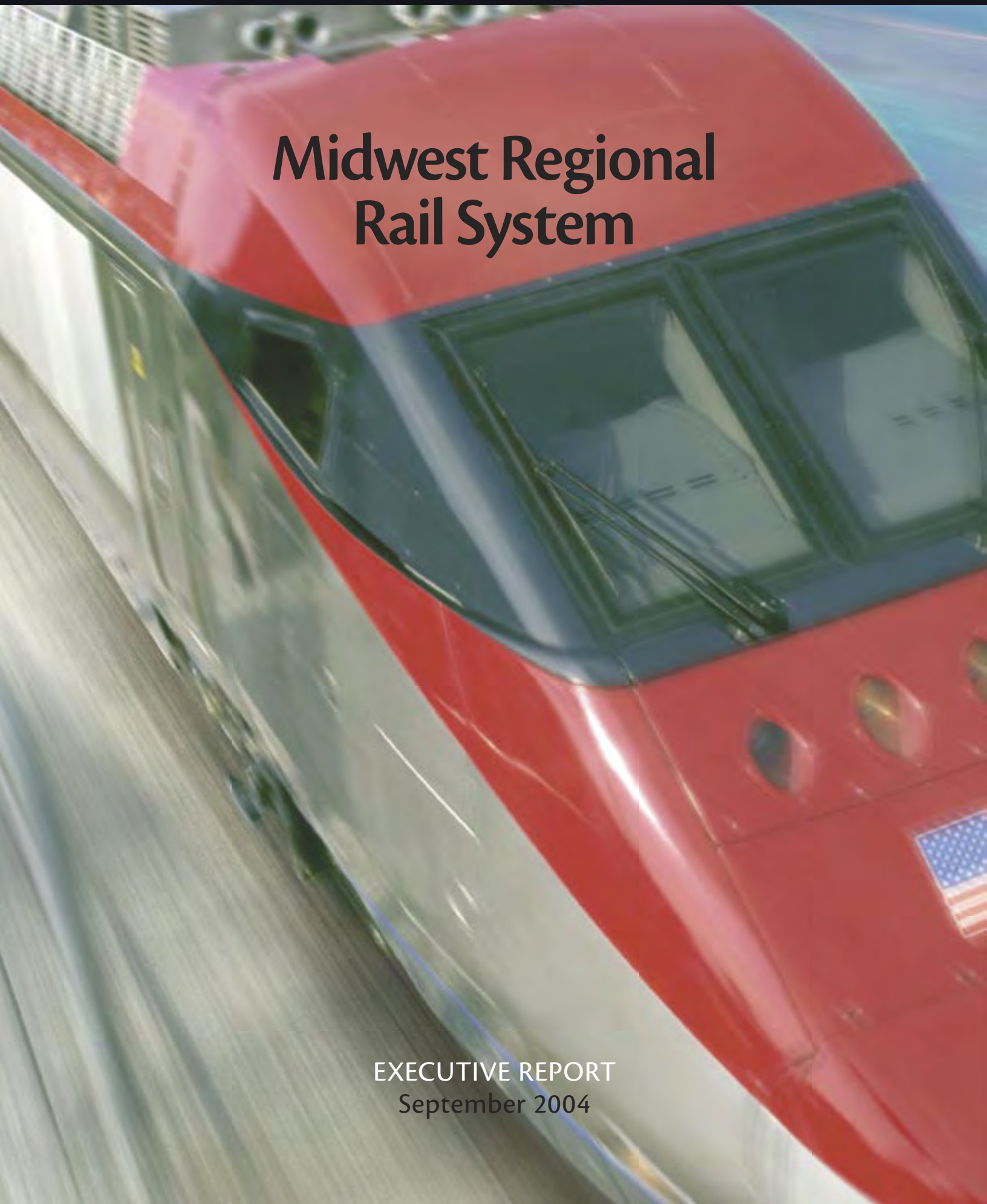
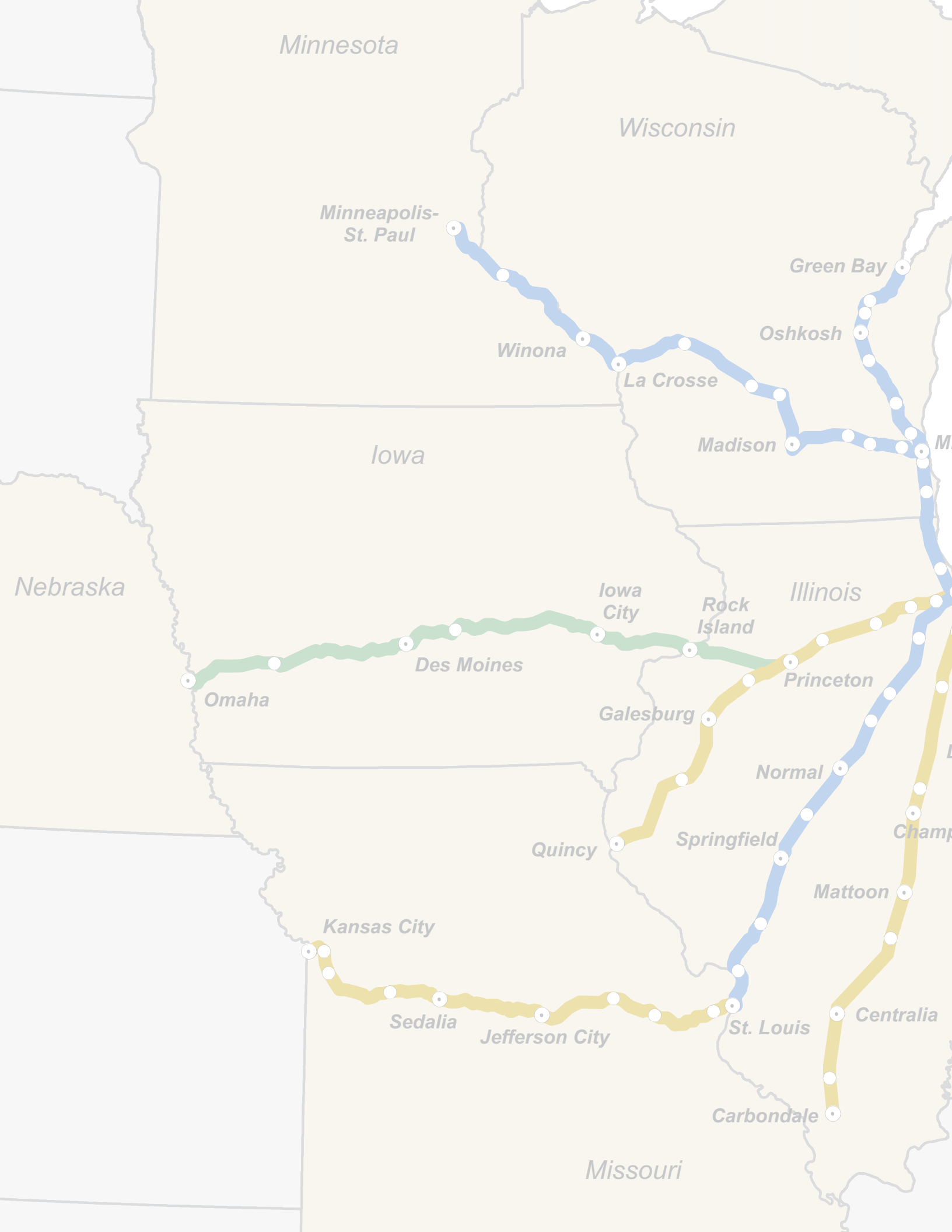
A Transportation Network for the 21st Century

Midwest Regional Rail System



EXECUTIVE REPORT

September 2004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Omaha
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Springfield
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Kansas City
Sedalia
Jefferson City
St. Louis
Centralia
Carbondale
Missouri

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Midwest Regional Rail System

EXECUTIVE REPORT

September 2004

Prepared for

Illinois Department of Transportation

Indiana Department of Transportation

Iowa Department of Transportation

Michigan Department of Transportation

Minnesota Department of Transportation

Missouri Department of Transportation

Nebraska Department of Roads

Ohio Rail Development Commission

Wisconsin Department of Transportation

Prepared by

Transportation Economics & Management Systems, Inc.

In association with

HNTB Corporation

The Midwest Regional Rail Initiative (MWRRI) is an ongoing effort to develop an improved and expanded passenger rail system in the Midwest. The sponsors of the Midwest Regional Rail Initiative are the transportation agencies of nine Midwest states—Illinois Department of Transportation, Indiana Department of Transportation, Iowa Department of Transportation, Michigan Department of Transportation, Minnesota Department of Transportation, Missouri Department of Transportation, Nebraska Department of Roads, Ohio Rail Development Commission and Wisconsin Department of Transportation.

This 2004 Executive Report updates prior plans for the Midwest Regional Rail System published in August 1998 and February 2000. This report refines and updates infrastructure and equipment capital cost estimates as well as ridership, revenue and operating cost estimates; it provides further detail related to feeder bus operational requirements; and it further assesses freight rail capacity needs related to the enhancement and expansion of modern passenger service.

A Steering Committee, composed of key staff from each state agency and Amtrak, provided oversight and direction to the consultant team retained to conduct the study. The Wisconsin Department of Transportation served as Secretariat for the Steering Committee.

Transportation Economics & Management Systems, Inc. of Frederick, Maryland, led the consultant team and was responsible for ridership and revenue forecasts, operations planning, financial and economic analysis, institutional arrangements, implementation and business planning, and directing the work of the other members of the consultant team. HNTB Corporation provided the assessment of infrastructure requirements.

Amtrak provided extensive technical support and analysis in all aspects of this study throughout its four-year period. Greyhound Lines, Inc. provided technical assistance in the analysis of feeder bus service. Talgo-Siemens provided technical assistance with regard to train purchase and train maintenance cost estimates. This report was financed, in part, by the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin. Greyhound Lines, Inc. and the Federal Railroad Administration (FRA) provided additional funding and support.

Vision: Midwest Regional Rail System

Since 1996, the Midwest Regional Rail Initiative (MWRRI) advanced from a series of service concepts, including increased operating speeds, train frequencies, system connectivity, and high service reliability, into a well-defined vision for creating a 21st century regional passenger rail system. This vision reflects a fundamental change in the manner in which passenger rail service is provided throughout the Midwest. This regional system would use existing rail rights-of-way shared with freight and commuter rail and would connect nine Midwest states to serve their growing populations. A regional system provides the opportunity for efficiencies and economies of scale including better equipment utilization, more efficient employee and crew utilization, and train equipment unit cost savings resulting from volume discounts.

This vision has been transformed into a transportation plan—known as the Midwest Regional Rail System (MWRRS). The primary purpose of the MWRRS is to meet current and future regional travel needs through significant improvements to the level and quality of passenger rail service. The rail service and its stations will also provide a stimulus for joint development in communities served by the system. Based on the updated analysis documented in this report, senior officials from the nine Midwest states continue to confirm that this plan provides a viable framework for developing and implementing this 21st century regional passenger rail system.

"This plan update confirms that the Midwest Regional Rail System continues to provide a viable framework for developing and implementing a 21st century regional passenger rail system."

"The primary purpose of the MWRRS is to meet current and future regional travel needs through significant improvements to the level and quality of passenger rail service."

"A regional system provides the opportunity for efficiencies and economies of scale including better equipment utilization, more efficient employee and crew utilization, and train equipment unit cost savings resulting from volume discounts."

MWRRS Elements

Planned MWRRS elements will improve Midwest travel. The major plan elements include:

- Use of 3,000 miles of existing rail rights-of-way to connect rural, small urban, and major metropolitan areas
- Operation of a "hub-and-spoke" passenger rail system providing service to and through Chicago to locations throughout the Midwest
- Introduction of modern train equipment operating at speeds up to 110 mph
- Provision of multi-modal connections to improve system access
- Improvement in reliability and on-time performance

Proposed Midwest Regional Rail System

*Indiana DOT is evaluating additional passenger rail service to South Bend and to Louisville.
**In Missouri, current restrictions limit train speeds to 79 mph.

Opportunity and the MWRRS

As planned, the MWRRS will improve mobility and stimulate economic development.

It affords the opportunity to:

» Greatly enhance passenger rail service throughout the Midwest

» Achieve significant reductions in travel times and improve service reliability to Midwest areas currently served by passenger rail

» Introduce passenger rail service to Midwest areas currently not served by passenger rail

» Introduce a regional passenger rail system designed to generate revenues which could cover operating costs when it is fully implemented

» Provide major capital investments in rail infrastructure to improve passenger and freight train safety and reliability on shared rights-of-way

» Support economic development activities near stations

Focus of the 2004 Executive Report

Planning for the MWRRS has progressed from the concept stage to the feasibility stage. This Executive Report highlights the findings resulting from a technical review and refinement of major plan elements. These include updates and refinements to:

» Ridership, revenue and operating cost estimates

» Operating plan

» Feeder bus recommendations

» Infrastructure and equipment capital cost estimates

» Freight rail capacity needs analysis

» Implementation plan phasing

» Financial plan

» Project coordination

"The MWRRS:

» Reduces travel time

» Improves service reliability

» Expands regional travel services

» Improves passenger and freight train safety

» Creates development opportunities"

MWRRS Key Assumptions

Successful implementation and operation of the MWRRS requires ongoing dialogue and coordination involving the Midwest state transportation agencies, freight and commuter railroads, railroad labor, funding entities, and the public. The findings and recommendations included in this report are based on several key assumptions. Major changes in these assumptions could alter the projections and economics associated with the MWRRS. These assumptions are:

- Ridership and revenue projections assume the construction of the entire system and introduction of new service and trip times according to the proposed project phasing schedule, and the predicted response from travelers to a fully integrated Midwest Regional Rail System
- Operating plans for passenger train frequencies, schedules, and speeds are achievable through cooperative agreements with the freight railroads, commuter railroads and labor unions
- Infrastructure improvements are dependent upon the freight railroads' and commuter rail operators' commitment to the construction schedule
- Funding for planning, construction, and equipment procurement is available to support the implementation schedule
- Funding support for operations is available during the start-up and implementation period

"Successful implementation and operation of the MWRRS require ongoing dialogue and coordination involving the Midwest state transportation agencies, freight and commuter railroads, railroad labor, funding entities, and the public."

"The MWRRS plan is based on several key assumptions involving:

- *Ridership & revenue estimates*
- *Rail operation plans*
- *Infrastructure improvements*
- *Project funding"*

Travel Market Served

Significantly reduced travel times, increased frequencies, improved service reliability and intermodal connectivity are key to revitalizing passenger rail service in the Midwest. Attributes inherent to the MWRRS will attract a broad ridership market. In 2025, with full implementation of the system, the MWRRS 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. MWRRS ridership and revenue forecasts were updated using the results of additional and expanded travel market field surveys and the latest 2000 US Census data.

"In 2025, the MWRRS is forecast to annually attract approximately 13.6 million passengers."

"Approximately 90 percent of the Midwest population will be within a one-hour ride of a MWRRS station and/or 30 minutes of a feeder bus station."

For the markets served, the MWRRS will provide a level of service, comfort, convenience, and a wide range of fares that will attract a broad spectrum of travelers. The MWRRS fares will be competitive with air travel and have the potential to generate revenue levels in excess of operating costs after the system's ramp-up period. Average MWRRS fares are estimated to be up to 50 percent higher than current Amtrak fares to reflect improved services.

EXAMPLE ONE-WAY MWRRS FARES

	Estimated Fares	
City Pairs	Non-business	Business
Milwaukee–Chicago	$18	$24
St. Paul–Madison	$55	$73
Green Bay–Chicago	$57	$76
Chicago–Detroit	$45	$60
Grand Rapids–Chicago	$33	$44
Port Huron–Lansing	$21	$28
Toledo–Cleveland	$24	$33
Indianapolis–Cincinnati	$24	$32
Champaign–Chicago	$28	$38
St. Louis–Springfield, IL	$20	$27
Jefferson City–Kansas City	$29	$39
Des Moines–Omaha	$30	$40

Feeder Bus System

Access to the Midwest rail system will be enhanced by the operation of a feeder bus system. The feeder bus network extends the reach of the system to outlying areas. With full implementation of the MWRRS, including the feeder bus system, approximately 90 percent of the Midwest region's population will be within a one-hour ride of a MWRRS rail station and/or 30 minutes of a MWRRS feeder bus station. Feeder bus lines will be privately owned and operated. Operating hours and schedules will be coordinated with train schedules to optimize the bus system's utility and minimize transfer time to MWRRS trains. The feeder bus network and operating plan was developed with the assistance of Greyhound Lines, Inc.

Service Attributes and Travel Market

Collectively, MWRRS 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 MWRRS

» 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)

"Numerous benefits will be derived from the MWRRS train and feeder bus services, including:

» Availability of a new travel option for short to medium-distance trips

» Downtown-to-downtown connectivity between urban centers

» Means to expand work-force recruitment"

NUMBER OF DAILY ROUND TRIPS

MWRRS Corridors/ City Pairs	Current Amtrak Service	Fully Implemented MWRRS
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		
Chicago–Cleveland	2*	8**
Chicago–Fort Wayne	0	8
Fort Wayne–Toledo	0	8
Toledo–Cleveland	2*	9
Chicago–Cincinnati		
Chicago–Cincinnati	1*	5
Chicago–Indianapolis	1*	6
Indianapolis–Cincinnati	1*	6**
Chicago–Carbondale		
Chicago–Carbondale	2*	2
Chicago–Champaign	2*	5
Chicago–Carbondale	2*	2
Chicago–St. Louis		
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		
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/Green Bay		
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
** MWRRS route differs from current Amtrak service

Operating Plan

The proposed MWRRS 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. MWRRS travel times are competitive with auto and provide all-weather service with increased reliability in congested urban corridors. Additionally, the MWRRS 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.

"The operating plan dramatically improves:

- *Service reliability within the region*
- *Frequency of train service*
- *Train travel times compared to auto and existing passenger rail service"*

EXAMPLE TRAIN TRAVEL TIMES (EXPRESS)

City Pairs	MWRRS	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

Financial Performance

A goal of the MWRRS is to improve 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 MWRRS 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 MWRRS 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—a USDOT federal credit program that provides credit assistance for surface transportation projects of national and regional significance—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 MWRRS financial forecast. These revenue-producing sources will further strengthen the MWRRS' financial viability.

"A goal of the MWRRS is to improve 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."

"During the construction and start-up phases, system revenues will not be sufficient to cover all system operating costs and subsidies will be required."

"All MWRRS 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...."

Forecast Operating Costs

As planned, the MWRRS 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 MWRRS 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. Since the largest component of annual operating costs is attributable to labor, 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. In this update, operating cost estimates were carefully reviewed and updated to reflect the latest industry experience. Particular emphasis was given to refining train equipment maintenance and track maintenance costs—two major operating cost items.

"The MWRRS operating plan and train speeds are integral to the system's overall cost effectiveness, as well as the system's reliability and regional connectivity."

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

Capital Costs

MWRRS capital costs include two major components—infrastructure and train equipment. The total capital investment in these two areas required for the MWRRS is estimated to be $7.7 billion (in 2002 dollars).

Train Equipment

Advanced passenger train technology enhances the utility and attractiveness of the proposed MWRRS. Travel time reductions, increases in train frequency, improved service and reliability, and modern equipment attract the attention of travelers, increase the competitiveness of rail travel with other means of transportation, and establish the MWRRS as a new mode choice for business and non-business travelers.

The MWRRS-selected train technology will:

- Permit travel at speeds up to 110 mph
- Significantly reduce train travel times
- Provide safe, reliable, comfortable, and convenient service
- Offer on-board amenities for business and leisure travelers such as comfortable seating, food service and 110 volt plug-ins for cell phones and computers
- Offer operations and maintenance cost savings

Fleet Composition

The proposed operating plan requires 63 trainsets, including spares. Train equipment for the entire system will cost approximately $1.1 billion. This cost estimate reflects a volume discount achieved by procuring the equipment on a system—rather than a corridor—basis and by manufacturing the train equipment in the Midwest. The updated equipment cost estimates were obtained from established multi-national manufacturers as part of an on-going MWRRI equipment evaluation effort. These estimates benefited from the experience gained in the development of a MWRRI equipment specification by the Midwest states and Amtrak.

Infrastructure Improvements

Track Improvements

Based on a comprehensive engineering review and refinement process, the infrastructure improvements required to implement the MWRRS are estimated to cost $6.6 billion. Major capital improvements include track replacement and upgrades, additional sidings, signal and communications systems, and highway-railroad grade-crossing improvements as necessary to support intercity passenger speeds of up to 110 mph as well as concurrent freight and commuter rail operations.

The infrastructure capital cost estimates in this 2004 plan update are substantially more than those cited in the prior year 2000 report. The increased infrastructure cost estimates are based on a better understanding of infrastructure improvements required to accommodate freight rail capacity needs, the inclusion of updated equipment maintenance facility cost estimates and the results of recent planning conducted by the MWRRI states.

Cost estimates and other results from more detailed planning and preliminary engineering studies addressing key MWRRS corridor segments have been incorporated. These studies include: the Milwaukee–Madison Corridor Study, the Milwaukee–Green Bay Corridor Study, the South of the Lake Passenger Rail Study addressing improvement needs in Illinois, Indiana and Michigan, and a Chicago–Cleveland Route Alternative Study sponsored by Ohio and Indiana.

MWRRS Capital Investment by Corridor

The 3,000-mile rail network to be used by the MWRRS is largely in good condition. Freight railroads own the majority of the system. Amtrak and Chicago's commuter rail operator, Metra, own the remainder. Amtrak uses some of the lines for its various passenger services. The rail infrastructure must be improved and enhanced to integrate the proposed MWRRS onto the existing rail network and simultaneously preserve the integrity of current and future freight and commuter operations.

MWRRI CAPITAL INVESTMENT BY CORRIDOR (MILLIONS 2002 $)

Corridor	Infrastructure	Train Equipment	Total
Chicago–Detroit/Grand Rapids/Port Huron	$873	$234	$1,106
Chicago–Cleveland	$1,187	$152	$1,338
Chicago–Cincinnati	$606	$101	$707
Chicago–Carbondale	$232	$51	$283
Chicago–St. Louis	$445	$115	$560
St. Louis–Kansas City	$893*	$86	$980
Chicago–Quincy/Omaha	$638	$167	$806
Chicago–Milwaukee–St. Paul/Green Bay	$1,638	$222	$1,860
Chicago Terminal and Waterford Shop	$60	-	$60
TOTAL	**$6,572**	**$1,128**	**$7,700**

*Estimate subject to additional analysis and refinement.

Benefits Associated with Infrastructure Improvements

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

- Operation of passenger trains at speeds up to 110 mph
- Reliable, frequent, and convenient passenger train arrivals and departures as a result of increased track capacity and signal system improvements
- System operation consistent with freight railroad policy and FRA safety regulations
- Modern and spacious station facilities and amenities for passengers
- Safety improvements to highway-railroad grade crossings
- Operational, safety and capacity benefits to freight railroads from improved track and signals

"The MWRRS is estimated to generate an additional $2.6 billion in public/private sector investments to improve and increase amenities in stations and promote sound development and job growth in adjacent areas."

Train Control Systems

A state-of-the-art train control system is proposed both as a collision avoidance and train traffic management tool. This system will be designed to improve operating safety, track capacity, and coordination among intercity passenger, freight and commuter rail operations.

Highway-Railroad Grade Crossings

Improvements to highway-railroad grade crossings, through a combination of technology improvements, visibility improvements, fencing, and some closures are part of the MWRRS infrastructure improvement program. Improvements are designed to enhance train, motor vehicle, and pedestrian safety. The highway-railroad grade crossing improvements proposed in this plan were developed in accordance with FRA guidelines.

Passenger Stations

Passenger station costs include the construction of new facilities where none now exist, as well as the refurbishment of existing stations. Improvements will be made to Chicago Union Station, the hub station for the system, as well as regional and local stations. Planned improvements are intended to enhance the aesthetics of MWRRS stations, their functionality, and their ability to support potential station-related, income-producing improvements. The $7.7 billion public investment in the MWRRS is estimated to generate an additional $2.6 billion in public/private sector investment to improve and increase amenities in stations and promote sound development patterns and job growth in adjacent areas.

Financing the Required Capital Investment

The MWRRS capital improvement program is estimated to cost $7.7 billion (in 2002 dollars) phased over a 10-year implementation period. The funding plan consists of a mix of funding sources including federal grants and loans, state funds, and other revenue generated from system-related activities, such as joint development proceeds.

While the capital investment required is substantial, the goal of obtaining sufficient capital funding is achievable. A coordinated and active effort involving each state, private sector representatives, and local elected officials will be required to ensure the system's implementation.

"A $7.7 billion capital investment is required to implement the MWRRS. Funding this level of investment requires:
- *Federal funds*
- *State funds*
- *Private sector funds"*

Federal funding will be the primary source of capital funds. A major, multi-year funding program will be necessary to guarantee that federal funds are available to the project consistent with the implementation schedule. The MWRRS Plan is based on the establishment of an 80/20 federal/state funding program like those that already exist for highways, transit and airports. Some of the Midwest states are currently using federal funds to implement MWRRS components such as highway-railroad grade crossing safety improvements. The strategic financial plan also assumes that Federal Full Funding Agreements, Grant Anticipation Notes and Transportation Infrastructure Finance and Innovation Act (TIFIA) loans can be used to ensure a steady flow of federal funds in order to maintain the implementation schedule.

KEY ASSUMPTIONS UNDERLYING THE STRATEGIC FINANCIAL PLAN

- *A dedicated, multi-year federal capital funding program for infrastructure and equipment will be required.*
- *The MWRRS Plan is based on the establishment of an 80/20 federal/state funding program like those that already exist for highways, transit and airports.*
- *States will match federal funding for infrastructure improvements and operating equipment.*
- *Where feasible, private sector financing to augment public-sector investments will be obtained.*

Proposed Implementation Schedule

The proposed implementation schedule reflects a 10-year phasing of MWRRS corridor segments. This 10-year phasing program is based on a conceptual analysis of the system's operations, engineering, and environmental requirements and issues.

The following principles were used to assemble the proposed implementation plan:

» Service is to be implemented consistent with market demand and each state's financial capacity to implement each phase

» Corridor segments with the highest potential ridership per dollar invested are to be implemented first

» Broad geographic coverage is to be achieved as early as possible

» Branch lines, which are expected to generate less revenue, are to be introduced in the later implementation phases when most of the corridors generate revenues in excess of operating costs

Additionally, ridership and revenue forecasts generated for the MWRRS were analyzed to identify the strongest performing corridors and to identify synergies between corridors in terms of rider travel patterns, level of ridership, operations, and network connectivity. The implementation and capital upgrade plan for the MWRRS was based on input from freight and commuter rail operators. Additional environmental analysis, preliminary engineering and final design work will also have to be completed. This MWRRS plan represents an important first step in an increasingly more detailed and project-specific planning and negotiation process, which must be conducted jointly with freight and commuter railroads.

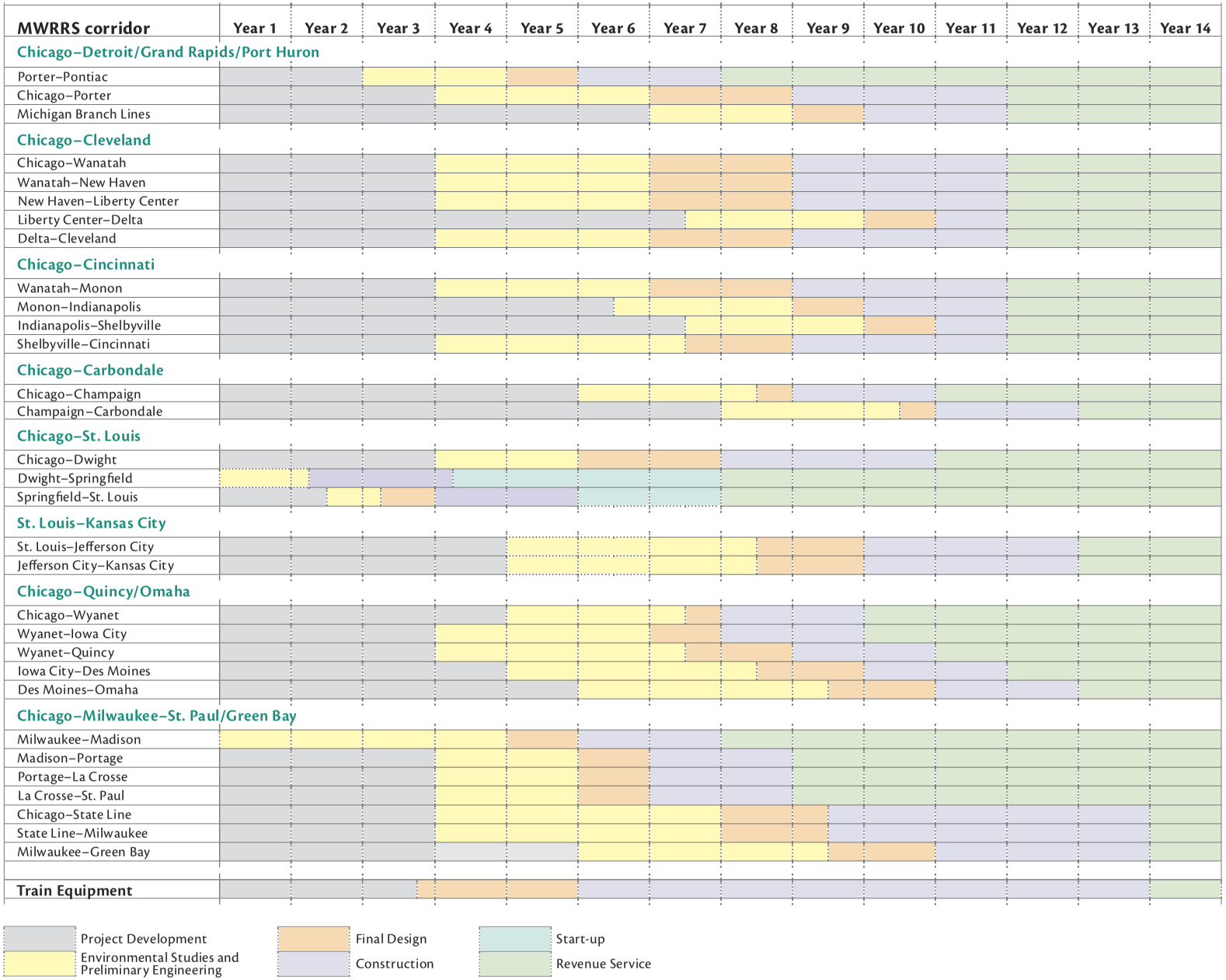
"The MWRRS implementation plan reflects an incremental approach to capital improvements and service introductions. The proposed phasing ensures:

» Strong system start-up in terms of ridership and revenue

» Increasing ridership and revenue as the system becomes operational."

"The implementation and capital upgrade program was based on input from freight railroads and commuter operators. This MWRRS plan represents an important first step in an increasingly more detailed and project-specific planning and negotiation process, which must be conducted jointly with freight railroads and commuter operators."

MWRRS Implementation Schedule



Project Coordination

The phased implementation of the MWRRS will result in various states performing different activities during the same year. For example, during the initial phases of the MWRRS implementation, Illinois, Michigan, Minnesota, Missouri, and Wisconsin will perform construction-related activities while Indiana, Iowa, Nebraska, and Ohio will engage in design, environmental studies, and pre-construction activities. To properly support these activities, the management and institutional structures required for the MWRRS must be flexible and evolve over time to respond to the changing needs of the states as their corridor(s) progress from planning to revenue service.

The actual pace of this phasing hinges upon the capability of each state to proceed with project implementation activities. Since federal funding is the predominant funding source for infrastructure improvement costs, the MWRRS management structure will evolve over time in response to the level of funding and the complexity of the system being managed.

MWRRS State Coordination

The MWRRI Steering Committee, comprised of state and Amtrak representatives, has managed the concept and feasibility planning activities over the past several years. This steering committee should continue through the initial years of project implementation. Its role, however, will evolve from planning, coordination and review to one that is more involved in project funding, satisfying grant requirements, and addressing implementation issues. At this juncture in the MWRRI, it is essential that a strong working relationship be forged between the states, federal and local governments, Amtrak, freight and commuter railroads, and railroad labor to ensure that system needs are identified and that the underlying principles of the MWRRS vision are incorporated into the actual service provided.

"MWRRS management requirements will evolve at a pace consistent with system implementation. Ultimately, a joint agreement addressing state responsibilities will be required."

Implementation of the MWRRS will remain the responsibility of the states. Once operational, states might find it advantageous to either broaden the roles and responsibilities of the MWRRI Steering Committee or take action to establish a formal organization charged with operations and system oversight. There are various institutional structures in the Midwest and in other parts of the U.S. that can serve as models for multi-state coordination. These models range from ad hoc multi-state committees, to committees established by multi-state agreement, to a Joint Powers Authority established through legislative authority.

Financial and Economic Benefits

An economic analysis was completed for the MWRRS in its February 2000 Plan using the same criteria and structure used by the Federal Railroad Administration (FRA) in its 1997 study, *High-Speed Ground Transportation for America*. This MWRRS analysis generated a benefit to cost ratio of 1.7. 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 U.S. except for Amtrak's Northeast Corridor.

The 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 the connectivity that it provides will afford an attractive travel choice that could result in reduced automobile trips for commuting, business, and leisure purposes.

"The MWRRS generates a favorable benefit to cost ratio."

"Independent FRA analysis supports the conclusions of the MWRRS plan, recognizing the system's:

- *Potential financial return*
- *Economic benefits that could be derived."*

Other Benefits

MWRRS enhances the Midwest region's existing transportation system:

» Provides an attractive passenger rail system with vastly reduced travel times, and enhanced service frequencies and regional connectivity

» Provides a transportation choice that affords travelers downtown-to-downtown connectivity between major urban centers

» Provides an alternative to highway travel and reduces congestion, energy use and emissions

"The MWRRS is an attractive regional travel option."

"The MWRRS is a reasonable public and private investment."

"The MWRRS investments lead to spin-off financial and economic benefits relating to:

» Freight and commuter rail operations

» Community development

» Job creation."

"The MWRRS will generate over 2,000 new permanent rail operating, equipment maintenance, and track maintenance jobs, and approximately 8,000 construction jobs."

MWRRS is a reasonable public and private investment:

» Total capital cost of $7.7 billion over a 10-year phasing plan
- Recommended 80 percent federal share
- 20 percent state share

» Revenues are maximized and operating costs are minimized with a goal of minimizing or eliminating state subsidies after the system is fully built out and the system ramp-up period is completed
- Estimated 13.6 million passengers annually in 2025

MWRRS investments lead to spin-off benefits:

» Freight and Commuter Rail Improvements
- Increased train speeds and improved highway-railroad grade crossing safety resulting from track capacity and signalization improvements

» Community Development
- Impetus for new station and station-area development opportunities and retail opportunities
- Improved transportation choices for regional travelers

» Job Creation
- 2,000 permanent jobs
- 8,000 construction jobs

The Path Forward

A series of short and long-term actions are necessary to advance the MWRRS plan towards implementation. Key actions are summarized below:

A National Federal Passenger Rail Funding Program

A key requirement for the success of the Midwest Regional Rail Initiative is Congressional passage of a federal passenger rail funding program. Such a program should be patterned on the already successful federal/state partnerships, which provide funding for our nation's highways, airports and transit systems.

A dedicated and independent passenger rail program is needed to ensure that funding will not be drawn away from the other modes. A multi-year funding commitment is needed because passenger rail projects, like other infrastructure projects, generally require multiple years from beginning to end. The program should provide an 80/20 federal/state cost share like that provided to the other modes. It should provide funding directly to states with strong preference given to regional balance. The funding level for a federal passenger rail program should reflect the significant regional funding needs that have been documented by the MWRRS Plan and similar state and national studies.

"The MWRRS is a key component in order to achieve a 21st century transportation system."

The creation of such a program will provide a level playing field for all of the transportation modes. Developing support in Congress for such a program is the highest priority MWRRS Plan implementation activity that can be undertaken and a regional advocacy program will be required.

Project Advocacy

Efforts should continue to build a coalition of regional stakeholders to solicit active support for the MWRRS and secure the required levels of state and federal funding. This effort should focus on making the U.S. Congress and Executive Branch aware of the important role that enhanced passenger rail service can play in addressing regional mobility and economic development needs and the critical need for federal funding. The regional stakeholder coalition should continue to involve elected officials—mayors, legislators, governors, and members of Congress—as well as private sector advocates and the general public. This effort can build on a number of initiatives in the Midwest to form passenger advocacy groups such as The Midwest Business Coalition for High Speed Rail, a MWRRI Mayor's Coalition, The Midwest Interstate Passenger Rail Commission, The Midwest High Speed Rail Association and The States for Passenger Rail Coalition. Efforts can also be undertaken to coordinate Congressional advocacy efforts with other regional coalitions such at those representing the Southeastern, Northeastern and Gulf states.

Shared Rail Rights-of-Way

A continuing dialogue with the freight railroads and commuter operators is needed to negotiate agreements on planned right-of-way improvements, the use of shared rights-of-way, and potential adjustments/refinements required to accommodate freight, commuter rail, and proposed MWRRS operating schedules.

Readiness to Proceed

Efforts should continue by the states to ensure that passenger rail projects are "funding ready". Several states have already proceeded with corridor environmental assessments and impact statements, as well as preliminary engineering studies. These activities should continue. Actions should also commence to gain federal agency funding to conduct a system-wide environmental review as necessary to satisfy National Environmental Policy Act (NEPA) requirements and to position the MWRRS project for receipt of federal grant funds and TIFIA loans.

"Short-term and long-term actions required to advance the MWRRS towards implementation include:

- *A coordinated advocacy program to develop Congressional and Executive level support for a dedicated, multi-year federal funding program.*
- *Advocacy for an 80/20 federal/state grant share in such a program as well as a predominant state role in project management and delivery.*
- *A cooperative partnership with the freight and commuter railroads."*

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