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STATE OF TEXAS            §  
  §  
COUNTY OF FORT BEND    §

**SECOND AMENDMENT TO AGREEMENT FOR  
SH 36A DEVELOPMENT CORRIDOR BUSINESS PLAN**

**THIS SECOND AMENDMENT**, is made and entered into by and between Fort Bend County (hereinafter "County"), a body corporate and politic under the laws of the State of Texas, and Transportation Economics & Management Systems, Inc., (hereinafter "Contractor"), a company authorized to conduct business in the State of Texas.

WHEREAS, the parties executed and accepted that certain Agreement for SH 36A Development Corridor Plan on July 22, 2014, (hereinafter "Agreement"), as amended on October 28, 2014; and

WHEREAS, the parties desire to further amend the Agreement to modify the Scope of Work for additional services to be provided by Contractor and authorize additional compensation for such additional services.

**NOW, THEREFORE**, the parties do mutually agree as follows:

1. Contractor shall render additional services as described in Exhibit A attached hereto and incorporated herein for all purposes (hereinafter "Additional Services").
2. County shall make an additional six hundred thousand dollars and no/100 (\$600,000.00) available for performance of Additional Services by Contractor.
3. The total Maximum Compensation under the Agreement and this Second Amendment shall be increased to an amount not to exceed six hundred sixty-three thousand dollars and no/100 (\$663,000.00), including travel and expenses. In no case shall the amount paid by County exceed the Maximum Compensation without an amendment.
4. The time for performance of the Services under the Agreement and the Additional Services agreed to herein shall be extended to terminate on September 30, 2015.

Except as provided herein, all terms and conditions of the Agreement shall remain unchanged.

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FORT BEND COUNTY

*Robert E. Hebert*

Robert E. Hebert, County Judge

TRANSPORTATION ECONOMICS &  
MANAGEMENT SYSTEMS, INC.

*Alexander E. Metcalf*

Authorized Agent- Signature

Alexander E Metcalf

Authorized Agent- Printed Name

President

Title

02/11/2015

Date



ATTEST:

*Laura Richard*

Laura Richard, County Clerk

**AUDITOR'S CERTIFICATE**

I hereby certify that funds are available in the amount of \$663,000.00 to accomplish and pay the obligation of Fort Bend County under this contract.

*Robert Edward Sturdivant*

Robert Edward Sturdivant, County Auditor

# EXHIBIT A

# SH 36A Development Corridor Business Case and Feasibility Plan: Scope of Work

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## Introduction

The purpose of this feasibility study is to further evaluate the potential for developing the SH 36A Development corridor, as an adjunct to Port Freeport to serve as a major container port for central, northern and west Texas and markets across Mid America. The corridor will provide a bypass and reliever to the ports of Galveston and Houston, which are being “choked off” by bottlenecks, congestion and a limited capability to serve the new larger ships that will access the Gulf of Mexico from the enlarged Panama Canal and the Suez Canal. The SH 36A corridor will provide a fast and effective means for serving markets to the north and west of Houston while expanding the opportunities for the Port Freeport to develop as a competitive “port of entre” to serve the rapidly expanding markets of Mid America from Denver to Chicago to Birmingham. In cooperation with the Port of Houston, Port Freeport can help support the growth of the Houston market with “topping off” services that allow Houston to exploit the lower shipping costs to be provided by the larger ships that are to be used as a result of the expansion of the Panama Canal, and the development of the trade with Southeast Asia.

The 36A Coalition are advocating for a feasibility study to assess the findings of the original concept study concerning the potential of a rail corridor from Port Freeport to Rosenberg and even Hempstead connecting to UP, BNSF and KCS national networks. The proposed rail corridor will avoid the bottlenecks of Houston, and connect with the new rail facilities being developed in the corridor (e.g., UP at Hearne)

TEMS has been asked to prepare a Scope of Work that will provide a Feasibility Level Analysis and Business Plan that will answer the following questions –

- What is the business case for investing in rail along the SH 36A Corridor and developing a trade corridor?
- How will the Port Freeport and the communities along the SH 36A Corridor benefit?
- Can the private sector play a role in developing the corridor, and can the freight railroads become a partner in the process?
- How can Port Freeport support the ongoing development of Port of Houston in serving the Greater Houston market?
- What are the sources of public and private funding (revenue, loans, grants, bonds, letters of credit, etc.) that can be obtained to support and develop the project?

## Study Approach

The purpose of the feasibility study is to access at an increased level of detail the market opportunities, physical facility needs, financial and economic returns, business arrangements and implementation timeline for developing the SH 36A Corridor as a trade corridor for Port Freeport between Port Freeport and Rosenberg.

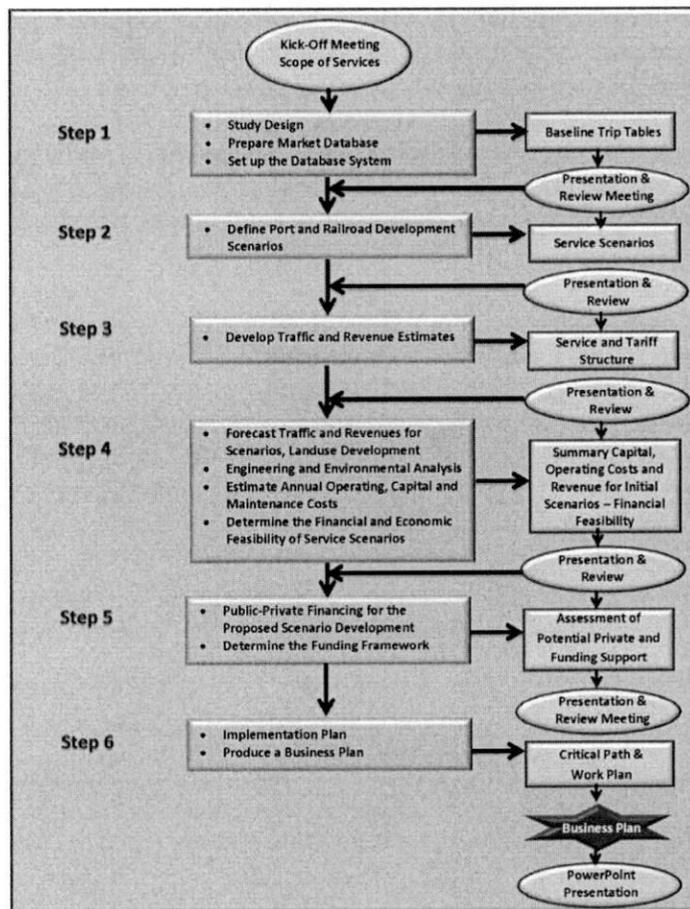
In carrying out an initial concept study, TEMS has already shown there is a prima facie case for the investment. However, the concept study was based on an analysis using existing data and models including the Panama Canal Route Choice model and the National Ports model. Both models need updating to 2014 to reflect the post 2008 recession economy and the latest changes in the development of the Panama Canal and US Ports.

In addition, the concept study made a number of assumptions about the institutional structures that would be adopted by the Ports and Railroads. In the feasibility 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 City of Houston of diverting the container and freight traffic around the city rather than going through the city as it does today. The analysis will produce both the Cost Benefit Analysis required by TXDOT and USDOT, as well as the economic impact for the city of Houston and the SH 36A corridor 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 steps Business Planning process. The process is shown in Exhibit 1. For this Feasibility Study TEMS will refine the more aggregate level of analysis that was used for the concept 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.

Exhibit 1: Steps toward the Development of the Business Plan

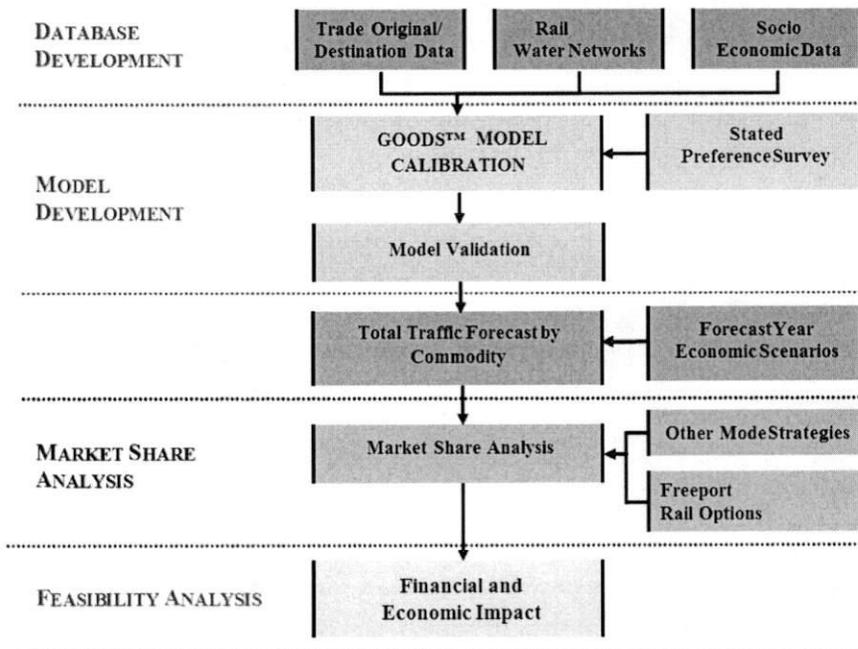


**Step 1 – Market Assessment**

In the Feasibility level of 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 Port Freeport and SH 36A Development 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.

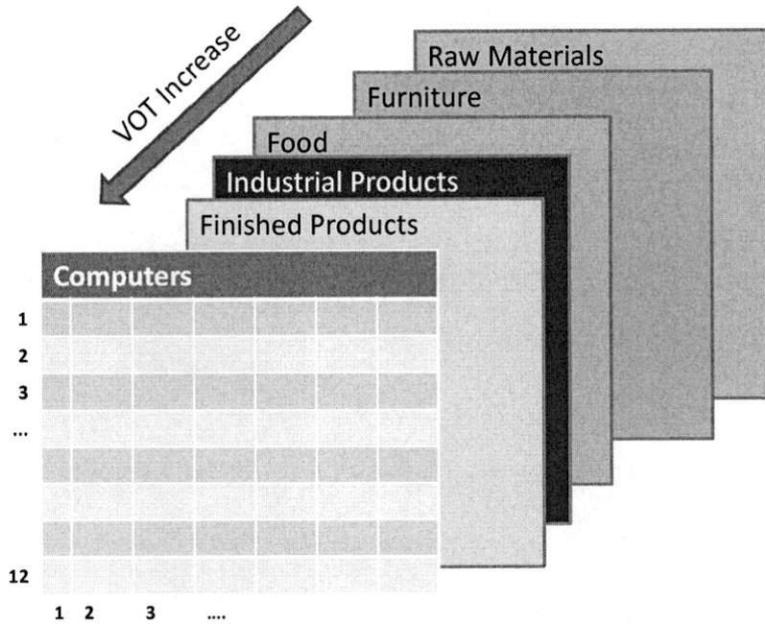
The feasibility study will use the TEMS GOODS™ model framework (Exhibit 2), which is designed to analyze freight traffic flows at an International, Regional and Local level.

**Exhibit 2: GOODS™ Model Structure**



As can be seen in Exhibit 2, 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, Electronics/Computers. Each type of container traffic will be modeled separately as each type of traffic has a different shipper response. See Exhibit 3.

Exhibit 3: 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 Freeport and the other Gulf Ports, and the market shares of the Gulf versus both West and East coast ports.

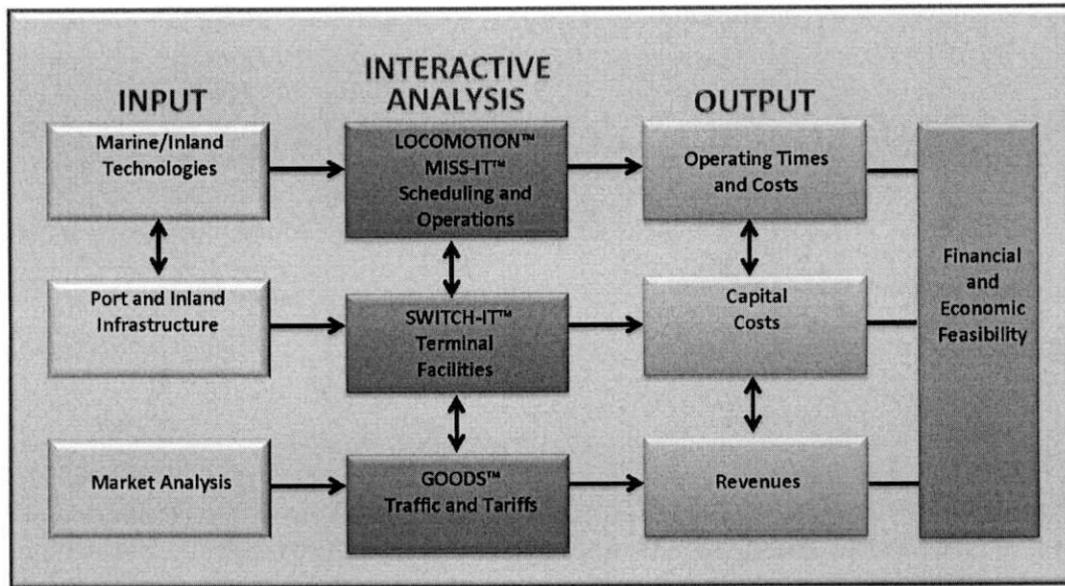
The market analysis will be used to identify rail traffic from the Port Freeport along the SH36A corridor for horizon years 2020, 2030, 2040, and 2050. The traffic analysis will be summarized in terms of short, medium and long term opportunities.

**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, and highway infrastructure and development strategies that might be developed for the Port Freeport and the SH36A corridor. Using specific market 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 ports of Houston and Freeport, and between the freight railroads. 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 4 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 SH 36A Development Corridor. The analysis uses three TEMS' programs: LOCOMOTION™, SWITCH-IT™ and GOODS™ to evaluate the Trade-offs between alternatives.

Exhibit 4: Interactive Analysis Process



Port and Infrastructure needs to service the SH 36A 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.

The Engineering feasibility for the study will build on the earlier concept study analysis and will create a representative alignment, between Port Freeport and Rosenberg, solely for the purpose of assessing the feasibility of the project. Civil, structural and operational engineering requirements for construction of the project, and likely related infrastructure costs, will be developed for the representative alignment. 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 and increasing congestion in the Houston region. The impact of the proposed improvements in Port Freeport services and SH 36A 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 SH36A 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).

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 it 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 Houston and Freeport, and specifically the role of Freeport "Topping off" container ships and/or COB services. It should be noted that Port Freeport largely serves a different market to that of Port of Houston. Port Freeport will serve Mid America, whereas the Port of Houston is largely serving its own metro area. Meetings will be held with the Port of Houston to identify the opportunities for collaboration and how the Port of Houston would respond to different options. From the evaluation of options the most effective development plan for the Port Freeport and the SH 36A 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 feasibility 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 Freeport 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 Freeport proposals. This includes competitive rail service to and from the port, the character of water services from and to the ports of Houston and Freeport, and the line and yard capacity issues for rail. The rail capacity issues will be identified using the MISS-IT™ and SWITCH-IT™ models. As required, 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 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 SH 36A corridor in relation to the supply and demand conditions (i.e., the affordability of the tariff to 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 SH36A Corridor. The proposed tariffs will be discussed with the freight railroads to identify the value they place on the improvements offered by the SH 36A 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 SH 36A Development Corridor. The analysis will identify these critical inputs/costs –

- Port infrastructure,
- Rail infrastructure,
- 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 both 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 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 Freeport and the SH 36A 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, 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 SH36A Development Corridor.

### **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**

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 plan and investment program to support as necessary the provisions of updated Port Freeport infrastructure, SH 36A Development Corridor, rail and highway infrastructure, a full multimodal “Inland Port” facility to facilitate traffic movement by truck, rail and water out of and into the Port Freeport 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.

#### **Resources**

**Time Line:** The work will take nine months to complete, and will involve seven meetings and presentations as shown in Exhibit 5 to the 36A counties and the Port Freeport, as the study proceeds.

**Study Cost:** The study will cost \$600,000 to complete including out of pocket travel costs. Out of pocket travel costs will be billed as a direct expense.

Exhibit 5: Work Plan for SH 36A Development Corridor Business Case and Feasibility Study

Business Plan Steps	MONTH								
	1	2	3	4	5	6	7	8	9
Step 0: Project Management	[Gantt bar spanning months 1-9]								
Step 1: Database Development	[Gantt bar spanning months 1-4]								
Step 2: Port and Rail Scenarios		[Gantt bar spanning months 2-6]							
Step 3: Traffic and Revenue Estimates			[Gantt bar spanning months 3-6]						
Step 4: Engineering, Environmental, Financial/Economic Analysis			[Gantt bar spanning months 3-8]						
Step 5: Finance and Funding						[Gantt bar spanning months 6-9]			
Step 6: Business Plan							[Gantt bar spanning months 7-9]		
Meetings	▲		▲	▲		▲		▲	▲
Presentations	■		■	■		■		■	■
Progress Reports	◆	◆	◆	◆	◆	◆	◆	◆	◆
Draft and Final Report								✦	✦