

# MOBILE TRADE AND TRANSPORT CORRIDOR: SCOPE OF WORK

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TEMS, Inc.

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## MOBILE TRADE AND TRANSPORT CORRIDOR: SCOPE OF WORK

## 1 Introduction

The purpose of this “Investment Grade” study is to evaluate the potential for developing the Mobile Trade and Transport Corridor, as an adjunct to Port Mobile to serve as a major container port for a hinterland corridor between the Appalachians in the east, and the Mississippi in the west, and stretching as far north as the markets of mid-America including Ohio, Indiana, and Illinois. The area is largely served today by West Coast Ports that rely on relatively expensive rail and truck shipments to these inland markets, but are low cost due to the large ships that can access West Coast Ports. With the opening of the Panama Canal, and the access of large ships to the Gulf of Mexico, the Mobile corridor has the potential to provide a less expensive and more effective way of serving these markets. See Exhibits 1 and 2.

The reason for this is that the Port of Mobile is one of the very few ports on the gulf and the east coast of the US that can serve the very large ships (50 foot depth) that will be able to access the gulf and east coasts with the opening of the Panama Canal. Once the Port is dredged, this will reduce the Maritime costs to the Port of Mobile significantly (i.e., 50 percent) and shift the competitive balance from West Coast Ports to the Port of Mobile.

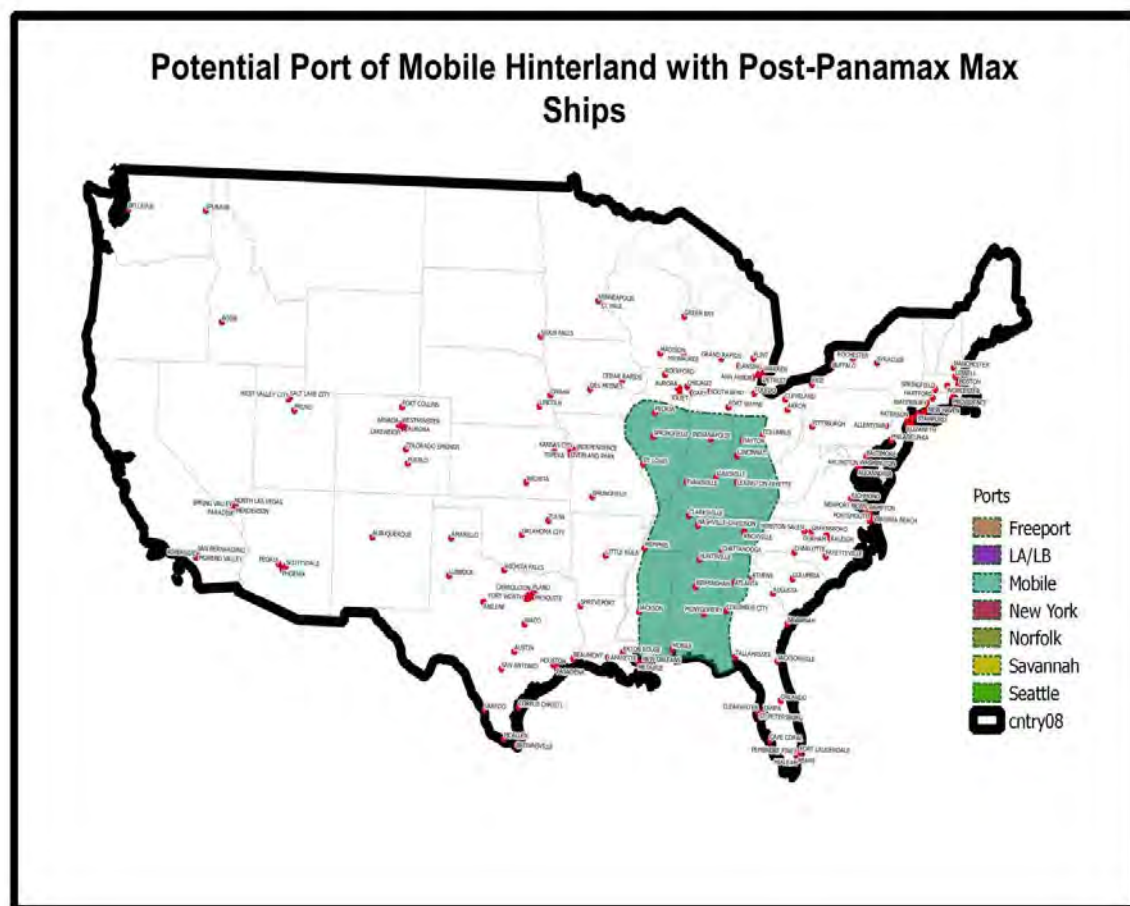
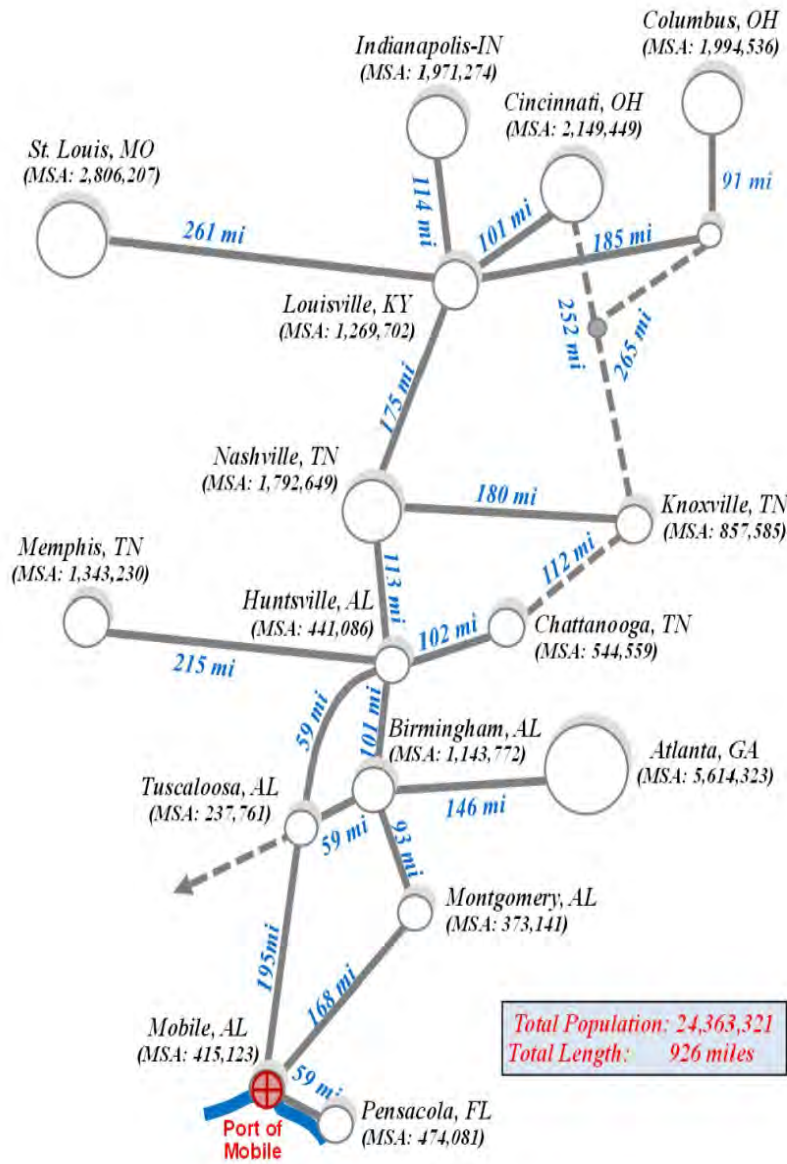


Exhibit 1: Potential Port of Mobile Hinterland with Post-Panamax Max Ships

# Mobile Trade & Transport Corridor: Population and Required Linkage



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### Exhibit 2: Mobile Trade & Transport Corridor: Population and Required Linkage

Ameri Metro is proposing that new infrastructure be developed at the Port of Mobile, and for inland access to the markets that may be served by the Port of Mobile in the future. The new infrastructure will include a new toll highway, a freight rail line from the Port of Mobile to Inland Ports at key locations in the Trade and Transport Corridor, and a cargo airport to expand the capabilities of the corridor to include air freight similar to the airport in Alliance, Texas.

To assess the potential for the Mobile Trade and Transport Corridor, Ameri Metro has asked Transportation Economics & Management Systems, Inc. (TEMS) to prepare a scope of work that will provide the business case for the project. The project will answer the following questions –

- What is the business case for investing in rail along Mobile Trade and Transport Corridor?
- How will the Port of Mobile and the communities along the Trade and Transport Corridor benefit?
- Can the private sector play a role in developing the corridor, and what financial returns will be generated?

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- How can Port of Mobile support the development of Inland Ports in serving the hinterland and trade market?
- What are the kinds and sources of private funding (revenue, loans, grants, bonds, letters of credit, etc.) that can be obtained to support and develop the project?

## 2 Study Approach

The purpose of the Business Plan study is to assess at an Investment Grade level of detail, the market opportunities, physical facility needs, financial and economic returns, business arrangements and implementation timeline for developing the Mobile Trade and Transport Corridor as a trade corridor for Port of Mobile between Port Mobile and inland markets.

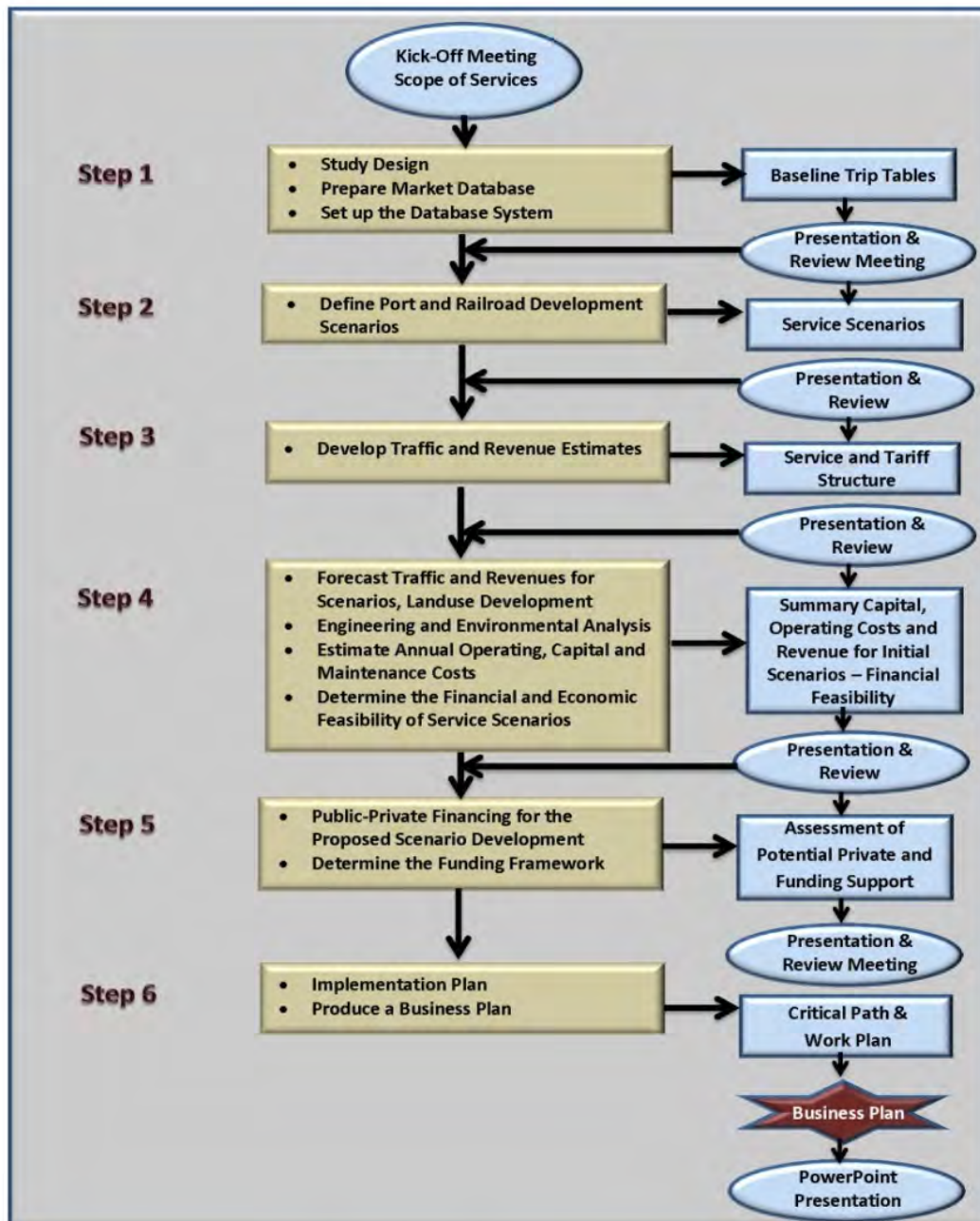
In carrying out its initial review, TEMS has already shown there is a prima facie case for the investment.

However, the review was based on an analysis using existing data and models including the Panama Canal Route Choice model and the National Ports model. Both models need updating to 2015 to reflect the post 2008 recession economy and the latest changes in the development of the Panama Canal, US Ports, and marine economics.

In addition, the preliminary study made a number of assumptions about the institutional structures that would be adopted by the Port and Railroads. In the Business Plan phase these assumptions need to be evaluated and as appropriate adjustments made to accommodate the findings of direct discussions with the key stakeholders.

Finally, the upgraded market analysis and institutional assumptions will be used to develop a more detailed implementation plan, financial and funding plan, and economic cost benefit and impact plan. The financial and funding plan will develop the cash flows for the project, and the timing and sources of funds needed to complete the project. The economic analysis will show the benefits to the communities in the Trade and Transport Corridor. The analysis will produce both the Cost Benefit Analysis required by USDOT, as well as the economic impact for the region associated with job creation, increased income, property development, and tax base enhancement. This can be used to develop community outreach in communities along the corridor and at local and state level, to explain the costs and benefits of developing the corridor.

In undertaking this analysis TEMS will use its six step Business Planning process. The process is shown in Exhibit 3. For this Feasibility Study TEMS will refine the more aggregate level of analysis that was used for the preliminary study. This will include updating the trade and traffic data that derives the forecasts, working to resolve institutional issues and ensuring the practicality of the proposed implementation process.



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## Exhibit 3: Steps toward the Development of the Business Plan

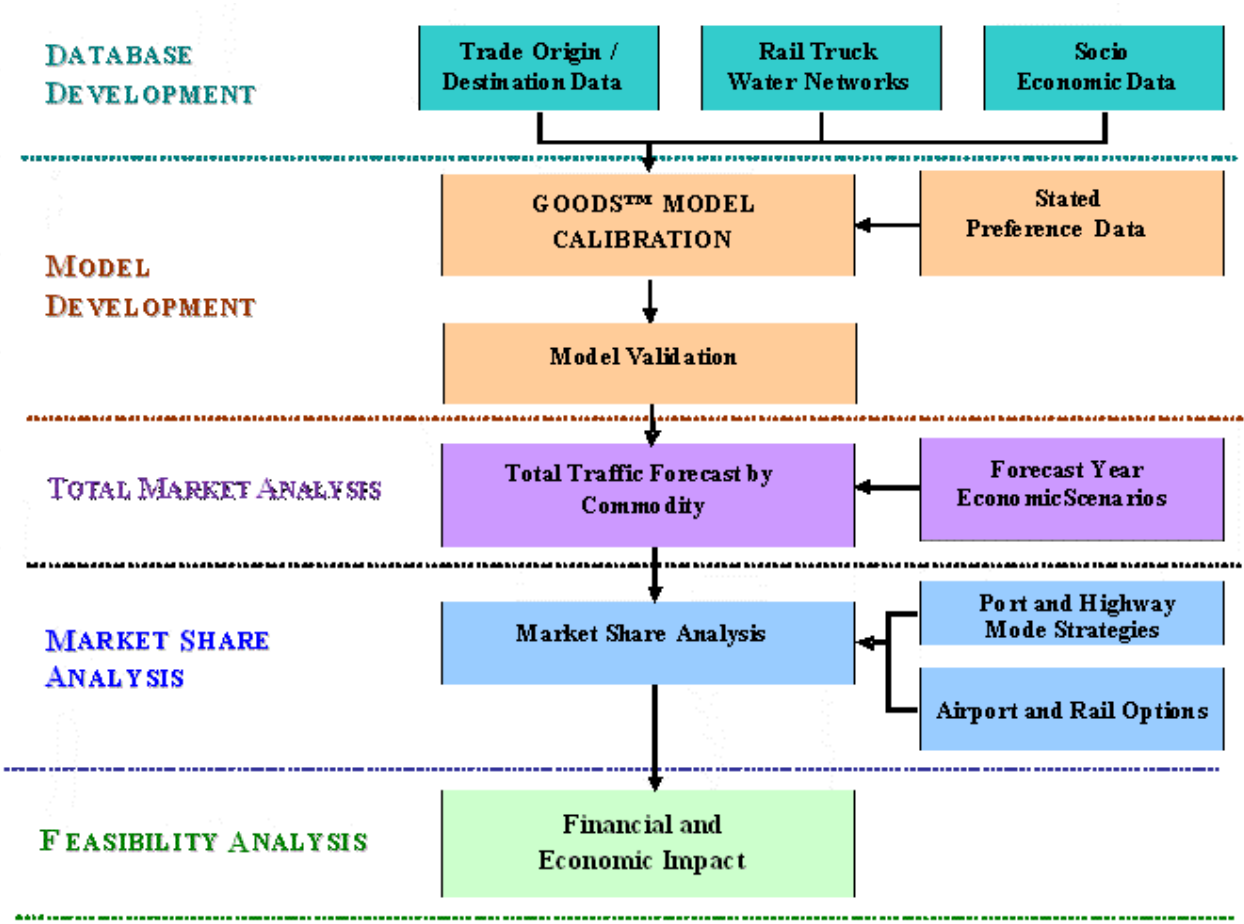
**Step 1 – Market Assessment**

For the Business Plan analysis, TEMS will update the market data developed by TEMS for the Panama Canal, Gulf Coast Port Study, West Coast Port Study, and National Ports Model. The data will be brought to a 2015 basis in order to identify the market potential for the Mobile Trade and Transport Corridor. This will be done using the TEMS GOODS™ multimodal freight model. The new database of socioeconomic data, marine markets, vessel economics, inland markets and competitive inland transport networks will be updated using the latest Port statistics, updated inland transportation data, and changes in mode competition due to oil prices, congestion and fuel efficiency.

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The feasibility study will use the TEMS GOODST<sup>TM</sup> model framework (Exhibit 4), which is designed to analyze freight traffic flows at an Internal<sup>2</sup>onal, Regional and Local level.

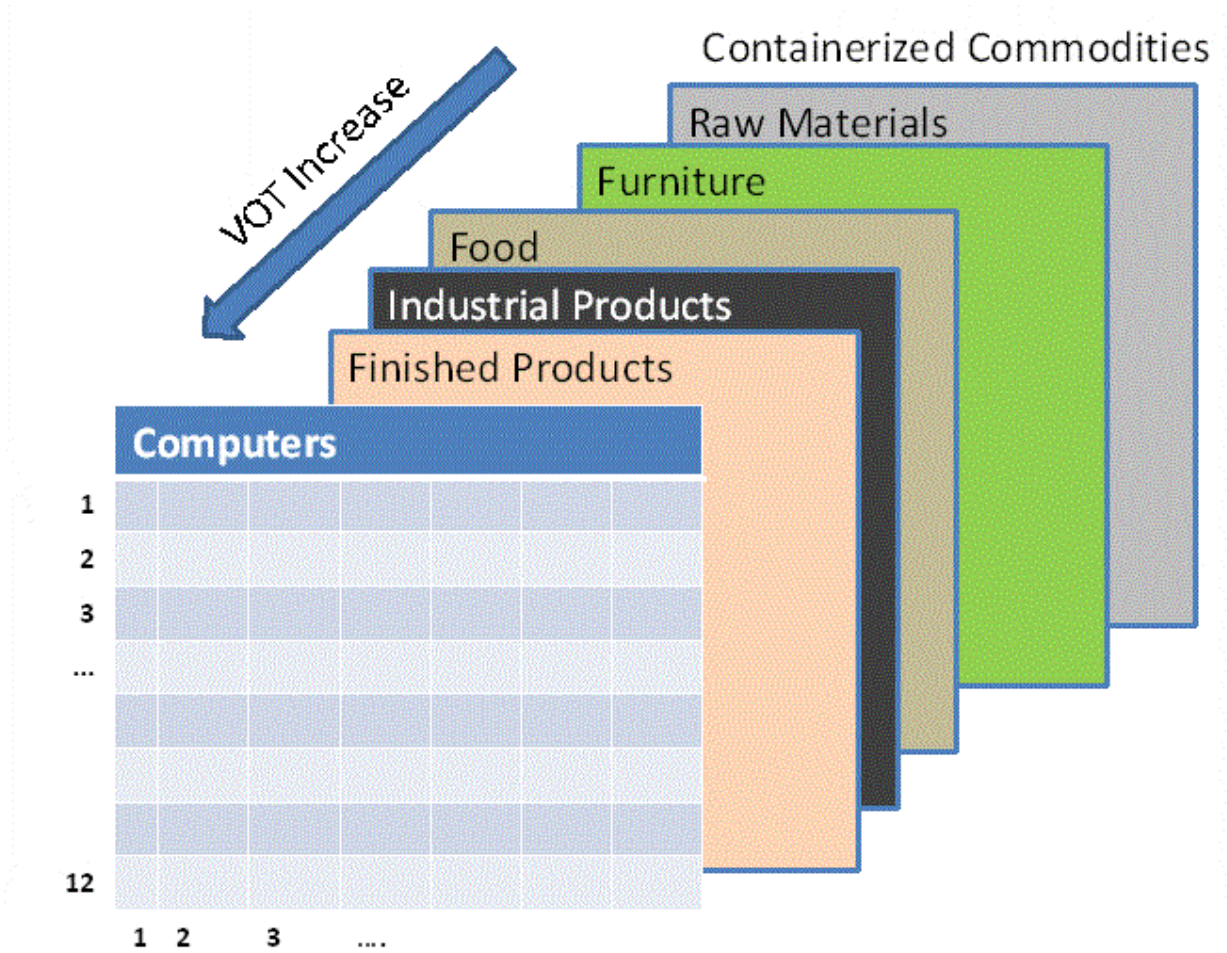
Exhibit 4: GOODST<sup>TM</sup> Model Structure



As can be seen in Exhibit 4, the database includes not just O/D data, transport mode networks and socioeconomic data, but in addition stated preference data on shipper choices. This data is critical in deciding how shippers select routes, modes, and carriers. The current data was developed in 2006 for the Panama Canal and USDOT inland shipping studies. This will be reviewed and updated to provide



insight into six types of container traffic – Raw Materials, Furniture, Food, Industrial Products, Finished Products, and Electronics/Computers. Each type of container traffic will be modeled separately as each type of traffic has a different shipper response. See Exhibit 5.



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## Exhibit 5: Containerized Commodity Disaggregation

The GOODS™ model allocates traffic to modes using a metric that reflects shipper and carrier behavior in the face of different mode and service options. A critical factor in the metric is Values of Time that are different by different commodities' value added content (i.e., highest for electronics lowest for raw lowest materials). It provides a mechanism for estimating market share traffic volumes and revenue potential for each element of the traffic movement. Values of Time will be updated to 2015 values.

Forecasts will be prepared using both the economic growth forecasts and changes in transport infrastructure in the Port of Mobile and the other Gulf Ports, and the market shares of the Gulf versus both West and East coast ports.

The market analysis will be used to identify rail traffic from the Port of Mobile along the Trade and Transport Corridor for horizon years 2020, 2030, 2040, and 2050. The traffic analysis will be summarized in terms of short, medium and long term opportunities.

**Step 2 – Service Scenario Definition**

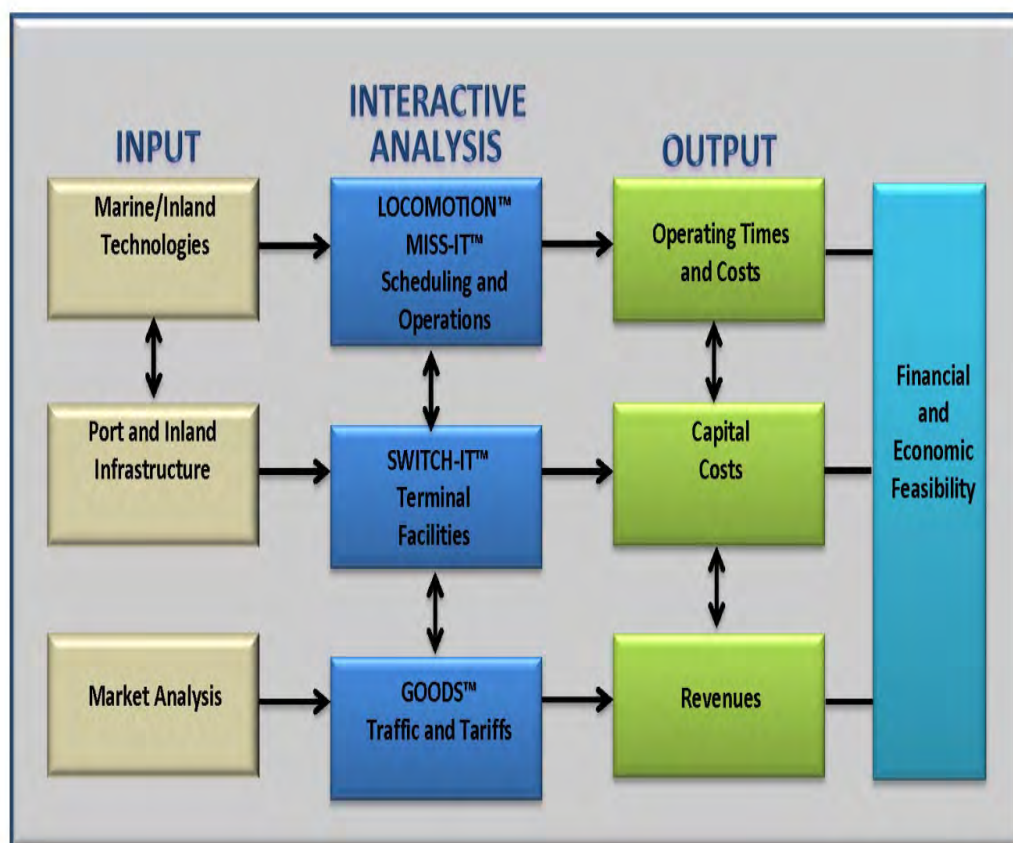
In the second step, the Business Plan will seek to define in more detail than in the concept study the most appropriate form of port, rail, highway and air infrastructure and development strategies that might be developed for the Port of Mobile and the Trade and Transport Corridor. Using specific market

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data on the potential market pairs, service needs, and the potential types of water, truck and rail operations in terms of performance and cost, an Interactive Analysis will be completed that assesses the relationship between market volumes, water, rail and truck service development options for the Port Freeport and Inland distribution networks. A key factor in this analysis will be the level of institutional cooperation that can be achieved between the communities along the route and transportation stakeholders. Specific discussions will be held with the freight railroads to identify mutually satisfactory solutions in the development of the corridor. From the evaluation of these options the analysis will identify the most effective traffic potential, intermodal interface needs, port to port services, and potential schedules and tariffs.

Exhibit 6 shows the Interactive Analysis process. It can be seen that data on the marine and inland transport distribution systems and on the market is required to identify the character of the transport operations that can be provided in the Mobile Trade and Transport Corridor. The analysis uses three TEMS' programs: LOCOMOTION™, SWITCH-IT™ and GOODS™ to evaluate the Trade-offs between alternatives.

Exhibit 6: Interactive Analysis Process



Port and Infrastructure needs to service the Mobile Trade and Transport Corridor will be identified and their operating and capital costs estimated in 2015 dollars. The cost estimates generated in the concept study will be subject to detailed review in terms of both their engineering requirements, as well as potential environmental issues. An environmental scan will be completed to ensure that environmental issues can be mitigated and that no “fatal flaws” exist in the development of the corridor.

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The Engineering feasibility for the study will build on the earlier port and market studies and analysis and will create a representative alignment (highway, rail, airport), between Port of Mobile and its hinterland, solely for the purpose of assessing the feasibility of the project. Civil, structural and operational engineering requirements for construction of the highway and rail project, and likely related infrastructure costs, will be developed for the representative alignments. Roadway network improvements necessary due to the project will also be analyzed. The overall analysis will include consideration of whether the project can be executed and operated safely, rail geometry issues, and the environmental feasibility of the project with a view towards the ability to secure the required licenses, approvals and permits in a timely and cost effective way.

Furthermore, the timing of infrastructure needs will be assessed to ensure that it is timed to relate to changing traffic conditions, which could well occur in the next five to ten years due to the Panama Canal. The impact of the proposed improvements in Port Mobile services and the Trade and Transport Corridor for truck and rail will then be compared to other major Gulf ports and used in estimating the potential market that the Port can capture.

Development of a new rail line in the Trade and Transport Corridor as part of the national rail network will fall under the jurisdiction of the United States Surface Transportation Board (STB). Under the National Environmental Policy Act (NEPA), the STB must take into account the environmental impacts of its actions, including direct, indirect and cumulative impacts. The STB's environmental rules are specified in 49 CFR 1105. These rules implement various environmental statutes that include NEPA and the National Historic Preservation Act. STB requirements for environmental documentation and historic reports as detailed in the following link: [http://www.stb.dot.gov/stb/environment/rules\\_guide.html](http://www.stb.dot.gov/stb/environment/rules_guide.html).

The development of the toll road will come under direction of FHWA and Alabama State DOT and will need to meet their applicable regulatory standards.

As a feasibility-level assessment, the current study must complete an Environmental Scan that will anticipate and identify potential environmental issues. The environmental scan will include a preliminary consideration of at least the following areas:

- Natural/Biological Resources
- Water Resources/Wetlands
- Land Use
- Geology and Soils
- Recreation
- Noise and Vibration
- Cultural/Paleontological Resources
- Environmental Justice

An environmental constraints map will be created for the project area that identifies the major environmental areas of concern. This constraints map will be created using publicly available data and the study team's knowledge of the project area. The representative alignment will be laid out such that

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is does not have any fatal flaws due to environmental impacts. Lesser impacts due to the representative alignment will be used as the basis for the mitigation costs associated with the project.

The Feasibility Study will not include public outreach other than with key Project stakeholders, but the feasibility study should reasonably anticipate likely community concerns.

Finally, the analysis will define the most effective way to develop both water services and inland distribution services, by assessing their performance in both financial and economic terms. Specifically, an analysis will be made of different water services to and between Mobile and other ports, and specifically the role of COB services. From the evaluation of options the most effective development plan for the Port of Mobile and the Trade and Transport Corridor will be derived. In developing the service plan, the analysis will also recognize and consider existing and potential institutional, fiscal, and policy issues that are fundamental to the success of the project.

A key element of the Business Plan assessment will be that the study teams work closely with important stakeholders such as the shippers to ensure they are comfortable with the basic concepts, market forecasts, and Port of Mobile service proposals. It is important to achieve “buy-in” from the freight shippers, railroads and carriers, and to identify their needs in meeting the Port of Mobile proposals. This includes competitive highway and rail service to and from the port, the character of water services from and to the Port of Mobile, and the line and yard capacity issues for rail, highway facilities and services. The rail capacity issues will be identified using the MISS-IT™ and SWITCH-IT™ models. As required, highway and rail infrastructure capacity needs and potential funding will be addressed. The service plan as finally developed will include contingencies to manage issues affecting its implementation.

### Step 3 – Traffic and Revenue Assessment

A traffic and revenue yield assessment will be completed to optimize the tariff systems for the final service plan for highway and rail. For each level of service, the market data and the service plan will be used to derive revenue estimates that reflect the supply and demand conditions that will exist. By providing an analysis of tariffs to the Trade and Transport Corridor in relation to the supply and demand conditions (i.e., the affordability of the tariff to truck companies and the freight railroads), a final set of traffic volumes and revenues can be derived. These tariffs, when applied to the market, will optimize revenues and provide the key input to the financial model used to assess the potential of the Corridor. The proposed tariffs will be discussed with the trucking companies and freight railroads to identify the value they place on the improvements offered by the Trade and Transport Corridor.

### Step 4 – Implementation Plan Analysis

In the fourth step, the market analysis, service plan and tariff structures developed in Steps 1 through 3 will be used to define the specific infrastructure, land uses, and development proposals for the Trade and Transport Corridor. The analysis will identify these critical inputs/costs –

- Port infrastructure,
- Rail infrastructure,
-

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Airport facilities,

- Highway infrastructure,
- Inland port potential,
- Terminal facilities,
- Bulk and car load rail traffic,
- Maintenance facilities,
- Interface access systems for truck and rail traffic,

A financial and economic evaluation process will assess financial return and economic benefits. The financial analysis will assess highway, truck and auto tolls, and freight railroad container and car load traffic and provide an assessment of needed facilities. These assessments will include net present value, internal rate of return, payback period, debt coverage and financial risk. A quantitative risk analysis risk analysis will identify key elements that could impact the financial return on the project. As the process develops, specific requirements will be developed for the Port of Mobile and the Trade and Transport Corridor and the revenue process will be examined to maximize the financial and economic success of the project.

In the economic analysis an evaluation will be made in the Cost Benefit returns of the project to the public, ports, highway operations, and freight railroads. This will be supplemented by a RENTS™ analysis of the jobs, income, property values, and tax base enhancement that would result from the project.

At the end of Step 4, the preliminary Implementation Plan will be developed, defining the milestones and components for implementing the Trade and Transport Corridor infrastructure.

### Step 5 – Financing and Funding Plan

In Step 5, the aim will be to develop a full financing framework and funding plan for the project will be defined to include potential public-private partnerships, franchise potentials and others. The role of funding sources in terms of both the public and private sector will be assessed and a variety of creative financing and funding programs will be considered. Specific consideration will be given to the appropriate institutional structures for the operation and the needs of stakeholders. As required, specific cost sharing arrangements will be developed between federal, state, ports, shippers and the freight railroads. As appropriate, cost-sharing arrangements will be thoroughly defined and various cost allocation, procedures proposed.

During this step, Institutional arrangements agreements will be discussed, developed, and delivered to the partners for their acceptance. A Risk Analysis will identify key factors and issues associated with the different strategic options.

### Step 6 – Business Plan

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In Step 6, a Feasibility Business Plan will be finalized that will bring together the various sub-plans and agreements that have been developed as part of Steps 1 through 5. The Feasibility Business Plan will include—

- Market Analysis
- Operating and Service Plans
- Capital and Operating Costs
- Environmental Requirements
- Land use Requirements
- Financial Plan
- Funding Plan
- Implementation plan

The Business Plan will guide and support the key stakeholders throughout the implementation and financing activities of the incremental rail project. Capital needs, operating costs and potential revenues will be identified. This plan will set out a development proposals and investment program to support as necessary the provisions of updated Port of Mobile infrastructure, Trade and Transport Corridor, rail, highway, air infrastructure, a full multimodal “Inland Port” facility to facilitate traffic movement by truck, rail, air, and water out of and into the Port of Mobile hinterland. This development will require full financial and economic justification and an understanding of the contribution the facility can make to the Texas economy in terms of jobs, income and transfer payments like tax base expansion and additional rents and fees.

### 3 Resources

**Time Line:** The work will take nine months to complete, and will involve eight meetings and presentations as shown in Exhibit 1, as the study proceeds. It is proposed that the Appalachian Regional Council (ARC) will set up a study advisory team that will meet with the study team at four workshops, where TEMS will present the work of the project and discuss key assumptions, issues, and input scenarios and strategies with the study team.

**Study Cost:** The study will cost \$500,000 to complete including out of pocket travel costs. Out of pocket travel costs will be billed as a direct expense.

### 4 Work Plan



