Task 4 Background and Content – Best Practices
White Paper

AMATS Freight Mobility Study

Prepared for
AMATS

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In association with
CPCS

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1 Introduction

In support of the Task 4: Background and Content analysis of the Anchorage Metropolitan Area Transportation Solutions (AMATS) Freight Mobility Study (FMS), a Best Practices White Paper was prepared. This White Paper presents the following:

- Section 2 presents a summary of best practices for metropolitan freight transportation plans, policies, and in some case, freight elements of broader transportation plans and processes, developed in the United States and Canada;
- Section 3 describes key freight elements that have been applied by regions and how they may be relevant to support the development of the Anchorage FMS;
- Section 4 identifies draft performance measures used in other regional freight plans that may be potentially useful to support the FMS; and
- Section 5 presents regional freight planning Case Studies, which include many of these best practices and elements, which may be useful in preparing the Anchorage FMS.
2 Best Practices in Regional Freight Planning

Both a brief summary of freight planning best practices and a detailed description of each of the primary best practices elements in regional freight planning are presented below.

2.1 Summary of Best Practices

Transportation planning and policy (metropolitan or otherwise) efforts in the U.S. have increasingly included freight in the planning process, and have been used to identify strategies and policies designed to move freight as efficiently as possible to help realize the potential economic benefits of this activity. When freight delivery is delayed or unreliable or inefficient, the result often correlates to reduced economic output and higher production costs of freight transport. Freight activity also causes negative externalities such as increased pollution, congestion, noise, and infrastructure damage. These externalities are particularly felt in urban (metropolitan) areas where population density is higher and have been a primary agency focus of many freight planning processes.

“The challenge in terms of policy is to minimize shipper and freight costs while also minimizing the external impacts due to freight transportation (infrastructure damage, air quality impacts, congestion, etc.).”

To address these realities, metropolitan planning organizations (MPOs) such as AMATS are increasingly and explicitly integrating freight planning into their long-range transportation policy and programming processes. In recent years, urban goods movement / metropolitan freight planning strategies and stand-alone plans have been developed in several urban areas across the United States, Canada, and overseas. Goods movement initiatives in a number of relevant regions were reviewed in support of the FMS to help identify potential lessons for Anchorage to understand in their planning process.

In support of the Anchorage FMS, we have identified and documented a series of general “best practices” in metropolitan freight planning (MFP), including:

1. Integrating “Mainstream” Goods Movement into the Overall Transportation Planning Process;
2. Implementing Innovative Stakeholder Engagement;
3. Engaging the Private Sector (a subset of stakeholder engagement);
4. Defining (limiting) Freight Issues/ Challenges;
5. Identifying the Root Causes of Freight Issues;
6. Managing and Addressing Land Use & Integration Compatibilities;
7. Using Pilot Schemes to Test Solutions;
8. Including Transportation Demand Management (TDM) in Freight Planning Process; and


Table 1 presents a brief description of the 16 metropolitan freight plans reviewed in support of the Anchorage FMS, and the specific examples of best practice elements used in their planning processes. This Table identifies the region, summarizes the population characteristics and freight operations of the region, and presents both the key points and best practices elements identified above that were emphasized in each region’s freight planning process. These regions have been cited in many federal and regional planning studies for best practices in freight planning. Several of these regions are highlighted in Section 5 Case Studies presented later in this White Paper.

Table 1: Examples of Best Practices in Regional Freight Planning

<table>
<thead>
<tr>
<th>Freight Plan /Program</th>
<th>Regional Characteristics</th>
<th>Key Freight Plan/Program Processes</th>
<th>Best Practices Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Seattle-Washington FAST Corridor</td>
<td>- 2015 population: 3,898,720&lt;br&gt;- 2 major interstate highway routes, UP and BNSF railroads, short line carriers, NHS intermodal connectors</td>
<td>- Prioritize projects to proactively enhance regional freight mobility instead of waiting to address them when freight volumes increase.&lt;br&gt;- Establish long-term freight quality partnerships to solve freight mobility problems and identify infrastructure improvements.&lt;br&gt;- Use ITS to expedite freight movement.</td>
<td>#8</td>
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<td>2. Chicago CREATE</td>
<td>- 2011 population: 9,730,000&lt;br&gt;- 7 major interstate highways, third-largest intermodal port in the world</td>
<td>- Use a collaborative process to identify transportation system improvements. More active involvement from the private sector is needed to address the region’s growth issues.&lt;br&gt;- Create project-specific tools to measure freight mobility and performance over time.</td>
<td>#9</td>
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<tr>
<td>3. Roberts Bank Rail Corridor, Vancouver</td>
<td>- Port/road/rail interface passing through an urban center</td>
<td>- Maintain close collaboration among public and private stakeholders to identify and prioritize optimal locations for investments in road/rail projects.</td>
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<tr>
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| 4. Peel Region, Toronto | • 2011 population: 1,297,000  
• Two intermodal rail facilities, truck route network, home to Canada’s largest airport | • Develop an economic case for a freight village/identify suitable land for logistics parks. Raise awareness of land-use for goods movement and incorporate it into the planning process.  
• Establish freight-specific performance measures | #6, #9 |
| 5. Orlando Metropolitan Area | • 2010 population: 2,134,411  
• Majority of the region’s freight is moved by truck | • Manage goods movement growth in a manner that both supports the regional economy and protects residential and business quality of life in a developing region  
• Freight villages  
• Active outreach to key public and private stakeholders | #6 |
| 6. Atlanta, Georgia | • 2013 population: 447,841  
• Complex Interstate and local road networks, railroads  
• Most freight activity occurs via trucks and air  
• Airport serves as a major generator for time-sensitive freight | • Establish temporary off-hour delivery program (OHD)  
• Private sector incorporation in the planning process is key to developing innovative freight mobility solutions  
• Implementation of “truck friendly lane” strategies to improve regional freight mobility | #3, #7, #8 |
| 7. Kansas City Region | • 2013 population: 2,071,133  
• 10 railroads, 4 Interstate highways, ports on the Missouri River, 4 airports  
• Serves as a major junction point (west coast to east coast) due to its geographic location in the center of the nation  
• Inland city | • Kansas City SmartPort: non-profit economic development organization that is focused on coordinating and expanding the transportation/logistics industry  
• Public-private partnerships  
• Willingness to prioritize and fund freight-focused infrastructure improvements | #2 |
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</table>
| **8. Los Angeles Metropolitan Area** | • 2014 population: 18.55 million (includes Los Angeles and Orange County)  
• Distribution center hub, international maritime and air cargo gateway | • Identify and relieve major rail/street conflict points through public and private sector coordination  
• Work with public and private stakeholder early on in order to guide the freight planning process. | #4 |
| **9. Toledo, Ohio** | • 2010 population: 651,429  
• Major freight junction for highway, rail, and maritime freight | • Tie transportation projects to economic development  
• Do not apply a “freight versus passenger” mindset. The MPO should be identifying issues and coming up with solutions for all of the regions transportation issues and not pit constituencies against one another. | #1 |
| **10. Lancaster County, Pennsylvania** | • 2013 population: 529,600  
• Accessible by Pennsylvania Turnpike (toll road) and several U.S. and state highways, Class I rail and short-line rail service  
• Most cargo transported by truck | • Conduct freight study to develop good understanding of the movement of freight in the region. This can clarify trends and correct public misperceptions.  
• Many projects benefit both freight and passengers. Continue selling projects based on the passenger benefits, but begin integrating freight benefits as a bonus to introduce the public to freight issues | #5 |
| **11. Delaware Valley (Greater Philadelphia/Camden region)** | • 2010 population: 7.1 million  
• Large freshwater port, airport with expanding international cargo services, extensive rail and highway network | • Freight Forward Improvement Program: encourages private sector stakeholders in the region to propose quick-fix improvement projects that can result in immediate benefits to the area’s freight movements  
• Treat freight transportation with the same level of emphasis as passenger transportation | #3 |
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</table>
| 12. Detroit, Michigan (Detroit Intermodal Freight Terminal) | • 2013 population: 688,701  
• Six railroads providing intermodal service to the region | • Early involvement of the private-sector freight community helps develop advocates for the project  
• Develop partnerships and balance public and private requirements and needs  
• Memorandum of understanding (MOU)  
  o Provides a framework for cost-sharing of intermodal improvements  
  o Establishes a process for continued dialogue among stakeholders  
• Use planning studies to drive projects | #2 |
| 13. Portland, Oregon | • Freight system consists of rail, water, air, pipeline, and truck transportation networks | • Emphasize freight’s connection to economic development  
• Freight-sensitive land use planning  
• Increase freight efficiency with TDM and operations and maintenance-focused projects | #8 |
| 14. Houston-Galveston region, Texas | • 2010 population: 5.9 million  
• Trucking, rail, marine, and air freight  
• Majority of goods movement occurs by truck | • Formally define and designate the freight-significant network  
• Work with partners to identify hotspots and mitigate existing system design deficiencies  
• Develop a freight-specific ITS program  
• Develop project evaluation criteria that give more recognition of and emphasis to freight projects, and develop a freight performance measures program | #4, #5 |
### 2.2 Description of Key Best Practices in Freight Planning

Each of the nine best practice elements is presented in detail below.

#### #1 - “Mainstream” Goods Movement into the Overall Transportation Planning Process

Goods/freight movement is an often-neglected, but critical element of smart growth and associated efforts to create compact, transit-oriented, and walkable land uses. It is not uncommon for otherwise highly touted and aesthetically pleasing new neighborhoods and mixed-use developments to have only minimal or no reasonable accommodation for truck deliveries, pickups, or staging locations. In these situations, not only are truckers and shippers/receivers inconvenienced, but there can also be significant direct and indirect economic cost, mobility, congestion, and safety impacts on residents, business owners, and the greater community. Regional planning and operating agencies can facilitate the accommodation of necessary goods movement into land use and transportation system planning and implementation with positive benefits for all stakeholders.

For example, the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area has developed strategies to link goods movement issues into their
transportation and land use planning processes. In conducting a regional goods movement study, MTC recognized the need to address the issue of land-use pressures driving the goods movement business within and out of the region. This process provided MTC with the opportunity to initiate a discussion about, and ultimately, a planning process to incorporate industrial land use preservation into existing smart growth programs. The Toledo Metropolitan Area Council of Governments in Toledo, Ohio has also successfully incorporated freight into its transportation planning activities by not having a “freight versus passenger” mindset, rather, by identifying integrated transportation issues and determining solutions for the region as a whole.

#2 - Stakeholder Engagement

By forming partnerships with goods movement stakeholders in the private and public sectors and involving them in the metropolitan planning process, planners are proactively working toward addressing goods movement issues. Many of these partnerships have been defined to cross different levels of governments and include neighboring jurisdictions. This includes partnerships among governments – Municipal, Regional, State and Federal – and Inter-organizational partnerships that work toward common and agreed-upon goals that are essential to making progress and achieving planning and implementation goals.

Two key factors when engaging stakeholders are critical to success:

- Multiple stakeholders—private, public, and community—are impacted by freight issues and/or could potentially play a role in developing their solutions; and
- No single stakeholder is capable of completely solving the most acute freight issues affecting metropolitan areas.

As such, the most effective processes of engagement are cooperative, including all of the above stakeholders working together to identify appropriate solutions to problems. “Some key stakeholders to bring to the table include large and prominent shippers, carriers, and receivers; the corresponding trade groups that represent key freight agents (local trucking associations, warehouse associations, retail sector groups, restaurant associations, and the like); the local Chamber of Commerce; public agencies with jurisdiction in the areas that impact the freight system; civic or neighborhood groups; researchers who could play a role in both research and outreach; as well as any other companies with the potential to contribute to the solution.”

Best practices include the importance of developing a consensus with stakeholders and gaining support (buy-in) from the same at the outset of metropolitan freight planning initiatives. This not only makes freight planning more sustainable and practical, but also reduces conflict in the future. For example, if freight stakeholders are negatively impacted or inconvenienced by the freight planning process, then early engagement can help them understand the purpose and benefits to their operations (e.g., if they understand how goals and the vision for the freight plan were developed and why).

Key points / best practice for stakeholder engagement:

• Designate a “freight person” at the regional agency to become the focal point of communications between the public and private sectors;

• Establish a “Freight Advisory Committee” (FAC) to become a forum for discussion of freight issues, with membership from the public and private sector;

• Establish a “Technical Advisory Committee” (TAC) for public-sector staff from various regional agencies (and jurisdictions) to discuss subjects that impact freight activity and to contribute to more harmonized policy development that considers freight issues; and

• Educate elected officials about freight, so that they can, in turn, integrate freight into broad transportation planning processes, as well as explain the importance of freight in the messaging to the public.

Examples of best practices include inviting elected officials to site visits of key freight facilities to see how important the freight system is to the urban area and their constituents. Kansas City’s SmartPort and Detroit’s Intermodal Freight Terminal (DIFT) are good examples of best practices in stakeholder engagement. The Kansas City SmartPort is an economic-development organization supported by both the public and private sectors with the purpose of improving the region’s freight access and mobility and enhancing the region’s position as a leading logistics hub. For Detroit, in planning for the DIFT, the early active involvement of the private-sector freight industry was crucial in developing advocates for the project and moving the project forward. The Roberts Bank Rail Corridor in Vancouver also provides a good example of best practices in stakeholder engagement, where strong collaboration between local, regional, and federal governments and private industry helped identify and fund the ideal locations for road and rail improvements.

#3 - Engage Private Sector

The objectives of the private sector (e.g., shippers and receivers) involved in metropolitan freight planning are different from the public sector. Private companies are interested in maximizing profits, while public agencies are interested in increasing economic benefits for society as a whole (and their regions) and reducing negative externalities. Private sector players are not typically involved in public transportation policy development, but best practice suggests they should be for a number of reasons:

• Private companies are equipped to identify the infrastructure bottlenecks and other (e.g., policy/regulatory) impediments to improving the efficiency of freight flows on transportation systems, given they are actively involved in moving and receiving freight on a day to day basis;

• Private companies may have innovative ideas and solutions to offer with respect to freight delivery approaches (e.g., exactly how and when off-peak delivery can work), as well as able to identify what regulations would have a very detrimental impact on their operations (with downstream economic impacts);

• The general public (and therefore policy makers) will benefit from improved efficiencies in freight flows through trickle-down improvements in economic activity; and
Engaging the private sector in freight planning will likely include consideration of all types of businesses (e.g., small, medium, large) as well as a range of vehicle classes (e.g., delivery vans, small trucks, large trucks) and all freight modes (e.g., truck, air, rail).

Both the Delaware Valley (Philadelphia) region and Atlanta regions provide good examples of best practices in engaging the private sector. The Delaware Valley Regional Planning Commission’s Freight Forward Improvement Program encourages private sector stakeholders to propose quick-fix improvement projects such as grade-crossing resurfacing and traffic signal timing adjustments, which can result in immediate benefits to the region’s freight efficiency. For Atlanta, in developing the Atlanta Strategic Truck Route Master Plan, incorporation of the private sector in the planning process was key to understand the freight issues on the existing roadway network, and to identify the innovative solutions that could be implemented to develop a more logical regional truck route network and improve overall freight operations in the region.


#4 - Define (limit) Freight Issues/Challenges

At the outset, the region should define the priority freight issues from a long-list of potential issues. There will be many competing issues and too broad a focus in the freight planning process will result in overly complicated planning and potentially spreading resources too thin. Too narrow a focus and some important issues could be left out.

“One benefit of engaging stakeholders is that doing so encourages identification and examination of problems from multiple vantage points. The initial engagement of stakeholders and consensus-building efforts help ensure that each problem is carefully vetted, clearly defined, and agreed on so that all parties understand what the process will—and will not—address.”

To define freight issues and challenges, the Southern California Association of Governments (SCAG) in the Los Angeles region worked with other public and private stakeholders to develop a freight action plan, which helped increase the visibility of freight issues in the region and guided the direction of freight planning early in the process. Similarly, the Houston-Galveston Area Council’s goods movement study notes the importance of designating a “Freight Significant Network” used to identify which portions of the freight system are most critical to freight mobility and the region’s economic competitiveness.

#5 - Identification of Root Causes of Freight Issues

Identifying and understanding the reason for freight issues and problems and addressing the root causes of these problems is a critical factor in the development of freight plans. For example, truck idling frequently is the result of the inability or unwillingness of
businesses (receivers) to accept deliveries. This type of truck idling issue in the vicinity of large buildings is frequently aggravated by delivery-time restrictions that shorten the period of time when deliveries can be made.4 These constraints and restrictions result in roadway bottlenecks, delays, and congestion, as well as increased emissions. So understanding the freight impacts of congestion on roadways that could be traced to truck delivery idling (as the root cause) is a key policy discussion in the freight planning process. This example, among many others, will need to be assessed and understood to help agencies define freight issues and the potential mitigation strategies to address those issues. More information on identifying "root causes" of freight problems available from NCFRP Report 14: Guidebook for Understanding Urban Goods Movement (2012).

Again, consultation with stakeholders has been used by regional agencies as an effective strategy to identify why the problem is happening in the first place (e.g., the root cause). Key tasks involved in this process include:

- Stakeholder outreach and agency coordination; and
- Data collection, assessment and analysis.

The Lancaster County (Pennsylvania) Transportation Coordinating Committee’s (LCTCC) Transportation Improvement Plan and the Houston-Galveston Area Council’s goods movement study provide good examples of best practices in identifying the root causes of freight issues. The LCTCC recommended developing a thorough understanding of the freight movements in their area in order to make better, more informed decisions about potential freight improvement projects and solutions. The Houston-Galveston Area Council identified the need to work with partners to identify freight hotspots and mitigate existing system design deficiencies on the regional freight system.

#6 - Manage and Address Land Use Compatibilities

Because of their typically large physical sizes (“footprint”) and need for reliable, high-capacity transportation networks, logistics-oriented facilities or land uses seek to locate where land is relatively inexpensive and access to highways and/or intermodal facilities is excellent. As urbanized areas become more densely developed and highway congestion grows, logistics-oriented firms often relocate some operations into “greenfield” areas that affect formerly rural lands and communities. Some agencies in the U.S. and Canada have developed land use and development regulations and guidance that support appropriate buffer zones between logistics-intensive land uses and other, incompatible land uses such as residential or commercial mixed-use. These agencies also have facilitated the clustering of logistics-oriented businesses in a manner that optimizes the use of appropriate transportation facilities.

Both the Peel Region (Toronto) and Orlando metropolitan area provide good examples of best practices in managing and addressing land use compatibilities in combination with the freight network. An innovative strategy from the Peel Region involved developing an economic case for a freight village, which consolidated all freight activity in a defined area, thus reducing truck volumes on some roadways. The Orlando metropolitan area

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4 TRB NCFRP Report 33 “Improving Freight System Performance in Metropolitan Areas” (May 2015), page 7
also provided lessons on integrating freight planning and land use planning by managing goods movement growth so that incompatible land uses are kept apart from each other, thus facilitating safer and more efficient freight transportation mobility and access.

#7 - Use Pilot Schemes to Test Solutions

The implementation of a public-sector change that affects freight activity should ideally only proceed with some certainty that the overall benefits outweigh any negative costs. Implementing a pilot to help assess the extent of this balance can be evaluated. Pilot schemes can be used by regions to enable the public agency to adjust (or cancel) the initiative at the end of the pilot scheme, based on feedback from stakeholders that are impacted and other data analysis. In addition, pilot testing can demonstrate to the private sector that public agencies are interested in proceeding carefully with the implementation of new ideas, and implementing only those that pass the pilot tests.

Atlanta and New York City provide examples of using pilot schemes to test potential freight solutions. During the 1996 Summer Olympics, Atlanta implemented a temporary off-hour truck delivery program to help mitigate projected traffic congestion levels. By working with the private sector freight industry, Atlanta was able to plan and implement its daytime delivery ban. However, it proved too challenging to continue the off-hour delivery program in the long-term, and truck deliveries mostly returned to daytime trips after the Olympics. The Hunts Point community in New York City implemented a “clean trucks” program that provided a monetary incentive to truck owners for switching to cleaner freight vehicles. The purpose of this program was to encourage the use of freight vehicles that produce fewer emissions.

#8 - Include Transportation Demand Management (TDM) in Freight Planning Process

Transportation Demand Management (TDM) is typically associated with addressing policy objectives such as energy conservation, environmental protection, shift to alternative modes, and passenger travel congestion reduction. TDM policies historically have focused on personal travel, including “smarter” or “more efficient” transportation system projects specific to commuter ridesharing, telecommuting, and trip reductions. Increasingly, however, public agencies at the federal, state and local level are trying to apply TDM to goods movement and freight policy.

“TDM can play a vital role in mitigating the interaction between trucks and cars by both managing the demand for goods movement during peak congested periods and by reducing overall personal vehicle demand when and where goods movement is a priority.”

Some examples of the steps public agencies can take to advance TDM for goods movement include the following (direct quote from FHWA report):

- “Seek ways to apply demand management to goods movement, such as real-time information, ecodriving, peak period pricing, mode shift, etc.;

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• Incorporate the strategies and related objectives of TDM that help address a goods movement policy into the general planning factors in the transportation planning process;

• Ensure that congestion management processes incorporate those TDM strategies that work to improve goods movement so that they work in concert with other strategies to maximize the efficiency potential for the transportation system;

• Incorporate TDM strategies that support goods movement enhancement as potential solutions in Major Investment Studies (MIS) to help address the factors influencing project solutions while efficiently and effectively meeting the needs of the community; and

• Ensure that goods movement TDM strategies are part of the public involvement dialogue to gain the broad support of the community.”

TDM strategies include:

• “Improve rail and marine transportation infrastructure and services to make these modes more competitive with trucking;

• Organize regional delivery systems so fewer vehicle trips are needed to distribute goods (e.g., using common carriers that consolidate loads, rather than company fleets);

• Use smaller vehicles and human powered transport, particularly for distribution in urban areas;

• Implement fleet management programs that reduce vehicle mileage, use optimal sized vehicles for each trip, and ensure that fleet vehicles are maintained and operated in ways that reduce external costs (congestion, pollution, crash risk, etc.); and

• Change freight delivery times to reduce congestion.


Portland Metro’s Metropolitan Transportation Improvement Program and Seattle’s FAST Corridor project provide good examples of including TDM in the freight planning process. Portland identified TDM policies and maintenance-and-operations-focused projects as a strategy for increasing the efficiency of the region’s freight network. Similarly, the FAST Corridor partnership has recently shifted its focus away from supply-side projects to demand-side projects such as providing real-time traffic information to truck drivers, because it is a more cost-effective way of expediting freight movement.

#9 - Use Performance Measures

Performance measures are becoming part of the standard planning process for states and regions in the U.S., and have been growing in use over the past two decades or more. Measures are developed to gauge the degree to which goals and objectives are achieved, and are linked directly to the vision, goals, and objectives on long-range transportation and freight planning. MAP-21 (and now the Fixing America’s Surface...
Transportation Act or “FAST” Act) requires undertaking of systematic performance measurements to determine the impacts of the strategies, programs, and funding used to address freight issues in the planning process. Performance measures should be directly related to a single objective; easily quantifiable; and able to gauge the entire range of levels of achievement (e.g., using a scale, not just “achieved” or “not achieved”). Examples of performance measures include safety, parking, use of alternative fuels, or reliability. Performance measures are significant to the freight planning process because they can evaluate how future conditions might affect system performance, and provide early warning signs of freight problems that may need to be addressed and planned for in the future.


Both the Peel Region’s (Toronto) Goods Movement Strategy and Chicago’s Regional Environmental and Transportation Efficiency Program, also known as the Chicago CREATE project, provide good examples of best practices in using performance measures for evaluating the efficacy of the freight system. The Peel Region’s plan included performance measures such as shipper delay costs and travel time delay, which could be useful in guiding future planning decisions. Although Chicago did not have freight-specific performance measures, the CREATE project developed tools (specific to the CREATE project) for measuring freight mobility and performance over time.

3 Freight Planning Initiatives

A number of public sector initiatives / policies are being used by regional agencies to address freight issues in urban areas. The “initiatives” that agencies can use are “organized as a continuum with supply initiatives at one end, demand-related initiatives at the other, and operational and financial strategies in the middle”. Each of these initiatives and association actions are often considered in more detail in future. These examples (Figure 1) provide planning programs and policies that could be useful to support the Anchorage FMS.

3.1 Infrastructure Management

Infrastructure management strategies involve infrastructure improvements that are designed to enhance freight mobility. This typically includes new and upgraded infrastructure, or more minor improvements such as the removal of geometric constraints at intersections. For example, in addressing freight travel time reliability concerns, the Orlando metropolitan area has planned for the development of freight villages. Freight villages link land use planning to transportation planning by clustering all freight-intensive activity in specific areas. This can be relevant to Anchorage as AMATS looks to relieve traffic congestion and freight routing issues in the region. The Orlando metropolitan area approach to infrastructure management is an example of integrating freight concerns in the transportation and land use planning process as a means of balancing the efficiency of the freight system with environmental and livability concerns.

3.2 Parking /Loading Areas Management

Parking and loading areas management includes initiatives that make better use of space and are implemented to improve the way freight vehicles park, load, and unload (both on-and off-street) in urban areas. New York City provides a good example of successful freight parking and loading management. The city enacted parking regulations and increased the capacity of parking and loading areas on several congested city streets, which allowed for a better balance of goods movement with other street uses. This can be relevant to Anchorage as AMATS looks to find solutions to the region’s lack of adequate freight parking and loading zones in the downtown area.

3.3 Vehicle-related Strategies

Vehicle-related strategies include regulations and technological advancements that seek to reduce the negative externalities produced by freight vehicles upon the environment. This includes initiatives to replace older trucks with cleaner, reduced-emissions vehicles, or initiatives to regulate noise pollution. New York City has used emission standards to help promote the usage of freight vehicles that produce fewer environmental impacts. The Hunts Point community in New York City has a voluntary clean truck program that allows truck owners to receive funding assistance for replacing older trucks with new diesel or alternative-fuel trucks. Although many of the freight vehicles being used in Anchorage are already diesel engines which emit lower levels of carbon monoxide, vehicle-related initiatives such as these can still be used by AMATS to remain in...
consistency with the general Anchorage freight planning goal of improved environmental quality.

Figure 1: Urban Freight Initiatives

Urban Freight Initiatives

- **ON-STREET PARKING AND LOADING**
  - Freight Parking and Loading Zones
  - Loading and Parking Restrictions
  - Peak Hour Clearways
  - Vehicle Parking Reservaton Systems

- **OFF-STREET PARKING AND LOADING**
  - Enhanced Building Codes
  - Tiers of Parking Space
  - Upgrade Parking Areas and Loading Docks
  - Improved Staging Areas
  - Truck Stoops/Parking Outside of Metropolitan Areas

- **ACCESS AND VEHICLE-RELATED RESTRICTIONS**
  - Vehicle Size and Weight Restrictions
  - Truck Routes
  - Engine-Related Restrictions
  - Low Emission Zones
  - Load Factor Restrictions

- **TIME ACCESS RESTRICTIONS**
  - Daytime Delivery Restrictions
  - Daytime Delivery Bans
  - Nighttime Delivery Bans

- **TRAFFIC CONTROL AND LANE MANAGEMENT**
  - Restricted Multi-Use Lanes
  - Exclusive Truck Lanes
  - (Dedicated Truck Lanes)
  - Traffic Control

- **CARGO CONSOLIDATION**
  - Urban Consolidation Centers

- **INTELLIGENT TRANSPORTATION SYSTEMS (ITS)**
  - Real-Time Information Systems
  - Dynamic Routing
  - Vertical Height Detection Systems

- **LAST MILE DELIVERY PRACTICES**
  - Time Slotting of Pick-Ups & Deliveries at Large Traffic Generators
  - Driver Training Programs
  - Anti-Idling Programs
  - Pick-up/Delivery to Alternate Locations

- **MAJOR IMPROVEMENTS**
  - Ring Roads
  - New and Upgraded Infrastructure
  - Intermodal Terminals
  - Freight Cluster Development (Freight Village)

- **MINOR IMPROVEMENTS**
  - Acceleration / Deceleration Lanes
  - Removal of Geometric Constraints at Intersections
  - Ramps for Handcarts and Forklifts

- **TECHNOLOGIES AND PROGRAMS**
  - Emission Standards
  - Low NOx Delivery Programs / Regulations

- **STAKEHOLDER ENGAGEMENT**
  - Designate a ‘Freight-Hero’ at Key Agencies
  - Create a Freight Advisory Committee (FAC)
  - Educate Elected Officials
  - Create a Technical Advisory Committee (TAC)
  - Create a Freight Quality Partnership (FQP)

- **PRICING**
  - Road Pricing
  - Parking Pricing

- **INCENTIVES**
  - Recognition Programs
  - Certification Programs
  - Operational Incentives for Electric / Low Emission Vehicles

- **TAXATION**
  - Taxation

- **DEMAND MANAGEMENT**
  - Voluntary Off-Hour Delivery Program
  - Staggered Work Hours Program
  - Receiver-Led Delivery Consolidation Program
  - Mode Shift Programs

- **LAND USE POLICY**
  - Relocation of Large Traffic Generators (LTGs)
  - Integrating Freight into Land Use Planning Process

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3.4 Traffic Management

Traffic management initiatives are designed to improve freight traffic flow using traffic control and engineering strategies. This can include weight and time access restrictions, or the implementation of dedicated truck lanes. To improve freight traffic flow, the state of Georgia explored the implementation of “truck-friendly” lanes as traffic management strategy. The “truck-friendly” lanes strategy proposes route improvement elements such as widening existing shoulders to accommodate trucks, improving key intersections, and increasing overhead signage along corridors. This type of initiative can be relevant to Anchorage as AMATS plans to address truck movement issues at intersections along its freight routes.

3.5 Pricing, Incentives, and Taxation

Pricing, incentives, and taxation include strategies to manage demand, minimize the negative externalities produced by freight activity, and improve traffic flow using financial mechanisms. These mechanisms include tolling or incentives for using low-emission freight vehicles. In the New York-New Jersey region, a time-of-day toll pricing initiative was enacted in 2001, providing a discount on off-peak tolls on certain facilities as a means of mitigating traffic congestion. This type of strategy can be useful in reducing freight traffic by encouraging better usage of the existing capacity. As freight volumes are expected to increase in Anchorage, more aggressive demand-side initiatives such as road pricing may be considered by AMATS in order to encourage more efficient use of the Anchorage road network.

3.6 Logistical Management

Logistical management initiatives seek to distribute last-mile delivery more efficiently using strategies such as consolidation of freight terminals, or implementation of intelligent transportation systems (ITS). The Houston-Galveston region has established an ITS program that includes real-time congestion and traffic data that could be useful to freight industry stakeholders, and the Houston-Galveston Area Council is planning on developing a concept of operations for a freight-specific ITS program. AMATS can also apply this logistical management strategy as a means of improving the Anchorage area’s highway safety and freight mobility through the use of technology.

3.7 Freight Demand/Land Use Management

Freight demand and land use management initiatives focus on shifting the demand for freight deliveries or integrating freight into the land use planning process for purposes of improving freight efficiency. Similar to Orlando, a freight demand/land use management initiative from the Peel Region in Toronto incorporates goods movement issues into the land use planning process by developing freight villages. This facilitates safer and more efficient freight mobility and access while protecting residential and business quality of life. This type of initiative is relevant to AMATS because much of the freight delivery in Anchorage is time sensitive. Strategies such as freight villages can address this issue by ensuring more efficient and cost-effective freight delivery.
3.8 Stakeholder Engagement

Stakeholder engagement initiatives are designed to more effectively identify freight issues and solutions by establishing partnerships between both public and private freight stakeholders. Many different U.S. cities and regions have done a good job of incorporating stakeholder engagement strategies into their freight plans. In particular, Chicago CREATE, Detroit’s DIFT, and Kansas City’s SmartPort provide examples of successful partnerships between public and private stakeholders that AMATS can look to, to help identify the best possible solutions for Anchorage. Effective methods of stakeholder engagement conducted by the various regions include early interaction with the private sector to identify/develop project advocates, partnering with public and private freight industries to identify freight issues, and creating a freight advisory committee to facilitate continued discussion of freight needs.
4 Draft Performance Measures

Over the long-term, performance measures will be used by AMATS to monitor and gauge the success of the FMS strategies. Below are some sources with freight performance measures that can be used in metropolitan freight planning that we have reviewed and identified potential draft performance measures for implementation in the FMS.


A number of “best practices” exist with respect to measuring performance and freight-related performance measurements more specifically. The best practices in performance measures development summarized below will be used to support the Freight Performance Management Framework and Measures analysis prepared later in Task 7 of the Anchorage FMS.

- **Don’t re-invent the wheel.** Agencies should begin with what is already available in terms of performance measurement frameworks and associated data sets and adapt or build on them as required. For AMATS, using and building on performance measures and approaches of the on-going Municipality Of Anchorage Congestion Management System and AMATS Status of the System Report and the 2035 Metropolitan Transportation Plan. Using information from the Alaska Department of Transportation and Public Facilities (DOT&PF) Statewide Long-Range Transportation Plan and Alaska State Freight Plan (currently underway) should also be considered.

- **SMART and KISS Principles.** Agencies should choose performance measures that are Specific, Measurable, Attainable, Realistic, and Timely (SMART). Performance measures should also be in the spirit of Keeping It Short and Simple (KISS). Practitioners should focus on the vital measurements of relevance to their targeted objectives, and avoid getting buried in measuring metrics. A performance-based, objectives-driven approach to planning for operations is based on the concept that “what gets measured gets managed.” However, this needs to be balanced against the complexity and cost of measuring too much.

- **Focus Performance Measures on Relevant Topics.** Agencies should focus on identifying performance measures that match the areas that the agency has some influence over and/or interest in. In the case of the AMATS FMS, performance measures should be illustrative of performance specific to the freight industry, not all sectors of the economy. They should be related to areas...
that AMATS and its partners can influence, for example, through support to projects that facilitate or regulate freight activities.

- **Understand the role and distinguish between Freight Indicators and Freight Performance Measures.** Freight indicators provide an indication of economic activity in the freight sector (e.g., trucking freight rates, mode share, or tonnage), while Freight indicators assist stakeholders in understanding the performance of the freight transportation system, but not necessarily in measuring the system’s performance. For example, demand for trucking services (freight indicator) is much more affected by the state of the economy than by improvements in highway infrastructure. In contrast, the percentage of total crashes that involve trucks is a performance measure that can be used directly by agencies to inform decision-making and adjust investments.

- **Harness and Use Big Data, Carefully.** Data on traffic flows can be tracked like never before with the advent of cost-effective electronic tagging and Global Positioning System (GPS). With Big Data there will potentially be a step-change in the availability of freight data, allowing many existing gaps to be plugged and permitting macro-level analysis of freight flows and operations at a higher degree of detail. A wealth of data is currently being collected in most regions by transportation system operators who run systems that keep track of real-time travel information. Intelligent Transportation Systems (ITS) components, in particular, such as toll tag readers and transponders, video detector systems, and traffic management systems used to provide travelers with real-time travel information, are used to measure performance of the transportation system on an ongoing basis.

- **Consider Reporting Requirements and Benefits of Publishing Performance Measurement Results to Stakeholders.** Agencies should consider the future reporting of the performance measures and how information can be provided to stakeholders interested in performance of the transportation system. An example is the use of dashboards or “report cards” that summarize performance with succinct and instantaneous assessment of performance. The data and analysis supporting the succinct measures should also be accessible for users to drill down into details and answer more nuanced questions, or to explore trends in further detail.

A draft set of freight performance measures that will be used as the starting point for the Task 7 analysis is shown below in Table 2.

**Table 2: Examples of Freight Performance Measures used in Regional Freight Planning**

<table>
<thead>
<tr>
<th>Freight Performance Measurement Category</th>
<th>Freight Performance Measures / Definition</th>
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</table>
| System Performance - Freight Demand      | - Forecasted rate of growth for all modes of freight  
                                          | - Truck freight forecast  
<pre><code>                                      | - Rail freight forecasts |
</code></pre>
<table>
<thead>
<tr>
<th>Freight Performance Measurement Category</th>
<th>Freight Performance Measures / Definition</th>
</tr>
</thead>
</table>
| **System Performance** - Freight Efficiency | • Water freight forecasts  
• Air freight forecasts  
• Rate of growth in containerized imports/exports  
• Transportation Services Index (TSI): USDOT Bureau of Transportation Statistics which measures movement of freight and passengers nationally by for-hire transportation (trucking, air, rail, water, pipeline)  
• National Highway System (NHS) travel speed (urban and rural)  
• Annual Hours of Truck Delay (AHTD) – travel time above congestion thresholds in units of truck vehicle-hours on Interstate Highway System  
• Truck Reliability Index (RI80) – Ratio of total truck travel time needed to ensure on-time arrival (e.g. observed or preferred travel time)  
• Trend line of top 10 highway freight bottlenecks  
• Composite Class I Railroad speeds  
• Rail freight market share  
• Cost of logistics as a % of GDP (from industry surveys/estimates)  
• NHS pavement conditions: Interstate/non-Interstate pavement in Good, Fair and Poor Condition based on International Roughness Index  
• NHS bridge conditions:  
  o % of NHS/non-NHS Deck Area on Structurally Deficient Bridges as a % of total bridge deck area  
  o % of National Bridge Inventory (NBI) Bridges by need category (routine or cyclic maintenance, preventative maintenance, rehabilitation & replacement)  
  o % of NBI Bridge Deck Area by need category (% of NBI highway bridge deck area with needs for routine or cyclic maintenance, preventative maintenance, rehabilitation & replacement)  
• Condition of NHS intermodal connectors  
• Truck injury and fatal crashes:  
  o Number of serious injuries  
  o Serious injury rate (# of injuries divided by VMT)  
  o Number of fatalities  
  o Fatality rate (# of fatalities divided by VMT)  
• Highway/rail at-grade crashes |
| **System Condition** |  |
| **System Safety** |  |
| **System Environmental Impacts (Air Quality)** | • Freight-related greenhouse emissions. Use Annual Hours of Delay (AHD) and Reliability Index (RI80)  
• Other emissions: VOC, NOX, CO, SOX, PM |
5 Case Studies of Best Practices

In our assessment of potential metropolitan freight plans relevant to the Anchorage region and the development of the FMS, we reviewed each of the 16 plans we reviewed as part of this White Paper. Rather than focusing on just three case studies, we identified several case studies including freight plans with components likely applicable to Anchorage.

5.1 Seattle-Washington FAST Corridor

The Puget Sound (Seattle) region is a major North American gateway for trade with Pacific Rim countries and is the major economic engine for Washington State. The Freight Action Strategy for the Everett-Seattle-Tacoma Corridor (FAST Corridor) public-private partnership was established to move needed goods and support port operations on the highways and rail lines that sustain the maritime international trade corridor through the Puget Sound region. Since 2002, nine FAST Corridor projects, costing a total of $568 million have been completed by the Partnership. In particular, these projects have helped to reconnect neighborhoods across highly-used railroad tracks, have improved safety for resident/drivers, and have improved the efficiency of freight flows between the port and inland points. In addition, the implemented projects support urban centers by reducing conflicts between urban growth and the growth of freight traffic; improve truck mobility to industrial centers by increasing capacity and travel time reliability along these major arterials; and improve emergency response by removing road barriers to fire and medical emergency services.

The FAST Corridor is a partnership of 26 local cities, counties, ports, federal, state and regional transportation agencies, railroads and trucking interests, intent on solving freight mobility problems with coordinated solutions. They have shared information and funding resources —sometimes shifting funds from projects that were delayed to those that were ready to begin — to benefit the program and region as a whole. Because of this approach, projects were built which otherwise might never have been completed.

An important aspect of FAST was that the region developed the strategy to proactively enhance regional freight mobility instead of waiting to address challenges when freight volumes increase and negatively impact the multimodal freight transportations system.

Potential Relevance to Anchorage

FAST provides best practice elements related to Stakeholder Engagement, Engaging the Private Sector, Defining (limiting) Freight Issues/Challenges, Identifying the Root Causes of Freight Issues, and Managing and Addressing Land Use Compatibilities. Anchorage is a port city with rail and highway connections that run through the city. Some of the issues around challenges of at-grade crossings that affected Seattle-Washington area could be of relevance to Anchorage as its population grows. The FAST Corridor approach is an example of maintaining and supporting essential goods movement activities in a manner that minimizes conflicts with other non-freight transportation activities and land uses. Freight economic development corridors are used in FAST as a way to identify and map supply chains, system conditions and capacity issues. Identifying corridors can help determine alternate routes during disruptions and first/last mile connections. Freight
development corridors can be used to help Anchorage identify some solutions to challenges.

Further information:
http://www.psrc.org/transportation/freight/fast

5.2 Chicago CREATE

CREATE is a first-of-its-kind public private partnership (PPP) between U.S. DOT, the State of Illinois, City of Chicago, Metra (regional transit provider), Amtrak, and the nation’s freight railroads. CREATE is investing billions in critically needed improvements to increase the efficiency of the region’s passenger and freight rail infrastructure and enhance the quality of life for Chicago-area residents. CREATE will reduce train and auto delays throughout the Chicago area by focusing rail traffic on four rail corridors that will be improved to handle passenger and freight traffic more efficiently. The work includes 70 projects which were identified, evaluated, and prioritized by the program for implementation, including:

- 25 new roadway overpasses or underpasses at locations where traffic (auto, pedestrian, bicycle, bus) currently crosses railroad tracks at-grade level;
- new rail overpass or underpass projects to separate passenger and freight train tracks from the roadway system;
- 36 freight rail projects including extensive upgrades of tracks, switches and signal systems;
- A number of viaduct improvement projects to existing structures in Chicago;
- A number of grade crossing safety enhancements including improvements to existing railroad grade crossings throughout the region; and
- Common Operational Picture (COP) – integration of information from dispatch systems of all major railroads in the region into a single display.

Selecting the improvements for CREATE was a collaborative process between the freight railroads, State of Illinois Department of Transportation, City of Chicago Department of Transportation, Metra and Amtrak. Input on grade crossings and traffic congestion was considered from the Illinois Commerce Commission and Chicago Area Transportation Study. For area residents, CREATE means reduced traffic delays, shorter commute times, better air quality, and increased public safety. For workers and businesses, it means more jobs and economic opportunities.

Potential Relevance to Anchorage:

CREATE provides an excellent example of how the partnership between public and private stakeholders with competing interests (e.g., Implementing Innovative Stakeholder Engagement and Engaging the Private Sector) can be used to improve communication and coordination between key public and private stakeholders to enhance the freight transportation system of a region. It focused on rail / road interface projects and methods
to better address passenger and freight rail conflicts using the same rail lines. CREATE provides ways in which to alleviate these conflicts. For example, freight and passenger trains in the Chicago area operate on the same tracks, which often resulted in schedule conflict and delay. Freight railroads deferred the right of way to passenger rail services (e.g., Amtrak and Metra) by protocol in peak hours of the day. In 2013 trains in Amtrak had more than 950 hours of delay in Chicago due to interference from freight, commuter, and other Amtrak trains.

Further information:
http://www.createprogram.org/index.htm

5.3 Roberts Bank Rail Corridor (Vancouver, BC Area)

Completed in 2014, the Roberts Bank Rail Corridor Program in Metro Vancouver (British Columbia) is a comprehensive package of road and rail improvements along a 40-mile corridor, funded by collaboration of twelve partners representing local, regional, provincial, and federal governments as well as private industry. The Program was designed to enhance the quality of life in communities through which freight rail traffic travels to and from Port Metro Vancouver terminals at Roberts Bank in Delta, and to improve the safety and efficiency of both the road and rail networks in these communities.

Potential Relevance to Anchorage:

Similar to CREATE and FAST, this program includes an example of a port, road, and rail interface passing through an urban center, with strong partnership involvement (e.g., Implementing Innovative Stakeholder Engagement and Engaging the Private Sector) as well as a best practices example of Managing and Addressing Land Use Compatibilities.

Further information:
http://www.robertsbankrailcorridor.ca/challenges-solutions

5.4 Peel Region (Toronto) Goods Movement Strategy

The Region of Peel (adjacent to the City of Toronto), recently launched their Goods Movement Strategy, which provides a good example of best practices in planning and investment strategy including the development of standard freight guiding principles for the region policy-makers to follow. The Strategy included the implementation of three tiers of roadway facilities and an accompanying investment and prioritization framework, taking into consideration both benefits to goods movement as well as economic benefits to the community as a whole. The Strategic Goods Movement Network (SGMN) connects all points on the network with each other, especially to major goods-generating activity centers and intermodal terminals. The network supports Peel’s goals for economic vitality, mobility for people and goods. The strategy contains a land use typology which was linked to the freight priority network. This approach provided public agencies that control land use planning information on how to direct developments so that that will benefit both freight users and shippers. A network strategy is developed
through a synthesis of best practices, identification of barriers, working with stakeholders, planning for implementation and performance monitoring.

**Potential Relevance to Anchorage:**

This Plan provides a strong example of combining land use planning and freight planning (e.g., Managing and Addressing Land Use Compatibilities and Integrating “Mainstream” Goods Movement into the Overall Transportation Planning Process). This Plan also provides a good example of Using Performance Measures to develop a planning and project prioritization process designed to prepare a financially responsible goods movement strategy.

**Further information:**


5.5 Orlando Metropolitan Area

Over the past several decades, Central Florida has experienced heavy population growth and significant urban sprawl. As a result, traffic congestion and aging transportation infrastructure are growing regional concerns. The region’s Metropolitan Planning Organization (Metroplan Orlando) identified a need to proactively plan for accommodating increasing freight activity in a manner that would protect the “quality of the experience” for tourists (a major driver of the economy), residents, and businesses.

The original Orlando Region Freight, Goods, and Services Mobility Strategy Plan (FG&SMSP), initially completed by Metroplan in 2002, suggested that, with the rapid parallel, and often uncoordinated, development of industry, logistics-intensive land uses, and residential/urban sprawl, the region had an opportunity to proactive plan to effectively segregate and buffer incompatible land uses from each other, thus facilitating more efficient and safe transportation mobility and access. The Plan recommended that local jurisdictions develop a warehousing and logistics (WL) zoning category to ensure appropriate design standards for the development of Freight Villages or similar sites. Intersection signal timing, roadway and intersection geometric design standards, loading dock requirements, and other factors that affect goods movement were also regulated in a WL zone.

One outcome (of potential relevance to Anchorage) of the strategy was that the City of Orlando began implementing new zoning classifications in the region south of the airport. For example, the City developed an “airport support” WL zone as part of its Southeast Sector Plan. The airport support zone provides sufficient infrastructure to support activities vital to the operation of the airport and the efficient movement of goods into and out of this area.

The Metroplan goods movement planning process has included active outreach to key stakeholders in the public and private sectors. From the public sector, these included local, county and state-level planners, economic development officials and politicians as well as port, airport, highway operating, and transit authorities. From the private sector, stakeholders include trucking firms, 3rd-party logistics providers (3PL), Class I and
regional railroads, warehousing and distribution companies, tourism and convention industry representatives, and real estate and development firms and officials.

**Potential Relevance to Anchorage:**

Managing goods movement growth to both support the regional economy and protect residential and business quality of life in a developing region of urban, suburban, and rural areas. This Plan considers the following freight planning best practices elements including the integration of land use planning with freight management planning (e.g., Managing and Addressing Land Use Compatibilities) and active outreach with the public and stakeholders alike (e.g., Implementing Innovative Stakeholder Engagement and Engaging the Private sector).

The Plan also identifies locations of freight carriers, air transportation and courier service clusters within the project area. The Plan goes in depth in identifying various services that may have set schedules such as major truck routes to land fill sites and transfer stations. Identifying regular services which may consist of mail delivery and solid waste corridors that is important for any efficient and healthy community can be used as a strategy for Anchorage in targeting improvements for the local transportation network.

**Further information:**


5.6 Portland, Oregon Freight Master Plan

Portland, Oregon has historically been one of the nation’s main freight hubs on the west coast, with connections to the interstate highway network, rail network, marine terminals, and an international airport. In 2002, it was projected that the demand for freight tonnage into, out of, and within the Portland area would be doubled by 2030. Much of this freight movement would occur via trucks. With the anticipated freight demand increase and the region’s significant economic dependence on freight movement, Portland identified the need to make sure that its transportation network could both support increased freight movement/demand and maintain a balance between freight and other transportation modes. In 2006, Portland completed a Freight Master Plan to address these needs among other freight-related mobility issues.

To improve freight mobility and efficiency as well as achieve transportation system balance, the Plan recommended that the city should develop a freight classification system that would specify the function and design of its transportation facilities. The Plan identifies a “freight district” as an industrial zoned area where all streets within the district provide local truck circulation and access. The Plan also identifies “truck access street” routes as streets used for distribution of trucking services to commercial and residential uses. This specific breakdown of the freight classification provides jurisdictions the ability to control and ensure desired traffic conditions and performance levels on the transportation system. Essentially this type of strategy allowed the region and its jurisdictions to efficiently manage freight growth while maintaining regional livability.
Potential Relevance to Anchorage:

Anchorage is a port city with expected future increases in freight volume, which suggests increased truck traffic on the region's roads. Portland’s strategy to improve freight mobility by classifying streets and guiding truck movements can be relevant to Anchorage as it seeks to create a land-use-based transportation system that allows for more efficient goods movement without adversely impacting the community (e.g., Integrating “Mainstream” Goods Movement into the Overall Transportation Planning Process, Defining Freight Issues/Challenges, Identifying Root Causes of Freight Flows, and Managing and Addressing Land Use Compatibilities). Specifying freight classifications by activity type breaks down the transportation uses and creates specific goals to address road classifications which may be used as part of Anchorage’s freight strategy.

Further information:
https://www.portlandoregon.gov/transportation/article/357098

5.7 San Francisco Bay Area Regional Goods Movement Study

The San Francisco Bay Area region is the third largest freight hub on the west coast. The freight system in the Bay Area consists of several major highways, a rail system, and marine and air terminals. Trucking represents the majority of the Bay Area’s goods movement, but air cargo is its fastest-growing freight mode. The greatest freight issues facing the Bay Area include traffic congestion, rail at-grade crossings, and increased truck traffic due to growth in container cargo.

To address these issues among others, the San Francisco Bay Area completed a 2004 Regional Goods Movement Study (with later updates). One planning strategy involved making a connection between land use planning and goods movement by developing freight villages. This approach was designed to cluster freight land uses into a specific designated area in order to more efficiently and cost-effectively move freight. This concept was further evaluated in a separate Freight and Land Use Development Study conducted for the region.

Potential Relevance to Anchorage:

The San Francisco Bay Area is a port city like Anchorage, and also faces similar freight issues such as traffic congestion and at-grade crossing impacts. The strategy to incorporate freight issues into land use planning (e.g., Defining Freight Issues/Challenges and Managing and Addressing Land Use Compatibilities) was intended to enhance freight mobility, and is of potential relevance to Anchorage’s interest in central freight distribution centers and intermodal connectivity.

Further information:
5.8 Houston-Galveston Region-Regional Goods Movement Plan

The freight system in the Houston-Galveston region consists of several major highways, a rail network, three major airports, and marine ports at Houston, Freeport, and Galveston. Trucking accounts for nearly half of the region’s intercity freight flows. One of the key freight issues facing the region is inadequate intermodal connectors, which leads to freight bottlenecks and increased traffic congestion on freight-significant corridors, including facilities leading into and out of the Port of Houston. Specific concerns included geometric road design deficiencies, safety issues, and insufficient signage.

The 2013 Regional Goods Movement Plan released by the Houston-Galveston Area Council (H-GAC) identified a potential solution to address this issue. First, the Plan proposed to “formally define and designate the freight-significant network”, allowing H-GAC to direct investments towards the most critical segments of the region’s freight system, and also better educating decision-makers on which portions of the freight system are most crucial to regional mobility and economic competitiveness. After identifying the most critical components of the region’s freight system and recognizing hot spots and deficiencies, the Plan recommended partnering with other entities to “mitigate short-term deficiencies”. In the Plan, these short-term deficiencies refer specifically to short-distance intermodal connectors. This strategy to identify and target priority intermodal connectors was an efficient way to enhance freight reliability and mobility, minimize adverse impacts on regional livability, and promote a more multimodal freight network.

Potential Relevance to Anchorage:

Similar to the approach taken in Portland, this strategy encouraged partnerships and presented a more efficient method of addressing freight system deficiencies and enhancing freight mobility while maintaining regional quality of life. The Houston-Galveston region’s strategy to improve intermodal connectors can be relevant to Anchorage as it looks to improve upon its own freight corridors and last-mile intermodal connectivity. Best practice elements developed in this Plan included Integrating “Mainstream” Goods Movement into the Overall Transportation Planning Process, Defining Freight Issues/Challenges, and Identifying Root Causes of Freight Flows, Managing and Addressing Land Use Compatibilities, and Use of Performance Measures.

Further information:

### Appendix 1: Reference Documents / Websites

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>FHWA Office of Freight Planning and Freight Management &amp; Operations</strong></td>
<td>Link with various resources / reports on freight planning <a href="http://www.fhwa.dot.gov/planning/freight_planning/index.cfm">http://www.fhwa.dot.gov/planning/freight_planning/index.cfm</a></td>
</tr>
<tr>
<td><strong>NCFRP Report 14: Guidebook for Understanding Urban Goods Movement (2012)</strong></td>
<td>Guidelines for planners to understand movement of different types of goods and how to collect data to evaluate their impacts. Also can support identification of “root causes” of freight problems.</td>
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