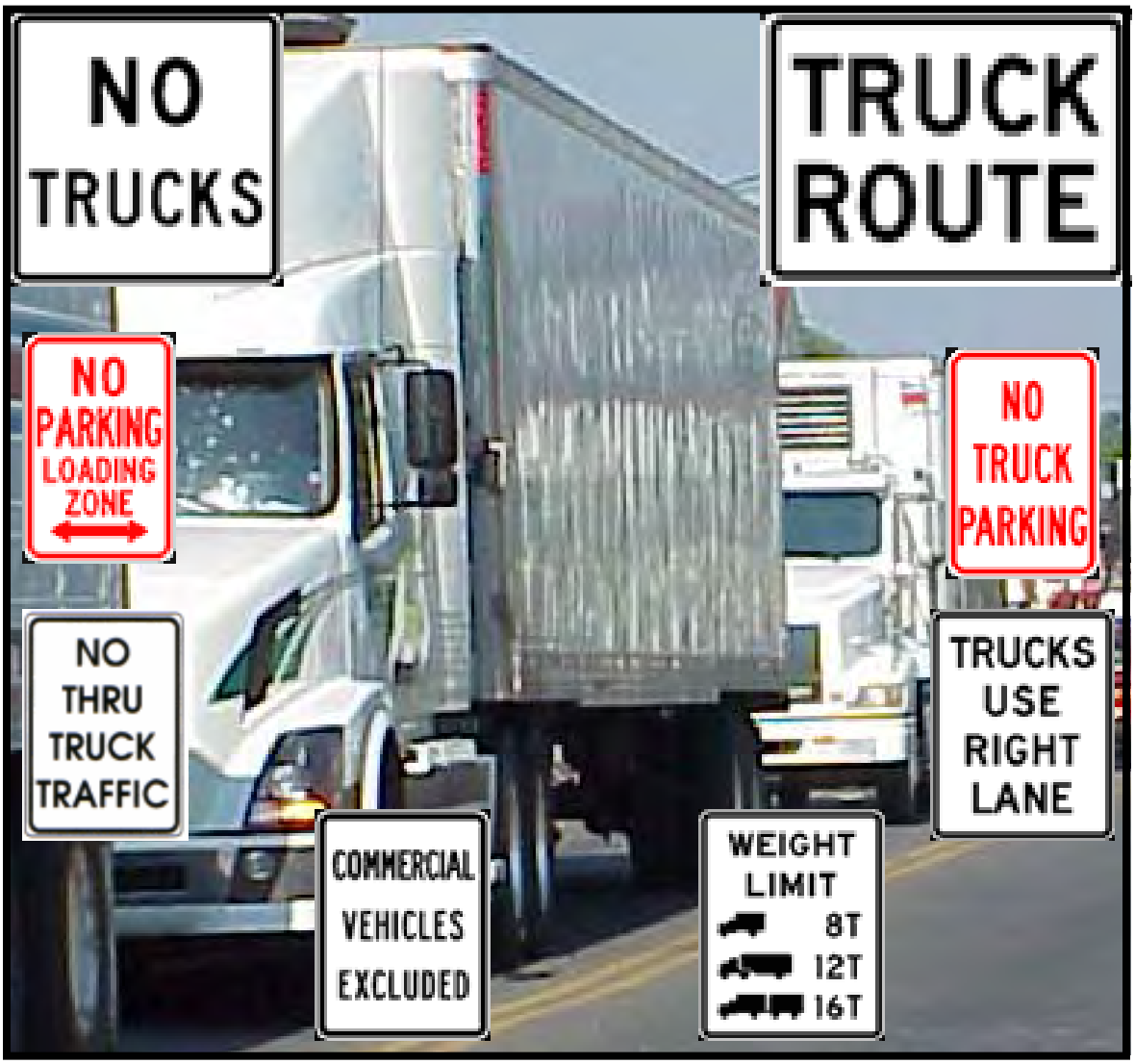
Trends in Heavy Truck Traffic Management

Final Report



Prepared for

Miami-Dade Metropolitan Planning Organization

Prepared by

Cambridge Systematics, Inc.

February 2005

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1.0 Introduction

Trucks are a daily fact of life on American streets and highways. Trucks, especially heavy trucks and tractor-trailers, are the mode of choice for the majority of local and regional distribution and delivery activity across the U.S., in Florida, and especially here in Miami-Dade County. They are the primary instrument of most U.S. domestic commerce for the delivery of services and goods to manufacturing plants and assembly sites, from manufacturers and assemblers to distribution centers, from distributors to retailers, and ultimately, to the consumers who use these goods at work and at home.

Effective management of truck traffic is a common goal throughout the industrialized nations of the world, and unsurprisingly, across most urbanized areas of the U.S. Trucks, especially large or heavy trucks, because of their size, weight, and subsequent operating characteristics can disrupt traffic flows, exacerbating already congested roadways. Accidents involving trucks have a higher tendency to be severe and are more apt to result in injuries and/or fatalities.

On November 7, 2003, while on her way to a charity event in Kendall, Miss Florida sustained critical injuries due to the impact of her automobile with an 18 wheel semi-trailer truck. The crash occurred when a pickup changed lanes and caused Miss Florida's vehicle to veer out of control. The semi-trailer also swerved and tipped over onto the car. The pickup did not collide with either vehicle and left the scene. The driver of the semi-trailer, along with two shipping companies, is being sued for damages. This accident, along with a history of similar incidents, served as a stimulus to the elected officials of Miami-Dade to call for investigating opportunities for the development of a truck management program.

The ***Trends in Heavy Truck Traffic Management Study*** was therefore undertaken to identify opportunities for improved truck operations in Miami-Dade County. The impetus for the study was borne out of a political will to better manage the safety issues associated with passenger vehicle-truck conflicts. The primary objective of this project was to develop recommendations for a heavy truck management program for Miami-Dade County that facilitates the efficient and reliable movement of freight while maximizing passenger safety and security.

Addressing issues associated with heavy trucks is not a simple undertaking. Many highway users believe that trucks should be banned from certain areas, or restricted to off-peak or night travel. On the other hand, industry and other freight stakeholders wish to see investments to improve truck access to key freight hubs and downtown areas by improving road geometries at key intersections, providing adequate loading/unloading zones, and adjusting signal timings to facilitate freight movements. The Miami-Dade MPO recognizes all of these viewpoints and has carried out several projects to begin addressing these issues. In 1996, an initial freight and goods movement study was completed that

documented the existing freight system, collected data from the trucking industry to quantify port access routes, and worked to provide a mechanism for integrating freight into the existing transportation planning program. Other facility-specific efforts have been completed to look specifically at truck access to Miami International Airport and the Port of Miami.

The ***Trends in Heavy Truck Traffic Management Study*** complements and extends the previous work, as the Miami area and the Southeast Florida region contemplate the appropriate role of trucks in an urbanized area and begin to assess strategies to better manage freight operations. This study provides an in-depth look at existing practices in heavy truck management programs around the U.S. as well as in major cities throughout the world. A successful program reflects the importance of providing a safe, secure, and efficient transportation system that maximizes trucking accessibility to the downtown, and other important freight generators, such as the port and airport, while minimizing adverse impacts on the community.

This report is organized as follows:

- **Section 1.0, Introduction –** This section presents the study purpose and provides a brief background of current conditions.
- **Section 2.0, Project Approach –** This section provides a description of the technical approach used to conduct this study.
- **Section 3.0, Overview of Case Studies –** This section describes the process used to select the case study cities. It also identifies the 22 cities selected and provides a high-level summary of their characteristics.
- **Section 4.0, Description of Program Types –** This section presents the findings and analysis of the 22 case studies. This includes a categorization of program types and management techniques.
- **Section 5.0, Miami-Dade Transportation Program Summary –** This section presents an analysis of the existing freight-oriented infrastructure, operations, and regulatory conditions in Miami-Dade County; and it summarizes the region's needs.
- **Section 6.0, Recommendations for Miami-Dade County's Truck Management Program –** This section presents a set of recommendations designed to facilitate the development of a truck management program. These recommendations integrate the program elements identified in Section 4.0 with the Miami-Dade-specific needs identified in Section 5.0, as appropriate.

2.0 Project Approach

The study approach focused around five major activities. These activities consisted of: 1) identifying cities to be used for case studies; 2) developing and preparing the case studies; 3) documenting the existing conditions in Miami-Dade County; 4) integrating the case study findings with the identified needs of Miami-Dade County to begin formation of a program; and 5) preparing recommendations to guide the development of a truck management program. The following sections provides a brief description of each major activity. For a more detailed description of the specific tasks completed as part of this study, readers are referred to the project scope of work, available from the Miami-Dade County MPO.

2.1 IDENTIFY CITIES FOR CASE STUDIES

Approaches to heavy truck management have already been developed, to varying degrees, in regions throughout the world as well as areas around the U.S. As part of this project, examples of truck management programs were identified in three categories: 1) major international city programs; 2) large U.S. city programs; and 3) the approaches of other cities in Florida. The objective was to use these experiences to abstract potentially useful practices, and to provide benchmarks that can help guide Miami-Dade County as it pursues the development of a truck management plan. Cities were selected for detailed case studies based on an international scan of world cities that exhibit similarities to Miami and Miami-Dade County's urbanized area in terms of population, economic structure, and major port and airport facilities. As part of the selection process, several top-tier global cities (e.g., London, Paris, New York, Los Angeles) were included to provide examples of truck management techniques being used by some of the largest, most dynamic and dominant cities.

2.2 DEVELOP CASE STUDIES AND DOCUMENT FINDINGS

After the identification of cities, their various approaches to truck management programs were identified and described as part of detailed case studies. Practices, plans, programs, and processes that contributed to the development and implementation of their freight management programs were summarized and analyzed. These case studies revealed a range of practices, with most falling into two broadly defined categories, "restrictive" and "pro-freight collaborative," representing distinct approaches to truck management. From the range of heavy truck management approaches observed in the case studies of cities throughout Florida, the U.S., and the world, common themes and their corresponding best

practices were identified for consideration and potential application by Miami-Dade County.

2.3 DEVELOP SUMMARY OF EXISTING MIAMI-DADE CONDITIONS/NEEDS

A key step in this study was the development of a local profile of conditions and needs. Understanding local conditions was a critical step in the development of recommendations for truck management techniques applicable to the region. This profile included a review of demographics, infrastructure, operations, existing freight initiatives, and existing truck management techniques. As part of this activity, interviews were conducted with local, county, and state representatives to provide a current perspective on truck management needs and policies in Miami-Dade County. These representatives consisted of technical staff involved in the management, planning, and operation of the transportation system.

2.4 INTEGRATE CASE STUDY FINDINGS AND MIAMI-DADE NEEDS

Once the local conditions and needs were characterized, findings from the case studies were applied to Miami-Dade to identify opportunities for truck management program elements. Comparing and contrasting the activities pursued by the case study cities in situations where their characteristics were similar to Miami-Dade's offered a method to abstract practices and approaches that might be useful to meet Miami-Dade heavy truck traffic management needs. The study team recognized that not all practices would be transferable, even in those cases where close physical, demographic, or economic congruency might exist, due to differences in local policy and political environments. However, applicable findings were identified based on common elements and used to guide the development of specific recommendations for Miami-Dade.

2.5 DEVELOP RECOMMENDATIONS FOR MIAMI-DADE COUNTY TRUCK MANAGEMENT PROGRAM

Based on the identified needs in Miami-Dade County, and the potential applicability of example approaches used in other cities based on a comparison of regional characteristics, recommendations were developed for a truck management program that will suit the conditions of Miami-Dade County. These recommendations are organized around programmatic organization; overall policy direction; specific techniques; and implementation activities.

3.0 Overview of Case Studies

A significant component of this study was the development of 22 case studies. These case studies were developed to illustrate potential truck management techniques for consideration in Miami-Dade County. The case study cities were selected based on an established set of criteria that compared city characteristics to those of Miami, with an intent to identify similarities and to distinguish crucial differences. Case studies were developed for three groups of selected cities – cities in Florida, cities in the U.S., and international cities – to provide a varied range of program types. Case study cities were compared to Miami through a review of socioeconomic data (comparisons of population and employment data with those of Miami) as well as transportation infrastructure components (airports, ports, rail service, and highways), volume of freight moving at the state level, and a "logistics ranking." In addition, within each case study, program elements were summarized, including identification and documentation of innovative and/or best practices.

3.1 SELECTION CRITERIA FOR BENCHMARK CITIES

Major metropolitan areas around the world, including the U.S., were evaluated with respect to their status as "world-class" cities (a hierarchy of cities, based on such measures as finance, management expertise, and the provision of other advanced services) from whom Miami can draw useful experience or lessons learned. Two main categories, "aspirational" world-class cities and "comparable" world-class cities, were used to shortlist cities that would be considered appropriate case studies for researching practices in the area of heavy truck management relevant to Miami. Beyond these global city classifications, other U.S. cities, and cities in Florida were selected based on their similarities to Miami and their experiences with truck management practices. The selection process for choosing the comparison cities is described, below, in more detail.

World-Class "Aspirational" Cities

This category identifies the leading world-class cities which Miami may wish to emulate with respect to transportation systems and freight management initiatives either immediately or in the future. While most of the cities in this category are much larger in size than Miami and many of their practices may not seem directly applicable, it is believed that they may provide insight that would be relevant to Miami as it continues to grow and develop, and ascends the ranks of

world-class cities.[1] The international "aspirational" cities selected for further analysis in this study include Frankfurt, London, Paris, and Singapore while the domestic "aspirational" cities include Chicago, Los Angeles, and New York.

Contemporary "Comparable" Cities

The objective of researching cities in this category is to provide Miami with innovative practices from similar-sized cities, or cities with a similar ranking in the hierarchy of world-class cities. Vancouver, British Columbia is in this category and was the international city selected for a detailed case study of its truck management practices. Domestic cities in this category include Atlanta, Boston, and San Francisco. Miami also falls within this category.

Domestic Cities

For the U.S., city-state pairs were selected for inclusion. These pairs – as opposed to metro areas selected in a vacuum – provide an opportunity to study how local and state jurisdictions work together as well as separately to manage heavy truck traffic. The city-state pairs were chosen based on demographics (population size and share of population that is foreign-born), the place of the city in the global world city hierarchy, economic structure (share of jobs in manufacturing and services as a percent of total employment at the county level), and on the presence of major freight facilities (an international airport, a deep water seaport, and/or rail/intermodal terminals of significance). Beyond the six selected domestic "aspirational" and "comparable" cities mentioned previously, Baltimore, Phoenix, Portland, and Seattle were also chosen for case studies because of shared characteristics with Miami and their relatively advanced approaches to truck management.

Florida Cities

Similar to the approach used for the selection of domestic cities, Florida cities were also chosen based on demographics (population size and share of population that is foreign-born), economic structure (share of jobs in manufacturing and services), and on the presence of major freight facilities (international airport, deep water seaport, rail/intermodal). Case studies reviewing the truck management approaches were completed for six Florida cities – Fort Lauderdale, Jacksonville, Orlando, St. Petersburg, Tampa, and West Palm Beach.

Table 3.1 provides a summary of the city comparison data.

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[1] A study of 122 cities throughout the world by the Globalization and World Cities Studies Network (published in *Cities*, 1999) describes 55 as "world-class." The world-class category is divided into three tiers – alpha (top tier – 10 cities), beta (middle tier – 10 cities), and gamma (lower tier – 35 cities). Miami ranks among the gamma cities in this tabulation. Beneath the Gamma category is a grouping of 67 cities that have not yet achieved world city status but possess at least some world city characteristics.

Table 3.1 Case Study City Comparison Data

Case Study City, State or International Program		City Type*	FAF Originating Tons (in Millions)	FAF Destination Tons (in millions)	2000 Population (in Thousands)	Manufacturing Employment (in Thousands)	Manufacturing Share of Total Employment	Logistics Rank
Atlanta	Georgia	World-Comparable	470.3	538.2	4,112.2	170.7	7.8%	9
Baltimore	Maryland	Domestic	165.1	214.2	2,553.0	85.7	6.9%	73
Boston	Massachusetts	World-Comparable	126.4	165.7	3,398.1	167.7	8.5%	58
Chicago	Illinois	World-Aspirational	780.4	743.1	8,272.8	496.4	12.0%	24
Los Angeles	California	World-Aspirational	1,086.1	1,190.0	9,519.3	536.3	13.3%	30
New York	New York	World-Aspirational	540.3	559.3	9,314.2	174.1	4.2%	28
Phoenix	Arizona	Domestic	127.1	153.6	3,251.9	137.5	8.6%	85
Portland	Oregon	Domestic	203.0	231.3	1,572.8	123.4	13.2%	68
San Francisco	California	World-Comparable	1,086.1	1,190.0	1,731.2	50	5.1%	37
Seattle	Washington	Domestic	345.8	355.9	2,414.6	165.4	12.2%	32
Fort Lauderdale	Florida	Florida	576.3	698.8	1,623.0	33.3	4.9%	106
Jacksonville	Florida	Florida	576.3	698.8	778.9	34.2	6.5%	31
Miami	Florida	World-Comparable	576.3	698.8	2,253.4	57.1	5.6%	41
Orlando	Florida	Florida	576.3	698.8	1,644.0	44.4	5.1%	120
St. Petersburg	Florida	Florida	576.3	698.8	921.5	39.16	9.2%	41
Tampa	Florida	Florida	576.3	698.8	998.0	31.3	5.0%	61
West Palm Beach	Florida	Florida	576.3	698.8	1,131.2	23.4	4.5%	114
Frankfurt	Germany	World-Aspirational	–	–	1,925.0	–	–	–
London	United Kingdom	World-Aspirational	–	–	11,900.0	–	–	–
Paris	France	World-Aspirational	–	–	9,850.0	–	–	–
Singapore	Singapore	World-Aspirational	–	–	4,400.0	–	–	–
Vancouver	Canada	World-Comparable	–	–	2,150.0	–	–	–

Source: City Type based on "Inventory of World Cities" published in *Cities*, 1999; origin and destination (tonnage) from Freight Analysis Framework (FAF), Federal Highway Administration; populations from U.S. Census Bureau and Principal Agglomerations of the World, Thomas Brinkhoff; manufacturing employment (2003) from U.S. Bureau of Labor Statistics; Logistics rankings based on "Logistics Quotients, 2003" calculated by *Expansion Management* and *Logistics Today*.

*Note: See text for explanations concerning "World Class" cities that are "aspirational" and "comparable" to Miami; "domestic" and "Florida" cities not included in world class hierarchy of cities rankings.

3.2 SUMMARY OF CASE STUDIES

Detailed case studies for each of the 22 cities are provided in Appendix A. These detailed case studies summarize the program characteristics for each city, based on available data, across a variety of categories. The research conducted for each case study was organized into two broad sections: 1) a truck program checklist and 2) an innovative freight management-related practices summary. The checklist was organized into the following broad areas: Planning and Outreach; Investment and Funding; Permitting; and Enforcement.

Each of these four areas were then subcategorized into specific practices and depending upon whether or not they were in use, the *Yes/No* column was marked accordingly with a checkmark. In cases where such practices were found to be not wholly in use or limited in scope, the corresponding *Yes/No* column was marked as "limited" or "partial." In instances where no information was found, the column was marked as "NA." In cases where it was known that these practices were not in use, the column was marked "none." The column *Organization/Notes* describes the organization carrying out the outlined practices and makes specific observations regarding the practices. Given that one of the objectives of this study was to separate out the city-state jurisdictions and responsibilities, the truck program checklist was found to be inapplicable for the international case studies. Therefore, this checklist was omitted for the international research.

Each case study also includes the following:

- ***Innovative Freight Management-Related Practices*** outlines new innovative practices and strategies that were found in each of the case studies. The main features of these practices are summarized and where known, their success is commented upon.
- The ***Program Summary*** at the end of each case study outlines specific approaches of each program and points out their applicability to the Miami-Dade area.
- ***Keywords*** at the end of each case study capture the main features that best describe the relevant case study program.

4.0 Description of Program Types

The individual case studies provided insights into the different approaches used by the specific cities to promote improved management of their heavy trucks. While these city-specific programs were useful, they were all customized to reflect each city's distinct needs, and often were based on local politics or specific regional concerns. To begin to identify possible program elements for the Miami truck management program, the individual case studies were categorized and summarized to identify broad classes of program types as well as more specific program elements that could then be evaluated for their applicability to Miami. This section presents an overview of truck management program types, identifies key program elements, defines best practices, and identifies common themes/findings which facilitate the identification of potential program elements for Miami.

In reviewing the experiences of other cities around the world, it became evident that communities were using a wide spectrum of program elements to control or manage their truck traffic. Different and sometimes apparently conflicting activities, one motivated by a desire to restrict truck traffic and the other to promote truck access, can be undertaken to achieve similar objectives. In some of the cases researched, elements were deployed in a restrictive manner, while in other cases elements were deployed that promoted increased freight mobility. For example, truck route restrictions (based on restricting movements) versus truck route designation (based on providing a complete truck route system) both reflect truck routing techniques and the desire to effectively manage truck travel along certain corridors.

In most cases, cities, counties, and states develop truck management programs for their individual jurisdictions. State departments of transportation focus on the state and interstate highways, providing truck movement and access throughout the State. These state programs focus on height/weight/length limitations, with key highway designations to ensure access into, out of, and through the State. These programs typically include permitting programs to accommodate vehicles even outside the legal "envelope." Local jurisdictions interface with these statewide truck networks and provide the roadway restrictions and designations for trucks operating on the local streets in their communities and neighborhoods. These, in contrast to statewide-level operations functions, deal more with community impacts, air quality concerns, safety, noise, and visual intrusions. Conflicts between these two perspectives are increasing as local issues impact state roads and interstate facilities in many populated areas.

In an ideal situation, the state and local programs are coordinated to ensure connectivity of the networks. However, in many instances, this linkage is missing, causing bottlenecks for trucks where disconnects in truck-friendly or

truck–acceptable facilities occur. These disconnects can result from little or no coordination between programs, or lack of formalized programs by one or both of the jurisdictions.

Additionally, many cities impose restrictions on an ad hoc basis often in response to general community or specific neighborhood opposition to truck movements. As noted above, this may occur in part due to conflicting objectives of promoting freight mobility versus restricting truck and terminal operations to preserve residential neighborhoods' peace and quiet and safety. This becomes especially problematic when residential communities and industrial areas "grow up" together, or when industrial areas are redeveloped into residential communities. Massachusetts has found a workable method to circumvent these problems – it requires that all cities get permission from the Massachusetts Highway Department (Mass Highway) before restricting traffic on a route (be it state highway or a local arterial). This requirement provides the State with an enhanced ability to preserve regional mobility and largely prevents unfair or overly restrictive route designations.

In the case studies, particular attention was given to describe the innovative technological, managerial, or other types of strategies that had been implemented or were in the planning stage. While most practices were already in operation, others were under consideration (such as the New York route planning application and the United Kingdom Lorry Road-Use Charge). Truck management practices, in operation or in the planning stages, were categorized based upon their intent and perceived impact on the trucking community.

After gathering the case study information for the benchmark cities, it became clear that the variety of individual truck management practices could be categorized into two principal approaches, "restrictive" and "pro-freight collaborative." The truck management practices of most cities were then categorized into either of these two approaches. Still, in several instances, a clear distinction could not be made, and these cities were labeled as "neutral." The restrictive and the pro-freight collaborative categories are explained in detail below.

4.1 RESTRICTIVE TRUCK MANAGEMENT PRACTICES

Truck management practices were classified as restrictive when the action contemplated or carried out was intended to preserve the non-freight (residential, business other than industry) community's travel patterns or routes at the expense of those of trucking and goods movement-related industries. In documenting the case studies, the status of the practices (active or not active) was determined. This included practices that had been implemented and have since been suspended or abandoned, practices currently in place, and practices planned or under development. In cases where the practice was terminated, the reason(s) were documented, as data allowed, and analyzed in terms of a) intent behind their implementation, b) the extent of their restrictive approach and c) their success or failure. The success or failure of a program was determined

based on its ability to achieve its objective (limit truck traffic in neighborhoods, reduce peak-period truck operations, etc.).

Examples of restrictive programs include a number of practices, ranging from the more minor but widespread, to the more stringent but less common. For example, a common restrictive approach to truck management consists of legislation that restricts trucks to specific routes, limiting route options and customer access. Perhaps the most common restrictive practice is simply that of through truck movement prohibitions on residential roads, including those that may be arterials, but which transect strictly or overwhelmingly residential areas. A less common, but more restrictive approach consists of programs that require motor carriers to request permission (apply for a trip permit) for a given movement. This process usually requires the submission of detailed load, trip, and route information. This is a doubly restrictive management technique in the sense that it constrains the trip itself, and it takes time to apply for and receive the permit, thus increasing the costs for making deliveries.

Specific examples of restrictive programs include the following:

- Singapore requires heavy vehicles (greater than 17,000 pounds) to notify regulators with trip details three days in advance of the truck movement.
- The Cambridge (MA) Night Time Truck Ban is an example of a time-specific restrictive practice. Under this program, trucks may not operate through neighborhoods at night, but regain access during daylight hours. Therefore, this practice is less restrictive.
- The Department of Transport in the United Kingdom is considering a program that restricts truck movements by applying charges or fees to truckers based on trip characteristics including distance, time of operation, and route. This practice would promote a system that encourages the shortest routes, off-peak travel, and the use of a designated system by making these the most cost-effective alternatives. However, it would also preserve the freedom of a trucker to travel without limitations, provided they are willing to pay the fees for not conforming.

4.2 PRO-FREIGHT COLLABORATIVE TRUCK MANAGEMENT PRACTICES

Truck management practices were determined to be pro-freight when the action contemplated or carried out was intended to improve, advance, optimize, or maximize the ability of trucks to move effectively in an urban region, thus aiding operations of the freight industry. In many cases this pro-freight intent was evident when industry owners and operators were involved either in the planning of such practices or in their implementation. A freight-friendly atmosphere was characterized, in part, by the overall perception of industry in general in a region. A recognition by policy-makers and the general public of the importance of

trucks and freight movements in broader terms – e.g., importance to the economic vitality of the region – encouraged (or at least did not impede) a pro-freight program. In many instances, freight planning programs explicitly expressed a willingness to consider industry's needs.

Pro-freight collaborative practices generally involve the freight community by inviting their participation in committees and setting up platforms to discuss their issues. The designation of truck routes and intermodal connectors (key local roadways that provide connections between load centers like ports and rail yards to highways of truly statewide significance or the Interstate system) also are key components to a pro-freight program.

Other methods used by cities to support freight and goods movement-related activities are through the identification of trucking needs (through various studies), targeted funding for improvements related to trucking (e.g., increasing turning radii along major truck routes, etc.) and capital funding earmarked for projects related to goods movement.

Three specific and noteworthy examples of pro-freight programs include the following:

1. The Freight Action STrategy for Everett-Seattle-Tacoma (FAST) Corridor Program in the State of Washington represents an example of ***targeted funding*** in a region to promote freight mobility. This program sponsors a package of freight investments and shared financing between the Class I railroads operating in the region along with several levels of the government.
2. The Alameda Corridor in Los Angeles is the most dramatic example of a significant ***capital investment*** to specifically address freight and goods movement. This project resulted in the construction of a new rail corridor to alleviate congestion at the Ports of Los Angeles and Long Beach.
3. The Boston Back Streets Program is an example of an ***economic development***-driven initiative that included considerations to promote truck movements in the region.

4.3 SUMMARY OF CASE STUDY FINDINGS

Table 4.1 categorizes the truck management programs of the case study cities into the three broad classifications – restrictive, pro-freight collaborative and neutral – as described previously. These classifications reflect the practices in the overall metropolitan regions rather than just those found in the cities. For example, while the City of New York is quite restrictive in its approach, the Ports of New York and New Jersey, along with the states and the MPO, encourage and aid freight movement.

Table 4.1 Classification of Truck Management Program Types

Restrictive	Neutral	Pro-Freight Collaborative
London, England	Atlanta, Georgia, U.S.	Frankfurt, Germany
Paris, France	Phoenix, Arizona, U.S.	Baltimore, Maryland, U.S.
Singapore, Singapore	Jacksonville, Florida, U.S.	Chicago, Illinois, U.S.
Vancouver, BC, Canada	St. Petersburg, Florida, U.S.	Portland, Oregon, U.S.
Boston, Massachusetts, U.S.	Tampa, Florida, U.S.	Seattle, Washington, U.S.
San Francisco, California, U.S.	West Palm Beach, Florida, U.S.	Los Angeles, California, U.S.
	Miami-Dade, Florida, U.S.	New York, New York, U.S.
		Fort Lauderdale, Florida, U.S.
		Orlando, Florida, U.S.

Note: The classifications presented above are based on available information. Pertinent information regarding the foreign cities was limited.

The categorization of the case study cities ultimately was a subjectively analytic process. Many cities had components that were both restrictive and pro-freight, making an exact determination difficult. Elements of the truck management programs in the case study cities can conflict at times, underlining that the creation of an effective program, whether restrictive or pro-freight in nature, is a complex undertaking.

Several general characteristics emerged during the categorization process that demonstrate common elements in how different types of cities approach truck management. These are presented below.

- ***Pro-Freight and Collaborative*** City Characteristics
  - World class cities that have a large industrial presence;
  - Cities with major seaports that are gateways for national and international markets;
  - Cities are concerned with long-haul trips (with local origins and destinations) that serve national and international markets, as well as through trips; and
  - Local politicians and policy-makers recognize the importance of heavy trucks to the community.
- ***Neutral*** City Characteristics
  - Cities that are neither major industrial nor commercial centers and those that exhibit limited heavy truck activity;
  - Cities that have conflicting program elements, reflecting both restrictive and pro-freight interests;
  - Cities, such as Atlanta, that are addressing freight needs by focusing on an intermodal approach; and
  - Cities for which there was limited data.

- ***Restrictive*** City Characteristics
  - World-class cities with minor industrial activity;
  - Cities with a limited number of heavy trucks primarily fulfilling domestic goods movement needs;
  - Cities primarily concerned with short-haul trips made by large trucks in the center of busy commercial areas;
  - Large trucks perceived to be of limited importance and compete, as a minority, with the movement of passengers; and
  - Local politics prioritized community interests over industry needs.

In parallel with developing these three classifications, several common themes and program elements emerged across categories. The following section presents the themes and program elements that became apparent from the case studies.

4.4 TRUCK MANAGEMENT PROGRAM ELEMENTS/THEMES

The case studies found that in most instances, a comprehensive truck management program was *not* in operation. Instead, practices and activities formed a loosely connected (if connected at all) set of activities that formed an approach for dealing with trucks and goods movement. These loosely defined approaches draw from different elements and combinations of elements, that when grouped together, form unique truck management programs. Table 4.2 demonstrates how the use of multiple truck management program elements have been combined to create distinct truck management approaches for each of the case studies.

These 15 program elements (or themes) appeared frequently among the case study cities. Each case study city used the program element in its own way to either restrict the movement of trucks (restrictive approach) or to assist them in their operations (pro-freight collaborative approach). The following section describes common themes and program elements identified from the case studies.

Regulation

Most truck management programs use regulation as a primary means of "managing" trucks. Many types of regulations were found to be in operation, focusing on temporal, geographic, and/or environmental constraints. These included regulations to confine movements to different times of the day, to restrict movements to certain routes, to control (limit) emissions, and to guide the development of freight-intensive industrial areas.

Table 4.2 U.S. Case Study Application Elements

Case Study		Truck Management Program Approach													
		Penalties	Enforcement (Special Measures Specific to Freight Movement)	Regulations (Specific to Freight Movement)	Neighborhood/ Local	Information Dissemination	Incentives	Intermodal/ Rail Approach	Economic Development Approach	Land Preservation and Other Land Use Strategies	Funding	Technology and Innovation	Industry Collaboration/ Private Sector Contribution	Investment in Infrastructure and Construction	Political Will Power and Approval
Baltimore	Maryland			●	●	●			●				●		
Boston	Massachusetts			●	●			●	●	●			●	●	●
Atlanta	Georgia							●			●		●		
Chicago	Illinois							●		●	●		●		●
Portland	Oregon					●			●	●	●	●	●	●	
San Francisco	California	●	●		●							●			
Seattle	Washington		●			●	●	●			●		●	●	●
Los Angeles	California						●	●	●		●		●	●	●
New York	New York		●		●				●			●		●	
Phoenix	Arizona		●	●											
Fort Lauderdale	Florida		●		●								●	●	
Jacksonville	Florida		●						●					●	
Miami	Florida		●	●							●		●	●	
Orlando	Florida			●					●	●					
St. Petersburg	Florida		●						●						
Tampa	Florida		●	●	●	●		●					●	●	
West Palm Beach	Florida							●					●		
Frankfurt	Germany					●		●				●	●		
London	United Kingdom		●	●									●		
Paris	France		●	●											
Singapore	Singapore		●			●							●		
Vancouver	Canada			●			●								

Enforcement, Penalties, and Pricing

Enforcement refers primarily to the use of fines and other penalties. The success or failure of targeted enforcement of truck-specific regulations and legislation as a means for truck management are noted in the case studies. In several instances, the lack of enforcement was remedied by innovative incentives or penalties. Pricing strategies (e.g., tolls, congestion pricing, hot lanes) were included in this category because like enforcement and penalties, such strategies have an impact on the cost of freight operations.

Incentives

The use of incentives to stimulate compliance has been implemented effectively by some cities. The development of incentive-based programs often emerges from the failure of conventional enforcement strategies. Incentives can eliminate the need for enforcement and penalties by rewarding those that voluntarily comply. Incentive-based programs work to stimulate self-enforcement/ compliance by rewarding operators with cost savings or business development opportunities.

Neighborhood/Local Focus

In order to mitigate the conflicts that often arise between communities and goods movement-related activities, truck management programs often include practices that can protect or reduce the impact of such conflict on the community. For example, time of day restrictions, such as night time bans, can be effectively used to mitigate community impacts.

Land Use Strategies

Practices that incorporate a land use approach in dealing with goods movement issues came up in several case studies. This provides a comprehensive approach to freight management as part of a larger system to incorporate goods movement into traditional MPO planning processes. Examples of such strategies include preservation of land for industrial and goods movement-related activities and incorporation of goods movement-related criteria within the programming process.

Economic Development

The linkage between industrial competitiveness and goods movement has become more prevalent as economic development organizations become more involved in transportation planning programs. These organizations are developing a greater awareness of the ties between transportation and economic growth. In addition, ISTEA and its successor Federal transportation spending authorizations have all noted the importance of preserving and promoting U.S. economic competitiveness in the global marketplace and have all encouraged

attention to freight planning to improve the domestic economy and maintaining a strong competitive presence.

Intermodal

Interest is increasing to reduce truck vehicle miles traveled by diverting traffic onto alternative modes like rail and barge. In addition, planners have recognized the importance of providing efficient and reliable connections between modes. For example, several cities support and encourage modal diversion from truck to rail to promote congestion and growth management.

Investment and Funding; Public-Private Participation

Funding specifically targeted for goods movement has been, until recently, virtually nonexistent. However there is an increasing awareness of the public benefits of funding freight-related programs and a willingness on the part of the private sector to participate and contribute toward funding. The Federal transportation authorization bills have continued to evolve since ISTEA to promote and fund freight transportation projects. These range from smaller quick-fix operational projects to much more complex infrastructure programs.

Information Exchange

Traditionally, regulatory authorities and truckers have had limited interaction, often in the form of truckers providing information on their trip activity to obtain permits. However, over the last decade the exchange of information on both sides has become an important tool for encouraging compliance among operators. Several cities have instituted special practices aimed at disseminating information to truckers, such as maps of truck routes and truck restrictions, and real time congestion information at major freight generators, such as port terminals.

Technology and Innovation

Advances in technology have introduced innovative, sophisticated tools that can be used by both private operators and public regulators to improve the efficient and safe operation of commercial vehicles. Examples include automated truck routing systems, automated load reservation systems, and weigh-in-motion (WIM) and preclearance technology. Each of these systems is designed to streamline motor carrier operations, reducing cost and delay.

Political Will Power

In large part, the success of truck management programs and practices, like other programs, is driven by local political motivation and will. Regardless of the technical validity of a truck management program, without political support it will not be implemented. In fact, the political direction often dictates whether a truck management program is restrictive or pro-freight.

4.5 TRUCK MANAGEMENT BEST PRACTICES AND PROGRAM THEMES

This section provides a summary of the best practices identified within each of the defined truck management programs. These best practices are based on a review of available data. While some locations have evaluated their programs or individual practices, others have not. In addition, some practices are still in the development stages. As such, the identification of best practices is based on a combination of qualitative and quantitative inputs. The goal of this section is to present an overview of the available truck management practices that have been successfully developed around the U.S. and throughout the world, and to serve as a foundation to guide the development of recommendations for the Miami-Dade truck management program. Tables 4.3 and 4.4 summarize best practices, organized by program element, as they apply to both restrictive and pro-freight approaches.

The detailed information collected and analyzed as part of the preparation of the case studies revealed several lessons learned/themes. The following lists the consistent themes that emerged from the 22 case studies regarding approaches to truck management.

- **There are no examples of the ideal comprehensive truck management program.** *The 'ideal' truck management program does not exist.* Successful practices in different areas emerged from the case studies but no one comprehensive program appeared to be ideal.
- **A truck management program is but one of many elements of a freight plan.** Truck management programs cannot be planned and implemented in isolation of the other freight movement needs. A truck management plan is but one component, among other modal needs, for improving the movement of freight. A truck management plan is best developed in the context of intermodal linkages and needs. In addition, as with successful freight planning, a truck management program should be integrated into the *overall* transportation plan for the area/region.
- **External factors other than the program *type* often contribute to the success or failure of a truck management plan.** Truck management programs utilize a variety of tools, approaches, and practices which can be grouped as freight-restrictive or pro-freight. In general these two categories form the universe of truck-related practices and either of the two can be effective. However, program success appears to not only be a function of the type of program but is also influenced by such factors as enforcement, and the social, economic, and political environments in which they are implemented.

Table 4.3 Restrictive Best Practices

Program Element	Practice	Case Study Example
Regulation	Operational Management by selective routing or time of day restriction	Peak-Hour Operation Restriction – Seattle, Washington London Lorry Ban – London, United Kingdom
	Truck Parking Management through comprehensive bylaws	Municipal Bylaws – Vancouver, Canada
	Environmental Quality Regulation	Maricopa Idling Ordinance – Phoenix, Arizona Noise Abatement – Vancouver, Canada
Enforcement, Penalties, and Pricing	Increasing cost of operation to discourage movement in peak periods or congested locations	Central London Congestion Charge – London, United Kingdom Electronic Road Pricing – Singapore Curbside Parking Pricing Strategies – New York, New York
Incentives	Incentives to increase compliance with regulations	Incentive-based Compliance – Vancouver, Canada
Neighborhood/Local Focus	Restrict Truck according to neighborhood requirements	Local Truck Zones – Baltimore, Maryland
Land Use Strategies	N/A	N/A
Economic Development	N/A	N/A
Intermodal	N/A	N/A
Investment and Funding	N/A	N/A
Information Exchange	Require motor vehicles to submit comprehensive information on route and time of operations	Heavy Motor Vehicles Notification – Singapore
	Establish a central point of contact for regulating movement of heavy trucks and coordination with relevant stakeholders	City of Seattle, Washington Freight Facilitator's office
Technology and Innovation	N/A	N/A
Political Will Power	N/A	N/A

Table 4.4 Pro Freight Collaborative Best Practices

Program Element	Practice	Case Study Example
Regulation	N/A	N/A
Enforcement, Penalties, and Pricing	N/A	N/A
Incentives	N/A	N/A
Neighborhood/Local Focus	Encourage interaction among neighborhood and truck operators	Truck Loading Unloading Program, Chicago
Land Use Strategies	Preservation of industrial land coupled with provision for movement of heavy vehicles to service the same	Truck Access Route Program (TARP)
Economic Development	Linking goods movement to economic development	Boston Back Streets Program Goods Movement and Economic Development, Los Angeles, California
Intermodal	Encourage rail and other modes of freight transportation to move from truck-based transportation.	Atlanta encourages the movement of freight via rail as opposed to truck.
Investment and Funding, Public Private Partnerships	Institute funding programs and capital investment, if needed in order to accommodate and facilitate efficient goods movement	Alameda Corridor – Public Private Participation Initiative
Information Exchange	On-line Appointment and Reservation System at high traffic areas like the Port	"CRIS" Cargo Reservation, Information, and Service Center – Frankfurt, Germany FIRST System – Port Authority of New York and New Jersey
	Industry Participation in Planning	Industry Participation – Portland, Oregon
Technology and Innovation	N/A	N/A
Political Will Power	Create a unified political strategy for management of goods movement	Freight Action Strategy for Everett-Seattle – Tacoma (FAST) Program CREATE Program – Chicago, Illinois

- **A successful truck management program needs to have multiple program elements and tools.** Multiple elements and combinations thereof constituted most of the more successful truck management programs. Management authorities applied a multitude of tools, including regulation, technology and others to organize and facilitate the operation of heavy trucks in their jurisdictions. In cases where elements were in limited use (or not in use at all), truck management programs were found to be less effective.
- **An effective truck management program is dependent on the consideration of the needs of all stakeholders.** Programs that involve outreach efforts, convene stakeholders, encourage communication, and collect data on operations or impacts are found to be more effective. *Educational* outreach efforts

are key to building consensus and political support to fund truck management programs.

- **Coordination among planning and operational staff and across agencies is crucial for the development of an effective program.** Truck management programs are more effective when they include mechanisms to enable coordination among the multitude of organizations involved in administering management programs. Coordination among adjoining cities, counties, and their state partners when designating truck routes helps provide an integrated and complementary system that is easier to implement and has a higher likelihood of success.
- **Outreach to the industry and the public is necessary to develop the political will to drive the program.** Truck management programs are more effective and more easily accepted when stakeholders are educated and allowed to provide input. The implementation of programs is ultimately a determination of political will, and the education of the primary constituents (the general public and industry) is needed to ensure the benefits of freight-related programs are both understood and supported.
- **Technology and innovation are becoming a larger force in truck management solutions.** The use of technology and innovation are key ingredients in the formulation of a successful truck management program. They allow for the development and use of efficient, cost-effective techniques that otherwise would not be possible, making programs more efficient and cost-effective.
- **Security is an important consideration.** The terrorist attacks in 2001 have increased safety and security considerations with regard to cargo movement and related management practices. Any truck management program under consideration now needs to include this as a key component. The coordination of multiple security-related programs with the truck management program is now an important part of the overall truck management program.
- **Political will may be the most significant factor in program implementation.** *Political will was found to be a significant determinant in the successful implementation of truck management programs.* The funding of freight programs, perceived to be beneficial only to industry, traditionally has been an uphill battle. A greater awareness of the benefits of such funding has been recognized, politically and publicly, only recently. The success of programs has been tied more to political will rather than specific program elements.

5.0 Miami-Dade Transportation Program Summary

To develop recommendations for the development of a truck management program, it is important to understand the existing system, its operational characteristics, any programs already in place, and the environments in which these operate, to better comprehend the issues that drive the transportation system. This section summarizes the transportation program in Miami-Dade County, including the identification of the region's key needs.

5.1 DEMOGRAPHICS

- **Population –** Miami-Dade County currently is home to a population exceeding 2.2 million. Between 1990 and 2000, the population grew by 16 percent. The community is extremely diverse, with almost 51 percent of the residents being foreign-born.[2] The majority of the population resides outside the central business district, primarily in single family homes. This has resulted in classic sprawl conditions throughout the County. In addition, the personal auto is the dominant mode of transportation, accounting for over 96 percent of all travel in the County. These leads to significant levels of congestion, especially during peak periods. As such, the region's population and its mobility needs dramatically impact truck mobility, while simultaneously creating a decentralized demand for goods and services.
- **Employment –** Miami-Dade's workforce is dependent on the services industry, which accounts for over 90 percent of all employment. This compares to about five percent being employed by the manufacturing sector.[3] Although there are several dense concentrations around the County, service employment is spread throughout the region, supporting the population. The three dominant economic generators for the County are the Port of Miami, Miami International Airport, and the central business district. There are other key areas, such as the agricultural and mining operations in the southern part of the County. As described above, employees typically are moving to work to locations throughout the County, by private auto, using the same key corridors that trucks rely on. These conditions create low levels of service, and regular examples of car-truck conflicts.

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[2] U.S. Census Bureau.

[3] U.S. Department of Commerce, Bureau of Labor Statistics.

5.2 INFRASTRUCTURE

- **Port of Miami –** The Port of Miami is the single largest truck trip generator in Miami-Dade County. The volume of freight handled by the port grew by over 89 percent between 1991 to 2002 – from 4.7 to 8.9 million short tons.[4] In addition, the port is the number one ranking container port in Florida, and truck traffic in the form of drayage and other container transfers can put up to 4,000 trucks on the roads on any given day. The Port of Miami also is home to not only the largest domestic cruise ship operation, it is the largest cruise port in the world. The Port of Miami accounted for over 21 percent of the national cruises (684) and almost 26 percent of the national cruising passengers (1.7 million) in 2001.[5] The cruise ship terminal generates significant volumes of truck traffic itself, apart from the Port's cargo operations, to supply the ships as well as putting scores of full-sized motor coaches on the roads between Miami International and the Port of Miami to transfer passengers between the two facilities. The freight and passenger operations at the Port of Miami rely on the same limited number of highways, like I-395, I-95 and local arterials. In addition, these highways are backbones of the commuting public and experience significant amounts of congestion throughout the day.
- **Miami International Airport –** Miami International Airport (MIA) is the second single most significant truck trip generator in Miami-Dade County. MIA is the eighth busiest cargo airport in the world, but more importantly, it is the third largest air cargo center in the U.S., and it leads all U.S. airports in the amount of international tonnage handled – more than LAX, more than O'Hare, more than JFK, and more than Atlanta. Miami International Airport accounts for 66 percent of the enplaned revenue tons in the entire State of Florida (1.8 million tons in 1999 and that amount is forecast to virtually double in a mere five years, growing 98 percent by 2010).[6] As noted above for the Port of Miami, MIA also relies exclusively on key regional roadways, like SR 836 and the Palmetto (SR 826), that function as key mobility corridors for all travel in the County. In fact, truck access to MIA has been highlighted by specific planning activities, such as a study to investigate highway improvement options to air cargo facilities located on the western portion of the airport.
- **Railroads –** Miami-Dade County is served by both the Florida East Coast Railway (FEC) and CSX systems. These two rail corporations have major facilities in Miami-Dade, including an intermodal terminal, and transload/ bulk transfer facilities. These facilities generate significant volumes of truck

[4] http://www.iwr.usace.army.mil/ndc/wcsc/portname00.htm.

[5] http://www.marad.dot.gov/Marad_statistics/.

[6] Florida Aviation System Plan, 2001.

traffic. Currently, rail provides intermodal, carload, and unit train service to a variety of customers. Aggregate, or limestone, quarries located in Miami-Dade County provide significant demand for bulk and/or unit train service on a daily basis for shipments northbound. In addition, a significant volume of consumer products are brought into the region via intermodal service to serve the local population. However, the mode split for rail is relatively small compared to truck. Encouraging freight mode shifts away from solely trucking modes to intermodal and rail modes, could help reduce roadway traffic congestion, or at a minimum support growth management efforts, in the future.

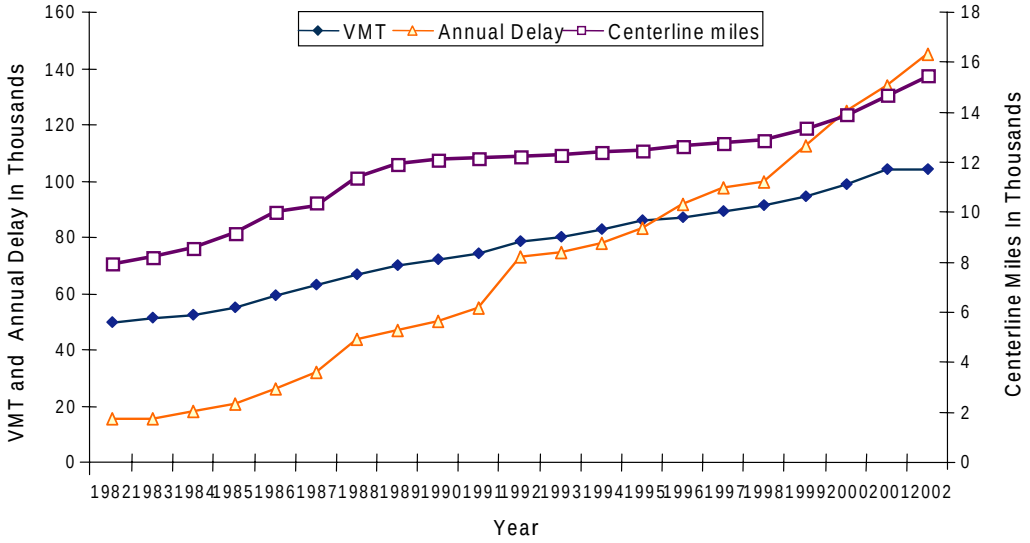
- **Highways –** The highway system in Miami-Dade County provides the primary transportation network for passenger and freight movements. The region's highways are critical to efficient freight operations as they provide the intermodal connectivity of the transportation system. Highways serve as connectors to the air, water, and rail terminals providing transfers of cargo between modes for freight shipments into, out of, within, and through the County. This system can be characterized by highways, expressways, and connectors of national and state significance; highways, major arterials, and connectors of regional significance; and arterials, local streets, and connectors of local significance.
  - Florida's Strategic Intermodal System (SIS) defines the highways of statewide significance; several of these represent nationally significant roadways, including I-95 which is the only Florida highway specifically designated as a nationally significant facility.
  - Highways of regional significance consist of a subset of the remaining state highways and key connectors that focus on regional connectivity and throughput.
  - The remaining roadways have local significance, providing service to local businesses and neighborhood residents, and connections to the other roadways in the hierarchy.
- **Other Freight Facilities –** There are several other types of freight-related facilities and hubs that support the movement of freight and goods.
  - Major trucking terminals, warehouses, and distribution centers provide storage, sorting, and reloading services.
  - Waterways, similar to highways and railroads, also provide corridors to connect hubs of activity. These include the Intracoastal Waterway, Miami River, and Government Cut, and the near Atlantic Ocean.
  - Pipelines, although often not considered, also move significant amounts of freight, such as jet fuel from Port Everglades to MIA.

Each of these infrastructure elements, directly and/or indirectly impacts the other modes. Miami-Dade County truly is served by a multimodal and intermodal transportation system. From an intermodal perspective, trucks primarily serve as the agent to transfer shipments between origin, more than one mode of transportation, and final destination. This magnifies the importance of the intermodal connectors. This was recognized and highlighted by the initial SIS funding for 2005 with $100 million allocated statewide to specifically address connectors. From a multimodal perspective, it is equally important to recognize the mix of transportation services available. The coexistence of multiple forms of transportation creates service bottlenecks caused by conflicting operations. Two key examples in the region consist of at grade rail crossings and draw bridges. Both of these examples illustrate the need for policies to effectively manage multiple operations.

5.3 OPERATIONS

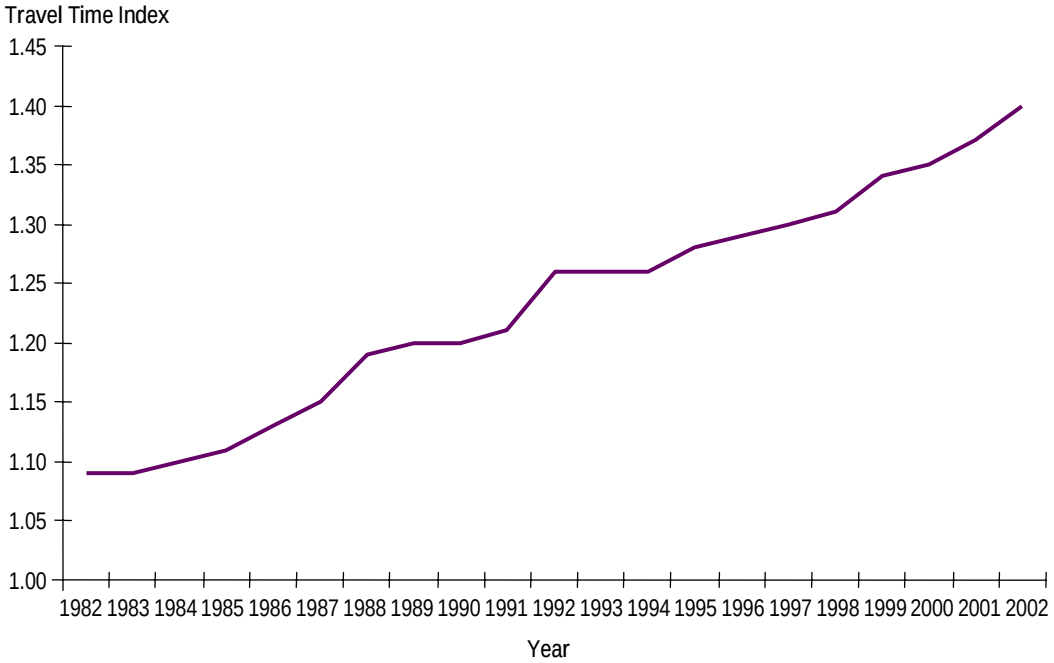
- **Congestion –** The Miami metropolitan area ranks among the top 15 most congested cities in the U.S. This is the result of over two decades of continued population, employment, and per capita auto ownership growth in the region, unmatched by anything close to similar growth in transportation infrastructure – roadways, railways, transit – or increases in transportation capacity. Between 1982 and 2002, center line miles and vehicle miles of travel have both increased by about 100 percent. More importantly, during this same 20-year period, the annual delay in person hours has increased by over 800 percent. Figure 5.1 illustrates the growth of these three indicators. These indicators help explain the dramatic increase in congestion as illustrated by the Travel Time Index developed by the Texas Transportation Institute. The Travel Time Index has grown from 1.09 in 1982 to 1.40 in 2002, indicating that travel time during peak periods is now about 40 percent longer than travel times for the same paths during the off-peak or "free flow" period. Figure 5.2 illustrates this growth.
- **Accidents –** Accidents are one of the key performance indicators reflecting the safety of a region's transportation system. Over the last five years, the total number of accidents in Miami-Dade County has decreased by eight percent from 49,804 to 45,731, even with a growth in overall traffic. The only accident category that increased was the number of fatalities. Figure 5.3 illustrates the safety trends over the last five years. While Miami-Dade County is home to over 14 percent of Florida's residents, it accounted for almost 19 percent of all the crashes reported in Florida in 2003. Broward County is the second largest county (over 10 percent of the State's population) and has the second largest number of accidents (11 percent). In general, the highways in Florida have improved their safety, as the mileage death rate has dropped from 3.4 in 1984 to 1.7 in 2003 (defined as deaths per 100 million vehicle miles of travel).

Figure 5.1 Increases in Centerline Miles, VMT, and Annual Delay *1982-2002*



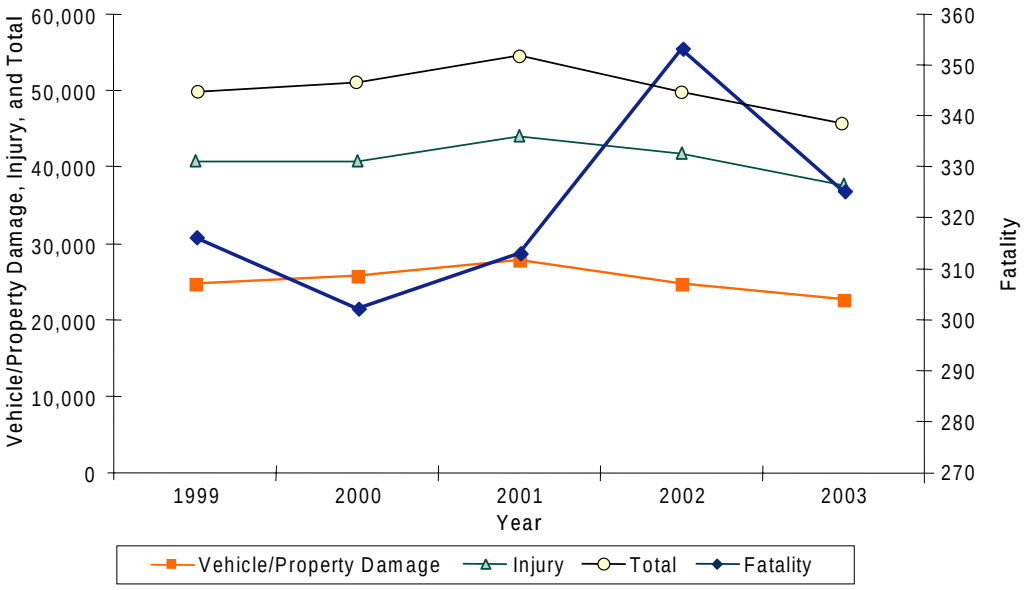
Source: http://mobility.tamu.edu/ums/congestion_data/tables/miami.pdf.

Figure 5.2 Increase in Congestion in the Miami Urbanized Area



Source: http://mobility.tamu.edu/ums/congestion_data/tables/miami.pdf

Figure 5.3 Number of Accidents in Miami-Dade County



Trucks have a significant impact on accidents. Although they represent fewer than four percent of the vehicles/drivers involved in crashes in Florida, they account for as much as nine percent of the vehicles involved in fatal crashes. However, these rates are significantly lower if the data are restricted exclusively to heavy trucks. Heavy trucks represent just over one percent of vehicles involved in crashes, and are involved in almost three percent of fatalities. Table 5.1 summarizes the accident data for Miami-Dade and Florida.

Crash cause factors also are provided at the state level. Figure 5.4 shows the breakdown of causes for accidents involving trucks. The top three causes account for over 55 percent of the total, and include careless driving (38 percent), failed/yield right-of-way (11 percent), and improper lane change (seven percent). The top two causes are consistent with the reported causes for all crashes (35 percent and 15 percent respectively). However, the third largest cause for all crashes is alcohol under influence (nine percent). The comparison of causes for truck crashes and all crashes suggest that drivers in general tend to cause about 50 percent of all accidents by engaging in careless driving and failing to yield right-of-way. Further analysis of driver fault is complicated by the fact that the crash report data collection process does not lend itself to easily identify driver fault.

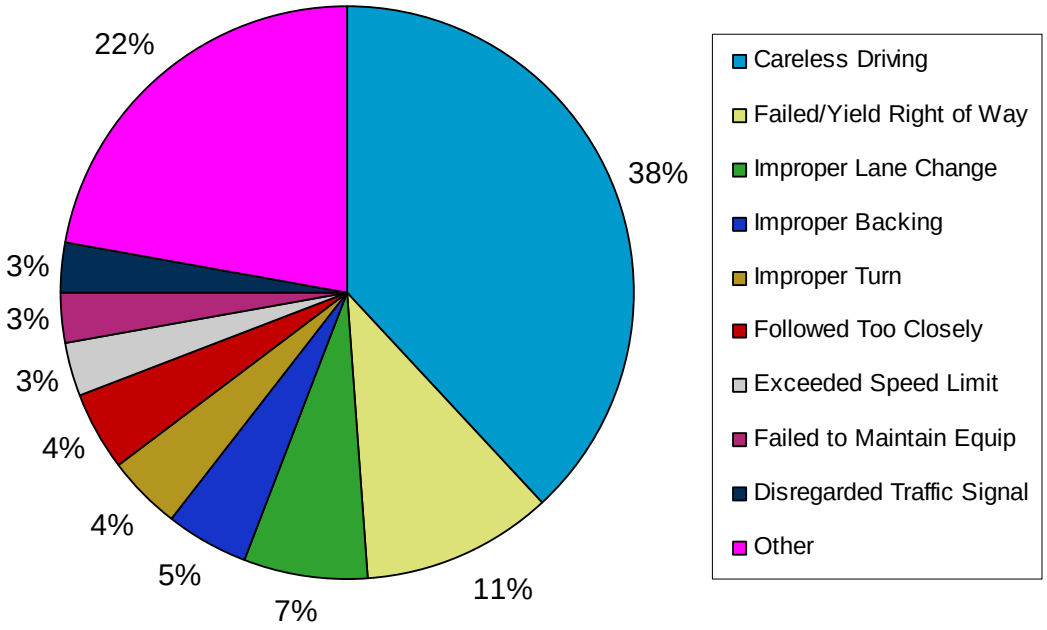
Although the basic trend shows a decrease in accidents in general, there have been several high-profile accidents in Miami-Dade County involving trucks over the last few years that have created a political environment that has heightened sensitivity to the conflicts that arise between automobiles and trucks. Examples of accidents involving heavy vehicles and their effects are provided in Figure 5.5.

Table 5.1 Summary of Florida Accident Data
2003

Category	Segment	Miami-Dade	Florida	Percent
Population		2,253,362	15,982,378	14.1%
Crashes	All Crashes	45,731	243,294	18.8%
Drivers/Vehicles	All Crashes		362,024	
	Trucks (6 or more tires)		13,716	3.8%
	Heavy Trucks		4,196	1.2%
	All Fatalities		4,436	
	Trucks (6 or more tires)		385	8.7%
	Heavy Trucks		115	2.6%

Sources: Florida Department of Highway Safety and Motor Vehicles, Traffic Crash Statistics Report 2003; and U.S. Census 2000.

Figure 5.4 Cause of Accidents Involving Trucks (Six or More Tires)



Source: Florida Department of Highway Safety and Motor Vehicles, Traffic Crash Statistics Report 2003.

Figure 5.5 Examples of Accidents Involving Trucks

Accident Involving Miss Florida, St. Petersburg Times, November 8, 2003

- On her way to a charity event in Kendall, Miss Florida, sustained critical injuries following the impact between the automobile she was riding in and an 18-wheel semi-trailer. The crash occurred when a pickup changed lanes and caused Miss Florida's vehicle to veer out of control. An 18-wheel semi-trailer truck also swerved and tipped over onto the car. The pickup did not collide with either vehicle and left the scene. Miss Florida was the worst injured among four occupants in the car. Miss Florida is now suing the driver of the 18-wheeler, saying that extensive injuries to her vocal cords threaten her singing career. The lawsuit alleges the driver of the semi was not trained to drive the vehicle. The suit also alleges that the avocados in the trailer were not loaded properly and shifted enough to overturn the truck. Two shipping companies are also named in the suit.

Interstate 95 and 157th Street, Miami, St. Augustine Record, March 30, 2002

- Cause of crash unknown. Tractor-trailer was burning in the northbound median. The accident occurred midday on a Friday and helicopters indicated that urban traffic was snarled as far south as 119th Street.

I-95 between Hallandale Beach Boulevard and Pembroke Road, Broward County, Miami Herald, November 14, 2002

- A taxi carrying four passengers from Port Miami-Dade to Fort Lauderdale International Airport veered in front of a flatbed truck and then got trapped underneath a fuel tanker at 10:30 a.m. The four passengers and the cab driver were killed. I-95 was closed for almost three hours in both directions. The HOV lane pavement required $25,000 in repairs before it could be reopened. There was question following the accident whether the trucks had been complying with rules that do not allow them to travel on the left two lanes.

Ramp from I-595 to Florida's Turnpike, Broward County, Miami Herald, February 11, 2004

- A truck traveling too fast up a ramp to Florida's Turnpike fell on its side on a Tuesday morning, blocking one lane of traffic until about 4:00 p.m. that same day.

I-95 north of 18th Street, Broward County, NBC 6, April 10, 2003

- A tractor-trailer crashed through the center barrier around noon on a Thursday, closing I-95 to all traffic.

Florida's Turnpike and Northwest 106th Avenue, Miami-Dade County, Miami Herald, January 23, 2004

- A fuel truck crashed just before rush hour on a Friday, creating a massive traffic snarl. Northbound commuters, in particular, were affected by the severe bottleneck.

Ramp to Dolphin Expressway from I-95, Miami, Miami Herald, October 3, 2004

- A tanker truck exiting I-95 onto the Dolphin Expressway flipped off the road and caused a large fire, closing a part of the expressway from 3:00 a.m. to 11:00 a.m. on a Thursday. The truck driver was killed. The aftermath of the accident snarled traffic in downtown Miami.

Florida's Turnpike, Indian River County, Miami Herald, September 29, 2003

- An SUV crossed the median, hitting a tanker truck, on Florida's Turnpike during a heavy Sunday afternoon thunderstorm. The accident killed the four SUV passengers, all residents of Miami-Dade County. The crash forced traffic detours, snarling traffic along the Treasure Coast.

I-95, Titusville, Miami Herald, March 25, 2004

- A minor accident on a Thursday morning slowed traffic in the northbound lanes of I-95. In the slowdown, a car slammed into the back of a semi-truck, setting off a fire that killed the car's two passengers. The truck then struck another tractor-trailer and three other cars. I-95 was closed in both directions for two hours following the accident and northbound lanes did not reopen until Friday afternoon. The crash caused significant traffic delays around the Kennedy Space Center.

- **Logistics Ranking**. Miami currently is ranked 22nd out of the top 100 most logistics-friendly metropolitan areas in the U.S.[7] This is based on 10 ranking criteria that span business climate, transportation infrastructure, and operations categories. Table 5.2 shows the rankings Miami received for each category. The rankings are based on the 331 metropolitan statistical areas (MSAs) established by the U.S. Office of Management and Budget. Although Miami ranked very well overall, it has three problem areas including, road density/congestion/truck safety (328th), fuel taxes and fees (248th), and railroad access (207th). Interestingly, the worst category specifically relates to congestion and truck safety. A truck management program can be used to address this category perhaps more effectively than it could any of the other categories.

Table 5.2 Logistics-Friendly Ranking

Ranking Categories	State or Metro Rank	Rank
Overall Transportation and Distribution Industry Climate	Metro	1st
Workforce/Labor Costs/Availability/Skill Levels	Metro	6th
Road/Highway Basic Infrastructure and Spending	Metro	56th
Road Density/Congestion/Truck Safety	Metro	328th
Road Conditions	State	11th
Fuel Taxes and Fees	State	248th
Railroad Access	Metro	207th
Water Ports (both river/lake and ocean)	Metro	42nd
Air Service	Metro	5th
Interstate Highway Access (main and auxiliary routes)	Metro	32nd

Source: http://www.expansionmanagement.com/.

5.4 KEY FREIGHT INITIATIVES

There are several initiatives that influence the region's freight transportation system. The following provides brief summaries of the major initiatives. This is not meant to be an all inclusive list of freight and/or transportation projects.

- **Freight Movement Study.** Miami-Dade County completed its Freight Movement Study (FMS) in 1996. The FMS included: a truck survey conducted at the Port of Miami to identify port access and egress truck routes through downtown so that specific intersections and routes could be prioritized for improvement; outreach to the trucking community, including

[7] http://southflorida.bizjournals.com/southflorida/stories/2004/10/11/daily65.html.

creation of a Steering Committee (for the study); a review of the existing infrastructure and its operational highlights; and recommendations for the formation of a "Freight and Truck Movement Planning Committee" to provide input to the annual TIP process and the LRTP project priority and selection processes, and the incorporation of a truck element into its urban area travel model and the travel forecasting process.

- **Seaport Access –** Highway access to the Port of Miami has been a leading issue for the County for many years. Currently, trucks must navigate from the expressway to the port gates via downtown streets. These same streets serve a rapidly growing, increasingly residentially oriented northern Downtown. Trucks also must compete for capacity with traffic destined for two major Downtown Miami recreational travel destinations – the Bayside Marketplace shopping and dining center, and gateway to Bayfront Park; and the American Airlines Arena, host to hundreds of events every year. Proposals to remedy this situation have included a new slip ramp to provide better access to the Interstate system; and a new bridge or tunnel to provide direct access to the port facility without the use of local streets. Several project-specific studies have been completed. For example, a 2000 study, ***Interim Rerouting Plan of Seaport Truck Traffic***, delineated truck route alternatives that could be used to improve access/egress to/from the Port of Miami. All of these proposals have met significant resistance dominated by political opposition from local communities and funding constraints.
- **Airport Access –** The Miami International Airport is one of the leading air cargo hubs not only in Florida or the U.S., but in the world. Its continued growth in air cargo business relies on efficient highway access. A 2001 study concerning truck traffic in the Airport West area posed a variety of potential short- and long-term solutions, including signal timing, alternative work hours, road widening, and a trip reduction ordinance. In 2002, the ***Short-Range Truck Traffic Study for the Airport West Area*** was conducted. It developed a set of standards and an implementation plan to better accommodate truck traffic and commercial truckers needs in the Airport West area. The 2025 LRTP funded an east-west, direct connection between SR 826 and the Miami International Airport Westside Cargo Area as suggested by the FMS. In late 2004, the Florida DOT announced that the Airport West connector, the airport's "back door," will be funded and fast-tracked, ultimately bringing to conclusion work begun a decade ago to improve access to cargo operations, and in particular access to the warehousing, distribution, and logistics firms of the Airport West industrial area.
- **Strategic Intermodal System (SIS) –** The Florida Department of Transportation has designated a Strategic Intermodal System (the SIS) that promotes the efficient movement of passengers and freight in Florida. This new program emphasizes intercity/interregional mobility and access to intermodal facilities like the Seaport and the Airport. The SIS will prioritize future state

transportation investments. This program will support investments in Miami-Dade County for those facilities on the designated system.

- **2030 Long-Range Transportation Plan (LRTP) –** The 2030 LRTP has established a set of goals and objectives to guide the County's transportation program. They were developed to "optimize the movement of people and goods while reinforcing fundamental principles of sustainability and environmental quality." Each goal has freight-specific implications; however, some are more relevant to a truck management program than others. Table 5.3 summarizes the six goals and identifies the specific objectives that relate directly to the truck management program being developed.[8] The 2030 LRTP also recognizes the importance of regionalism with its first ever formal regional goals/ objectives an system designation.

Table 5.3 2030 LRTP Goals and Select Objectives

1. Improve Transportation Systems and Travel – Improve accessibility – Enhance mobility – Reduce congestion – Improve safety on facilities and in operations – Improve transportation security for facilities and in operations
2. Support Economic Vitality – Increase and improve passenger and goods access to airports and seaports – Enhance the efficient movement of freight and goods
3. Enhance Social Benefits
4. Mitigate Environmental and Energy Impacts
5. Integrate Transportation with Land Use and Development Considerations
6. Optimize Sound Investment Strategies

5.5 EXISTING TRUCK MANAGEMENT TECHNIQUES

As part of the development of an enhanced truck management program, it is important to understand any existing activities already in place. Interviews were conducted with representatives from cities in Miami-Dade, Miami-Dade County, and the Florida Department of Transportation to learn of current activities. The interview guide is provided in Appendix B. In general, the interviews did not reveal an extensive amount of information relating to truck traffic management practices. In fact, most municipalities contacted were unable to identify a contact

[8] Miami-Dade Transportation Plan (to the Year 2030), Long-Range Element, October 2004, Final Draft Summary Document.

person or provide specific responses to the questionnaire. This, in and of itself, was very informative, as it indicates that existing activities are limited. The following provides a summary of the available information based on interviewee responses.

Local Perspective

At the local level there is no formal truck management program. The only regular activity is the loading/unloading zone program for the City of Miami. Hours of delivery for the central business district in Miami are set by the City's Off Street Parking Department and enforced by the Miami Police Special Events Office.

Other management techniques are reactionary. For example, "no through truck" signs are occasionally posted in neighborhoods at the request of residents. These restrictions are not communicated or promoted in any way other than reading the signs. Established truck routes, although not officially designated, are accepted. For example, NW 5th and 6th Streets and NE 1st and 2nd Avenues, along with I-95 and I-395 are known as the routes used to access the Port of Miami. In fact, these routes are the focus of planning efforts to improve port access and minimize community impacts.

In discussing the local attitude towards truck operations, it was suggested that if truck activity could be promoted to show that it enhances the city's image or tax base, there would be support from the leaders.

There have not been many complaints about truck activity at the local level. However, it was suggested that most of the major roadways, which tend to be used by trucks, are under county or state jurisdiction.

County Perspective

Several planning agencies influence the management of trucks in Miami-Dade County, including the Miami-Dade Expressway Authority (MDX), the Florida Department of Transportation (FDOT), and Miami-Dade County Public Works Department's Traffic Engineering section. FDOT and MDX are the major players in regulating truck movements as they control the principal highways and state roads. Miami-Dade is unique in that the County has authority over all non-state roadways, including anywhere a car or truck can operate, such as parking lots. However, there is no official truck management system, and truck management planning in the County tends to be reactive. Truck issues generally only become a political issue following a relatively high-profile incident. The uproar surrounding the incident generally does not last long, and truck management issues then tend to fade away until the next incident occurs. Often, public outcry is against a heavily congested roadway, or a particular bottleneck, which is further exacerbated by truck traffic.

There is a dense network of key truck/freight corridors in Miami-Dade County that serve a variety of commercial, industrial, and agricultural areas. This

network is made up of the expressways, state highways, and U.S. 1. It also includes key connectors such as 25th and 36th Streets which are used to access the airport, the trans-Biscayne Bay causeways which connect the islands of Miami Beach and the other beach communities to the mainland, and 5th and 6th Streets and 1st and 2nd Avenues which are used to access the port. Although there is no systematic process for managing or planning for truck traffic, urban and industrial areas by definition are required to have roadways that are designed to accommodate trucks.

New security requirements at some locations have created operational restrictions on the roadway network. For example, the narrowing of roads and the installation of barriers surrounding Federal buildings impacts traffic flows, usually in dense, already congested areas such as CBDs. In addition, traffic engineering is involved as part of traffic operations reviews of new security plans that involve access/check points at facilities like Miami International Airport.

Two types of signs typically are used to control truck movements in the Miami-Dade County. "No trucks" signs are posted on roads that physically cannot accommodate trucks. These signs may or may not include additional information, such as specific height or weight restrictions. "No through trucks" signs are more common and are posted in response to neighborhood/community complaints. Enforcement of these signs is provided by the police. If new signs are installed, calls are placed to the police to inform them of the change. There is no outreach program to inform truckers of restricted/posted roadways. Restrictive truck signs also have been used to control toll jumping along SR 112. These sign uses represent reactionary truck management approaches.

Current signage regulations in Miami-Dade County require that postings be placed on every block of a regulated route. For example, a roadway serving a residential community that does not allow through truck traffic must have a "no through trucks" sign installed on each block. This is viewed as cost-prohibitive and it was suggested that a revised law would be helpful, stating all local neighborhood streets prohibit through truck moves unless otherwise posted. This change would be most effective at the state level.

Conflicting land use/zoning decisions can create truck traffic conflicts, particularly in growing and changing metropolitan areas. Miami-Dade County is no exception. For example, when industrial and residential developments are on opposite sides of an arterial, the local neighborhood streets will tend to have mixed traffic. The County works to ensure that all new developments include roadways that can handle truck traffic. In addition, during construction activities, temporary signs are often used to manage truck traffic in the development area. Cities control their own development activities; however the County can block zoning decisions.

Ultimately, Miami-Dade County seeks to be a neutral body, favoring neither trucks nor passenger vehicles. A goal of the County is to achieve a balanced

system – one in which residents are protected from truck traffic and trucks are ensured accessibility and mobility for their operations.

State Perspective

The Florida Department of Transportation (FDOT) becomes involved with truck issues when local agencies try to restrict movements. FDOT occasionally receives requests from neighborhoods to restrict trucks on specific roadways, but FDOT has not placed new restrictions based on these requests. There is no way to implement a program that pleases all stakeholders; a bypass for one community equates to more truck traffic for another community. FDOT does review roadway geometrics as part of the permitting process for developments of regional impact.

FDOT has implemented 24-hour truck restrictions on I-95, recently expanded from 12 hours, that restrict trucks from the left-most lane. FDOT staff are not necessarily proponents of truck restrictions, especially on the Interstate, and left lane restrictions often introduce increased turbulence into the operating patterns. However, the lane restrictions were an MPO driven program. The hours were expanded to provide consistency throughout the Southeast Tri-County region.

FDOT has identified passenger vehicle driver education as a critical need. Drivers need to be instructed on how to drive in the presence of trucks. Many accidents involving trucks are often caused by cars not understanding the dangers of tailgating, driving in truckers' blind spots, and cutting in front of trucks.

FDOT has an oversize/overweight permitting program for trucks moving shipments that exceed the legal weight and dimensions. These permits only address the state highway system. The final local roadway segment of a trip is not covered by the permit, and truckers sometimes confront unanticipated problems on local roadways, such as posted bridges, for which they had not been provided advance notification. When possible, programs should focus on keeping trucks on the major expressways as long as possible.

5.6 SUMMARY OF NEEDS

Based on a review of the Miami-Dade County profile, the following needs have been identified. These needs will help focus the recommendations presented in Section 6.0.

- **Congestion throughout the region limits the reliability and mobility of the regional system.** The roadways of Miami-Dade County experience frequent and regular congestion. Drivers experience significant delay. If current trends continue, congestion will continue to worsen in the future.
- **Continued growth in the population and traffic volumes will continue to challenge the already congested infrastructure.** The key load centers, like Port of Miami and Miami International Airport, will be a focal point for the added volumes.

- **Access to the Port of Miami is restricted and improvement options are burdened by technical and political challenges.** Current highway access requires trucks to traverse local roadways. In addition, rail access is constrained and poorly maintained.
- **Lack of a formalized truck management program has resulted in a reactive environment.** Planners and operators respond to community complaints to better manage truck traffic; however, no general, programmatic, proactive systemic initiatives have been promoted. In addition, many planning and operations staff are not familiar with truck management techniques.
- **There has been a lack of education and outreach activities related to truck traffic.** Local residents almost universally do not understand the economic impact that freight shipments have on their region's economy. In addition, no initiatives have been undertaken to make drivers more aware of how to handle their vehicles in the presence of heavy truck traffic.
- **Political opposition to truck traffic has resulted in an environment that could promote increasingly restrictive behavior.** As in many areas, trucks have received negative press for their involvement in crashes, disturbing neighborhoods, and slowing overall traffic operations. The perceptions engendered by these events will likely lead to restrictive truck management practices unless a balance can be provided by increasing citizens' (and politicians') respect for trucks' contributions to the overall quality of life, and subsequently 'making a place' for them on the area's roadways.
- **No champion or advocate has emerged in the operational environment to promote a proactive truck management program.** Currently, as already noted, the region operates on a reactive basis, responding to development plan reviews on a regular basis, and irregularly to community complaints.
- **Existing legislation/regulations do not support an efficient, cost-effective truck management program.** One example is that current laws require roadway restriction signs to be posted on every block for a given street. Legislative changes that restrict truck movements in all residential neighborhoods with out any signs would be beneficial.

6.0 Truck Management Program Recommendations

In developing recommendations for a new truck management program, it is crucial to:

- Recognize the institutional and organizational make up of the community;
- Understand the current operational conditions;
- Identify an appropriate set of goals and objectives;
- Define technically sound and reasonable program elements;
- Develop a realistic implementation plan; and
- Acknowledge the political will of the community.

A program that incorporates all of these elements will be successful. The recommendations presented below address each of these areas. In addition, the recommendations encourage a balanced approach that addresses the needs of the entire Miami/Dade County community (both residential and business sectors). Finally, the recommendations provide guidance on how to establish a truck management program and present management techniques for consideration by the MPO.

The recommendations developed as part of this study do not prescribe a specific set of management techniques. The specific program elements will be selected and finalized as part of the initial program activities.

The remainder of this section presents a blend of process and technical recommendations for the MPO's consideration.

6.1 INSTITUTIONAL/ORGANIZATIONAL SETUP

To develop and implement a truck management program, the appropriate organizational structure must be established. The key agencies involved in the setting and enforcement of truck-related policies and regulations must be included in the program development from the inception. These agency staff provide the transportation planning/engineering technical and operational expertise required to develop and maintain a safe and efficient truck management program. In addition, it is important to build program support among the impacted stakeholders, including neighborhood representatives, elected officials, and industry/goods movement representatives. Involvement of these stakeholders ensures a first hand understanding of stakeholder needs, generates a

greater level of compliance with regulations, and ensures technically sound solutions.

The successful truck management program should promote a system that balances the needs of all roadway users by providing a proactive rather than a reactive approach to the management of trucks. A ***proactive*** program works to implement management techniques that prevent or minimize conflicts by design, as opposed to a ***reactive*** program that tries to clean-up conflicts, often in an ad hoc fashion, after they exist.

The following activities are recommended to support the establishment of a successful truck management program. It should be noted, that the below recommendations lay out functional requirements to support the organization and establishment an effective truck management program. These recommendations are ***not*** intended to create political conflicts with previously established boards or committees like the FTAC. Rather they are intended to outline recommendations to help set up a new program to address truck traffic issues.

Recommendations

- **Identify program leadership.** The effectiveness of a program is directly driven by and dependent on the expertise and authority of its leadership. Currently, there is not a defined truck management program at the local, county, or state level. This new program must be integrated across the operations of these three jurisdictional groups. Miami/Dade County likely will be the logical choice to lead and coordinate this program. However, given the jurisdictional issues, the program will ideally have a leadership committee. This committee can then identify or elect a lead agency. The Freight Transportation Advisory Committee (FTAC), designated by the Miami-Dade MPO Board, should be used to facilitate the development of the leadership committee. This will help ensure it is politically accepted and supported.
- **Establish a Technical Advisory Committee (TAC).** The formation of a technical advisory committee is an important activity. This committee should consist of local, county, and state agency staff; it should also include industry and neighborhood representation. The purpose of this committee will be to evaluate the possible management techniques based on the identified needs to select the key technical elements of the program. An expanded FTAC could be used to solicit stakeholder participation. This would require additional members from key agencies and stakeholder groups to provide the technical expertise and user perspectives.
- **Develop program strategy and operations plan.** Based upon the research and analysis completed as part of this project, as well as relying on input provided by the TAC, the leadership committee will finalize the program specifics. This will include adoption of goals and objectives, and the definition of program functional elements. Once the program functions have been

defined, an operational plan will be developed to lay out specifically how the goals and objectives will be met.

- **Define implementation activities.** Specific actions will be defined that guide the implementation of the program. This will include an outline and schedule of key activities and milestones for the first year. Each activity will be assigned to a specific agency/stakeholder.
- **Establish ongoing program monitoring activities.** In order to ensure that the program is effective, monitoring activities should be established. This will include outreach to the stakeholders (neighborhoods, industry, and roadway users) and the implementing agencies. It also should include tracking activities to monitor project implementation. This will provide opportunities for program refinements/modifications.

6.2 TRUCK MANAGEMENT PROGRAM GOALS

As identified in Section 6.1, one of the first activities to be undertaken is the development of program goals. This section incorporates the LRTP goals as the guideline for developing the MPO's truck management program goals. However, it is understood that they will be reviewed prior to formal adoption by the established leadership.

The Miami/Dade County transportation program is driven by the Long-Range Transportation Plan (LRTP). The 2030 LRTP Update was adopted in December 2004. The Adopted LRTP contains a set of goals and objectives that guide transportation investment decisions. It is recommended that the proposed truck management program be consistent with and in support of these goals. This will ensure two things. First, it ensures that the truck management program contributes to the success of Miami/Dade's transportation program. And second, it ensures that the truck program may be eligible for funding and/or political support. Table 6.1 identifies truck management program applications associated with the overall transportation system goals defined in the 2030 LRTP.

Recommendations

In support of the overall transportation program, and specifically, the truck management program, the following recommendations are provided to guide the development of the goals and objectives for this program.

- **Adopt the LRTP goals as the high-level guiding principles.** It is crucial that all the elements of the County's transportation program feed into and contribute to achieving the long-range goals and objectives.
- **Develop specific truck management program goals.** The truck management program must have a specific set of achievable goals that guide its implementation and operation.

Table 6.1 Application of Existing LRTP Goals to the Truck Management Program

1. Improve Transportation Systems and Travel
In an increasingly multimodal and intermodal transportation system, trucks continue to grow in importance as part of transportation planning considerations. Their size and weight characteristics impact the design, operation, and maintenance of the highway system. Miami/Dade is a diverse and high-growth region. It is critical that transportation planning activities, and transportation improvement programming recognize and address the impact of truck traffic. The truck management program will provide a new tool to support improvements to the system.
2. Support Economic Vitality
The importance of trucks to the economy and commerce of an area is well recognized and understood. In Miami/Dade, with the presence of the Port of Miami and the Miami International Airport, an efficient freight transportation system is imperative, as these two facilities drive the region's economy, tying it to domestic and international markets. In addition, the system must provide mobility and safety for the residents and employees living and working in the County. The truck management program will seek to improve existing and provide new transportation system capabilities to promote a more balanced system that focuses both on protecting the needs of residents while providing an efficient system to industry.
3. Enhance Social Benefits
The MPO's transportation program has a particular focus on the social benefits it provides to the communities of Miami/Dade County. Specifically, the program addresses the need for accessibility to key service centers, such as medical, education, government, and cultural areas. In addition, the program focuses on the safety of the system's users. The truck management program will provide new opportunities to reduce accidents caused by the conflicts that arise between autos and trucks, and between pedestrians and trucks.
4. Mitigate Environmental and Energy Impacts
The environmental and energy impacts of trucks and goods movement are an important consideration while planning, especially when assessing air quality impacts of transportation improvements. The truck management program will provide a new opportunity to mitigate environmental impacts by improving the mobility of all types of traffic, by reducing conflicts/accidents, by reducing noise pollution in sensitive areas, and by reducing air pollution throughout the region and along major corridors.
5. Integrate Transportation with Land Use and Development Considerations
The integration of land use and transportation planning activities has historically been a challenge. Transportation planning has often been reactive as opposed to preventative or proactive when dealing with land use activities. As planners work to bridge these two disciplines, the integration of freight and goods movement planning with land use strategy actions such as the preservation of land for industrial and goods movement-related activities will be an increasingly important if not absolutely vital component as development continues to outstrip available vacant land. The truck management program will provide new capabilities to promote access to key industrial and commercial areas for trucks as part of an overall regional mobility program that considers the needs of commerce and industrial areas as well as those of residential areas.
6. Optimize Sound Investment Strategies
With limited funds available, transportation investment decisions must be prioritized effectively. The overall goal is to maintain, develop, and expand a transportation system that meets the needs of its users. Investment in goods movement-related projects that aid commerce and the economy is one of many important components. The truck management program will assist in the identification of and improvement to key corridors and hubs that drive the region's economy to ensure effective and efficient goods movement throughout the County.

- **Solicit input and approval of the goals from the TAC, implementing agencies, affected highway users, and affected communities.** For this program to be effective, the impacted stakeholders must support the overall direction of the program. Policy-makers and planners need to communicate with the operations staff and the system users to validate the reasonableness of the program direction. In addition, the program must accommodate the needs of the communities (residential and industry) located along existing and proposed truck routes.
- **Monitor goals over time and modify as necessary.** As with any program, it must be able to evolve over time and adapt to changes in need, advances in technologies, and unforeseen external factors like shifts in global trade patterns.

6.3 TRUCK MANAGEMENT TECHNIQUES

Once the program organization has been established and the goals and objectives have been defined, the specific management techniques must be selected and developed into a comprehensive program. The research and analysis completed in the initial phases of this study provides an extensive list of example activities completed by other metropolitan areas. These activities in most cases do not reflect a comprehensive program that addresses all truck management issues. However, they do provide a list of elements that can be used to ***build*** a program.

As presented in earlier sections, the examples of activities have been broken down into functional areas. These areas represent categories of program approaches within which specific activities can be defined. These categories, in turn, have been used to focus the development of specific recommendations for Miami/Dade County. The recommendations also were developed to address the needs identified for the region.

Table 6.2 provides a non-exhaustive list of recommendations by focus area. This list provides specific recommendations for consideration by MPO staff, the FTAC, and other decision-makers identified or defined as part of the initial set up activities of the truck management program. Selected activities should be integrated into the existing transportation program, including the LRTP and TIP. The objective of this table is to lay out possible opportunities that can feed into the program development process that will need to be completed following the formation of the program's organization (see Section 6.1).

Table 6.2 Recommendations by Functional Area

Functional Area	Recommendation	Examples
Program Development	**Miami-Dade County should designate one person to act as the truck program facilitator.** The success of a truck management program is dependent on its leadership. It is critical that one individual be appointed as the advocate to make sure the program advances. This individual does not have to be the implementation or operational lead, but rather the person responsible for bringing the TAC together to ensure that the program is developed and implemented. This person would be responsible for working with all defined stakeholders, including the FTAC, industry and community representatives, and all newly established program specific organizational bodies.	The case studies primarily focus on summarizing the elements of truck management programs or activities. However, the development and implementation is driven by strong leadership. For example, the **City of Seattle** has established the **Office of Freight Facilitator** which is responsible for developing a freight management plan for Seattle, identifying high-priority projects, communicating with the public on freight issues, and championing the needs of freight movement. This office also participates in the design and review of projects that may impact freight movement in Seattle. The office also interacts with other public agencies to champion the interests of freight movement.
Regulation	**Miami/Dade County should investigate the opportunity and support for streamlined regulations supporting truck operations and route delineation.** A truck management program is dependent on the enabling legislation and regulation in place. Modifications or enhancements to the regulatory environment should be explored across local, county, and state jurisdictions. Considerations should focus on achieving a balance between truck route designations and restrictions. This approach will help both the promotion of truck mobility and the elimination of truck access to sensitive communities.	The case studies provide a variety of examples related to regulatory actions. For example, the **City of Vancouver** is governed by a comprehensive set of municipal by-laws. Commercial vehicles are permitted to use all municipal parking meters for free until 10:00 a.m., and many commercial areas of the City include dedicated traffic lanes for use by trucks and other freight vehicles. No vehicle is allowed to park for more than three consecutive hours on municipal streets – in both commercial and non-commercial areas – a regulation that is enforced in response to specific complaints. In addition, double-parking is prohibited and can be subject to a $500 fine. There are several regulations in place within **London** that impact truck traffic. The Transport for London introduced the Central London Congestion Charge to reduce traffic congestion in the central district of London. London also has regulations that restrict the movement of trucks on residential streets to a network of designated truck routes on nights and weekends.

Table 6.2 Recommendations by Functional Area (continued)

Functional Area	Recommendation	Examples
Enforcement, Penalties, and Pricing	**Miami/Dade County should define a realistic enforcement program to support its management techniques.** The enforcement of a program is a critical component of its success. Regulations will not impact operations if the enforcement is not there to support it. Currently, the small number of road restrictions, including loading zones, are enforced by local, county, and state police departments at varying levels of consistency/ frequency. The development of a more comprehensive truck management program will rely on the development of improved interagency trucking-related communications, and the inclusion of an effective enforcement component – without enforcement a new program will not be successful.	Enforcement, or lack there of, was identified as an issue in many case studies. Some programs had developed measures to manage truck traffic, but poor enforcement resulted in an ineffective program. Other cities spearheaded their enforcement by developing programs that required limited actual enforcement activities. For example, **New York City** has developed a parking management program that requires commercial vehicle drivers to pay a charge to use commercial parking spaces during the hours of 7:00 a.m. and 6:00 p.m. The New York City Police have found enforcement to be much easier with this system than with a traditional system of meter-less loading zones, and the average time spent in a commercial spot has dropped to approximately 90 minutes from an average of five hours. **Singapore** initiated a congestion-based system for its inner city. This system currently uses an electronic toll collection (ETC) scheme. Vehicles are outfitted with an in-vehicle unit (IU) and drivers have a prepaid cash card which fits into the IU. As the vehicle drives under gantries in the charging zone a charge is automatically deducted from their cash card; this amount varies by both the area and the time of day. Again, this system regulates, or enforces itself, by use of technology.
Incentives	**Miami-Dade County should explore the potential impact that incentives could have on compliance with new program elements.** An analysis should be conducted to evaluate the potential use of these tools based on the specific program components selected. One, or both, of these tools are critical to the success of a program.	An analysis of the case studies revealed that incentive-based programs can be successful as long as they are enforced. The use of incentives can help transfer the burden of proof of compliance to the industry, thus simplifying the program implementation. **Vancouver** is an excellent example of an incentive-based program. To foster higher compliance with the Motor Vehicle/Commercial Transport Regulations and the municipal by-laws, city officials have focused on freight-oriented companies by creating a list of approved trucking companies for municipal business and is developing a system that ties new construction permits, contracts, and agreements with requirements that trucks adhere to local regulations and by-laws. The Maricopa County (Phoenix) Truck Idling Ordinance represents an example of a self-imposed program. It requires truck stop and distribution center owners or operators to erect and maintain permanent signs indicating that the maximum idle time allowed in Maricopa County is five minutes. The ordinance specifies the County's vehicle idling information line and the amount of money the violator will be fined.

Table 6.2 Recommendations by Functional Area (continued)

Functional Area	Recommendation	Examples
Neighborhood/ Local Focus	**Miami/Dade County should develop a protocol for involving local stakeholders in outreach efforts.** The development of truck management programs is almost always driven by local interests. Often this consists of reacting to complaints by residential neighborhoods regarding the noise and safety impact of truck traffic. Other examples include concerns for the accessibility to industrial/commercial areas. Involving local stakeholders will benefit the planning and implementation of a mutually acceptable truck management program. Miami-Dade should work as the go-between in the stakeholder groups as a neutral facilitator providing technical guidance.	All the case studies provide examples of truck management activities developed to address local/ neighborhood issues. Ultimately, that is the purpose of programs of this type. Two examples provide differing perspectives of management activities. The first example is an economic development-oriented program. As part of **Boston's** *Boston Back Streets Program*, sites that had convenient, direct access to a highway or rail facility were prioritized for preservation for industrial uses. This includes the provision of some city sponsored financial and technical resources. The second example specifically addresses the residential perspective. The **City of Cambridge** proposed a night time ban on through trucks on certain routes. City staff worked closely with the trucking industry and neighboring communities to designate routes that would be acceptable to all. Although this ban was later lifted under political and industry pressure, it represents the type of program being deployed across the country.
Land Use Strategies	**Miami/Dade County should promote the inclusion of truck access/truck traffic into land use planning decisions.** Effective land use planning relies on a direct link to the transportation system. An integrated truck management program can help manage this connection by facilitating – and maintaining into the future, as appropriate – truck access to industrial/commercial areas. The proposed truck management program, and the LRTP goals both call for an effective integration of land use and transportation planning activities to facilitate the mobility and accessibility of the region.	Several case studies focused specifically on land use and development issues. For example, the **Portland Metro** designated industrial infrastructure for future investment and upgrades. The **City of Portland** has also worked to develop land use designations in the form of designated freight districts that are areas in which freight movement is encouraged and infrastructure is developed to facilitate truck operations. Similarly, in **Frankfurt**, Germany there are freight villages. These are agglomerations of transport-oriented companies (including warehouses, trucking firms), logistics service providers, and logistics-intensive trade and production enterprises. Most of them have access to at least two modes of transport, in particular road and rail (intermodal terminal). These villages are generally located away from areas with "conflict potential" (e.g., higher population densities) and therefore allow round the clock operations. They provide sufficient access to both the long-haul transport network as well as to delivery points in urban areas.

Table 6.2 Recommendations by Functional Area (continued)

Functional Area	Recommendation	Examples
Intermodal	Miami/Dade County should integrate intermodal connectivity needs into its truck management program to ensure preservation and enhancement of key intermodal routes and hub connectors. The transportation systems of today are becoming more and more intermodal. This is especially true for freight transportation. The local transportation system is dependent on an intermodal system, with one of the largest airports and seaports in the country. Potential truck route designations and/or restrictions must incorporate the linkages between major freight generators (hubs) and key trade corridors, as well as the main throughways connecting them.	Several case studies identified a significant intermodal focus within their transportation programs. For example, the Chicago Region Environmental and Transportation Efficiency (CREATE) program proposes numerous improvements to both railroad infrastructure and the local highway system. This innovative program is financed by a public-private partnership that estimates the share of benefits to the public and private sector (in this case, railroads) and proposes cost-splits accordingly. In the Los Angeles region, the Alameda Corridor was constructed. This is the single largest example of an intermodal freight project funded by public and private sources. It is a 20-mile-long rail cargo expressway linking the ports of Long Beach and Los Angeles to the transcontinental rail yards near downtown Los Angeles. The project separates freight trains from street traffic and passenger trains, facilitating a more efficient transportation network. It specifically provided a rail corridor that reduces the demand for trucks at the Ports of Long Beach and Los Angeles.
Investment and Funding and Public-Private Participation	Miami/Dade County should explore opportunities available for funding its truck management program activities. Investment decisions and funding sources remain a significant challenge for most transportation programs. For example, a more advanced or expanded truck route designation/limitation signage program will require additional funding for Miami-Dade Public Works Department, and possibly for similar departments at the municipal level. Based on the agreed upon list of program initiatives, a financial feasibility analysis will be required.	The case studies provide several examples of programs established to fund freight projects. For example, in Chicago, the Truck Access Route Program (TARP), instituted by IDOT, helps local government agencies upgrade roads to accommodate 80,000 pound trucks. The routes provide access to points of loading and unloading and to facilities for food, fuel, truck repair, and driver rest. Projects must connect to a truck route and end at another truck route or truck trip generator. IDOT provides up to $30,000 per lane-mile and $15,000 per intersection and projects are selected each fall to be constructed during the upcoming fiscal year. In the Pacific Northwest, the FAST Corridor (Freight Action Strategy/Corridor (FAST Corridor) was formed to prioritize regional freight mobility. Phase I (1997-2003) consisted of 15 projects valued at $500 million, one-half of which are now completed. Contributions were made by all levels of government and by the two affected Class I railroads in the region. The project package consists of a wide variety of transportation improvements including the implementation of ITS, port access improvements, intersection improvements, and road widenings.

Table 6.2 Recommendations by Functional Area (continued)

Functional Area	Recommendation	Examples
Information Exchange	Miami/Dade County should develop an outreach plan as part of the truck management program. One of the key factors of success for a new program is the development of an effective outreach program. The exchange of information between the public and private sectors is crucial to the establishment of a successful management program. On the public sector side, outreach with regard to regulations, truck routes and educational efforts are essential to enforcement and compliance with regulations. On the part of the private sector, the provision of information on needs, issues, and concerns will be important. Together this exchange of information would be beneficial to both parties in planning for and fulfilling needs.	Many of the case studies identity information exchange and outreach activities. Most commonly, these consist of committees, task forces, or working groups organized to bring freight stakeholders to the table to participate in the identification of local and regional transportation issues. For example, in Baltimore, the Freight Movement Task Force was formed, consisting of members from the public and private sectors, including the trucking industry. This group has worked together to map out and consider solutions to problems for trucks; to develop a free map of truck routes, which can be ordered on-line; and develop education and enforcement strategies for truck parking. Another example focuses on an education campaign designed to promote the important of trucks. The Puget Sound Regional Council developed the "If you got it, a truck bought it" educational program aimed at educating the public on the importance of freight and goods movement.
Technology and Innovation	Miami/Dade County should explore the use of technology and innovation as part of the truck management program. The use of technology to enhance and improve our transportation systems has continued to evolve, now representing significant portion of our transportation programs. The region has an established and expanding ITS program. Opportunities exist for integration with the traffic operations center, as well as other more specific opportunities, such as port or airport access information.	The case studies provide many examples of technology applications. Examples include: electronic metered truck parking in New York City; development of a port gate reservation system for trucks serving the Port of Los Angeles; a congestion pricing program using electronic toll collection technology in Singapore; and electronic distribution truck route maps via the Internet in Baltimore. Truck management programs also benefit from regional ITS programs that provide real time traffic conditions.
Political Will Power	Miami/Dade County should work with the current political leaders to develop support for an integrated, balanced truck management program. One of the most significant factors involved in the development of a truck management program is the local political will. This will require extensive outreach and educational activities to show the importance of truck mobility to the region. The identification of a proponent from the political arena will be crucial to the success of the truck management program.	The case studies provide a variety of examples of the impact of political will. For example, in major freight centers, like Chicago and Los Angeles, industry represents a major political force, resulting in major freight friendly investments with programs like CREATE and the Alameda Corridor. On the other hand, there are many examples of programs that are driven by local neighborhood groups primarily focused on restricting trucks from operating in specific areas. The ultimate lesson from these case studies is that local politics will impact the content of a truck management program. Therefore, programs should be developed to mediate and facilitate a diverse set of interests and goals.

6.4 IMPLEMENTATION/NEXT STEPS

This final section summarizes the key steps required to develop and implement the truck management program. Many of the actions will be based, in part, on the specific program elements defined and selected by the guiding committee, whether it is the FTAC or a program specific TAC. The implementation activities will be the initial steps undertaken to define and establish a truck management program. As discussed above, it will be imperative that the immediate actions support the development of a program that benefits all stakeholders.

The recommendations provided in Section 6.3 provide options for Miami-Dade County to consider. However, regardless of the overall technical direction, there are a critical number of components that should be included for the program to be successful. Many of these components are defined in Section 6.1. In addition to these organizational elements, there are four functional elements that should be addressed by a truck management program to guide the implementation activities. These consist of: 1) planning; 2) funding; 3) outreach; and 4) enforcement. The following summarizes these elements.

Planning

The planning element will drive the entire program. This activity defines the parameters and technical direction of the program. Organizing activities will be included within the general "planning" functions. This will include formation of a technical advisory committee (TAC), coordination with the FTAC and the MPO, definition of goals and objectives, short- and long-term activities (administrative and technical), outreach and educational initiatives, agency roles and responsibilities, and an implementation schedule. Regardless of the technical complexity ("let's put up more truck signs versus let's develop a multifaceted, integrated truck management program"), short- and long-range plans should be developed. Without a plan, there will not be a program.

Funding

The definition of the technical direction for the program should incorporate a financial feasibility component. For example, if one activity calls for the development of a designated truck route network, funding will need to be identified for: 1) development of criteria; 2) data collection to support the application of the criteria; 3) preparation and placement of signs; and 4) outreach to the industry to notify the of the new program. Each element will require similar considerations, whether it relates to technical staff time, consulting services, or materials.

Outreach

As illustrated by almost every case study, building a relationship with the impacted stakeholders is a critical component for a truck management program. The development of an outreach program to support all program activities will be invaluable to the program success. In addition, it provides access to the

system users, which accelerates the learning curve for the planners and operations staff in identifying and understanding specific bottlenecks and needs. Outreach should use multiple media (brochures, web site, work shops, etc.) to provide ample opportunity for gathering input and encouraging participation. These activities should be used to support specific technical activities as well as overall program development. In addition to the dissemination of program material and the collection of key input from stakeholders, outreach activities should be developed to educate the system users, impacted communities, and elected officials. An educated public will enhance the development of a program that benefits all stakeholders.

Enforcement

As with any enforcement-based program, a truck management program relies on the effective communication and enforcement of the program. The regulatory community needs to show its commitment to the program to ensure that the trucking industry will accept it as a legitimate program; without this acceptance the program will not be successful. Any type of restrictive program element, such as the HOV lane on I-95, will fail without either an enforcement presence, or alternatively, an incentive-based self-enforcement program. Therefore, as with funding, an enforcement feasibility or reasonableness test should be applied to each technical element. The activity should be considered ineffective if enforcement is required but unlikely, due either to political acceptability or funding constraints.

Key Immediate Implementation Steps

Focusing on the these four elements, the following provides a specific list of recommended steps for advancing the development of this program.

1. **Establish a program development/management committee.** The key first step to initiate the truck management program is to identify/designate a group of individuals to drive the necessary activities. Several committees have been referenced in this section, including a leadership committee, the FTAC, and the TAC. It is important to access the expertise of each committee, as well as key stakeholders, to ensure the right mix of technical and political resources necessary to define and implement an effective program.
2. **Identify and work with the operations agencies that are/will be responsible for implementing and enforcing the program.** The success of the program will rely on not only the acceptance by implementing agency staff but by its commitment to and continuing participation in the program. In addition, their input to the program structure will be invaluable.
3. **Define and adopt specific program goals/objectives/strategies to guide development.** The truck management program will be driven by a specific set of goals, objectives, and strategies that expand and enhance the existing Miami-Dade transportation program. The specific goals and objectives

should be developed in response to consultation with the identified stakeholders and their identified needs. They should address the four program elements identified above (planning, funding, outreach, and enforcement).

4. **Identify, define, and develop a specific set of truck management techniques for inclusion in the program.** Based on the defined program strategy, the specific goals and objectives, and input from the key stakeholders, an initial set of truck management techniques will be defined. These activities should be organized and scheduled to complement each other, and to ensure implementation agencies are not overburdened with respect to either funding or workloads.
5. **Define a schedule and timeframe (short- and medium-term) for development and implementation of each selected program element.** This activity will build off of the elements defined in Implementation Step 4, ensuring that the implementation is well thought out and staggered to be most effective.
6. **Develop educational/outreach material and conduct outreach to promote program elements, build acceptance of the program, and gather input from the system users.** An outreach plan should be developed to meet two objectives. First, it will support the formation of the program (support for items 1 through 5) by gathering input from stakeholders. Second, it will provide material for freight education and program dissemination once the program is established, and it will help develop an understanding of freight and trucking needs in the greater community.
7. **Finalize the truck management program and begin implementation.** The TAC/FTAC-accepted program should be finalized and implementation begun on the established schedule.
8. **Integrate program into overall regional transportation programs, as appropriate.** The truck management program will become one of many elements to the Miami-Dade County transportation program. It will be important to work with other program elements to ensure that the overall transportation program is integrated. For example, the traffic operations center maintained by the Florida DOT can function as a data collection and data dissemination resource for the truck management program, larger corridor projects can be integrated into the MPO LRTP, intersection improvements can be incorporated into municipal, county, and state work programs, and input can be given to regional and state initiatives, such as the ongoing development of the SIS.
9. **Support overall integration of truck management and planning into the planning process.** An important component of the truck management program development process will be to ensure it is integrated in to the Miami-Dade County transportation program. This will be critical for long-term investment and funding opportunities. As noted in Implementation Step 8, above, incorporation of freight and trucking-responsive projects in the LRTP and the FDOT work program, as well as the planning processes that lead to

their continued updating, will be the penultimate objective of the program. Continuing to address freight and trucking needs through the annual MPO UPWP (Unified Planning Work Program) will also be part of integrating freight planning.

10. **Build political support with elected officials on an ongoing basis throughout the entire process.** The importance of political support cannot be overstated. Political interest in this subject was the single motivator for the development of this plan. Continued support will be critical in the overall acceptance and ongoing success of this program. Education, outreach, and presentation of freight studies' findings and recommendations to the local decision-makers at municipal and County levels can contribute positively to building this vital support.

Hopefully, following the recommendations included in this study, a truck management program can be implemented in the near future and successfully continued to mutually benefit motorists, trucking concerns, and the local economy.

Appendix A

1.0 Summary of Case Studies

This technical report presents summaries of the case studies completed to document current practices and trends in heavy truck management around the world. This represents our Task 2 activities of the Trends in Heavy Truck Traffic Management Study.

This research draws from varied sources including the NCHRP report on Best Practices in Statewide Planning prepared by CS, the VNTSC project for the development of a Motor Carrier Management Program for the District of Columbia, and web resources.

1.1 Overview

The case studies researched were selected on the basis of criteria outlined in the preceding memorandum. This memorandum outlined two categories of case studies for selection – aspirational and comparable city-state case studies – that would outline strategies and approaches that could be applied to Miami-Dade. Based upon availability of web resources and contacts as well as importance, the following case studies form an exhaustive set of approaches that will be further studied as to applications to Miami-Dade.

International Case Studies

1. Frankfurt, Germany;
2. London, United Kingdom;
3. Paris, France;
4. Singapore, Singapore; and
5. Vancouver, Canada.

United States Case Studies

6. Atlanta, Georgia;
7. Baltimore, Maryland;
8. Boston, Massachusetts;
9. Chicago, Illinois;
10. Los Angeles, California;
11. New York, New York;
12. Phoenix, Arizona;
13. Portland, Oregon;
14. San Francisco, California; and
15. Seattle, Washington.

Florida Case Studies

16. Fort Lauderdale;
17. Jacksonville;
18. Orlando;
19. St. Petersburg;
20. Tampa;
21. West Palm Beach; and
22. Miami.

1.2 Case Study Outline

The research conducted for each case study was organized into two broad sections: 1) a truck program checklist; and 2) an innovative freight management-related practices summary. The checklist was organized into the following broad areas:

1. Planning and Outreach;
2. Investment and Funding;
3. Permitting; and
4. Enforcement.

The above areas were subcategorized into specific practices and depending upon whether or not they were in use, the *Yes/No* column was marked with a checkmark. In cases where such practices were found to be not wholly in use or limited in scope, the corresponding *Yes/No* column was marked as "limited" or "partial." In cases where no information was found on them, this column was marked as "NA." In cases where it was known that these practices were not in use, the column was marked "none." The column *Organization/Notes* described the organization carrying out the practices outlined and also made observations on the specifics and type of practice. Given that one of the objectives of this study was to separate out the city-state jurisdictions and responsibilities, in the special contexts of international case studies, the truck program checklist was found to be inapplicable. Therefore, this checklist was omitted for the international research.

The *Innovative Freight Management-Related Practices* section outlines new innovative practices and strategies that were found in each of the case studies. The main features of these practices are summarized and where known, their success is commented upon.

The *Program Summary* section at the end of each case study outlines specific approaches of each program and points out their applicability to the Miami-Dade area. The *Keywords* under each program capture main features that best describe the case study program under consideration.

2.0 International, U.S., and Florida Case Studies

2.1 International Case Studies

Aspirational City – Frankfurt, Germany

Miami-Dade – Frankfurt, Demographic Comparison

City	Population (in thousands)	Freight Facilities		
		International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	X	X	X
Frankfurt	1,925.0	X		X

Innovative Freight Management-Related Practices

Frankfurt Airport (Fraport) – Fast Lane

Fast Lane allows forwarding agents to transfer work (e.g., opening and reassembling freight and, if needed, palletization) to Freight Service, an in-house division of Frankfurt Airport. Freight Service has special teams that process the clearance of the goods on a preferential basis directly after the aircraft has landed. Forwarding agents outsource freight clearance services to Fraport and in this way save time and money. Airfreight is no longer transported to the forwarding agents' cargo warehouses, to be opened and resorted. The final recipient profits from the reduction in transport time. Additionally, this reduces truck traffic in areas in and around the airport and improves security by reducing intermediaries in processing and forwarding.

Frankfurt Airport – Truck Slot System

In October 2001, a slot system was introduced for trucks at Frankfurt Airport. The new timetable control system includes fixed "windows" for the delivery of freight and alleviates congestion caused by the arrival of too many trucks at the same time, particularly on weekends. The slot control concept was drawn up by Fraport Freight Service jointly with its forwarding agency customers and truckers. It has met with broad

acceptance. Forwarding agents and truckers are very satisfied with this service which benefits all the companies and people involved in the handling process.

"CRIS" Cargo Reservation, Information, and Service Center

Frankfurt Airport's CRIS service for airlines handles the reservation requests of freight movers and informs as well as advises them about all questions relating to freight handling. This includes freight reservations, information about freight capacity, cargo status queries, and truck management (coordination of feeder services according to airline specifications).

HGV Toll System in Germany

Germany has proposed the implementation of a system of tolls for heavy goods vehicles (HGVs) using Federal motorways. It would be a distance-based fee that would be implemented via an innovative satellite-based GPS positioning system supplemented with video cameras. Most of the revenues raised from this toll would be earmarked for improving transport infrastructure, facilitating a change in the funding system from the general budget to users. The level of the HGV toll will be based on the infrastructure costs imposed by HGVs on tolled motorways (average toll rate of €0.15 per kilometer), the number of axles, and levels and types of emissions.

Freight Villages in Germany

Freight villages are agglomerations of transport-oriented companies (including warehouses, trucking firms), logistics service providers and logistics-intensive trade, and production enterprises. Most of them have access to at least two modes of transport, in particular road and rail (intermodal terminal), and an organization with management functions initiating cooperative activities in order to make use of synergies. These villages are generally located away from areas with "conflict potential" (e.g., higher population densities) and therefore allow round the clock operations. They provide sufficient access to both the long-haul transport network as well as to delivery points in urban areas. They also offer cost savings for the provision of essential amenities (electricity, telecommunications, etc.) and necessary economies of scale to provide a greater range of facilities such as advanced secure sorting systems that might otherwise not be economic to install at individual firms and locations.

Program Conclusions

Frankfurt International Airport is the number one cargo hub for Europe. Subsequently, it is at the forefront in the application of technology and innovation to further its operational efficiency. An industry-responsive approach is indicated with the establishment of freight villages and the application of innovative technologies at the airport with some degree of oversight. The proposed toll-system is expected to be an important advancement for both financial and security reasons.

The Frankfurt program is characterized by significant **investment** in **technology** corresponding to the needs of a highly intensive freight and goods movement-oriented industry. Given Miami International's status as a leading freight airport, some of the Frankfurt strategies, including the reservation system, have some potential applicability for Miami.

Keywords – Technology and Innovation, Investment.

Aspirational City – London, United Kingdom

Miami-Dade – London, Demographic Comparison

City	Population (in thousands)	Freight Facilities		
		International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	X	X	X
London	11,900.0	X	X	X

Innovative Freight Management-Related Practices

Central London Congestion Charge

In February of 2003, Transport for London (the Department of Transportation for the City of London) introduced the Central London Congestion Charge, an effort to reduce traffic congestion in the central district of London. The area covered under this initiative is bounded by the inner ring road that surrounds Central London, a zone that covers most of the commercial and retail heart of the City.

Vehicles entering into this zone between the hours of 7:00 a.m. and 6:30 p.m. on weekdays are required to pay £5 (approximately $8.00) to drive or park in this zone. Vehicles are tracked and subsequently charged through a network of video cameras which capture an image of license plates. Payments can be made through a variety of means including at retail outlets, gas stations, via telephone, or through self-service machines.

With respect to freight, trucks are required to pay the charge in the same manner as private automobiles (at retail outlets, via telephone, etc.), but with an additional £10 per year charge for administrative costs. Trucking companies are allowed to register all of their vehicles at once with Transport for London and funds may be paid electronically monthly. All of the generated revenues are used to benefit transportation in the City.

London Lorry Ban

The London Lorry Ban restricts the movement of trucks on residential streets to a network of designated truck routes on nights and weekends. A permit is required to travel on any non-designated streets. Compliance is enforced by police officers and through a system of closed-circuit television cameras.

United Kingdom Lorry Road-User Charge

The United Kingdom's Department for Transport is considering the implementation of a road-user charge on truck operators. The charge would apply to vehicles based on size and weight, distance, time of operation, day of operations, route of operation, and other

operational characteristics. This complex system of charges is expected to become operational in 2006.

Program Conclusions

An international city, London is an example of a city battling a modern day traffic problem: the co-existence of a service-oriented economy alongside a multimodal freight system. In general, the London program has a **regulatory and restrictive** approach designed to decrease congestion in the City via **pricing strategies** using advanced **technology**.

While London is a higher-level world city compared to Miami, it shares many attributes including a diverse international mix of population and a large service economy. Miami can evaluate the application of certain elements of the London approach, such as the implementation of pricing strategies in highly congested locations to reduce traffic congestion.

Keywords – Regulation and restrictions, pricing strategy, innovation and technology.

Aspirational City – Paris, France

Miami-Dade – Paris, Demographic Comparison

City	Population (in thousands)	Freight Facilities		
		International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	X	X	X
Paris	9,850.0	X		X

Innovative Freight Management-Related Practices

Goods Movement and Delivery in the City

Paris is the only city in France where traffic and parking matters are not regulated by the local government, but by a representative of the national government. With respect to freight, regulation of goods movement in the City includes a system of time restrictions for different types of trucks. The larger the truck the greater the time restrictions, with truck-size defined by the area of floor surface they occupy. For example, vehicles that occupy less than 16 square meters are authorized to deliver goods at all times in the City and vehicles which occupy between 16 and 24 square meters are authorized to deliver goods from 0:00 to 16:30 and from 19:30 to 24:00. Delivery windows become progressively more restrictive as trucks increase in size. The strategy also includes a provision for increasing the number of on-street loading/unloading zones (including better enforcement of these zones). The strategy favors night deliveries in order to protect passenger peak hours from freight traffic. The City has tried to simplify the policies to facilitate enforcement but has not found improvement in compliance.

Consolidation of Deliveries – Magasins de Quartier

The Magasins de Quartier project, under consideration by the City of Paris would implement a consolidated delivery system, a concept that is becoming very popular for security as well as congestion reasons. The project proposes drop-off zones for carriers delivering parcels ordered by any kind of communication means: mail order, telephone, fax, or Internet to local depots. These local delivery depots are small-scale terminals (no more than a few hundred square meters) and are located in dense commercial or residential areas. The local delivery zones are open from early in the morning until late in the evening. Carriers will be able to leave parcels and goods in this depot and the intended recipients will be informed about the deliveries. The recipients can either retrieve the items themselves or the employees of the Magasin de Quartier will deliver them at an extra cost. It is proposed that the distances from depot to the client (recipient) will be short, making it possible to deliver without motor vehicles. A similar program has been tested in Germany but its performance has not yet been evaluated.

Program Conclusions

The Paris program was found to be **restrictive** and **complicated** and therefore **hard to enforce**. Miami may not be able to apply the provisions or approach taken by the City, but can learn from its experience in enforcement of complicated regulations. However, the innovative consolidated delivery approach can be a consideration in dense urban areas where truck traffic is frequent and causes significant congestion and security concerns.

Keywords – Complicated, barriers to enforcement, consolidation of deliveries, security.

Aspirational City – Singapore, Singapore

Miami-Dade – Singapore, Demographic Comparison

City	Population (in thousands)	Freight Facilities		
		International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	X	X	X
Singapore	4,400.0	X	X	

Innovative Freight Management-Related Practices

Electronic Road Pricing

Singapore began a paper-based system of congestion charging as early as 1975 for a limited inner-city area defined by gantries at the borders. This was replaced in 1998 with an electronic toll collection (ETC) scheme. Vehicles are outfitted with an in-vehicle unit (IU) and drivers have a prepaid cash card which fits into the IU. As the vehicle drives under gantries in the charging zone (which is much smaller than London's), a charge is automatically deducted from their cash card; this amount varies by both the area and the time of day, with the highest prices during the 8.30 a.m. to 9.00 a.m. peak traffic time. The scheme operates from 7.30 a.m. to 7.00 p.m. in the Central Business District, but ends at 9.30 a.m. in the outer ring road area.

The system is innovative in that prices are raised or lowered when the speeds in a "basket" of roads in the Central Business District fall above or below certain thresholds; if the average speed rises above the threshold, the price is decreased. Recently, the system was changed to one of graduated payments to prevent people from speeding to the gantries just as the price is about to increase (or indeed slowing down if it is about to fall). The price varies by type and size of vehicle as well.

Heavy Motor Vehicles Notification

Under this notification, certain configurations of heavy vehicles with a weight greater than 17,000 pounds expecting to travel on Singapore roads are required to submit a Form of Notice containing all details of the trip to the road transport authority, three days in advance. This notice is used to assess impacts on roadways and plan in advance for such movement that may disrupt traffic.

Other Practices – Industry Shifts

Singapore is the world's third largest oil refining center with a total capacity exceeding one million barrels a day. Other industries include chemicals and chemical products and other refined petroleum products. In recent years a new island, Jurong Island, has been

devoted to the fast expanding petrochemical industry. Some of Singapore's more polluting industries such as cement, food processing, and sawmills, representing an earlier phase in the country's industrialization process, have been deliberately reduced or phased out as Singapore has emerged as a center of high-technology industries. Among other things, this has led to a decrease in heavy industry-related truck traffic and a shift toward air and pipeline distribution.

Program Conclusions

Singapore has chosen to treat all vehicles including commercial trucks with an **overall restrictive** program designed to control pollution and reduce congestion. The **proactive and aggressive** measures have ensured that Singapore is one of the few Asian cities to meet USEPA and WHO standards for clean air. Among the rigorous strategies to reduce automobile travel are a permit system for the purchase of vehicles, high taxes on gasoline, and the pricing scheme for accessing downtown areas described above.

Singapore is an atypical city-state with relatively few access points. This eases enforcement and, therefore, may make it not very comparable to cities like Miami. The pricing system and its subsequent results have been much lauded throughout the world. Miami may not be able to emulate the strategies embodied by the country but can look upon this as an example of an extremely focused restrictive "blanket" program.

Keywords – Pricing strategies, aggressive enforcement, restriction.

Comparable City – Vancouver, Canada

Miami-Dade – Vancouver, Demographic Comparison

City	Population (in thousands)	Freight Facilities		
		International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	X	X	X
Vancouver	2,150.0	X	X	X

Innovative Freight Management-Related Practices

Parking Management

The City of Vancouver is governed by a comprehensive set of municipal by-laws. Commercial vehicles are permitted to use all municipal parking meters for free until 10:00 a.m., and many commercial areas of the City include dedicated traffic lanes for use by trucks and other freight vehicles. No vehicle is allowed to park for more than three consecutive hours on municipal streets – in both commercial and noncommercial areas – a regulation that is enforced in response to specific complaints. Double-parking is prohibited and can be subject to a $500 fine, although short-term loading and unloading is permissible. Permits are available to allow for the extended use of a traffic lane for a double-parked vehicle, such as during construction.

Air and Noise Pollution Abatement

Vancouver currently bans passenger buses from idling for more than three minutes, and is looking to extend that regulation to cover all vehicles, particularly diesel-burning trucks. The City also has a comprehensive Motor Vehicle Noise Abatement by-law, which bans the use of "engine brakes" or "jake brakes" at any time except during emergencies.

Industry Outreach – Incentive-Based Compliance

The management of overweight or heavy trucks is the most significant freight-oriented concern in Vancouver, and the municipal government is working collaboratively with the trucking industry to find solutions to the problem. To foster higher compliance with the Motor Vehicle/Commercial Transport Regulations and the municipal by-laws, city officials have focused on freight-oriented companies (both trucking companies and firms hiring trucking companies).

Vancouver has created a list of approved trucking companies for municipal business and is developing a system that ties new construction permits, contracts, and agreements with requirements that trucks adhere to local regulations and by-laws. The trucking industry has also been closely involved with the development of the freight-oriented portions of

the regional transportation plan prepared by Translink, the regional authority comparable to a U.S. Metropolitan Planning Organization.

Program Conclusions

The City of Vancouver has a carrot and stick-based approach towards truck movement in the City. Compliance with by-laws is rewarded with municipal contracts while noncompliance is discouraged through comprehensive restrictive enforcement.

Miami, a city not dissimilar to Vancouver, can choose to adapt some of the measures Vancouver currently uses to encourage compliance with regulations. Noise and air pollution, a common cause for concern with trucks can also be addressed by innovative measures being practiced by Vancouver.

Keywords – Noise and air pollution, collaboration, incentives, penalties.

2.2 U.S. Case Studies

Comparable City – Atlanta, Georgia

Miami-Dade – Atlanta, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Atlanta	4,112.2	423.1	10.3%	2,176.0	7.8%	86.6%	X		X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Atlanta Regional Commission ("ARC," the MPO for the Region) organized a work team that included representatives from the Chamber of Commerce, Georgia DOT, Norfolk Southern, and CSX to conduct a study for a multimodal terminal in Atlanta. The use of freight railroad tracks for passenger service was a key issue. Georgia DOT completed a Freight Rail Plan update in 2000. GDOT carried out a truck movement study to collect data on truck travel in the State.
Truck Route Delineation	Limited	County ordinances control trucks operating on local streets. Ordinances mention that signage may not be complete. State routes are delineated by Georgia DOT but no comprehensive route-plan was available at the time of this research.
Parking Management	NA	
Industry Outreach	✓	The MPO for the Region has involved private sector representatives in the study mentioned above.
Public Outreach	NA	
Investment and Funding		
Infrastructure Investment	NA	

Activity	Yes/No	Organization/ Notes
Funding	✓	The State Rail Freight Assistance Program helps to maintain economic competitiveness and preserve rail freight service. The program has increased road safety and efficiency (700,000 fewer truck loads on rural roads per year), as well as rail freight safety and efficiency. It also preserves scarce linear right-of-way for future uses, including utilities and fiber optics.
Permitting		
OS/OW Permitting	✓	The state DOT handles oversize overweight permitting on state-controlled highways. The County carries out OS/OW permitting for local roads.
Hazmat Permitting	✓	GDOT issues permits for transport of hazmat materials.
Enforcement		
Parking	✓	City Public Works Department
Truck Routes	✓	City Police

Innovative Freight Management-Related Practices

Study of Hourly Truck Movements Around Atlanta

This study identified 79 workable strategies to facilitate truck travel in and around Atlanta. The strategies are intended to be implemented by the Georgia Department of Transportation in the short, medium, or long term. Operational strategies include the improvement of intermodal facilities access as well as time-of-day restrictions. However, most restrictive measures are considered difficult to implement due to lack of consensus or resistance from the trucking industry.

Driver-oriented measures focus on information such as route planning kiosks at truck stops and in-vehicle navigation systems including real-time traffic information. According to the study less than 15 percent of trucks in Atlanta currently use onboard-GIS and in-vehicle navigation, and many drivers still struggle with navigation. More restrictive (and thus long-term) measures include ramp metering, congestion pricing for trucks during peak hours, and permit-based access to congested facilities. However, heavy resistance from the trucking industry is expected towards these measures.

Capital investment strategies include retrofitting infrastructure, urban distribution centers for LTL vehicles, truck-only lanes, and even roads or truck-bypass lanes that allow trucks to bypass long queues. Interestingly, truck-only roads are considered as one of the prime strategies implementable in the short term. Planning strategies include truck route plans, a continuous freight data collection program (including an openly accessible freight

information database), and truck-supportive land use planning strategies (e.g., preservation of land for freight corridors or future intermodal facilities). Advocacy, legislative, and financial measures include tax incentives for the use of alternative fuel vehicles or smaller trucks, closer cooperation between the state agencies involved in regulating trucks, and the establishment of freight advisory councils on different political levels.

Program Conclusions

The Atlanta Freight Management program is characterized by a focus on the rail mode with a designated rail plan and special funding through the State Rail Freight Assistance Program. At both state and local levels, rules and regulations exist for trucks movement. This may indicate a **pro-rail** rather than a truck-based approach towards freight movement. Additionally, the pro-rail approach appears to be a by-product of the **passenger rail** needs. However, the study on hourly truck travel movements emphasizes the importance – and previous lack thereof – of **reliable data on truck movements**, an essential component of freight planning. The program proposals vary in extent and approach but are yet to be implemented.

In relation to Miami, Atlanta may not be an example as no prominent strategies or approaches seem to emerge out of this case study. However, Atlanta's study on the hourly movements of trucks underscores the importance of reliable data for purposes of freight planning.

Keywords – Freight-passenger rail approach, freight data.

Comparable City – Baltimore, Maryland

Miami-Dade – Baltimore, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Baltimore	2,553.0	146.1	5.7%	1,248.5	6.9%	87.3%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	Partial	The City of Baltimore's *Transportation Strategic Plan* does not explicitly mention planning for freight. However, in 1994, Baltimore Metropolitan Council (the MPO for this Region) established a Freight Movement Task Force which incorporates freight issues into the MPO planning process. Their role and activities are detailed below. MDOT carried out a *State Freight Infrastructure Study* as part of its freight planning initiatives. Freight is a critical component of its *Strategic Plan* as well.
Truck Route Delineation	✓	Local Truck Zones are established in certain neighborhoods of Baltimore which restrict through trucks. Alternate routes allow trucks to bypass these zones.
Parking Management	✓	The Baltimore Planning Department works with developers to ensure that all new construction in the City has adequate off-road truck facilities. The Freight Movement Task Force (mentioned above) has a parking subcommittee that focuses on planning for curbside truck management.
Industry Outreach	✓	The City works with developers on off-street truck facilities, and publishes a free truck route map with the MPO for truckers. The Freight Movement Task Force membership consists of industry stakeholders as well as public offices.
Public Outreach	Limited	Baltimore has responded to the concerns of neighborhoods adversely affected by heavy trucks through the establishment of local truck zones.

Activity	Yes/No	Organization/ Notes
Investment in Infrastructure	Limited	The Baltimore Development Corporation, the local economic development agency, also works to improve truck access to facilities.
Permitting		
OS/OW Permitting	✓	The State Highway Administration issues permits for trucks traveling on state highways and interstate routes.
Hazmat Permitting	✓	Maryland Department of Environment
Enforcement		
Parking	✓	Baltimore Department of Transportation
Truck Routes	✓	City Police enforce truck traffic within the City. Baltimore has had mixed success in enforcing the use of alternate routes. State Police enforce truck traffic on state and interstate highways.

Innovative Freight Management-Related Practices

Local Truck Zones

Baltimore has sought to protect neighborhoods from through truck traffic by creating "zones" as opposed to restricted routes for through trucks. Alternate truck routes are indicated at zone boundaries, but the City has had mixed success in enforcing the use of these zones.

Freight Movement Task Force

The Freight Movement Task Force consists of members from the public and private sectors, including the Maryland Department of Transportation, the Maryland State Police, the trucking industry, and academic researchers. Innovative initiatives carried out by the task force include the following:

1. A design charrette in which different stakeholders were invited to map out problem areas for trucks and together consider possible solutions;

2. A free map of truck routes, which can be ordered on-line; and

3. The truck parking subcommittee has identified truck-related infrastructure needs and also focused on education and enforcement strategies.

The task force can be considered a model for instituting collaborative, participatory freight planning.

Program Conclusions

Local initiatives for freight movement in Baltimore are limited but the truck program initiatives of the MPO have been more expansive. The MPO regional program approach is **collaborative, pro-industry and participatory,** incorporating stakeholder concerns and solutions, while the local approach as evident from the establishment of the truck zones is more **restrictive and regulatory**.

While Baltimore has been identified as a comparable city, it appears that the truck program approach may not be entirely suitable to Miami. Rather, *elements* of the approach such as the institution of a regional multistakeholder body, may be incorporated while making program recommendations for Miami. Also the mixed success in the enforcement of local truck zones may indicate that restrictive practices such as these may need further refinement to achieve anticipated results.

Keywords – Regional collaboration and industry outreach, local restrictions and regulations.

Comparable City – Boston Metropolitan Area, Massachusetts

Miami-Dade – Boston, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Boston	3,398.1	508.1	15.0%	1,980.0	8.5%	87.3%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	*Boston's Public Transportation and Regional Connections Plan* prepared by the City of Boston's Boston Transportation Department (BTD) with Boston Redevelopment Authority, Massachusetts Port Authority, and MassHighway has a freight component. The MPO for the Region, Central Transportation Planning Staff (CTPS), in its *Boston MPO Transportation Plan Update 2000-2025*, identified various measures for the improving goods movement in the Region. MassGIS the Commonwealth's Office of Geographic and Environmental Information, within the Massachusetts Executive Office of Environmental Affairs has created a comprehensive, statewide database of spatial information for environmental planning and management. This includes mapping the City's freight railroad system. In 1998, CTPS participated in testing the Truck Trip Estimation Procedure (TTEP) for the FHWA using the Truck Inventory and Use Survey (TIUS) database. The TTEP estimates the average number of "tours" per day for 10 major industry segments such as food/warehouse delivery, household goods, and retail delivery.
Truck Route Delineation	Limited	Under Massachusetts law, a community must gain permission from MassHighway before restricting truck traffic along streets within the community. BTD has "prohibited" rather than "designated" truck routes. CTPS conducted a study of truck routes in Cambridge, Boston, Somerville, Arlington, Watertown, and Belmont. The truck study was completed in

Activity	Yes/No	Organization/ Notes
		September 2001 and its findings and recommendations were considered in the update of the Transportation Plan.
Parking Management	✓	BTD's *Access Boston 2000-2010* study incorporates Truck Loading/Unloading Zone issues.
		Cambridge requires all new development to include provision for off-street loading/unloading for trucks.
Industry Outreach	Partial	Cambridge had previously proposed a nighttime ban on through trucks on certain routes which have now been lifted.
Public Outreach	✓	BTD is responsive to neighborhood concerns about trucks. As noted above, Cambridge city staff involved neighborhoods in the truck route ban effort.
		The Regional Transportation Advisory Council is an independent group of citizens and officials charged with providing public input on transportation planning to the Boston MPO. The council provides public input on transportation planning to the Boston MPO.
Investment and Funding		
Investment in Infrastructure	Diversion of land to other uses	In 2000, the Massachusetts Turnpike Authority sold a portion of the land adjacent to the Beacon Yards to Harvard University. Over time this land currently used for freight and vehicle storage will probably be converted into academic use.
		Capacity improvements identified by the CTPS include the Chelsea truck route which is proposed to be an exclusive, grade-separated truck route between Logan Airport and Chelsea. A double-stack initiative for freight trains in the Boston region also aims to increase efficient freight movement in the Boston area.
Funding	✓	Cambridge prioritizes roadway improvement funding for truck routes.
Permitting		
OS/OW Permitting	✓	Boston Transportation Department issues permits on the basis of legislation laid out by the State.
Hazmat Permitting	✓	Boston Transportation Department
Enforcement		
Parking	✓	Parking at Truck Stops is enforced by the Massachusetts State Police.
		Parking in the City is enforced by the Boston Transportation Department.
Truck Routes	✓	Massachusetts State Police

Innovative Freight Management-Related Practices

Boston Back Streets Program

As part of the *Boston Back Streets Program*, sites that have convenient, fairly direct access to a highway or rail are prioritized for preservation for industrial uses. The City also provides some financial and technical resources as part of the program. The economic-development-oriented program is an example of incorporation of goods movement and land use linkages within economic development in a situation when often more profitable land use like residential and commercial win over industry and warehousing.

Cambridge Nighttime Truck Ban

Cambridge had previously proposed a nighttime ban on through trucks on certain routes. Cambridge city staff worked closely with the trucking industry and neighboring communities to designate routes that would be acceptable to all. Despite this, the ban has been lifted due to political and industry misgivings.

Program Conclusions

The truck management program for the Boston area is primarily concerned with **neighborhood issues** relating to trucks. The Cambridge truck ban and the Boston prohibitions point towards a **regulatory and restrictive approach** regarding freight and goods movement. However, there is also a more **accommodating element** in their approach toward industry and the needs of industry through: 1) dialogue with truck operators; and 2) investment in important truck corridors. There also seems to be some interest in shifting freight from the truck mode towards rail.

The Boston-Cambridge area, comparable to Miami in terms of a number of demographic characteristics, presents some potential lessons to be learnt in its truck management approach. The lifting of a truck ban points toward a need for a concerted effort to delineate truck routes. Also, in the face of safety concerns relating to trucks, it may be worthwhile for Miami to look at the modal options provided by rail. Economic development initiatives like the Back Streets program can also provide opportunities for industries limited by restrictions.

Keywords – Pro-neighborhood, regulations and restrictions, industry cooperation, truck to rail mode shift, economic development.

Aspirational City – Chicago, Illinois

Miami-Dade – Chicago, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Chicago	8,272.8	1,426.0	17.2%	4,136.6	12.0%	83.2%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Chicago Area Transportation Study ("CATS" is the MPO for the Chicago Region) has a long history of regional freight planning: dedicated freight staff have been maintained since before 1970, though not in all program years. The MPO conducts separate travel surveys of the motor carrier industry, and the CATS demand model involves a separate truck trip table that is married to the auto trip table. Major U.S. and Canadian railroads, in cooperation with state and city governments, have proposed the Chicago Region Environmental and Transportation Efficiency (CREATE) Program. CREATE proposes numerous improvements to both railroad infrastructure and the local highway system in the Chicago region.
Truck Route Delineation	✓	Truck Routes are delineated but no information was available on the plan.
Parking Management	✓	One off-street parking bay is required for every 100,000 square feet of parking space. Chicago DOT works with industry owners and operators to develop programs (further described below) for loading and unloading.
Industry Outreach	✓	The Loading-Unloading Program described above is carried out with industry participation. Chicago DOT and the Planning and Development manage a program to identify and improve significant industrial corridors, including truck access. Each corridor has an appointed council comprised of both public and private interests. CATS (the MPO for the Region) manages the Intermodal Advisory Task Force which includes

Activity	Yes/No	Organization/ Notes
		representatives from the private and public sectors. The task force assists in prioritizing freight-related projects and works with CATS to inventory major intermodal facilities and projects in the Region. The task force also explores creative financing for freight projects and has hosted public workshops on the future of freight operations in the Chicago region.
Public Outreach	✓	The Industrial Corridor Councils set up by the City as well as the Intermodal Advisory Task Force include public representatives.
Investment and Funding		
Infrastructure Investment	✓	The Truck Access Route Program (TARP) instituted by IDOT, helps local government agencies upgrade roads to accommodate 80,000-pound trucks. This program is described in detail below. IDOT also has a program to identify and finance rail improvements as part of the Rail Freight Program.
Funding	✓	For the TARP Program, IDOT provides up to $30,000 per lane mile and $15,000 per intersection. As part of the Rail Freight Program, IDOT provides low interest loans to finance rail improvements and, in some cases, grants. Railroads will pay $200 million of the $1.5 billion CREATE plan described above. Railroads pay for the business improvements to the rail network and government will pay for public benefits such as grade crossing separations and commuter rail improvements.
Permitting		
OS/OW Permitting	✓	Bureau of Permits, Chicago Department of Transportation
Hazmat Permitting	NA	
Enforcement		
Parking	✓	Chicago Police Department enforces parking and loading zones. Double-parking has been ruled a moving violation rather than a parking violation. This enables police to tow the vehicle.
Truck Routes	✓	Illinois State Police, local city streets enforced on basis of complaints by Chicago Police Department.

Innovative Freight Management-Related Practices

Intermodal Advisory Task Force

Established in 1994, the Task Force comprised of freight operators (both trucking and railroad), civic organizations, and public officials, works to raise public awareness of the importance of intermodal freight movement to the economic health of Chicago and to plan for improved freight facilities in the area. The Task Force encourages cooperative participation by both the public and private sectors and provides a forum for discussion of long-term freight needs, with an emphasis on intermodal coordination. The Task Force assists in prioritizing freight-oriented infrastructure projects and has worked with the staff of CATS to develop an inventory of major intermodal facilities and projects in the Region. The Task Force also explores opportunities for the creative financing of freight projects and has hosted public workshops on the future of freight operations in the Chicago region.

Truck Loading Unloading Program

The staff of the Chicago Department of Transportation work cooperatively with the owners and operators of industrial facilities in the City – warehouses, factories, and other facilities – to develop programs for loading and unloading that minimize truck idling and double-parking. Members of the city staff help facility operators optimize the times for receiving shipments in order to increase the efficiency and speed of each delivery. Compliance with the developed plans is purely voluntary – there are no existing regulations to enforce it.

Truck Access Route Program (TARP) and Create Programs

The TARP, instituted by IDOT, helps local government agencies upgrade roads to accommodate 80,000-pound trucks. The routes provide access to points of loading and unloading and to facilities for food, fuel, truck repair, and driver rest. Projects must connect to a truck route and end at another truck route or truck trip generator. IDOT provides up to $30,000 per lane mile and $15,000 per intersection and projects are selected each fall to be constructed during the upcoming fiscal year.

The Chicago Region Environmental and Transportation Efficiency (CREATE) program proposes numerous improvements to both railroad infrastructure and the local highway system. This innovative program is financed by a public-private partnership that estimates the share of benefits to the public and private sector (in this case, railroads) and proposes cost-splits accordingly. This has resulted in the railroads paying about $200 million of the total $1.5 billion cost of program.

Program Conclusions

The Chicago approach, akin to other major freight centers of the United States, can best be termed as a **pro-freight** and **industry-oriented** program. The intense participation of industry stakeholders in the planning and selection process has resulted in **infrastructure and construction** focused solutions to support movement of freight in the Region.

Additionally, reflective of its role as a key intermodal center of the country, the Chicago Region's freight planning has resulted in the prioritization of **intermodal connections** rather than the individual modal components. The **innovative funding** match that allocates infrastructure costs to the public and private sectors based on expected benefits underlines an effort towards a more balanced funding of infrastructure.

Chicago and Miami are different demographically and the overall approach toward the management of freight in the Region does not appear to be applicable to Miami. However, it offers an example of the results of an industry-based approach toward the management of freight in an area, and may have elements that would be applicable to Miami.

Keywords – Pro-freight, industry-based, infrastructural solutions, intermodal approach, innovative funding solutions.

Comparable City – Portland, Oregon

Miami-Dade – Portland, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Portland, OR	1,572.8	178.7	11.4%	937.5	13.2%	81.1%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	Portland's *Transportation System Plan* has a freight component integrated into the entire system plan. In addition, the City is currently working on a master plan for freight management, which will create holistic policies regarding freight movement and the upgrading of freight-oriented infrastructure. Metro (the MPO for the Portland region) has planned for and designated key freight corridors that provide access to industrial areas and important intermodal facilities.
Truck Route Delineation	✓	The City of Portland has instituted a tiered system of truck routes with designations of regional, major, and minor truck routes. The routes are delineated by mode and are available on the Internet.
Parking Management	✓	The City of Portland's Office of Transportation runs the *Angled Parking Permit Program* which provides operators with parking strategies.
Industry Outreach	✓	City of Portland has designated a committee, consisting of members from the business community as well as public agencies, to develop guidelines for freight movement in the City. The Oregon Freight Advisory Committee (OFAC) provides input to the state DOT and consists of shippers, carriers, association and agency representatives, among others.
Public Outreach	✓	The Portland Office of Transportation works with individual neighborhoods through community outreach efforts on truck management issues.

Activity	Yes/No	Organization/ Notes
Infrastructure and Funding		
Infrastructure	✓	Metro has identified 59 freight mobility projects that would cost $1.76 billion. Metro is seeking comments on project priorities.
Funding	✓	The State of Oregon has designated $100 million for freight projects that provide access to industrial lands or other job-creating sites. The projects identified above by Metro will be a part of this funding program.
Permitting		
OS/OW Permitting	✓	The City of Portland coordinates with the State of Oregon to issue permits for over-dimension, weight, and size trucks. This harmonization of city- and state-level permitting reduces the burden on trucking companies and encourages cooperation between industry and government.
Hazmat Permitting	NA	
Enforcement		
Parking	✓	City of Portland enforces curbside parking.
Truck Routes	NA	

Innovative Freight Management-Related Practices

Funding Mechanisms

Portland is considering innovative ways to fund freight-oriented projects, including fees based on weight and miles (implemented by the State of Oregon, with income shared with the City of Portland), truck registration fees, and a fee based on assumptions about the traffic generated by a particular business.

Angled Parking Permit Program

Portland runs the Angled Parking Permit program, which attempts to alleviate street blockage caused by loading/unloading trucks by providing operators with strategies to encourage better traffic flow. Permits are granted to allow an individual truck to park at a particular site. The program suggests various parking strategies to drivers, including anything from setting up cones to utilizing a flagger. The program is administered by the Office of Transportation.

Industry Participation

Portland has worked closely with the trucking industry on the development of freight management policies. Between February and June 2003, committee meetings were held

by the Portland city staff, with extensive input from business and industry, to help to develop new solutions for freight management and freight infrastructure. These meetings had high-profile support from elected leaders in Portland, contributing to their ultimate success.

Industrial Infrastructure and Designated Freight Districts

Metro has designated industrial infrastructure for future investment and upgrade. The City of Portland has also worked to develop land use designations in the form of designated freight districts that are areas in which freight movement is encouraged and infrastructure is developed to facilitate truck operations.

Program Conclusions

Portland's activities point toward a **progressive, pro-industry** approach to freight and goods movement in the City and the Region. The designation of freight districts and identification of critical industrial infrastructure point toward **land use planning** as the preferred mechanism for the **integration of freight planning into the regular planning process**. Additionally, the identified **funding mechanisms and political willpower** point toward an ability to carry out the identified plans.

Portland's approach toward freight planning has elements that can be applied to Miami. The comprehensive land use planning approach along with the innovative funding strategies under consideration are strategies that would benefit a city wishing to promote goods movement within the existing planning process. The Portland case study also underscores the importance of a political willingness to support the implementation of freight and goods movement strategies.

Keywords – Pro-industry, innovative funding mechanisms, political willpower, integration into comprehensive land use planning process.

Comparable City – San Francisco, California

Miami-Dade – San Francisco, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
San Francisco	1,731.2	554.8	32.0%	988.6	5.1%	90.3%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	San Francisco does not have any known freight plans at the local level. The Metropolitan Transportation Commission (MTC), the MPO for the Region (with the City of Oakland as the freight center of the Bay Area), is currently doing a *Goods Movement Study* to understand needs and propose solutions for freight in the Bay Area. This includes the identification of freight-specific projects for inclusion in the programming for funding.
Truck Route Delineation	Partial	The City of San Francisco restricts *through* trucks (as indicated on a truck restrictions map) rather than providing designated truck routes. This has evolved over time, primarily due to citizen and neighborhood activism.
Parking Management	✓	The Department of Parking and Traffic has instituted a unique system for loading zones, including a system of metered zones (described below).
Industry Outreach	NA	
Public Outreach	✓	Truck prohibitions on city streets have evolved in response to citizen and neighborhood activism.
Investment and Funding		
Infrastructure Investment	✓	The City of San Francisco has invested in parking meters for loading zones to expedite turnover of limited curbside loading space.
Funding	NA	Unknown

Activity	Yes/No	Organization/ Notes
Permitting		
OS/OW Permitting	✓	Department of Parking and Traffic at the City of San Francisco does OS/OW permitting. This permitting is extremely rigorous, delineating among other things, times, days, and routes for larger vehicles.
Hazmat Permitting	✓	State of California
Enforcement		
Parking	✓	Department of Parking and Traffic's Enforcement Division at the City of San Francisco.
Truck Routes	✓	Department of Parking and Traffic's Enforcement Division at the City of San Francisco.

Innovative Freight Management-Related Practices

Curbside Management

The San Francisco Department of Parking and Traffic has worked to prevent abuse of designated loading zones by separating them into general commercial use and truck-only areas. In an effort to prevent non-delivery vehicles from using truck zones, San Francisco has recently created a third category of loading zones that can be used only by trucks with six or more wheels. All loading zones have a 30-minute time limit. The curbs are painted yellow and signs are posted at each space informing parkers of the time limit and the days and times of the restriction. In an effort to gain compliance with the 30-minute time limit, the Department has also installed parking meters in some loading zones – costing 75 cents for 30 minutes – in order to encourage turnover, but has found compliance to be weak.

Program Conclusions

The San Francisco area, sister city to the larger freight center of Los Angeles, has less intensive freight and goods movement activities. Therefore management and enforcement of these activities appears to be limited. The **pro-neighborhood** program works through a system of **regulations and restrictions** aided by **innovative practices** to address the pressing needs of curbside management via installation of parking meters and dual loading zone types.

The potential application of the San Francisco program to Miami may be limited although the Cities appear demographically similar to each other. Metered loading zones, while appearing to be an attractive way to address loading zone parking issues, would require further examination before implementation to ensure greater compliance than that experienced, thus far, in San Francisco.

Keywords – Pro-neighborhood, regulations and restrictions, innovation and technology.

Comparable City – Seattle, Washington

Miami-Dade – Seattle, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Seattle	2,414.6	331.9	13.7%	1,355.1	12.2%	81.9%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/Notes
Planning and Outreach		
Freight Planning	✓	The City of Seattle's Office of Freight Facilitator is responsible for developing a freight management plan for Seattle as well as other duties described in more detail below.
Truck Route Delineation	Time Restriction	A truck restriction is currently in place in downtown Seattle, requiring large trucks to travel through downtown only at off-peak hours. WSDOT's Freight and Goods Transportation System (FGTS), updated biennially, classifies state highways, county roads, and city streets according to the tons of freight that are carried on them each year. The Port of Seattle (independent of the City of Seattle) makes a map of truck routes and truck restrictions available to all drivers traveling to and from the Port. The City of Seattle has an outreach program to publicize traffic regulation information for local companies that receive and generate truck shipments.
Parking Management	NA	
Industry Outreach	✓	The FAST Corridor project (described below) involves private stakeholders, including railroads and the truckers' association, in the planning, implementation, and funding of freight-related projects. The City has established the Freight Mobility Advisory Committee (FMAC) that includes public and private interests and meets monthly to discuss freight-oriented projects underway by the Seattle Department of Transportation. The City maintains a list of companies and keeps them informed of policies and programs that are likely to impact them.

Activity	Yes/No	Organization/Notes
Public Outreach	✓	One of the duties of the City's Office of Freight Facilitator is to communicate with the public on freight issues.
Investment and Funding		
Infrastructure Investment	✓	The Freight Action STrategy for the Everett-Seattle-Tacoma (FAST) Corridor includes a package of freight-related improvements for the Seattle-Tacoma region. The nationally lauded program is funded by railroads and public authorities (including WSDOT) and is described in greater detail below.
Funding	✓	The FAST Corridor is funded by a coalition of public and private organizations.
Permitting		
OS/OW Permitting	✓	State of Washington's Motor Carrier Services has now initiated an on-line permitting system.
Hazmat Permitting	NA	
Enforcement		
Parking	✓	City of Seattle enforces parking regulations within the City.
Truck Routes	✓	State and city police enforce truck routes on the respective roadways.

Innovative Freight Management-Related Practices

Freight Action STrategy for Everett-Seattle-Tacoma (FAST) Program

The Washington Department of Transportation (WSDOT) and the Regional Council co-sponsor an interagency group of local governments which, in turn, sponsor the shared package of freight investments titled the FAST Corridor (Freight Action Strategy/Corridor (FAST Corridor). Phase I (1997 to 2003) consisted of 15 projects valued at $500 million, one-half of which are now completed. Contributions were made by all levels of government and by the two affected Class I railroads in the Region. The project package consists of a wide variety of transportation improvements including the implementation of ITS, port access improvements, intersection improvements, and road widenings. This program is an example of a successful participatory program that has both the political support and motivation to carry out projects beneficial to freight movement in the Region.

Time-of-Day Restriction

The City of Seattle has a time-of-day restriction on trucks entering the City; trucks can only operate during off-peak hours within the City.

Local Freight Facilitator's Office

The City of Seattle has established the Office of Freight Facilitator which is responsible for developing a freight management plan for Seattle, identifying high-priority projects, communicating with the public on freight issues, and championing the needs of freight movement. This office also participates in the design and review of projects that may impact freight movement in Seattle. The office also interacts with other public agencies to champion the interests of freight movement.

Advisory Committee

The City of Seattle has also established the Freight Mobility Advisory Committee (FMAC) which includes public and private interests and meets monthly to discuss freight-oriented projects underway by the Seattle Department of Transportation. The FMAC has, for instance, initiated a program, funded with both private and public monies, to alleviate congestion at identified chokepoints near the Port of Seattle.

Industry Communication and Outreach

The municipal government maintains a list of freight companies that operate in the industrial areas of Seattle and uses the list to update them on traffic policies and projects that impact freight movement.

Program Conclusions

The Seattle program is **pro-freight** with significant **industry outreach** and participation in the decision-making process. The program has political support and, subsequently, funding for the implementation of its plans. The City, while restricting trucks during peak hours, demonstrates some freight-friendliness by communicating with affected operators through policy and project updates and the Office of Freight Facilitator.

Seattle's successful organizational strategies including the establishment of a freight facilitator's office as a single point-of-contact for issues relating to freight movement and its demonstrated political support for freight-related policies and projects is a worthwhile consideration for Miami as it establishes a management program for freight.

Keywords – Pro-freight, industry communication, industry outreach, political will, funding.

Aspirational City – Los Angeles, California

Miami-Dade – Los Angeles, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Los Angeles	9,519.3	3,449.4	36.2%	4,033.4	13.3%	83.3%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	LADOT, Port of Los Angeles and Long Beach, Community Redevelopment Authority carry out freight planning for their individual concerns. The MPO sets the approach for these efforts and conducts freight planning at the regional level. California DOT's Statewide Goods Movement Plan was carried out in 1998 and the DOT is currently working on a goods movement strategy concurrent with this plan.
Truck Route Delineation	None	
Parking Management	Partial	Not as part of a plan but as a component of larger parking program.
Industry Outreach	✓	LADOT's Transportation Task Force subcommittee for freight movement includes representatives from the trucking industry, and develops goods movement-related solutions (detailed below). SCAG (the MPO) coordinates with California Truck Association, FedEx, UPS, and Class I Railroads while conducting freight planning. The Community Redevelopment Agency, an economic development agency, is working on truck issues in industrial areas in the City (described in detail below).
Public Outreach	✓	Significant public outreach was undertaken as part of the development of the Alameda Corridor and other plans.

Activity	Yes/No	Organization/ Notes
Investment and Funding		
Infrastructure Investment	✓	Examples include the Alameda Corridor described in detail below.
Funding	✓	The Alameda Corridor was financed by a unique public-private partnership (main features are described below).
Permitting		
OS/OW Permitting	✓	City of Los Angeles carries out the permitting process on the basis of legislation enacted by the State.
Hazmat Permitting	✓	Hazmat permitting is carried out by California State DOT.
Enforcement		
Parking	✓	Bureau of Parking Enforcement and Intersection Control
Truck Routes	Partial	Voluntary, incentive-based strategies towards enforcement via signalization; intersection and striping solutions aimed towards improvement of truck movement and safety.

Innovative Freight Management-Related Practices

Demand Model Development

The Ports of Los Angeles and Long Beach have jointly prepared a transportation study that includes an integrated intermodal logistics analysis. The study aims at determining traffic growth, developing transportation planning tools to address this growth, identifying deficiencies, and recommending improvements. The most critical task which serves as the foundation for the entire study is the development of innovative terminal truck and auto trip generation models.

The new trip generation model was developed and validated using actual gate transactions, terminal throughput data, and traffic counts. The model is able to accurately simulate the peak day within the entire year as well as daily and peak-hour truck-type movements within five to 10 percent of the actual counts which is considered excellent. Automobile trips of port employees and visitors were integrated into the model as well as non-terminal trips from other land uses located throughout the ports.

Alameda Corridor – Public-Private Participation Initiative

Alameda Corridor is a 20-mile-long rail cargo expressway linking the ports of Long Beach and Los Angeles to the transcontinental rail yards near downtown Los Angeles. It is a series of bridges, underpasses, overpasses, and street improvements that separate freight

trains from street traffic and passenger trains, facilitating a more efficient transportation network. The project's centerpiece is the Mid-Corridor Trench, which today carries freight trains in an open trench that is 10 miles long, 33 feet deep and 50 feet wide between State Route 91 in Carson and 25th Street in Los Angeles. Construction began in April 1997 and operations began in April 2002.

The $2.4 billion Alameda Corridor was funded through a unique blend of public and private sources. Revenues from user fees paid by the railroads will be used to retire debts. Railroads will pay $15 for each loaded 20-foot equivalent unit (TEU) container; $4.00 for each empty container, and $8.00 for other types of loaded rail cars such as tankers and coal carriers. Over a 30-year period, fees will increase between 1.5 percent and 3.0 percent per year, depending on inflation. This collaborative effort has been lauded all over the world for being a first in the area of public-private partnership for a major construction project.

Port Reservation System

The Ports of Los Angeles and Long Beach are considering a 24/7 on-line reservation system for entering the ports which, if implemented, will result in reduced waiting times and pollution due to idling trucks at the gateway to the ports.

Goods Movement and Economic Development

The Community Redevelopment Agency of Los Angeles, an economic development organization with a particular focus on the reuse of former industrial areas, works on trucking issues as they relate to easing congestion and improving the flow of goods through the City. It has recently prepared a major report on the efficiency of truck movement in the urban industrial areas of Los Angeles, and has requested funding for the implementation of truck management solutions. The Redevelopment Agency is also working to develop more efficient mechanisms for the loading and unloading of goods, including the possibility of a central facility. This approach is one of the first to integrate the economic development of an area with planning for the efficient movement of freight.

Program Conclusions

The Ports of Los Angeles and Long Beach and the surrounding metropolitan area constitute the largest freight and goods movement center in the country. Consequently, the cities and regional agencies view goods movement as being critical to the economy of not only their region, but to the entire nation. Their significant role as gateway ports has led to a responsive **pro-freight and goods-movement approach,** based on **incentives and investment in freight-related infrastructure** as the primary mechanisms for directing (and in this case, enhancing) freight movements rather than a regulatory approach.

Los Angeles operates on a significantly larger scale than Miami in terms of freight operations and demographics but presents broad approaches and strategies that can be applied. For example, Miami can attempt to orient existing economic development initiatives in freight-critical areas towards safe and efficient goods movement. It can also

take a lead from the Alameda corridor for financing infrastructure related to the movement of goods in the Region.

Keywords – Pro-industry, incentive-based enforcement, investment in freight-related infrastructure, technology and innovation, economic development.

Aspirational City – New York, New York

Miami-Dade – New York, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
New York City	9,314.2	3,139.6	33.7%	4,127.2	4.2%	92.2%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	At the local level freight planning is restricted to truck route delineation. The New York Metropolitan Transportation Council (NYMTC) is one of the few MPOs in the United States to develop a comprehensive *Regional Freight Plan*. The Freight and Economic Development Division of the New York State Department of Transportation carries out planning for goods movement.
Truck Route Delineation	✓	The City of New York is in the process of updating its truck route system.
Parking Management	✓	New York City recently conducted a successful pilot using metering systems in loading zones, leading to its adoption in other areas. This program is described in detail below.
Industry Outreach	✓	The truck route updating process being carried out by the City of New York seeks to incorporate industry and business concerns. NYMTC's Freight Transportation Working Group (FTWG) consists of freight providers and receivers and their associations, other interested transportation agencies, business associations, as well as the ports and public agencies.
Public Outreach	✓	The City's truck route update incorporates neighborhood feedback. The FTWG seeks to educate the general public and local decision-makers about the importance of freight transportation to the Region.

Activity	Yes/No	Organization/ Notes
Investment in Infrastructure	✓	Significant investment was made in electronic parking meter systems (described in detail below). This has been highly successful in increasing turnover as well as in recovering the investment as a pilot program.
Permitting		
OS/OW Permitting	✓	New York State DOT and City DOT.
Hazmat Permitting	✓	Port Authority of New York and New Jersey has jurisdiction over several bridges. New York State DOT has jurisdiction to issue hazmat permits.
Enforcement		
Parking	✓	City of New York enforces parking in the City.
Truck Routes	✓	New York State Police enforce adherence to truck routes.

Innovative Freight Management-Related Practices

Security

After the events of 9/11, there has been interest in integrating the security plans created in isolation by the various agencies that operate the transit, highways, and bridges of the City. This is an important consideration in view of future implications for freight movement not only in this coastal megaloplis but throughout the country.

Truck Route Mapping Tool

New York City is considering implementing a web-based mapping tool to allow truck drivers to identify optimal routes with respect to size/weight characteristics and destination. This innovative approach has potential to improve compliance with local route designations.

Environmental Quality Impact

New York State Department of Transportation recently used Federal transportation funding to install plug-in power sources for the hundreds of trucks that gather to load and unload at the Hunt's Point Cooperative Market. These power sources provide heat and light to the drivers and have dramatically reduced the number of trucks idling for power, thereby reducing the amount of exhaust in the area.

Pricing Strategies

New York City has developed several innovative programs for managing commercial parking. The drivers of trucks and other commercial vehicles are required to pay a charge to use commercial parking spaces during the hours of 7:00 a.m. and 6:00 p.m. – $2.00 for one hour, $5.00 for two hours, and $9.00 for three hours. Three hours is the maximum time allowed. Businesses are able to purchase debit cards with memory chips for use by their drivers, eliminating the need to carry cash for use in the meters. The New York City Police have found enforcement to be much easier with this system than with a traditional system of meter-less loading zones, and the average time spent in a commercial spot has dropped to approximately 90 minutes from an average of five hours. In addition to this, there has been significant revenue generation. Initially, approximately $300,000 was invested in research, development, and purchasing; the revenue projection for 2005 is $10 million.

Real-Time Cargo Information System (FIRST)

The Port Authority's Freight Information Real-Time System for Transport (FIRST) system will provide cargo and equipment information in real-time on the Internet. The web page will integrate available information on ship, railroad, or plane arrivals, provide up-to-date cargo status and real-time road conditions, and provide real-time video, which monitors congestion at seaport entry gates or airport access points. A pilot project is being developed for the Southern Corridor in New Jersey.

New Jersey Truck Ban Ruled Unconstitutional

The New Jersey DOT, which had ruled that 102-inch-wide trucks and double tractor-trailer combinations trucks be banned from operating on most local roads, was overruled by the U.S. District Court as unconstitutional because it discriminated against out-of-state truckers. This legal battle reinforces the need for partnerships and coordination for implementation of any freight strategy.

Program Conclusions

New York's **regional approach** toward their freight program appears to be **pro-freight** and **planning-oriented**, while its **local approach** is more **solution-oriented** with metered loading zones. The Hunt's Point examples use **technology and innovation**.

Miami, being a markedly different city from New York both by demographics and freight-related measures, may not be able to emulate its approach in this area. However, the case study and its elements are likely to become more practicable in Miami as it continues to grow. An exception to this is the truck route mapping tool which may be a viable voluntary enforcement tool, if Miami chooses to implement a truck route system.

Keywords – Pro-freight planning, technology and innovation.

Comparable City – Phoenix, Arizona

Miami-Dade – Phoenix, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Phoenix	3,251.9	457.5	14.1%	1,596.1	8.6%	83.3%	X		X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Maricopa Association of Governments' ("MAG" is the MPO for Phoenix region) Regional Freight Assessment is intended to serve as a base for analyzing current and future regional freight needs, including infrastructure improvements, activities, and future planning endeavors related to freight and the goods movement process. Other freight-related activities include: 1) developing an Intermodal Management Systems report, which is considered in the preparation of the Transportation Improvement Program; 2) conducting freight forums, which provide carriers and shippers an opportunity to give input on transportation needs and investments; and 3) considering freight movement factors as a part of modal plan development, (e.g., this is specifically addressed in the airport planning process). ADOT's MoveAZ Long-Range Plan currently under development has a freight component.
Truck Route Delineation	Limited	Truck routes are delineated at the state level and published on the web site for use by operators. Information on local truck route delineation was not found.
Parking Management	NA	
Industry Outreach	✓	The Regional Transportation Plan was developed under the direction of the Transportation Policy Committee (TPC), a public/private partnership established by MAG and charged with finding solutions to the Region's transportation challenges. The TPC includes community business and freight representatives.
Public Outreach	✓	The TPC also has community representatives.

Activity	Yes/No	Organization/ Notes
Investment and Funding		
Infrastructure Investment	✓	Investment has been made by Arizona in implementing Border Crossing-related programs like the Free and Secure Trade (FAST) and the Customs-Trade Partnership Against Terrorism (C-TPAT) programs.
Funding	NA	
Permitting		
OS/OW Permitting	✓	Permits for travel on state routes are issued by ADOT's Motor Vehicle Division. Permits for use on other routes are issued by local authorities, usually the county roads department. Time-of-day and day-of-week restrictions apply to some of the permits.
Hazmat Permitting	NA	
Enforcement		
Parking	✓	City of Phoenix
Truck Routes	✓	Arizona State Police

Innovative Freight Management-Related Practices

Maricopa County Truck Idling Ordinance

The Maricopa County Truck Idling Ordinance requires truck stop and distribution center owners or operators to erect and maintain permanent signs indicating that the maximum idle time allowed in Maricopa County is five minutes. The ordinance specifies the County's vehicle idling information line and the amount of money the violator will be fined.

Program Conclusions

The Phoenix truck program is mostly based on the state and regional levels. As a non-attainment region, the Truck Idling Ordinance mentioned above, represents an innovative approach to mitigate pollution. At the state level, this points to a **reactive** program with emphasis on **security and air quality** and at the regional level, a **planning-based approach**.

The Phoenix program does not appear to be relevant to Miami at this point. However, Miami can consider measures akin to the Truck Idling Ordinance as a preventive if not a reactive measure to improve air quality. Like Phoenix, Miami-Dade and neighboring counties have been designated by EPA as a non-attainment area for some pollutants.

Keywords – Reactive planning, security, border crossings, truck idling ordinance, planning-based.

2.3 Florida Case Studies

Florida City – Fort Lauderdale

Miami-Dade – Fort Lauderdale, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Fort Lauderdale	1,623.0	410.4	25.3%	673.4	4.9%	88.4%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Broward County MPO (BCMPO) handles freight planning for the area. The improved movement of goods and freight is a key aspect of the 2025 LRTP and ties to overall economic development goals. The BCMPO first became involved in freight transportation planning in the mid 1990s with its *Industry Outreach Initiative*, which was conducted specifically to poll industry representatives to identify their needs. The *Freight and Goods Movement Study* (FGMS) was the first step for a more integrated freight-planning program in Broward County. Core elements of the study include enhancing connections between modal networks; balancing the needs of passenger and freight traffic; removing specific constraints that act as bottlenecks; improving access to regional freight generators; and expanding options for transporting freight. The *ITS Intermodal Plan* was a follow on project to the FGMS. It looked specifically at ITS applications for freight movements. This project developed a recommended set of projects for implementation. One project currently is being prepared for deployment. Port Everglades and Fort Lauderdale-Hollywood International Airport conduct their own long-range planning initiatives.
Truck Route Delineation	NA	

Activity	Yes/No	Organization/ Notes
Parking Management	NA	
Industry Outreach	✓	The Industry Outreach Initiative, the FGMS, and the ITS Intermodal Plan all included significant outreach activities designed to provide ample opportunities for private sector input (including personal interviews and focus groups).
Public Outreach	✓	The public outreach components of transportation plans are taken very seriously in Broward County. The ongoing LRTP process involves significant public meetings, and the MPO staff report monthly to board of elected officials.
Investment and Funding		
Infrastructure Investment	✓	The FGMS seeks to have freight considerations included in the ranking methodology for projects. The study also recommends a series of short- and long-term initiatives to improve freight movement in Broward County. The BCMPO is also looking into and implementing ITS strategies (e.g., dynamic message sign systems) to improve freight flows. A private developer is working to develop a major truck stop facility in the County at the intersection of I-595 and the Florida Turnpike.
Funding	NA	
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting	✓	No permit needed if in compliance with Federal requirements.
Enforcement		
Parking	✓	Fort Lauderdale's Parking Services Division handles parking enforcement.
Truck Routes	✓	Although Broward County does not have designated truck routes, an increased emphasis (training and citations) has been placed on commercial motor vehicle safety and reducing incidents.

Innovative Freight Management-Related Practices

Freight Transportation Planning Program

The BCMPO has undertaken several significant freight planning initiatives over the last several years, and currently is sponsoring an ITS deployment project that will impact the

safety of trucks approaching Port Everglades. It currently is updating its LRTP, which has a specific freight component.

Port Security Program

Over the last few years Port Everglades has been working hard to complete its new security program. This includes a variety of barrier fences and new technologies. A strong effort has been made to work with truckers to minimize the associated delays.

Program Conclusions

Neighboring Broward County and the City of Fort Lauderdale share many similarities with Miami-Dade. Both have very large foreign-born populations and economies that are heavily weighted towards services. Truck management activities in Broward County have a direct effect on Miami-Dade, as most truck trips must traverse Broward County prior to entering (or after leaving) Miami-Dade. With its Freight and Goods Movement Study (FGMS), the Broward County MPO has completed a **comprehensive freight study** to identify freight flows, major generators of truck traffic, and freight issues and constraints. The BCMPO plans to incorporate these findings and recommendations for improving the flow of goods and safety into future long-range transportation plans and updates.

Broward County is currently looking into **ITS solutions** to improve safety for trucks and passenger vehicles. At the terminus of I-595, the BCMPO is considering a **speed warning system** to inform vehicles if they are moving too fast as they reach the end of the highway and entrance to Port Everglades.

Keywords – Comprehensive freight study, ITS solutions, speed warning system, motor carrier safety.

Florida City – Jacksonville

Miami-Dade – Jacksonville, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Jacksonville	778.9	45.7	5.9%	424.4	6.5%	87.1%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	Partial	The First Coast MPO (FCMPO is the MPO for the Jacksonville area) is developing a "Freight Mobility Study" to identify a network of connecting routes for freight while maintaining safety through the proper separation of vehicle types. Connectivity to major activity centers is a criterion for prioritizing projects here. The FCMPO's 2025 LRTP Update includes freight enhancements as a way to support economic vitality. This is also a goal for the 2030 LRTP.
Truck Route Delineation	Limited	A GIS network of major freight highways was developed as part of the first phase of the FCMPO's Freight Mobility Study. Recommendations to improve freight mobility will include potential improvements to these designated routes.
Parking Management	NA	
Industry Outreach	✓	A Steering Committee was formed by the FCMPO to provide guidance to the Freight Mobility Study. The formation of a formalized Freight Committee is included as an objective of the Study and as a way to ensure that freight issues will be considered in the 2030 LRTP Update process.
Public Outreach	NA	
Investment and Funding		
Investment in Infrastructure	Limited	The Freight Mobility Study will include recommendations for alternative routes, improvements in geometry, and possible ITS improvements to improve freight flows in the Region.
Funding	NA	

Activity	Yes/No	Organization/ Notes
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting		No permit needed if in compliance with Federal requirements.
Enforcement		
Parking	✓	The Administration and Finance Division of the City of Jacksonville handles parking enforcement.
Truck Routes	NA	

Innovative Freight Management-Related Practices

Freight Transportation Planning Program

The FCMPO has established a freight transportation planning program through the development of its Freight Mobility Study. A GIS network of major freight highways was developed as part of the first phase of this project. Recommendations to improve freight mobility will include potential improvements to these designated routes and connectivity to major activity centers is a criterion for prioritizing projects. This program also includes a Steering Committee that provides guidance to the freight program. Phase II of this program currently is underway.

Program Conclusions

Jacksonville is significantly smaller than Miami-Dade, is less demographically diverse, and has a relatively larger manufacturing industry. As a port city, however, its approaches to freight management may be applicable. Through its "Freight Mobility Study" Jacksonville is working on identifying a **network of freight routes**. A goal of this study is to identify the network and seek solutions for improving mobility and **safety** on these routes. The findings and recommendations of the **freight study** will be incorporated into the LRTP.

Keywords – Network of freight routes, safety, freight study, port.

Florida City – Orlando

Miami-Dade – Orlando, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Orlando	1,644.6	197.1	12.0%	861.7	5.1%	87.6%	X		X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	*The Freight, Goods, and Services Mobility Strategy Plan* (FGSMSP) prepared by Metroplan Orlando (the regional MPO) in 2002 presents freight recommendations for inclusion in the 2025 LRTP. This effort included a 2025 freight forecast.
Truck Route Delineation	Limited	The FGSMSP defines the "roles" for network roads, including through routes and arterial stem routes for trucks. Tourist Corridors (and associated zoning), intend to eliminate conflicts between heavy freight traffic and tourism-related travel.
Parking Management	Limited	The FMSCP recommends instituting parking strategies that balance passenger and delivery vehicles, incorporating truck parking and delivery needs into building and land development codes.
Industry Outreach	✓	A Freight Mobility Steering Committee was established to provide guidance to the FGSMSP. The Committee included representatives from the carriers and public transportation planning entities.
Public Outreach	✓	Metroplan Orlando formed a Citizens' Advisory Committee to advise in all aspects of the making of the 2020 LRTP Update including goods movement.
Investment and Funding		
Investment in Infrastructure	Limited	The FGSMSP suggests implementing zoning and planning efforts to cluster warehouse and logistics activities, and designing road and intersection geometrics to accommodate trucks.
Funding	Limited	The FGSMSP recommends scheduling specific freight projects for funding.

Activity	Yes/No	Organization/ Notes
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting		No permit needed if in compliance with Federal requirements.
Enforcement		
Parking	✓	Parking in the City is enforced by Parking Division of the City of Orlando.
Truck Routes	NA	

Innovative Freight Management-Related Practices

Freight Transportation Planning Program

The Freight, Goods, and Services Mobility Strategy Plan (FGSMSP) carried out by the MPO provides a comprehensive rather than a piecemeal approach toward the implementation of varied strategies addressing freight issues such as truck routing, freight forecasts, zoning, and programming of funds as described in detail in the program checklist.

Program Conclusions

The recommendations of the FGSMSP are to be incorporated into Metroplan Orlando's 2025 LRTP. The study recognizes that a relatively seamless and safe delivery of freight is important to the quality of the tourism experience in Central Florida. In this manner, freight is seen as a contributor to the Region's economic security.

The parking challenges faced by trucks in the Orlando region have been recognized. Recommendations have been made for the provision of larger curbside parking spaces and for faster turnover of these spaces (including peak-hour pricing mechanisms to regulate parking behavior). Development codes should specify the number, size, and location of truck parking based on type of land use (e.g., office, retail, industrial).

The Orlando area is comparable to Miami-Dade in economic structure, with a concentration in services and a relatively small manufacturing sector. The importance of **tourism** is also a commonality between the two cities. Although neither a port nor a terminus like Miami, Orlando's comprehensive planning program incorporates Port Canaveral and the transportation corridor connecting the two. Metroplan Orlando's program provides several lessons relating to truck management that can be applied to Miami/Dade County. Namely, Metroplan recognizes the importance of freight to **economic development**, the use of **zoning and land use**, and the designation of "**roles**" for roadways in the network, all as part of an effort (still in the planning stage at this point) to maintain freight mobility and the quality of life in the Orlando area. These

factors contribute to a transportation program that integrates the needs of trucks into the Region's transportation program.

Keywords – Comprehensive planning, economic development, zoning and land use, tourism, peak-hour pricing.

Florida City – St. Petersburg

Miami-Dade – St. Petersburg, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
St. Petersburg	921.5	87.7	9.5%	425.6	9.2%	85.5%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Pinellas County MPO handles freight planning for the County. The effective movement of freight is considered important to the economic development of the County.
Truck Route Delineation	✓	The MPO Countywide Truck Route Plan designates facilities suitable for heavy truck use during daylight hours as well as routes where truck use is permitted at all hours. The MPO maintains a map of current truck routes.
Parking Management	NA	
Industry Outreach	✓	The MPO works with the business community to determine their transportation service and facility needs.
Public Outreach	✓	The MPO has nine committees with public and private sector members to advise on transportation planning in the County.
Investment and Funding		
Infrastructure Investment	✓	A relatively low percent of total traffic in Pinellas County is commercial trucks. Investments emphasize congested corridors that would also benefit truck movement.
Funding	NA	
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting	✓	No permit needed if in compliance with Federal requirements.

Activity	Yes/No	Organization/ Notes
Enforcement		
Parking	✓	The Parking Enforcement Division of the City of St. Petersburg handles enforcement.
Truck Routes	✓	Truck routes are enforced by local law enforcement agencies in the County.

Innovative Freight Management-Related Practices

Countywide Truck Route Plan

The MPO Countywide Truck Route Plan is an example of a time-of-day program for routing of trucks on a large, countywide basis. The plan is intended to facilitate the efficient movement of trucks on roads that are better designed to accommodate higher speeds and the turning movements of heavy vehicles. This approach is relevant in a scenario in which many states are struggling with funding and upkeep of roadway and pavement for heavy vehicles.

Program Conclusions

Beyond large industries that cater to tourists, St. Petersburg is demographically distinct from Miami-Dade. It has a higher concentration of manufacturing, a small foreign-born population, and its airport and port are small in scale (neighboring Tampa has the major airport and port that serve the Region). The effective movement of trucks and freight, however, is considered important to the **economic development** of the County. The designation of county-level truck routes based upon **heavy vehicle needs** has applicability to Miami-Dade's truck management approach.

Keywords – Economic development, heavy vehicle needs.

Florida City – Tampa

Miami-Dade – Tampa, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
Tampa	998.9	115.2	11.5%	601.8	5.2%	87.6%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Hillsborough County MPO (HCMPO is the MPO for the County) and Port of Tampa (the largest freight center in the Tampa area), lead efforts to understand needs and propose solutions for freight in the Region. FDOT District 7 is conducting the *Tampa Bay Regional Goods Movement Study* to enhance the identification of activity centers, key connectors, and linkage requirements. The Sarasota/Manatee MPO (part of the greater Tampa-St. Petersburg area) completed a freight movement study in 2000 described in detail below.
Truck Route Delineation	✓	Hillsborough County limits the movement of through trucks (over two axles) to designated routes and provides a map showing these routes. The City of Tampa Truck Route Ordinance restricts the use of through trucks on city streets to designated routes (posted with signs). Information concerning these routes was given to trucking companies in the area. The HCMPO's 2025 LRTP seeks to discourage through truck traffic from intruding on residential neighborhoods. The Hernando MPO (MPO north of HCMPO, but considered part of Tampa metropolitan area) mapped routes with heavy truck traffic and intermodal locations in order to enhance goods movement planning. The Sarasota-Manatee MPO evaluated truck corridors, based on operational, design, and land use information to determine improvements needed to optimize present and future freight movements in the Region.

Activity	Yes/No	Organization/ Notes
Parking Management	NA	
Industry Outreach	✓	In keeping with the provisions of U.S. legislation concerning MPO planning, the Hillsborough County MPO solicits input from shippers and freight service providers.
Public Outreach	✓	Local citizens participate as part of the transportation planning process. Specifically, the residents of Ybor City have been very vocal regarding through truck traffic in their communities. This is reflected by the current policy to improve safety by developing alternative strategies to reduce speeding, and to discourage trucks and cut-through traffic on residential streets.
Investment and Funding		
Infrastructure Investment	✓	The HCMPO has 10 weighted criteria, including goods movement and regional connectivity, in its roadway prioritization process. Port access is a priority in the HCMPO's 2025 LRTP. This includes numerous roadway improvements such as a more direct Interstate connection to the Port. The 2025 LRTP also supports improved roadway access to parts of the airport that handle freight. Significant ITS work, already underway, will also enhance freight movement.
Funding	✓	The Crosstown Connector which will improve access to the Port is included among "cost affordable projects 2007-2015" in the HCMPO's 2025 LRTP.
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting	✓	No permit needed if in compliance with Federal requirements.
Enforcement		
Parking	✓	City of Tampa Parking Division
Truck Routes	✓	Hillsborough County Sheriff's Office; city police departments.

Innovative Freight Management-Related Practices

Freight-Related Studies and Data

The Sarasota/Manatee MPO, while a separate MPO region, is still a part of the greater Tampa Bay area, completed a freight movement study in 2000 that included a database of freight movement characteristics and identification of needs.

Just south of Tampa, the Sarasota-Manatee MPO identified its **primary corridors** for heavy truck movements, evaluated their current conditions, and their ability to sustain future growth. Based on these findings, it made recommendations concerning how **geometries** could be improved to accommodate growing truck traffic on these key corridors.

A study is underway, led by the Civic Association of Port Tampa City to find solutions to heavy truck traffic going through South Tampa neighborhoods. Rerouting, improved enforcement, and new infrastructure are considered options.

Several studies are being undertaken by different organizations interested in the economic development of the area. The data gathered as part of these planning efforts as well as results from the studies form a valuable source of information in a data-scarce freight world.

Program Conclusions

Hillsborough County takes a **regulatory** and **capacity-building** approach to control and expedite the flow of trucks. The HCMPO completed a truck route plan that identified and posted routes most suitable for trucks which are enforced by local enforcement jurisdictions. The HCMPO's LRTP has programmed a significant improvement, the "Crosstown Connector," to improve **access to the Port** and better separate trucks from downtown streets. The availability of **freight data** is a valuable aid for freight planning and forecasting.

Tampa (Hillsborough County) has a similar economic structure as Miami-Dade, emphasizing a large services sector with a relatively small amount of manufacturing. Similar to Miami-Dade, Tampa has a busy port, with significant commercial and cruise ship activities generating very large volumes of truck traffic (often carrying hazardous goods) adjacent to Tampa's central business district. These features suggest that Miami can learn from and apply features of the Tampa approach toward goods movement.

The Sarasota Manatee study provides a good example of some of the vital data collection that Miami-Dade can pursue to support plans and policies relating to freight and goods movement.

Keywords – Port access, regulatory, capacity-building, freight data.

Florida City – West Palm Beach

Miami-Dade – West Palm Beach, Demographic Comparison

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X
West Palm Beach	1,131.2	196.9	17.4%	522.5	4.5%	88.7%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Palm Beach Metropolitan Planning Organization (PBMPO) handles freight planning for the Delaware-sized county. The 2025 LRTP indicates increasing accessibility and mobility options for freight as a goal.
Truck Route Delineation	NA	
Parking Management	NA	
Industry Outreach	✓	The PBMPO receives and compiles information on freight and goods movement from the Port and the Palm Beach Industrial Association.
Public Outreach	NA	
Investment and Funding		
Infrastructure Investment	✓	The Port of Palm Beach, the fourth busiest port in Florida with $3.0 billion in goods passing through annually, is the only South Florida port facility operating its own rail system with pier-side rail box, hopper and intermodal cars operating 24 hours a day.
Funding	NA	
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting	✓	No permit needed if in compliance with Federal requirements.
Enforcement		
Parking	✓	West Palm Beach Division of Parking Administration
Truck Routes	NA	

Innovative Freight Management-Related Practices

Freight Transportation Proposed Study

The West Palm Beach MPO has indicated that freight is a planning focus and is making efforts to incorporate its needs in its planning process. It has proposed, as part of its Unified Planning Work Program to solicit consultant services to identify the major categories of goods moving within and through Palm Beach County. Intermodal transfers, an inventory of freight terminals as well as major distribution centers will be researched. The study is also proposed to include analysis of truck traffic and accidents on Interstate 95 in Palm Beach County. The results of the study will be used as a basis for further study and input to the CMS and Long-Range Transportation Plan.

Program Conclusions

West Palm Beach and Palm Beach County appear to have limited engagement in truck management planning, but the MPO has indicated its interest in and need for more information on freight movement in the County through its proposal for a study. Similar to Miami-Dade, Palm Beach County has a significant port (Port of Palm Beach handles fuel, containers, and bulk) that generates significant truck traffic.

Subject City – Miami-Dade

Miami-Dade – Demographics

City	Population	Foreign-Born		Employment			Freight Facilities		
	(in thousands)	(in thousands)	Percent	Total (in thousands)	Mfg Emp as a Pct of Total	Svcs Emp as a Pct of Total	International Airport	Seaport/Water Facility	Railyard/ Intermodal Rail
MIAMI-DADE	2,253.4	1,147.8	50.9%	1,018.0	5.6%	90.4%	X	X	X

Truck Program Checklist

Activity	Yes/No	Organization/ Notes
Planning and Outreach		
Freight Planning	✓	The Miami-Dade County MPO conducts modest freight planning efforts at the regional level. The Port of Miami and Miami International Airport also carry out freight planning for their individual concerns. The Miami-Dade County's *Freight Movement Study (FMS)* was carried out in 1996. It made several recommendations to incorporate freight planning, projects and modeling in the forecasting process and creating freight committees. In 2002, the *Short-Range Truck Traffic Study for the Airport West Area* was conducted. It developed a set of standards and an implementation plan to better accommodate truck traffic and commercial truckers needs in the Airport West area.
Truck Route Delineation	Limited	The FMS reviews the possibility of trucks using alternate rather than more congested routes, or using congested routes during off-peak periods. This could include the prohibition of trucks on certain congested routes where suitable alternatives are available. Some municipal jurisdictions prohibit through truck movements on local streets. A 2000 study, *Interim Rerouting Plan of Seaport Truck Traffic*, delineated truck route alternatives that could be used to improve access/egress to/from the Port of Miami.
Parking Management	✓	Cities generally control parking on their streets. Miami provides downtown loading zones but enforcement is not consistent.

Activity	Yes/No	Organization/ Notes
Industry Outreach	✓	The Freight Study included a survey of truck carriers with operations in Miami-Dade County. The outreach to the trucking community (and the creation of a Steering Committee for the study) is expected to help forge a link for future planning efforts. The FMS also recommended the formation of a "Freight and Truck Movement Planning Committee" (comprised of freight-related organizations and companies) to provide input to the annual TIP process and the LRTP project priority and selection processes. A truck survey was conducted at the Port of Miami in 1996 to identify port access and egress truck routes through downtown so that specific intersections and routes could be prioritized for improvement.
Public Outreach	✓	The FMS included input from both public and private sector entities involved in the freight movement business.
Investment and Funding		
Infrastructure Investment	✓	Freight-specific projects to improve circulation related to port and airport activity are included in the MPO's cost-feasible plan. Goals include improved economic competitiveness and specifically mention freight movement as well. The Port of Miami Master Development Plan and the 2025 LRTP identify an under-Bay tunnel as a possible infrastructure improvement. The Port of Miami had also considered an exclusive truck corridor along the Florida East Coast right-of-way to provide capacity between the Port and a rail yard for the transfer of containers. The rail yard has since been sold. The 2025 LRTP has funded an east-west, direct connection between SR 826 and the Miami International Airport Westside Cargo Area as suggested by the FMS.
Funding	Limited	Most large-scale infrastructure projects to help freight have not been funded, although the Port Tunnel has moved from the recommended but unfunded to the funded section of the LRTP, albeit in outlying years.
Permitting		
OS/OW Permitting	✓	Florida Department of Transportation
Hazmat Permitting	✓	No permit needed if in compliance with Federal requirements.

Activity	Yes/No	Organization/ Notes
Enforcement		
Parking	✓	Parking enforcement is shared by the Miami Parking Authority and the City of Miami Police Department.
Truck Routes	NA	

Innovative Freight Management-Related Practices

Studies and Data Collection

The Miami-Dade MPO in particular has been very proactive in the area of freight planning by conducting various studies in the area of freight management. The Freight Movement Study (FMS) was a an extensive plan which recommended that freight planning be included in the Integrated Management System, under development in 1996. The FMS also encouraged Miami-Dade to incorporate a truck element into its urban area travel model. Industry outreach efforts were included as part of the recommendations and industry concerns were researched via a survey of carriers in the Region.

A 2001 study concerning truck traffic in the Airport West area posed a variety of potential short- and long-term solutions, including signal timing, alternative work hours, road widening, and a trip reduction ordinance. Other studies including the *Interim Rerouting Plan of Seaport Truck Traffic* and the 1996 Port of Miami truck survey point toward significant contributions towards freight-related data and study. This is extremely critical in a situation where many states are grappling with the lack of adequate data on freight movements.

Program Conclusions

As Miami-Dade looks into the future, the importance of tying growth with freight mobility and land use will be crucial for maintaining the movement of goods into and out of the Region. Roadways need to be able to accommodate truck movements and freight-intensive businesses and services should be located in areas that have these types of roads. This is all the more important because Miami-Dade has very limited right-of-way available for new or expanded roadways/transit corridors and land for development.

Key elements of the Dade County Freight Movement Improvement Plan include continued and **coordinated planning** that includes **private and public freight sector representation**; and systematic implementation of **short- and long-term improvements** to facilitate truck movements on major truck corridors, at major intermodal terminal points, and at designated "hot spots." The number of studies and data collected point toward professional planning and administrative awareness of the importance of freight and goods movement but also points toward the need for consolidation of knowledge and efforts.

Keywords – Coordinated planning; private and public representation; short- and long-term improvements, data collection.

Appendix B

City Interview Guide for Miami/Dade Heavy Truck Management Study

The Miami/Dade Metropolitan Planning Organization (MPO) currently is conducting a Heavy Truck Management Study. This project was motivated by a strong political pressure to improve highway efficiency and safety for passenger vehicles by restricting truck operations. The purpose of this study is to develop a proposed heavy truck management program that benefits both passenger and freight traffic by creating an operating strategy that provides trucks with regional mobility while minimizing the impact on passenger traffic and communities.

The purpose of these interviews is to collect specific information on the current/existing truck management mechanisms in place throughout Miami/Dade County. Interviewees should identify any regulatory programs in place; identify major truck corridors and major problem areas; and provide recommendations on ways to improve the efficient operation of passenger and freight vehicles in their jurisdiction.

The following represents the specific information to be collected:

Interviews should be conducted with the city staff that are most knowledgeable about truck routes, truck restrictions, any necessary permits, and dissemination to the trucking industry.

1. Do you currently have a heavy truck management program? If so, please describe. If not, how do you manage/enforce truck movements?

2. Which organizations are involved in planning and managing this program? What kind of coordination platforms exist between them?

3. Please describe existing truck restrictions/regulations.

4. Do you have designated truck routes? Do you have route restrictions/areas where trucks are prohibited?

5. Are truck routes and/or restrictions signed appropriately? Please describe the signage program (placement, message, locations, etc.).

6. How are truckers informed of these restrictions/designations? Is there a brochure? Is it word of mouth? Is it reliant on actual signs?

7. Do you have problem areas in your jurisdiction? Locations where truck traffic has historically been a problem? Where are they? Please describe the problem/issues (accidents, neighborhoods, noise, emissions, etc.).

8. Have you done anything in response to these issues/complaints?

9. Would you consider your program/operation to be restrictive or pro-freight? Please explain.

10. Please identify any major freight activity areas/corridors in your area.

11. Do you collect any data with respect to commercial vehicles – any studies that were commissioned?

12. How are you dealing with security issues post 9/11? Do you plan to collaborate with the ports, etc., in dealing with such issues?

13. What is your opinion on "political attitude" toward trucks?

14. Have you carried out any freight-significant projects? How are such projects funded?