Scope of Services

1. BACKGROUND

In May 2019, Transportation Economics & Management Systems, Inc. (TEMS) submitted the final report for the Toledo-Detroit/Ann Arbor Ridership Feasibility and Cost Estimate Study for the City of Toledo and Toledo Metropolitan Area Council of Governments (TMACOG). The study showed that there was a strong case for developing the corridor as a passenger rail system; this included not only meeting USDOT FRA funding requirements, but also increases in jobs, income, and economic development, for each community in the corridor.

As a result of these findings, TEMS was asked to prepare a scope of work and budget for taking the next steps in developing the passenger rail system. The first step would be to prepare a Tier 1 EIS report that can be used to obtain USDOT FRA funding for both additional studies and also funding of the project itself. It was agreed that the work of developing a Tier I EIS would be split in two phases –

- Phase 2A for the development of the critical Alternatives Analysis, and the preparation of two key documents required by USDOT for funding, a Service Development Plan (SDP), and National Environmental Policy Act (Service NEPA) document.
- Phase 2B for developing the corridor public outreach program and measuring both local support and comment and input on the project, and the preparation of a Tier 1 EIS document that would be prepared to obtain a USDOT "Record of Decision" (ROD) for the project for the preferred alternative.

Together the Service Development Plan, Service NEPA, and EIS complete the Passenger Rail Corridor Investment Plan (PRCIP) and support a potential future FRA decision to fund and implement a major investment in the Toledo-Detroit/Ann Arbor corridor. As part of Phase 2A work plan, the study team will prepare an application to USDOT for Phase 2B and Tier II funding. This includes planning, environmental, engineering work, as well as public outreach and agency coordination.

2. STUDY APPROACH

To achieve the objectives that the City of Toledo and TMACOG are seeking, the Phase 2 study aims to systematically address the requirements of the USDOT requirements for a Record of Decision (ROD) for a Tier 1 EIS. Tasks and deliverables are organized so that they meet USDOT FRA requirements for funding a new passenger rail system and operation.

For Phase 2A the key deliverables will be –

- Purpose and Need Statement
- Draft Service Development Plan
- Draft Service NEPA Analysis

For Phase 2B, the key deliverables will be –

- Final Service Development Plan
- Final Service NEPA Analysis
- Draft Tier 1 EIS Report
- Final Tier 1 EIS Report
- Record of Decision (ROD) for Project

3. STUDY TASKS

TASK 1: PROJECT MANAGEMENT

This task includes the overall management of the project including maintaining the project files, project minutes, administrative record that includes all relevant studies, databases and documents required to prepare both the SDP and Service NEPA reports that are submitted to the USDOT FRA.

The key Project Management outputs include –

- Project Work Plan and Schedule: TEMS will prepare a Project Work Plan and Schedule for the Phase 2A and 2B work program and update the documents on a continuous basis throughout the study.
- Monthly Progress Reports: TEMS will prepare monthly progress reports that can be shared with FRA, state agencies and other funding partners. The report will track task progress, identify issues and needs, and provide a guide to overall project progress.
- Project Kick Off Meeting: TEMS will conduct a project kick off meeting describing the proposed study methodology and procedures. The kick-off meeting can be held with or separately with key stakeholders. A PowerPoint presentation will be used at the kick-off meeting.
- Study Purpose and Need: In this task TEMS will identify the purpose and need for the Toledo-Detroit/Ann Arbor passenger rail system. This analysis will include a statement of objectives designed to improve accessibility to and from Toledo and Detroit/Ann Arbor. This will include the potential improvement of the transportation system to serve the existing and future markets, the likely changes in population and socioeconomics in the corridor, changes in total travel demand, and the reduction in energy, emissions, and congestion, as well as environment improvements resulting from an improved transport system.

DELIVERABLES

- Project Work Plan
- Meeting Minutes
- Kick Off Meeting and Presentation
- Monthly Project Progress Reports
- Schedule using Gantt Chart Technology
- Purpose and Need Statement
- System Improvement Impacts

TASK 2: COMMUNICATIONS PLAN

TEMS will develop a Communications Plan for Phases 2A and 2B. A Public Involvement Plan (PIP) will be prepared. TEMs will work closely with key stakeholders in Phase 2A and with stakeholders and public in Phase 2B. Key stakeholders will include USDOT FRA, ODOT, MDOT, Railroads, and Transportation Agencies such as MPO's, Detroit Airport, and other partners critical to the development of the Service Development Plan. In Phase 2A, TEMS will develop a master stakeholder and public contact list (emails). The Public Involvement Plan (PIP) will be developed and linked to the key milestones in the planning/engineering process.

DELIVERABLES

- Public Involvement Plan
- Master Contact List (email)

- Public Outreach publications (newsletters, news conference, website)
- Work with Toledo to prepare project website
- Public workshop materials
- Study progress presentations
  - Methodology
  - Database
  - Results

TASK 3: ALTERNATIVES DEFINITION AND SPECIFICATION OF OPTIONS

ROUTES AND ENGINEERING DATABASE: TEMS will identify the potential alternative routes for rail service in the Toledo-Detroit/Ann Arbor corridor. Three rail corridors can be considered, which provide potential links between Toledo, Detroit and Ann Arbor. These corridors are –

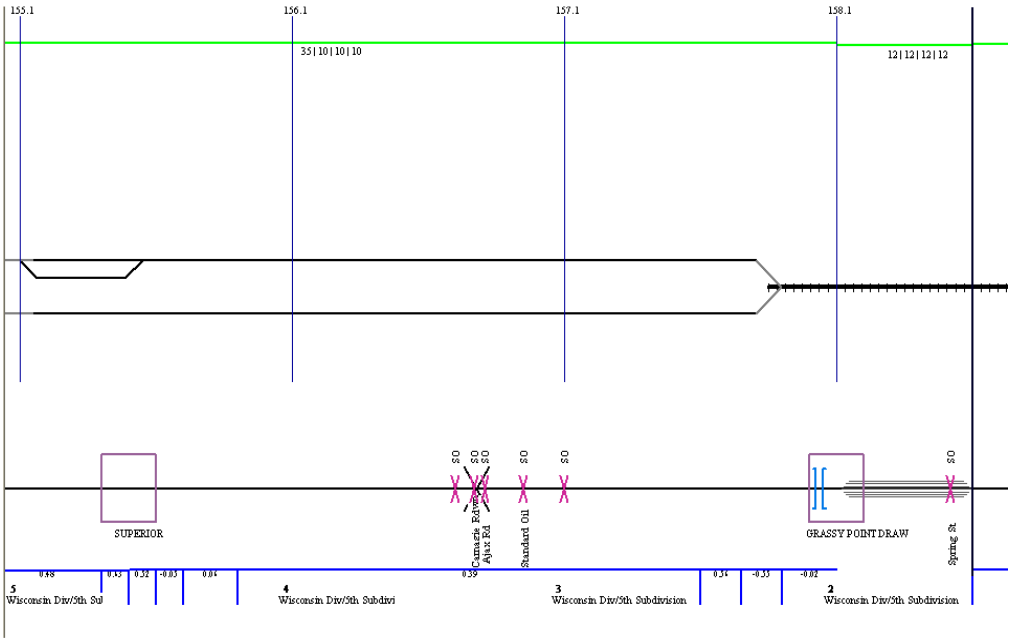
- Wyandotte Route
- CSX Detroit Metro Airport Route
- Ann Arbor Route

The engineering database will consider the Toledo-Detroit/Ann Arbor routes, and in each case will develop a routing system that provides the most effective transportation links for a passenger rail system.

The three corridors have been evaluated previously as part of the MWRRI studies but needs updating to 2018. As a result, its capital costs, operating costs, and finances and economic benefits are currently unknown and need to be updated. However, previous studies suggest the routes are very viable and show real potential for passenger rail.

For the three routes, the TRACKMAN™ Track Management System will be used as in previous MWRRI studies to provide a milepost-by-milepost record of the rail gradients and track geometry of the right-of-way. The data will be recompiled from existing sources includes railroad timetables, track charts, ordinance survey maps, and land stat photometry. The data will be reviewed and updated as required. As required, this will be achieved by a field review of the right-of-way and track in the corridor by the TEMS Team. Potential track upgrades and improvements for different passenger rail speeds and operations will be assessed and improvements will be identified and listed. Engineering notes will be developed and entered into the TRACKMAN™ program to provide a clear understanding of basic track conditions, and the upgrades needed to support passenger rail speeds. A sample output from TRACKMAN™ is given on the next page.

TRACKMAN™ SAMPLE OUTPUT



SERVICE SCENARIO AND EQUIPMENT DATABASE

The database for the passenger rail equipment options will be developed by reviewing the results of the different Midwest Regional Rail studies and soliciting information from manufacturers to update TEMS existing databank. It is anticipated that, as in the Midwest Regional Rail Study, and subsequent studies the focus will be on 79 and 110 mph technology.

79 mph

Amtrak

110 to 130 mph

Talgo T21

SERVICE SCENARIOS

Working closely with the Toledo/TMACOG Project Coordinator, an initial set of passenger rail service scenarios will be defined. The key factors considered in defining scenarios include –

- Train frequency
- Train speed
- Track speed
- Station stops
- Fares

The TEMS Team will explore opportunities to attract riders and create greater value and revenue. In addressing this issue, the TEMS Team will consider two potential levels of service, each targeted to different traveler needs. These include –

BASE LEVEL SERVICE CONCEPT – a 79 mph service operating within the context of a "stand alone" service. The frequency of train service will reflect weekly levels of commuter, social and business travel. A basic fare (similar to current Amtrak fares) would be established for this service. The base level service provides a platform against which additional speed and frequency improvements can be evaluated in both financial and economic terms.

IMPROVED SERVICE CONCEPTS – service improvements that would be associated with upgraded track and up to 110 mph train frequency and speeds. Improvements would include reductions in travel times, increased frequencies, improved reliability, improved train stopping patterns and higher quality of service. It would also provide for improved transportation access and connections at stations, such as taxis, limos and transit. Fares will be optimized to maximize revenue potential.

MARKET DATABASE

Four market databases will be developed to identify the current nature of travel in the corridor. The market database will consist of four components – origin/destination data, socioeconomic data, network data, and stated preference.

ORIGIN/DESTINATION DATA – As part of the original Ohio Hub and Midwest Regional Rail Study, as well as the more recent Chicago-St. Louis, Chicago-Detroit, Chicago-Ft. Wayne Columbus, and Chicago-Twin Cities, and Ann Arbor to Traverse City studies, TEMS developed a comprehensive origin/destination database for Ohio and Michigan. The data are for travel by air, rail, bus and auto and are on a trip-purpose basis (business, commuter and social / tourism). The data are aggregated on a county level in rural areas and a sub-city (TAZ) level for most urban areas. For this study, the data will be refined to ensure it properly reflects 2018 travel demand in the study corridors. It is anticipated that the study will have about 150 zones.

SOCIOECONOMIC DATA – As part of the Ohio Hub and Midwest Regional Rail Study and other more recent studies an extensive socioeconomic database was developed for Ohio and Michigan. The data was developed from Federal Census and BEA data, state transportation data, as well as Woods and Poole socioeconomic forecasts and contains population, employment and income forecasts on a county basis. These will be reviewed and adjusted to the proposed zone system to provide an effective database for the proposed corridors.

NETWORK DATA – Comprehensive modal networks will be developed for each mode of intercity travel (auto, air, rail and bus). The networks, which will identify access and egress times, and costs, will be built for business and non-business travel. A refined set of networks will be developed for the proposed corridors to show the strength of modal competition and connections in the corridor.

STATED PREFERENCE DATA – Stated preference data for the corridor will initially in Phase 2A use data collected as part of the Detroit-Chicago/Ann Arbor EIS study. In Phase 2B, a specific corridor Stated Preference survey will be completed for the final ridership and revenues to be included in the Draft and Final Tier 1 EIS report.

The analysis will identify overall corridor end points, cities and communities served, alignment options, station sites, connecting services. For each alignment specific track geometry, layouts, quality of infrastructure, including bridges, crossings, curves, crossovers, gating will be identified using the TEMS TRACKMAN™ program. This will allow "helicopter ride" review and assessment of the key features and factors of the alignments.

DELIVERABLE

- Route KML's and mapping
- Route Geometry
- Route Markets
- Route Operating Scenarios

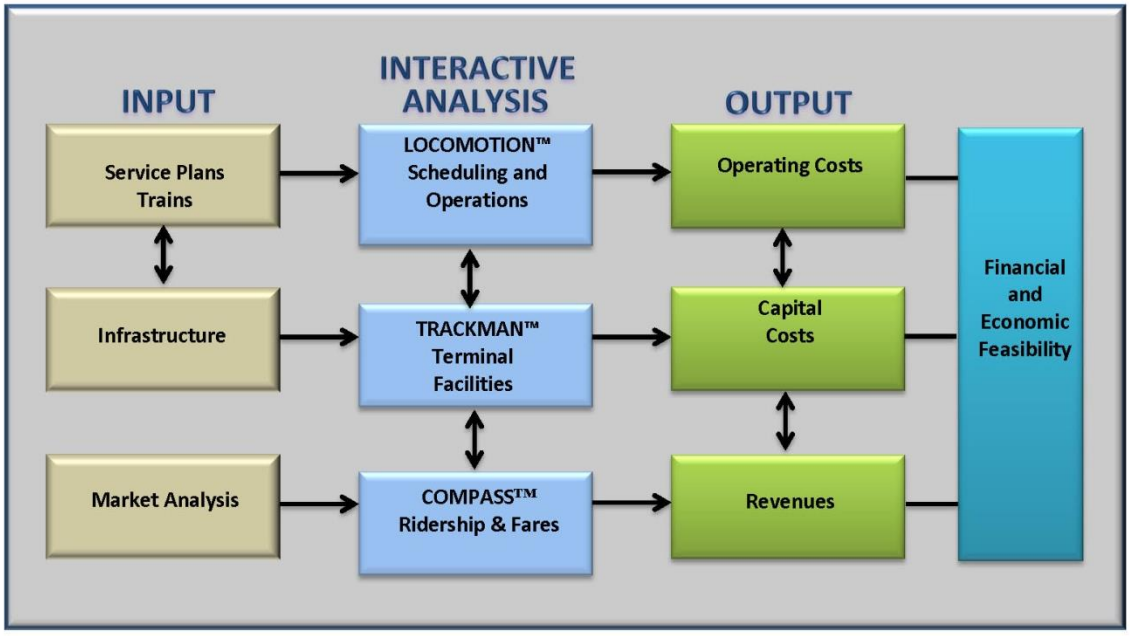
TASK 4: INTERACTIVE ANALYSIS

The Interactive Analysis is designed to develop the most efficient and effective alternative for each passenger rail alignment and service for each of the three routes in the Toledo-Detroit/Ann Arbor rail corridors.

RAIL SERVICE ANALYSIS

The determination of appropriate rail service depends on balancing the trade-off between revenues and costs for any given route and associated technology. Higher levels of ridership generate higher revenues, which permit a greater level of infrastructure investment, and thus higher speeds. Lower levels of ridership and lower revenues require that infrastructure investment be minimized and/or the use of more sophisticated vehicles (e.g., tilt technology to compensate for inadequate track geometry).

As a result, the TEMS Team proposes an Interactive Analysis as the most efficient means of developing an appropriate passenger rail service and identifying infrastructure needs.



The Interactive Analysis utilizes a number of computer systems, permitting a rapid evaluation and re-evaluation of route, technology, and/or ridership factors –

- TRACKMAN™ to assess the right-of-way and route improvement options
- LOCOMOTION™ Train Performance Calculator to assess the performance of technologies
- COMPASS™ Rail Demand Model to assess ridership and traffic levels

The result of the Interactive Analysis is an operating strategy for each route/alternative technology option that optimizes the infrastructure, technology and traffic levels.

For the proposed corridor, the first step in the Interactive Analysis is to identify for each alternative the most appropriate route alignment and train speed. To achieve a desired train speed, the route is examined, and specific infrastructure improvements are proposed for each mile of track. For the Toledo-Detroit/Ann Arbor Rail Corridor Study, Ohio Hub and Midwest Regional Rail and other more recent studies in the Midwest unit costs have been used to generate cost estimates for improvements. These will be updated to 2018.

The actual operating speed of the train along the track is calculated using LOCOMOTION™. Output from LOCOMOTION™ will be examined to identify specific bottlenecks, such as bridges, crossings, tunnels and curves that restrict train speeds unnecessarily and reduce the overall timetable performance of a specific technology.

The output of LOCOMOTION™ provides an assessment of train running times for any given set of infrastructure proposals. By reviewing the timetables, the level of infrastructure improvements can be increased or reduced to meet specific timetable and thus specific ridership needs. In this way, the Interactive Analysis will result in the development of an operating strategy for each right-of-way/corridor and technology that best combines infrastructure requirements, operating speeds and frequencies, and potential ridership.

A sample output from LOCOMOTION™ is given in the following exhibit. It should be noted that the time saved by removing impedance factors would be different for different train technologies. For example, removing moderate curves is less important than removing bridge speed restrictions for trains with steerable trucks.

Where restrictions are found, TRACKMAN™ will be used to identify the cost of upgrading the right-of-way. By using LOCOMOTION™ and TRACKMAN™ and COMPASS™ together, a priority ranking of improvements can be developed. This consists of a cost per train travel time minutes saved and cost-per-revenue dollar earned.

LOCOMOTION™ SAMPLE OUTPUT

LOCOMOTION - Train Performance Calculator

(c) 1990-1995, Transportation Economics & Management Systems, Inc.

Project	Rockford Chicago O'Hare
Corridor	Rockford Airport to Chicago O'Hare
Technology	F40M
Investment	Metra Stock
Date	25-Aug-97
Time	11:15 AM
Maximum Train Speed	79 mph
Acceleration Distance	3 miles
Deceleration Distance	2 miles
Station Dwell Time	2 min
Recovery Time	0 min
Total Journey Time	3:44 hours
Total Journey Length	81.0 miles

Station City	Mile Post	Speed Restriction	Train Speed	Schedule Time	Depar Arriv	Engineering Description
Rockford Airport	0	75	0.0	0:00	Dp	
	1	75	55.5	0:02		
	2	70	70.0	0:03		Airport junct
	3	79	77.9	0:03		
	4	79	79.0	0:04		
	5	79	79.0	0:05		
	6	79	79.0	0:06		
	7	79	79.0	0:06		
	8	79	79.0	0:07		
	9	79	63.0	0:08		
	9.1	60	60.0	0:08		Davis junct-Start
	9.6	60	60.0	0:09		Davis junct-End
	10	79	67.3	0:09		
	11	79	76.7	0:10		
	12	79	79.0	0:11		

The Interactive Analysis will identify key bottlenecks that prevent a given technology from achieving its maximum capability, listing the priorities for each train type, and estimating the civil engineering costs to overcome these bottlenecks. Equally, the analysis will be used to assess the effect of train speed on ridership levels and the cost of aligning the track to avoid locations with important environmental or cultural characteristics. In each case, the required infrastructure improvements will be quantified in terms of the full range of factors that affect infrastructure costs (grading, track quality, signaling, and grade crossing protection).

DELIVERABLES

- Interactive Analysis
- Base Year Traffic – OD
- Train Times and Operating Plan
- Rail Route Infrastructure

TASK 5: RIDERSHIP AND REVENUE

DEMAND ANALYSIS

The introduction of new rail systems, which provide substantially reduced travel times, higher comfort levels, and frequently lower fares has radically changed travel patterns and brought communities closer together. In general, intercity travel is increasing, marked by a substantial increase in travel demand and distances traveled, as well as a significant shift toward rail use as a result of higher gas prices, and increased highway congestion.

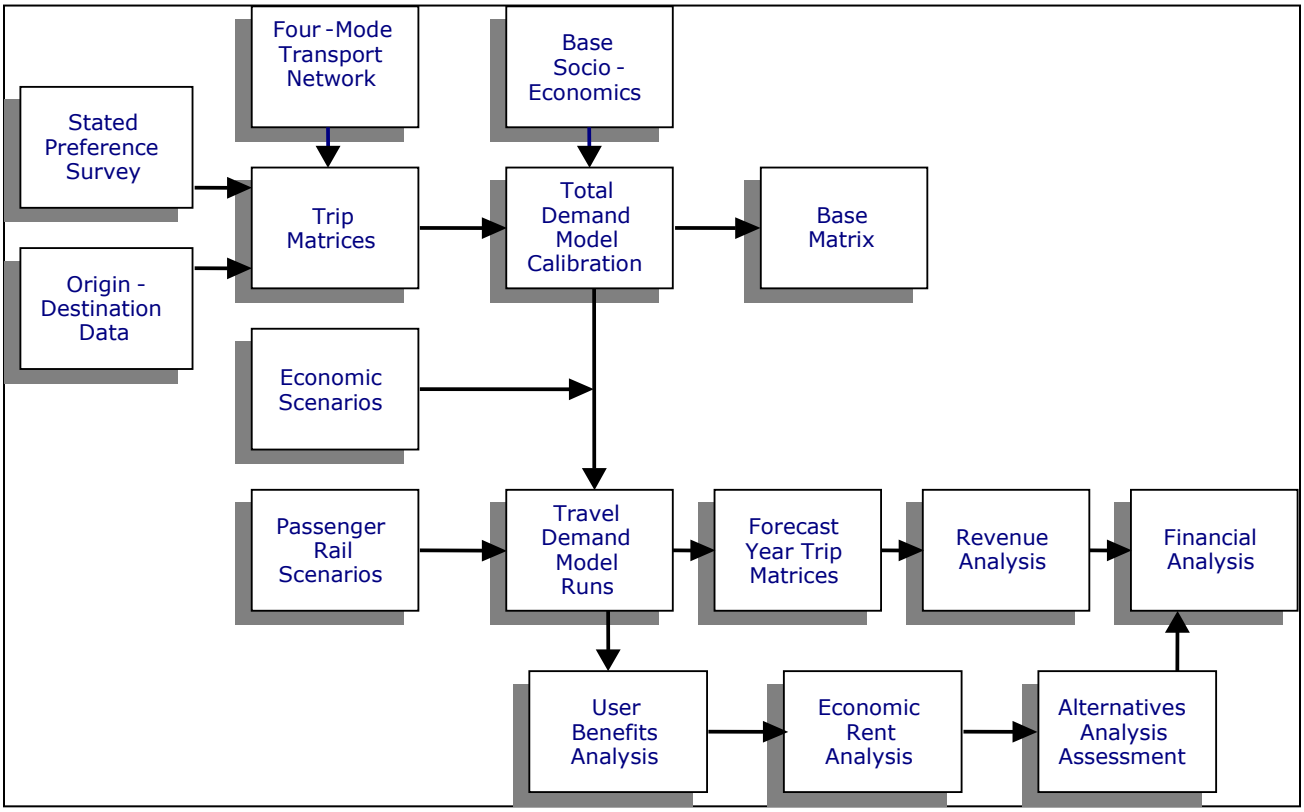
To effectively predict the change pattern and overall rail travel demand levels for new rail systems, models are needed that can accurately forecast the impact of trip making increases and the role of the rail mode. To meet these needs, TEMS developed the COMPASS™ Model System, which is a fundamentally new approach to transportation analysis. It combines existing regional transportation planning techniques with new market research techniques. COMPASS™ has the advantage of having been tested in North America, Europe and Australia on various projects as they progressed from planning, to engineering, to implementation. It provided the foundation for the Ohio Hub, Midwest Regional Rail, and the recent Ann Arbor-Traverse City ridership and revenue forecasts and has been calibrated to reflect conditions in the Midwest and specifically Michigan and Ohio.

Contrary to conventional methods of analyzing demand on the basis of existing or historical demographic/travel data, the COMPASS™ Model, while including such data in the analysis, subordinates it to a detailed dynamic behavioral assessment of an individual's innate travel characteristics. Using an advanced market research technique, Abstract Mode Trade-Off Analysis, these innate travel characteristics are formulated as preference utilities or demand elasticities, yielding a precise measurement of the responsiveness of travel demand to improvements in the overall level of service and the relative competitive position of alternative modes.

As shown in the exhibit below, the COMPASS™ Model includes three key sub-models –

- Total Demand Model
- Induced Demand Model
- Modal Split Model

COMPASS™ Rail Demand Model Structure



Using the COMPASS™ approach to rail forecasting, the TEMS Team will –

- Eliminate the potential shortcomings of other model approaches, which often rely upon historical data that reflects rail's current negative image and tend to underestimate a new and modern rail system.
- Overcome the propensity inherent in conventional planning models to fail to identify accurately the market share for all modes. Typical models are geared to forecasting the dominant mode (auto) and are frequently biased in their calibration procedures to coefficients and parameters that reflect auto travel. Unless a model explicitly represents the response of individuals to the modes other than auto (rail, bus, and air) differently through model coefficients such as the value of time, it is inevitable that the model will not be able to provide effective rail forecasts.

The basis of the TEMS Team's approach to forecasting the potential for new interstate passenger rail service will be to treat rail as an enhanced or new mode. The objective will be to focus the analysis on the response to the new mode's performance by taking behavioral attitudes into account, rather than simply extrapolating demand on the basis of historical or current travel relationships. This will allow for a more accurate and realistic ridership forecast. The output of the forecasting process can be used to ensure that the most appropriate route and technology combinations have been obtained and that potential revenue is maximized, and capital costs minimized.

RIDERSHIP AND REVENUE FORECASTS

Using the service scenarios developed for the Toledo-Detroit/Ann Arbor corridor, total demand and market share forecasts for passenger rail traffic will be prepared for five-year intervals for the study period 2018-2050. To forecast the impact of regional economic growth on total demand, socioeconomic scenarios will be prepared that identify the likely changes in income, population, and employment over the study period.

For rail, the strategies that will be developed include train frequency, commercial speed, stopping patterns and passenger interchange. Using these inputs, as appropriate, alternative strategies will also be prepared for other intercity transportation modes, so that the impact of investment in these modes is incorporated into the overall demand analysis. This task will be carried out in conjunction with the TMACOG project manager.

The rail ridership forecasts will be assigned to show segment volumes, station volumes, and passenger miles and revenues on an annual basis. The forecasts will also be provided on an origin and destination basis and on a corridor, segment, and city pair basis. For each technology option, the rail revenues will be generated. Revenues will be based on a fare/tariff structure, which can be compared with fares and costs of competing traffic (air, auto, and bus). This will ensure that the optimum revenue stream is generated for the rail service and will provide a basis for considering higher fares and lower subsidies for the passenger rail service. Revenues will be given in 2018 dollars.

DELIVERABLES

- Corridor Traffic Forecasts
- Revenue Yield Analysis
- Sensitivity Analysis
- Station Volumes
- Route Segment Loadings

TASK 6: SYSTEM CAPITAL AND OPERATING COSTS

Operating and Capital Costs will be developed for each alternative.

OPERATING COSTS: For each of the technology options, a set of 2018 operating costs will be developed that are based on the operating timetable. The operating unit costs will include the following –

- Track maintenance
- Train crew
- Rolling stock maintenance
- Electrification maintenance
- Signals and communications maintenance
- Energy costs
- Train crew
- Control staff
- Terminal personnel
- On-board services
- Administration

CAPITAL COSTS: Capital costs for the passenger rail service include cost for rolling stock, as well as infrastructure costs. Rolling stock costs for the various technologies will be obtained directly from equipment manufactures.

As for infrastructure costs, the TEMS Team has a set of unit costs derived from the ongoing studies for the Midwest Regional Rail system, which have been updated to 2018 dollars. It is proposed that these will be reviewed and adjusted to reflect specific conditions in the Toledo-Detroit/Ann Arbor Passenger Rail corridors.

The infrastructure cost databank will include unit costs for the following –

- Land and right-of-way
- Sub-grade, structures, and guideway
- Track
- Rolling stock
- Signals and communications
- Electrification
- Demolition
- Stations
- Maintenance and facilities
- Highway and railroad crossings
- Farm and animal crossings
- Pedestrian crossings
- Fencing

DELIVERABLES

- Unit Capital Costs
- Unit Operating Costs
- Cost Summary Report

TASK 7: FINANCIAL AND ECONOMIC BENEFITS

To provide a clear understanding of the financial and economic value of different route investments, the TEMS Team will carry out the follow-up analysis –

- Comprehensive financial analysis of fares, operating ratio, subsidies, profit
- Comprehensive user benefits (consumer surplus) and non-user benefits analysis for USDOT and Ohio and Michigan DOTs.
- Community benefits analysis (supplyside)

This provides a first level screening of route options, as these hurdles are a minimum requirement for a project's success.

FINANCIAL ANALYSIS – The financial analysis will be based on a detailed cash flow analysis of passenger revenues, operating and maintenance costs, and infrastructure and rolling stock costs. The analysis will include the discounting of costs and revenues to an appropriate base year, the establishment of an infrastructure cost implementation program, and the assessment of both Net Present Values and Internal Rates of Return showing the overall worth of the rail service in financial terms.

In addition, a number of ancillary revenue/cost relationships will be defined in the financial analysis, including project profitability (rate of return), operating ratio (cost/revenue relationship), investment standards (investment dollar/passenger mile), and train efficiency (cost/train mile). These will be used to provide a comparative analysis of corridor performance.

ECONOMIC ANALYSIS OF USER AND NON-USER BENEFITS – In the economic analysis, transportation user costs and benefits will be assessed in terms of increased user benefits (consumer surplus), increased trip making (regional mobility), reduced journey travel times and congestion (travel time savings), and improved quality of service (maximum service levels). The economic analysis will be based on the flow of economic costs and benefits over time and the impact of the proposed rail service on both users and non-users. This analysis will include resource savings, energy savings, accident savings, and producer surplus. The economic benefits and costs will be discounted to an appropriate base year and evaluated in terms of Net Present Values, Internal Rates of Return, and Cost-Benefit Ratios. The Office of Management and Budget (OMB) requires the use of discount rates of 3% and 7% real. The analysis will also include a public sector constrained capital assessment.

ECONOMIC BENEFITS FOR COMMUNITIES (ECONOMIC RENT) – For the Toledo-Detroit/Ann Arbor passenger rail corridor, a supplyside economic analysis will be completed. This shows the communities along the corridor the benefits they will get from the implementation of the high speed rail corridors. This has been used successfully in the public outreach program to develop community support (e.g., Ohio Hub, MWRRI, Florida Vision Plan and Hampton Roads Vision Plan). TEMS has developed the Economic Rent Analysis as a mechanism for estimating the increase in Jobs, Income, Property Values, and the expansion of the Tax Base, as a result of implementing transportation projects. This is an additional task that TEMS feels essential to the public outreach process. It is essential to get support from Chambers of Commerce, Mayors and Community Leaders. In addition, it is useful to show both the federal and state governments the return they get from increased tax revenues from implementing a project. A recent APTA study completed for the MWRRI using TEMS data showed that the expanded tax base from the project provided a 100 percent return for federal funds, and a 50 percent return for state funds.

DELIVERABLES

- Financial Analysis – Cash Flows
- Cost Benefit Analysis
- Economic Impact Analysis

TASK 8: SERVICE NEPA SCOPING AND ENVIRONMENTAL SCAN

The National Environmental Policy Act (NEPA) of 1969 requires that the social, economic, and natural environmental impacts of any proposed action of the federal government be analyzed for decision making and public information purposes.

A Service NEPA is a preliminary assessment or "environmental scan" to assist FRA in making an initial determination what kind of detailed environmental assessments will be needed for each stage of the environmental process (i.e., FONSI – Finding of No Significant Impact, CE – Categorical Exclusion, EA – Environmental Assessment, full EIS.) and for scoping the level of effort that will likely be needed to complete those assessments. There are three classes of action –

- Class I Actions, which are those that may significantly affect the environment, require the preparation of a full Environmental Impact Statement (EIS). Most certainly development of the major greenfield alignments as proposed will be considered a Class I action.
- Class II Actions (Categorical Exclusions) are those that do not individually or cumulatively have a significant effect on the environment and do not require the preparation of an EIS or an Environmental Assessment (EA). Upgrades to existing rail lines entirely within the right of way are an example of a type of action that might qualify for a Categorical Exclusion.

- Class III Actions are those for which the significance of impacts is not clearly established. Class III Actions require the preparation of an Environmental Assessment (EA) to determine the significance of impacts and the appropriate environmental document to be prepared (40 C.F.R. § 1508.4) either an EIS or a Finding of No Significant Impact (FONSI).

The Service NEPA for the Toledo-Detroit/Ann Arbor corridor will describe the environmental impacts of the type of rail service being proposed, communities being served, types of operations (speed, electric, or diesel powered), ridership projections, major infrastructure components, improvement alternative being proposed and measures taken to minimize harm to the corridor.

SCOPING – A Service NEPA provides a screening of alternatives that have financial and economic viability. In this task TEMS will conduct a preliminary scoping to obtain information on each alignment and provide an opportunity to obtain input on each alternative and specifically any concerns or issues that allow the alternative to be improved. Key stakeholders will be consulted including federal, state and local authorities, as well as the public at the earliest practical time (Phase 2B). The alternatives used for the scoping will be the full range of existing practical rail routes that offer effective times for rail service between Toledo and Detroit/Ann Arbor.

ENVIRONMENTAL SCAN OF ROUTES – TEMS will carry out an overview of environmental issues associated with different alignments that can be used for the development of the Toledo-Detroit/Ann Arbor Passenger Rail service. The analysis will review public data on key environmental issues such as socioeconomic environment, transportation impacts, energy resources, wetlands, battlefields, cultural amenities, historic amenities, superfund sites, landuse, environmental justice, public health, environmental sustainability, construction impacts and provide an assessment of critical issues, mitigation needs and mapping of key areas to be assessed in later environmental studies. As required, TEMS will map environmental factors and identify any fatal flaws and develop mitigation strategies.

DELIVERABLE

- "Draft Service NEPA Report" for the proposed passenger rail alternatives

TASK 9: FINANCING AND FUNDING ANALYSIS

The TEMS Team will work with the Toledo/TMACOG Project Manager and Steering Committee to develop financing and funding plans for the rail service. The analysis will consider different ways to generate federal, state, local, and private sector support for the rail service. Specific issues to be considered include –

- Federal and state match
- Local funding of stations
- Private sector roles in provision of services and contracting
- Freight railroad contracting and funding options

The analysis will consider the full range of innovative financing proposed by the USDOT FRA and evaluate the potential roles of grants, TIFIA loans, franchising, GANS and other financial instruments. As part of this task the team will prepare an application for USDOT funding of further, more detailed funding as required by the project.

DELIVERABLES

- Funding Plan

- Sources of Funding
- USDOT funding for further planning, environmental, and engineering work

TASK 10: IMPLEMENTATION PLAN

Using the outputs of the previous tasks, an implementation plan will be developed that sets goals, timetables, and arrangements for implementing passenger rail service in the Toledo-Detroit/Ann Arbor Passenger Rail corridors. The timeline for planning, environmental analysis, preliminary engineering, final engineering, and construction will be set out in a realistic program to show the implementation milestones and the opening year for passenger rail operations. Alongside the physical implementation process will be a second set of milestones that identify the funding needs and institutional framework for developing the system. Action plans for lead agencies, local communities and private sector partners will be identified in the implementation process. A key element of the plan will be the interaction of physical facility provision, funding, and institutional development. The implementation plan will seek to define authority and responsibility for ensuring the success of the development process. The implementation plan will recommend an action program that sets out the steps that need to be followed to ensure the successful implementation of passenger rail in the Ohio/Michigan corridor.

DELIVERABLE

- Implementation Plan

TASK 11: DRAFT SERVICE DEVELOPMENT PLAN

For the preferred alternative(s) TEMS will develop a Service Development Plan. This will provide the documentation required by USDOT FRA to further develop the project. The Service Development Plan (SDP) is a detailed operations plan that describes the proposed rail service from an engineering, operational and ridership perspective. This document provides the information needed by FRA to assess the technical merits and feasibility of the project. It can provide a platform to improve existing rail service (for example, through faster or more frequent service) and/or develop new services to meet the growing travel needs of the public. The SDP defines these improvements and evaluates the operational, network and financial impacts of proposed changes, with the goal of weighing the benefits and costs of each proposed investment.

The SDP will include –

- The program's rationale (including purpose and need),
- Service/operating plan and a prioritized capital plan,
- An implementation plan (including project management approach, needed stakeholder agreements and financial plan), and
- An assessment of the benefits and costs of the project.

The following are among the questions to be answered by the SDP –

- What types of rail services are required in the Toledo-Detroit/Ann Arbor corridor to support market growth?
- What investments in infrastructure will be needed to accommodate new service alternatives?
- How will alternatives be packaged and implemented over time?

A Service Development Plan for Toledo-Detroit/Ann Arbor corridor can be developed using the output of the Phase 2 a work program in terms of the database and alternatives analysis that have been assessed for the project. The Service Development Plan will describe the Operations Plan as proposed for the corridor. It will detail the potential market-ridership and revenue for the service, the character of the proposed train service, including all aspects of train operations such as schedules, train stopping patterns, equipment, stations, maintenance, cleaning and storage facilities, and interaction with freight operations. In addition, the Service Development Plan will show the ability to reach USDOT-required financial and economic criteria, implementation plan, and proposed financial and funding requirements.

DELIVERABLE:

- Draft Service Development Plan Report

TASK 12: EIS IMPLEMENTATION PLANNING REPORT

If it is determined that the preferred alternative will have significant impacts, then preparation of a both a Tier 1 and Tier 2 EIS will likely be required. The Service NEPA document will aid in project scoping and in determining the required effort needed to finalize the environmental documentation. It will identify the likely alternatives that need to be assessed and based on the issues that are seen in the environmental scan, will develop an estimate of the level of effort that will be needed to obtain required agency clearances and approvals.

An EIS Implementation Plan will be prepared for Toledo-Detroit/Ann Arbor corridor using the databases and analysis prepared in Phase 2. The report will identify the environmental conditions along the route based on the Environmental Scan that has already been performed. It will identify environmental concerns and identify proposed environmental mitigation measures. The mitigation measures will describe how it is expected that each environmental concern and issue can be mitigated either through route planning practices and procedures, or by specific measures to develop infrastructure solutions such as bridging and retaining wall limitation, as well as if needed compensatory actions to maintain the quality of environment for specific entities. This will enable scoping the anticipated level of effort needed to complete the Tier 1 and Tier 2 environmental clearances to obtain a Record of Decision on the project.

DELIVERABLES:

- Draft EIS Implementation Plan

4. WORK PLAN AND STUDY BUDGET

It is proposed that the Phase 2A: Tier 1 EIS project be completed in a six-month time frame. As shown in the accompanying Work Plan, anticipated completion dates are as follows –

- Study design and databank development by the middle of month 2
- Definition of the Alternatives at the end of month 3
- Interactive analysis by the end of month 4
- System forecasts and outputs by the middle of month 5
- Implementation plan and business plan documentation by the end of month 6
- Make application to USDOT for further Tier 2 funding of planning, environment and engineering work.

To ensure that project documentation is completed within the timeframe, preparation of the draft reports will begin in month 5 and a draft will be submitted to the Steering Committee the last week in month 6.

The Study Budget for the Phase 2A Tier 1 EIS analysis is $300,000.

Toledo-Detroit/Ann Arbor Passenger Rail Corridor: Phase 2A Tier 1 EIS Analysis – Work Plan