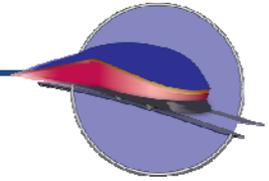


# High Speed Intercity Passenger Rail (HSIPR) Program

## Application Form

### Planning



Applicants for Planning funds are required to submit this Application Form and other documents as outlined in Section E of this application. Please complete this document and provide any supporting documentation electronically. Supporting documentation should be logically and descriptively labeled. For each question, enter the appropriate information in the designated gray box. If a question is not applicable to your project, please indicate “N/A.” If you have questions about the HSIPR program or this application, please contact FRA at [HSIPR@dot.gov](mailto:HSIPR@dot.gov).

### A. Point of Contact and Project Information

(Must be consistent with information provided on applicant’s SF 424)

<b>(1) Submitting Agency:</b> Michigan Department of Transportation		<b>Submitting Agency Authorized Representative Name and Title:</b> Al Johnson, Supervisor		
<b>Street Address / City:</b> 425 West Ottawa P.O. Box 30050	<b>City:</b> Lansing	<b>State:</b> MI	<b>Zip Code:</b> 48909	<b>Telephone Number:</b> 517-335-2549 <b>Email:</b> johnsonal@michigan.gov
<b>Application Point of Contact (POC) Name and Title</b> (If different): N/A		<b>Application POC Telephone:</b> N/A <b>Application POC Email:</b> N/A		
<b>(2) Name(s) of additional States applying (if applicable):</b>  N/A				
<b>(3) Planning Project Name</b> (Please provide a clear, concise, and descriptive name, example “Capital City to Hill Valley Corridor Service Development Plan”):  Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor Program				

**(4) Describe the corridor service(s) that is (are) the subject of the Planning Project, including corridor name, endpoints, major intermediate cities, and other characteristics (upload a map if applicable):**

The name of the corridor is Chicago Hub (Chicago to Detroit/Pontiac) High Speed Rail Corridor. The endpoints of the corridor are Chicago, IL (Chicago Union Station) and Pontiac, MI. The major intermediate cities are Gary, IN, Porter, IN, Kalamazoo, MI, Ann Arbor, MI, and Detroit, MI. The location for the planned station stop at Gary Airport has not been determined yet. The Project Study Area Map is attached as Exhibit 1.

**(5) Planning Project Abstract (In 3 - 5 sentences, please describe your proposed planning project):**

The Planning Project yields a Service Development Plan and a Service NEPA document. The Service Development Plan includes the following activities: ridership and revenue update, operating plan update, operating and capital cost update, operating ratio calculation, benefit to cost ratio calculation, coordination with agencies/public, and a stakeholder workshop. The Service NEPA document includes the following tasks: Project Management, Purpose and Need Statement, Alternatives Development and Planning, and Formal Public/Agency NEPA Input. The completion of these two items generates a Passenger Rail Corridor Investment Plan.

- (6) 6a. Total Cost of Planning Project (2010 dollars): \$ 4,000,000**  
 - Amount Requested from HSIPR Program: \$ 3,200,000  
 - Non-Federal Match Amount: \$ 800,000

**6b. Indicate the source, amount, and percentage of matching funds:**

Non-FRA Funding Sources	New or Existing Funding Source?	Status of Funding <sup>1</sup>	Type of Funds	Dollar Amount *Should total Non-Federal Amount in above 6a.	% of Total Project Cost	Describe any uploaded supporting documentation to help FRA verify funding source
Michigan DOT	New	Committed	MDOT State Restricted Funds	\$400,000	10%	
Indiana DOT	New	Committed	Industrial and HSR Rail	\$200,000	5%	Letter of Support (Exhibit 2)

<sup>1</sup> Reference Notes: The following categories and definitions are applied to funding sources:

**Committed:** Committed sources are programmed capital funds that have all the necessary approvals (e.g. legislative referendum) to be used to fund the proposed project without any additional action. These capital funds have been formally programmed in the State Rail Plan and/or any related local, regional, or state Capital Investment Program (CIP) or appropriation. Examples include dedicated or approved tax revenues, state capital grants that have been approved by all required legislative bodies, cash reserves that have been dedicated to the proposed project, and additional debt capacity that requires no further approvals and has been dedicated by the sponsoring agency to the proposed project.

**Budgeted:** This category is for funds that have been budgeted and/or programmed for use on the proposed project but remain uncommitted, (i.e., the funds have not yet received statutory approval). Examples include debt financing in an agency-adopted CIP that has yet to be committed in their near future. Funds will be classified as budgeted where available funding cannot be committed until the grant is executed, or due to the local practices outside of the project sponsor's control (e.g., the project development schedule extends beyond the State Rail Program period).

**Planned:** This category is for funds that are identified and have a reasonable chance of being committed, but are neither committed nor budgeted. Examples include proposed sources that require a scheduled referendum, requests for state/local capital grants, and proposed debt financing that has not yet been adopted in the agency's CIP.



Illinois DOT	New	Planned		\$200,000	5%	Letter of Support (Exhibit 2), Exhibit 15
	New	Committed				

**(7) Which of the following planning activities are proposed to be funded under the HSIPR Program?** NOTE: Eligible planning projects for these funds include either 1) State Rail Plans or 2) Passenger Rail Corridor Investment Plans. Applicants seeking to develop a passenger rail corridor investment plan must apply for any necessary work to develop *both* a service development plan and corridor-wide environmental documentation. If the applicant has already completed one of these documents or a component thereof, FRA must have accepted that document as meeting the minimum requirements outlined in Section 2.4.1 of the FY2010 Planning NOFA.

- State Rail Plans
- Service Development Planning and Service NEPA
- Service Development Planning only (Service NEPA already complete)
- Service NEPA only (Service Development Planning already complete)

**(8) 8a. Describe the service attributes of the Program/Project for which you are planning** (*check all that apply*):

- Additional Service Frequencies
- New Service
- Service Quality Improvements
- Improved On-Time performance on Existing Route
- Increased Average Speeds/Shorter Trip Times
- Other (*Please Describe*):

**8b. Please provide an overview of the characteristics of the Program/Project for which you are planning, including a description of the types of improvements under consideration, and if applicable, the intercity passenger rail proposal:**

Overview of the Characteristics of the Planned Project

The Chicago Hub (Chicago to Detroit/Pontiac) High Speed Rail Corridor is an MWRRI Phase 1 project. The initial 40 mile segment between Chicago, Illinois and Porter, Indiana contains Norfolk Southern right of way that is one for the heaviest freight railroad routes in the country. The main characteristic is the number of hard constraints within this segment that inhibit the increase of frequency and speed of passenger rail service for the Chicago-Detroit, Chicago-Cleveland, and Chicago-Indianapolis/Cincinnati corridors. Without solutions to remove or mitigate these constraints, the MWRRI cannot implement high speed rail service in these corridors. The MWRRI and FRA are studying various alternative routes within this segment as part of the MWRRI Phase 7 project and intend to reduce the number of the alternative routes for future evaluation and environmental documentation. In order to address these constraints, the State of Michigan, as a member of the MWRRI, is the lead state with Indiana, Illinois, and Norfolk Southern and is seeking funds to develop a Passenger Rail Corridor Investment Plan for the Chicago-Detroit/Pontiac corridor.

Description of Type of Improvements under Consideration

The Passenger Rail Corridor Investment Plan will be developed with consideration of the type of improvements planned for the corridor. MDOT, AMTRAK, and FRA have made significant investments in this corridor from Porter, Indiana to Detroit. Additional infrastructure investment is needed to increase train speed and frequency and deliver high speed rail from Porter to Pontiac. Various levels of engineering, from concept to preliminary to final, have been completed throughout the corridor, including various alternatives within the Chicago-Porter segment. As a result, certain improvements have been planned. These improvements are described in more detail in the Project Management Plan that has been prepared.

The Chicago-Detroit/Pontiac High Speed Rail Corridor currently has three round trips of intercity passenger rail service each day for Amtrak Wolverine Service. This project will increase the service frequency of Amtrak Wolverine intercity trains from three to nine round trips per day with a one train intra Michigan service from Battle Creek to Detroit. The Chicago to Porter segment will need to host a projected 50 passenger trains between Porter and CP501, a projected 62 passenger trains between CP 501 and Grand Crossing, and a projected 72 passenger trains between Grand Crossing and CP518. The Statement of Work is developed to ensure that the growth of passenger and freight service in this segment is properly considered.

The project plans for physical improvements to be made on the partner railroads as follows:

- Canadian National (CN) between Pontiac and West Detroit Junction;
- Conrail Shared Assets Operations (CSAO) between West Detroit Junction and Townline;
- Norfolk Southern (NS) between Townline and Kalamazoo;
- Amtrak between Kalamazoo and Porter;
- Norfolk Southern (NS) between Porter and 21st Street in Chicago (if selected as the preferred alternative);
- CSX (Michigan Central) from Porter to Tolleston to Buffington Harbor (if selected as the preferred alternative);
- Other Reasonable alternatives between Porter and Tolleston as analyzed within the project; and
- Amtrak between 21st Street in Chicago and Chicago Union Station (CUS).

The planned project also includes the following special tasks:

- Chicago Union Station Passenger Flow Analysis
- Chicago Union Station Track and Platform Capacity Analysis
- Railroad Passenger/Freight Conflict Analysis – Grand Crossing to CUS
- CN High-Speed Rail (HSR) Capacity Analysis – Pontiac to West Detroit Junction
- Chicago – Detroit/Pontiac Maintenance Facility Study

**(9) What are the anticipated start and end dates for this Planning Project? (mm/yyyy)**

**Start Date:** 10/2010

**End Date:** 01/2012

## B. Statement of Work

### BACKGROUND

*Briefly describe the events that lead to the need for the planning project and the underlying issue that the project will address (less than 1/2 page).*

In 1995, the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, in partnership with the Federal Railroad Administration (FRA) and Amtrak, began to evaluate the potential role of high-speed rail in the Midwest. The Memorandum of Agreement (MOU) for the Conduct of the MWRRI is included in Section D-2 as Exhibit 3. The Executive Summary of the MWRRI Business Plan is Exhibit 4.

On July 27, 2009, the Governors of the Midwest states and the Mayor of the City of Chicago executed an MOU. This document affirms that “all MOU Participants recognize a priority to establish the Chicago Hub to corridors consisting of Chicago-St. Louis, Chicago-Milwaukee-Madison, and Chicago-Detroit/Pontiac (MWRRI Phase I). The Midwest Governors’ MOU is included as Exhibit 5.

The Midwest Governors’ priority project was partially realized in 2009 through funding from the American Recovery and Reinvestment Act.

On April 1, 2010, the FRA issued a Notice of Funding Availability (NOFA) pertaining to funding made available for planning activities under the FRA’s High-Speed Intercity Passenger Rail (HSIPR) Program. In order to satisfy the Governors’ stated priority in the MOU to complete Phase 1 of the MWRRI, the Michigan Department of Transportation (the lead state) is joined by the Indiana and Illinois Departments of Transportation, and Norfolk Southern in submitting an application for funding to prepare a Service Development Plan and a Tier 1 EIS document for the corridor. Concurrently with this application, the Wisconsin Department of Transportation, as the lead state for the MWRRI, is submitting an application for the preparation of a system-wide Service Development Plan and to complete Service NEPA’s on remaining corridors outside the Phase 1 area. Michigan, Illinois, and Indiana are also making significant financial contribution to the 20% local share of that project.

### GENERAL OBJECTIVE

*Provide a general description of the planning work to be accomplished through this grant, including project work effort, project study area, and other parties involved. Describe the end-state of the project, and the outcomes that will be achieved as a result of this project.*

#### Introduction

The States of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin, and the City of Chicago have entered into a Memorandum of Understanding for the implementation of high-speed rail passenger service and connections involving corridors linking cities in their respective states. The MWRRI Technical Steering Committee (TSC), comprised of technical representatives of the states’ departments of transportation, has been assigned the responsibility for implementing this strategy with the initial priority the completion of Phase 1 of the MWRRS. The MWRRI TSC has assigned the Michigan Department of Transportation (MDOT) as the lead state to implement high speed rail passenger service on the Chicago-Detroit/Pontiac corridor for the purpose of completing the MWRRI Phase 1 and satisfying the Midwest Governors’ priority.

The goal of the Chicago Hub (Chicago-Detroit/Pontiac) High-Speed Rail Corridor Program is to upgrade rail infrastructure and facilities along the Chicago-Detroit/Pontiac corridor to safely accommodate current and increased high-speed passenger rail services and to complete Phase 1 of the MWRRI. The improvements to the

corridor consist of operations improvements to Chicago Union Station, the elimination of chokepoints between Chicago and Porter, IN, and upgraded track and signaling between Porter and Detroit/Pontiac to achieve speeds up to 110 mph. Michigan's positive train control system, known as Incremental train Control System (ITCS), currently operating between Kalamazoo, MI and New Buffalo, MI would be expanded to operate between Dearborn, MI and Porter, IN.

The objective of the proposed planning work is to produce a Passenger Rail Corridor Investment Plan (the "project" consisting of a Service Development Plan and a Service NEPA between Chicago and Detroit/Pontiac). The attainment of this objective will significantly improve the probability of reaching the goal stated above.

#### Project Study Area

The project study area (see Exhibit 1) begins in Chicago, Illinois and ends in Pontiac, Michigan. The study area includes the Norfolk Southern corridor between Chicago and Porter, Indiana which is one of the heaviest freight segments in the country. An infrastructure investment is needed to operate 56 MWRRI passenger trains (not including the existing Amtrak long distance trains) in this segment without degrading the current and future freight capacity needs. The planning process that defined the planned investment included the 1996 HDR South of the Lake and the 2004 HNTB studies (Exhibit 6) that identify feasible rail alternatives between Chicago and Porter using existing and abandoned rail rights of way. Exhibit 7 contains map of the Chicago to Porter corridor and the alternatives considered in these previous studies. Exhibit 7 also shows the level of future service for two of the alternatives under consideration. The MWRRI Phase 7 is preparing a conceptual design update of these studies. The update will reflect changed conditions in the segment; initiate a preliminary analysis of the alternative routes; reduce the number of routes for future evaluation and environmental documentation; and include the current Norfolk Southern and CSX alternatives in the analysis, as well as the historic routes (Exhibit 7). This technical information will be available for the start of the project.

#### Project Work Effort

The Grantee agrees to perform the professional planning, environmental and engineering services required to prepare a Passenger Rail Corridor Investment Plan for the proposed Chicago-Detroit/Pontiac corridor of the Midwest Regional Rail System (MWRRS). The Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor is an MWRRI Phase 1 Implementation project that also includes the Chicago-St. Louis and the Chicago-Milwaukee-Madison corridors.

The Passenger Rail Corridor Investment Plan consists of the following:

- A corridor Service Development Plan and
- A corridor-wide Service NEPA document

The National Environmental Policy Act (NEPA) is a basic national charter for the protection of the environment. NEPA procedures ensure that environmental information for projects that receive federal funding is available to public officials and citizens before decisions are made. Since FRA is the lead federal agency for the project, NEPA requires that FRA supervise the preparation of an environmental evaluation for the proposed project in order to assist its planning and decision making. A Service NEPA addresses: 1) what rail services are proposed, 2) what cities and stations will be served, 3) what reasonable route alternatives will be investigated, 4) what service levels will be considered, 5) what operational characteristics will be utilized, 6) what ridership volumes are expected, and 7) what infrastructure elements are required (e.g. route alignments, track improvements, bridges, tunnels, fencing, grade crossings, electrification, communications, stations, and maintenance facilities).

The project work effort to complete this project builds on previous work completed in phases 1 through 7 of the MWRRI. Notable MWRRI planning documents that will be referenced and used throughout this project include the MWRRI Project Notebook and Appendices dated June 2004 (Exhibit 8); MWRRI Project Notebook Chapter 11, Economic Cost-Benefit Analysis updated dated November 2006 (Exhibit 8); and MWRRI Phase 6 Programmatic EIS Template (Exhibit 9). Additionally, MWRRI Phase 7 deliverables completed under a cooperative agreement between the MWRRI Technical Steering Committee and FRA will also serve as a building block for this project. The FRA Statement of Work associated with MWRRI Phase 7 is included as Exhibit 10. As part of the MWRRI Phase 7, the City of Chicago has requested that the MWRRI consider another alternative between Grand Crossing and CUS using right of way of Canadian National (Exhibit 11).

Due to the range of alternative routes within the initial segment of Chicago-Porter, the project work effort will produce a Service NEPA (Programmatic Environmental Impact Statement) which will be a Tier 1 Environmental Impact Statement (Tier 1 EIS). The most important aspect of the Tier 1 EIS for the Chicago-Detroit/Pontiac Corridor will be the Purpose and Need Statement, particularly the program background and its legislative history. The Chicago-Detroit/Pontiac Corridor Purpose and Need Statement will tie together the evolution (i.e. history) of the project by citing all its completed technical reports, policies, and related governmental efforts. It will also consider the significant investment made by FRA, MDOT, and Amtrak within Michigan resulting in an increase in speeds up to 95 MPH. It will result in a single summary and seminal Tier 1 EIS from which all segments of the project (i.e. all alternative alignments) would then issue. By that means, once the Tier 1 EIS produces a Record of Decision (ROD), there will be little vulnerability to legal intervention during implementation of any part of the Tier 2 sequencing. The knitting together of this project history is needed to make the Chicago-Detroit/Pontiac Corridor Tier 1 EIS legally sufficient to protect its long-term implementation.

The project work effort will also include the analysis of alternatives in the Tier 1 EIS including the build alternatives that have been addressed during the life of the Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor program and the importance of Gary, Indiana as a major intermodal hub. Segments between stations will be identified and defined in order to provide all necessary site specific information based on existing and available data. The No Action alternative will be described based on existing statewide, long-range modal information available from Michigan, Illinois, and Indiana Departments of Transportation.

The effort also includes engineering support for the alternative analysis. Each route alternative considered will be reviewed and inspected as necessary to identify specific infrastructure improvement requirements and to develop comparative capital cost estimates. The infrastructure requirements will be coordinated with the passenger system operating plan and with the anticipated requirements of the existing freight operations. Infrastructure improvements/creation considerations will include earthwork, bridge construction, improved drainage, rail placement, signal and grade crossings, and maintenance-of-way facilities. These infrastructure improvements shall be generally located and mapped for identification of general environmental issues. Generalized/preliminary capital costs shall be prepared for use in the comparison of alternatives.

The project work effort also includes the affected environment. Existing conditions and impacts will be described at a statewide and regional level primarily using available data and literature from the two subject states, and supplemental field investigations. Activities include initial data collection, with detailed emphasis on segments where Categorical Exclusions are anticipated, if any such segments are identified. Existing conditions will primarily be determined using existing electronic data sets of information available from

Chicago-Detroit/Pontiac Corridor. Depending on data available, and where fiscally appropriate, GIS-based data will be used to help describe existing conditions and evaluate impacts. Databases anticipated to be available are US Census data, wetlands (National Wetlands Inventory maps), threatened and endangered species, farmlands, historic and archeological resources, and public parks and recreational areas. Mapping will be prepared at an appropriate scale for impact-specific areas. In addition to obtaining available electronic databases, the Grantee will coordinate with federal and state agencies to help describe regional and statewide resources and activities. This information will supplement information missing from existing databases. Local agencies may be contacted as well for specific sensitive areas. Spot field checking for unique or sensitive resources will supplement information obtained. General information on the listed topics will be obtained. Project specific data may be required, as appropriate, in segments where candidate Categorical Exclusions are identifiable.

The project work effort also identifies environmental concerns and potential physical, social, and environmental issues, and evaluates the consequences of these areas for the project. The aim of this analysis is to show the impact of train speeds up to the design speeds. Where new routes are proposed, the analysis will identify key concerns and issues, then prepare a framework and definition for the site-specific second tier environmental document that will be required for such routes. Environmental impacts of the feasible alternatives will be assessed in a general manner. The evaluation of impacts will identify where specific impact analyses may be required in subsequent second tier environmental documents on select alignments. The Tier 1 EIS impact evaluation will consider those elements described in Existing Conditions noted above. It is assumed that stations will not be evaluated in detail at this level of analysis, except to the extent that detail is available for projects in one or more project rail segments. Where such detail is present, the assessment will include this information such that the Tier 1 EIS Record of Decision can determine that no further assessment will be required for those specific segments of the program. The Chicago-Detroit/Pontiac Corridor TIER 1 EIS will incorporate, by reference, the environmental concerns and assessments derived from previous studies on corridors or routes in the system to serve as a baseline and provide guidelines for this study. A key feature of the analysis is to identify areas where Categorical Exclusions activities (CEs) can be derived, areas that require mitigation, and potential impacts that need further study. It is anticipated that Programmatic Categorical Exclusions (PCEs) of specific segments in the Chicago-Detroit/Pontiac Corridor will be obtained during this Tier 1 EIS.

The project work effort will include the preparation of a Service Development Plan that describes the corridor's transportation challenges and opportunities; develops a detailed operations plan including service frequency, timetable and stringlines, station locations, intermodal connections at Gary, Indiana and other locations; updates the current corridor financial plan; assesses user and non-user benefits including job creation and retention and energy savings; and prepare a corridor implementation plan.

The Grantee will edit all previous reports and prepare and edit the draft and final Tier 1 EIS report. Categorical Exclusions documentation on specific segments/activities will also be provided.

As part of the project effort, the Grantee will be responsible for coordinating with review federal, state and local agencies, as appropriate, for the segments of the Chicago-Detroit/Pontiac Corridor that contain Categorical Exclusions. The Grantee will coordinate with review agencies to obtain information appropriate for the general review of impacts of the Chicago-Detroit/Pontiac Corridor system in the Tier 1 EIS. The Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor program will be critically dependent on positive public informational programs, including Public Involvement (PI), in order to help insure that the project goals are

ultimately achieved. PI will be organized and coordinated by the Grantee in order to ensure State participation is not fragmented or inconsistent.

#### Other Parties Involved

In addition to the MWRRI states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin, and the City of Chicago, Amtrak, and Norfolk Southern Railroad, MDOT has sought and received letters of support for the project from Canadian National (CN), Conrail Shared Assets, Canadian Pacific (CP) and Amtrak. Support letters are included as Exhibit 12. Other parties involved are county governments along the corridor including Oakland, Wayne, Washtenaw, Jackson, Calhoun, Kalamazoo, Van Buren, Cass and Berrien Counties in Michigan; Porter and Lake Counties in Indiana; and Cook County in Illinois. The cities involved along the corridor include Pontiac, Birmingham/Troy, Royal Oak, Detroit, Dearborn, Ann Arbor, Jackson, Albion, Battle Creek, Kalamazoo, Dowagiac, Niles and New Buffalo in Michigan; Michigan City, Gary, and Hammond Whiting in Indiana; and Chicago, Illinois. The Congressional Districts covered by this corridor include the 6<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup>, and 15<sup>th</sup> Congressional Districts in Michigan, the 1<sup>st</sup> and 2<sup>nd</sup> Congressional Districts in Indiana, and the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 7<sup>th</sup> Congressional Districts in Illinois.

#### End State of Project

The end state of the project will be a Service Development Plan and a Record of Decision for a Tier 1 EIS that provides the prerequisites for federal funding required to undertake preliminary engineering and project NEPA work in the Chicago-Porter section and environmental documentation permitting the states of Indiana and Michigan to proceed with final design and construction of significant portions of the high speed rail corridor between Porter, Indiana and Pontiac, Michigan.

#### Desired Outcomes

The desired outcomes of the project are as follows

1. A Service Development Plan for the Chicago-Detroit/Pontiac corridor as briefly described in the project work effort above
2. A Record of Decision for a Tier 1 EIS for the Chicago-Detroit/Pontiac Corridor
3. A protocol of infrastructure needs and associated capital costs and required environmental clearances in the Chicago-Porter segment (Tier 1 EIS will determine final protocol) for the NS alternative route is used as an example – a protocol will be developed for other reasonable alternatives:
  - 3.1 108 passenger trains from CUS to Union Avenue
  - 3.2 90 passenger trains from Union Avenue to 21<sup>st</sup> Street Interlocking
  - 3.3 72 passenger trains from 21<sup>st</sup> Interlocking to CP 518
  - 3.4 72 passenger trains from CP 518 to Grand Crossing
  - 3.5 62 passenger trains from Grand Crossing to CP 501
  - 3.6 40 passenger trains from CP 501 to Porter (assuming Detroit and Cleveland trains use NS corridor)
  - 3.7 62 passenger trains from CP 501 to Tolleston (assuming Detroit, Indianapolis/Cincinnati, and Cleveland trains divert off the NS corridor)
  - 3.8 28 passenger trains from Tolleston to Porter on CSX (Michigan Central)
4. Selection of a preferred alignment for the Chicago-Detroit/Pontiac service in the Chicago-Porter segment
5. Preparation of environmental documentation for remainder of corridor from Porter-Pontiac
6. Understanding the impact of future passenger flow on the CUS at full build-out of the MWRRI

7. Understanding the impact on the track and platform areas of CUS at the full build-out of the MWRRRI
8. Understanding the impacts of the full build-out on the maintenance facilities at Amtrak Chicago Maintenance Facility

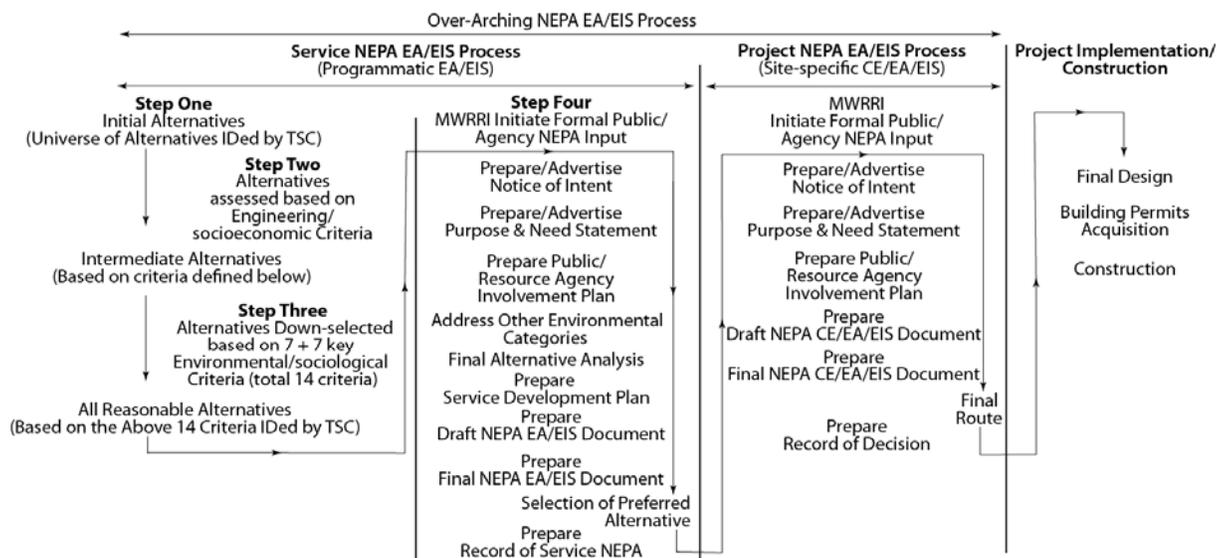
**DESCRIPTION OF WORK**

*Describe the tasks of the planning project from start to finish. A task 1 – Detailed Planning Project Workplan – shall be included. Under the cooperative agreement, FRA will participate in the project, as described in this Statement of Work, through review draft work products and acceptance of task deliverables. Group the tasks into major and minor components and relate the major components to milestones and deliverables. Address inter-relationships between tasks. Identify the milestones for which FRA review of draft work products is anticipated. (For more detailed studies it may be appropriate for FRA to participate in the development of methodologies.) Address necessary coordination and processes to involve affected parties and the public as appropriate.*

**Description of Work**

The Grantee will engage a consultant team to assist with the day-to day program management and prepare deliverables for review and approval. The Grantee, in consultation with FRA, will ensure that the consultant performs all tasks necessary to guide, schedule, and coordinate the project activities and study deliverables. The “project work effort” is summarized in the General Objective section above. A detailed planning project work plan is by definition the a demonstration of a systematic process to deliver a product that satisfies the federal and state guidelines. The MWRRRI TSC and FRA have discussed the use of a 4 step methodology to arrive at the selection of a preferred alternative and the preparation of a Service NEPA.

**Service NEPA and Project NEPA Methodology Outline for the MWRRRI  
Four Step Process Resulting in the Selection of a Preferred Alternative**



The four step alternatives selection process is based on **Step One** — identification of a universe of initial alternatives; **Step Two** — down selection leaving an array of intermediate feasible alternatives based on route characteristics, population served, and obvious untenable defects; **Step Three** — down selection leaving Reasonable alternatives based on engineering/socioeconomic criteria and 7 key environmental criteria totaling 14 criteria; and **Step Four** - further alternative analysis of the Reasonable Alignments resulting from Step Three and a No-Build alternative including agency coordination and public involvement; scoping, ridership and revenues; operating plan and operating costs; capital costs; operating ratio and benefits/cost ratio; conceptual engineering and track schematics; coordination with railroads; preparation of a Service Development Plan; and stakeholder workshop. The completion of Step Four results in a Service NEPA with a preferred alternative to then be assessed in the Project NEPA.

F



A detailed project work plan and schedule has been developed to demonstrate how the Grantee will deliver the project work effort. The work plan and schedule addresses the inter-relationship between the tasks and sub tasks; identifies draft work products (technical memorandums) requiring FRA review and time for review; and identifies the scheduled milestones. Task 4 identifies in detail the coordination and public involvement processes that will be undertaken by the Grantee. The Detailed Planning Project Work Plan is written below and the Primavera Schedule with timelines is included as Exhibit 13. A screen shot of the schedule follows the description of Task 9.

## **Task 1: Detailed Planning Project Work Plan and Schedule**

### **1.1 Project Work Plan**

The Grantee will prepare a detailed project work plan itemizing the work tasks necessary for completing the scope of work. The project work plan will include information on the project team organization, the project schedule, budget, standards (graphics, report, communications) manual, invoicing and progress reporting methods and procedures, and the scope of work. The project work plan will be reviewed and approved by the FRA. The Grantee will coordinate with FRA to determine the appropriate electronic format for all project deliverables. This will be documented in the project work plan.

### **1.2 Project Advisory Committee**

The Grantee, in cooperation with the FRA, will appoint an Advisory Committee to provide technical input to the planning process for this project. Advisory Committee meetings will be held at key project milestones including an initial meeting on the project purpose and need and range of alternatives to be considered; a meeting with the FRA and interested agencies to scope the project; a meeting to scope the project with the public; a meeting on alternatives screened for further evaluation; and meetings to select a preferred alternative. The Grantee will provide FRA with meeting agendas and minutes of all Advisory Committee meetings.

### **1.3 Project Coordination**

The Grantee will maintain coordination with FRA throughout the project. The coordination will include regular transmittals of project correspondence and records as well as telephone contact for items requiring immediate attention. Review meetings will be held monthly with the FRA to discuss project activities and schedules and to resolve potential problems. The Grantee will provide minutes of the review meetings to the FRA.

### **1.4 Administrative Record**

The Grantee will document and maintain files of all project activity, including key telephone communications, correspondence, media coverage and meetings. The Grantee will prepare notes for all meetings attended for this contract, and will provide a copy to the FRA project manager.

A project master file will be established and maintained by the Grantee during the course of the project. It will contain copies of reports, correspondence and other documents, and will be compiled and recorded in an Administrative Record as per *Document Management Procedures Handbook for NEPA Studies* by Cutler & Stanfield, April, 2000.

## 1.5 Progress Reports

The Grantee will prepare a detailed monthly status report, which will track the project activities, progress, and expenditures against the budget.

### *Deliverables:*

- Project Work Plan - FRA review and approval needed
- Meeting materials and presentations
- Meeting minutes
- Administrative record
- Monthly Progress Reports

## Task 2: Purpose and Need

### 2.1 Management Work Plan for Purpose and Need

The Grantee will prepare a management work plan associated with the development of the Purpose and Need Report. The Grantee will ensure compliance with the overall schedule and project budget and assure quality of deliverables.

### *Deliverable:*

- Purpose and Need Work Plan

### 2.2 Prepare Draft Project Purpose and Need

The Grantee will prepare the Purpose and Need Statement using information available from the MWRRRI Phase 7 Study, existing Chicago to Detroit/Pontiac Corridor Studies and federal and state policies, plans, and legislation regarding high-speed passenger rail service. General information on existing and future travel demand, via highway, air and rail modes, will be obtained from the federal and state Departments of Transportation.

The Purpose and Need Statement is an early and key document of the Programmatic EIS process. It sets the stage for consideration of the alternatives. The Purpose and Need Statement establishes the problems that must be addressed in the analysis; serves as the basis for the development of project goals, objectives, and preliminary evaluation measures; and provides a framework for determining which alternatives should be considered as reasonable options in a given corridor. The Statement serves to articulate why an agency is proposing to spend resources to study various alternatives and ultimately implement a project that may result in significant transportation, community, and environmental costs, benefits, and impacts. The structure of the document will be to provide a framework for the assessment of high speed rail on a regional system basis, and will also provide detail to help guide analysis at the corridor level.

The initial task will involve problem identification, which will draw upon previous research, including the Midwest Regional Rail Initiative studies, previous Chicago-Detroit/Pontiac corridor studies, and other relevant research and studies. Research on need will seek to establish evidence that identified transportation problems or deficiencies that exist, or will exist if projected population and planned land use growth are realized. Building upon prior studies, an inventory and characterization of existing transportation resources in each of the study alternative routes will be made. Such topics include the following:

- Congestion levels,
- Transportation options between major cities, including auto, commercial airline, intercity bus lines,
- Comparison of travel time, costs, convenience, frequency, etc. between modes,
- Analysis of travel flows between cities, and the share by mode (i.e. modal splits),
- Expected corridor growth and changing demographic profiles of the population.

The purpose of potential transportation investments will be drafted to address identified problems and needs. This will be articulated in the Purpose and Need Statement. A hierarchy of goals and objectives will be developed, which will be designed to:

- Objectively address the identified needs
- Aid in developing and evaluating potential solutions
- Be achievable
- Be sufficiently comprehensive to allow for a reasonable range of alternatives, and specific enough to limit the range of feasible alternatives
- Allow for a range of alternatives that are in context with the setting

A set of preliminary evaluation measures, corresponding to project objectives, will be prepared. This will be refined later in the project and used to evaluate defined alternatives for the corridor.

A first Draft Purpose and Need Report will be prepared for the FRA's review and comment. A Draft report incorporating FRA comments will be prepared and issued for public review. The Draft report will be posted to the project website.

***Deliverable:***

- Draft Purpose and Need Report – FRA review

**2.3 Prepare Final Project Purpose and Need**

Based on feedback to the Draft report from project scoping meetings, stakeholder and public involvement events and website communications, a Final Project Purpose and Need will be prepared and issued.

The Final report will be posted to the project website.

***Deliverable:***

- Final Purpose and Need Report – FRA approval

**Task 3: Alternatives Development and Planning**

This task provides a preliminary analysis of alternative routes of the Chicago-Detroit/Pontiac corridor to:

- Reduce the number of routes for future evaluation and environmental documentation
- Build upon available previous corridor and identify and analyze the variety of historical routes that can connect nodes in the system

*MWRRRI Phase 7 Note: Task 1 of the Statement of Work for the MWRRRI Phase 7 includes a start of the preliminary alternatives analysis for the Chicago to Porter segment (South of the Lake) of the Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor. The completed work product, with the approval of FRA, will serve as the basis for continued analysis within this Statement of Work. Subtasks completed in MWRRRI Phase 7 include 3.1, 3.2, 3.3.1, 3.3.2, 3.3.3, and 3.3.4.*

In order to accomplish this task, the Grantee, using a four step process to identify, analyze and evaluate the route alternatives, shall undertake the following subtasks:

- 3.1 Step 1. The Grantee shall identify the universe of route alternatives in graphical (GIS) and text formats. The Grantee shall prepare a Technical Memorandum for review and approval by FRA.
- 3.2 Step 2. Upon receipt of approval of the Technical Memorandum from 3.1 above and assembly of track charts, timetables, GIS data and relevant previous studies, the Grantee shall prepare a preliminary analysis of each route considering population centers served, route distance and obvious untenable defects to eliminate those routes that are not suitable for passenger service. The Grantee shall prepare a Technical Memorandum detailing the analysis and submit it to FRA for review and approval. In addition, a public involvement meeting will be scheduled and the Technical Memorandum will be modified if necessary.
- 3.3 Step 3. The Grantee shall subject the surviving intermediate routes to a more thorough quantitative screening and evaluation process. The Grantee shall prepare graphical and tabular data to enable FRA and stakeholders to evaluate route alternatives and retain reasonable alternative for further evaluation as required under NEPA procedures. The Grantee shall assemble data to enable a comparison of routes on the basis of speed, multiple tracks, intermodal station sites, ridership potential, cost of improvements, and key environmental criteria as described in the following second level subtasks:
  - 3.3.1 In order to compare routes on the basis of potential speed and multiple tracks, the Grantee shall collect and present data on distance, curvature, grades (where significant), quantity of tracks and existing freight density and existing permissible freight speeds. Based on this data, the Grantee shall prepare

simplistic speed profiles and route travel times.

- 3.3.2 In order to consider intermodal station sites, and potential stations at airports, the Grantee shall identify and illustrate each route geographically for interstate crossings, commercial airports, and major population centers.
- 3.3.3 In order to consider ridership potential, the Grantee shall illustrate geographically the routes and adjacent population centers. Potential ridership is anticipated to be proportional to the population along the routes.
- 3.3.4 In order to consider the cost of improvements, the Grantee shall quantify the following factors for each route: track conditions, number of tracks, density of existing freight service, structures, crossings, and existing signal system. The Grantee shall prepare a comparative capital cost estimate for each alternative.
- 3.3.5 In order to consider the possible environmental impacts, the Grantee shall employ readily available GIS data to assess the impacts the project may have on the following key environmental criteria: floodplains, wetlands, historic and archaeological sites, 4 (f) protected properties, threatened and endangered species, hazardous materials, and areas that are likely to engender issues of environmental justice as described in the following third level subtasks.

#### 3.3.5.1 Initial GIS and Geospatial Data Collection and Mapping

Existing conditions will be primarily determined using existing GIS and geospatial data sets of information available from MWRRI states and federal agencies. Depending on data availability, and where fiscally appropriate, GIS-based information will be used to help describe existing conditions and evaluate impacts through spatial analysis and modeling. The Grantee will collect the following *existing* inventories of GIS-based environmental information from state and federal agencies to be used in the GIS model:

- Ground and Surface Water Resources/Floodplains
- Wetlands
- Threatened and Endangered Species
- Historic and Cultural Resources (archeological sites will not be publicly disclosed)
- Environmental Justice / Demographic Census Information
- Hazardous Material/Waste
- Section 4 (f) Properties

The Grantee will standardize the existing GIS information collected to comply with the GIS Data Model rules developed as part of the Pilot GIS Data Model. Mapping will be prepared at an appropriate scale to conduct a representative impact analysis of alternatives.

#### 3.3.5.2 Affected Environment

Form FRA F 6180.135 (03-10)

Existing conditions immediately along the proposed build alternative corridors will be described at a state and regional level primarily using available data and literature and supplemental field investigations to describe unique local conditions. All the jurisdictions within the MWRRS, such as states, counties, MPO's, cities, towns, villages, and tribal reservations, will be compiled and mapped.

The Grantee will initiate literature searches, letter correspondence, and telephone contacts with local, regional, state, and federal agencies to obtain available existing information concerning relative topics in the project area. The Grantee will assemble the information and verify the information in the field when necessary. Previously prepared studies and environmental screenings associated with the MWRRRI will be collected, reviewed, and summarized. Pertinent information from these studies will be incorporated into the land suitability analysis and alternative corridor development.

The Grantee will coordinate with federal and state agencies to help describe significant regional and statewide resources and activities. This information will supplement information missing from existing databases. Local agencies may be contacted as well for specific sensitive areas. Spot field checking for unique or sensitive resources will supplement information obtained. General information on the listed topics will be obtained for each of the states where the MWRRRI corridor is under consideration.

### **Natural Environment**

Floodplains and Floodways

Wetlands

Threatened and Endangered Species

### **Human Environment**

Archaeological, Historic and Cultural Resources

4(f) Protected Properties

Environmental Justice Population

### **Physical Environment**

Hazardous Materials

#### 3.3.5.3 Environmental Consequences

The analysis of impacts will be primarily GIS-based, supplemented with field observations at specific unique or sensitive areas. The evaluation of impacts will identify where specific impact analyses may be required in subsequent project NEPA documents on select alignments. The impact evaluation will consider those elements described in Existing Conditions noted above.

The Grantee will conduct analyses to define the nature and extent of each potentially significant adverse environmental impact and identify appropriate potential mitigation measures and strategies for potentially unavoidable adverse impacts. The key environmental issues to be evaluated by the Grantee will include:

- Floodplains/Floodways – Identify potential impacts to groundwater, streams, rivers, and standing bodies of water affected by high-speed train system alternatives.
- Wetlands – Determine the approximate number and extent of wetland crossings (direct and indirect impacts) and wetland habitat types impacted by high-speed train system alternatives.
- Threatened and Endangered Species – Identify observations of threatened and endangered species and sensitive habitat. Section 7 consultations would occur at the project level.
- Historic and Cultural Resources – Identify potential impacts to historic and cultural resources as the first part of phased implementation of Section 106 consultation. Determinations of eligibility and effect would occur at the project level. The Grantee will provide support materials and attend meetings with agency staff.
- Archaeological Resources – Conduct assessment of historic and prehistoric archeological sensitivity of the areas affected by the proposed alignments.
- Section 4(f) and 6(f) Properties – A formal Section 4(f)/6(f) Statement is not part of this scope; however, the Grantee shall identify potential impacts to properties and measures to avoid impacts during project (Tier 2) studies.
- Environmental Justice – Evaluate the potential for disproportionate effects on low-income and minority population
- Hazardous Material/Waste Constraints – Identify and quantify potential hazardous material and waste constraints for each high-speed train alignment.

The Grantee shall summarize the evaluation methods and anticipated representative impacts of the reasonable alternatives.

- 3.3.6 The Grantee shall prepare a Technical Memorandum summarizing the data from 3.3.1, 3.3.2, 3.3.3, 3.3.4, and 3.3.5, entitled ‘Alternatives Analysis’.
- 3.3.7 Upon assembly of the data, the Grantee shall hold a one-day workshop with FRA and designated stakeholders to review the data, develop a scoring procedure, and evaluate the route alternatives. Based on the scoring, either a single alternative or multiple alternatives shall be identified for further study at the discretion of FRA and stakeholders. The Grantee shall document the evaluation process and conclusions and prepare a Summary of Chicago-Detroit/Pontiac Route Preliminary Alternatives Analysis with Environmental Consequences Report.

***Deliverables:***

- Technical Memorandum: Alternative Route Depiction - FRA review and approval
- Technical Memorandum: Preliminary Analysis – FRA review and approval
- Technical Memorandum: Alternatives Environmental Analysis – FRA review and approval
- Technical Report: Summary of Chicago to Detroit/Pontiac Route Preliminary Alternatives Analysis with Environmental Consequences – FRA approval

**Task 4: Step 4 Analysis – Formal Public/Agency NEPA Input****4.1 Public Involvement and Agency Coordination**

The Grantee will be responsible to coordinate review with federal, state and local agencies and the public, as appropriate, for preparing the Programmatic EIS.

**4.1.1 Public Involvement Plan**

The Grantee will develop a Public Involvement Plan for the project. The plan will outline the public involvement program and will identify key contacts within agencies, the news media, public officials and the general public. The plan will also identify key contacts with civic and business groups, relevant interest groups, present and potential riders/users, and private service providers/shippers. The plan will identify how public involvement activities will be linked to key milestones in the planning/engineering and environmental analytic process. The plan will identify public involvement activities with key milestones, including:

- Notice of intent publication and scoping activities.
- Development of purpose and need statement.
- Identification of the range of alternatives.
- Collaboration on impact assessment methodologies.
- Completion of the Draft Programmatic EIS.
- Identification of the preferred corridors and the level of design detail.
- Completion of the Final Programmatic EIS.
- Completion of ROD and recommended Segments of Independent Utility

The plan will contain a series of public involvement and educational activities that will include: interactive/informational workshops; educational materials and displays; briefings for federal, state, and local elected officials; small group meetings; media outreach strategy; creation of a web page; creation and maintenance of a comment/response database; creation and maintenance of a public outreach database; an agency coordination effort; and assistance to FRA with a project steering committee.

The Grantee will submit the draft Public Involvement Plan for FRA review. The final plan will be revised based on received comments.

**4.1.2 Mailing List**

The Grantee will establish and maintain a database of elected officials, public officials, agency staff, and key public stakeholders, as appropriate. The database will be used to provide the public with information concerning progress on the project and for notifying the public of meetings and workshops.

The initial mailing list will not attempt to include all of the adjacent property owners in the study corridors. The mailing list will be built using data obtained from key public agencies. Public officials

will also be asked to provide community leader names during the initial telephone contact. Included in the database will be civic/social service agencies as identified in the community outreach research.

#### 4.1.3 Phone and Mail Contact

The Grantee will provide a toll-free telephone number for citizens wishing to contact the study team. The telephone service will begin prior to project Scoping and will continue through the completion of the Record of Decision.

#### 4.1.4 Receiving and Responding to Comments and Data Requests/Comment/Response Database

The Grantee will prepare responses to comments from the general public. The Grantee will create and maintain a database that logs comments and tracks responses. The database will detail the comments and questions received from the public and other interested parties (from public workshops, small group meetings and the project hot line) and the responses provided by the Grantee and/or the FRA. The date and method by which each comment is received and responded to will be included. The database will be updated after each outreach activity or at least monthly.

#### 4.1.5 Notice of Intent

The Grantee will prepare a draft Notice of Intent (NOI) to prepare a Programmatic Tier 1 EIS for publication in the Federal Register. The NOI must be published in the Federal Register no later than two weeks prior to the agency/public scoping meetings.

#### 4.1.6 Agency Coordination

The Grantee, in cooperation with the FRA, will identify appropriate review agencies and develop an initial agency distribution mailing list. The Grantee will prepare, in cooperation with the FRA, a list of agencies to be contacted for initial coordination. The Grantee will prepare a coordination letter for the agencies. The letter shall concurrently provide an invitation to an agency scoping meeting.

Follow on coordination meetings with agencies shall be held at key milestones in the study process as follows:

##### Scoping meeting

- Notice of intent publication and scoping activities.
- Development of purpose and need.
- Identification of the range of alternatives.

##### Alternatives screening meeting

- Identification of reasonable alternatives to be fully evaluated in the Draft Programmatic EIS.
- Collaboration on impact assessment methodologies.

##### Selection of preferred corridors for future project (Tier 2) studies

- Identification of the preferred alternative and the level of design detail.

Agencies will be given the opportunity to review and comment on the Draft Programmatic EIS and Final Programmatic EIS. They will also be notified of the completion of the Record of Decision. The Grantee will identify and arrange appropriate agency meeting venues. The Grantee will prepare invitation letters, handouts and exhibits, attend and facilitate the meeting and prepare summary minutes.

#### 4.1.7 Agency Scoping

The Agency Scoping Meeting invitation will be included in the agency coordination letter. The Grantee will prepare a coordination packet for distribution at the meeting. The coordination packet will include a project overview, a copy of the NOI, draft Purpose and Need elements, a range of alternatives to be considered and a summary of environmental considerations to be addressed in the Programmatic EIS. The Grantee will address all details for the meetings.

A joint scoping meeting will be held with the FRA in a central location. Scoping activities will be documented in meeting minutes and agency correspondence will be kept in a file.

#### 4.1.8 Public Scoping

Concurrent with agency scoping activities, the Grantee will host information public scoping meetings at locations that are geographically spread through the study corridors. These initial meetings will be presented sequentially and will introduce the project, the purpose and need, the range of alternatives to be considered and environmental considerations to be evaluated in the Programmatic EIS. The Grantee will coordinate with the FRA to determine the appropriate locations for the meetings. The Grantee will arrange to reserve rooms, prepare exhibits, provide staff and prepare a summary of comments and responses.

#### 4.1.9 Public Officials Informational Meetings

At key points in the study, meetings will be held with the local public officials. These will most likely occur prior to Public Informational Workshops and will utilize board mounted graphic exhibits prepared for the workshops. When needed and/or requested, these formal meetings with public officials will be supplemented with small group meetings.

#### 4.1.10 Citizens Informational Workshops

The Grantee shall conduct a series of workshops within the study corridors. The workshops will identify the list of alternatives to be fully evaluated in the Draft Programmatic EIS and the screening criteria used to eliminate the preliminary range of alternatives.

The workshops will be informal in nature to encourage one-on-one discussions of the project with the public. The Grantee will make a short formal presentation at each workshop. This formal presentation will be structured to the workshop being held and address local/regional concerns. Public concerns and comments identified during the meetings will be recorded in the comment/response database. The outreach and comment/response databases will be updated after each involvement activity. The Grantee will also prepare summary minutes of the workshops.

The Grantee will prepare project handouts for the workshops. The handout will be developed to relate to the workshop being held and will be approved by the FRA prior to public distribution. The Grantee will provide sign-in sheets and comment sheets to record the public's input.

The Grantee will notify the public in advance of the workshop through the use of newspaper advertisements. The Grantee will prepare a press release notice through the Public Information Office regarding each workshop. Information about the workshops will also be posted on the project website.

#### 4.1.11 Public Hearing

The Grantee will prepare for and attend a series of public hearings of the Draft Programmatic EIS. The Grantee will coordinate with the FRA to determine the appropriate locations for the meetings. The Grantee will arrange to reserve rooms, prepare exhibits, provide staff and prepare a summary of comments and responses.

The Grantee will prepare and distribute a hearing announcement, including arranging for notice in local newspapers and distributing the notice to local governments, agencies and the general public. The Grantee, in cooperation with the FRA, shall prepare a presentation, meeting handouts and displays for the hearing. The Grantee will hire a court reporter to record hearing proceedings and provide an original transcript along with three copies for the FRA.

The Grantee will organize and summarize public comments received during the hearing and public comment period and prepare responses. The Grantee will prepare a Public Hearing Log that will contain: legal notices, the notice distribution list, display ads, hearing presentation, hearing exhibits, transcripts and comments.

#### 4.1.12 Small Group Meetings/Speaker's Bureau

The purpose of the small group meetings is to provide the public with an opportunity to be informed about the project, the proposed purpose and need for the project and the development of study corridors, and to solicit their input. These meetings will take place with a variety of community and neighborhood groups, civic, business groups, and municipalities along the corridor. Some small group meetings will be face to face meetings with local officials and business leaders as needed and could also include outreach efforts with minority or low-income groups. It is envisioned that these meetings will take place in a variety of locations throughout the corridor.

Throughout the Programmatic EIS development process, requests for meetings with small groups from the project area will be accommodated. The organization making the request for the meeting will be responsible for providing the location and contacting their members.

The Grantee will establish a Speakers Bureau to accommodate small group meetings. As a part of the Speakers Bureau, the Grantee will develop some basic materials for use with small group meetings to ensure speakers have the most up to date information on the project and a consistent message is being

provided to the public by speakers. The Grantee will provide speakers for these meetings. The Grantee will provide a two-person team for each of these meetings. The Grantee will provide informational material, update the mailing lists, and prepare a summary of the meeting comments.

#### 4.1.13 Media Outreach

The Grantee will implement a media outreach strategy including preparing for and attending editorial board briefings, press releases, meeting releases, and general outreach to both the print and broadcast media. The effort will include a periodic update of media informational packages about the project. The effort will also include the identification of the key media markets and needed media contact information. The Grantee will prepare meeting notice ads, press releases, and editorial board briefings for major markets of the corridor. Materials developed for public workshops and events, including public information pieces will be modified and used to create media information packets.

#### 4.1.14 Newsletters

The Grantee shall prepare four issues of a newsletter for distribution to those persons on the project mailing list and to FRA officials.

Expected Newsletter content is as follows:

- Newsletter #1

An introductory, educational project newsletter to be widely distributed to raise the general public's awareness of the project, the project purpose and need, anticipated range of alternatives, the EIS process to be conducted and to inform the public of the times and locations for the public meetings and workshops.

- Newsletter #2

The project newsletter will address alternatives screened from further consideration and anticipated workshops.

- Newsletter #3

The third project newsletter will address alternatives development, the announcement of the availability of the Draft Programmatic EIS, and announce the public hearing on the Draft Programmatic EIS.

- Newsletter #4

The fourth newsletter will announce the selection of a preferred alternative and the release of the Final Programmatic EIS.

#### 4.1.15 Fact Sheets

The Grantee will prepare fact sheets on key issues of public concern. Possible fact sheet issues could include noise/vibration, traffic/safety/grade crossings, parking, property values, economic development, station locations and design and any other relevant issue that continuously appears in the comment response database or during public outreach activities. Fact sheets will be carefully distributed to those communities in which a particular topic may be an issue. Other copies will be used as handouts at meetings and other outreach activities or used to provide project information as requested by the public. Fact sheets are envisioned as one "8 ½" x "11" page, full color, printed front and back.

#### 4.1.16 Web Page

The Grantee will host the project website. The Grantee will provide updated information during key milestones throughout the study to provide an additional avenue to involve/inform the public about the project.

#### 4.1.17 Displays

The Grantee will develop and prepare a set of transportable, informational displays. The Grantee will also identify and arrange for the display of this exhibit at locations within the corridor. When practical, the display will be available prior to the public outreach meetings and will include information about the dates, times and locations for the public workshop.

The display will provide general information and be posted at locations to supplement the workshops. Displays will be designed to include a comment form and, when logical, displays will be staffed to allow for interaction. This will allow the public an opportunity to have their questions answered and to provide their input without having to attend a formal workshop. The Grantee will investigate possible locations for the displays such as community fairs, public events, festivals and other such activities. Other potential locations include city halls, municipal complexes, Amtrak passenger stations, main branch libraries, the government headquarter buildings, state capitol building and other key high traffic locations.

#### *Deliverables:*

- Public Involvement Plan – FRA review and approval
- Comment/Response Database
- Documentation of public involvement activities
- Four newsletters
- Meeting handouts
- Presentations
- Meeting minutes
- Content for project website
- Project fact sheets
- Project displays
- Public Hearing presentation, handouts and displays
- Public Hearing Log and Transcripts

#### 4.2 Other Environmental Criteria

Grantee shall address the following additional environmental criteria at a summary level, describing how each will be impacted by the project:

- Air Quality

- Parks and Recreation/Wildlife Refuge
- Special Protected Areas
- Farmland
- Land Use Compatibility
- Soils/Slopes Constraints
- Visual Assessment
- Noise and Vibration
- Energy
- Construction Impacts
- Socioeconomics (Inclusive of business/residential relocation, English as a Second Language)
- Access, traffic, and parking
- Freight Rail Impacts
- Public Safety
- Coastal Resources
- Indirect and Cumulative Impacts

4.3 Conceptual Engineering – Route Studies

The purpose of this task is twofold: (1) develop conceptual engineering to a level to support the decision making process of NEPA; (2) identify the proposed infrastructure improvements and rail operations in the selected rail corridors to determine the estimates of probable operating and capital costs for each Build alternative in each corridor.

The subtasks needed to satisfy the purpose of this task are as follows:

4.3.1 Task Management-Conceptual Engineering

The Grantee shall be responsible for the technical management of subtasks associated with alternative development and planning as further defined below in order to ensure timely delivery of technical data and compliance with the overall schedule and project budget, quality of the defined Work Product; and preparation of a work plan.

***Deliverable:***

- Conceptual Engineering Work Plan – FRA review

4.3.2 Conceptual Engineering Standards and Guidance

The Grantee will develop engineering standards and guidance to utilize in developing units of measure for estimating probable costs and developing conceptual engineering plans. The Grantee shall prepare design criteria for the following:

#### 4.3.2.1 Design Criteria

- Design speeds
- Track and Guideways
- Special Trackwork
- Horizontal alignment – tangents, curvature, superelevation/cant deficiency, and spirals
- Vertical alignment – grades and vertical curves
- Clearances and track centers
- Maintenance and Layover Facilities
- Public and Private Roadway Crossings
- Structures
- Drainage
- Utilities
- Signal and Communication System (PTC)

#### 4.3.2.2 Track work Concepts

The Grantee shall prepare typical sections for the following:

- High Speed Rail on New Roadbed & New Embankment
- High Speed Rail on New Roadbed & New Embankment (Double Track)
- HSR on Existing Roadbed
- HSR on Existing Road (double track)
- Freight Rail Roadbed and 28' Center to New HSR Single Track w/5' Embankment
- Freight Rail Roadbed and 28' Center to New HSR Double Track w/5' Embankment

#### 4.3.2.3 Structural Concepts

The Grantee shall develop standard concept sections and elevations for railroad and roadway structures including bridges and retaining walls. The standards shall be applied to establish capital costs and identify impacts to adjacent properties. Standard sections will be prepared for track, cuts, and retained earth fills as follows:

- HSR Double Track on 15' Fill
- HSR Double Track on 15' Retained Earth Fill
- HSR Double Track in 25' Cut Area
- HSR Double Track in 25' Cut Area with 10' Retaining wall w/ 5' shelf
- Double Track (50') High Level Bridge
- Single Track on Flyover/Elevated Structure
- Single Track on Approach Embankment w/Retaining Wall
- Double Track on Flyover/Elevated Structure
- Double Track on Approach Embankment w/Retaining Wall

#### 4.3.2.4 Public and Private Roadway Crossings

The Grantee shall examine FRA criteria for closure or improvement design criteria for public and private roadway grade crossings. The Grantee shall prepare up to five (5) typical plans representing various categories of crossings, including quiet zones.

#### 4.3.2.5 Vehicle Layover and Storage/Maintenance Facility Requirements

The Grantee shall define the functional facility requirements and concept plans for vehicle layover and storage and maintenance facilities. The results of this subtask will serve as input to capital cost estimates, plans, and determination of potential Right-of-Way (ROW) needs.

#### 4.3.2.6 Unit Cost Data

The Grantee shall develop standardized cost categories and a spreadsheet template used in the calculation of capital costs for each corridor. The Grantee shall develop a base set of unit costs for typical passenger rail infrastructure construction elements including: track work, structures, systems, crossings, maintenance facilities, and right of way and land costs. The Grantee shall develop the costs of professional services as a percentage of the estimate of construction costs including: design engineering, insurance and bonding, program management, construction management and inspection, engineering services during construction, and integrated testing and commissioning. The Grantee shall develop unit costs associated with variable and fixed costs associated with operating a passenger rail system.

#### ***Deliverable:***

- Conceptual Engineering Report - FRA review and approval

### 4.3.3 Conceptual Plans

#### 4.3.3.1 Conceptual Trackwork Plans

The Grantee shall prepare conceptual plans at 1 inch = 200 ft (plotted on 11"x17" prints) at only critical areas needed for evaluating environmental impacts and verifying the feasibility of construction of the alternative rail routes through these areas in each corridor that survive the Step 3 screening. The plans shall be prepared on existing mapping from FRA or commercial sources. The Grantee shall prepare concept plans at 1 inch = 100 ft on sections of the route where it is expected that layover facilities/yards and maintenance facilities will be considered. Plans will depict existing and new main line tracks, sidings and spurs, curve data, turnouts, crossovers, grade crossings, stations, yards, major culverts, bridge structures, retaining walls, signals, geographic and political boundaries, approximate right of way limits and property impacts, and wetlands and wetland impacts. Commercial mapping data will be obtained as necessary to prepare conceptual designs and evaluate property and wetlands impacts. Passing siding locations, station sites, layover facilities, yards and shops shall be coordinated with the stringlines and schedules.

#### 4.3.3.2 Conceptual System Elements

Conceptual signal and communication requirements and costs for the rail corridor shall be defined.

#### 4.3.3.3 Track Schematic

The Grantee shall prepare track schematics depicting existing and current conditions at 1 inch = 1 mile (or 1 inch = 0.1 to 0.5 miles in dense areas) to determine number, length or location of main line tracks, sidings and spurs, curvature, length of curve, grade, turnouts, crossovers, grade crossings, yards, major culverts, bridge structures, retaining walls, signals, and approximate right of way limit for defining capital cost units of measure.

#### 4.3.3.4 Railroad Coordination

The Grantee shall initiate coordination activities with railroad owners and operators in study corridor. Coordination is anticipated to include obtaining data, sharing preliminary and final results of engineering and modeling activities, meetings and revisions of Work Product to reflect appropriate revisions to address owner/operator comments.

##### ***Deliverable:***

- Conceptual Engineering Plans – FRA review and approval

#### 4.4 Draft Service Development Plan

The Grantee shall produce a draft Service Development Plan (SDP) for each reasonable alternative in the corridor. Components of a Chicago-Detroit/Pontiac SDP were developed in 2004 and included all corridors of the MWRRS. The SDP for the corridor shall be updated based on previous work done by the MWRRRI to include nine round trips between Chicago and Detroit (with consideration of planned MWRRRI trains from Cleveland, Indianapolis/Cincinnati, and Carbondale corridors operating with the South of the Lake segment).

The subtasks needed to satisfy the purpose of this task are as follows:

##### 4.4.1 Transportation Challenges and Opportunities

The Grantee shall provide a description of the corridor's transportation challenges and opportunities using current and forecasted travel demand and capacity considering multimodal system alternatives. A qualitative and quantitative assessment of the costs, benefits, and impacts and risks of the alternatives shall also be included.

##### 4.4.2 Detailed Service Plan

The Grantee shall produce a detailed service plan including service frequency, timetable and stringlines, station locations, intermodal connections and train consists. The plan shall consider the existing and future characteristics of freight, commuter, and other intercity passenger rail.

##### 4.4.3 Identification of Improvements

The Grantee shall identify infrastructure, rolling stock, and facility improvements for each phase of new or improved service implementation.

##### 4.4.4 Financial Plan Update

The Grantee shall update the Financial Plan for each phase of new or improved service implementation.

4.4.5 Operations Plan Update

The Grantee shall update the Operations Plan including train operations of the south side of Chicago Union Station, a pedestrian flow analysis, a capacity analysis between CUS and Grand Crossing, an analysis of the Amtrak maintenance facility at CUS, and a capacity analysis of the CN from West Detroit to Pontiac. See Tasks 5.0 – 9.0 for a description.

4.4.6 Ridership Update

The Grantee shall update the Ridership estimates for each phase of new or improved service implementation.

4.4.7 Assessment of Benefits

The Grantee shall assess the user and non-user benefits including job creation and retention, “green” environmental outcomes, potential energy savings, and effects on community livability.

4.4.8 Program Implementation Strategy

The Grantee shall update the Implementation Strategy including implementation schedule.

***Deliverable:***

- Draft Service Development Plan – FRA review

4.5 Final Alternatives Analysis

4.5.1 Define Existing Baseline Transportation Conditions

The Grantee shall define the No Action alternative based on existing modal information available from the state. The No Action alternative definition shall address existing and planned intercity transportation options including the following modes:

- Highway Network
- Intercity Bus Service
- Passenger Rail Services
- Freight Rail Network
- Air Travel Network

The Grantee shall prepare a technical memorandum defining the No-Action Alternative for each corridor.

***Deliverable:***

- Technical Report: No Action Alternative – FRA review

#### 4.5.2 Station Location Analysis

The Grantee shall supplement the station data developed from the population centers analysis for each rail route with existing ridership data developed from updated analysis from Task 4.4. This effort is intended to identify station access and land-use variables potentially influencing station location.

***Deliverable:***

- Technical Report: Station Location Analysis - FRA review

#### 4.5.3 Selection of Preferred Alternative

Using information gathered during the Step 3 screening and scoping meetings, and the technical and environmental information developed in Step 4, the Grantee shall hold a one-day engineering and planning design charrette with FRA and invited stakeholders to review the technical information for each alternative. The purpose of the charrette is to establish criteria for evaluation of routes based on FRA guidelines and project Purpose and Need, develop a scoring procedure, and evaluate the route alternatives. Based on the scoring, a preferred alternative shall be identified. The Grantee shall document the evaluation process and conclusions and prepare a Summary of the Final Alternatives Analysis.

***Deliverable:***

- Summary of the Final Alternatives Analysis - FRA review and approval

#### 4.6 Final Service Development Plan

The Grantee shall update the draft Service Development Plan to include the locally preferred alternative only.

***Deliverable:***

- Final Service Development Plan – FRA review

#### 4.7 Draft Programmatic EIS Documentation

##### 4.7.1 Document Production

The Grantee will prepare and edit the Draft Programmatic EIS document, consistent with the requirements of the National Environmental Policy Act and FRA Procedures for Considering Environmental Impacts. There will be a formal, internal Grantee team QA/QC review process that will take place prior to the submittal of the Administrative Draft Programmatic EIS to the FRA for review. The FRA will determine what other internal technical areas will need to review the document. The Grantee will submit an Administrative Draft of the Draft Programmatic EIS for FRA review. The Administrative Draft Programmatic EIS will be revised based upon this internal review.

##### 4.7.2 Revisions to Draft Programmatic EIS

There will be at least one round of revisions to the Draft Programmatic EIS based upon the review and comment by the FRA. A second round of document revisions will be made based upon the review and

comment from FRA, which will include the legal sufficiency review.

#### 4.7.3 Circulate the Draft Programmatic EIS

The Grantee will circulate the Draft Programmatic EIS for public review and prepare an electronic version of the document for the project website.

#### 4.7.4 Notice of Availability – Draft Programmatic EIS

The Grantee will prepare a Notice of Availability of the Draft Programmatic EIS for publication in the Federal Register. A draft notice will be prepared and submitted to FRA for review and comment. Once approved, copies of the notice will be submitted to FRA for publication in the Federal Register. The Grantee, with FRA input, shall determine local media outlets for publishing the Notice of Availability. The Grantee will be responsible for circulating the public notice to media outlets and local governments.

#### ***Deliverables:***

- Administrative and Final Draft Programmatic EIS - FRA review and approval
- Electronic version of Programmatic EIS for project website – FRA review
- Administrative and Final Notice of Availability – FRA review
- Legal notice in selected newspapers

#### 4.8 Final Programmatic EIS and Record of Decision

##### 4.8.1 Review and Respond to Comments

After the Draft Programmatic EIS public hearing(s) and review period, the Grantee will review and organize comments and prepare responses to substantive public hearing/written and agency comments. The public hearing transcripts will be reviewed, as well as all written comments received as a result of the Public Hearing, and any agency comments received as a result of the Draft Programmatic EIS review process. The Grantee will submit draft responses to the FRA for review and approval. A summary of comments received (written and from the public hearing) along with responses will be included in the Final Programmatic Environmental Impact Statement (Final Programmatic EIS).

##### 4.8.2 Final Programmatic EIS Production

The Grantee will prepare the Final Programmatic EIS to reflect the Selected Alternative and reasons for its preference. The Final Programmatic EIS will also document recommended Segments of Independent Utility for future project (Tier 2) evaluation, mitigation commitments, as appropriate at the program level, and compliance with applicable environmental laws and Executive Orders. Additional quantitative data and analysis needs will be identified for future project (Tier 2) actions. The Final Programmatic EIS will identify requirements of future project (Tier 2) NEPA documents to comply with applicable laws, executive orders and related requirements such as Section 106, Section 7, and Section 4(f). The Final Programmatic EIS will also reference and summarize any Memoranda of Understanding between the FRA and the freight railroad operators for capacity and operational analyses in future project (Tier 2) actions.

#### 4.8.3 Final Programmatic EIS Revisions

Based on legal sufficiency review by the FRA, the Final Programmatic EIS will be revised accordingly. Copies of the revised document and a title sheet for signature will be produced. Once approved, the Final Programmatic EIS will be produced for distribution. The Grantee will distribute the Final Programmatic EIS to reviewing agencies, local governments and other interested citizens, as appropriate. The Grantee will place the Final Programmatic EIS on the project website.

#### 4.8.4 Notice of Availability – Final Programmatic EIS

The Grantee will prepare a Notice of Availability of the Final Programmatic EIS for publication in the Federal Register. A draft notice will be prepared and submitted to FRA for review and comment. Once approved, copies of the notice will be submitted to FRA for distribution. The Grantee, with FRA input, shall determine local media outlets for publishing the Notice of Availability. The Grantee will be responsible for circulating the public notice.

#### 4.8.5 Record of Decision

The Grantee will prepare the draft Record of Decision (ROD). The Grantee will organize and summarize public comments on the Final Programmatic EIS. The Grantee, in consultation with FRA, will prepare draft responses to comments. A draft ROD will be prepared and submitted to FRA for review and comment. Once approved, copies of the Final ROD will be submitted to FRA for distribution.

#### ***Deliverables:***

- Administrative and Approved Final Programmatic EIS – FRA review and approval
- Recommended Segments of Independent Utility – FRA review and approval
- Electronic version of Final Programmatic EIS for project website
- Draft ROD
- Final ROD

#### 5.0 Passenger Flow Analysis

The Grantee will conduct a passenger flow analysis of the Chicago Union Station (CUS) consistent with the full build-out of the MWRRI service and relocation of selection Metra trains in accordance with the CREATE program. The simulation technical approach involves the use of dynamic simulation tools and services to determine the effects of increased passenger volumes to CUS. The model will include individual passengers as they move to and from the train platforms, through the station, and methods and routes utilized to exit the facility. This task will also include the checked baggage handling facility. The planned scope of work would include the movement of passengers between the ground floor and the concourse level. Critical access points such as escalators, elevators, and other internal facilities (waiting areas, baggage, and others) will be included as it impacts passenger flow.

The model will first focus on creating a baseline of the existing facility and train traffic. The analysis will also include the existing facility with increased train traffic schedules to understand how passenger flow is impacted. The modeling will also include investigation of alternative strategies to move passengers more effectively as bottlenecks or internal congestion points are identified.

There are specialized simulation software tools available for passenger flow modeling. These tools include libraries of functionality that allow for the unique behavior of pedestrian movement to be included. This includes “personal” space behavior, the ability to create different traffic patterns and routes through facilities based on origins and destinations of movement. A preferred simulation software tool will be selected that includes the unique dynamics of passenger movement and also the ability to customize the specific passenger flow processes that are needed at CUS. The passenger flow process steps may include as necessary: security, ticketing, baggage handling, waiting areas, escalators, elevators, stairs, and others to support this project. It is important that the selected tool be customizable such that a variety of passenger processes and physical facility elements and their throughput capacity may be included.

The passenger traffic at CUS will include a variety of “use cases” -including “long haul” and commuter traffic. The characteristics of this traffic will also be represented in the model in terms of arrival time (cut off prior to train departure or arrival, etc.) and others such as “rollaway” baggage requirements (increased floor space needed).

The model can provide a user interface that facilitates the ability of station management to run the model after the project has been delivered. This includes an animation of the layout and the people moving within in it. This may be useful for public outreach, communication, and even special event/disruption planning as needed.

The model will be able to provide numerous standard and customized outputs and reports to support this project. At a minimum, this includes:

The Grantee, working very closely with FRA in this task, will conduct the Passenger Flow Analysis in accordance with the following work plan and subtasks:

#### 5.1 Research of Passenger and Related Movement Patterns

Definition and model encoding of all passenger flow types or facility “use cases” (arriving Metra, departing Metra, arriving MWRRI/Amtrak, departing MWRRI/Amtrak, family and friends, baggage handlers, etc.). This will include research and counting the current use cases based on available data and/or site observations.

##### 5.1.1 Data collection and assumption development for baseline volume and future volume.

##### 5.1.2 Development of model inputs and logic to support movement patterns.

#### 5.2 Internal CUS Baseline Model Development and Validation

Development of model to represent the geographical scope of the facility and the internal passenger processes to support each of the passenger movements from 5.1. This includes process times, internal transfer facilities such as escalators and elevators, etc. A validation of the model and animation will be performed with the project team.

#### 5.2.1 Model Development

#### 5.2.2 Validation

### 5.3 Increased Volume Scenarios within CUS Baseline Facility

This task will start by using the baseline facility to test its effectiveness with increased volume scenarios. From these scenarios, the congestion points and areas that need potential design focus will be identified.

### 5.4 Alternative CUS Designs

The model can be used to test alternative internal CUS designs to address the congestion points identified during Task 3. One or more proposed designs (or alternate passenger process flow strategies) can be tested to determine its ability to improve passenger flow.

#### 5.4.1 Development of design or passenger processing alternatives.

#### 5.4.2 Model testing and evaluation of the alternative designs.

Based on the results of these runs, one or more alternative internal CUS may be created to address the congestion points identified through the increased volume scenarios associated with the full-build out of the MWRRS.

#### ***Deliverables:***

- Draft Passenger Flow Analysis Technical Report – FRA review
- Final Passenger Flow Analysis Technical Report – FRA review and approval

### 6.0 Track and Platform Capacity Analysis

The Grantee, in close cooperation with the FRA, will undertake a track and platform capacity analysis of the South Side of the CUS consistent with the full build-out of the MWRRS. For complex terminals and interlocking such as those at the South Side of CUS, the success and capacity of these systems relies on the ability to manage multiple concurrent trains and to route them through the tracks and assign platforms based on schedule and real-time needs. To assess the capacity required at CUS, the simulation technical approach requires a dynamic simulation of individual train movements through the study area. This model shall be a dynamic tool—not a “play back” of a schedule or set of static assumptions. In a congested and busy station such as CUS, it is necessary to include the practical decisions that are made by terminal operators to assign routes and tracks through the interlocking to and from the station tracks. A modeling approach that includes dynamic platform track assignments (within an established practical range) and dispatching logic are required in order to quantify the performance of an infrastructure design.

The modeling approach will be iterative in that a number of physical designs and/or operating plans may be evaluated to determine the preferred solution.

The scope of the model will be relatively small (less than 2 miles in span); however, the modeling within this area will need to be sufficiently detailed to reflect the capacity constraints of the signal blocks, speeds, required diverging movements, empty equipment movements, and other characteristics.

During the project kick-off meetings, the Grantee will tailor the modeling approach to best meet project requirements. To assess capacity among a variety of alternatives that may be physical or operational in nature, it is critical that the modeling tool be flexible and able to include operating changes such as dynamic track assignment and flexible routing or dispatching based on current conditions and other area trains.

For the planning stages of this project, where numerous iterations may be required, a modeling approach that allows for scenario analysis which can include numerous simulation runs. The flexibility of the modeling will provide the ability to create “what if” scenarios as needed and assist in customizing the analysis to answer the much needed questions during the capacity evaluation stage.

The modeling shall provide reports and demonstrate to project stakeholders the impact of changes to operating plan and infrastructure changes. Also a schematic or other visual animation shall be integrated with the modeling approach to assist in communicating performance and routing flexibility required. As the preferred design and operating plan is developed, the modeling can be used for validation and demonstration that the design and plan provides desired level of service.

The modeling will include the logic elements that a dispatcher would use to dynamically avoid conflicts and select available routes. It includes the primary elements or “best practices” dispatch logic such that the performance of a design alternative can be assessed. The model will only move trains into and out of CUS if there is a platform available and if it is safe to move them—if there is a pending conflict, or headway allowances are not available, the train will be logically held back (outside the model boundaries or on a platform, etc.) and the time that the train is delayed is reported by the model. This report of delay is a key comparative measurement between alternatives and indicates whether the level of infrastructure is capable of meeting the demand scenario.

The delay or “on time performance” of a train is a key model output. The model will report this on an individual train level, by time of day (especially peak periods), by track segment/switching area and others.

The modeling will also allow for scheduled and unexpected events to be placed at any link (track segment) or platform within the study area. These events may temporarily or permanently take an area out of service during the model run and to perform “perturbation analysis” as needed.

An option will be to deliver this model if needed. A user interface facilitates the ability of others to run the model after the project has been delivered. This includes an animation of the area network and the trains being routed through it. This may be useful for public outreach, communication, and special event/disruption planning as needed.

The work plan that the Grantee will follow to undertake this track and platform analysis consists of the following subtasks:

#### 6.1 Definition of Study Area, Data Collection, Research of Projected Train Service Plan

Definition of the study area boundaries needed to support this study, review of available data (track charts, surveys, and other documents), kick off meeting to establish objectives and basis of design assumptions. Interviews and visits with terminal operating experts will provide insights into daily train scheduling decisions that may be critical to include in the modeling.

##### 6.1.1 Data collection and assumption development for baseline volume and future volume.

##### 6.1.2 Development of model inputs and model scope and specification to support train plans.

#### 6.2 Baseline Model Development and Validation

Development of a model to represent the current area network and internal constraints based on model specification developed for subtask 6.1.2. A validation of the model and animation will be performed with the project team to ensure accurate train routing and level of performance.

##### 6.2.1 Model Development

##### 6.2.2 Validation

#### 6.3 Alternative Scenario Analysis.

This subtask will involve testing the baseline network to examine its effectiveness with increased volume scenarios. Alternate concepts will be developed by the design and engineering team and evaluated/compared using the model. This analysis will assist in identifying “minimum build” and other scenarios as needed to support the project decision process.

##### 6.3.1 Development of alternative concepts to be tested

##### 6.3.2 Modification of baseline model to reflect alternative concepts.

##### 6.3.3 Analysis and comparison of alternative concepts.

#### 6.4 Validation of Preferred Alternative

As a result of subtask 6.3.3, a preferred solution will be developed. This concept will be further engineered and then tested with the model to demonstrate to stakeholders and others the overall system performance.

#### ***Deliverables:***

- Draft Track and Platform Capacity Analysis Technical Report – FRA review
- Final Track and Platform Capacity Analysis Technical Report – FRA review and approval

#### 7.0 Railroad Passenger/Freight Conflict Analysis - Grand Crossing to Chicago Union Station

The Grantee, in cooperation with FRA, will undertake a passenger railroad/freight conflict analysis between Grand Crossing to Chicago Union Station that considers the MWRRI full build-out. Rail operations on this segment of the Chicago to Detroit/Pontiac Corridor will include 56 MWRRI trains and freight. For complex transportation systems such as this corridor, there are often numerous interactions among different operators and facilities that need to be analyzed.

The modeling shall provide the capability and flexibility to analyze among numerous alternatives and address the best combination of infrastructure design and operating plans to support proposed train volumes.

During the project kick-off meetings, the Grantee will tailor the modeling approach to best meet project requirements. To assess capacity among a variety of alternatives that may be physical or operational in nature, it is critical that the modeling tool be flexible and able to include operating changes such as dynamic track assignment and flexible routing or dispatching based on current conditions and other area traffic volumes and requirements. It also must be able to prioritize and manage different types of traffic including passenger and freight rail schedules appropriately. Also, if there are area impacts of terminals and other facilities, these must be included in terms of how they might impact the operating plan within the study area.

For the planning stages of this project, where numerous iterations may be required, a modeling approach must allow for a scenario analysis that can include numerous simulation runs. The flexibility of the modeling will provide the ability to create “what if” scenarios as needed and assist in customizing the analysis to answer the various questions during the capacity evaluation stage. The modeling shall provide reports and demonstrate to project stakeholders the impact of changes to operating plan and infrastructure. As the preferred design and operating plan is developed, the modeling will produce validation and demonstration that the plan provides desired level of service.

The modeling will include the logic elements that a dispatcher may use to dynamically avoid conflicts and select available routes. It includes the primary elements or “best practices” dispatch logic such that the performance of a design alternative can be assessed. The model will only move trains through an area if it is safe to move them—if there is a pending conflict, or headway allowances are not available, the train will be logically held back (outside the model boundaries or on a siding, etc.) and the time that the train is delayed is reported by the model. This report of delay is a key comparative measurement between alternatives and indicates whether the level of infrastructure is capable of meeting the demand scenario.

The delay or “on time performance” of a train is a key model output. The model will report this on an individual train level, by time of day (especially peak periods), by track segment/switching area and others.

The modeling will also allow for scheduled and unexpected events to be indicated at any link (track segment) or node (control point) within the network. These events may temporarily or permanently take an area out of service during the model run and to perform “perturbation analysis” as needed.

An option will be to deliver this model if needed. A user interface that facilitates the ability of others to run the model after the project has been delivered. This includes an animation of the area network and the trains being routed through it. This may be useful for public outreach, communication, and special event/disruption planning as needed.

The Grantee will undertake the following subtasks to complete this analysis.

#### 7.1 Definition of Study Area, Data Collection, Research of Projected Train Service Plan

Definition of the study area boundaries needed to support this study, review of available data (track charts, surveys, and other documents), kick off meeting to establish objectives and basis of design assumptions.

##### 7.1.1 Data collection and assumption development for baseline volume and future volume.

##### 7.1.2 Development of model inputs and model scope and specification to support train plans.

#### 7.2 Baseline Model Development and Validation

Development of model to represent the current area network and internal constraints based on model specification developed for subtask 7.1.2. A validation of the model and animation will be performed with the project team to ensure accurate train routing and level of performance.

##### 7.2.1 Model Development

##### 7.2.2 Validation

#### 7.3 Alternative Scenario Analysis

This task will involve testing the baseline network to determine its effectiveness with increased volume scenarios. Alternate concepts will be developed by the design and engineering team and evaluated/compared using the model. This analysis will assist in identifying “minimum build” and other scenarios as needed to support the project decision process.

##### 7.3.1 Development of alternative concepts to be tested

##### 7.3.2 Modification of baseline model to reflect alternative concepts.

##### 7.3.3 Analysis and comparison of alternative concepts.

#### 7.4 Validation of Preferred Alternative

As a result of subtask 7.3, a preferred solution will be developed. This concept will be further engineered and then tested with the model to demonstrate to stakeholders and others the overall system performance.

#### ***Deliverables:***

- Draft Grand Crossing to CUS Conflict Analysis Report – FRA review
- Final Grand Crossing to CUS Conflict Analysis Report – FRA review and approval

8.0 CN Capacity Analysis for High Speed Rail– Pontiac to West Detroit Junction

The Grantee shall produce a capacity analysis for the CN segment of track between Pontiac and West Detroit Junction to determine the infrastructure necessary to support the planned intercity passenger service and anticipated commuter and freight services according to the following:

1. Assumptions

Signaling, shared intercity and commuter rail layover tracks in Pontiac, New Center, intercity maintenance facility in Pontiac.

2. Items Provided by MDOT/SEMCOG

Rail system in RTC format (Ann Arbor-Milwaukee Junction), passenger and freight train movements (Ann Arbor-West Detroit Junction).

3. Daily Passenger Round Trip Frequencies

Option	Intercity (Amtrak)	Commuter Rail	
		AA-Detroit	Pontiac-Detroit
1	7	4	5
2	7	8	8
3	7	15	15

4. Stations

Pontiac (existing), Bloomfield Hills (existing), Troy-Birmingham(existing), Royal Oak (existing), State Fairgrounds (proposed), McNichols (proposed), Caniff (proposed), New Center (existing).

5. Draft Strawman Schedules

Schedules are subject to refinement to reflect train meet resolution issues, arrival time refinements based on being integrated with distribution and collection system times, potential stations assessment taking into account station spacing/estimated passenger volumes, and train performance calculator station to station travel times.

6. Allowable Passenger Train Speeds

Pontiac-West Detroit Junction: Up to 79 mph.

7. Train Length

Intercity: 537 feet (locomotive, Amcafe car, 4 coaches, decommissioned locomotive). Commuter Rail: 311 feet (locomotive, 2 coaches, 1 cab car).

8. Train Performance Calculator

Produce refined schedule times and travel times for the sub-segments.

9. String Line Diagrams

Determine the location of train meets.

10. RTC Model

Standard model used in capacity analysis work; consequently, should be used to assure acceptance of the results by the other host railroads.

11. Needed Improvements (associated with each option)

Plot needed improvements on track charts and provide associated cost estimates.

***Deliverables:***

- Draft Capacity Analysis Report – FRA review
- Final Capacity Analysis Report – FRA review and approval

9.0 Chicago-Detroit/Pontiac Maintenance Facility Study

The Grantee shall develop a Preliminary Maintenance Plan for the corridor which will determine how and where the locomotives and passenger cars (also referred to as the passenger trainsets) used in the service will be maintained.

Three distinct intercity passenger services operate between Chicago and Michigan destinations:

1. Wolverine Service between Chicago and Detroit/Pontiac
2. Blue Water Service between Chicago and Port Huron
3. Pere Marquette Service between Chicago and Grand Rapids

The Maintenance Plan must describe how the equipment for each of these services will be maintained under an integrated program. The Grantee currently anticipates the use of 15 train sets to support its complete high-speed intercity rail program. Maintenance facilities may be located in Chicago, Pontiac, MI or other locations.

The Preliminary Maintenance Plan must be coordinated with the Preliminary Operating Plan for the corridor since the functions are closely inter-related. The plans must also be coordinated with the Maintenance and Operating Plans that have been developed for the Chicago HSR Hub.

The following 4-step process will be used to perform the study:

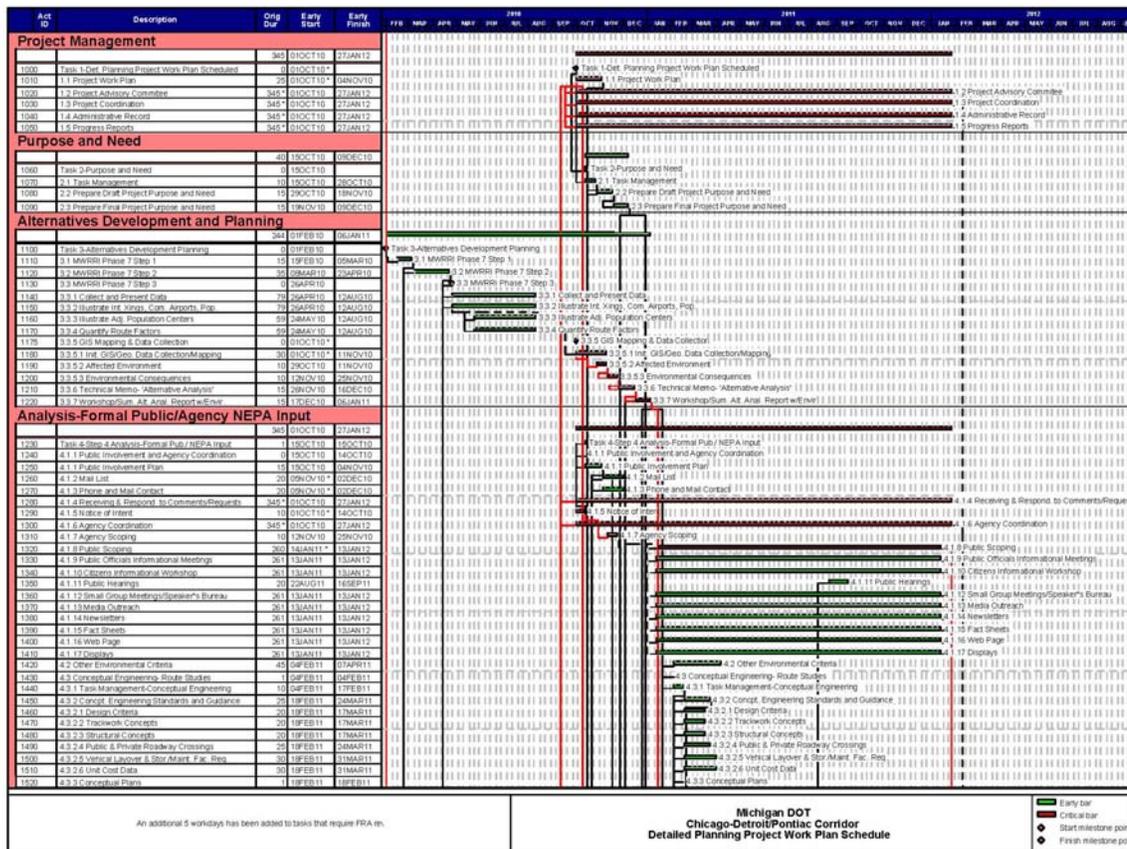
1. Determine the functional requirements needed to properly support the equipment maintenance activities for the equipment to be used, including:

- Type(s) and quantity of train sets (locomotives and cars) including spares to be operated
  - Inspection, maintenance, fueling, servicing and repair requirements for the equipment
2. Establish the design criteria for the hub maintenance facility and for satellite facilities, including:
    - Track space, facilities, equipment needed to perform the maintenance requirements
    - Track space and configuration required to store serviceable train sets between trips
    - Track space needed to perform switching of train sets when maintenance is needed
    - Track space necessary to store operational spare equipment clear of other trains
    - Facilities for operating and maintenance employees including buildings and parking
    - Access roadways sufficient to accommodate large fuel trucks and emergency vehicles
    - Materials handling and storage area requirements (outside, inside, high value, sensitive)
    - Utility services to the facility and within the facility including water treatment facilities
    - Requirements for security fencing, lighting, 24-hour access, security cameras, etc.
    - Capability to accommodate weather conditions including heavy snow accumulation
    - Track configuration necessary to support FRA blue signal protection requirements
    - Track configuration that allows switching without use of signaled main tracks
  3. Analyze the alternatives available to accomplish the required maintenance tasks, including:
    - Existing facilities that can be used without modifications
    - Existing facilities that can be used if suitably modified and/or expanded
    - Alternate facilities/locations that are available to be used or that could be constructed
  4. For each of the maintenance facilities proposed (existing and alternative), develop concept plans that describe the layout of tracks, buildings, storage areas, roadways and parking, utility corridors and related facilities that will be required at that facility.

The information developed during the study using this 4-step process will then be utilized to develop the footprint and analyze the potential impacts for each facility identified.

***Deliverables:***

- Draft Maintenance Facility Study Technical Report – FRA review
- Final Maintenance Facility Study Technical Report – FRA review and approval



For a full view of the three-page project schedule, please see Exhibit 13.

## PROJECT SCHEDULE

The period of performance for the above work shall be 16 Months, beginning October 1, 2010 and ending January 27, 2012.

## PERFORMANCE OBJECTIVES AND DELIVERABLES

The Detailed Planning Project Work Plan Schedule is shown in Exhibit 13. The Deliverables section of this schedule defines the performance objectives by due date and lists the date of each deliverable. The schedule also contains the inter-relationship between the task timelines and the deliverable dates. The Grantee monitors this schedule link to ensure that the performance objectives are achieved. The list of deliverables shown below is same as the deliverables in the schedule.

**The Grantee shall provide FRA with a projected schedule to achieve the deliverables and performance objectives listed below. The Grantee shall achieve these performance objectives in order for the project to be considered complete.**

*List tasks, including task 1 – Detailed Planning Project Workplan and Schedule, that are required in order to complete the project, as applicable.*

1. Detailed Planning Project Work Plan and Schedule
2. Draft Purpose and Need Statement
3. Final Purpose and Need Statement
4. Technical Memorandum: Alternative Route Depiction
5. Technical Memorandum: Preliminary Analysis
6. Technical Memorandum: Alternatives Environmental Analysis
7. Technical Report: Summary of Chicago to Detroit/Pontiac Route Preliminary Alternatives Analysis with Environmental Consequences
8. Public Involvement Plan
9. Conceptual Engineering Work Plan
10. Conceptual Engineering Report
11. Conceptual Engineering Plans
12. Draft Service Development Plan
13. Technical Report: No Action Alternative
14. Technical Report: Station Location Analysis
15. Summary of the Final Alternatives Analysis
16. Final Service Development Plan
17. Administrative and Final Draft Tier 1 EIS
18. Revisions to Draft Tier 1 EIS
19. Electronic version of Tier 1 EIS for project website
20. Administrative and Final Notice of Availability
21. Administrative and Approved Final Tier 1 EIS
22. Recommended Segments of Independent Utility
23. Electronic version of Final Tier 1 EIS for project website
24. Draft ROD
25. Final ROD
26. Draft Passenger Flow Analysis Technical Report
27. Final Passenger Flow Analysis Technical Report
28. Draft Track and Platform Capacity Analysis Technical Report
29. Final Track and Platform Capacity Analysis Technical Report
30. Draft Grand Crossing to CUS Conflict Analysis Report
31. Final Grand Crossing to CUS Conflict Analysis Report
32. Draft Capacity Analysis Report
33. Final Capacity Analysis Report
34. Draft Maintenance Facility Study Technical Report
35. Final Maintenance Facility Study Technical Report

## **PROJECT ESTIMATE/BUDGET**

*Provide an overall cost summary in this section with a detailed description of project costs by element attached as an appendix if needed.*

The total estimated cost of the Project is \$4,000,000, for which the FRA grant will contribute an estimated 80.0000% of the total cost, but no more than \$3,200,000. Any additional expense required beyond that provided in this grant to complete the project shall be borne by the Grantee. (See attached budget for additional financial details of the project.) The detailed description of each task element is included in the project description.

**Chicago to Detroit/Pontiac High Speed Intercity Passenger Rail Program (FRA Grant)**

Task 1 – Detailed Planning Project Work Plan and Schedule	\$ 148,760
Task 2 – Purpose and Need	\$ 58,560
Task 3 – Alternatives Development and Planning	\$ 664,320
Task 4 – Step 4 Analysis - Formal Public/Agency NEPA Input	\$ 1,752,200
Task 5 – Passenger Flow Analysis	\$ 172,360
Task 6 – Track and Platform Capacity Analysis	\$ 253,360
Task 7 – Railroad Passenger/Freight Conflict Analysis – Grand Crossing to Chicago Union Station	\$ 299,640
Task 8 – CN Capacity Analysis – Pontiac to West Detroit Junction	\$ 249,360
Task 9 – Chicago-Detroit/Pontiac Maintenance Facility Study	\$ 201,440
<u>Internal MDOT Project Costs</u>	<u>\$ 200,000</u>
Subtotal	\$ 4,000,000
Total	
FRA (80.0000% of project cost):	\$ 3,200,000
<u>Grantee Contribution (20.0000% of project cost):</u>	<u>\$ 800,000</u>
<b>Total Project Cost:</b>	<b>\$ <u>4,000,000</u></b>

**PROJECT COORDINATION**

*List major partners, sub-awardees or sub-grantees that will be implementing this program. In addition, please attach a basic organizational chart as an appendix showing the titles/company name of those with authority to make management decisions and those with direct project management responsibility.*

Major Partners

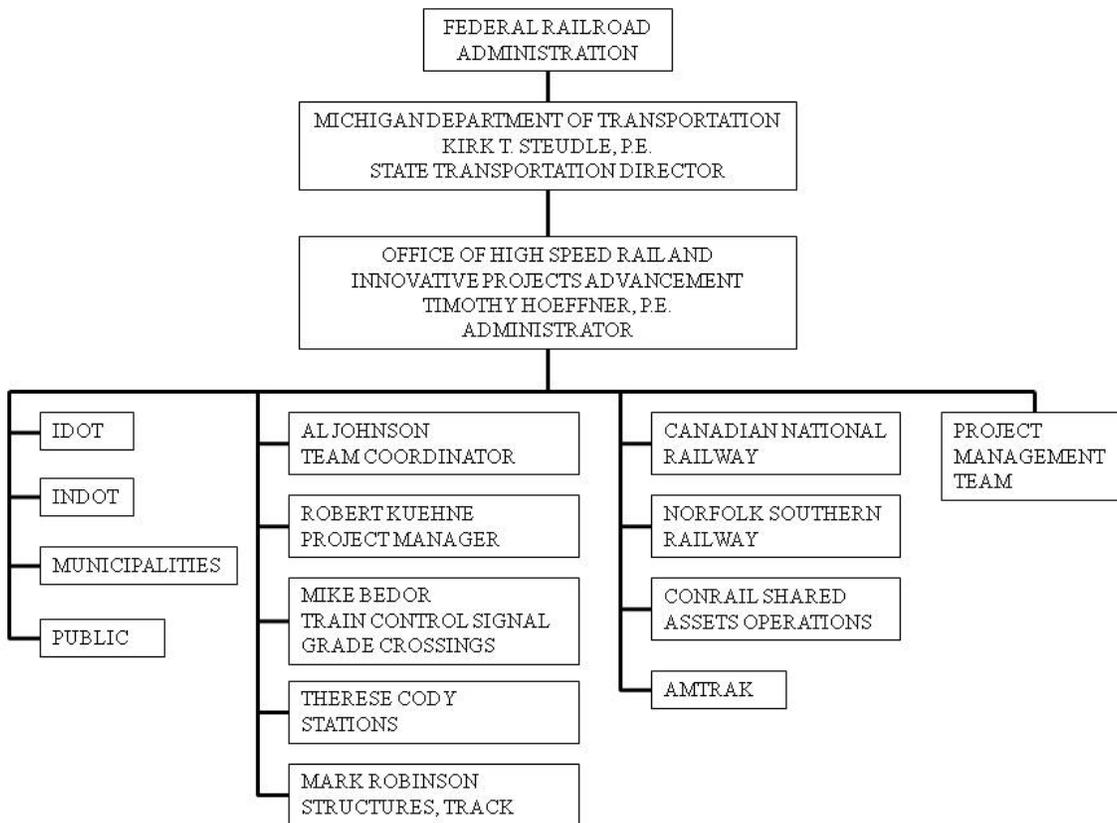
The major partners in this project are:

- Michigan Department of Transportation (lead state)
- Illinois Department of Transportation
- Indiana Department of Transportation

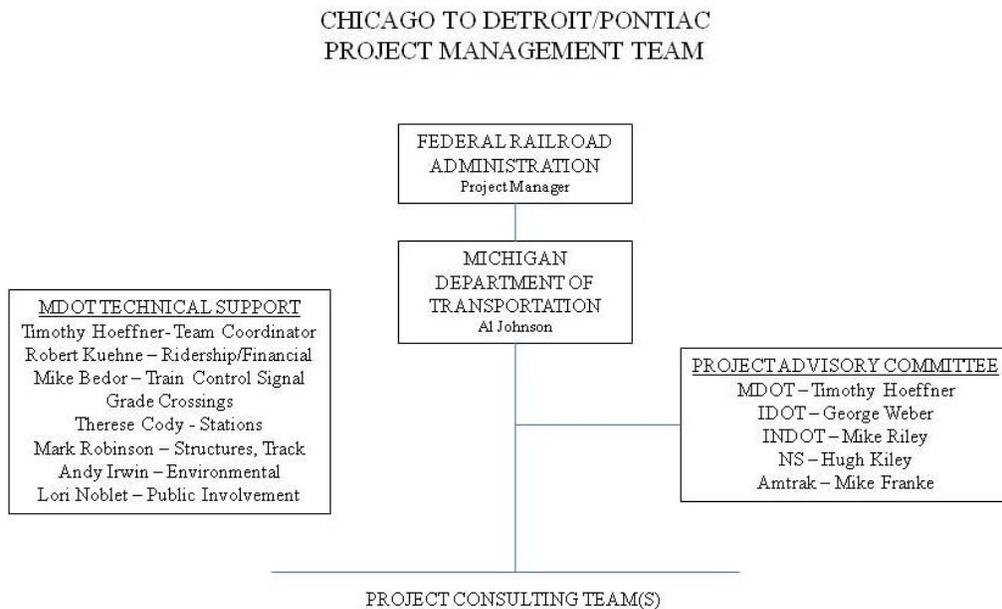


The major partners have committed, budgeted, or planned up to \$800,000 as the non-federal match for this project. The Michigan, Indiana, and Illinois Departments of Transportation are parties to the Memorandum of Agreement for the MWRRI. This Memorandum of Agreement will permit the MWRRI TSC to designate other states to lead multi-state projects. MDOT will be the lead state for this project with INDOT and IDOT as major partners in this effort.

A “relationship” organizational chart has been prepared that demonstrates overall coordination needed among the major partners, other railroad partners, municipalities, and the public. Coordination is required to enter into contractual arrangements among the parties. The Office of the State Transportation Director has the ultimate contractual responsibility between FRA and the State. The Director will be advised by the Administrator of the Office of High Speed Rail and Innovative Projects Advancement. Contractual responsibilities between the MDOT and the parties are the responsibility of Administrator of the Office of High Speed Rail and Innovative Projects Advancement. The Administrator is advised by the Team Coordinator and MDOT project manager. The following is the “relationship” organization chart:



The Project Management Team shown on the organization chart above is responsible for the implementation of the project to develop a Passenger Rail Corridor Investment Plan consisting of a Service Development Plan and a corridor-wide Tier 1 EIS. The MDOT Project Manager will be directly responsible to the FRA Project Technical Representative on a day to day basis. The MDOT PM will be supported by an MDOT Technical Group. This Technical Group will be responsible for review of project deliverables. The Technical Group also has responsible for the Quality Assurance of these documents by ensuring that the quality control/quality control procedures of the Consultant Team(s) were satisfactory. The Project Advisory Committee will generally function as a Steering Committee to provide advice to the MDOT Project Manager. The Project Advisory Committee will meet periodically to receive updates from the Project Team, including the status of schedule and budget. The Project Team Committee Organization Chart is shown below:



The following table provides a list of Team Members by Committee including Company affiliation and titles:

Name	Company Affiliation	Title
TBD	Federal Railroad Administration	TBD
Kirk T. Steudle, P.E.	MDOT	State Transportation Director
Tim Hoeffner	MDOT	Administrator of the Office of High Speed Rail and Innovative Projects Advancement
Al Johnson	MDOT	Supervisor
Robert Kuehne	MDOT	Passenger Policy Specialist
Mike Bedor	MDOT	Rail Capital Program Manager
Therese Cody	MDOT	Rail Operations Program Manager
Mark Robinson	MDOT	Engineer
Andy Irwin	MDOT	Manager of Project Planning Section
Lori Noblet	MDOT	Community Impact/Environmental
George Weber	IDOT	Chief, Bureau of Railroads
Mike Riley	INDOT	Manager, Office of Rail
Hugh Kiley	Norfolk Southern	Associate Vice President Operations
Mike Franke	Amtrak	Assistant Vice President – Policy and Development, Central
TBD	CN	TBD
TBD	CSAO	TBD

**The Grantee shall perform all tasks required for the project through a coordinated process; including as appropriate all railroad owners, operators, and funding partners within the project area. Under the cooperative agreement, FRA will participate in the Project, as described in this statement of work.**

- Host Railroads – Amtrak, NS, CSAO, CN
- Freight/Passenger Railroad Operator(s) – Amtrak, Norfolk Southern, Canadian National, Conrail
- Funding Partners – MDOT, IDOT, INDOT
- FRA

## PROJECT MANAGEMENT

*Describe any critical assumptions, special requirements and contingency plans. Provide updated project management plan as an attachment if needed. Describe how the project will be monitored and evaluated for progress.*

## 1.0 Introduction and Project Description

### 1.1 Background

In 1995, the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, in partnership with the Federal Railroad Administration (FRA) and Amtrak, began to evaluate the potential role of high-speed rail in the Midwest. The work of this Midwest Regional Rail Initiative (MWRRI) has resulted in a well-coordinated and integrated 110-mph rail business plan that defines the way in which the rail system should be implemented.

On July 27, 2009, the Governors of the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin and the mayor of the City of Chicago executed a Memorandum of Understanding for the “Implementation of High-Speed Rail Passenger Service and Connections Involving Corridors Linking Cities in their Respective States.” This document affirms that “all MOU Participants recognize a priority to establish the Chicago Hub to corridors consisting of Chicago-St. Louis, Chicago-Milwaukee-Madison, and Chicago-Detroit/Pontiac (MWRRI Phase I), that would form a high-speed hub in the heart of the nation with high-speed and conventional passenger service connections radiating to seven other Midwestern states.”

The goal of the Chicago Hub (Chicago-Detroit/Pontiac) High-Speed Rail Corridor Program is to upgrade rail infrastructure and facilities along the Chicago-Detroit/Pontiac corridor to safely accommodate current and increased high-speed passenger rail services. The improvements to the corridor consist of operations improvements to Chicago Union Station (CUS), the elimination of chokepoints between Chicago and Porter, IN, and upgraded track and signaling between Porter and Detroit/Pontiac to achieve speeds up to 110 mph. Michigan’s positive train control system, known as Incremental train Control System (ITCS), currently operating between Kalamazoo, MI and New Buffalo, MI would be expanded to operate between Dearborn, MI and Porter, IN.

The Midwest Governors' priority project was partially realized in 2009 through funding from the American Recovery and Reinvestment Act of two legs of the MWRRI Phase 1. Illinois received \$1.1 Billion for the Chicago- St. Louis Corridor and Wisconsin received \$822 Million for the Chicago-Milwaukee-Madison Corridor. The Chicago-Detroit/Pontiac Corridor received \$244 Million for projects laying the foundation for the future.

As a member of the MWRRI, the Michigan Department of Transportation (MDOT) has assumed the role of lead state for the preparation of the Passenger Rail Corridor Investment Plan (PRCIP) (also referred to as the "project") for the Chicago-Detroit/Pontiac Corridor. The PRCIP is required by the Federal Railroad Administration (FRA) and consists of the development of a Service NEPA and a Service Development Plan (SDP) for the corridor. The Illinois Department of Transportation (IDOT) and the Indiana Department of Transportation (INDOT) are cooperating with MDOT in this effort. Norfolk Southern will also participate in the project as a member of the project advisory committee. All three agencies are experienced in managing and delivering complex rail transportation projects. The completion of a PRCIP is a prerequisite for seeking final design and construction funding for the build-out of the corridor.

## 1.2 Project Description

The PRCIP will be developed with consideration of the type of improvements planned for the corridor. MDOT, Amtrak, and FRA have already made significant investments in a section of this corridor from Porter, Indiana to Detroit/Pontiac. Additional infrastructure investment is needed in this portion to increase train speed and frequency and to deliver high speed passenger rail service throughout this corridor. However, the uniqueness of this corridor is that the western section from Chicago-Porter contains one of the most congested freight corridors in the country. Additionally, the proposed Midwest Regional Rail System (MWRRS), in conjunction with the Amtrak long distance trains, will have between 50 and 72 trains in this section, depending on the segment. (Refer to Exhibit 7). The corridor is also unique in that this section will also serve passenger rail trains for the Carbondale, Ft. Wayne/Cleveland, and Indianapolis/Cincinnati corridors. Various levels of engineering, from conceptual through preliminary, have been completed on several segments within the corridor. As a result, certain improvements have been identified as described herein.

The Chicago-Detroit/Pontiac High Speed Rail Corridor currently has three round trips of intercity passenger rail service each day for the Amtrak Wolverine Service. This corridor traverses Oakland, Wayne, Washtenaw, Jackson, Calhoun, Kalamazoo, Van Buren, Cass and Berrien counties in Michigan. It traverses LaPorte, Porter, and Lake counties in Indiana and Cook County in Illinois. It serves the Michigan cities of Pontiac, Birmingham, Royal Oak, Detroit, Dearborn, Ann Arbor, Jackson, Albion, Battle Creek, Kalamazoo, Dowagiac, Niles and New Buffalo. It also serves the Indiana cities of Michigan City and Hammond-Whiting and Chicago, the hub of the Midwest Regional Rail System. This project will increase the service frequency of Amtrak Wolverine intercity trains from three to nine round trips per day.

Railroad infrastructure improvements in the corridor will increase service reliability and reduce travel times leading to increased ridership. These improvements will offer another mode option with comparable total travel times and user costs. The infrastructure improvements will also benefit rail freight carriers and users, since freight trains will also be able to operate at higher speeds and will experience less delay on heavily-used

segments. Grade crossing improvements and the full implementation of Positive Train Control (PTC) systems are designed to support increased train speeds by safeguarding joint use by passenger and freight trains, enhancing safety at grade crossings, and managing train traffic more effectively.

The project plans for physical improvements to be made on the partner railroads as follows:

- Canadian National (CN) between Pontiac and West Detroit Junction;
- Conrail Shared Assets Operations (CSAO) between West Detroit Junction and Townline;
- Norfolk Southern (NS) between Townline and Kalamazoo;
- Amtrak between Kalamazoo and Porter;
- Norfolk Southern (NS) between Porter and 21<sup>st</sup> Street in Chicago (if selected as the preferred alternative in the PRCIP);
- CSX (Michigan Central) from Porter to Tolleston, CSX (PRR) from Tolleston to CP501 (if selected as the preferred alternative in the PRCIP);
- Any other reasonable alternative between Porter and 21<sup>st</sup> Street in Chicago (if selected as the preferred alternative in the PRCIP); and
- Amtrak between 21<sup>st</sup> Street in Chicago and CUS.

On CN, between Pontiac and West Detroit Junction, planned improvements include new welded rail, ballast and ties for most of the line as well as Centralized Traffic Control (CTC) and additional CTC-controlled crossovers connecting CN's two main tracks. Improving the rail and signalization from Pontiac/Royal Oak and Troy/Birmingham into Detroit will greatly benefit this corridor. Under a recently announced grant, the cities of Troy and Birmingham are constructing a new Amtrak station on city-owned property along the CN where the railroad separates the two communities. Transit-oriented development and intermodal connections are features of the new station. This will upgrade services, connectivity and safety. The facility will serve both communities through the use of a pedestrian grade separation and replace the current bus shelter at trackside. Grade crossing improvements are also planned in this segment. The West Detroit Connection Track Project (Detroit New Center Station through West Detroit Junction) involves replacing a bridge over Junction Avenue and connecting CSAO and CN railroads at West Detroit Junction by constructing one mile of new track eastward to the Vinewood Interlocking. Several crossovers will also be constructed as a part of this project. In addition, the current Automatic Block Signal (ABS) system between Milwaukee Junction and West Detroit Junction will be converted to CTC signaling. This new connection will provide a direct connection to Detroit Station and separate Amtrak passenger trains from freight train movements. It will also eliminate the need to hand-operate track switches while increasing train speeds from 15 to 40 MPH and will save 5-10 minutes per train movement and improve reliability.

On CSAO, between West Detroit Junction and Townline, the corridor improvements will include new ties, ballast and rail for most of the line and crossovers which connect both CSAO main tracks and provide access to the new connecting track to the Detroit Station. The West Detroit Connection Tracks and CSAO portion of the project create "independent" access to the Detroit Station for Amtrak passenger trains.

On NS between Townline and Kalamazoo, also under the recent ARRA grant, the City of Dearborn is constructing a new station on Ford Motor Company property adjacent to the Henry Ford Museum. The new station will occupy six acres of property with a 23,000 square foot facility that will be a consolidation of two

existing rail stops. The Henry Ford Museum entertains 1.7 million visitors annually and is within walking distance of Dearborn's West Downtown District. It is also close to the campus of the University of Michigan-Dearborn and the Henry Ford Community College which together serve 23,000 students. Transit-oriented development will be a feature of the new station. The new station will provide intermodal opportunities since bus and taxis will also use the new station. A new station is also planned near the University of Michigan Hospital in Ann Arbor that will relocate the existing Amtrak station, expand the station and parking, and offer other amenities to create a "community stop" rather than just a station.

The results of the current study conducted by Amtrak in NS territory will be used to define the project. The improvements on NS between Dearborn and Kalamazoo will include the installation of new rail, ties and ballast, bridge improvements and the installation of four-quadrant gates and related vehicle detection circuitry. Intercity passenger trains use the NS track between Townline and Kalamazoo, with the exception of a short piece of CN track through Battle Creek. MDOT is currently negotiating with NS for the acquisition of the track between Townline and Kalamazoo. If MDOT acquires this portion of track, it would extend the existing Incremental Train Control System (ITCS) from Kalamazoo to Dearborn, allowing for an increase of train speeds from the currently-approved FRA limitation of 79 MPH to 110 MPH. The FRA has mandated that PTC be installed on passenger rail corridors by 2015. When accomplished, the corridor would have a total of 235 miles of 110 MPH track from Porter, IN to Dearborn, MI. The Battle Creek station, located on the CN portion of track, is scheduled for interior and exterior renovations to modernize and create a more user-friendly facility for the rail, bus and taxi services operating at this station. This work is funded by the ARRA grant.

On Amtrak-owned track between Kalamazoo, Michigan and Porter, Indiana, some segments of rail will be replaced along with the replacement of some ties, ballast and surfacing of the track in those segments. New four-quadrant gates would be installed at all public grade crossings while new half-roadway gates would be installed at all private crossings. The grade crossing modernization is in anticipation of FRA's approval for 110 MPH speeds, which requires that all grade crossings must be closed or equipped with automatic warning devices. In New Buffalo, a new station has already been constructed and placed in service on the corridor to give the city more train service than was scheduled on the Amtrak Pere Marquette route which was served by a different station. The new station was built on private property and totally funded by a private developer. Amtrak received ARRA funding to extend ITCS from New Buffalo, MI to Porter, IN and will complete work in the next 2 years.

In Indiana, beginning in Porter where the corridor rejoins NS track, the Gateway Project is addressing the single most delay-prone corridor in the country; 14 Amtrak trains traverse this corridor daily. MDOT will coordinate with INDOT and IDOT on this project. The proposed construction of two new tracks, bridges, signals and right-of-way improvements will provide a passenger train corridor that will eliminate a major source of train delays and congestion.

In Illinois, while still on NS track, the Englewood Flyover Project will significantly improve operations "South of the Lake" (Lake Michigan), reduce train congestion and enhance train reliability. This project will relieve a major chokepoint between points east and south of Chicago and CUS. The project scope includes construction of a flyover and approach bridges, embankment, retaining walls, relocated main tracks and other projects as well as associated infrastructure improvements to support grade separated tracks. Interlocking signal improvements benefiting Amtrak, Metra and NS are also included. The Englewood Flyover Project was

submitted as a Track 1 application and has been approved. Additional track, bridge and signal improvements are proposed between Englewood and CUS and at CUS.

A significant asset on this corridor program is the ITCS positive train control project. This project has been ten years in engineering, testing and construction and has been a cooperative effort by FRA, MDOT, Amtrak and General Electric. The project has already had an investment of nearly \$40 million. The FRA has approved 95 MPH revenue passenger train speeds within the limits of a 72-mile test area in the western portion of the State, but this technology will expand from Dearborn, Michigan to Porter, Indiana under this application. FRA has issued a conditional approval to increase speeds to 110 mph. this will happen later this summer. This will be accomplished in conjunction with the installation of PTC throughout all segments of the Chicago-Detroit/Pontiac Corridor.

In addition to the improvements and projects listed above, two new commuter train services have been proposed and are currently under development in Michigan. The proposed Ann Arbor-Detroit commuter service is projected to have four daily round trips between Ann Arbor and Detroit. Additional capital improvements necessary for this service include additional passing track segments, two commuter train layover facilities (one at Ann Arbor and the other at Detroit), two new commuter stations (one at Ypsilanti and the other at Henry Ruff Road near the Detroit Metro Airport), and station sign improvements at the three existing Amtrak stations (Ann Arbor, Dearborn and Detroit New Center). The proposed Wally Line commuter service will operate four daily round trips between Howell and Ann Arbor with several intermediate stops. The proposed capital improvements will permit trains from either service to access the maintenance and repair facilities at Jackson or Owosso. These commuter rail operations would be a secondary beneficiary of the project.

The project also includes the following special studies:

A passenger flow analysis of the Chicago Union Station (CUS) will be undertaken consistent with the full build-out of the MWRRI service and relocation of selection Metra trains in accordance with the CREATE program. The simulation technical approach involves the use of dynamic simulation tools and services to determine the effects of increased passenger volumes to CUS. The model will include individual passengers as they move to and from the train platforms, through the station, and methods and routes utilized to exit the facility. This task will also include the checked baggage handling facility. The planned scope of work would include the movement of passengers between the ground floor and the concourse level. Critical access points such as escalators, elevators, and other internal facilities (waiting areas, baggage, and others) will be included as it impacts passenger flow.

The project will also include a track and platform capacity analysis of the South Side fo the CUS consistent with the full build-out of the MWRRS. For complex terminals and interlocking such as those at the South Side of CUS, the success and capacity of these systems relies on the ability to manage multiple concurrent trains and to route them through the tracks and assign platforms based on schedule and real-time needs. To assess the capacity required at CUS, the simulation technical approach requires a dynamic simulation of individual train movements through the study area. This model shall be a dynamic tool—not a “play back” of a schedule or set of static assumptions. In a congested and busy station such as CUS, it is necessary to include the practical decisions that are made by terminal operators to assign routes and tracks through the interlocking to and from the station tracks. A modeling approach that includes dynamic platform track assignments (within an

established practical range) and dispatching logic are required in order to quantify the performance of an infrastructure design.

The project will include a passenger railroad/freight conflict analysis between Grand Crossing to Chicago Union Station that considers the MWRRI full build-out. Rail operations on this segment of the Chicago to Detroit/Pontiac Corridor will include 56 MWRRI trains and freight. For complex transportation systems such as this corridor, there are often numerous interactions among different operators and facilities that need to be analyzed.

The project will include producing a capacity analysis for the CN segment of track between Pontiac and West Detroit Junction to determine the infrastructure necessary to support the planned intercity passenger service and anticipated commuter rail and freight services through this section.

The project will also include the development of a Preliminary Maintenance Plan for the corridor which will determine how and where the locomotives and passenger cars (also referred to as the passenger trainsets) used in the service will be maintained.

### **1.3 Project Management Plan Overview**

MDOT and its partners are experienced in the management and delivery of complex rail projects. However, due to the wide scope of needs for a project of this magnitude, a Project Management Team (PM Team) is often utilized to augment the public agency, rail carrier and regulatory forces. A PM Team, working under the direction of MDOT, will be utilized to develop the PRCIP for the Chicago-Detroit/Pontiac Corridor. The PRCIP includes the preparation of a Service NEPA and an SDP to be completed in the manner described by FRA.

The role of the PM Team is to manage the project implementation where large volumes of critical communications and a wide range of interdependencies between standards and designs, and other projects, are involved. The PM Team coordinates those elements of the project that are common to the management, organization, finance, and schedule of the project. It also manages standards of communication, methods, technology and quality that are required to successfully deliver the project's objectives. The PM Team will, at the direction of MDOT, provide either direct management or management oversight, as appropriate.

Key tasks for the PM Team are described in Section 3 below. They include interface with partners and stakeholders, as well as the broad range of disciplines involved in the project. PM Team members will work with designated representatives from MDOT (the Advisory Committee), INDOT, IDOT, FRA, Norfolk Southern and the other affected railroads, communities and other stakeholders to produce the Service NEPA and the Service Development Plan.

The requirements for the Service NEPA and the Service Development Plan are described in Section 2 below.

## **2.0 Objectives of the Project Management Plan (PMP)**

Form FRA F 6180.135 (03-10)

When the Federal Railroad Administration issued its High-Speed Intercity Passenger Rail (HSIPR) Program Guidance, it highlighted the central importance that the environmental review process plays in the implementation of the program. This process encompasses the requirements of the National Environmental Policy Act (NEPA) and related laws and regulations including Section 106 of the National Historic Preservation Act and 49 U. S. C. 303 which protects public parks, recreation areas, wildlife and waterfowl refuges and historic sites. This is collectively termed the “NEPA Process.”

FRA identified its approach for integrating the NEPA process into the HSIPR program in its June 17, 2009 Guidance which was published at 74 FR 29900 on June 23, 2009. As FRA has stated in its Guidance, in many ways, the choice of the appropriate funding track for a project depends on the stage of NEPA review that the specific proposal has reached. Extensive planning and environmental review is needed to support the development and implementation of a large-scale intercity high-speed rail program. FRA published its updated Procedures for Considering Environmental Impacts in the Federal Register at 64 FR 28545 on May 26, 1999.

The objectives of the PMP are to ensure that the actions necessary to meet the requirements of the Service NEPA and the Service Development Plan (SDP) are properly identified, planned for, managed and accomplished. The Service NEPA and the Service Development Plan are described below. Together, they form the PRCIP required by FRA.

## 2.1 Service NEPA

The purpose of the Service NEPA, as defined by FRA in its “Overview of HSIPR NEPA Requirements” issued on August 14, 2009, is to ensure that the overall environmental effects of all connected actions necessary to start new corridor services or make significant upgrades to existing corridor services are evaluated and considered.

The Service NEPA may be accomplished through the development of one of the three following alternative documents:

- EA-Environmental Assessment-For corridors with potentially minimal environmental impacts. The EA may result in either:
  - (1) Finding of No Significant Impact (FONSI); or
  - (2) EIS is required if significant impacts are identified.
- EIS-Environmental Impact Statement-For corridor programs with potentially significant environmental impacts. The EIS may be tiered or combined with the Project NEPA. A Record of Decision (ROD) will be issued.
- CE-Categorical Exclusion-FRA defines the classes of actions that it considers as categorically excluded at 64 FR 28547. This is typically approved by FRA using its worksheet process.

Four phases are generally required to complete the Service NEPA requirements:

- Planning and Project Development: This includes the completion of an SDP;

- **Engineering:** This includes conceptual engineering to approximately the 5% level of development and is related to the SDP and supporting programmatic environmental analysis;
- **Environmental Analysis:** This includes landscape level data collection and impact analyses. Overall air and noise effects from train operations are considered; and
- **Public Involvement Process:** In this process, the permitting agency involvement may be limited for Tier I documents. Permitting agencies should be informed of the preparation of the Service NEPA document. The public circulation of a Service NEPA document may be required before FRA will issue a decision. For Service NEPAs, the FRA decision may occur beyond the application date and this may delay a selection decision.

MDOT, with the assistance of its PM Team, will prepare a Service NEPA document in accordance with FRA requirements and the approved Statement of Work

## 2.2 Service Development Plan (SDP)

The SDP required as a part of the Service NEPA must include the following six components:

- Rail service alternatives and preferred type
- Route alternatives stations
- Service levels/frequencies
- Capital project /physical improvement needs
- Forecasts for ridership and revenue
- Estimated operating costs

Some of the information required for the SDP has been briefly summarized in Section 1 above. The individual categories of information required for the SDP will be developed and presented in sufficient detail to meet the information requirements for the Service NEPA.

MDOT, with the assistance of its PM Team, will prepare the SDP required by the Service NEPA in accordance with FRA requirements and the approved Statement of Work.

## 3.0 Elements of the Project Management Plan

Section 3.1 describes the relationship of the key parties involved in the project, how they are organized, how they will coordinate with each other and how MDOT will manage the project. The organization chart included as figure 3.1 depicts these relationships. Section 3.2 describes how the project will be managed. Section 3.3 provides a summary description of the technical tasks that must be accomplished to develop the Service NEPA and the SDP, collectively known as the PRCIP. The PMP also describes how MDOT will use its PM Team to assist MDOT in managing and accomplishing these tasks. Section 3.4 describes how the various industry standards and applicable regulations will be integrated into the project development. In Section 3.5, the requirements for the Quality Assurance (QA) Plan and the Quality Control (QC) Plan are specified. A project schedule showing the relationship of all the tasks, and a budget to accomplish those tasks, are included in Sections 3.6 and 3.7 respectively.

### 3.1 Organization

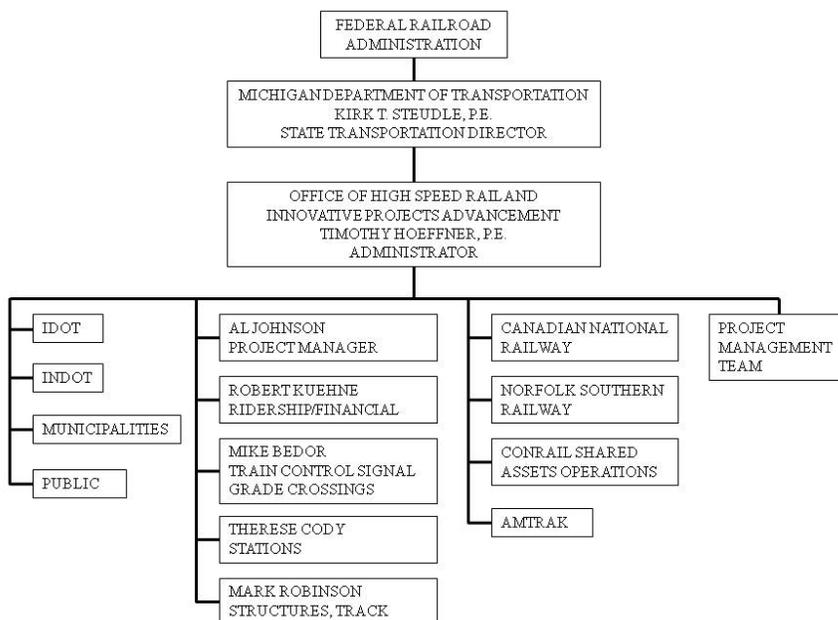
MDOT, in accordance with the overall objectives, coordination and planning of the MWRRI, has assumed the role of lead state for the preparation of the PRCIP for the Chicago-Detroit/Pontiac HSIPR Corridor. MDOT is assisted in this effort by IDOT and INDOT, both of whom are managing additional projects that also benefit the Chicago-Detroit/Pontiac Corridor. Norfolk Southern will participate as a member of the Project Advisory Committee.

These three states, as members of the MWRRI, have coordinated their efforts closely to support the eight-state Chicago-hub based high-speed passenger rail routes in Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin. Portions of this 3,000-mile, high-speed rail system are part of the national high-speed rail system designated under the Intermodal Transportation Efficiency Act of 1991. The FRA is the lead agency with jurisdiction over the Chicago-Detroit/Pontiac project.

MDOT will maintain a direct relationship with FRA throughout the project. MDOT will also employ a consultant to act as its Project Management Team (PM Team). The PM Team, as directed by MDOT, will be responsible for performing a significant amount of the project management and coordination as well as the conduct of the technical tasks that must be accomplished to complete the Service NEPA and the SDP.

The organization chart in Figure 3.1 below describes the parties involved in the project and how they relate to each other.

**Figure 3.1 Organization Chart**



### 3.2 Administration

Under MDOT's direction, the PM Team will prepare a detailed work plan itemizing the work tasks necessary to complete the PRCIP. The work plan will include the information on the project, team organization, the project schedule, standards manual, invoicing and progress reporting methods and procedures and the scope of work. MDOT and FRA will both review the work plan for approval.

MDOT will appoint a Project Advisory Committee from its staff members to provide technical input to the planning process for this project. Committee meetings will be held at key project milestones. The PM Team, under the direction of the PM Team Manager will assist MDOT in preparing for and conducting these and other meetings and in preparing minutes of the meetings. The PM Team will maintain a document control system for the project. It will also produce monthly progress reports to be delivered to designated recipients.

### 3.3 Task Management

The PM Team will include several Task Managers, each highly qualified in his/her field of expertise, to direct and oversee the accomplishment of various specialized tasks required by the Service NEPA and the SDP. There are four principal task groups included in the scope of work for the PM Team. They are:

- Project Management
- Purpose and Need Statement
- Alternatives Development and Planning
- Step 4 Analysis-Formal Public/Agency NEPA Input

Each of these four principal task groups contains a large amount of detailed technical work that will be conducted by or under the direction of the individual Task Managers. Key tasks in each group include:

- Project Management (as summarized in Section 3.2 above)
  - Project Work Plan
  - Project Advisory Committee
  - Project Team Coordination
  - Administrative Record
  - Progress Reports
- Purpose and Need Statement
  - Task Management Plan
  - Draft Purpose and Need Statement
  - Final Purpose and Need Statement
- Alternatives Development and Agency Planning
  - Reduce the number of routes for future evaluation and environmental documentation
  - Build upon available previous corridor studies , identify and analyze the variety of historical routes that can connect nodes in the system
  - Using this data, prepare a preliminary analysis of route alternatives
  - The PM Team shall deliver the following documents to MDOT:
    - Technical Memorandum: Alternative Route Depiction

- Technical Memorandum: Preliminary Analysis
  - Technical Memorandum: Alternatives Analysis
  - Technical Report: Summary of Chicago-Detroit/Pontiac Route Alternatives Analysis
- Step 4 Analysis-Formal Public/Agency NEPA Input
  - Public Involvement and Agency Coordination
  - Other Environmental Criteria
  - Conceptual Engineering-Route Studies
  - Draft Service Development Plan
  - Final Alternatives Analysis
  - Final Service Development Plan
  - Draft Programmatic EIS documentation
  - Final Programmatic EIS and Record of Decision

### 3.4 System Standards and Integration

The PM Team is responsible to identify the key industry standards, applicable regulatory requirements, and project-specific technical and management requirements and integrate them into every aspect of the project, including the QA and QC Plans. The PM Team is also responsible for ensuring that all parties involved with the project are in compliance with the identified requirements.

### 3.5 Quality Assurance/Quality Control

MDOT will require that the PM Team develop a Quality Assurance Plan to establish standards for developing work products that are accurate, complete, and in accordance with requirements.

MDOT will also require that the PM Team develop a Quality Control Plan to ensure that the actual work performed is accurate, complete and in accordance with requirements.

MDOT will review and approve the Quality Assurance Plan and the Quality Control Plan prepared by the PM Team as one of the earliest project work tasks of the project.

The PM Team will, as a part of its Project Management task, review intermediate work products to ensure that they conform to the requirements of the plans.

### 3.6 Project Schedule

The Project Schedule, supplemented with the information for the individual detailed tasks throughout the project, will be developed by the PM Team as part of its Project Management Task and submitted to MDOT for review and approval. A copy of the Project Schedule developed by MDOT for the Project Management Plan and this project is attached as Exhibit 13.

### 3.7 Project Budget

Form FRA F 6180.135 (03-10)

The Project Budget, to correspond with the amount of funding that has been approved for the project, and including the individual detailed funding segments, will be prepared by the PM Team and submitted to MDOT for review and approval. A copy of the Project Budget developed by MDOT for the PMP is attached as Exhibit 14.

### 3.8 Critical Assumptions

Critical assumptions that have been made that could have an impact on schedule and budget are as follows:

- The MWRRI Phase 7 Task 1 is currently underway. The scope of this task includes the conceptual design update of the 2004 reports on the South of the Lake between Chicago and Porter. The update is intended to reflect changed conditions in the corridor; initiate an alternatives analysis of alternative routes; reduce the number of routes for future evaluation and environmental documentation; include the current NS and CSX alternatives in the analysis as well as the historic routes; and the preparation of track schematics for existing and proposed conditions for the routes selected for further study. This work is detailed on the project schedule and in the Work Plan for the project. This work is scheduled for completion prior to the commencement of this project. If the MWRRI Phase 7 work is not completed the schedule and budget for this project will be impacted.
- The FRA, Amtrak, and MDOT have heavily invested in the Porter to Detroit section of this corridor. This investment in the Amtrak owned segment has resulted the only Amtrak high speed rail operation outside the Northeast corridor with the current authorized speed of 95 mph from Kalamazoo to New Buffalo. Amtrak has conditional approval to increase the speed to 110 mph. Because of this sunk cost in an existing Amtrak corridor, it is assumed that this section of the Chicago to Detroit High Speed Rail Corridor is acceptable as the route from Porter to Detroit.
- The recently awarded ARRA funding for the Englewood Flyover, Indiana Gateway Project, and Dearborn Station will be completed as planned.

### 3.9 Special Requirements

The cooperation of the freight railroads in providing data such as track charts, time tables, structure lists, etc in a timely manner is essential to adequately address the Statement of Work for this project. No other special requirements are envisioned.

### 3.10 Risk Management

A Risk Management Plan will developed by MDOT. The plan will identify all the cost and schedule risks that would adversely impact the implementation of the project. It will describe the likelihood of risk occurrence, the impact on project costs and schedule should the risks occur, and the procedures used to prevent their occurrence or mitigate their impact. The final version of the Risk Management Plan will rank each of the identified risks according to its potential cost and schedule impact on the project.

Each of the project risks is defined by the categories below and will be included within the Risk Management Plan:

**Roles and Responsibilities:**

- Agency or division level roles and responsibilities in risk management

**Probability of Occurrence:**

- Projects how likely it is that the risk event will occur. Probabilities are categorized as:
  - LOW - unlikely to occur
  - MODERATE – somewhat likely to occur; possible
  - HIGH – likely to occur

**Impact on Project Cost:**

- The estimated range of the cost overrun that the project will incur should the risk occur:
  - LOW- \$0 - \$100,000
  - MODERATE - \$100,000 - \$250,000
  - HIGH - \$250,000 or more

**Impact on Project Schedule:**

- Describes which project activities are impacted, the potential delay, and whether the risk threatens planned schedule in the detailed work plan

**Risk Handling**

- Describes the suggested handling of the risk if and when it does occur; the suggested handling of each risk is classified as follows:
  - Acceptance –accept the risk consequences; take action to move forward knowing that circumstances may have changed. This type of risk may be assigned
  - Avoidance – change the work plan in attempt to avoid the risk occurrence
  - Control – take action to reduce the likelihood that the risk occurs
  - Transfer – share or transfer the risk and risk consequences with other parties. This may involve moving responsibilities between agencies or contractors

**Mitigation Strategies**

- Description of the strategies used to mitigate the risk, including roles and responsibilities, costs to mitigate, and potential net benefits.

**3.11 Contingency**

Since MDOT as the lead and IDOT and INDOT as our partners have extensive experience in the conduct of large projects, we do not envision a need to include any contingency funds in the planning budget. The intent is to follow an FRA approved Statement of Work in negotiating with the successful consultant. If MDOT and our

partner believe that the SOW needs scope flexibility, a contingency fund will be established with the project budget.

## C. Response to Evaluation Criteria

**(1) Potential Transportation and Public Benefits.**

Please identify:

For Passenger Rail Corridor Investment Plans:

- The clarity and detail with which the applicant has identified the problem to be addressed by the proposed service;
- The market potential of the corridor being studied, taking into consideration such factors as population, density, economic activity, and travel patterns;
- The potential for the corridor to deliver high-speed and intercity passenger rail service benefits, including ridership, on-time performance, travel time, service frequencies, safety and other factors;
- The potential of the corridor program to promote economic development, including contributions to a sustainable U.S. manufacturing and supply base;
- The potential of the corridor program to enhance energy efficiency and environmental quality;
- The potential of the corridor program to promote interconnected livable communities, including complementing local or state efforts to concentrate higher-density, mixed-use, development in areas proximate to multi-modal transportation options (including intercity passenger rail stations); and
- The consideration of other transportation modes in the planning process.

For State Rail Plans:

- The clarity and detail with which the applicant has identified the problems to be addressed by the State’s vision for rail transportation and rail investment program;
- The potential for the State rail plan to lead to passenger and freight rail service benefits, including ridership, on-time performance, travel time, service frequencies, goods movement, safety and other factors;
- The potential of the State rail plan to promote economic development, including contributions to a sustainable U.S. manufacturing and supply base;
- The potential of the State rail plan to enhance energy efficiency and environmental quality;
- The potential of the State rail plan to promote interconnected livable communities, including complementing local or state efforts to concentrate higher-density, mixed-use, development in areas proximate to multi-modal transportation options (including intercity passenger rail stations); and
- The integration of the State rail plan with the planning processes of other transportation modes.

Transportation Problem Addressed

On January 28, 2010, President Obama announced the first recipients selected to receive grant funding under the High-Speed Intercity Passenger Rail (HSIPR) Program. The President charged the states with developing high-speed rail projects that “build a foundation for economic competitiveness, ensure safe and efficient transportation choices, promote energy efficiency and environmental quality, and support interconnected livable communities.”

The Chicago-Detroit/Pontiac high-speed rail corridor addresses the President’s vision and provides further service and public benefits by:

- Meeting travel demand
- Decreasing travel times
- Improving reliability
- Providing amenities to improve passenger ride quality and comfort

Additionally, the project thoroughly addresses the inadequacies along the corridor that prohibit the above needs

being met. These inadequacies include capacity issues at Chicago Union Station, capacity issues in the South of the Lake Corridor (Chicago to Porter, IN), and capacity issues within Detroit.

#### Market Potential

##### Corridor Assets/Population

The 2005 MI Transportation Plan states that the Detroit-Chicago corridor supports approximately 28 percent (over 3.2 million) of the state's population and 30 percent (over 1.7 million) of Michigan jobs. It is the primary east-west Interstate link in Michigan with the Midwest's major industrial and commercial centers in Michigan, Indiana, Illinois, and Wisconsin. It also is the gateway to international trade with Canada with connections in Detroit to the nation's busiest Can-Am International Border Crossings. Two-thirds of Michigan's Smart Zones (university research and technology centers), thirty-five major health care facilities and over 222,000 students enrolled in the state in post secondary schools are in educational institutions along this corridor. The Northwest Indiana region is a market that represents over \$40 billion in commerce, and a population of over 750,000. Access to Lake Michigan and the Chicagoland rail network has attracted global companies like ArcelorMittal, BP, and United States Steel Corporation. Northwest Indiana is also home to two certified technology parks: Hammond INnovation Center and the Purdue Technology Center. Six universities are located along the corridor and a brand new \$225M hospital is breaking ground in Porter this summer. The Chicago metropolitan area is a major world financial, business and tourism center. With \$506 billion gross metropolitan product (2007), Chicago is home to 21 Fortune 500 companies, the second largest central business district in the U.S., the third largest convention center in the U.S., and it attracts 45 million travelers per year. Additionally, the Chicago metropolitan area recorded the greatest number of new or expanded corporate facilities in the United States for six out of the seven years from 2001 to 2008. Chicago is the world's third largest intermodal hub, and the only city in North America in which six Class 1 Railroads meet.

In an era of railroad renaissance, the headquarters for the education and development of the next generation of railroad leaders is in Michigan and Illinois. The nation's only two railroad engineering programs are located at the University of Illinois at Urbana-Champaign (UIUC) and Michigan Technological University. At the UIUC Railroad Engineering Program, an expert from Taiwan began teaching the first university-level class in high-speed rail to be offered in the country in 2010. Michigan Tech's Rail Transportation Program has recently partnered with IBM to develop high speed rail technology in the U.S. and across the world.

The corridor between Chicago and Detroit/Pontiac connects the third largest and eleventh largest metropolitan areas in the United States. Data from the 2000 U.S. Census shows a total population of 7,596,683 and forecasts show expected growth in the years to come. By 2030, the population in a 20-mile band around the corridor in Michigan is expected to increase by 3.5% from the 2005 population. Additionally, population in the Lake, Porter and LaPorte county region of Indiana increased by 4.2% between 1990 and 2000, and is expected to grow another 5.7% by 2030. According to the Chicago Metropolitan Agency for Planning the city of Chicago will increase by 12.6% between 2000 and 2030, and the population of Northeast Illinois will reach 10,050,860 people; a 24% increase over 2000 Census Data.

##### Travel Patterns/Highway Congestion

Traffic congestion relief on American highways has become a major concern for DOT's across the country. While the three states have worked to expand their highways to absorb the ever-increasing traffic volumes, the need for intercity public transit is becoming more evident. According to the 2005 MDOT SLRP Highway and Bridge Technical Report, congestion is getting worse with time, with 28 percent of state trunkline miles projected to be at or approaching congested conditions by 2030. From 2004 to 2030 there is projected to be a 145-percent increase in congested miles, a 257-percent increase in congested VMT, and a 361-percent increase in congested CVMT. A study commissioned by the Northern Indiana Commuter Transportation District (NICTD) found that by the year 2030, Interstate 90/94 in Cook County, the Borman Expressway, Interstate 65 in Lake County, and many portions of U.S. and State highways in the Chicago/Northwest Indiana vicinity will be operating at or above their traffic capacity.

There is great potential for growth in the passenger rail transportation mode in this corridor. As in many regional transportation corridors in the country, the current modal share is heavily favoring the automobile. The MWRRRI analysis of travel between the cities of Chicago and Detroit in the year 2000 shows that 98% of travelers chose to drive over other modes (air, bus and rail). Air travel constituted 1.12%, bus 0.42% and rail having 0.24% of the

modal share. As highway congestion continues to increase, travelers will look to other modes of transportation that offer convenience, decreased travel times, and comfort.

#### Passenger Rail Service Benefits

A recent MDOT survey of Amtrak riders in Michigan indicated that improved on-time reliability was the single most important factor identified by rail respondents if they were to increase their use of the service. More frequent train service, overall comfort while traveling, and cleanliness were all rated highly in the survey questions and in written comments. The high-speed rail corridor program includes numerous projects that will enhance the existing passenger rail infrastructure to reach higher speeds, better travel times, better service frequencies and more safe and reliable intercity passenger rail service between Chicago and Detroit/Pontiac.

The largest of these is the South of the Lake Corridor (SOLC) project, which is the segment of the Chicago-Detroit/Pontiac corridor between Chicago Union Station (CUS) and Porter, IN. This is an extremely important segment because it has an impact on the Chicago-Cleveland, Chicago-Indianapolis/Cincinnati, Chicago-Carbondale, Chicago-St. Louis/Kansas City, and Chicago-Omaha corridors. Improvements to the SOLC will allow for improved movements within Chicago Union Station for all corridors, improved passenger rail operations to the south and east, and benefits to freight traffic to the south and east. The South of the Lake improvements are expected to provide the greatest improvement to on time performance due to the fact that most of the delays in the current corridor service are due to freight interference in this busy segment.

Within the SOLC, the HSIPR will analyze issues related to train capacity and pedestrian flow at the South side of the CUS. CUS is a busy travel hub that provided intercity passenger rail service to over 3 million passengers in FY 2009, the fourth busiest station in the Amtrak system. In order to support existing passenger rail and future high-speed rail trains from Cleveland, Indianapolis/Cincinnati, Carbondale, St. Louis/Kansas City, and Quad Cities/Des Moines/Omaha, capacity improvements need to be implemented. Additionally, expansion of the Amtrak Chicago area maintenance facilities to accommodate the full build-out of future rail service will also be analyzed.

With Amtrak's ownership of 100 miles of this corridor, the implementation of ITCS, an innovative PTC technology, has become an important asset to this corridor. This project has been in ten years of engineering, testing and construction, and has been a cooperative effort by FRA, MDOT, Amtrak and General Electric. The project runs along the Amtrak ownership and has had an investment of nearly \$40 million from MDOT. This project has gained FRA approval to operate a positive train control system at 95 mph in revenue passenger service. Currently, FRA approval is limited to Kalamazoo to New Buffalo, but this technology will expand from Dearborn, Michigan to Porter, Indiana under this application. As a result, FRA approval is expected for additional speed increases to 110 mph.

Additionally, the Amtrak-owned portion of the corridor will benefit from the replacement of rail in areas where the existing rail is either worn out or obsolete. It will also be enhanced by the installation of four-quadrant gates at each public grade crossing and flashers with half-roadway gates at all private crossings. This grade crossing modernization is in anticipation of the Federal Railroad Administration's approval for 110 mph train speeds, which requires that all at-grade crossings must be closed or equipped with automatic warning devices. Along with the installation of ITCS from Dearborn to Kalamazoo, the Michigan corridor would be complete for the operating of Amtrak services at 110 mph, from Dearborn to Porter, Indiana, a distance of approximately 186 miles.

As corridor train movements continue to the east, trains operate on the NS until they reach Townline, with the exception of a short piece of CN ownership through the City of Battle Creek. Along the NS, improvements will include the installation of new rail, ties, and ballast, as well as equipping all public grade crossings with 4-quadrant gates and related vehicle detection circuitry.

Along the CSAO mainline between Townline and West Detroit, the corridor improvements will include new ties, rail and ballast for 2/3 of the line and universal crossovers that connect both CSAO mains and provide access to the new connecting track to the Detroit Station. The West Detroit and CSAO portion of the corridor project create an "independent" access for Amtrak passenger trains to the station without freight interference, although freight train usage is permitted.

The West Detroit Junction project will result in a major time reduction by eliminating a choke point for passenger movements. This new connection will separate Amtrak from conflicting freight movements and increase track speeds from 15 mph, to 40 mph reducing travel time 5-10 minutes per train move.

The proposed improvements will lead to increased train speeds, increasing service frequency and higher ridership. The nine trip scenario with 110 mph speeds will decrease the travel time between route termini from the current 5 hours and 38 minutes to 3 hours 46 minutes, and ridership between all stops in Michigan and Chicago will reach 3,674,940 passenger trips by 2025. Of the total rail ridership forecast throughout the MWRRS for 2025, 6 percent is a result of the natural growth of travel demand in the region, 10 percent is due to increased mobility or induced demand, and 84 percent is due to diverted demand. In addition, the implementation of positive train control and enhanced grade crossing warning systems will provide greater passenger safety.

#### Economic Development

One of the fundamental benefits of the implementation of the MWRRS is the immediate source of jobs and economic growth. The current White House administration has directly targeted the development of high speed rail in America to deliver transportation, economic recovery and other public benefits. The decline of the steel industry, automobile industry and the recent recession has left the population along this corridor in need for an economic jump-start. According to statistics from the U.S. Bureau of Labor Statistics, the U.S. Census and Southeastern Michigan Council of Governments (SEMCOG), the City of Detroit experienced a 60% population decline since its peak in 1950. The State of Michigan has seen a net out-migration of 372,000 people since 2000; most of these persons are young adults, who are seeking jobs. In the last decade, Southeast Michigan's home prices have fallen 28% and 1 in 20 homes are in foreclosure. Unemployment in Detroit remains the highest in the nation—a 30% unemployment rate with nearly 50% unemployment rate for African American men. The entire state suffers from 14.9% unemployment rate (March 2010) stemming from the loss of 800,000 jobs since 2000.

In the Gary metropolitan area, unemployment has reached 11.1% and the Michigan City-La Porte communities suffer from 13.2% unemployment as of March, 2010. The region has a greater percentage of high school graduates than the national average, but it trails both Indiana and the nation with residents obtaining a bachelor's degree (22%). Because of the cyclical nature of the industrial base of this region, the average long-term unemployment rate has been higher in the region than in the rest of the state or U.S.

While the region is challenged, the leadership in the States of Michigan, Indiana and Illinois realize an opportunity before them. According to the MWRRRI Project Notebook, expanded service and increased speeds have the potential to create 6,970 jobs, \$138M in household income and \$680M in joint development in the state of Michigan by the time the system reaches full build-out. The entire corridor is estimated to see 12,970 jobs created by the 10th full year of operation. Job creation immediately created by rail corridor improvements in Michigan, Indiana and Illinois affects the construction, engineering and operating sectors. Hundreds of construction jobs will be added to the economy through 2015, and new operational jobs will be created following the construction period. The MWRRRI economic analysis calculated a direct increase of 9,790 jobs and \$134M in household income in Detroit, and 24,790 jobs and \$490M in household income in Chicago. The area surrounding Gary Airport has the potential for an economic benefit of \$32-\$48M, the area between Hammond-Whiting has a potential for \$16-\$25M, and the area around Michigan City has the potential for \$12-\$18M in added economic growth.

A recent study commissioned by MDOT and completed by Grand Valley State University compiled the transportation and economic benefits received by communities that host stations for passenger rail service in Michigan. According to their research, the 22 Michigan communities with Amtrak stations received a total of \$62 million annually in quantifiable benefits (traveler savings, non-traveler savings, local business benefits and Amtrak expenditures). The potential for economic growth is drastic considering only eleven of Michigan's 22 station communities have only a single daily round trip while the other half has from two to four daily round trips.

The study lists numerous types of economic benefits including increased employment for station construction, increased property values, new development of adjacent land and increases to local tax base. Increased level of service resulting from MWRRS is expected to lead to rising property values and significant public-private development opportunities near stations. According to the MWRRRI, the intermodal stations serving the rail service will see property value increases ranging from \$76-\$114M in large cities like Detroit, to \$48-\$72M in medium sized cities such as Ann Arbor and \$9-\$13M in smaller cities like Niles.

The program will result in enhanced regional transportation infrastructure and services, and will have significant economic benefits and create new jobs in the Midwest, while strengthening the region's manufacturing, service and tourism industries. It will support existing industries and foster growth of new businesses in the three states and elsewhere across the Midwest by improving access between communities. It will also encourage large businesses to distribute their operations more widely into smaller, highly accessible Midwestern communities that provide a high

quality of life for residents. Users of the improved intercity rail corridor will experience reduced travel times and costs, as well as enhanced travel comfort and station amenities.

Energy Efficiency and Environmental Quality

Shifting riders from highways and air travel to rail alleviates congestion among highway and airline routes leading to significant environmental benefits including better air quality, less carbon emissions and can reduce dependence on foreign oil. Research done by the Environmental Law and Policy Center (ELPC) shows that high-speed trains in the Midwest would be three times as energy efficient as cars and six times as energy efficient as planes on a per-passenger-mile basis. Currently, passenger rail travel along the Chicago-Detroit/Pontiac Corridor reduces auto trips by 500-600 per day. The resultant savings in fuel is approximately two million gallons per year. With ridership expected to increase by a factor of four with full implementation of the MWRRS, fuel savings would likewise increase to eight million gallons per year.

The MWRRRI in conjunction with the 1997 Federal Railroad Administration/U.S. Department of Transportation (FRA/USDOT) study, High-Speed Ground Transportation for America calculated emissions savings based on changes in energy use with and without the proposed high speed rail service. The methodology took into account the region of the country, air quality regulation compliance of the counties served by the proposed rail service, the projection year, and the modes of travel used for access/egress as well as the line-haul portion of the trip. For the MWRRS, it was assumed that emissions savings would be proportional to the number of diverted auto vehicle miles. For both the FRA and MWRRRI analyses, the number of vehicle-miles saved was calculated by multiplying the number of diverted auto trips times and the average trip length divided by an average vehicle occupancy factor. The resulting auto vehicle miles saved was divided by the estimate of emissions benefit, yielding a FRA estimated benefit of \$0.02 per vehicle mile. This value, multiplied by the number of vehicle miles saved by implementation of the MWRRS, yields a benefit of \$0.6 billion on the entire system.

Connectivity to Other Transportation Modes

With the direction and leadership from the federal government, the country is considering greater emphasis on alternative transportation options, such as intercity passenger rail. The development of these national infrastructure investments will lead to a greater need for communities with convenient and affordable access to such public benefits, and these communities will become centers for sustainable economic growth and prosperity in the years to come.

Developing a high-speed rail system is only the first step in creating a meaningful public transit climate in the country. Once travelers reach their intercity destination, mixed-use development near the stations and ample transit opportunities to nearby events, facilities, shopping and housing further generates confidence in using public transportation. The SDP and PIP is purposefully pursuing partnerships to create connectivity with the existing public transit systems that have been developed by the states, counties and individual communities being served by proposed service.

In Michigan, current intercity passenger service is offered by Amtrak, Greyhound, Indian Trails and other charter bus and auto services. The State of Michigan provides a subsidy to Amtrak for two single round trip intercity passenger rail services (Pere Marquette and Blue Water Service) in Michigan, while the existing Wolverine Service (Chicago to Detroit/Pontiac) is part of Amtrak's National System Service and is funded entirely by Amtrak.

Existing local and regional transit services are available in all counties of the corridor through a combination of providers. The Detroit Transportation Corporation operates the People Mover, an elevated automated guideway system in Downtown Detroit. Detroit Department of Transportation (DDOT) also provides bus service throughout the city limits. In Detroit's metropolitan area, the Southeast Michigan Suburban Mobility Authority for Regional Transportation (SMART) operates bus service between the city and suburban Oakland, Macomb, Wayne and Monroe Counties. The Blue Water Transportation Commission in St. Clair County offers bus and trolley service. Total annual ridership for these providers is 45 million. Other Michigan cities along the corridor providing transit service include Ann Arbor, Battle Creek, Kalamazoo, Jackson and Benton Harbor.

The State of Michigan is moving forward with a comprehensive strategy involving transportation and land use decisions, which will directly affect the livability and sustainability of the region, especially along the MWRRS. MDOT continues to seek opportunities to integrate multi-modal transportation systems throughout the corridor including the development of a commuter rail line between Ann Arbor and Detroit (MITRAIN), a commuter line

between Howell and Ann Arbor (WALLY) and a new light rail line between Pontiac and downtown Detroit along Woodward Avenue. Ongoing coordination with Detroit Department of Transportation (DDOT), SMART, Monroe and St. Clair Counties to increase/improve carpool lot facilities, and bicycle and pedestrian facilities will be incorporated into future projects to promote connectivity of the Southeastern region of the state.

The traveling public in Northern Indiana is served by the Northeastern Indiana Commuter Transportation District (NICTD) which primarily acts as a commuter service between South Bend, IN and Chicago's Millennium Station. The current public bus system in the region includes three autonomous municipal services in the cities of Gary, East Chicago and Hammond and five demand-response providers. The Gary Public Transportation Corporation (GPTC), East Chicago Transit (ECT) and the Hammond Transit System (HTS) are fixed route service providers that provide demand response services only on a limited basis. The MWRRRI is looking into potential partnerships with transit providers in this region of Indiana.

Connectivity to air travelers is of utmost importance to the development and sustainability of high speed rail in this corridor. Detroit Metro Airport is Michigan's largest airport with close to 18 million enplanements per year. Gary International Airport (GYI) is positioning itself to relieve air congestion in the Chicago market by implementing a capital improvement plan to enhance its airfield, aircraft facilities and passenger terminal to handle rapidly growing projected passenger demand. Ongoing planning efforts with stakeholders at GYI envision direct access to the proposed high speed service to Detroit and Chicago. O'Hare International Airport, one of the nation's busiest airports, and Midway International Airport are directly linked to intercity passenger rail through Chicago's public transit network.

Access to ports and marine transportation is a fundamental goal for connectivity in the region as well. Michigan offers numerous interstate and international ferry services in the Detroit region and in northern Michigan. Numerous bicycle and pedestrian trails also exist in the region, focused on both transportation and recreation.

Beyond generating greater passenger connectivity, the benefits of HSR will affect intermodal transport of freight through this vital commercial corridor. By enhancing rail infrastructure on freight carrier-owned tracks the movement of goods along the rail routes becomes more efficient. Moving business and casual auto travelers off of the highways allows for faster travel times for trucking companies. MDOT reports that between 1995 and 2005, trade between the US and Canada increased over 75 percent, and trade between Michigan and Canada was up 32 percent. The Detroit region supports the nation's largest border crossing with Canada where approximately 43 percent of all US/Canada trade moved through just two of Michigan's eight international crossings. Two of the fastest growing general aviation cargo airports at Willow Run and Benton Harbor, a joint use military/civilian cargo airport in Battle Creek are also located along the corridor. Marine freight moves through the corridor by access to six ports in the Detroit area and one marine cargo port in St. Joseph. There are also six rail freight intermodal terminals within the Detroit region serving many freight carriers that bring \$19.7 billion through the area. The Port of Indiana in Burns Harbor handles more than 6 million tons of domestic and general cargo annually. This facility leads all Great Lakes Ports in international cargo. Chicago is the nation's largest freight rail hub and east-west interchange point, including many rail-truck transfer hubs located in the metropolitan area.

**Promotion of Livable Communities**

The project is dedicated to creating livable communities through cooperative planning with many stakeholders to create transit oriented development around emerging intermodal facilities that will serve the MWRRS. The communities that currently house intermodal facilities see substantial benefits due to access to alternative modes in comparison to cities off the grid.

Many communities along the proposed high-speed rail line are moving forward with plans for more sustainable Transit Oriented Development (TOD) including Dearborn and Birmingham, the recipients of American Recovery and Reinvestment Act (ARRA) funds for station enhancements. Both MDOT and SEMCOG have been assisting these communities through cooperative planning with stakeholders to create transit oriented development around the intermodal facilities. Both agencies have also been conducting walkability/bikeability audits to help encourage more livable and sustainable communities.

The City of Detroit, under the leadership of Mayor David Bing, is also positioning itself to be more ecologically and economically sustainable through a cross-sector collaboration of public and philanthropic investment including a new land use policy focusing on the strategic deployment of resources. The City of Battle Creek, another recipient of ARRA high-speed rail station funding, is also taking significant steps towards increased ridership and TOD in

the corridor, with help from MDOT.

Transit oriented development projects in the Northwest Indiana region include a major shoreline development plan called the Marquette Greenway Plan, the Illiana Expressway, the Port of Indiana and a proposed expansion at Gary International Airport (GYY).

At the heart of the MWRRS is Chicago, a city recognized as having one of the most robust public transit systems in the nation. Union Station, the central transfer location for the Midwest HSR system, is located in Chicago's Loop, the second largest central business district (CBD) in the nation. The district is characterized by very dense, transit-oriented development that is pedestrian-friendly and bicycle-friendly. Downtown Chicago's hub-style layout creates a convenient location for multiple intermodal facilities, including Union Station, within a few mile radius.

**(2) Future Program Viability and Sustainability.**

Please identify:

- The likelihood that the final deliverables (Service Development Plan, Environmental Document, or State Rail Plan) will be ready and capable of being implemented;
- The demonstrated commitment of the State and other stakeholders to quickly execute the program once planning is complete;
- The degree to which the planning process meaningfully incorporates input from affected communities, local governments, regional councils and planning organizations, neighboring States, railroads, transportation modal partners, environmental interests, the public and other stakeholders – early and throughout the process;
- The likelihood that the corridor programs being studied can yield measurable service and public benefits in a reasonable period of time;
- The demonstrated ability of the applicant to support the future capital and operating needs of the corridor(s) being studied;
- The thoroughness of the proposed deliverables;
- The quality of proposed methodology and assumptions; and
- The applicant's contribution of a cost share greater than the required minimum of 20 percent.

**Final Deliverables**

Michigan DOT is committed to implementing the final deliverables, a Service Development Plan and a Service NEPA, in accordance with the proposed Schedule and Project Management Plan. See Exhibit 13 for the Schedule. The project will begin, and will follow the given schedule, once funding is received and a Notice to Proceed has been granted.

**Demonstrated Commitment**

The project stakeholders, including Indiana DOT and Illinois DOT have agreed to participate in the funding of the

local share of the project, and have provided letters to Michigan DOT stating the maximum amount each will fund. Please see Exhibit 2. The applicant and stakeholders will contribute a cost share of 20% of the project total. Additionally, letters of support for the project have been provided by Canadian National, Canadian Pacific, Conrail, Amtrak, and the City of Chicago.

#### Stakeholder Input to the Planning Process

In addition to private and state support, Michigan DOT will garner public support through an array of public information meetings occurring throughout the Service NEPA process. A Public Involvement Plan (PIP) was created to facilitate the process. The PIP contains public involvement and educational activities that include workshops, educational materials, briefings for government officials, small group meetings, a media outreach strategy, creation of a website, creation and maintenance of a comment/response database, creation and maintenance of a public outreach database and agency coordination. As part of the PIP, an agency scoping meeting will be held to determine the purpose and need of the project. There will also be a public scoping meeting to discuss the purpose and need. Additionally, after Steps 2 and 3 of the four-step Service NEPA process, there will be public information meetings to discuss the outcomes of each step and to receive comments. Please see the Statement of Work, included in Section B of this application, for a more detailed explanation of the public involvement and agency coordination aspects of the project.

MDOT has worked extensively with MPO's, transit agencies, private businesses, local governments, environmental interests, the public, and other transportation stakeholders over past decades to foster an environment of cooperation to reach unified strategic goals for the implementation of public transportation services. MDOT and the state's MPOs are committed to the continuing, cooperative, and comprehensive transportation planning process in Michigan. For example, the process used to develop State Transportation Long Range Plans (SLRP) and State Transportation Improvement Plans (STIP) encourages teamwork and consensus building to identify state and local transportation needs, evaluate proposed projects to address those needs, and utilize agreed-to planning tools and performance metrics to reach agreement for metropolitan transportation systems.

#### Measurable Benefits

The Passenger Rail Corridor Investment Plan will yield measurable service benefits in a short time frame after the planning and environmental process has been completed. Construction, engineering and operating jobs will be created immediately by the project. The plan is proposed to create 6,970 jobs, \$138 million in household income, and \$680 million in joint development in the state of Michigan by the time the system reaches full build-out. The project is proposed to create 12,970 jobs by the 10th full year of operation. Once the proposed improvements to the corridor are constructed, the travel time between Chicago and Detroit/Pontiac will be reduced by 1 hour and 52 minutes.

#### Michigan DOT Capital and Operating Commitment

Michigan DOT has been funding Intercity Passenger Rail projects since 1974 and has invested \$50 million in capital and operating expenses since 2002. From this experience, MDOT has developed a best practices strategy for the use of state appropriations for spending in passenger rail infrastructure and service expansion. This gives MDOT an advantage over states that do not support their own intercity rail service. Michigan DOT is also currently exploring alternative approaches to funding potential future costs through innovative partnerships, such as through Public Private Ventures. The projects associated with this application have years of previous planning and design work due to a number of rail and intermodal initiatives stemming from state transportation planning processes between MDOT and stakeholder organizations. This previous work will lead to a short turn-around period between environmental clearance and the start of construction.

#### Deliverables and Methodology

The methodology and assumptions used in preparing the Statement of Work for the Service Development Plan and Service NEPA were determined in a coordinated effort with the Federal Railroad Administration (FRA). The four step process described in the Statement of Work was created by the Midwest Regional Rail Initiative (the group under which the eight Midwestern states are aligned) in cooperation with FRA. Michigan DOT believes that the Statement of Work thoroughly outlines the requirements of producing a Passenger Rail Corridor Investment Plan for the Chicago to Detroit corridor and that the methodology and assumptions are of high quality since they were determined in conjunction with FRA.

Contributions

As stated above, Indiana DOT, Illinois DOT, and Michigan DOT have agreed to participate in the funding of the local share of the project, and are contributing a total of 20% of the total project cost.

**(3) Project Delivery Approach.**

Describe qualifications of the applicant and its key partners to successfully complete the planning activities, including the following information:

- The applicant’s financial, legal, and technical capacity to implement the project;
- The applicant’s experience in administering similar grants and planning efforts;
- The soundness and thoroughness of the cost methodologies and assumptions, and estimates for the proposed planning activities;
- The reasonableness and timeliness of the milestone and completion schedule;
- The thoroughness and quality of the Statement of Work;
- The timing and amount of the project’s future noncommitted investments;
- The comprehensiveness and sufficiency, at the time of application, of agreements with key partners that will be involved in conducting the planning effort; and
- The overall completeness and quality of the application, including the comprehensiveness of its supporting documentation.

Financial Management Capacity

Financial statements of the State of Michigan's Comprehensive Annual Financial Report (SOMCAFR) are prepared by the Michigan Department of Management and Budget and are audited by the State Auditor General. Separate Audited Financial Statements of the restricted funds of MDOT AFR can be found at the Michigan Office of the Auditor General website at: <http://audgen.michigan.gov>, and MDOT's website at [www.michigan.gov/MDOT](http://www.michigan.gov/MDOT). Audits of the SOMCAFR and MDOT AFR are performed by both the State of Michigan’s Auditor General and MDOT's Office of Commission Audits.

MDOT's ability to absorb unforeseen cost increases, cost overruns or financial shortfalls is limited to those funds made available to its rail programs per statutory distribution of Michigan's Comprehensive Transportation Fund, per PA 51 of 1951. Allocation of funds over and above those already made available to MDOT's rail program is at the discretion of the state legislature.

Legal Capacity

Michigan has the statutory legal authority to build and oversee a rail capital investment through the State Transportation Preservation Act of 1976 “Act 296 of 1976” and “Act 51 of 1951”.

Technical Capacity

The MDOT Office of High Speed Rail and Innovative Project Advancement consists of a team of experts in rail management, each with their own area of expertise. This office is responsible for promoting and developing the infrastructure needed to support intercity passenger rail, commuter rail and rail rapid transit services. This office works with contractors, provides project oversight, oversees financial aspects of program development and interacts with stakeholders to ensure the success of all rail projects. Staff members in this office are well-versed in all aspects of project management and have experience in working with rail owners and contractors, stakeholders and federal regulatory agencies.

MDOT engineers are highly skilled and thoroughly trained in project management, as evidenced by their track record in applying new technology and innovations to address a full array of rail transportation challenges. MDOT was the first state to interconnect traffic and grade crossing signals to prevent motorists from being trapped on a grade crossing. MDOT is currently conducting an FRA-approved test project using raisable barriers to prevent gate running violations. MDOT has partnered with the FRA, Amtrak and General Electric to implement an Incremental

Train Control System(ITCS) which resulted in FRA approval in 2005 to operate passenger trains at 95 mph. FRA has provided conditional approval for train speeds up to 110 mph, which should be implemented this summer.

Experience in Planning Efforts

MDOT has initiated and successfully managed a variety of large-scale projects. One example is the early preliminary engineering for the Detroit Intermodal Freight Terminal (DIFT) Project, for which an FHWA Record of Decision was issued on April 22, 2010. The DIFT will soon move into subsequent implementation phases. It will consolidate the routing of the CSX, NS, CN, CSAO, and Amtrak through the city of Detroit to reduce congestion for freight services.

Since the mid-1970s the State of Michigan has acquired and managed over 1,000 miles of active rail lines, investing over \$250,000,000 in capital improvements and purchases. The state presently still owns and manages approximately 530 miles of rail property, and takes an active role in design and implementation of significant capital improvement projects. The state has dedicated railroad engineering staff in place to plan and implement right-of-way projects to enhance its rail corridors. The state also has multiple railroad inspectors that are well-trained and highly experienced.

MDOT has multiple pre-qualified railroad contractors who are familiar with relevant state and federal rules governing such work. MDOT will seek Amtrak support for technical assistance to extend the positive train control system. In addition, Michigan will seek Amtrak support for development of train schedules, projection of ridership and revenues, projection of annual operating funding requirements, station development, negotiation/coordination with host railroads, and engineering design support. Michigan will also seek FRA assistance with new equipment inspections.

Michigan is also home to one of the original six federally-designated high speed rail corridors as a result of MDOT's longstanding advocacy for integrated interstate high-speed passenger rail services and its commitment to and participation in the MWRRI.

Recent Grants

MDOT was recently selected by FRA to receive funding to renovate the station at Battle Creek, MI. The selection also supplied funding for the construction of a new station in downtown Dearborn, MI adjacent to the Henry Ford Museum and a new station in Troy to replace the platform and shelter in Birmingham. MDOT has also partnered with FRA, Amtrak and GE as part of FRA's Next Generation High Speed Rail Program to conduct a demonstration of the Incremental Train Control System on Amtrak ownership between Kalamazoo and New Buffalo. This project partnership has included investments totaling \$40 million dollars. Passenger trains are currently traveling 95 mph in this segment and are expected to increase to 110 mph this summer. In addition, MDOT has partnered with FRA and NS to conduct a grade crossing in-ground barrier test project at Denton Road in Wayne County. This is the first test of this technology in the country.

Cost Methodologies and Estimates

A systematic engineering planning process is used to conduct an engineering assessment of the rail rights-of-way to estimate the capital investment required for each alternative rail route. The initial step in this process is to segment each route and to assess the elements of the infrastructure of each route segment. The elements that are assessed include:

- Guideway and Track Elements
- Stations, Terminals, and Intermodal
- Support Facilities
- Sitework
- Systems

The engineering assessment of these elements is accomplished by conducting field views of each segment. A field view is a limited site verification without detailed surveys and consists of the sampling of critical sites along the track at crossings, bridges and stations. These views are augmented by using satellite photography and GIS data to understand what lies between each view. At each location, engineering notes are compiled and the physical track

conditions are compared with the latest track charts and other information provided by the railroads.

Field observations are conducted at highway/railroad crossings, overpasses and parallel roadways. The inspections focus on the condition of the track and the ability to accommodate joint freight and passenger train operations. The railroad right-of-way and highway corridors are examined for their ability to accommodate additional tracks for added capacity. Where possible, other existing facilities were observed, including bridge conditions, vertical/horizontal clearances, passenger train facilities, railroad yards and terminal operations. Photographic records are made at many locations and will be included in the corridor reports.

As route segments are examined in the field, general concepts are developed and assumptions made regarding the capacity and operational improvements needed to accommodate future passenger operations. The primary objective is to conceptualize infrastructure improvements that would improve fluidity and enhance the reliability of both passenger and freight rail operations.

The results of the field inspections are combined with data derived from GIS and railroad track charts to determine more precisely the recommended infrastructure improvements and to estimate the capital costs. Cost estimates are then prepared through the application of appropriate unit costs.

## B.2.1 Guideway and Track Elements

### B2.1.1 Guideway

During the field views, the condition of the right of way is noted and a determination made relative to the improvements required to accommodate a specific train technology. The limited field views determine the existing track condition, assess its suitability to accommodate joint rail freight and passenger operations based on FRA regulations and track safety standards, and gather sufficient data to identify needed infrastructure improvements

Where passenger and freight are expected to share track, it is generally recommended that the existing track be improved with either a 33% or 66% tie replacement depending on the existing track condition, and planned track speed. Where existing rail conditions are not suitable for passenger operations, the capital cost estimates provide for replacement with 136 lb CWR. In single track territory, 10 mile passenger sidings are provided at nominal 50 mile intervals to allow passenger and freight trains to pass. Additional freight sidings are provided between passenger sidings, as needed to support the level of freight operations that are anticipated for the corridor.

A key engineering assumption involves the centerline offset between an existing high density freight track and a new FRA Class 6, 110-mph track. The freight railroad industry requested that new tracks be constructed at a minimum 25-foot centerline offset from the adjacent track, where feasible. However, in order to accommodate possible future capacity expansion especially in congested urban areas, the 25-foot offset will be increased to a 28-foot centerline offset. The 28-foot offset would allow a future siding with 14-foot track centers to be constructed between the new passenger track and the adjacent freight track. Based on the field reviews the costs associated with the 28-foot offset will be estimated and included under the line item "High-Speed Rail (HSR) on New Roadbed and New Embankment."

Wherever the 28-foot centerline offset is not feasible due to inadequate right-of-way or other constraints, new track would be added at the standard 14-foot centerline offset from the adjacent freight track, but the proposed passenger train speed may be limited to 79-mph.

### B.2.1.2 Turnouts and Crossovers

New turnouts and crossovers are provided as necessary for operating the passenger service.

### B.2.1.3 Realignment and Superelevation of Curves

Physical forces on the passengers, rolling stock and track serve to limit the speed at which a train can safely or comfortably operate through curves. The overall track standard for mixed freight operations is to increase super-elevation to as much as 4½ inches where necessary to achieve desired passenger speeds. For lines with very light freight operations or for high-speed intermodal trains, additional increases in super-elevation might be possible, but in no case will super-elevation exceed the value that balances freight speed at 60 mph or be greater than 6 inches. Where heavy freight operations (e.g., slow coal trains) predominate, lower levels of super-elevation must be used.

### B.2.1.4 Bridges and Tunnels

A complete inventory of bridges is developed for each existing rail route from existing track charts. For estimating the cost of new bridges along existing rail beds, conceptual engineering plans are used for a bridge to carry either single or double tracks over highways, streams, valleys, and rivers. Some bridges will require rehabilitation on the abutments and superstructure. This type of work includes pointing of stone abutment walls, painting of bridges, and replacement of bearings. Many of the major bridge cost estimates will be estimated only as placeholders which will be subject to more detailed engineering analysis in the future.

#### B.2.1.5 Highway/Railroad Grade Crossings

The treatment of grade crossings to accommodate 110-mph operations is a major challenge to planning a high-speed rail system. 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 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 program.

There are numerous grade crossings through downtown business areas and residential communities. For many of these, speed restrictions will be assumed, but there are others where high-speed operations are essential to the success of the rail system.

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:

- 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.

#### B.2.2 Stations, Terminals, and Intermodal

Stations and parking facilities include platforms, circulation, lighting, security measures, and all auxiliary spaces. Space will be provided for ticket sales, passenger information, station administration, baggage handling, and commercial space. The average cost per station used in this study will be based on cost data from more detailed studies conducted throughout the country.

Placeholders for the improvements will be developed based on experience with other high speed rail projects. Costs of the parking facilities will be estimated on the basis of ridership at each station.

#### B.2.3 Support Facilities

Support facilities include maintenance facilities and yards which contain all equipment necessary to properly maintain the fleet of vehicles. The size of the maintenance facility is related to the size of the fleet.

Conceptually, vehicle servicing will be performed at corridor end-points or at other points where trains lay over at night. Specific locations for servicing facilities will not be finalized under this study. Placeholders will be developed and used for layover facilities, heavy maintenance facility based on cost information from other similar

studies.

#### B.2.4 Sitework and Other Conditions

Across the United States, a number of dual use corridors that feature recreational trails along with active rail lines are in service. The construction standards vary widely, particularly with respect to fencing, mode separation distance and common use of bridge structures. A minimum standard commonly accepted around the country is 30 feet from center of track to edge of trail. In Newark, Delaware, a rail-trail has been built at that separation from Amtrak's high-speed northeast corridor tracks, although a greater separation is recommended where practicable. The requirements for vertical and horizontal separation along with the need for fences and barriers for rail-trails will be examined as part of the preliminary engineering and project development process. One or more alternative rail routes in the Chicago-Porter segment have recreational trails

Sitework and special conditions will call include a placeholder for environmental mitigation within a given segment. This placeholder will be developed on the basis of experience on similar projects of this type.

#### B.2.5 Systems

Modern train control and communication systems safely coordinate train operations to permit bi-directional use of a track network. On heavily used lines, railroads install Centralized Traffic Control (CTC) to maximize track capacity. CTC is system of signal blocks, track circuits, controlled switches, wayside signals (or cab signals), interlockings and communications to a central control facility that enable trains moving in a common direction to follow closely on a common main track or pass opposite direction traffic on siding tracks. Under CTC, a remotely located dispatcher can set and optimize train routing. However, train speeds are limited to 79-mph.

FRA regulations require that trains operating in excess of 79 mph employ advanced signal systems that provide cab signaling and automatic train protection or automatic train stop functions. Such track circuit based systems in use today are very expensive to construct and maintain. In efforts to develop a more cost effective technology, the FRA and industry have turned to Positive Train Control (PTC), a communication based strategy that does not depend on track circuits to establish train location. Multiple research and development efforts in the United States are currently evaluating advanced train control systems:

- **ITCS:** The Michigan DOT and the FRA, along with Amtrak are advancing a project to implement an Incremental Train Control System (ITCS) in Michigan. The ITCS system, developed by General Electric Transportation Systems, is being tested on a 60-mile portion of the Chicago-Detroit High-Speed Rail Corridor between Kalamazoo and Niles, MI. The system has been in commercial operation since Jan 2002 and speeds have been gradually increased from 79 to 95 mph and are expected to reach 110 mph in January 2008.
- **NAJPTC:** The Illinois DOT, the Association of American Railroads (AAR), Union Pacific and the FRA have tested a Positive Train Control Project (PTC) on a 123-mile segment of the Chicago-St. Louis High-Speed Rail Corridor from Mazonia to Springfield, IL. The contractor, Lockheed Martin, successfully demonstrated 110 mph passenger operations in a field trial in 2002. The system has been removed from operation and transferred to AAR's Transportation Technology Center, Inc. in Pueblo, CO for further development.
- **BNSF, CSX and NS** have developed systems independently to provide PTC functions, principally for freight applications.

FRA has mandated that Class 1 Railroads install Positive Train Control where shared passenger and freight operations exist. Therefore, this project will consider the use of PTC for the entire corridor.

#### Reasonableness and Timeliness of Schedule

Schedule durations and milestones were developed based on the experience gained by MDOT and IDOT in working with the Federal Railroad Administration (FRA) on previous environmental strategies. The MWRI Technical Steering Committee also partnered with FRA in developing a Four Step Methodology to arrive at reasonable alternatives for assessment in the Service NEPA document. Step 4 of the process results in the development of a Service Development Plan and the Final Tier 1 EIS and the selection of a preferred alternative.

The schedule takes advantage of the progress made in the MWRI Phase 7 program to evaluate route alternatives in the South of the Lake segment. This prior work fosters an aggressive, yet achievable program, which will enable timely completion of the study phase and positioning of the corridor projects for implementation.

Statement of Work

The Statement of Work has been developed in collaboration with the FRA that will result in the preparation of a Passenger Rail Corridor Investment Plan. During the MWRRRI Phase 7 work effort, the FRA has provided input for each step of the evaluation process. The Statement of Work includes a four step process of project management, developing a purpose and need, developing route alternatives, public involvement process, and analyzing the selected route alternatives. These steps provide a thorough review process for route alternatives in the corridor and selection of either one single route or multiple route alternatives to continue forth to the NEPA process.

The deliverable will be a Passenger Rail Corridor Investment Plan consisting of a Service Development Plan and a Tier 1 EIS in accord with the FRA’s procedures as published in the Federal Register, 64 FR 28545, “Procedures for Considering Environmental Impacts” and guidance in the published in August 2009, “Compliance with the National Environmental Policy Act in Implementing The High-Speed Intercity Passenger Rail Program.”

Noncommitted Investments

The MWRRRI Study has identified a series of improvements to the railroad infrastructure that are necessary to implement increased high speed passenger rail service in the Chicago-Detroit Pontiac Corridor. In the first ARRA round, the FRA authorized investments for the Indiana Gateway Project, Englewood Flyover and Michigan stations.

For the second round of HSIPR funding, MDOT intends to apply for the following improvements:

1. Residual FY 2009 Funds (approximately \$65M) – Construction Projects 50/50 Match
  - (a) Application for the West Detroit Connection Track Project (for existing service) Estimated Cost \$15.5 M

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor West Detroit to the Detroit New Center Station. Project includes a new bridge over Junction Avenue, new connection track and extension approximately one mile long, signal improvements, and several crossovers. Work will be done under Categorical Exclusion. If grant money is awarded for the West Detroit Connection track project, then 50% of the existing project funds can be allocated to other unfunded project costs.

2. FY 2010 Planning Funds (Up to \$50 M) – 80/20 Match
  - (a) Application for the Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor Investment Plan Estimated cost \$4.0M

Multi-state (Illinois, Indiana, Ohio, and Michigan) application led by MDOT to conduct studies and capacity analysis necessary to produce the required service development plan, and corridor wide environmental document for high speed passenger rail service and service increases from 3 round trips to 9 round trips (Tier 1 EIS).

3. FY 2010 Stand Alone Projects (up to \$245M) – 80/20 Match
  - (a) Application for the Beaubien Interlocking/Milwaukee Junction Improvements (for existing service) Estimated Cost \$17.3M

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor from the Detroit New Center Station through Milwaukee Junction. This project includes completion of Milwaukee Junction and Beaubien Interlocking improvements as outlined in the DIFT. FHWA EIS ROD issued 4-22-10

- (b) Application for Norfolk Southern Railway Improvements (for existing service) Estimated Costs TBD from the Amtrak/NS Study

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor consists of NS ownership on the corridor from Kalamazoo to Dearborn. This project is being studied by Amtrak and NS to determine the scope for the project. The application may range from stabilization of the line to maintain passenger speeds at 79 mph to increasing speeds up to 110 mph, infrastructure/capacity improvements, and grade crossing work. This will be determined in May once the results of the Amtrak/NS study are shared with MDOT. Work to be done under Categorical Exclusion. Known projects include:

- (c) Application for Conrail Shared Assets Operations Improvements (for existing service) Estimated

Cost \$6.3M

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor consists of CSAO ownership on the corridor from Dearborn to West Detroit. This project will include infrastructure/capacity improvements in this segment (tie/ballast replacement on mains 1&2, new connection to CSX at CP Lou, and upgrade CP Townline. Work to be done under Categorical Exclusion.

Project Detail (All projects required for Ann Arbor – Detroit)

Upgrade Main Tracks Numbers 1 & 2 Tie and Ballast Replacement - \$3,100,000

Direct Connection to CSX at CP Lou - \$2,000,000

Upgrade CP Townline - \$1,200,000

CSAO Track Improvements - \$6,300,000

- (d) Application for Grand Trunk Western Railroad (Canadian National) Improvements (for existing service) Estimated Cost \$13.7M

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor consists of CN ownership on the corridor from Milwaukee Junction to Pontiac. This project will include infrastructure/capacity improvements in this segment (tie/ballast replacement).

- (e) Application for Delray / CP YD External DIFT Improvements (for existing service) Estimated Cost \$ 16.2M

Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor from the Detroit New Center Station through Milwaukee Junction. This project includes completion of Delray and CP YD improvements as outlined in the DIFT. FHWA EIS ROD issued 4-22-10

Agreements with Key Partners

On July 27, 2009, the Governors of the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin and the mayor of the City of Chicago executed a Memorandum of Understanding for the “Implementation of High-Speed Rail Passenger Service and Connections Involving Corridors Linking Cities in their Respective States.” This document affirms that “all MOU Participants recognize a priority to establish the Chicago Hub to corridors consisting of Chicago-St. Louis, Chicago to Milwaukee-Madison, and Chicago to Detroit-Pontiac (MWRRI Phase I), that would form a high-speed hub in the heart of the nation with high-speed and conventional passenger service connections radiating to seven other Midwestern states.” This MOU has been provided as Exhibit 3.

IDOT, INDOT, NS–Letters of support from IDOT, INDOT, and NS are part of this application. MDOT, IDOT, and INDOT have agreed to fund the project and Norfolk Southern has agreed to participate in the project.

CN-A letter of support from CN Railway is part of this application. Agreements are in the process of being negotiated regarding construction, maintenance, and operation.

CSAO- A letter of support from CSAO (Conrail representing NS and CSX) is part of this application. Agreements will be negotiated regarding construction, maintenance, and operation.

NS-An internal team of MDOT executive and attorney general staff are presently negotiating the final lease terms on ownership and control of the NS Rail Lines. Assisting our team is a highly-regarded railroad attorney with over 20 years experience in developing comparable transactions, including multiple transactions with NS. The lease agreement template (attached as part of the MOU) addresses all relevant aspects of the proposed transaction, including current and future cost obligations of the parties, maintenance standards and responsibilities, frequency and schedule of current and future services, facility access, freight rights, planned improvements, dispute resolution, planned interim cost adjustment factors, and relevant contingency language. Upon execution, the lease will provide for a joint coordination committee (to be comprised of personnel from MDOT administrative staff and NS administrative staff) that will oversee performance and compliance with conditions established by the lease. The present status of the ongoing negotiations is positive, with all parties communicating and participating in good faith toward developing a mutually satisfactory agreement in advance of the receipt of any ARRA awards.

MDOT's proposed lease agreement with Norfolk Southern includes relevant cost sharing arrangements for future use and maintenance of the line between Dearborn and Kalamazoo as specifically and proportionally related to planned freight use.

Amtrak is the intercity passenger rail service provider. Amtrak operates the Wolverine service as part of their National System Network which includes the six trains now used to provide daily intercity passenger rail service in the Chicago-Detroit/Pontiac Corridor. In addition, Michigan will continue to contract with Amtrak to provide the Blue Water service (Chicago-Port Huron) which includes two additional trains between Battle Creek and Chicago. These trains operate at speeds up to 95 mph between Kalamazoo and Niles (45 miles) and up to 79 mph in the remainder of the 304-mile corridor. Amtrak is the current provider; consequently, Amtrak is already operating train sets in the corridor and equipping and maintaining those train sets using facilities located in proximity to the corridor.

MDOT will contract with the host railroads and draw on their expertise where applicable to construct infrastructure improvements on their ownership. Railroads are in agreement with needed improvements identified in the Michigan portion of the CSDP. MDOT will seek Amtrak support for development of train schedules, projection of ridership and revenues, projection of annual operating funding requirements, station development, negotiation/coordination with host railroads, and engineering design support. MDOT will also seek Amtrak support for technical assistance to extend the Positive Train Control System (PTCS) east of Kalamazoo.

MDOT has also maintained constant collaboration with the FRA through the entire process. This includes the development of the four step corridor evaluation process and review through the development process.

#### Completeness and Quality

This application has taken into account many factors in developing the comprehensive planning program presented herein. Currently scheduled and planned projects have been identified and all key partners notified. To strengthen the application, the following supporting documents have been provided:

- Exhibit 1 – Project Study Area Map
- Exhibit 2 – Letters of Support from Indiana DOT, Illinois DOT, and Norfolk Southern Railway
- Exhibit 3 – Memorandum of Agreement for the Conduct of the MWRRRI
- Exhibit 4 – Executive Summary of the MWRRRI Business Plan
- Exhibit 5 – Midwest Governors' Memorandum of Agreement
- Exhibit 6 – 2004 HNTB South of the Lake Study
- Exhibit 7 – Chicago to Porter corridor map/Level of Service map/Historic Rail Routes map
- Exhibit 8 – MWRRRI Project Notebook and Appendices dated June 2004/MWRRRI Project Notebook Chapter 11, Economic Cost-Benefit Analysis
- Exhibit 9 – MWRRRI Phase 6 Programmatic EIS Template
- Exhibit 10 – FRA Statement of Work for MWRRRI Phase 7
- Exhibit 11 – Map of City of Chicago-Requested Route Alternative
- Exhibit 12 – Support Letters from Canadian National Railway, Conrail Shared Assets, and Amtrak
- Exhibit 13 – Detailed Planning Project Work Plan Schedule
- Exhibit 14 – Project Budget
- Exhibit 15 – Illinois Capital Bill
- Exhibit 16 - Grand Valley State University for MDOT: Michigan Passenger Rail Station Community Benefits Study
- Exhibit 17 - University of Michigan for MDOT: Intercity Bus and Passenger Rail Study (July 2009)
- Exhibit 18 - Northwest Indiana Regional Development Authority: Comprehensive Economic Development

Plan

- Exhibit 19 - Northwestern Indiana Regional Planning Commission: Connections 2030-Compliance Amendment
- Exhibit 20 - Cambridge Systematics for INDOT: Indiana Rail Plan
- Exhibit 21 - Amtrak: Amtrak to perform high-speed rail improvement study in Michigan
- Exhibit 22 - Amtrak: State of Illinois Amtrak Fact Sheet, Fiscal Year 2009
- Exhibit 23 - MDOT Traffic Management System; Rail Statistics: Amtrak Annual Ridership Summary
- Exhibit 24 - MDOT MI Transportation Plan (SLRP)
- Exhibit 25 – Reference Website Links

We believe that we have succeeded in defining a planning project that is essential to future development in the corridor and is well positioned to proceed to a successful record of decision, allowing the corridor improvement program to move forward to the benefit of the citizens of the Midwest.

## D. Optional Additional Information

**(1) Please provide any additional information, comments, or clarifications and indicate the section and question number that you are addressing** (e.g., Section A, Question 6). *This section is optional.*

This project will ensure an appropriate regional balance in the Midwest and the country by solving the problems associated with implementing high speed rail service to the East from Chicago. Until the issues related to Chicago to Porter segment are solved, a regional balance will not exist. This project will solve those problems.

The project ensures promotion of livable communities. While Michigan is challenged economically, the leadership in Detroit, Southeast Michigan, and the State of Michigan realize an opportunity. The City, Region, and State are moving forward with a comprehensive strategy involving transportation and land use decisions that will directly affect the livability and sustainability of the region, especially along the high speed rail corridor. This project is a key ingredient in this strategy.

The MWRRI Technical Steering Committee, in partnership with the FRA, has developed a unique 4 step process efficiently and economically define and justify the selection of all reason route alignments in a corridor using a logical, quantifiable, and documented methodology. This is a innovative planning tool developed with the MDOT partners that can be used on this project.

The Chicago Hub (Chicago-Detroit/Pontiac) Corridor spans multiple states. As part of the MWRRI, Illinois, Michigan, and Indiana have a Memorandum of Agreement in place to allow this type of mult-state project. The public involvement plan has been developed to engage local communities and a variety of other stakeholder groups. MDOT will employ unique design charettes to engage the public in participating in the project. Furthermore, MDOT, IDOT, and INDOT have a history of working in public-private partnerships with the freight railroad industry. This project will demonstrate the process of preparing a Passenger Rail Corridor Investment Plan across three states.

The project complements previous planning grants and construction awards to MWRRI Phase 1 states of Illinois and Wisconsin. The projects complements construction grants to Illinois for the Englewood Flyover, Indiana for the Indiana Gateway, and Michigan for station construction. These are existing projects within the project corridor. This project complements previous construction and planning grants made by the HSIPR program.

The project complements previous investment made by Michigan, FRA, and Amtrak in the high speed rail corridor. These investments have resulted the ability for Amtrak to operate in sections of the corridor at 95 mph with approval to increase the speed to 110 mph. This corridor is the only high speed rail corridor in the US outside of the Northeast. This project complements previous state and federal investment in the high speed passenger rail sytem.

**(2) Optional Supporting Documents** (If you have uploaded documents to *Grants.gov*, please provide document title, filename, and description here):

Document Title	Filename	Description and Purpose
Exhibits 1-5	Exhibits 1-5.pdf	Project area map showing the corridor termini and alternatives previously studied in the South of the Lake Corridor, supporting documentation to demonstrate level and type of commitment to the project, MOA among the MWRRI states to establish the relationship of MDOT, INDOT, and IDOT, Documents the basis for the Chicago Hub (Chicago-Detroit/Pontiac) High Speed Rail Corridor and the relationship of this corridor to other MWRRI corridors, and documents that the implementation of MWRRI Phase 1 was the Midwest Governors' priority
Exhibits 6-7	Exhibits 6-7.pdf	Documents the level of previous work conducted on the various alternatives in the Chicago to Porter




### E. Checklist of Application Materials

Required Documents	Reference	Description	Format
<input checked="" type="checkbox"/> HSIPR Planning Application Form	FY 2010 Planning NOFA Section 3.3.1.1	This document to be submitted as an attachment through <i>Grants.gov</i> .	Form
<input checked="" type="checkbox"/> OMB Standard Forms <ul style="list-style-type: none"> <li>• SF 424: Application for Federal Assistance</li> <li>• SF 424A: Budget Information-Non Construction</li> <li>• SF 424B: Assurances-Non Construction</li> </ul>	FY 2010 Planning NOFA Section 3.3.1.2	Please submit through <i>Grants.gov</i>	Form
<input checked="" type="checkbox"/> FRA Assurances Document	FY 2010 Planning NOFA Section 3.3.1.3	May be obtained from FRA’s website at <a href="http://www.fra.dot.gov/downloads/admin/assurancesandcertifications.pdf">http://www.fra.dot.gov/downloads/admin/assurancesandcertifications.pdf</a> . The document should be signed by an authorized certifying official for the applicant. Submit through <i>Grants.gov</i>	Form
Optional Supporting Documents	Reference	Description	Format
<input checked="" type="checkbox"/> Map of proposed project area	FY 2010 Planning NOFA Section 3.3.1.1	This document to be submitted as an attachment through <i>Grants.gov</i> .	None
<input checked="" type="checkbox"/> Other supporting documents as identified by applicant	FY 2010 Planning NOFA Section 3.3.1.1	This document to be submitted as an attachment through <i>Grants.gov</i> .	None

**PRA Public Protection Statement:** Public reporting burden for this information collection is estimated to average 32 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is **2130-0583**.

