

Background

Miami-Dade The Metropolitan Planning Organization (MPO) has developed the Miami-County Integrated Transportation Management System (ITMS). This project follows the development of the Miami-Dade County Process/Congestion Mobility Management Management System (MMP/CMS) prepared by DPA for the MPO. A great deal of emphasis has been placed on coordination of the ITMS with various Miami-Dade County and Florida Department Transportation (FDOT) of departments.

Objective

Develop a transportation information/analysis system for Miami-Dade County that functionally integrates the implementation of six of the seven management systems initially required by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) regulations.

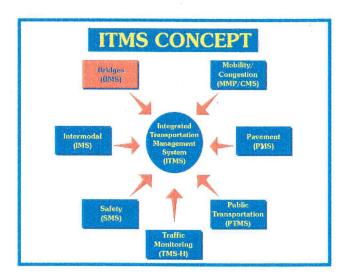
The six ISTEA management systems are Mobility Management Process/Congestion Management System (MMP/CMS), Intermodal Management System (IMS), Pavement Management System (PMS), Public Transportation Management System (PTMS), Safety Management System (SMS) and Traffic Monitoring System for Highways (TMS/H).

Executive Summary

In achieving this objective the system would:

- provide an automated centralized platform for sharing and analyzing data,
- function as a decision support tool providing the decision makers and officials improved access to transportation information within the Miami-Dade County area, and
- emphasize the development of the ITMS system using available data.

Underlying Concept

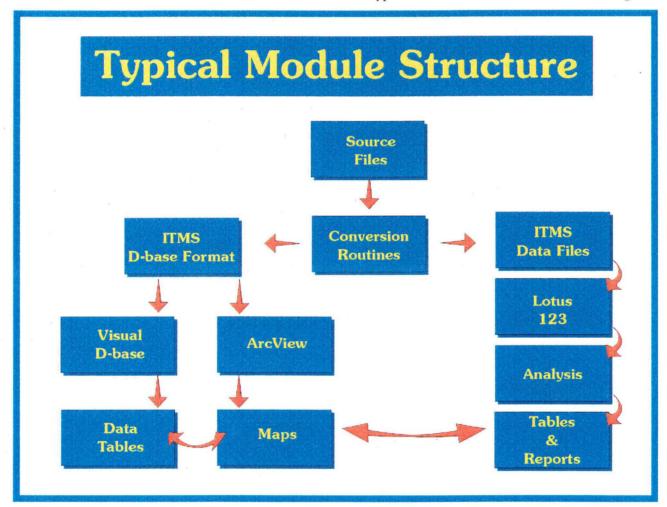


ITMS Structure

The extensive information and comprehensive analysis in the ITMS has been organized into modules - one for each of the six management systems. Even though the information resides in separate modules, it is integrated and is available across the modules for analysis and evaluation. This seamless assembly of data inputs and outputs is a primary aspect of the ITMS as an integrated information management system.

The basic elements of the ITMS are a relational database, a data input/update component, an analysis component, a visual and graphical presentation component, and a report generation component.

A typical ITMS module for individual management

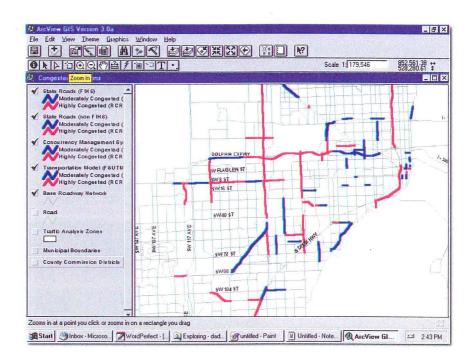


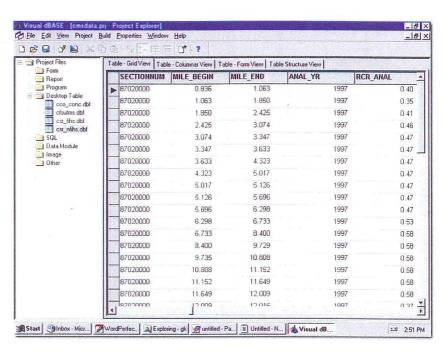
The ITMS program package is based on the geographic information system (GIS) software ArcView, and the database software Visual dBase. The computational analysis and reports use the Lotus 1-2-3 spreadsheet software. The graphical user interfaces (GUIs) and the data conversion/update processes have been developed using Visual Basic programming.

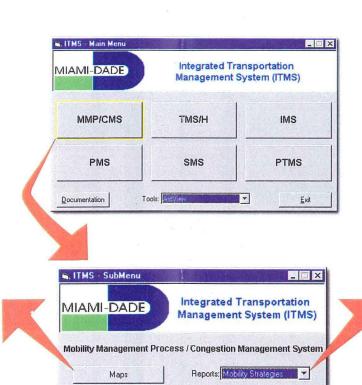
systems includes a sub component to convert all the input data into the appropriate formats. The data analysis sub component allows calculation of selected performance measures and analysis parameters, and preparation of standard preselected reports. The GIS sub component provides the visual analysis and preparation of standard preselected maps.

Integrated Transportation Management System (ITMS)







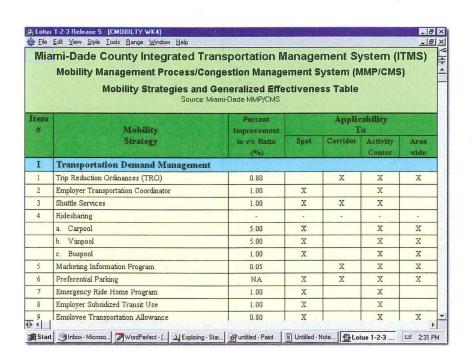


Tahular Data

<u>D</u>ocumentation

RCR Analysis

Main Menu



Output Files Concurrency FSUTMS Base Year : 1990 State Roads Base Year : 1995 Analysis Year (e.g., 1997) : 1997
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ITMS Functions at a Glance

Miami-Dade County Integrated Transportation
Management System (ITMS)

Mobility Management	Intermodal Management	Pavement Management	Traffic Monitoring	Public Transportation	Safety Management
Process/Congestion	System (IMS)	System (PMS)	System (TMS/H)	Management System (PTMS)	System (SMS)
Mgmt. System (MMP/CMS)					
IAPS	MAPS	MAPS	MAPS	MAPS	MAPS
tate Roads - LOS	Bikeways	SR - Surveyed Pavement Deficiencies	ITD Basemap	Metrobus System	Bike & Pedestrian Crashes - Year 199
oncurrency Data - LOS	Intermodal System	SR - Visually Evaluated Pavement Deficiencies	FDOT Basemap	Routes	Bike & Ped. Crashes - Years 1992 to 1
orida Intrastate Highway System (FIHS)	Railroad Network	SR - Prioritized Pavement Deficiencies	County Traffic Count Stations - AWDT	Stops	High Accident Locations
aximum Allowable LOS	AMTRAK Terminal	SR - Work Program Scheduling	Estimated Road Right of Way	Maintenance Facilities	SR - High Accident Segments
nalysis Year v/c Ratio	Tri-Rail System	SR - Number of Lanes	Federal Functional Classification	Metromover & Metrorail System	SR - High Accident Spots
ngested Locations	Tri-Rail Stations	Public Works Pavement Condition Survey	State Functional Classification	Alignment	Emergency Service, Medical Service
State Roads (FIHS)	Major Airports	T dollo from a farming condition during	State Highway System	Stations	Enforcement Agency Locations
State Roads (non-FIHS)	Major Seaports		State Traffic Count Stations - AADT	Maintenance Facilities	Emorcement Agency Locations
County Roads (Concurrency data)	Intercity Bus Terminals		SR - Traffic Monitoring Sites		
County Roads (FSUTMS)	Major Truck Terminals		Vehicle Classification Stations	Metromover System - Annual Ridership	
				Metrorail System - Annual Ridership	
ongestion Duration	Freight Roadway Network		Portable Stations		
	Railroad System & Grade Crossing Hazards		Telemetered Stations		
			SR - Daily Truck Percentage		
			Traffic Signals		
EPORTS	REPORTS	REPORTS	REPORTS	REPORTS	REPORTS
ADT Report	Miami International Airport Operations	SR - List of Prioritized Pavement Deficiencies	SR - Seasonal Volume Factors	Metrobus Ridership	High Accident Locations
NDT Report	General Aviation Operations	SR - List of Work Program Schedule	SR - Seasonal Axle Factors	Metromover Ridership	SR - High Accident Segments
R - Vehicle Classification	Port of Miami Operations	Public Works - Survey Results		Metrorail Ridership	SR - High Accident Spots
	Port of Miami Operations	Public Works - Survey Results		Metrorail Ridership	SR - High Accident Spots
R - Vehicle Classification erformance Measures 5 Planning Factors	Port of Miami Operations	Public Works - Survey Results		Metrorali Ridership	SR - High Accident Spots
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Working in ITMS

A user-friendly program environment has been developed to guide a user through the components and modules of the ITMS program package. Upon starting the ITMS program, a sequence of GUIs display the available options and allow the users to select their desired option.

The exhibit titled *Working in ITMS* illustrates typical navigational steps and functional elements of the ITMS program. The chart titled *ITMS Functions at a Glance* maps out the comprehensive information that has been analyzed, and made available, in the ITMS program.

Benefits

The following is a list of the main benefits of the ITMS:

- Improve the planning process and project selection through better utilization of available information.
- ▶ Improve the decision making process using advanced decision support and analysis capabilities.
- Increase effectiveness of planning through improved access to integrated and seamless multimodal and multi-disciplinary information.
- Build synergy between governmental agencies by creating a system for improved data exchange and information sharing.
- Increase productivity and more effective resource allocation through better coordination of efforts avoiding duplication.

- Provide a robust information system that can be expanded to integrate other analysis tools and applications.
- ► Improve the efficiency of the transportation system in Miami-Dade County.
- ▶ Increase satisfaction of the traveling public.

Future Needs

The following is an initial listing of system enhancement recommendations for future phases:

- ► Develop Transportation Improvement Program (TIP) application.
- ▶ Update the ITMS system to incorporate FDOTs improved roadway network, when available.
- ► Automate maintenance of historic data.
- Develop an internal agency program for annual data updates.
- ► Integrate traditional transportation analysis tools, such as, Highway Capacity Software.
- ► Integrate FDOTs transportation modeling and GIS applications.
- Develop Internet applications.
- Develop applications to interact with other areas of transportation, e.g., bridge management, construction management, socio-economic data, land use, utilities, etc.
- Expand/enhance the means of accessibility to the system by other departments and agencies.
- Complete the population of all databases over time.

