where passenger speeds are greater than 79 mph, 25% of the existing private crossings on the route will be closed.
- Where speeds do not exceed 79 mph, private crossings will not be affected.
- Where passenger speeds are greater than 79 mph, public crossings will be upgraded to four quadrant gates with constant warning time, and remaining private crossings will be upgraded to four quadrant gates.
- Where passenger speeds do not exceed 79 mph, public crossings warning systems will be upgraded to standard two quadrant gates, and flashers with constant warning time and remaining private crossings will be upgraded to standard two quadrant gates and flashers.
- Precast panels will be installed at all public crossings.
- Where new track and embankment are constructed, precast panels will be installed and roadway surfaces improved at public crossings.

MWRRI Infrastructure Capacity and On-Time Performance

The need for MWRRI system railroad infrastructure improvements have been carefully assessed in order to develop a plan for reliable and on-time passenger service, but more importantly, the Steering Committee advanced a plan that will not compromise freight rail operations. At a minimum, freight railroads must be able to operate their trains as effectively as they could if the MWRRI system did not exist. Beyond this, it is desirable to actually create benefits for freight railroads while developing the infrastructure necessary to support the passenger train operations. Additionally, freight railroads must retain their ability to expand their own franchise for future growth in traffic. The objective of the MWRRI system capacity analysis has been to estimate the operational and infrastructure improvements needed to achieve an acceptable level of freight and passenger service.

While Amtrak has a legislated right to provide train service on the MWRRI system lines, an agreement is required from the private railroad operators regarding other conditions for Amtrak's use of their rights-of-way. The key issue is not only the level of capacity required to handle the current traffic, but the future levels of freight and passenger traffic on these lines as well. Where capacity is readily available, Amtrak can obtain access at incremental cost. Where capacity is unavailable or upgrading is required, the private railroads will require an additional infrastructure investment. That level of investment and contractual agreements related to on-time performance is subject to negotiation.

As part of the Phase 6 work plan the MWRRRI Steering Committee advanced a system-wide capacity analysis to assess the impact that additional passenger trains will have on existing and future railroad capacity. The goal of the analysis was to confirm the feasibility of planned MWRRRI system operations, and to verify the required capacity improvements and capital costs for the corridors. The completed analysis is reported in the 2004 *MWRRRI Project Notebook, Chapter 6 - Freight Capacity Methodology and Results*.

Three lines, Chicago-Twin Cities, Toledo-Cleveland and St. Louis-Kansas City, are heavily used railroad corridors and the introduction of MWRRRI system passenger trains would place significant strain on existing infrastructure resources and the ability of the passenger trains to operate on-time. The MWRRRI system capital costs include considerable investments to augment railroad capacity on these lines. Even on corridors with light or moderate traffic, passenger operations would still require additional improvements at critical locations.

The two primary objectives of the MWRRRI capacity analysis were 1) to measure the delay impact of running passenger trains along with freight trains on the corridors; and 2) to estimate the operational and infrastructure improvements needed to achieve an acceptable level of freight and passenger service

The MWRRRI capacity analysis was designed to ensure the effective integration of passenger and freight train operations with sufficient physical plant capacity and the study results confirmed the feasibility of shared passenger and freight operations. The results suggest that the proposed MWRRRI system line capacity, track condition and signaling system upgrades will mitigate passenger-caused delays to freight. Additionally, the proposed improvements may offer substantial improvement to freight train operations.

As the planning work moves from conceptual to feasibility planning and then into preliminary and final engineering, the requirements for the capacity analysis for each MWRRRI system line will become more detailed. At each step, capacity analysis reflects the operating practice in an increasingly realistic manner. The capacity analysis will be significantly advanced as part of the required work under the FRA Rail Corridor Transportation Planning process.

Future MWRRRI capacity analysis and engineering assessments will require considerably more discussion to ensure railroad concurrence. Final design concepts and recommended capital plans will depend on detailed operations analysis, design coordination, and in-depth discussions with the freight railroads. The engineering analysis advanced under the Rail Corridor Transportation Plan will result in an assessment of the on-time performance for passenger train operations on all of the MWRRRI rail corridors.

As the MWRRRI project moves beyond the feasibility phase and into the environmental and project development phase, including alternatives analysis, route selection, and production of a first tier Programmatic Environmental Impact Statement, involvement

and coordination with the railroads will become increasingly important. The MWRRI Steering Committee is committed to working cooperatively with the freight railroads towards achieving solutions and building effective working relationships.

Additionally, it is important to note that the MWRRI *Template Scope of Services for a Programmatic Environmental Impact Statement* suggests that the Final PEIS will reference and summarize any Memoranda of Understanding between the MWRRI States and the freight railroad operators which will identify the needs and methods for capacity analysis, along with agreements on how to assess and ultimately achieve a specified level of on-time passenger train performance in future MWRRI project development phases.

MWRRI Financial and Economic Benefits

An economic analysis was completed in 2006 for the MWRRI system using the same criteria and structure used by the Federal Railroad Administration (FRA) in its 1997 study, *High-Speed Ground Transportation for America*. The MWRRI will generate a \$23.1 billion user benefit over the 40-year life of the project and has a benefit-to-cost ratio of 1.8, which indicates that for each dollar spent on the system — one dollar and eighty cents is returned in benefits. This is one of the highest returns for any regional rail system in the U.S. Additionally, businesses using MWRRI system will benefit from reduced transportation costs. Freight rail operations also will benefit from reduced congestion and enhanced safety, as a result of MWRRI track and signal improvements in shared corridors.

Modal shift projections prepared as part of this study suggest that a large number of intercity trips will be diverted from auto to MWRRI system trains. This will lessen congestion along several major highway corridors during peak travel times, thereby lessening the projected auto vehicle miles for the region and significantly reducing auto emissions levels. The MWRRI will generate significant user benefits and provide reasonable levels of resource savings. The high-performance passenger trains will generate savings in automobile operating costs, airport and highway congestion relief, and reduced energy usage and exhaust emissions.

The MWRRI will support existing industries and foster the growth of new business across the Midwest by improving access between communities. It also will encourage large businesses to distribute their operations more widely into smaller, highly accessible Midwestern communities that provide a high quality of life for residents. The long-term permanent gains include:

- 57,450 permanent new jobs across the Midwest
- \$1.096 billion dollars of extra household income across the nine-state region
- \$4.911 billion dollars of increased joint development potential for the 102 cities in the MWRRI system stations

The MWRRI Economic Analysis showed that the system will generate significant economic growth in the region – 15,200 annual construction jobs associated with the 10-

year construction phase of which 6,000 are construction jobs. The spending on construction will create \$5.3 billion of increased household earnings along with \$16.9 billion of increased output by the region’s businesses during the construction period.

11) Results in terms of reduced line haul and/or travel times for intercity rail passengers, increased intercity passenger service frequencies, and/or enhanced service quality for intercity train passengers.

A) Projected Increase in Daily Trips

Collectively, MWRRRI train and feeder bus services will provide numerous attributes and benefits:

- A new transportation option in major travel corridors that are experiencing significant levels of congestion
- A time competitive service for short to medium-distance trips
- A transportation choice for smaller communities which do not have or are under-served by commercial air service
- A travel environment conducive to both business and leisure travel
- A means to expand workforce recruitment by employers located in communities served by the MWRRRI system
- A transportation choice that affords travelers downtown-to-downtown connectivity between major urban centers
- A transportation system for individuals who do not or cannot drive a motor vehicle (e.g. elderly and/or disabled individuals)

Increased Frequencies (Round-trips)		
MWRRRI System Corridors/City Pairs	Current Amtrak Service	Fully Implemented MWRRRI System
Chicago-Detroit/Grand Rapids/Port Huron		
Chicago-Detroit	3	9
Chicago-Kalamazoo/Niles	4	14
Kalamazoo/Niles-Ann Arbor	3	10
Ann Arbor-Detroit	3	10
Detroit-Pontiac	3	7
Kalamazoo-Grand Rapids Holland	0	4
Battle Creek-Port Huron	1	4
Chicago-Cleveland	2*	8**
Chicago-Fort Wayne	0	8
Fort Wayne-Toledo	0	8

Toledo-Cleveland	2*	9
Chicago-Cincinnati	1*	5
Chicago-Indianapolis	1*	6
Indianapolis-Cincinnati	1*	6**
Chicago-Carbondale	2*	2
Chicago-Champaign	2*	5
Chicago-Carbondale	2*	2
Chicago-St. Louis	3*	8
Chicago-Dwight	3*	8
Dwight-Springfield	3*	8
Springfield-St. Louis	3*	8
St. Louis-Kansas City	2	6
Chicago-Quincy	1	4
Chicago-Omaha	1*	4**
Chicago-Naperville	3*	9
Naperville-Rock Island	0	5
Rock Island-Iowa City	0	5
Iowa City-Des Moines	0	5
Des Moines-Omaha	0	4
Chicago-Milwaukee-St. Paul	1*	6
Chicago-Milwaukee	8*	17
Milwaukee-Madison	0	10**
Madison-St. Paul	0	6
Chicago-Milwaukee-Green Bay	0	7

* Includes Amtrak Long-distance trains

** MWRRI route differs from current Amtrak service

B) Operating Plan with Decreased Travel Times

The proposed MWRRI system operating plan optimizes the relationship among service levels, estimated ridership, and revenue generated. It consists of a hub-and-spoke operation with Chicago Union Station serving as the system hub. The operating plan dramatically improves service reliability, increases service frequency, and reduces travel times compared to current regional passenger rail services. Depending upon the corridor, round trip frequencies increase between two and five times those offered by existing services. Reductions in travel times range from 30 percent between Chicago and Milwaukee to 50 percent between Chicago and Cincinnati. The MWRRI system travel times are competitive with auto and provide

all-weather service with increased reliability in congested urban corridors. Additionally, the MWRRI service will increase through and connecting trips at Chicago Union Station.

The operating plan results in higher operating efficiencies compared with existing Midwest service by using trains capable of quick turnaround at service endpoints and run-through service in Chicago. Maintenance and service facilities will be strategically located to optimize operating schedules, eliminate maintenance-related service interruptions, and achieve cost efficiencies.

This update reflects a number of refinements to corridor routes, travel times and operating speeds designed to minimize capital costs while maximizing ridership and revenues.

Reduction of Travel Times			
City Pairs	MWRRI	Current Service	Time Reduction
Chicago-Detroit	3 hr 46 min	5 hr 36 min	1 hr 50 min
Chicago-Cleveland	4 hr 22 min	6 hr 24 min	2 hr 02 min
Chicago-Cincinnati	4 hr 08 min	8 hr 10 min	4 hr 02 min
Chicago-Carbondale	4 hr 22 min	5 hr 30 min	1 hr 08 min
Chicago-St. Louis	3 hr 49 min	5 hr 20 min	1 hr 31 min
St. Louis-Kansas City	4 hr 14 min	5 hr 40 min	1 hr 26 min
Chicago-Omaha	7 hr 02 min	8 hr 37 min	1 hr 35 min
Chicago-St. Paul	5 hr 31 min	8 hr 05 min	2 hr 34 min
Chicago-Milwaukee	1 hr 04 min	1 hr 29 min	25 min

12) Matching funding

This application for \$297,000 under the Federal Railroad Administration’s Capital Assistance To States – Intercity Passenger Rail Service Program is made in cooperation with the Amtrak and the eight other states of the Midwest Regional Rail Initiative. The eight states of the MWRRI and Amtrak will provide the \$297,000 in matching funds. This will provide a total budget of \$594,000.

13) Ownership

NA

14) Written agreements

The 9 states participating in the Midwest Regional Rail Initiative have executed and maintained a Memorandum of Agreement, which currently runs through 2010. The Memorandum of Agreement is attached in appendix 14.

15) Environmental documentation

The deliverables from Phase 6 of the MWRRI, along with those developed in Phase 7, will continue to move the MWRRI toward completing NEPA documents on one or a combination of corridors in future phases. In Phase 6, the MWRRI Steering Committee developed draft scope of work, purpose and need statement and cost estimates for a project level Environmental Impact Statement for Phase I of the MWRRI system. Phase I includes upgrading existing service between Chicago-St. Louis, Chicago-Detroit and Chicago-Milwaukee-Madison. The scope also includes work effort toward completing a Rail Corridor Transportation Plan (RCTP).

In Phase 7, the Steering Committee would continue to advance Phase I of the MWRRI system through preliminary alternatives analysis of feasible routes in the South of the Lake corridor between Chicago Union Station and Porter, IN, along with updated capital costs and equipment and train control assumptions. The preliminary alternatives analysis for the SOL routes would be incorporated into the full public review of feasible routes addressed in a future EIS, consistent with NEPA and RCTP requirements.

During Phase 6, the Steering Committee also developed a template scope of services and estimated costs for a Programmatic Environmental Impact Statement for one or more corridors in the MWRRI. The individual states would tailor the PEIS scope, depending on which corridors they wish to study in the PEIS. Again, the scope includes work elements that would support a RCTP when project level NEPA documents are completed.

Draft EIS and PEIS work plans and a GIS data model, developed during Phase 6, are also in place for use when states begin NEPA and RCTP work. As with Phase I of the MWRRI, the Steering Committee would incorporate the preliminary route analysis of other MWRRI corridors into future NEPA and RCTP documents for full public evaluation.

In summary, the MWRRI Steering Committee proposes tasks to continue maintaining current costs (Task 4), which are supplemented with updated evaluation of feasible routes (Tasks 2 and 3), equipment (Task 5) and train control technology (Task 6). In addition, Task 7 will provide an analysis of the energy and environmental benefits of the MWRRI system and associated public information documents. The deliverables from these tasks can be used to support NEPA documents and RCTPs in future phases.

16) Planning requirements

See attached letters from each state documenting how state plans and policies have addressed intercity passenger rail service needs and improvements in appendix 3.