

# Capstone Project Assignment – Economic Development

## *Scenario:*

You are the multi-modal freight unit of your state's department of transportation. Your state is facing a worsening budgetary crisis, and the legislature is looking across all state agencies for economic development opportunities. The DOT Commissioner has asked you to lead a study identifying possible opportunities for economic growth and job creation within the freight transportation sector. The study should look at economic growth and jobs in transportation providers (railroads, trucking companies, air cargo companies, and port operations), and the economic growth within the supply chain sector. The study should offer suggestions for DOT policies and practices to help in business retention, expansion, and new business attraction. For example, a public private partnership to add rail siding in a new industrial park.

## *Your Assignment:*

Make a recommendation that describes the course of action for developing this study. Specifically, the final product should address the following:

- How will you go about identifying the opportunities for economic development? How will you identify potential threats to economic development? What possible solutions might you suggest (e.g. freight resiliency)?
- What data sources will you need to estimate those opportunities and possible impacts?
- Who will be involved from other DOT departments and other state agencies, and in what capacity?
- Who will be involved from the private sector, and in what capacity?
- How should the citizenry be involved?

## *Product:*

Be prepared to present your recommendations for development of an economic development study and answer questions to a panel of executive level members of the I-95 Corridor Coalition via a webcast. Each capstone group will give a 30 minute PowerPoint presentation, followed by Q&A and discussion. You are also required to compile your recommendations into a final report (no more than 10 pages in length), due at the time of presentation. The report should be prepared as an executive briefing document that would be given to the DOT Commissioner and Governor's Office.

**Freight Academy Capstone Project  
Guidebook for Freight & Economic Development  
July 2010**



Hypothetical

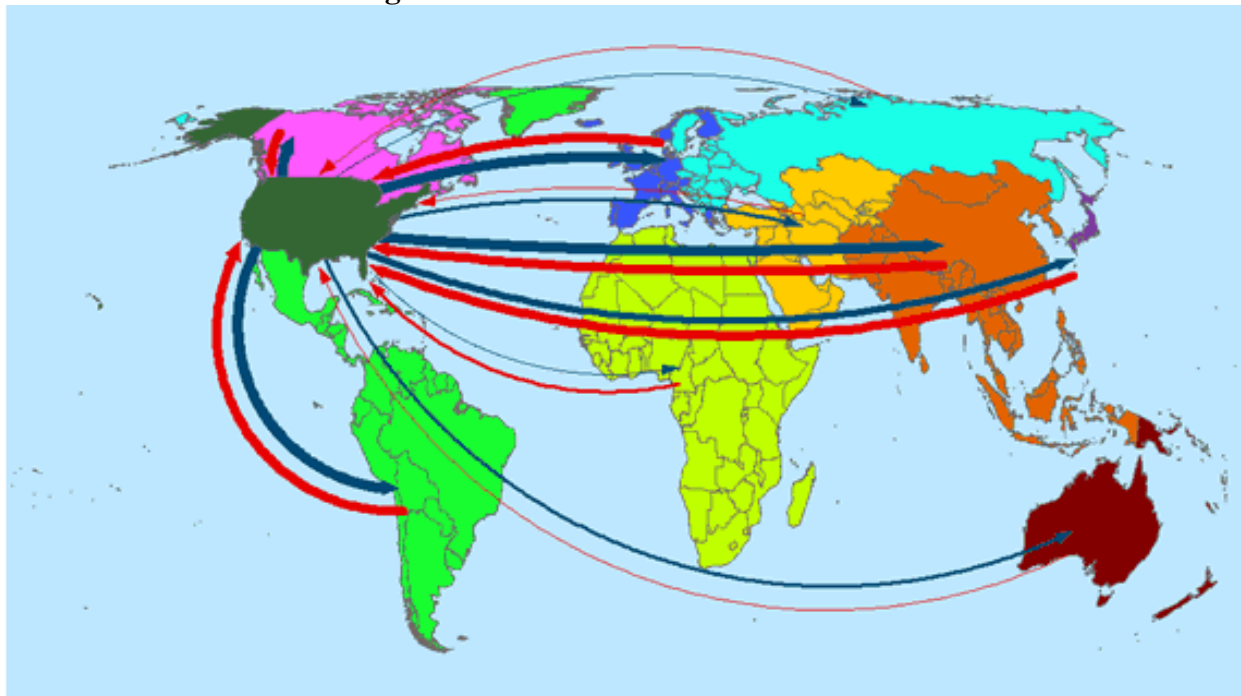
**FINAL**

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## Introduction

Freight can be a major catalyst for job creation and an indicator for local, regional and national economic development. The freight sector employs over 10 million people in the United States who are responsible for the movement and distribution of goods from suppliers to customers. Besides the benefits of the jobs created through the freight sector, improved movement of goods helps make supporting businesses in the retail, office and recreational sectors more competitive and reduces costs for consumers. Thus, the multiplier effect of freight on total employment is exponentially higher than the jobs directly created in the freight sector.

### Freight Flows to and from the United States



Source: <http://ucatlans.ucsc.edu/trade/tradeflows.htm> - Data Source: UNCTAD

With proper foresight and planning, new investment in transportation infrastructure and operations can provide major economic development opportunities for the state. The process outlined below provides step by step instructions for identifying and targeting investment in transportation infrastructure for freight.

### STEP 1: Understand the existing freight network conditions

The freight system involves a complex interaction of public agencies and private businesses at each level of operation. Public agencies are involved in the freight system primarily as owners and operators of the physical infrastructure (e.g. highways, airports, ports, and some railroads<sup>1</sup>). State DOTs invest millions of dollars each year into the upkeep and expansion of the transportation system to reduce congestion, improve efficiency, and improve safety. Private businesses primarily utilize this transportation infrastructure to deliver goods.

<sup>1</sup> Most railroads privately own and maintain extensive infrastructure.

To best realize economic benefit from an efficient freight system, it is important to have a good understanding of the transportation infrastructure and the public and private entities involved in all levels of supply chains. The primary public entity is the state DOT which maintains and operates the interstate highways and US and State route system along with limited ownership of the rail network. The state DOT also partners with many other public authorities like expressway authorities, turnpike authorities, airport authorities, seaport authorities, and rail authorities. Private businesses predominately move the freight, each playing a specific part in the supply chain. Some examples include trucking companies (examples: Schneider National, Roadway Express) that own and operate tractor trailers over the public highway system; railroad companies (examples: CSX Transportation, Union Pacific) that provide rail service in single unit trains and mixed loads on the primarily private-owned railroad infrastructure; and third party logistics providers (examples Landstar, Hub Group) that do not own any equipment directly but provide outsourced logistics resources to companies.

Other players in the freight network include shipping companies like United Parcel service (UPS), FedEx, Maersk, Hapag-Lloyd, and COSCO. Cargo airlines like Federal Express, UPS Airlines, Korean Air, Cathay Pacific Airways, Lufthansa, and Singapore airlines carry most of the world's air freight cargo. Manufacturers like Apple Inc, Western Digital Corporation, Hansen Natural Corporation, and Colgate-Palmolive Company represent some of the top publicly held US manufacturing companies. Retailers like Wal-Mart Stores Inc, The Kroger Company, The Home Depot, Inc, and Sears Holdings represent some of the world's top retailers. Warehousing functions most likely are a part of all these airlines, manufacturers and retailers freight movement. The complete freight network circle always includes the consumer. It is the consumer that demands the "stuff" to be there when the consumer wants it. Not one minute before or after.

### ***Data Collection***

**Infrastructure Conditions** – Adequate capacity for freight movement is critical in attracting new freight-related development. Therefore, the first step in data collection must be a full assessment of the existing intermodal transportation system (roadways, rail, airports, intermodal yards, etc.). This review would measure how the current system operates, identifying problem areas, and would develop solutions to those problems, in which the public and private sectors may play a role. This data would come from a variety of sources:

- Road Network Performance – Levels of Service (State and Local DOTs)
- Rail Network Performance – Average Train Speed, Dwell Time (Private Freight Rail Carriers)
- Air Network Performance – On-time Performance (Airport Operators)
- Maritime Facility Performance – Lifts per Acre, Tons per Acre (Individual Terminal Operators, container volumes (measured in TEU's))

**Existing Economic Conditions** – Looking at the economic development possible by expanding freight has to be put in the context of the existing economy. The second component of the data collection process is to determine the current employment levels and job types and the tax receipts generated within the region. This information is especially valuable when

communicating with elected officials and local communities. This data can be obtained from a number of sources including:

- Torto Wheaton, Freight Locator and InfoUSA for information on existing warehousing and distribution activity centers
- Census Data (Regional Planning Agencies and Towns)
- Town and County Financial Records

**Freight Flow Data** – The third component of the existing conditions analysis is information on freight commodity flows in the state and how they are affected by regional, national, and international trends. This information is often difficult to collect due to the guarded and confidential nature of private freight businesses. Many businesses are reluctant to share this information because it may sacrifice their competitive edge over other companies. There are many resources available but they are often focused on a single commodity or transportation mode. The following list provides some detail on the resources available:

*Commodity Flow Data (U.S. Bureau of the Census)* – The CFS is the primary source of national and state-level data on domestic freight shipments by American establishments in mining, manufacturing, wholesale, auxiliaries, and selected retail industries. Data are provided on the types, origins and destinations, values, weights, modes of transport, distance shipped, and ton-miles of commodities shipped. The CFS is a shipper-based survey and is conducted every five years as part of the Economic Census. It provides a modal picture of national freight flows, and represents the only publicly available source of commodity flow data for the highway mode.

*Transearch Database (IHS Global Insight)* – The Transearch database provides U.S. county-level freight movement data by commodity group and mode of transportation, using primary data gathered from 22 of the nation's largest freight carriers. This information can also be supplemented with modal costs, which would assist policy makers in understanding the comparative advantages of different modes. Access to this information is extremely costly and is likely not feasible for a state-wide analysis. However, Transearch data would prove extremely useful for a subset of key counties within the state.

*Freight Analysis Framework 2 (U.S. DOT)* – The Freight Analysis Framework (FAF) integrates data from a variety of sources to estimate commodity flows and related freight transportation activity among states, regions, and major international gateways. FAF version 2 (FAF<sup>2</sup>) provides estimates for 2002 and the most recent year plus forecasts through 2035.

*GeoFreight: The Intermodal Freight Display Tool CD* – A 2-CD set which presents a tool that uses a routing model to assign data on freight flows to various components of the transportation network. The tool is a prototype that serves two purposes: to graphically display geographic relationships between freight movements and infrastructure; and to assist freight policymakers and planners in identifying the flows of domestic and international freight across the nation and in assessing the current and potential major freight bottlenecks in the U.S. transportation system.

*Motor Carrier and Operating Statistics (FMCSA)* – A collection of for-hire trucking company financial and operating statistics (F&OS) mandated under (regulations: 49 CFR 1420) and managed by the Federal Motor Carrier Safety Administration (FMCSA) Motor Carrier Financial

and Operating Statistics (F&OS) Program.

*National Transportation Atlas Database (U.S. DOT)* – The NTAD is set of nationwide geographic databases of transportation facilities, transportation networks, and associated infrastructure. These datasets include spatial information for transportation modal networks and intermodal terminals, as well as the related attribute information for these features.

*Rail Waybill Data (Surface Transportation Board)* – A stratified sample of carload waybills for all U.S. rail traffic submitted by those rail carriers terminating 4,500 or more revenue carloads annually.

*North American Transborder Freight Data (U.D. DOT)* – The NATFB contains Freight flow data by commodity type and by mode of transportation (rail, truck, pipeline, air, vessel, and other) for U.S. exports to and imports from Canada and Mexico. The database includes two sets of tables; one is commodity based while the other provides geographic detail. This type of information is being used to monitor freight flows and changes to these since the signing of the North American Free Trade Agreement (NAFTA) by the United States, Canada and Mexico in December 1992 and its entry into force on January 1, 1994. The database is also being used for trade corridor studies, transportation infrastructure planning, marketing and logistics plans and other purposes. It allows users to analyze movement of merchandise by all land modes, waterborne vessels, and by air carriers.

*Truck Transportation, Messenger Services & Warehousing (U.S Census Bureau)* – The Service Annual Survey (SAS) provides data that help to measure America's current economic performance. Using a sample of about 70,000 service firms, the SAS collects revenue; expenses; e-commerce sales; and, for some industries, exports, inventories, class of customer, and detail product lines based on the North American Product Classification System (NAPCS).

*County Business Patterns (U.S. Census Bureau)* – Annual series that provides subnational economic data by industry. The series is useful for studying the economic activity of small areas; analyzing economic changes over time; and as a benchmark for statistical series, surveys, and databases between economic censuses.

*Port Import-Export Reporting Service (PIERS Global Intelligence Solutions)* – PIERS data provides detailed import and export information on commodities moving through U.S. and international ports. The data is a compilation of bills of lading that can be used to understand current volumes, trade trends and forecasts. The data would also be useful in analyzing similar metrics from any other ports in competition with port facilities in the state.

Others Data Sources Available:

- U.S. Army Corps of Engineers Navigation Data Center – A range of water transportation statistics
- Maritime Statistics - Data on U.S water transportation and fleets (where are ships coming from)
- Agricultural Trade (U.S.D.A) - An assortment of agricultural production and export data

- U.S. International Trade and Freight Transportation Trends (U.S. DOT) - A number of data sets of internal trade and the modes used to transport freight.

## **STEP 2: Develop a Desired Freight Vision for the State**

The next step in bringing economic development to the state is to develop a freight-related profile of the region, using the information collected in the first step to identify opportunities and challenges for economic development.

### **Outreach and Coordination**

Encouraging investment in freight-related businesses and infrastructure can be a benefit for the community as a whole, but progress on these improvements can easily be held up without careful outreach to the citizens and agencies that may be affected. Early involvement and inclusion in every step of the process is key for a successful project.

#### *Citizens Advisory Group*

The citizenry should be involved in a general way at first to develop the Freight Vision and Freight Development community profile discussed earlier through an Advisory Group. The Advisory group would be made up of representatives from entities such as local business groups, chambers of commerce, local and state legislators and local regulatory agencies. The Advisory Group will be useful in providing feedback on desired industries/businesses and potential mitigation measures to minimize impacts on adjacent neighborhoods, environmental resources and historical or cultural landmarks. It is important at this early stage to help identify citizens who are willing to serve as champions for the project. The group should meet regularly to review the progress on components of the Freight Vision and community profile. Techniques such as newspaper announcements, local radio broadcasts and recruitment at local events (state fair, shopping malls) could be used to reach the larger audience and solicit feedback.

#### *Interagency Coordination*

The wide array of state department involvement suggests the need to develop an interagency leadership team. This group would be comprised of leadership from state agencies who are integrally involved in the planning, development and implementation of the transportation system. The team would focus on developing future transportation projects in a collaborative, interdisciplinary approach that involves all stakeholders and preserves the scenic, historic, natural environment and community values setting while efficiently meeting the mobility, economic and safety needs of citizens.

#### *Freight Advisory Committee (FAC)*

Appropriate private sector representatives would form a freight advisory committee (FAC) that would meet at least once a year. The steering committee would follow the strategic economic development goals set up by the state and assist in providing input to the types of investments made to freight infrastructure. The FAC would have a direct point of contact within the governor's office to ensure close communication between each group.

The purpose of the statewide FAC would be to facilitate strategic information exchange and coordination among freight stakeholders regarding freight needs and potential solutions and report the results to the statewide freight steering committee. The FAC will help set criteria for selecting and prioritizing projects.

The FAC will provide an opportunity to reach consensus among diverse stakeholders on multimodal freight needs and facilitate successful solutions. It will serve as a source for developing freight champions as well as points of contact for local areas. A major goal of the FAC will be to facilitate successful implementation of project success by raising the level of shared knowledge between public and private sector stakeholders on freight concerns. It will establish strong partnerships with key private sector economic leaders in the freight industry.

### **Developing a Profile for Freight-Related Development**

It is important for the State to have a vision of how freight can promote economic development. This vision should be shared by all agencies having an influence or use of transportation. A good place to start would be the goals identified in the state transportation plan. All goals pertaining to economic development or freight can be used to create Freight Vision statements. The Freight Vision statements should answer questions like the following:

- What freight opportunities can the state maximize to yield greater global economic competitiveness?
- How can the state fix freight bottlenecks at the same time developing a new infrastructure to move freight?
- What are the desired economic benefits of the state? How does freight achieve these benefits? How does freight impede these benefits?



### **Identify opportunities for economic development**

Encouraging freight-related development can provide economic benefits to the state and surrounding regions. To help support this development, an understanding of the existing economic climate of the region is critical. Gathering information on the existing infrastructure, workforce trends, needs of local industries, and supply chain components is important to determine what type of development is best suited for the area.

#### *Economic Environment*

The first step in the process is to survey existing industries in the region. Freight-related development could either seek to complement the existing industries or diversify the economic base of the region. Things to consider include:

- What are the major industries in the region? What are the attributes of their existing supply chains? Are there any major gaps in their supply chains?
- What businesses support the major industries in the region? How are their supply chains structured? What businesses are supported by existing industry?

- Has the region traditionally been focused on a single sector of the economy? Would promoting freight-related development help diversify the industrial base of the region?
- What are the major economic threats and weaknesses of the region? How is freight access considered in business location decisions?

It is also important to consider what new industries the region is interested in attracting. Those businesses will likely require a different supply chain to obtain raw materials and deliver goods. It is possible that an underdeveloped supply chain infrastructure hinders efforts to grow that type of business in the region.

The state commerce department may serve as a potential resource for this task. The department's marketing and outreach functions help attract global and national interest. Additionally, the department works with different regional partnerships involved in economic development. Finally, this department is key when dealing with issues related to state and federal regulations and trade issues. The state, regional, and local economic development groups should also be involved to recommend economic development policy and recruitment strategies.

If an economic base exists to support freight related industry, then a region becomes more appealing to an industry considering a site selection. A state can provide opportunities for freight industry by establishing itself as an international gateway. A state DOT must ensure its lack of viable infrastructure is never a reason for losing a freight economic development opportunity.

### *Infrastructure*

Freight-related development requires significant infrastructure; such as the roadways, railroads, ports and airports in the region and the connections between them. It is important to identify the capacity of the region's infrastructure. Different components of the supply chain may prioritize access to different modes of transportation over others, but it is important to seek access to multiple transportation modes to improve the system's resiliency. Development will also need utilities such as water and electricity.

This task would rely on the expertise of the state DOT. Many groups within the transportation department are involved to oversee development and to help identify and resolve conflicts with policies and projects. The following list includes the major divisions whose roles in economic development is integral:

- Modal divisions, such as highway, freight, rail, transit, and aviation planning offices;
- Divisions who oversee long-range planning or strategic activities, such as statewide planning and strategic planning offices;
- Local operations divisions; and
- Divisions of finance and programming.

### *Land Use*

Transportation infrastructure and land use are integral pieces of planning for a new freight development. Land use must be compatible with the surrounding development and tie into a high speed -- high volume multi modal transportation network. Certainly this type of development is mismatched if residential land uses surround the area.

One example is new urban design which focuses on urban villages, mixed use town centers, walkable communities, and transit oriented development. Freight access is not often a part of this type of design leading to a mixed use center with no loading zones or on street parking. Designs for these types of communities must include access for trucks and other freight modes to ensure that goods can be delivered to the center.

Freight and non-freight land uses must be coordinated with mobility needs. Goods movement and logistics needs must be built into the land development and site design. Land use and transportation planned in an integrated manner will ensure adequate zoning buffer, proper mitigation and aesthetic concerns are addressed when newly emerging areas are being designed to accommodate freight.

An example of matched land use and transportation would be to develop warehouse and distribution centers only on locations with multimodal access. This would maximize freight mobility while minimizing incompatible surrounding land uses. New freight development can also be consolidated in “Freight Villages” that cluster freight and industrial activities together.

### *Labor Force*

Freight businesses rely on a variety of skilled and unskilled employees; the jobs available range from hourly warehouse workers, to truck drivers, to machine operators, to mechanics, to the clerical and management jobs necessary to oversee operations. Each warehousing or freight operation is unique and many businesses are transitioning to automated processes that require more education but also pay more as a result. Major questions to consider in evaluating the labor force are:

- Are seasonal employees available? Is this type of work desirable?
- What is the labor environment (Union or Open-Shop)? If not standardized, what are the pros and cons of each system?
- Is the local education system geared to support the new business?

The state labor department and state university and community college system should be involved to help implement educational programs to ensure a productive labor force. This is key for economic development initiatives, since the ultimate success is often dependent on the ability to attract competent employees for newly attracted businesses.

### **Estimate Economic Benefits**

Once the opportunities for economic development have been developed it is important to estimate the economic benefits. First, there are the direct benefits which accrue primarily through tax receipts and new jobs. A new freight business will add to the local and statewide tax base, through new property taxes, sales tax, and income tax payments. It is also useful to consider the total salaries of the employees of the proposed freight businesses, but full-time, part-time and seasonal positions. The development will also create construction jobs which will help amplify the economic benefits. The state revenue department should be involved to help estimate tax benefits.

### *Indirect Benefits*

The new employees and temporary jobs will also have a multiplying affect on the local and state economy. Freight-related development will help improve the local supply chain, reducing shipping costs in the area making businesses in the area more competitive. As new freight development occurs in the target areas it may attract additional development and jobs clustering near intermodal terminals or in freight villages. There are also indirect benefits from the jobs created as the new employees increase consumer spending in the community (restaurants, shopping malls, etc.)

## **Identify Potential Threats to Economic Development**

### *Taxes & Utilities*

Freight is a very competitive business that pays very close attention to the costs of doing business. Convincing businesses to relocate to a new area can be difficult. Relocation carries a lot of costs related to navigating the permitting and regulatory process, new taxes, fuel and utility costs, and workforce education and recruitment costs. The same tax structure mentioned previously that benefits state and local governments can also be a deterrent to freight-related economic development. It is important to fully understand the existing tax structure in the state and how its burden compares to other states in the region. Freight-related businesses also require significant utility infrastructure and resources, so it is important to compare utility rates to ensure they are competitive.

### *Permitting & Regulatory Process*

New development will require the business to file the necessary permits to comply with local, state, and federal regulations. While these processes are set up to ensure that the facility will be safe for the environment and surrounding areas, it can be a confusing, long, and costly process. It is beneficial to fully research the permits necessary for freight-related development and to establish a streamlined, easy to understand process through the regulatory procedures. This would include identifying local zoning issues and necessary waivers for freight-related use, the associated cost and timeline for each process.

### *Workforce Education*

It is important to ensure that local workforce is capable of performing the jobs necessary to support the new freight-related businesses in the area. This is one of the major issues that companies look for when deciding the relocate. Therefore, along with the other steps above, it is important to ensure that local educational attainment is similar to that which is required for new development

## **STEP 3: Develop and Implement Policies, Strategies, and Programs in the State Freight Plan**

The third step is using the understanding of the freight system and identified steps for bringing economic development to the region provided in the previous steps to develop and implement the necessary policies, strategies, and programs to meet the desired freight vision. The policies, strategies, and programs are identified in the State Freight Plan under economic development goals and objectives.

### **Outreach and Coordination**

Outreach and coordination should take on a new level of complexity at this stage of the process. The public involvement will be focused more on local stakeholders instead of a wider advisory group and a statewide freight advisory committee (FAC) should be established to give private freight stakeholders a forum for continuing infrastructure and economic development improvements.

#### *Stakeholder Group*

Once locations and infrastructure improvements have been selected the stakeholder groups should become more localized. The stakeholders at this step of the process should include abutting residents – possibly through a neighborhood association, abutting businesses & industries, and local legislators. This smaller group will serve as an advisory group that meets regularly to develop a set of standard mitigation measures that will be required for new construction – different mitigation packages for different types of improvements (new building, new railroad construction, etc.).

### **Develop Mitigation Measures**

The local and state agencies should work with both the Stakeholder Group and the FAC, to develop a set of mitigation measures that would help reduce the impact of freight-related development on adjacent land owners. Such mitigation measures can include:

#### Noise

- Encourage use of lower impact technology (genset locomotives, etc.)
- Encourage more compatible adjacent uses (retail, hotels, etc.)
- Provide funds for buffer development or streamlined procedures when they are used.

#### Emissions

- Encourage lower emission technologies (genset locomotives, solar panels)

The mitigation measures could then be included in local zoning ordinances to provide a toolkit to developers looking to mitigate the impact of new freight development. Providing an accepted set of mitigation measures sets the community's expectations and gives developers and businesses realistic expectations they can incorporate into their site selection.

### **Streamlined Permitting**

The State DOT should work with other state and local permitting agencies to develop a set of standards considered acceptable for common freight-related uses. The standards would include acceptable values for total building footprint, truck traffic, water usage, electricity usage, and other aspects of freight development. These standards could then be used to pre-permit freight developments in specific areas identified through the Regional Profile, cutting down the time and complexity to permit conforming freight uses. It is also recommended that a single state-level Ombudsman be appointed to serve as a single point of contact for permitting needs.

### **Labor Force**

The state and local education systems must also begin programs to educate people for the jobs associated with the new desired freight businesses. Programs can be put in place at high schools, community colleges and universities to reflect the mix of jobs new freight development will bring to the region.

### **Freight Infrastructure Programs**

The state must also work to address any major issues within the freight infrastructure. Early action is required to address infrastructure improvements because these projects are generally large in scale and require many years to be programmed, designed, and constructed. The State DOT can utilize federal funding for roadway improvements through the State Transportation Improvement Program (STIP), which is a five year capital planning document required by the Federal Highway Administration. Programming freight projects in the STIP will require work with the local MPOs and other stakeholders who have been involved in all steps of the process outlined above. The state can also utilize federal and state funds to develop public-private partnerships to invest in new infrastructure. These partnerships would utilize funding from the private sector (e.g. railroads, businesses, etc.) and the public agencies to provide a bigger impact for the respective investments. Many states use public-private partnerships to fund intermodal connections such as the Industrial Rail Access Program which provides funds for new rail connections and sidings.

## **STEP 4: Measure the Performance of the State Freight Plan**

An annual performance report is presented to the freight stakeholder group and the FAC. The purpose of this report is to monitor progress toward the Statewide Freight Vision. Performance indicators and measures could be selected in advance by the statewide freight advisory committee. Careful monitoring of these measures would provide feedback to the decision makers and stakeholders so any needed adjustments to the plan become apparent.

### **Conclusion**

The process described in this document provides clear guidance to help state DOTs work with the fellow state agencies, businesses and the public to bring the economic benefits of freight development to their state or a specific region. Working methodically through the four steps of understanding the existing freight network; developing a vision; and developing and implementing policies, strategies and programs; and measuring the performance provides an effective procedure for realizing the benefits of economic development through freight opportunities while minimizing the negative impacts.

# Freight Academy Capstone Project

## Guidebook for Freight & Economic Development

### October 2010

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This report is based on a hypothetical scenario developed through an academic exercise for the I-95 Corridor Coalition Freight Academy. The contents of this report should not be construed as factual in any way.



# Freight as Economic Development

## ○ Provides Jobs

- The Freight Sector employs over 10 million people in the United States

## ○ Investment improves movement of goods

- Benefits supporting businesses in the retail, office and recreational sectors
- Reduces costs for consumers

## ○ Property Tax Benefits

# Steps for Freight & Economic Dev.

1. Understand existing freight network conditions

2. Develop a desired freight vision for the state

3. Develop and implement policies, strategies, and programs in the state freight plan

4. Measure the performance of the state freight plan

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# Existing Freight Conditions

## ○ Freight System

- Complex interaction of public agencies and private businesses at different levels of operation.
- Need to have an understanding of this interaction.
- Data at three levels:
  - Infrastructure Conditions
  - Economic Conditions
  - Freight Flows

# Existing Freight Conditions

## ○ Infrastructure

- Adequate capacity is critical in attracting new freight-related development.
- Data collection must include a full assessment of the existing intermodal transportation system.
- Assessment would include current system operation, problem identification, SWOT analysis, and private/public roles of responsibilities.

# Existing Freight Conditions

- **Measuring Infrastructure Network Performance**
  - Levels of Service (Roads)
  - Average Train Speeds, Dwell Times (Freight Rail Carriers)
  - On-Time Performance (Airport Operators)
  - Lifts Per Acre, Tons Per Acre, Container Volumes (Terminal Operators)

# Existing Freight Conditions

## ○ Economic Conditions

- Existing economy/trends will focus on freight-related economic development.
- Data collection must include a range of indicators on current employment levels and job types, and tax receipts generated within the region.

# Existing Freight Conditions

- **Measuring Economic Conditions**
  - Private Industry Data (Torto Wheaton, Freight Locator and InfoUSA)
  - Census Data (County Business Patterns)
  - Labor Data (U.S Department of Labor, Bureau of Economic Analysis)

# Freight Flow Data

- **Commodity Flow Data**
- **TranSearch Database**
- **Freight Analysis Framework**
- **Rail Waybill Data**
- **Port Import-Export Reporting Services (PIERS)**



# Steps for Freight & Economic Dev.

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# Developing a Freight Vision

- **Conduct Outreach and Coordination**
- **Identify Opportunities and Threats**
- **Develop Profile for Freight-Related Development**
- **Estimate Economic Benefits**

# Outreach and Coordination

- **Citizens Advisory Group**
  - Local business groups, chambers of commerce
  - Local regulatory agencies
  - Elected officials
- **Interagency Coordination**
  - State-level coordination
- **Freight Advisory Committee (FAC)**
  - Private-sector freight stakeholders

# Identify Opportunities

## ○ Opportunities

- Economic Environment
  - Major industries
  - Supply chains
  - Economic diversity
  - Freight access
- Infrastructure
  - Capacity
  - Long-range planning
  - Finance
- Land Use
  - A matched land use/transportation strategy
- Labor Force
  - Concentration
  - Education



# Identify Opportunities

## ○ Threats

- Taxes & Utilities
  - Versus other States
- Permitting & Regulatory Process
  - Timing
  - Cost
  - Approvals
- Workforce Education
  - Educational shortfalls



# Develop a Profile for Freight-Related Development

- What freight opportunities can the state maximize to yield greater global economic competitiveness?
- How can the state fix freight bottlenecks at the same time developing a new infrastructure to move freight?
- What are the desired economic benefits of the state? How does freight achieve these benefits? How does freight impede these benefits?

# Estimate Economic Benefits

## ○ Direct Benefits

- Tax receipts
- Employment
  - Temporary
  - Permanent

## ○ Indirect Benefits

- Returns to private sector
- Clustering
- Social benefit
  - Air quality
  - Time travel savings
  - Accident rates



# Steps for Freight & Economic Dev.

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# Outreach and Coordination

## ○ Stakeholder Group

- More localized than previous outreach groups
- Focused on specific projects



# Policies & Programs

- **Mitigation Measures**
  - Encourage more compatible adjacent uses (retail, hotels, etc.)
  - Provide funds for buffer development or streamlined procedures when they are used.
  - Encourage lower emission technologies (genset locomotives, solar panels)
- **Streamlined Permitting**
  - Develop a set of standards for common freight-related uses
  - Designate Ombudsman



# Policies & Programs

- **Labor Force**
  - Programs at high schools, community colleges and universities to educate for the mix of new freight-related jobs
- **Freight Infrastructure Programs**
  - Federal Funding (STIP)
  - Public-Private Partnerships (IRAP)

# Steps for Freight & Economic Dev.

1. Understand existing freight network conditions
2. Develop a desired freight vision for the state
3. Develop and implement policies, strategies, and programs in the state freight plan
4. Measure the performance of the state freight plan

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# Performance Management

- **Annual Performance Review to the FAC**
- **Provide Feedback**
  - Decision-makers
  - Stakeholders

Hypothetical



# Conclusion

- **Freight is a major source of economic development**
- **This four step process provides clear guidance to the DOT for working with freight stakeholders (state agencies, businesses, and the public) to bring the economic benefits to their state or a specific region while minimizing the negative impacts**

**Thank You!**

**Any Questions?**

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