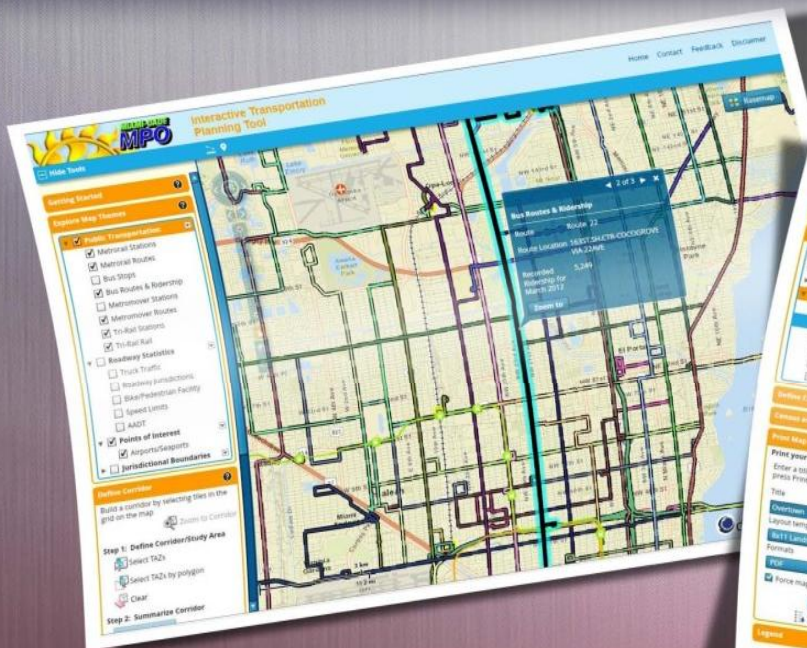




INTERACTIVE TRANSPORTATION PLANNING TOOL

Report and User Guide

January 2013



PREPARED FOR



PREPARED BY



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Interactive Transportation Planning Tool - Final Report and User Guide

Work Order GPC IV-31

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The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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INTERACTIVE TRANSPORTATION PLANNING TOOL

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INTERACTIVE TRANSPORTATION PLANNING TOOL

INTRODUCTION

The Miami-Dade Metropolitan Planning Organization (MPO) is the agency responsible for planning, prioritizing, and programming transportation improvements in Miami-Dade. The MPO conducts a continuing, cooperative, and comprehensive transportation planning process that results in plans and programs that consider all transportation modes and support metropolitan community development. To improve the quality and accessibility of transportation planning data available to the community, the Miami-Dade MPO identified the need to develop an Interactive Transportation Planning Tool (ITPT). The ITPT is a computer application available online through the MPO's website that utilizes Geographic Information Systems (GIS) to display data customized by the user to fit the study area or data type desired.

The Importance of Good Data

Studies that incorporate transportation data are conducted by a wide range of entities and for a broad array of disciplines, including transportation engineering, multimodal transportation planning, social sciences, public health, education, public administration, and by practitioners engaged in marketing, commerce, and industry. The availability of data is the basis for these studies and analyses. Collecting good quality data and making it easily available to study teams in a useful format plays a vital role in supplying objective information for the problems under study. Making decisions on the basis of good quality data is the foundation for a well-designed, successful transportation system that meets the needs of all users.

Project Team and Report Overview

The Miami-Dade MPO retained the services of Kimley-Horn and Associates, Inc. (KHA), Data Transfer Solutions, LLC (DTS), and R.J. Behar & Company, Inc. (RJB) (collectively referred to as the Project Team) to develop the ITPT. The ITPT is accessible to the public from the MPO's website (<http://www.miamidade.gov/mpo/>). The content of this report describes the processes completed during the development of the ITPT application. The report includes Project Overview, Literature Review, Stakeholder Engagement, Data Development, Mapping, Organizational Concept, Testing, Additional Resources, and Recommended Next Phases. The ITPT User Guide is provided in Appendix C of this report.

INTERACTIVE TRANSPORTATION PLANNING TOOL

OBJECTIVE AND PROJECT OVERVIEW

The objective of the ITPT was to develop an interactive transportation planning tool that would be accessible from the MPO's website (<http://www.miamidade.gov/mpo/>). The planning tool would utilize GIS mapping to display 2010 census data, American Community Survey (ACS) data, regularly collected transportation data, model results, and other transportation planning data at the County and municipal level, commission district boundary level and smaller. Furthermore, the application would be able to produce area specific maps that could be utilized for presentations and general planning discussions and reports.

The approach taken in the development of this application was comprised of a series of tasks that included Stakeholder Coordination; Data Development; Mapping; Organizational Concept; Development and Testing; concluding with the installation of the ITPT on the County's server.



The ITPT was officially launched and became available to the public on the MPO's website on January 30, 2013.

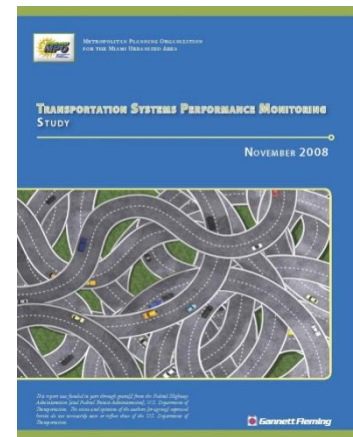
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LITERATURE REVIEW

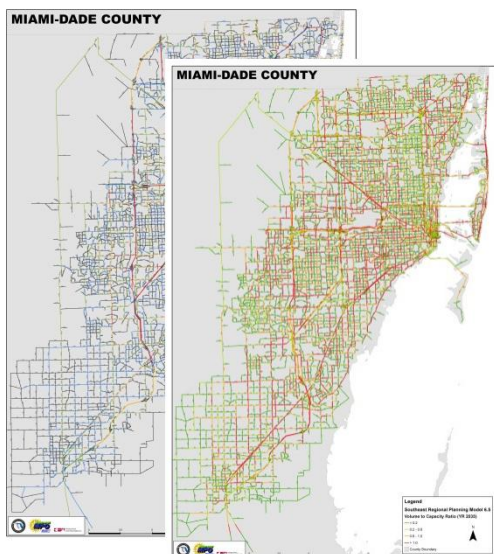
The ITPT brings together large amounts of transportation data on a single, highly responsive, GIS graphic system for easy access. A brief description of the resources used to create this application is listed below:

1. Transportation Systems Performance Monitoring Study, Miami-Dade MPO, 2008

The Transportation Systems Performance Monitoring Study identified a series of performance measures that could be collected on an annual basis, in order to have a method of tracking changes in the quality and level of service on the transportation system. Several features identified in the performance measures section were incorporated into the ITPT as baseline data that could be compared to past and projected future conditions.



2. SERPM 6.5 Model Runs



The Southeast Florida Regional Planning Model (SERPM v.6.5) provides transportation model run data along major roadways in Miami-Dade, Broward and Palm Beach Counties. The primary objective of travel demand forecasting is to forecast the effects of various policies, programs, and projects on highway and transit facilities. These impacts are commonly quantified by representing the projected demand in terms of forecasted traffic volumes and transit ridership. The results of the SERPM 6.5 model were provided as a series of premade maps available for download from within the tool.

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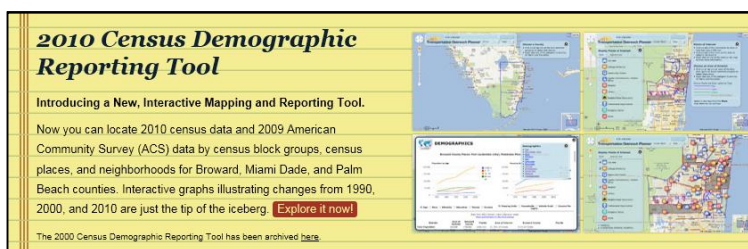
3. 2010 U.S. Census

The 2010 Census provides a snapshot of both demographic and socioeconomic information for the United States. The U.S. Census is mandated by Article I, Section 2 of the Constitution and takes place every 10 years. The data collected by the decennial census, in addition to determining the number of seats each state has in the U.S. House of Representatives it also is used to distribute billions in federal funds to local communities. The online Transportation Outreach Program mini-site provides interactive mapping and statistical capabilities supportive of the objectives for the ITPT. A link to the demographic reporting tool extension is provided in the ITPT application under 'Census and Other Statistics' or can be accessed directly from the MPO's website.



4. American Community Survey

The American Community Survey (ACS) is an ongoing statistical survey by the U.S. Census Bureau that regularly gathers information concerning the current population. Similar to the 2010 U.S. Census information this information can be accessed through the link to the Transportation Outreach Program in the ITPT application or can be accessed directly from the MPO's website.



5. National Transit Database

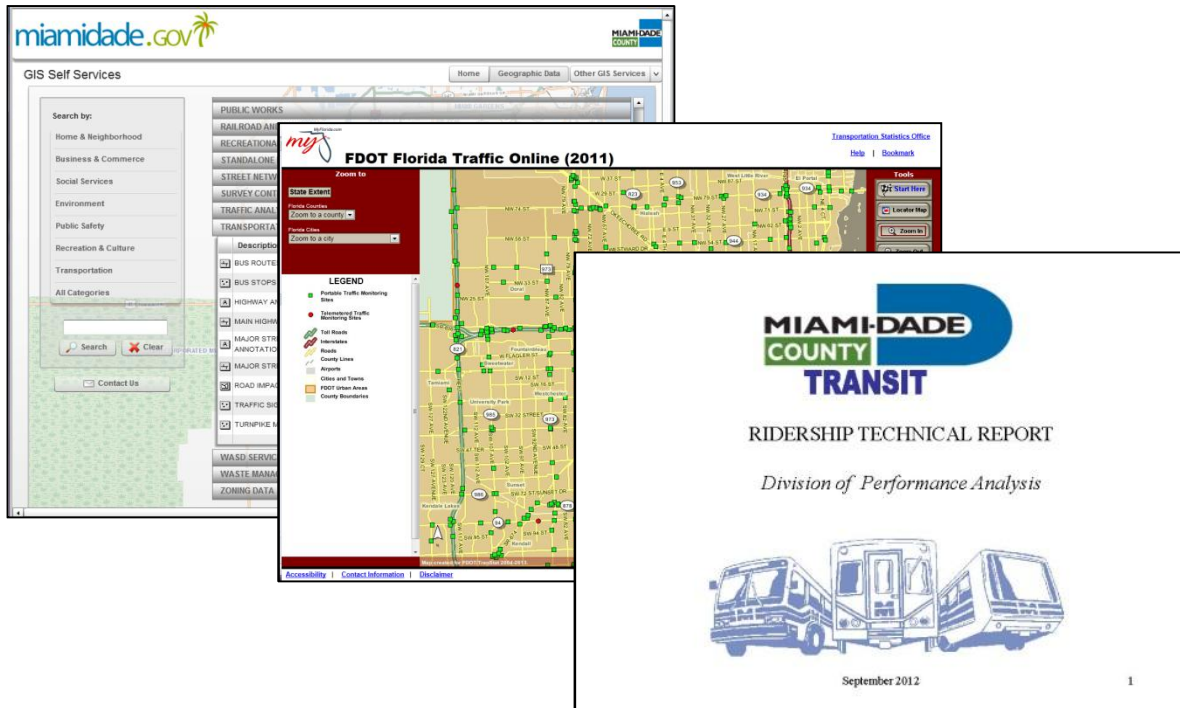
The National Transit Database is the Federal Transit Administration's primary database for statistics on the national transit industry. Information from this source was used during the data development stages of ITPT application.

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6. Local and State Data

Local data was collected and obtained from the Florida Department of Transportation (FDOT), Miami-Dade Transit (MDT), and Miami-Dade County. Data collected from these agencies included, but was not limited to:

- Traffic volume totals
- Existing speed limits
- Metrobus/rail ridership
- Available parking at transit facilities
- Existing and Future Land Use



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STAKEHOLDER ENGAGEMENT

During the development of the ITPT, feedback and assistance was solicited from local stakeholders in the form of a Study Advisory Committee (Committee). The Committee was comprised of representatives from FDOT Districts 4 and 6, Miami-Dade County Planning Department, Miami-Dade Public Works and Waste Management Department, Miami-Dade Expressway Authority, Miami-Dade Transit (MDT), and the Miami-Dade MPO.



Two (2) separate meetings were held for the Committee during the development phases. The first meeting was held at the project start and was an initial kick-off meeting to discuss the tool's main objectives and data needs. Once a demo version of the application was developed, the Committee was brought together again and the tool was demonstrated to the Committee by the Project Team. Suggested tool enhancements and data recommendations that fell outside the scope of this project were documented and summarized in the final report under the 'Recommended Next Phases' section.

Committee Involvement Meetings

The Committee involvement meetings began with an introduction and a presentation of the ITPT, followed by a general discussion. The Committee provided input about the use of the planning tool and the quality of the data and graphics. The following list identifies the scheduled Committee meetings and briefly summarizes the key points:

1. Advisory Committee "Kick-off" meeting – May 5, 2012

An Advisory Committee "Kick-off" meeting was organized to introduce Committee members to each other as well as to familiarize them with the ITPT objectives. The goal of this meeting was to involve the Committee members in the ITPT data development process. As a result, an itemized list of potential data sources was created for implementation into the ITPT.

2. Sprint Demo #1 – August 1, 2012

A Sprint Demo #1 meeting was held by webinar with the project manager to discuss the basic layout and tool functions of the ITPT. Approval of the itemized list of data layers was confirmed with the project manager and the development of data not available through the committee was started.

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3. Sprint Demo #2 – October 24, 2012

A Sprint Demo #2 meeting was held to demonstrate the ITPT to the Committee. As a result, the future of the ITPT was discussed, including maintenance and the possibility for future expansion. Committee members were tasked with providing the data maintained by their agency and outlined on the data inventory spreadsheet.

4. Sprint Demo #3 – December 12, 2012

The purpose of the Sprint Demo #3 meeting was to present the ITPT to Mr. Jesus Guerra. This sprint was the final run through before the initial site launch set for January.

5. Initial Launch – January 30, 2013

The initial launch of the site on the MPO's Mini-Sites website allowed the opportunity for MPO staff, the Committee, and the general public to test the site and provide feedback.

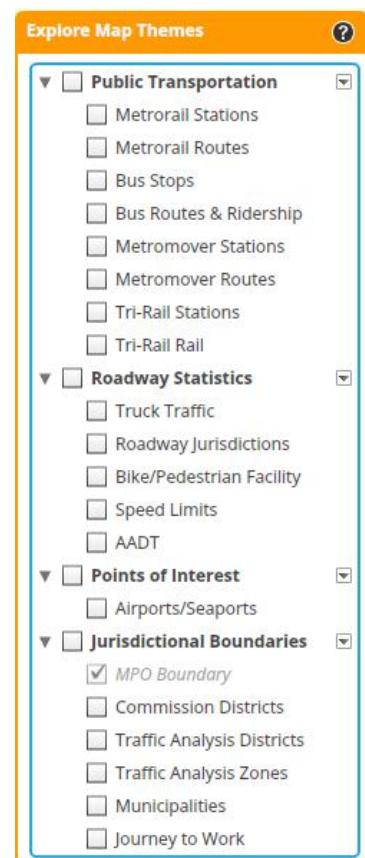


INTERACTIVE TRANSPORTATION PLANNING TOOL

DATA DEVELOPMENT

In preparation for the Advisory Committee “Kick-off” meeting held in May 2012, the Project Team developed an index of available data with sources to present to the Committee. The data index outlined the socio-demographic, workers and employment data, journey to work information, 2005 and 2035 origin and destination and desire lines, 2005 and 2035 Levels of Service on roadways, traffic volumes and speeds, and transit routes and ridership. A copy of the data index is provided in the appendix of this report under **Appendix A: Data Index**.

Committee members from agencies listed as sources for the data outlined in the data index were tasked with providing the requested data for the tool. Data not available electronically was created and converted into an electronic format compatible with GIS by the Project Team. Following the development and collection of the data needed for the tool the data layers were grouped into Map Themes, used for the organization of the data in the user interface. The image to the right provides a screenshot of the four map themes provided in the tool with their associated data layers listed for each.



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MAPPING

The ITPT utilizes a Geographic Information Systems (GIS) base map supported by dtsagile and powered by Environmental Systems Research Institute (Esri) to display layers of transportation data for Miami-Dade County. The application brings together large amounts of data on a single, highly responsive GIS for MPO members, consultants and elected officials to use to obtain information and produce custom maps, which can be used in reports and presentations. The data developed specifically for this tool as well the data collected from the stakeholders were incorporated as individual layers in the application. The user has control of what layers will be displayed by selecting each layer and turning it either off or on.

Through the use of the **Define Corridor** tool the user has the ability to isolate a specific transportation corridor through the selection of individual Transportation Analysis Zones (TAZ) or by creating a polygon around the area of interest in the map. This capability is designed to provide the user with map centric corridor information. The corridor tool also provides a dynamic **Corridor Summary** of the area of interest as shown in the below figure.

Define Corridor ?

Build a corridor by selecting tiles in the grid on the map

Zoom to Corridor

Step 1: Define Corridor/Study Area

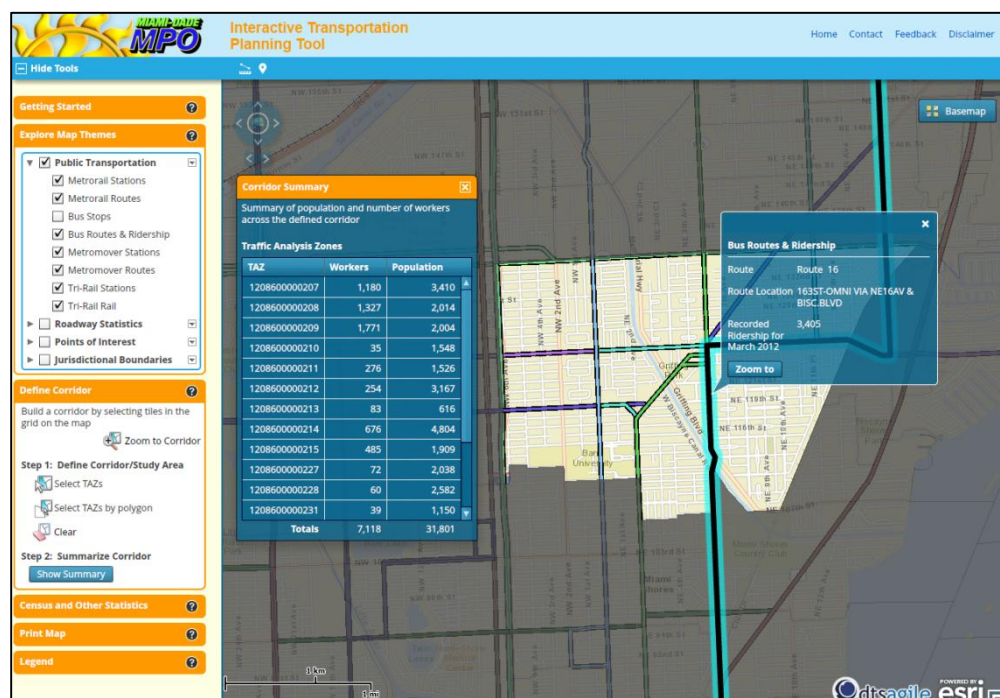
Select TAZs

Select TAZs by polygon

Clear

Step 2: Summarize Corridor

Show Summary

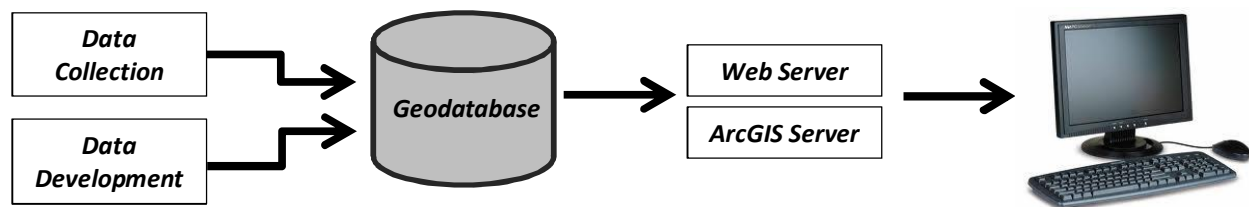


INTERACTIVE TRANSPORTATION PLANNING TOOL

ORGANIZATIONAL CONCEPT

Prior to the development of the actual planning tool, the Project Team developed an organizational concept diagram which summarized the methodology for implementing the interactive tool by identifying data storage and retrieval, data compilation, and graphics development. In addition, the Project Team established the search logic as well as the commands and the capabilities of the system for calculations and comparisons. Future expansion capabilities for sketch planning activities were also considered at this stage of the application's development.

A maintenance schedule for the developed and collected data, incorporated into the geodatabase was created outlining the recommended timeframes in which each data layer should be updated. Most layers required updates on an 'as needed' basis; however, other layers are recommended to be updated on an annual basis. A copy of the maintenance schedule is provided in **Appendix B: Proposed Maintenance Schedule**. The flow chart below provides a simplified version of the applications organizational concept diagram.



Hosting Requirements

At the time of the initial launch for the original ITPT on the MPO's mini-site webpage, the application was deployed across two physical servers; Web server and ArcGIS server. Hosting the site across two servers is not a requirement of the hosting agency yet when the site is transferred to the hosting agent for the MPO the hosting server must meet the minimum requirements outlined below.

Web Server

The Web server was used to host the actual website. It is an Adobe Flex application built on the ArcGIS API for Flex 3.0 API.

- Windows Web Server 2008 R2
- IIS 7.5

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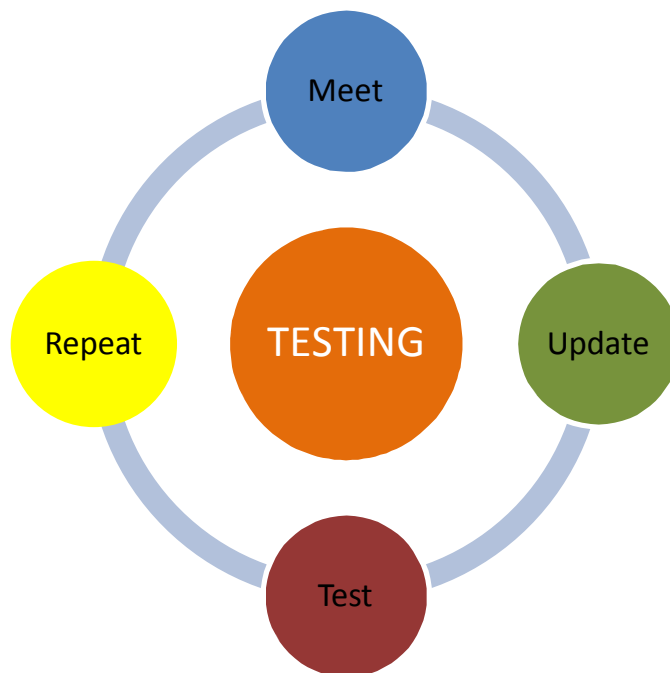
- Application Pool
 - .NET Framework 4.0
 - Managed pipeline mode - Integrated

ArcGIS Server

The ArcGIS server was used to hosts the published ArcGIS services to support the website which AGS 10.1.

TESTING

Throughout the application development process the tool was presented and tested by the MPO staff, Committee members, and the Project Team. Prior to the deployment of the ITPT, during the final stages of the application development process, the ITPT was tested at the Sprint #2 Committee Involvement Meeting. The Committee provided comments about the use of the application planning tool as well as the quality of the data and graphics, which the Project Team implemented after reviewing the input.



INTERACTIVE TRANSPORTATION PLANNING TOOL

RECOMMENDED NEXT PHASES

Future expansion capabilities were identified during the development of the interactive planning tool and are outlined within this chapter. The suggested enhancements are recommended for consideration when future updates to the ITPT are completed. Among the many options explored throughout the application development process, the following elements are considered viable options for implementation.

1. Search Bar Function – It is recommended that a Search Bar Function be incorporated that would perform searches by street or address for a specific location in Miami-Dade County.
2. Personalization Features – This option is intended for frequent users of the ITPT. It will allow the users to set and save any previously defined settings such as views, layers and basemaps on their local hard drives for quick and easy access upon entering the site. A login and password may be required if incorporated.
3. Mobile Compatibility – The request for the functions available in the web version of the tool to be available in a mobile format compatible with a mobile phone or tablet was suggested. Uses of this modification would allow users the ability to access the tool while out in the field. The ability to edit information while in the field or submit comments/notes about specific areas within Miami-Dade should be considered.
4. Additional Data Resources – Several data resources were identified through the planning process as potential additions to the tool. Keeping with the original objective of the ITPT, being transportation focused the following data sources were identified as being beneficial additions.
 - Environmental Features – the addition of wetlands, water bodies, streams, canals, brownfield locations, gas stations, and other environmentally sensitive features that are typically evaluated for major roadway projects and reviews.
 - Park and ride locations
 - Tolled roadway facilities
 - Florida’s Historic Highways and Byways (in Miami-Dade County)
 - Miami-Dade traffic concurrency data
 - Miami-Dade traffic signal phasing/timing plans
 - Detailed census data
 - Right-of-way information
 - Bus frequencies and headway information by stop

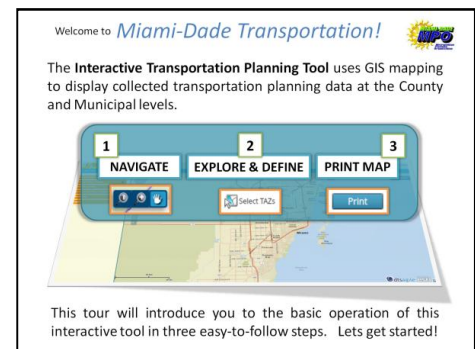
INTERACTIVE TRANSPORTATION PLANNING TOOL

ADDITIONAL RESOURCES

Included in this chapter is a brief summary of the Getting Started Tool and the User Guide for this application. These documents can be accessed through the ITPT online or at the MPO website (<http://www.miamidade.gov/mpo/>).

Getting Started

Get off to the right start using the **“Take a Tour”** feature located under the **Getting Started** header, along the left side of the map display area within the ITPT. This brief tour will introduce the user to the basic operations of how to navigate the map view window, explore map themes, define a corridor/study area, print maps, calculate distance and area information, and define coordinates.



User Guide

The ITPT User Guide provides instructions for using the application, focusing primarily on the program's functions and applications. The following is a summary of each chapter in the User Guide, which outlines the multiple functions and tools available with this application.

Chapter 1 – Getting Started

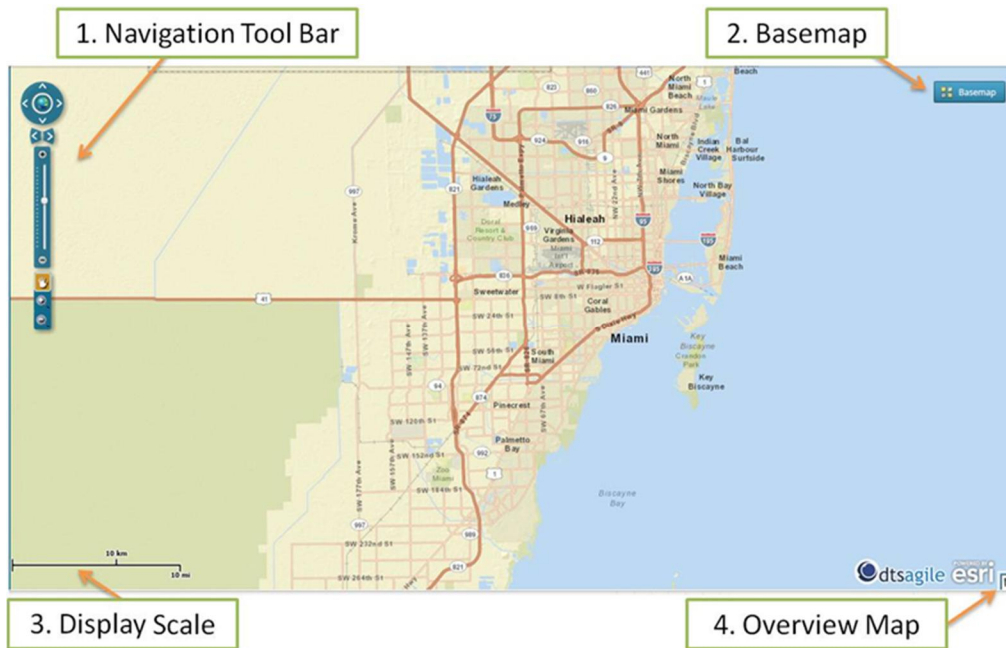
This section briefly introduces the Getting Started tour and how to navigate the User Interface and the Help menu in the tool.



INTERACTIVE TRANSPORTATION PLANNING TOOL

Chapter 2 – Map Display Window and Tools

This section covers the features found in the Map Display Window including the Navigation Tool Bar, Basemap, Display Scale, and Overview Map. Furthermore, Map Display Tools are explored as well as the Measurement and Coordinates Tool.



Chapter 3 – Explore Map Themes

Special attention is given to the Layer Categories found under the Explore Map Themes feature of the ITPT in this chapter. It covers topics like Turning On/Off a Layer, Managing a Layers' Properties, and the Legend.



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Chapter 4 – Defining a Corridor

This chapter explains how to build a corridor/study area by selecting tiles in the grid on the map. Also included in this section is how to use the Print Map tool to create a custom map that matches the contents of the browser.

Define Corridor

Build a corridor by selecting tiles in the grid on the map

Zoom to Corridor

Step 1: Define Corridor/Study Area

Select TAZs

Select TAZs by polygon

Clear

Step 2: Summarize Corridor

Show Summary

Print Map

Print your map

Enter a title and select options, then press Print to generate a map

Title

Layout templates

Formats

☒ Force map scale to

Print

View map legend

Chapter 5 – Census and Other Statistics

A summary of the links and premade maps listed below, available in the ITPT are found in this chapter of the User Guide.

1. 2010 Census Information
2. FDOT Florida Traffic Online
3. Miami-Dade Transit – Technical Reports
4. Land Use & Zoning
5. SERPM Model 6.5 – Total 2-way Volumes 2005
6. SERPM Model 6.5 – Total 2-way Volumes 2035
7. SERPM Model 6.5 – Volume to Capacity 2005
8. SERPM Model 6.5 – Volume to Capacity 2035
9. Miami-Dade County Adopted 2015-2025 Land Use Plan map

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ITPT USER GUIDE

INTERACTIVE TRANSPORTATION PLANNING TOOL - USER GUIDE

CHAPTER 1 – GETTING STARTED

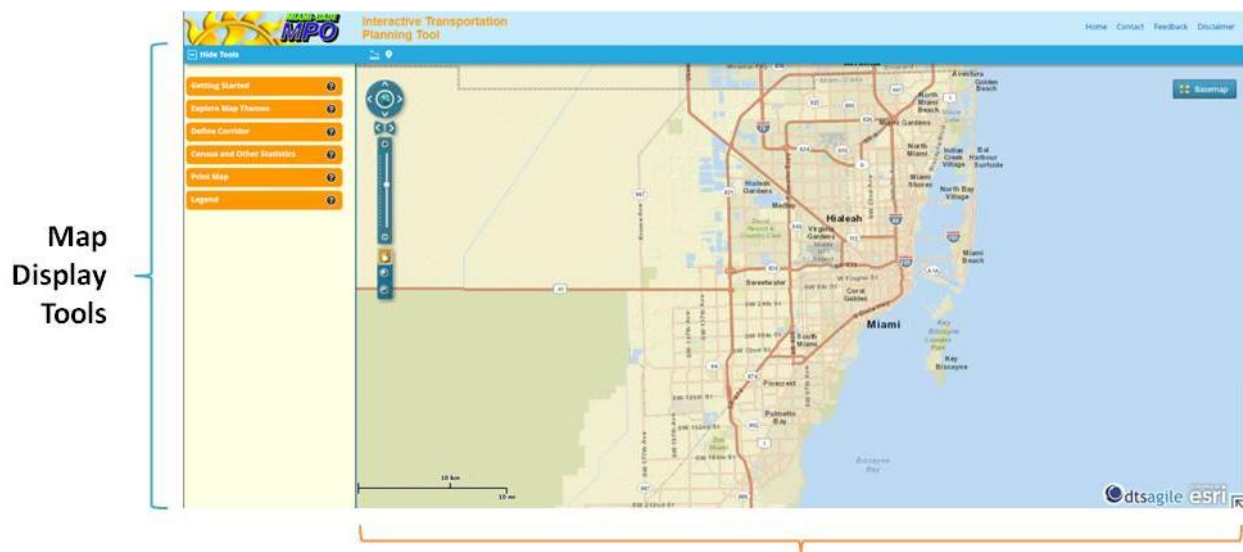
Getting Started

Get off to the right start using the “**Take a Tour**” feature located under the **Getting Started** header, along the left side of the map display area in the ITPT. This brief tour introduces the user to the basic operations of how to navigate the map view window, explore map themes, define a corridor/study area, print maps, calculate distance and area information, and define coordinates.



Navigating the User Interface

The **User Interface** view of the Miami-Dade ITPT is prompted immediately when the user accesses the application via the Miami-Dade MPO website. The user interface view is separated into two sections; the **Map Display Window** and the **Map Display Tools**.



Map Display Window

The Map Display Window is the area of the user interface where the data is displayed. The map display window includes the Navigation Tool Bar, Basemap, Display Scale, and an Overview Map feature. Map Display Tools are located along the left and top sides of the map display window. Along the left side, are tools for Getting Started, Explore Map Themes, Define Corridor, Census and

INTERACTIVE TRANSPORTATION PLANNING TOOL - USER GUIDE

Other Statistics, Print Map, and the Legend. The toolbar located at the top of the map display window includes the Measurement and Coordinates tools.

The map display window and display tools are covered in more detail in Chapter 2.

Help

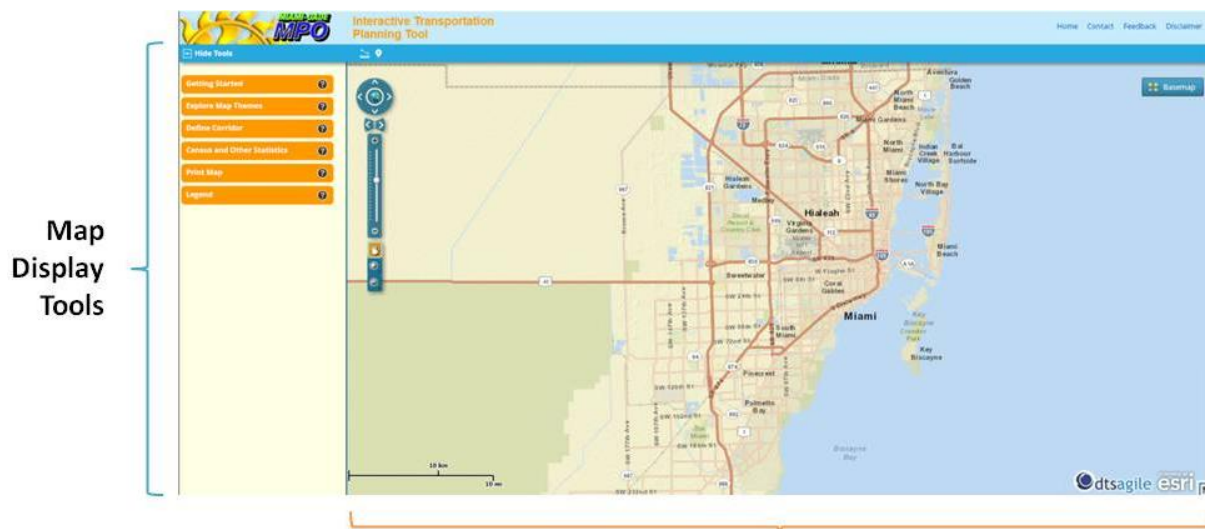


For a detailed description of each map display tool, the **Help** feature can be accessed from the left corner of any map display tool header (Getting Started, Explore Map Themes, Define Corridor, Census and Other Statistics, Print Map, and Legend) by selecting the “?” icon.

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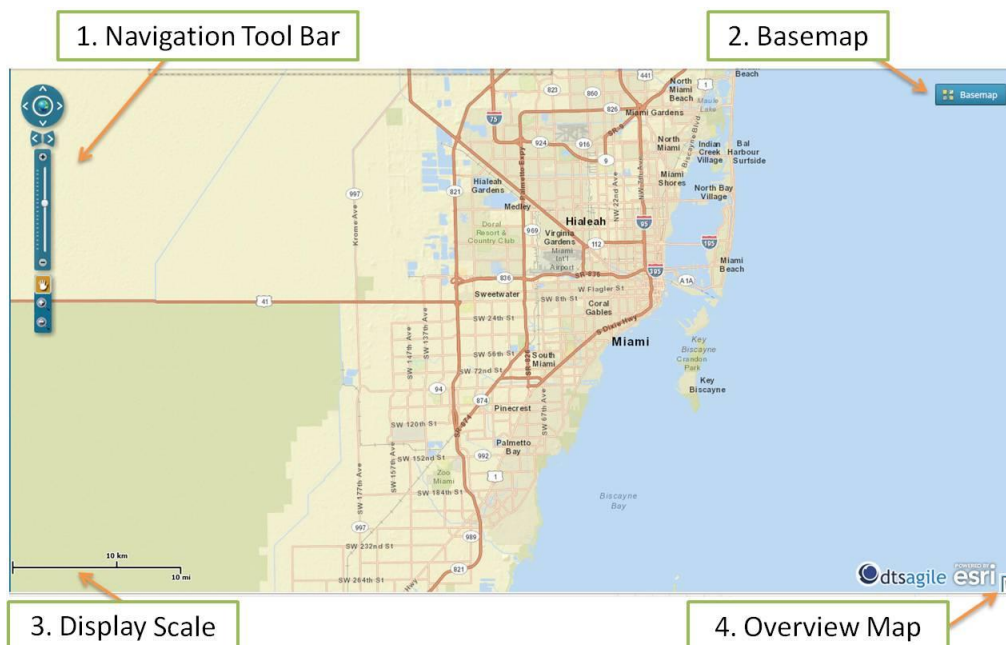
CHAPTER 2 – MAP DISPLAY WINDOW AND TOOLS

The user interface view is separated into two sections; the **Map Display Window** and the **Map Display Tools**.



Map Display Window

The **Map Display Window** is an interactive area of the user interface where the GIS data will be displayed. There are four key features available within this area.



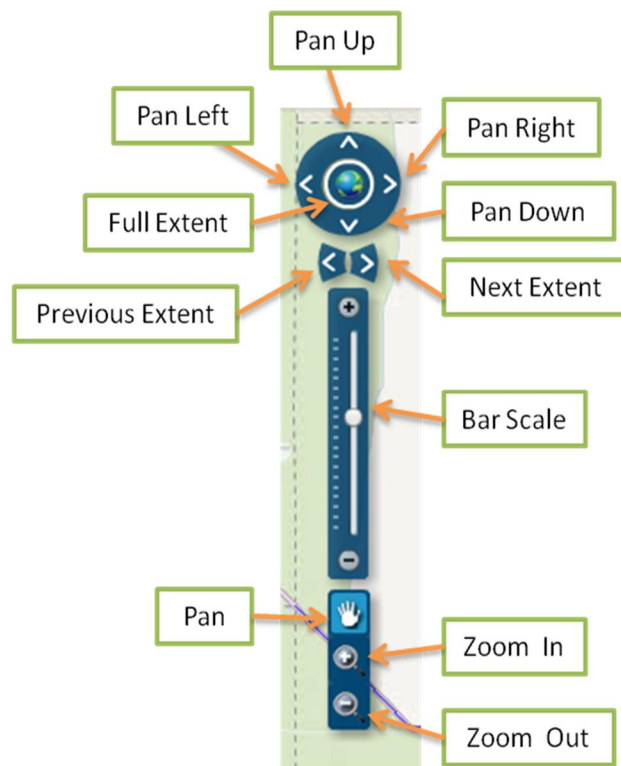
INTERACTIVE TRANSPORTATION PLANNING TOOL - USER GUIDE

The map display window includes the following dynamic features:

1. **Navigation Tool Bar** – Offers a variety of tools that can be used to navigate the map display window. Some examples include zoom in/out, pan and full extent.
2. **Basemap** – Allows the user the ability to select and change the background display of the map.
3. **Display Scale** – Used to approximate linear distance across the map display window.
4. **Overview Map** – Provides a map with a greater perspective on the selected area of interest.

Navigation Tool Bar

The **Navigation Tool Bar** provides several features that will help the user find an area of interest on the map. The tool enables the user the ability to **Zoom In/Out**, **Pan** or change between **View Extents** (shown below). Additionally, the user can use this tool to set the map display scale. The Navigation Tool Bar is located on the left side of the map display window.



Pan Up/Down: Moves the map view up or down, incrementally.

Pan Left/Right: Moves the map view left or right, incrementally.

Full Extent: Returns the map view to its original setting, zoomed to the full County.

Previous Extent: Moves the map view backward in a series of previously viewed settings.

Next Extent: Moves the map view forward in a series of previously viewed settings.

Bar Scale: Allows you to set the scale of the map view by sliding the dial up or down along the bar to zoom in and out.

Pan: Using the cursor, hold a left click and drag the map view to an area of interest.

Zoom In/Out: Select the appropriate magnifying tool to zoom in and out indicated by the + and - buttons. Using the cursor, move the cursor over the area of interest, hold a left click and drag the cursor on the map. Release the left click and the red box will become the new map extent.

Basemap

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The **Basemap** feature is located in the upper right corner of the map display window. The drop-down menu allows the user the ability to select and change the background map displayed on your Map Display Window.



The **Basemap** drop-down menu contains several map alternatives to choose from, which include:

Imagery – A worldwide map display using aerial photography.

Imagery with Labels – A worldwide map display using aerial photography including labels.

Streets – A streets map display of the world including labels.

Topographic – A worldwide topographic map display.

Terrain with Labels – A worldwide map display of the terrain including labels.

Light Gray Canvas – A worldwide map display depicted in shades of grey.

National Geographic – A worldwide map display produced by National Geographic.

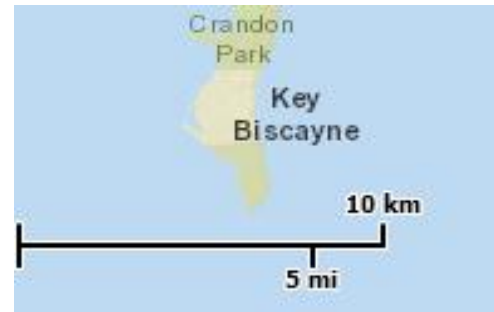
Oceans – A worldwide map display of ocean topography.

Open Street Map – An open street map display of the world.

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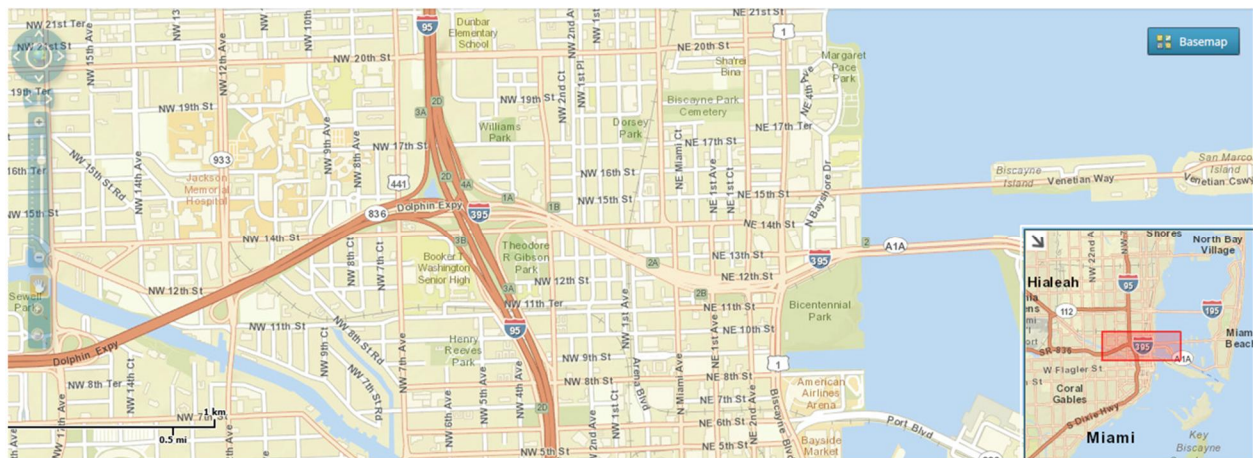
Display Scale

Located at the bottom left of the map display window is a **Display Scale** (scale bar). The scale bar can be used to approximate linear distances across the map display window in US customary and English SI units. The scale automatically updates with the map view as you navigate to a specific area of interest.



Overview Map

An **Overview Map** is located at the bottom right corner of the map display window and can be expanded or hid by clicking on the arrow icon. This feature provides a greater perspective of the selected area of interest.



Map Display Tools



Map Display Tools are found along the left side of the Map Display Window; including **Explore Map Themes**, **Define Corridor**, **Census and Other Statistics**, **Print Map** and **Legend**.

Additional features can be found across the top of the Map Display Window, including a **Measurement Tool** and a **Coordinates Tool**. These tools allow the user the ability to explore and define the data in the map display window.

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Measurement Tool

The **Measurement Tool** is located along the top of the map display window. The tool provides five measuring options for calculating distance and area information in the map display window:

1. **Straight Line Tool** – Used to measure distance across a straight line segment. Utilize this tool by pressing and holding down a left click of the cursor to start and let go to finish.
2. **Multi-segment Line Tool** – Used to measure distance across a series of straight line segments. Using the cursor, click once to begin drawing a segment and double-click to complete.
3. **Freehand Line Tool** – Used to measure distance across a path drawn freehand. Using the cursor, press and hold a left click to start and release to finish.
4. **Polygon Tool** – Used to measure area using a polygon shape. Using the cursor, left click to begin drawing a shape. By single-clicking with the mouse the shape will be defined and a double-click will complete the drawing.
5. **Freehand Polygon Tool** – Used to measure area using a freehand polygon tool. Using the cursor, press and hold a left click to start the drawing and let go to finish. Note that only the area shaded in gray will be calculated.

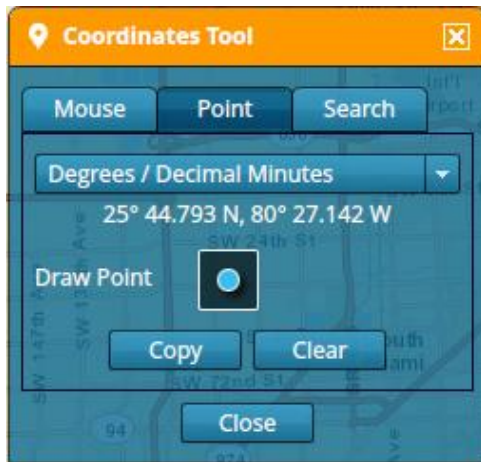
The **Results** of the measurements are displayed on the right of the measurement tool window. For the line tools, calculation results include distance (in feet, yards, miles, nautical miles, meters, and kilometers), true bearing and magnetic bearing. The results for the polygon tools include area (in acres, square feet, square miles, square meters, and square kilometers) and perimeter. Options to copy and clear the result calculations are available at the bottom of the measurement tool window.



Coordinates Tool

The **Coordinates Tool** provides the geographic coordinates for a specific location on the map as well as the option to search for a specific location using latitude and longitude.

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The Coordinates Tool window provides several options to determine the Latitude and Longitude for any location. Use the **Mouse** tab to estimate coordinates in an area. Use the **Draw Point** tool under the **Point** tab to select and define coordinates at a particular location. Locate a specific place by entering Latitude and Longitude coordinates in the **Search** tab. Measurements are provided in decimal degrees, degrees/decimal minutes, degrees/minutes/seconds, U.S. National Grid and Web Mercator.

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CHAPTER 3 – EXPLORE MAP THEMES

The **Explore Map Themes** tool allows the user to view and explore key map layers and data associated with the ITPT.

The Layer Categories

Under the Explore Map Themes header are the following categories; **Public Transportation**, **Roadway Statistics**, **Points of Interest** and **Jurisdictional Boundaries**. To access the layers associated under each category, double-click the theme title.



Turning On/Off a Layer

Layers must be turned on before they can be viewed in the Map Display Window. Layers can be turned on and off by checking and unchecking the box to the left of the specific layer. The category which the layer is located under must also be turned on in order to display the layer.

For example, to view “Metrorail Stations” data under the category “Public Transportation”, both the boxes to the left of the layer, “Metrorail Stations” and the category, “Public Transportation” must be ‘checked’.

Managing a Layers’ Properties



Located at the right of each category is a drop-down menu that allows the user to control the layers’ properties. Managing these features correctly will allow for more than one layer to be displayed without compromising valuable information. A list of the layers’ properties includes:

Zoom to – Provides ability to zoom to a select layer.

Transparency – Provides ability to adjust the level of transparency that a particular layer will have. Slide the dial between Opaque (0%) and Transparent (100%) to adjust the display.

Move up/down – Provides ability to manage the order of the appearance of the layers in the display.

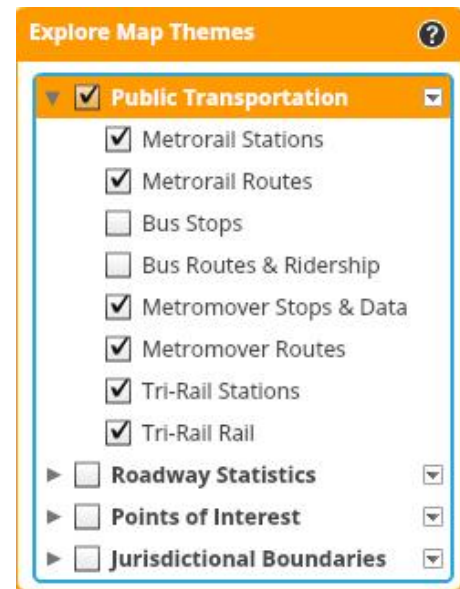
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Description – Provides ability to view a description of the map service.

Public Transportation Layers

The following layers can be accessed under the **Public Transportation** category:

1. **Metrorail Stations** – Displays the Metrorail Stations located in Miami-Dade County. By selecting a Metrorail station icon in the map display detailed information related to that station will be displayed.
2. **Metrorail Routes** – Displays the Green and Orange Metrorail Routes in the County.
3. **Bus Stops** – Displays the bus stop locations throughout the County. By selecting a bus stop icon in the map display detailed information related to that stop will be displayed.
4. **Bus Routes and Ridership** – Displays Bus Routes and Ridership information for the County. By selecting a route in the map display detailed information related to that route will be displayed.
5. **Metromover Stations** – Identifies the County's Metromover Stations including the station name, location, and recorded ridership for March 2012.
6. **Metromover Routes** – Displays the Metromover Routes in Miami-Dade County.
7. **Tri-Rail Stations** – Identifies the County's Tri-Rail stations including the station name.
8. **Tri-Rail Rail** – Displays the Tri-Rail alignment connecting to the County's Tri-Rail stations.



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Roadway Statistics Layers

Under the **Roadway Statistics** category, the layers include:

1. **Truck Traffic** – Displays the Annual Average Daily Traffic (AADT) for trucks along major roadways in Miami-Dade County. Select a segment to obtain the roadway ID, segment limits (to and from) as well as the truck AADT.
2. **Roadway Jurisdictions** – Classifies a roadway segment by jurisdiction; whether it is being maintained by the city, state or county. Also noted is road name and road width in feet.
3. **Speed Limits** – Displays the roadway speed limits in miles per hour (mph).
4. **AADT** – Displays the Annual Average Daily Traffic (AADT) for major roadways in Miami-Dade County. Click on a roadway link to detail the year, roadway ID, segment limits (to and from), AADT and traffic factors including K, D and T factors.



Points of Interest Layer

The layer under the **Points of Interest** category is:

1. **Airports/Seaports** – Layer identifies the name and location of the major Airports and Seaports in Miami-Dade County.

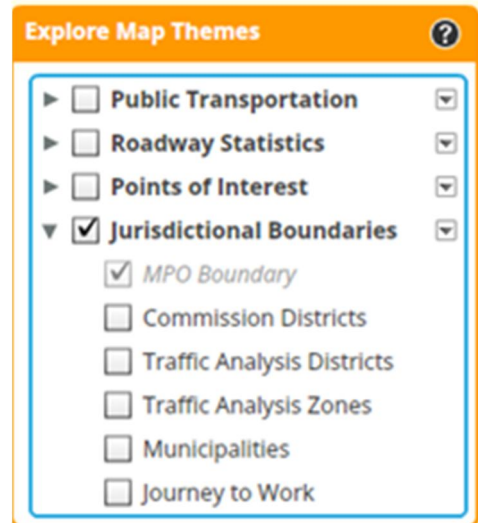


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Jurisdictional Boundaries Layers

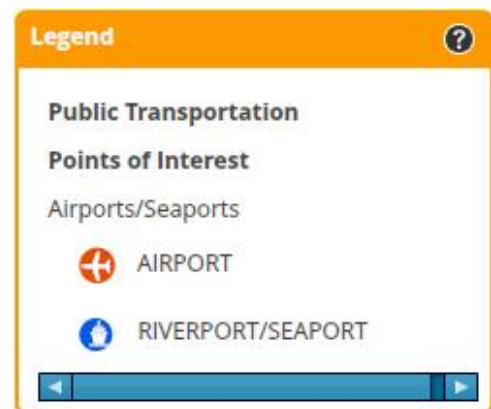
Under Jurisdictional Boundaries, the layers include:

1. **Commission Districts** – Depicts the Commission District boundary, number, and representative.
2. **Traffic Analysis Districts** – Outlines the Miami-Dade County Traffic Analysis Districts (TAD) and provides the TAD population and number of workers based on the 2010 Census data.
3. **Traffic Analysis Zones** – Outlines the Miami-Dade County Traffic Analysis Zones (TAZ) and identifies the population and number of workers in a TAZ based on the 2010 Census data.
4. **Municipalities** – Depicts the jurisdictional boundaries for each municipality in Miami-Dade County.
5. **Journey to Work** – Provides information based on the 2010 Census data regarding a particular areas journey to work patterns including statistics for employment total, drive to work alone, use of public transportation, walk to work, and the mean travel time it takes to get to work in minutes.



Legend

The **Legend** tool provides the symbology for each map layer. The Legend is dynamic in that it is linked to the layers within the Explore Map Themes, such that when map layers are turned on, they appear in the Legend and when they are turned off, they are automatically removed.

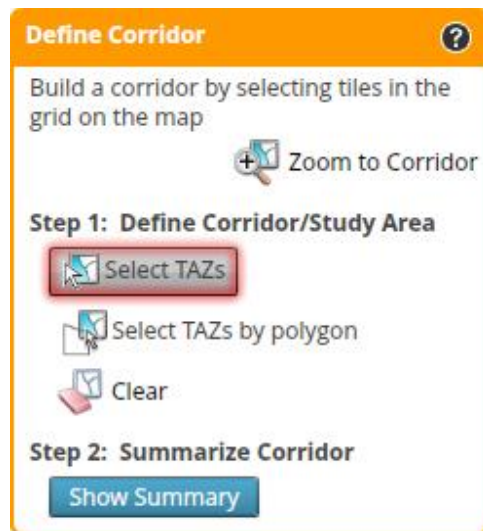


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CHAPTER 4 – DEFINING A CORRIDOR

Define Corridor

The **Define Corridor** feature allows the user to customize a specific study area by selecting Traffic Analysis Zones (TAZs) within the corridor limits.



To define a corridor/study area, click the **Select TAZs** button under the Define Corridor header. Using the cursor, select and highlight individual TAZ tiles of interest in the map display window; a second click will remove unwanted tiles and selecting **Clear** will remove all.

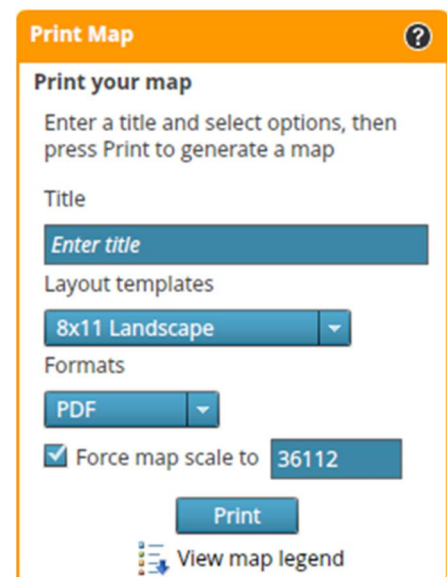
A **Corridor Summary** window will appear automatically, displaying the 'workers' totals and 'population' totals within the TAZs for the selected corridor. **Zoom to Corridor** will center the selected TAZs in your map view window.

Select TAZs by polygon is a feature that allows the user to draw a polygon that will select and define all intersecting TAZ tiles. Once this feature is activated, use the cursor to begin drawing the shape over the TAZ grid. Click once to begin outlining a shape followed by each additional click to define a polygon. Click the cursor twice to complete the drawing.

Print Map

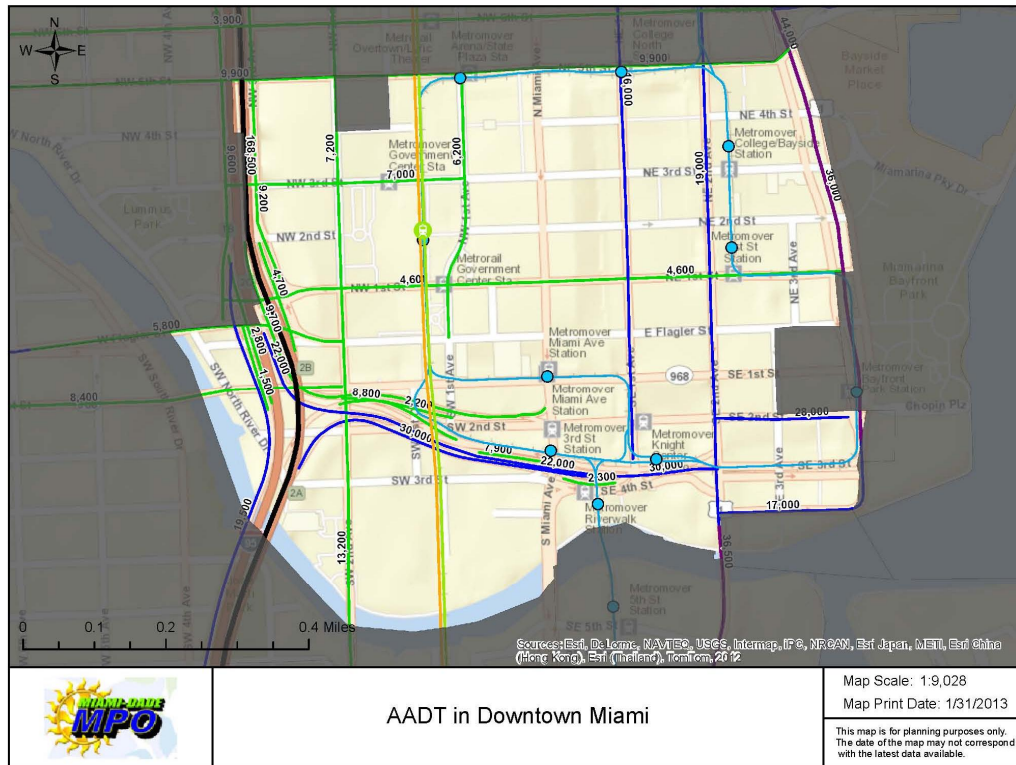
The **Print Map** tool allows the user to create a custom map that matches the contents of the browser. Begin by accessing the "Print your map" feature under the **Print Map** header. Here the user can customize the title they would like to be displayed on the map as well as specify the layout and formats. Once all options are selected press **Print** to generate the output. The printed map is created and displayed in a new window.

Several options exist for the printed map output type. PDF is the



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default format, though several other options exist for you to choose from. Other formats include PNG32, PNG8, JPG, GIF, EPS, SVG and SVGZ.

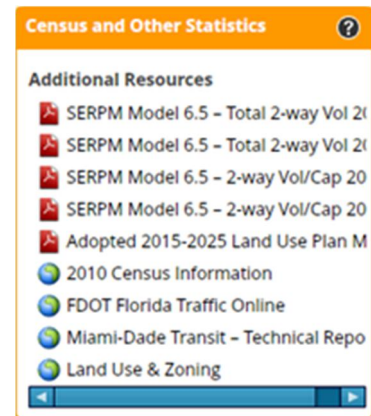


To view the Legend associated with the map layers, select the **View Map Legend** to access or print a map legend.

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CHAPTER 5 – CENSUS AND OTHER STATISTICS

The **Census and Other Statistics** provides additional resources in support of the data available in the ITPT. Included in this feature is access to a collection of useful transportation related resources and links that can be viewed or printed. A summary of those resources provided in the tool are shown below.



Links

1. **2010 Census Information –**
<http://mpotransportationoutreachplanner.org/topmap/>

Link to the MPO's mini-site Transportation Outreach Planner tool containing latest census information.

2. **FDOT Florida Traffic Online –**
<http://www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html>

Link to FDOT traffic data interactive map site.

3. **Miami-Dade Transit – Technical Reports –**
<http://www.miamidade.gov/transit/ridership-technical-reports.asp>

Link to the Miami-Dade Transit site where users can find the technical reports used in the tool and they can obtain updated ridership data in between the updates.

4. **Land Use & Zoning –**
<http://gisims2.co.miami-dade.fl.us/MyNeighborhood/MPOMap.asp>

Link to the County's interactive land use and zoning tool. A hard copy version of the adopted 2015-2025 Land Use map is also available as a premade map.

Premade Maps

5. SERPM Model 6.5 – Total 2-way Volumes 2005
6. SERPM Model 6.5 – Total 2-way Volumes 2035
7. SERPM Model 6.5 – Volume to Capacity 2005
8. SERPM Model 6.5 – Volume to Capacity 2035
9. Miami-Dade County Adopted 2015-2025 Land Use Plan map

APPENDICES

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APPENDIX A: PROPOSED MAINTENANCE SCHEDULE

Miami-Dade Interactive Planning Tool Proposed Maintenance Schedule

Layer Name	Source	Data	Maintenance		File type
			Retrieval Notes	Update	
Public Transportation					
Metrorail Stations	MD County	Metrorail Stations	Routes available online, ridership entered manually	Annually	Point
Metrorail Routes	MD County	Metrorail Route	Online	When Needed	Line
Bus Stops	MD County	Bus Stops	Online	When Needed	Point
Bus Routes & Ridership	MD County/MD Transit	Bus Routes & Ridership	Routes available online, ridership entered manually	Annually	Line
Metromover Stations	MD County/MD Transit	Metromover Stops & Ridership	Routes available online, ridership entered manually	Annually	Point
Metromover Routes	MD County	Metromover Routes	Online	When Needed	Line
Tri-Rail Stations	MD County	Tri-Rail rail stations	Online	When Needed	Point
Tri-Rail Rail	MD County	Tri-Rail rail	Online	When Needed	Line
Roadway Statistics					
Truck Traffic	FDOT	Truck Traffic	Online	Annually	Line
Roadway Jurisdictions	MD County	Street Maintenance	Online	Annually	Line
Speed Limits	FDOT	Speed Limits	Online	Annually (January)	Line
AADT	FDOT	AADT	Online	Annually	Line
Bike/Pedestrian Facility	MD County	Bike & Pedestrian Facilities	Online	Annually	Line
Points of Interest					
Airports/Seaports	MD County	Airports/Seaports	Online	When Needed	Point
Jurisdictional Boundaries					
Commission Districts	MD County	Commission Districts	Online	When Needed	Polygon
Traffic Analysis Districts	MPO	Traffic Analysis Districts	New	When Needed	Polygon
Traffic Analysis Zones	MPO	Traffic Analysis Zones	New	When Needed	Polygon
Municipalities	MD County	Municipal Zones	Online	Annually (January)	Polygon
Journey to Work	US Census	Journey to work	Online	When Needed	Polygon

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APPENDIX B: DATA INDEX

Data	Source	Description/Use	Status
Socio-Demographic Data			
Population (Total)	Miami-Dade Planning Research/ US Census	Population totals would be available at County, municipality, and district levels. The population data could be collected at block level for small scale assessments.	Coordination was made with the Miami-Dade Planning Research department. Data was also available for download from US Census.
Race	Miami-Dade Planning Research/ US Census	Race breakdown would be available at County, municipality, and district levels. Race could be broken into the following categories: White, African American, Asian, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Other, and Two or more races.	
Ethnicity	Miami-Dade Planning Research/ US Census	Ethnicity totals would be available at County, municipality, and district levels. Ethnicity would be shown as either, Hispanic or Latino, or Not Hispanic or Latino.	
Age	Miami-Dade Planning Research/ US Census	Age breakdown would be available at County, municipality, and district levels. Age groupings would be as follows: Under 18, 18 and over, 20-24, 25-34, 35-49, 50-64, and 65 & over.	
Sex (Male/Female)	Miami-Dade Planning Research/ US Census	Male and female totals would be available at County, municipality, and district levels.	
Housing Statistics	MPO/SERPM Model	Housing statistics would be available at County, municipality, and district levels.	Available from MPO in TAZ format.
Workers and Employment			
Industry Employment Totals	MPO/SERPM Model	Industry employment and industry type breakdowns would be available at County, municipality, and district levels.	Available from MPO in TAZ format.
Income data	MPO/SERPM Model	Income breakdowns would be available at County, municipality, and district levels.	Available from MPO in TAZ format.
Journey to Work			
Travel time to work	5-year estimates American Community Survey (ACS)	Average travel time totals will be provided at the lowest geopolitical level of assessment available. 5-year estimates will be used for the small scale assessments and 1-year estimates will be used for large scale assessments when available.	Available for download from the US Census. Some information may not be available for all time periods at all scales. Data limitations may limit some analysis capabilities.
Means of transportation to work	5-year estimates American Community Survey (ACS)	Mode of transportation to work will be provided at the lowest geopolitical level of assessment available. The modes are split between: Drove alone, Carpool, Public transportation, and Other. 5-year estimates will be used for the small scale assessments and 1-year estimates will be used for large scale assessments when available.	Available for download from the US Census. Some information may not be available for all time periods at all scales. Data limitations may limit some analysis capabilities.
Origin and Destination (OD)			
2005 and 2035 Origin and Destination (OD) data	MPO/SERPM Model	SERPM Model Run data will be converted into a format compatible with the GIS interface tool to display OD information.	Availability and format of data may affect scale of analysis capabilities. Coordination was made with MPO.
Level of Service (LOS)			
Roadway Level of Service (LOS)	MPO/SERPM Model	SERPM Model Run data will be converted into a format compatible with the GIS interface tool to display LOS information for 2005, 2010, and 2035.	Availability and format of data may affect scale of analysis capabilities. Coordination was made with MPO.
Mode Split and Auto Occupancy			
Mode Splits and Auto Occupancy	MPO/SERPM Model	Data will provide mode splits and auto occupancy for the County.	Coordination should be made with the MPO to determine format data will be available in. Limitations as to the level of analysis may be affected by the format of the data.
Traffic Volumes			
Annual Average Daily Traffic (AADT) volumes	MPO/SERPM Model/FDOT	AADT volumes are available through the SERPM model and are also available for the FDOT monitored roadways in the State from FDOT.	Available for download from MPO and the FDOT website
^ Truck Traffic Volumes (TTV)	FDOT	FDOT truck traffic volumes are updated each year and are available for the FDOT monitored roadways in the State.	Available for download from FDOT website
Telemetered Traffic Monitoring Sites (TTMS)	FDOT	The FDOT TTMS sites provides information on Florida Telemetered Traffic Monitoring Sites, as well attribute information compatible with the Roadway Characteristics Inventory (RCI) database.	Available for download from FDOT website
^ Portable Traffic Monitoring Sites (PTMS)	FDOT	The FDOT PTMS sites provides information on Florida Telemetered Traffic Monitoring Sites, as well attribute information compatible with the Roadway Characteristics Inventory (RCI) database.	Available for download from FDOT website
Traffic Speeds			
Maximum Speed Data	FDOT	The FDOT Maximum Speed Limits data provides speed limits for the FDOT monitored roadways in the State.	Available for download from FDOT website
Traffic speed data	FDOT/District 6	The data is collected through cell phone coverage and reported back through the Navteq system.	Coordination was made to determine limitations of data coverage and format.

Data	Source	Description/Use	Status
Transit Information			
Tri-Rail Route and Ridership	SFRTA	The Tri-Rail route, stop locations, and ridership would be displayed for the full extend of the transit network within Miami-Dade County.	Available for download from Miami-Dade County GIS page. Coordination with MDT and SFRTA was made to collect ridership information.
Metrobus Routes	Miami-Dade Transit	The Metrobus routes and stop locations would be displayed for the full extend of the transit network. Allowing users to assess network gaps and coverage.	Available for download from Miami-Dade County GIS page. Coordination with MDT was made to confirm route accuracy.
Metrobus Ridership	Miami-Dade Transit	The Metrobus ridership totals for each stop would be available for the entire route network to assess ridership patterns and needs.	Coordination with MDT was made to obtain latest ridership information.
Metrorail Routes	Miami-Dade Transit	The Metrorail network and stop locations would be displayed for the full extend of the transit network.	Available for download from Miami-Dade County GIS page. Coordination with MDT was made to confirm route accuracy.
Metrorail Ridership	Miami-Dade Transit	The Metrorail ridership totals for each stop would be available for the entire route network to assess ridership patterns and needs.	Coordination with MDT was made to obtain latest ridership information.
Metromover Routes	Miami-Dade Transit	The Metromover route and stop locations would be displayed for the full extend of the transit network.	Available for download from Miami-Dade County GIS page. Coordination with MDT was made to confirm route accuracy.
Metromover Ridership	Miami-Dade Transit	The Metromover ridership totals for each stop would be available for the entire route network to assess ridership patterns and needs.	Coordination with MDT was made to obtain latest ridership information.
Roadway Features and Alternative Transportation Networks			
^ Bike facilities	FDOT/RCI/County	Bike facility data obtained through the Roadway Characteristics Inventory program for all state roadways could be incorporated into the interactive tool. Shoulder type, shoulder width, bike lane and bike slot locations would be some of the information available.	Coordination with FDOT was made to obtain the latest RCI information. County bike facility information should be included in future phase.
^ Pedestrian Facilities	RCI/County	Pedestrian facility data obtained through the Roadway Characteristics Inventory program for all state roadways could be incorporated into the interactive tool. Sidewalk barrier and sidewalk location information would be displayed.	Coordination with FDOT was made to obtain the latest RCI information. County pedestrian facility information should be included in future phase.
^ Multiuse Trails/Greenways	County	This feature would provide the locations of all multiuse and greenway locations and connections within the County.	Coordination was made with the County to obtain latest facility information.
Planning			
^ Existing Land Use	County/Municipalities	Existing land use data would be available at County level. Municipality information would depend on availability.	Coordination should be made with municipalities to obtain latest land use information to include in future phase.
^ Future Land Use	County/Municipalities	Future land use data would be available at County level. Municipality information would depend on availability.	Coordination should be made with municipalities to obtain latest land use information to include in future phase.
^ Zoning	County/Municipalities	Zoning data would be available at County level. Municipality information would depend on availability.	Coordination should be made with municipalities to obtain latest land use information to include in future phase.
Districts			
County Commission Districts	County	County Commission Districts would be available to use as an assessment tool that could be turned on and off.	Coordination should be made with County to obtain district boundaries.
Traffic Analysis Districts (TAD)	MPO	Traffic analysis districts (TAD) would be available to use as an assessment tool that could be turned on and off.	Available for download from Miami-Dade County GIS page. Coordination should be made with MPO to confirm boundaries.
Background Layers (Base Map Features)			
Major Roadway Network	FDOT	The FDOT roadway network data would include roadway functional classification information. These roadway files would provide more information for the major roadway such as interstates, toll roads, US, and State roadways. Local road data should be obtained from the county.	Available for download from FDOT website
Local Roads	County	Feature would provide the local street network with local names not included in the FDOT data.	Available for download from Miami-Dade County GIS page.
Airports/Seaports	County	Feature would provide locations of all airports and seaport locations in the County.	Available for download from Miami-Dade County GIS page.
Parks	County	Feature would provide locations of all parks and open space locations in the County.	Available for download from Miami-Dade County GIS page.
Municipal Zones	County	Feature would provide boundaries of all municipalities within the County.	Available for download from Miami-Dade County GIS page.
Miami-Dade County Boundary	County	Feature would provide County boundary.	Available for download from Miami-Dade County GIS page.