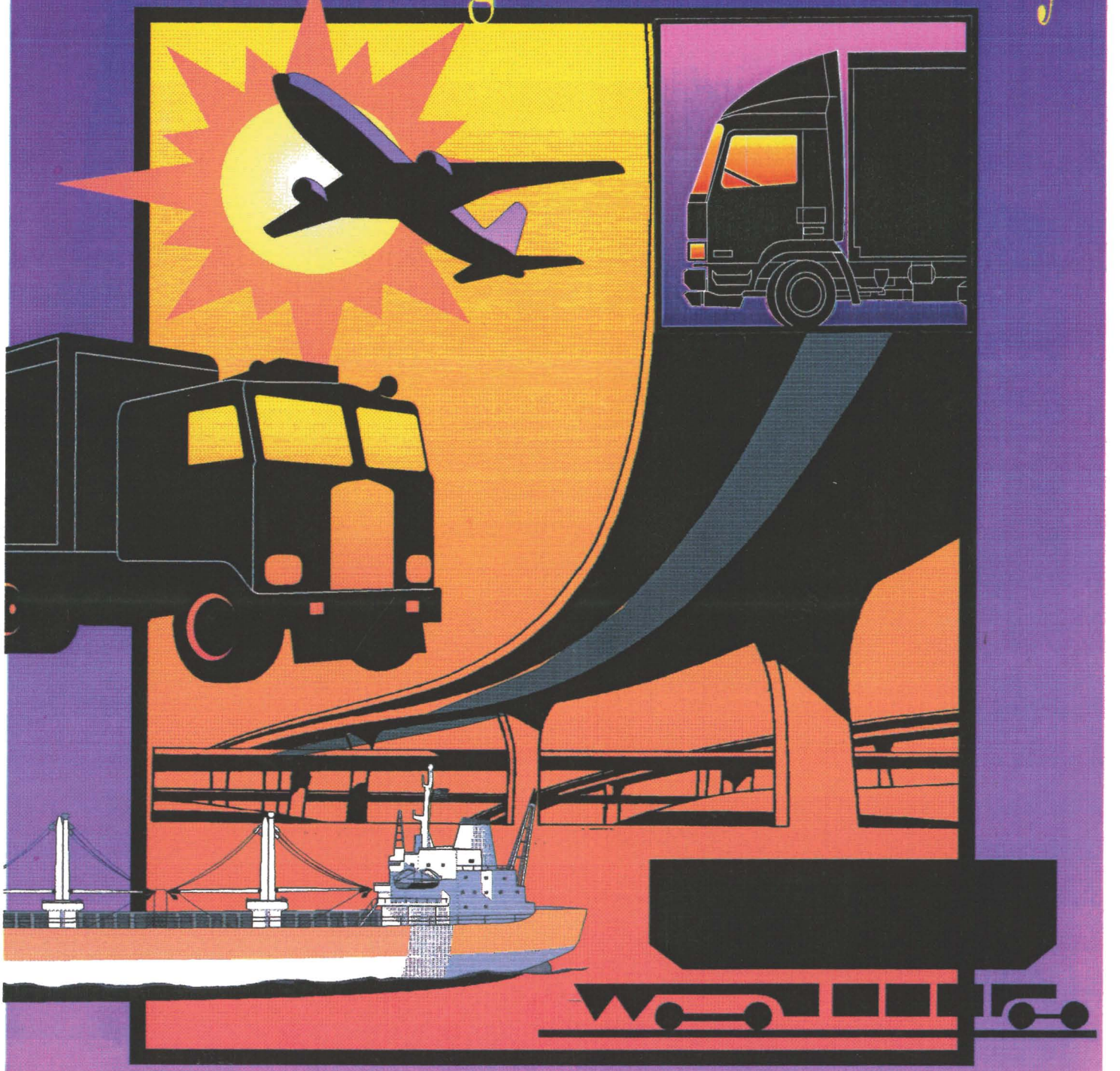
EXECUTIVE SUMMARY

Freight Movement Study



Prepared For:
Dade County Metropolitan Planning Organization

DECEMBER, 1996

Prepared By:
The Corradino Group

Executive Summary

Introduction

Over the past 15 months, the Dade County Metropolitan Organization (MPO) has been involved in studying freight movement in Dade County. The Corradino Group (TCG), a transportation planning and engineering firm, has been the principal consultant on the study. The purpose of this study is to identify ways to improve freight movement on the surface transportation network. In addition, this study identifies recommendations for incorporating freight movement into Dade County's transportation planning process. This work has involved investigating major freight movement patterns in Dade County, evaluating the requirements for initiating a freight movement forecasting capacity in the MPO's travel forecasting model, developing initial short-term transportation improvement recommendations for enhancing the efficient movement of freight in Dade County, and developing a freight interest representation mechanism for the local MPO transportation planning process. The study has focused on eight work tasks, as follows:

- Task 1: Information Research
- Task 2: Developing an Inventory and Data on Existing Conditions
- Task 3: Analysis of Data
- Task 4: Considering/Researching Application of Freight Modes to Dade Travel Model
- Task 5: Assessing the Freight Movement Planning Process
- Task 6: Developing a Freight Movement Improvement Plan
- Task 7: Developing Other Recommendations
- Supplemental Task: Port of Miami Truck Survey

The work and products associated with this study are consistent with Federal, State, and Local transportation planning regulations and requirements, and have included significant input from both public and private sector entities involved in the freight movement business.

Project Overview

The 1991 Intermodal Transportation Surface Efficiency Act (ISTEA) legislation required consideration of freight in the development of the six transportation management systems mandated for long range transportation planning. In particular, the following systems are affected by freight movement concerns:

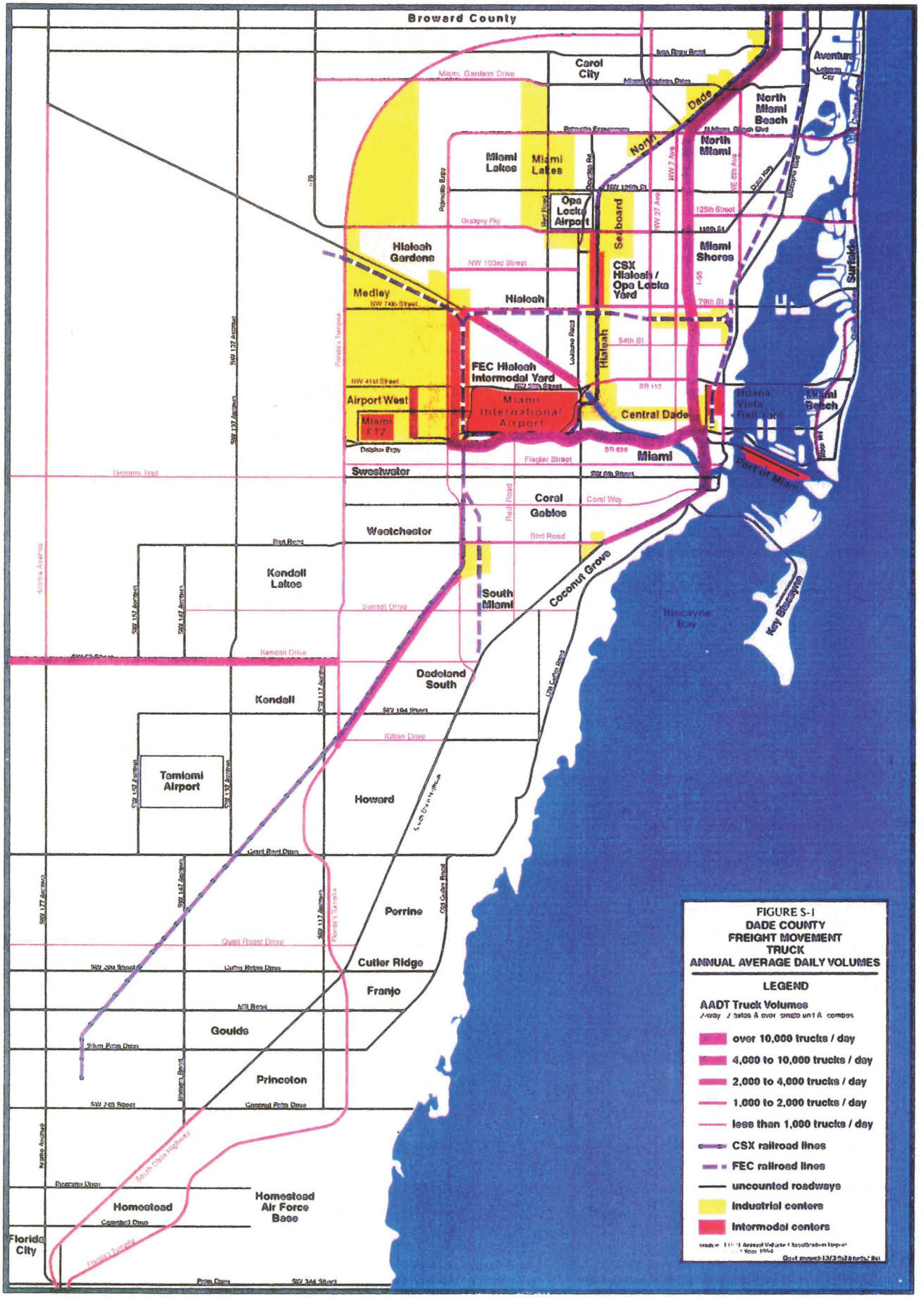
- CMS: Congestion Management System
- IMS: Intermodal Management System
- PMS: Pavement Management System
- BMS: Bridge Management Systems

The economic well-being of major metropolitan areas in general depends in large measure on the timely and efficient flow of goods. Truck traffic in Dade County is focused primarily west and north with linkages between intermodal centers such as the Port of Miami and Miami International Airport and north on I-95 to Broward County (Figure S-1). As a major Florida and national port site, Dade is especially dependent upon the movement of freight to and from the Port of Miami. In addition to the contributions of the Port of Miami, Miami International Airport has had remarkable growth in its freight handling over the past decade.

At the time this study was initiated, little was known about the actual flow of goods within the County. This study has significantly advanced the information base of freight movement and concerns in the County and their attendant economic considerations. As an example, roadways and bridges bearing high numbers of trucks deteriorate faster. Slower moving trucks can impede the flow of commuter traffic. Trucking accidents often cause a disproportionately larger or longer traffic slowdown, due to vehicle size and cargo accident impacts. And, virtually all hazardous materials are transported on trucks in major urbanized areas. The lack of data is as simple as the level of counts available at specific locations on the roadway network. In large part, this is because little attention has historically been paid to freight and its considerable impacts on traffic. There has been relatively little strategic planning or freight movement forecasting done for this vital transportation sector. In Dade County, there is virtually none performed, except for addressing specific seaport and airport ground transportation access concerns.

Work Accomplished

- A public/private sector study advisory committee was established, composed of representatives of the local freight industry, and representatives of the MPO, FDOT, and County Public Works, Planning, Airport and Seaport Departments. The private sector representatives provided input on local trucking concerns and ideas for recommended improvements in both formal meetings and private interviews.


Broward County
Carol City
Miami Gardens Drive
Aventura
North Miami Beach
North Miami
Miami Lakes
Opa Locka Airport
Seaboard
Hialeah Gardens
NW 103rd Street
Medley
NW 74th Street
Hialeah
CSX Hialeah / Opa Locka Yard
Miami Shores
79th St
54th St
FEC Hialeah Intermodal Yard
Airport West
Miami International Airport
Miami FTZ
Central Dade
Miami Beach
Miami
Port of Miami
Flagler Street
SR 836
Sweetwater
Coral Gables
Coral Way
Westchester
Bird Road
Kendall Lakes
South Miami
Coconut Grove
Biscayne Bay
Key Biscayne
Sunset Drive
Kendall Drive
Dadeland South
Kendall
SW 184 Street
Killian Drive
Tamiami Airport
Howard
Perrine
Quail Roost Drive
Cutler Ridge
Franjo
Gould
Princeton
Coconut Palm Drive
South Dixie Highway
Homestead
Homestead Air Force Base
Florida City
Palm Drive
SW 344 Street
FIGURE S-1
DADE COUNTY
FREIGHT MOVEMENT
TRUCK
ANNUAL AVERAGE DAILY VOLUMES
LEGEND
AADT Truck Volumes
over 10,000 trucks / day
4,000 to 10,000 trucks / day
2,000 to 4,000 trucks / day
1,000 to 2,000 trucks / day
less than 1,000 trucks / day
CSX railroad lines
FEC railroad lines
uncounted roadways
industrial centers
intermodal centers

- A mail-out/mail-back survey of over 800 local freight-associated firms was conducted to gain insight into trucking patterns and freight business patterns (Figure S-2). The data collected provides insight into the nature of freight movement in Dade County. Some of the key findings include nearly half of the respondents need improved rail and intermodal facilities; over 25% of respondents will import/export in the future; and the main problems -- no surprise -- traffic, parking, and rush hour deliveries.

  A survey of vehicle volumes and of origins and destinations of trucks was carried out at three major freight movement sites to help develop a profile of major terminal freight origins, destinations, flows, and peaking characteristics (Figures S-3). These data include strong linkages between the Port of Miami and West Dade; little interaction between the Port and Miami International Airport; and there is significant movement from Dade County to Broward County and Port Everglades. The data collection effort itself was very successful, with excellent cooperation from terminal managers and vehicle operators.

- The Dade County MPO travel model was reviewed to determine the best way to incorporate a freight element into the travel model. A survey of MPO's was conducted to identify what other areas are doing relative to forecasting truck traffic. Many areas are in the early stages of developing truck modeling capacities and most face difficulties with acquiring necessary data. A truck element was developed for the Dade County model (Figure S-4), and it was recognized that additional data would need to be collected for development of the model.

- The consultant established a process for incorporating freight concerns into the MPO planning process, and a Freight and Truck Committee has been proposed as a part of the Transportation Plan Technical Advisory Committee. This committee would bring a continuing understanding and focus of freight concerns into the transportation planning and project prioritization process.

- A one-week survey of truck traffic originating at the Port of Miami was conducted to determine primary paths through the downtown (Figure S-5). This survey was conducted Monday through Friday from 7:00 until 5:00 and included truck traffic counts on the Port of Miami bridge as well as major streets in the downtown. Results from the survey were used to affirm and prioritize recommendations for downtown street improvements identified by the Port.

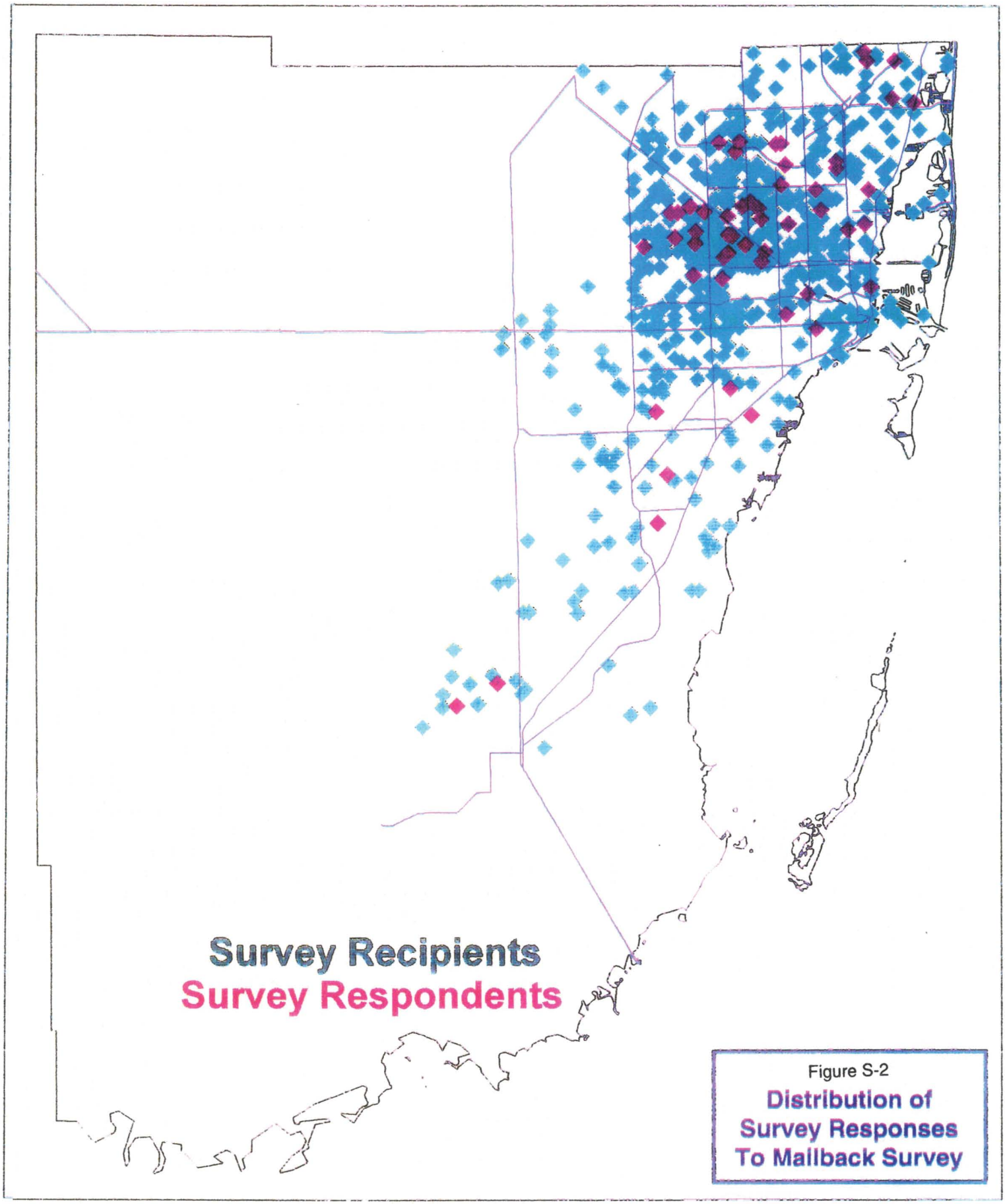
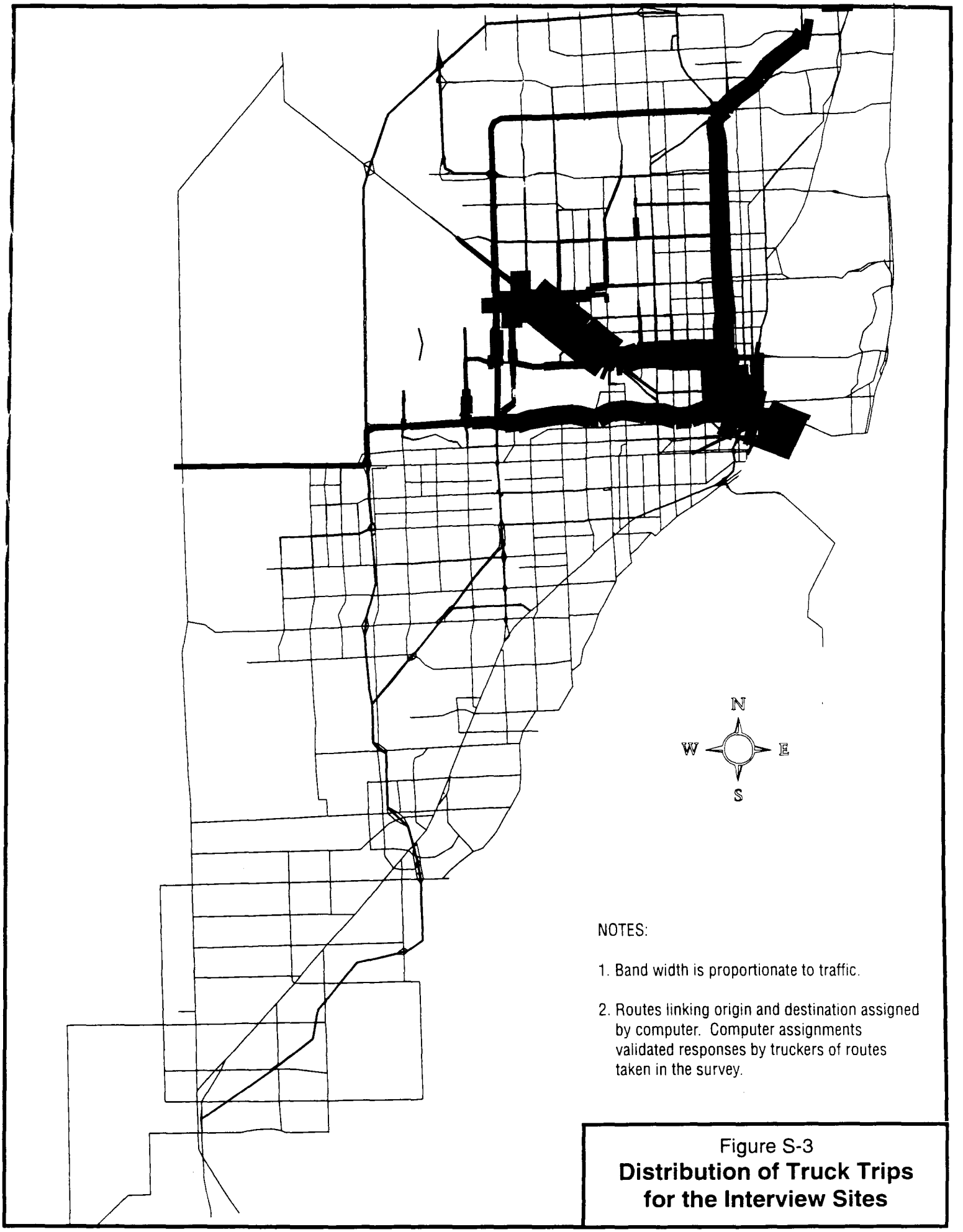


Figure S-2

Distribution of Survey Responses To Mailback Survey

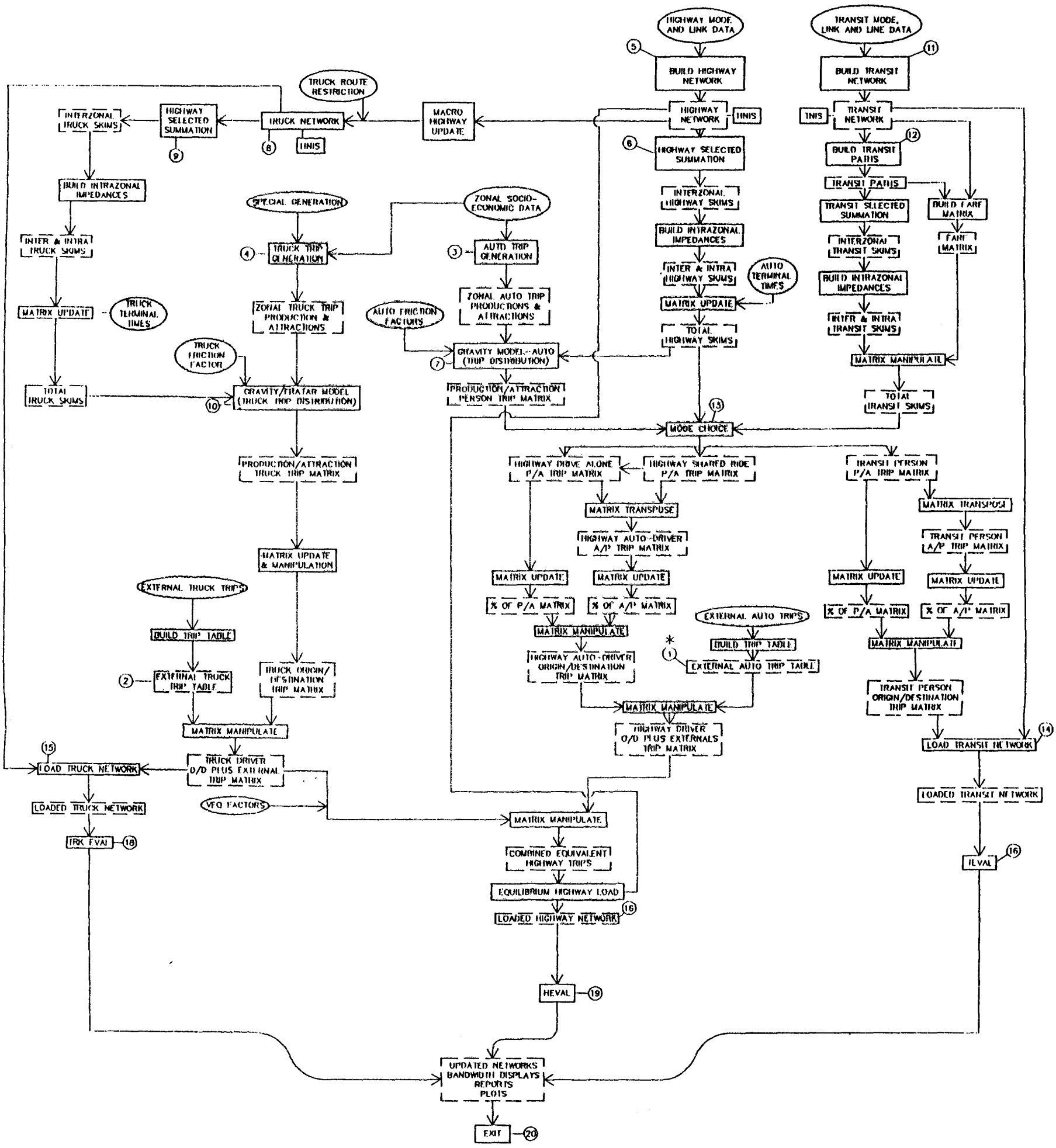


NOTES:

1. Band width is proportionate to traffic.

2. Routes linking origin and destination assigned by computer. Computer assignments validated responses by truckers of routes taken in the survey.

Figure S-3
Distribution of Truck Trips for the Interview Sites



LEGEND

TRANPLAN/FSUTMS PROCESS

TRANPLAN/FSUTMS I/O FILE

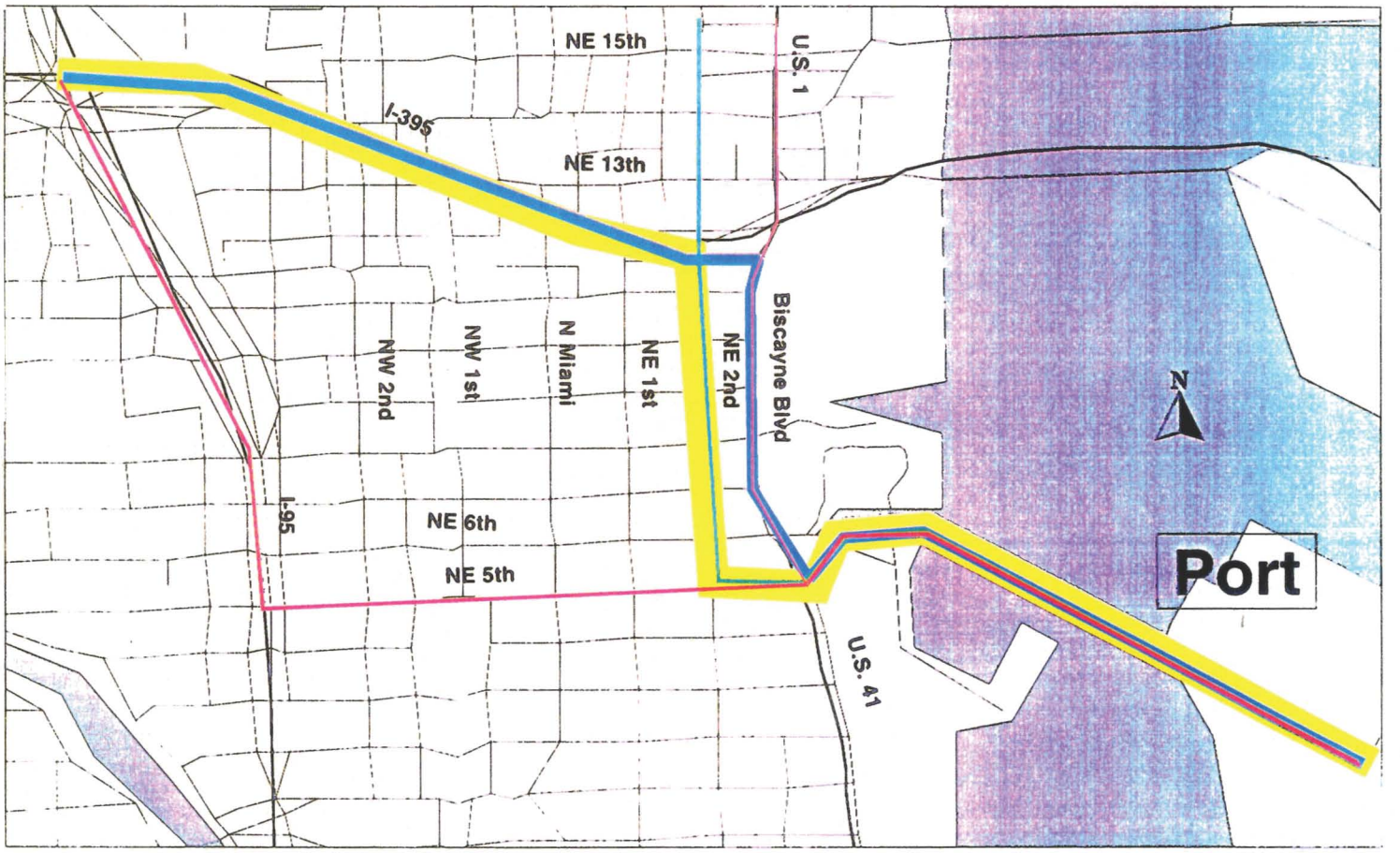
USER INPUT ASCII DATA

* NUMBERING SYSTEM CORRESPONDS TO MODULE DESCRIPTIONS LISTED ON PAGE 43

Figure S-4

FLOW DIAGRAM OF A SUGGESTED TRUCK MODEL WITH AUTO AND TRANSIT MODELS

Figure S-5a Routes To the Port of Miami



Inbound to port via I-395 to NE 2nd to NE 5th to Port

Inbound to port via I-395 to Biscayne to Port

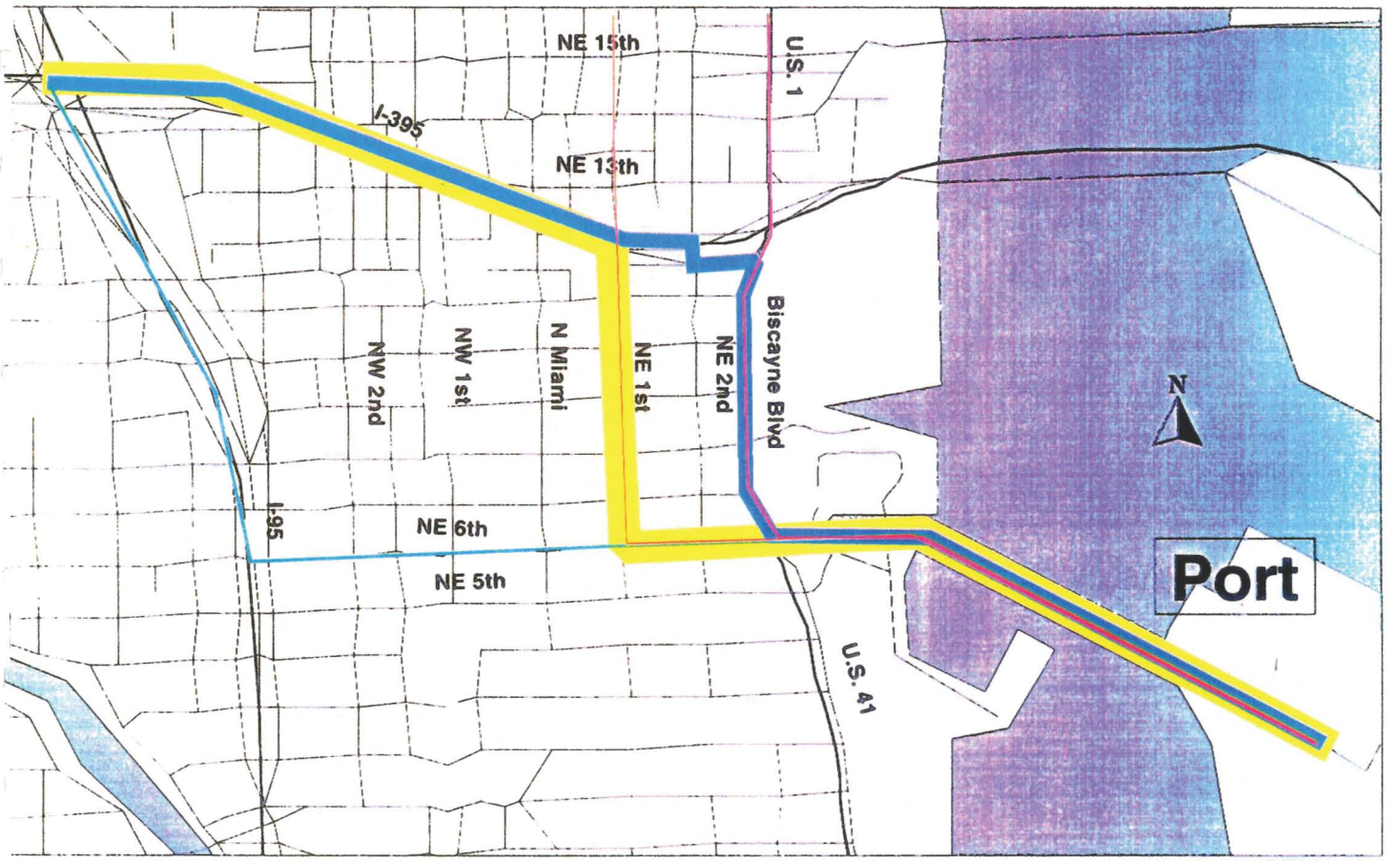
Inbound to port via NE 2nd, north of I-395, to NE 5th to Port

Inbound to port via I-95 to NE 5th to Port

Inbound to port via Biscayne, north of I-395, to Port

Line width proportionate to number of trips

Figure S-5b Routes From the Port of Miami



Outbound from port on NE 6th to NE 1st to I-395

Outbound from port onto Biscayne to I-395

Outbound from port on NE 6th to I-95

Outbound from port onto Biscayne north past I-395

Outbound from port on NE 6th to NE 1st north past I-395

Line width proportionate to number of trips

Summary of Findings

The MPO freight movement study has resulted in the following major findings:

- There is no consistent approach to freight movement planning; rather, local governments appear to be tailoring their planning to local conditions. There are a number of important study efforts occurring throughout the United States relative to freight movement that can be drawn upon and coordinated to improve freight movement planning in Dade County.
- Freight movement issues and planning are becoming increasingly important in Dade County's Transportation Planning Process.
- The County's Draft Mobility Management Process/Congestion Management System (MMP/CMS) includes factors in its corridor evaluation process that are key to freight movement.
- There is no consolidated overall database of truck movements in Dade County. However, District VI of the Florida Department of Transportation (FDOT) does maintain classification counts but at limited specific locations in Dade County.
- There currently is no mechanism in Dade County to estimate truck travel patterns; specifically, the County travel model does not forecast truck travel uses and patterns for long-range planning.
- On-site data collection efforts were much more successful than "outreach" (i.e., telephone, mailback survey) efforts in acquiring information on truck travel.
- Much of the truck travel in the County occurs from SR 836 north. The Port of Miami, Miami International Airport, and FEC Intermodal Yard in Hialeah are major freight intermodal hubs.
- Travel patterns are generally concentrated in the northern to northwestern part of the County.
- There is significant movement from Dade County to Broward County and Port Everglades.
- Countywide, the heaviest traveled roads are: I-95, SR 112, SR 836, SR 826, NW 25th Street, NW 74th Street, and Okeechobee Road. In the downtown, I-395 is the most common access route, mainly for Port-bound or Port-exiting truck movements.
- The current situation where trucks and buses must access the Port of Miami via downtown streets is a major concern. Other concerns include access from the airport west cargo area to SR 826 and western Dade County beyond SR 826, the worsening level of service on roadways throughout Dade County, and the effect of trucks on pavement and bridges.

- While the private sector has generalized concerns relative to congestion, and dissatisfaction with specific locations with geometric deficiencies, etc. there were no major concerns regarding identification of problems and strategic transportation concerns by the private sector in meetings held as part of the study. Most input came from the public sector representatives of the airport and seaport in particular.

Planning Recommendations

Recommendation 1: Establish Dade County Freight and Truck Committee

The County should establish a Freight and Truck Committee (FTC) to participate within the overall transportation planning process and provide input to the Transportation Improvement Program (TIP), which is the primary mechanism for actual transportation improvement project implementation (Figure S-6).

Recommendation 2: Modify Dade County Travel Model to Include a Truck Element

Travel demand forecasting for Dade County follows FSUTMS[1] conventions. The model should be modified to include truck traffic as defined in this study. The inclusion of trucks in the Dade County model will allow for a quantifiable data assessment to be used when assessing priorities for truck travel.

Recommendation 3: Conduct Origin-Destination/Travel Survey Suitable for Dade County Travel Model.

The County should build upon the database for truck movement established in this study to provide a comprehensive origin-destination profile for truck travel to be used in model development.

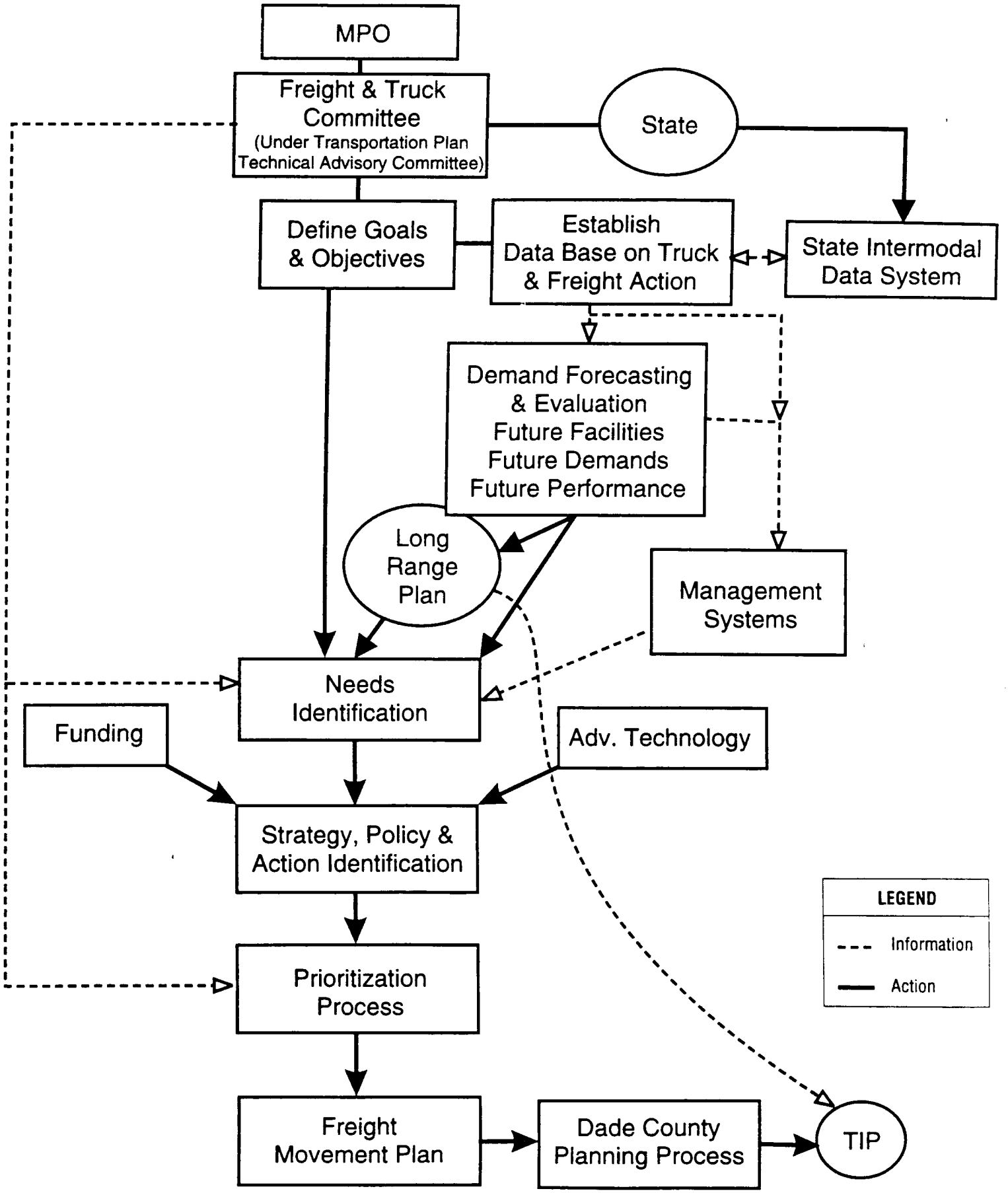
Recommendation No. 4: Conduct Industry/Location Specific Surveys

The level of survey activity needed to develop a statistically valid and more comprehensive profile of the majority of freight movements in Dade County was beyond the scope of the current study. As noted in Technical Memoranda Nos. 1 and 2, two surveys were conducted to obtain an understanding of the characteristics of shippers in various industries and a broad but only sketch-level profile of freight movement.

1 Florida Standard Urban Transportation Model Structure (FSUTMS). FSUTMS is the Florida Department of Transportation's model structure for travel forecasting.

Figure S-6

Dade County Freight Movement Planning Process



Recommendation No. 5: Improve Monitoring of Truck Traffic on the Roadways

Through both this MPO Freight Movement Study and through recent work associated with development of the Southeast Florida Regional Planning Model, it has been observed that an increased capacity for identification of truck travel volumes would be highly desirable for planning purposes, as well as for identifying operational improvement opportunities and recognizing potential high roadway maintenance areas.

Dade Transportation Improvements for Trucking and Freight Movement

The following is a listing of transportation improvements that are being considered or recommended for implementation. Through work in this study, the consultant identified three key areas of emphasis for freight movement consideration. These were the Port of Miami, the Miami International Airport, and the west/northwest commercial area.

The identification of improvement alternatives for freight movement in the county was based on review of information developed in this Freight Movement Study, discussions with representatives of major intermodal facilities, and review of Dade County planning documents such as the Transportation Improvement Program (TIP).

Improvement No. 1: Port of Miami Access Improvements

This MPO Freight Movement Study recognizes concerns associated with movement of truck traffic through the downtown to/from the Port of Miami. The Port of Miami tunnel project has been considered as the major long range improvement to address this concern. No other alternative surfaced through the study process that would replace the overall function of the port tunnel more effectively. In addition, work associated with the supplemental Port of Miami Truck Survey reinforced the major impact of I-395 as an access/egress road to downtown and the Port and the resulting reduction of truck traffic in downtown that would be experienced through implementation of a Port tunnel. At the time of this report, the status of the Port of Miami tunnel in the Long Range Plan is not certain. If the tunnel project is not carried forward, alternatives to improving truck traffic in downtown such as are cited in the next two sets of improvements are even more critical.

Improvement No. 2: Downtown Miami Street Improvements

A preliminary evaluation of truck traffic movement between the Port of Miami and the downtown roadway system was conducted by the firm of Beiswenger, Hoch and Associates[2].

2 Port of Miami - City Street Improvements, prepared by Beiswenger, Hoch and Associates, Inc., July 1995.

The report identifies that the main points of conflict associated with trucks are related to turning movements in the downtown where existing conditions and design are not suitable for the number of trucks serving the Port of Miami. Key intersections identified for improvement were:

- NE 2nd Avenue and NE 5th Street
- NE 1st Avenue and NE 6th Street
- Eastbound ramp at I-395 and NE 2nd Avenue

The supplemental survey conducted as part of this study affirmed these locations as the greatest priority locations for improvement.

Improvement No. 3: Biscayne Truckway

The consideration of a truckway on existing Florida East Coast (FEC) rail line from downtown to the Buena Vista yards at approximately Biscayne Boulevard and 36th Street has been identified as a key improvement that would allow the port and the railroad to optimize handling of container traffic from the Port of Miami. Discussions with FEC have indicated the feasibility of such a project. It could serve as an interim truckway until the Port tunnel is built or, in absence of the Port tunnel, it could become the primary route for trucks through the downtown.

Improvement No. 4: NW 25th Street Improvements

The NW 25th Street corridor between NW 87th Avenue and NW 67th Avenue, which is heavily used by vehicles traveling between SR-826/Palmetto Expressway and the main cargo and maintenance facilities of Miami International Airport, was identified in this Freight Movement Study as a major corridor. The Miami International Airport is currently undergoing expansion to meet double-digit growth for air freight demand at Miami. Increased capacity will in turn place significantly greater demands on traffic in the corridor.

Improvement No. 5: Okeechobee Road Truck Corridor Improvements

When origin-destination data was plotted in TRANPLAN Okeechobee Road was simulated as having the second greatest amount of truck trips. However, drivers reported it ranked seventh in the amount of trips. This indicates that while Okeechobee Road should be one of the most efficient route for truck trips, it is not being used. There may be potential for greater utilization of Okeechobee Road by trucks.

Costs

Costs for the planning improvements were estimated based on experience or previous estimates. There would be no direct costs associated with establishment of the Freight and Truck Committee, but there would be a requirement for participation of individuals in various County departments. The development of truck data needed to modify the Dade County model is estimated to be in the range of $190,000, based on surveys conducted in other major metropolitan areas. Modification of the Dade County model would cost about $75,000. Operational recommendations such as the Biscayne Truckway or downtown Miami Street improvements were not advanced to the level of detail to include costs.

Conclusion

Just as the rest of the country, truck and freight movement is playing an increasingly important role in transportation planning. Incorporating the benefits of strong intermodal planning will benefit Dade County not only in terms of transportation considerations (traffic congestion, accidents, etc.) but also economically. Getting more and better data for understanding freight movement is very important. Equally important is exploring opportunities for routing trucks in underutilized corridors, such as the proposed Biscayne Truckway. Finally, maintaining a dialogue between planners and decisionmakers and the freight community will ensure continuing responsiveness of transportation improvement planning to freight and truck needs.