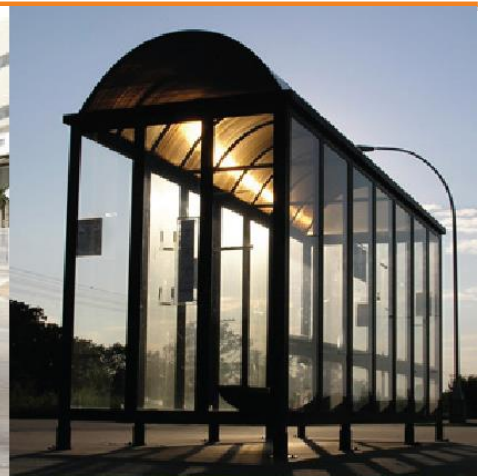




ATSIM 6.0

User's Guide



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Gabrielle Matthews of FDOT served as project manager and has been closely involved in the general direction of the system. The assistance of previous managers at FDOT is also appreciated. Dr. Fabian Cevallos, Transit Program Director of the Lehman Center for Transportation Research (LCTR) at Florida International University (FIU), served as the principal investigator and chief system designer. Mr. Haifeng Wang, Senior Computer Programmer with FIU's LCTR, performed most of the software coding. Dr. Albert Gan, Professor of Civil Engineering at FIU, served as the expert consultant and tested the system for its usability and accuracy. The assistance from previous LCTR researchers and students is also recognized. This User's Guide was written by Dr. Fabian Cevallos and Dr. Albert Gan. Lastly, the assistance and feedback provided by many users from various transit agencies are gratefully acknowledged.

ATSIM is provided as an "as is" and it is free to any transit agency in Florida that wish to use it, courtesy of the FDOT and the LCTR at FIU.

DISCLAIMER

While every effort was made to ensure that this software is of the best quality and free of defects, some errors may be unavoidable. No warranty, expressed or implied, and no warranty of merchantability or fitness, is given. Neither the Florida Department of Transportation, nor Florida International University, will assume any liability for results obtained or losses incurred from the use of this software.

Table of Contents

1	<i>Introduction</i>	1
	<i>What is ATSIM?</i>	1
	<i>Why Transit Stop Inventory?</i>	1
	<i>Why ATSIM?</i>	1
	<i>Major ATSIM Features</i>	2
	<i>How does ATSIM work?</i>	2
	<i>Getting Started with ATSIM as a Web-Based Application.</i>	3

2	<i>Data Collection</i>	5
	<i>Why Standard Attributes?</i>	5
	<i>What are the ATSIM Standard Attributes?</i>	5
	<i>Agency Information Attributes</i>	6
	<i>Location Attributes</i>	6
	<i>Amenity Attributes</i>	8
	<i>Shelter Attributes</i>	8
	<i>Bench Attributes</i>	9
	<i>ADA Compliance Attributes</i>	11
	<i>Miscellaneous Attributes</i>	12
	<i>Customizable Attributes</i>	12
	<i>Images Attributes</i>	13
	<i>Key Functions</i>	13
	<i>Search</i>	14
	<i>Map</i>	14
	<i>Add</i>	14
	<i>Save</i>	14
	<i>Delete</i>	14
	<i>Print</i>	14
	<i>Background Color Changer</i>	15
	<i>Move Back</i>	15
	<i>Log out</i>	15
	<i>GPS Feature</i>	15

Image Upload Feature..... 16

3 *Data Management* **20**

Export 21

Queries 21

Charts 21

Reports 22

4 *Maps* **23**

5 *Work Orders* **24**

Work Orders 25

Agency Information..... 25

Request 25

Assignment..... 26

Status 27

Images..... 28

Queries 29

Querying Work Orders 29

Maps 30

Reports 30

Full Report..... 31

Field Report..... 31

Work Orders Field Management..... 33

6 *Transit Applications* **35**

Retrieving Transit Stop Attributes and Pictures 35

Query Function 36

Querying Transit Stop Inventory 38

Transit Stop Summary and Charts 39

Summary Report 39

Charts 41

7 Administration Features 42

- User Management 42
- Field Management 43

8 Field Guidelines 46

- Data Collection Plan 46
 - Initial Field Survey 46
 - Date and Time 46
 - Crew Assignment 46
 - Mode of Travel 47
 - Safety Accessories 47
 - Miscellaneous Items 48
- Crew Training 48
- Data Collection Procedure 49
 - Equipment Setup 49
 - Pictures 49
 - Batteries 49
- Data Quality Assurance 50
- Technical Support 50

Appendix A: Quick Reference Guide 51

- Accessing ATSIM Data Collection a device/computer ... 51
- Accessing Work Orders on a device/computer 51
- Accessing Data Management on a device/computer 51
- Accessing Maps on a device/computer 52

1

Introduction

This guide provides detailed instructions on how to effectively use the Automated Transit Stop Inventory Model (ATSIM). Users should be familiar with the general operation of computers, internet browsers, and tablets.

What is ATSIM?

ATSIM is a completely web-based system designed for the collection, update, and management of standard transit stop inventories for transit agencies in Florida, but it can also be easily adapted for agencies outside Florida. ATSIM is designed to keep track of transit stop facilities and their amenities. It automates the data collection and analysis process, and avoids time-consuming manual data entry and duplication of records by individual agencies. The data collection component of ATSIM consists of a web interface and a tablet that can be accessed wirelessly. It is designed to run on a device that has a camera, internet access, and a Global Positioning System (GPS). The system allows collection of close to 100 standard attributes, user-defined fields, and latitude and longitude GPS coordinates. The system also has the capability to store multiple pictures in the database.

Why Transit Stop Inventory?

Transit stop inventories are needed for tracking the locations of stops, identifying the type and conditions of amenities, determining how well areas of interest are served by transit services, assessing the accessibility for disabled persons and Americans with Disabilities Act (ADA) compliance, and upgrading the right-of-way infrastructure. Transit Stop Inventories are useful tools for asset management in that they assist transit agencies with keeping a detailed inventory of valuable assets. Furthermore, the advent of Advanced Public Transportation Systems (APTS) or Transit Intelligent Transportation Systems (ITS) makes it even more important for transit agencies to keep an up-to-date inventory of transit stop data. An accurate transit stop inventory is essential to implementing APTS or transit ITS projects, such as automatic passenger counters (APC), automatic vehicle locators (AVL), computerized trip planners, or real time information systems.

Why ATSIM?

The traditional methods of collecting transit stop inventory using a clipboard, pencil, paper, and spreadsheets are time-consuming, inaccurate, and difficult to update. As a result, transit agencies are often reluctant to commit resources to such efforts. ATSIM replaces traditional methods and provides an automated and affordable alternative to collecting, updating, and managing transit stop data. The availability of ATSIM also avoids duplication of development efforts by multiple agencies, and contributes to the standardization of transit stop inventories in Florida.

Major ATSIM Features

ATSIM is a web-based system that uses Microsoft SQL Server as the back-end database. Version 6.0 of ATSIM includes numerous improvements and additional Work Orders management features. The following are the major key features:

- Accessible through a web browser
- Collection of close to 100 standard transit stop attributes, including GPS locations and digital photos
- Customizable user-defined fields and list-box selection items
- Google Map capability
- Easy updates of existing stop records in the field or any location
- Export to different formats (CSV, GTFS, GIS) and ZIP for pictures
- Manage Work Orders
- Generate Reports
- Run Queries and charts
- Search feature
- And much more

How does ATSIM work?

This section describes the ATSIM process and data flow. Users can access ATSIM through a web browser using a computer, tablet, smartphone, or laptop. In the field, a crew member can collect new data or search for a particular stop from the database. Once a record is retrieved, it can be edited. After the stop information has been updated, the crew member can save it to the database. Figure 1-1 shows the process and data flow functions of ATSIM.

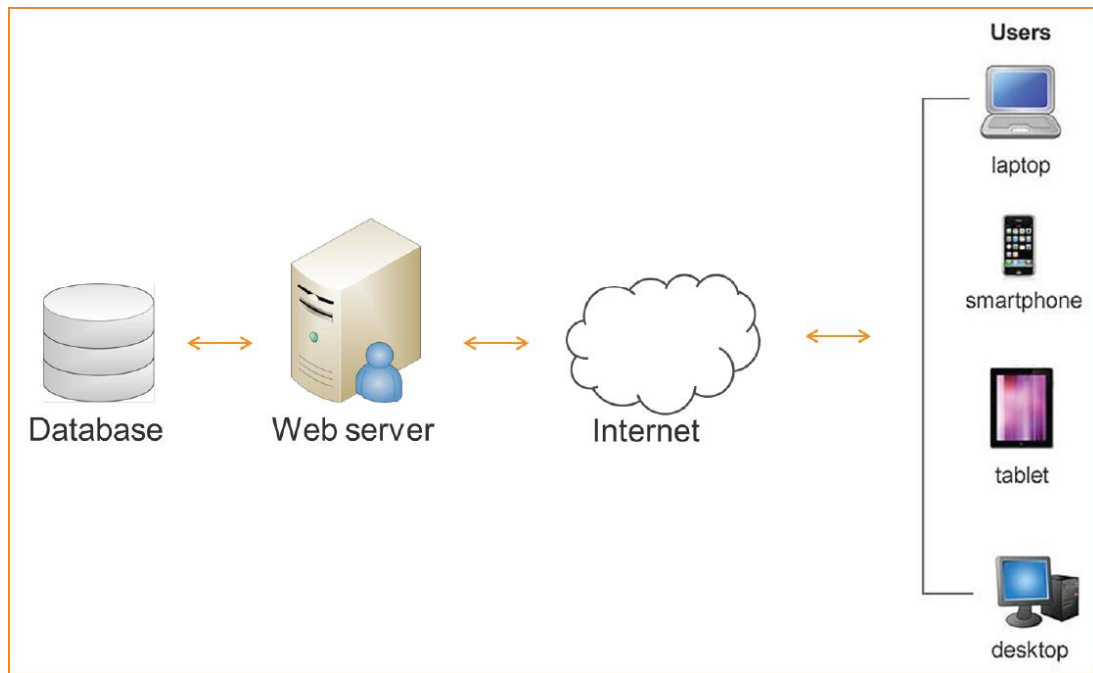


Figure 1-1. ATSIM process and data flow.

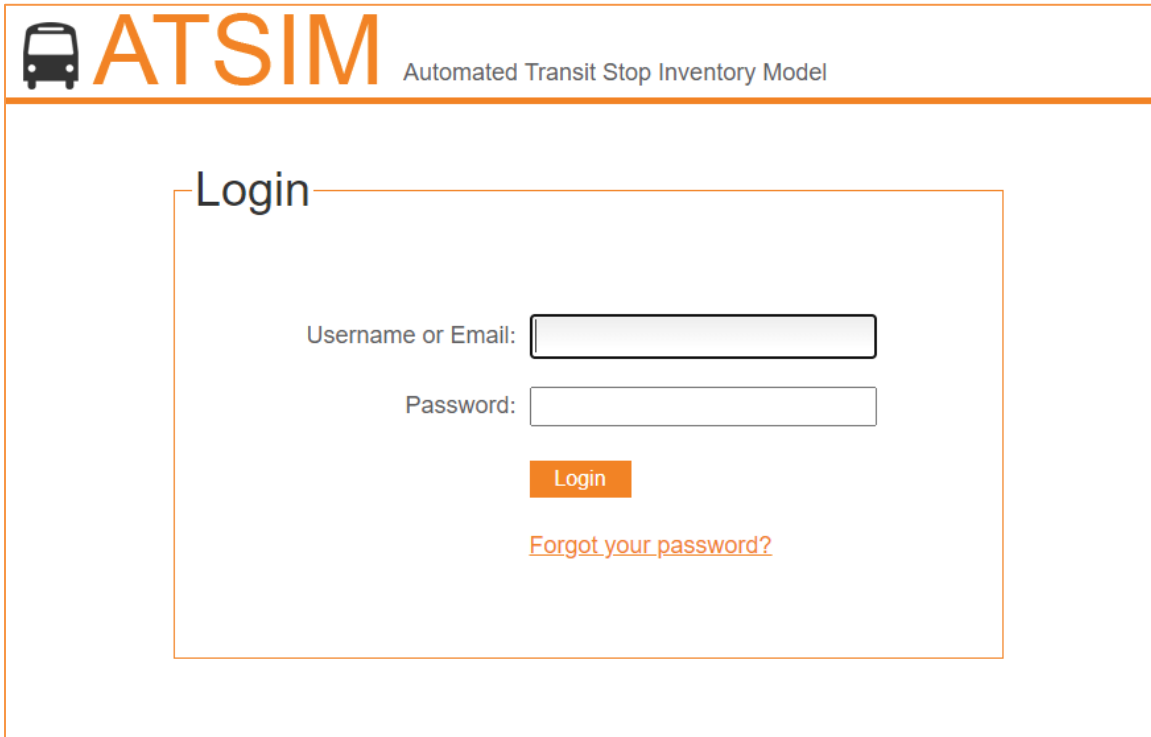
Getting Started with ATSIM as a Web-Based Application

Users must have an authorized username and password to log into the ATSIM web-based application. ATSIM can be accessed from a computer in the office or a tablet for fieldwork. Any tablet with a camera and GPS capability should work, since ATSIM resides on the web servers and not on the tablets. Once ATSIM is accessed, the user can enjoy its many features, such as providing stop locations using Google Maps, printing work orders and reports, generating reports, uploading pictures, and much more. For security reasons, ATSIM connections will expire after one hour of inactivity; users will then be logged out. It is also recommended to log out the system when fieldwork has been completed. Figure 1-2 shows the ATSIM log-in screen, which provides added security and protects data integrity.

Note: The ATSIM web-based application is best viewed using the latest browsers.

Tip: Bookmark the ATSIM website for quick access.

Important: Users should be familiar with all of the features of the data collection device before using ATSIM.



The screenshot displays the ATSIM login interface. At the top left, there is a bus icon followed by the text 'ATSIM' in a large, bold, orange font. To the right of 'ATSIM' is the subtitle 'Automated Transit Stop Inventory Model' in a smaller, grey font. Below the header, the word 'Login' is centered in a large, grey font. Underneath 'Login' is a white rectangular box containing the login form. The form has two input fields: the first is labeled 'Username or Email:' and the second is labeled 'Password:'. Below these fields is an orange button with the text 'Login' in white. At the bottom of the form box, there is a link that reads 'Forgot your password?' in orange text.

Figure 1-2. ATSIM Log-in screen.

The ATSIM main menu consists of four modules:

1. Data Collection
2. Work Orders
3. Data Management
4. Maps

Figure 1-3 shows the ATSIM main menu screen, which provides a gateway to accessing the various functions of ATSIM.



Figure 1-3. ATSIM main menu screen.

2 Data Collection

This section defines the standard and customizable attributes adopted in ATSIM.

Why Standard Attributes?

A standard transit stop inventory allows the Florida Department of Transportation (FDOT) to effectively develop tools that can be used by all transit agencies. When transit stop inventories are developed separately by individual agencies, they do not share the same data structure, attributes, accuracy, software platform, etc.

What are the ATSIM Standard Attributes?

The majority of the standard attributes in ATSIM were identified based on both an agency survey and a review of existing transit stop databases from transit agencies in Florida. The agency survey was conducted in 2004 to obtain information on the state-of-the-practice in transit stop inventories. This information was incorporated into earlier versions of ATSIM. Later in 2012, a teleconference was conducted to present a proposal for the new version of ATSIM and to get feedback from the transit agencies. Based on the teleconference and direct communication with the transit agencies, the Lehman Center for Transportation Research (LCTR) at Florida International University (FIU) added several new fields and made significant improvements to ATSIM. Since then, with the support from FDOT, the LCTR team continues to improve the ATSIM application based on feedback from the users.

Now the standard transit stop inventory has close to one hundred attributes that includes twenty general attributes that can be used for specific needs. This assures that Florida's transit systems can have a set of attributes with the same consistent definitions. Version 6.0 allows collection of standard attributes, user-defined fields, and latitude and longitude GPS coordinates.

There are seven sections in the data collection component, as follows:

1. Agency Information
2. Location
3. Amenities
4. ADA Compliance
5. Miscellaneous
6. Add Fields
7. Images

Agency Information Attributes

The Agency Information Attributes is the initial setting after logging in and clicking on the “Data Collection” button from the ATSIM main menu. Figure 2-1 displays the agency information section screen.

The screenshot shows the ATSIM web application interface. At the top, there is a navigation bar with the ATSIM logo, a 'New Record' button, and a set of icons including back, forward, search, add, delete, print, and refresh. Below the navigation bar is a tabbed menu with 'Agency Information' selected. The main content area displays 'Agency Information' with the following fields: 'Assessor: LCTR', 'Selected System: FDOT', and 'State: Florida'.

Figure 2-1. ATSIM agency information section.

The Agency Information Attributes are described below:

1. **Assessor:** The name of the person who performs the field data collection.
2. **Selected System:** The agency that performs the field data collection.
3. **State:** The state where the transit agency is located.

Location Attributes

The Location Attributes section allows users to enter the field data related to each transit stop location. Figure 2-2 displays the Location Attributes screen.

The screenshot shows the ATSIM web application interface for the Location Attributes section. The form is titled 'Location' and contains the following fields: 'Stop Number', 'Stop Name', 'Stop Class' (dropdown), 'On Street', 'At Street', 'Latitude', 'Longitude', 'Get GPS' button, 'Routes', 'Time Point' (checkbox), 'Transfer Point' (checkbox), 'Placement' (dropdown), 'Travel Direction' (dropdown), 'Municipality' (dropdown), 'Status' (dropdown), 'Landmark' (dropdown), and 'Location Notes' (text area).

Figure 2-2. ATSIM Data Entry Section for Location Attributes.

1. **Stop Number:** A unique identifier assigned to a transit stop. It is common for agencies to assign this number to the transit stop sign. This is a computer-generated number that is automatically incremented. If a transit agency has a different numbering system, this field can be edited for manual data entries.
2. **Stop Name:** A stop name used as a stop identifier established by an agency.
3. **Stop Class:** A stop location based on a selection of County, Local, Private, and State rights-of-way.
4. **On-Street:** The name of the street along a transit route.
5. **At-Street:** The name of the closest cross-street to the stop location.
6. **Latitude and Longitude:** These are the latitude and longitude coordinates. The numbers are automatically filled in from the built-in GPS receiver after the user clicks on the "Get GPS" button. The geographic locations can also be entered manually.
7. **Routes:** All route numbers served by the stop (enter each route number, separated by a comma, and followed by a space).
8. **Time Point:** Whether or not the stop is used as a time point.
9. **Transfer Point:** Check if the stop is a transfer point.
10. **Placement:** The stop location is associated with the cross-street. It can be "Far" for far-side stop, "Near" for near-side stop, "Midblock" for mid-block stop, and "Terminal." When "Near" and "Far" are selected, the corner location and distance fields will appear on the right. When "Midblock" is selected, the midblock field will appear on the right. The determination of whether a stop is on the far- or near-side depends on its location to the nearest intersection. If "Terminal" is selected, no additional fields will appear.
 - a. **Midblock:** The midblock field will appear when the Midblock option, in the Placement dropdown list, is selected. The standard selection for Midblock is ES for (East Side), WS for (West Side), NS for (North Side), and SS for (South Side). A stop can be considered midblock if it is located more than 200 feet from its nearest intersection.
 - b. **Corner Location:** The corner location dropdown field will only appear when either the Near or Far option, in the Placement dropdown list, is selected. The street corner where the stop is located. It can be labeled as NE (Northeast), NW (Northwest), SE (Southeast), or SW (Southwest).
 - c. **Distance:** The distance dropdown field will only appear when either the Near or Far option, in the Placement dropdown list, is selected. This is the distance, in feet, from the transit stop to the cross-street. If a measuring wheel is not used, this can be a distance estimated by the assessor (the nearest 5 or 10 feet should be sufficient).
11. **Travel Direction:** The travel direction of the street on which the stop is found. It can be EB (Eastbound), WB (Westbound), NB (Northbound), or SB (Southbound).
12. **Municipality:** The name of the municipality where the stop is located.
13. **Status:** "Active" if the transit stop is currently being used, or "inactive" if it is not used.
14. **Landmark:** The major landmark served by the transit stop if one exists near the stop. The landmarks include 38 options. The following table shows some of the landmark options.

Airport	Industrial Complex	Prison
Apartment Complex	Lake	Religious Institution
Bridge	Library	Restaurant

Bus Terminal	Mall	School
Campground	Marine Terminal	Shopping Center
Cemetery	Military	Stadium
City/Town Hall	Museum	Trailer Park
Court House	Nursing/Retirement Home	Train Station
Fire Dept	Office Building	Theatre
Golf Course	Park/Recreation	Tower
Government Center	Park-N-Ride	University/College
Hospital	Police Department	Others
Hotel/Motel	Post Office	

15. **Location Notes:** A “note” is included for the assessor to document any special conditions that exist at the stop.

Amenity Attributes

The Amenity Attributes section uses information pertaining to shelter and bench amenities. Figure 2-3 shows a screen capture of the ATSIM Amenity Attributes.

Shelter Attributes

Because shelters and benches are important stop amenities, ATSIM provides additional attributes to record additional information for these facilities. The following additional attributes are included for shelters:

1. **Number of Shelters:** Allows the entry of the total number of shelters at a transit stop. There can be situations when an agency places more than one shelter at busy locations or transit terminals. To be able to enter the shelter information, 1 or more shelters need to be selected from the dropdown list. Note that for stops with no shelter, “0” needs to be selected from the dropdown list. If a number is not selected, the system will consider as if no data have been collected.
2. **Current Shelter:** When there is more than one shelter, this item allows the selection of a particular shelter from the total number indicated in the “Number of Shelters” field.
3. **Shelter Ownership:** The name of the shelter owner. The standard selection options are Primary Transit, Other Transit, Municipality, University, Business, and Advertisement Firm.
4. **Shelter Installation Year:** The year the shelter was installed.
5. **Shelter Condition:** The condition of the shelter, which can be Good, Average, or Poor.
6. **Shelter Type:** The type of material the shelter is made of. The standard selection options are Mostly Wood, Mostly Brick/Concrete, Mostly Metal, Mostly Plastic, and Other.
7. **Shelter Seating Capacity:** The total seating capacity inside the shelter.
8. **Graffiti:** Whether or not there is graffiti on the shelter.
9. **Total Width:** The total width of the shelter in feet.
10. **Total Height:** The total height of the shelter in feet.
11. **Total Depth:** The total depth of the shelter in feet.
12. **Wheelchair Accessibility:** Whether the shelter is wheelchair accessible. The standard selection items are Easy, Difficult, and Not Possible.
13. **Shelter Light:** Whether or not there is lighting inside the shelter.

14. **Advertisement:** One of the following options can be selected: on bench, on shelter, on both, and no advertisements.
15. **Trash Can:** Whether or not there is trash can inside the shelter.
16. **Schedule:** Whether or not there is a printed schedule inside the shelter.
17. **Map:** Whether or not there is a map inside the shelter.
18. **Electronic Message:** Whether or not there is an electronic message device inside the shelter.
19. **Information Display:** Whether or not there is a selected area for information display inside the shelter.
20. **Shelter Notes:** A “note” field is included for the assessor to document any special conditions related to the shelter attributes.

Bench Attributes

The following additional attributes are included for benches:

1. **Number of Benches:** Allows the entry of the total number of benches at a transit stop. There can be situations when an agency places more than one bench at busy locations or transit terminals. To be able to enter the bench information, 1 or more benches need to be selected from the dropdown list. Note that for stops with no benches, “0” needs to be selected from the dropdown list. If a number is not selected, the system will consider as if no data have been collected.
2. **Current Bench:** When there is more than one bench, this item allows the selection of a particular bench from the total number indicated in the “Number of Benches” field.
3. **Bench Ownership:** The name of the bench owner. The standard selection options are Primary Transit, Other Transit, Municipality, University, Business, and Advertisement Firm.
4. **Bench Installation Year:** The year the bench was installed.
5. **Bench Condition:** The condition of the bench, which can be Good, Average, or Poor.
6. **Bench Type:** The type of material the bench is made of. The standard selection options are Mostly Wood, Mostly Concrete, Mostly Metal, Mostly Plastic, and Other.
7. **Bench Seating Capacity:** The total seating capacity of that bench.
8. **Graffiti:** Whether or not there is graffiti on the bench.
9. **Bench Notes:** A “note” is included for the assessor to document any special conditions related to the bench attributes.

Amenities

Number of Shelters <input type="text"/>	Number of Benches <input type="text"/>
Current Shelter <input type="text"/>	Current Bench <input type="text"/>
Shelter Ownership: <input type="text"/>	Bench Ownership <input type="text"/>
Shelter Installation Year: <input type="text"/>	Bench Installation Year: <input type="text"/>
Shelter Condition: <input type="text"/>	Bench Condition: <input type="text"/>
Shelter Type: <input type="text"/>	Bench Type: <input type="text"/>
Shelter Seating Capacity: <input type="text"/> persons	Bench Seating Capacity: <input type="text"/> persons
Graffiti: <input type="checkbox"/>	Graffiti: <input type="checkbox"/>
Total Width: <input type="text"/> feet Total Height: <input type="text"/> feet	Bench Notes: <input type="text"/>
Total Depth: <input type="text"/> feet	
Wheelchair Access: <input type="text"/>	
Shelter Light: <input type="checkbox"/>	
Advertisement: <input type="text"/>	
Trash Can: <input type="checkbox"/> Schedule: <input type="checkbox"/> Map: <input type="checkbox"/>	
Electronic Message: <input type="checkbox"/> Information Display: <input type="checkbox"/>	
Shelter Notes: <input type="text"/>	
Trash Can (not at a shelter): <input type="checkbox"/>	
Bike Rack: <input type="checkbox"/> Vending Machine: <input type="checkbox"/> Restroom: <input type="checkbox"/> Nearby Phone: <input type="checkbox"/>	
Parking: <input type="checkbox"/> Newspaper: <input type="checkbox"/> Info Kiosk: <input type="checkbox"/> Lighting: <input type="text"/>	

Figure 2-3. ATSIM data entry section for Amenities settings.

At the bottom of this section, ATSIM includes the following 9 items:

1. **Trash Can (not a shelter)**
2. **Bike rack**
3. **Vending machine**
4. **Restroom**
5. **Nearby phone**
6. **Parking**
7. **Newspaper**
8. **Info kiosk**
9. **Lighting**

Most of these items can be recorded with a check mark whether they exist or not. The “Trash Can (not a shelter)” item allows to record trash cans outside shelters. For Lighting , one of the following options can be selected: street light, building light, solar, and no light.

ADA Compliance Attributes

The ADA Compliance section helps assess if a stop is in compliance with ADA regulations. Figure 2-4 shows ATSIM ADA-related attributes.

1. **Sidewalk:** Whether there is sidewalk equal to 5 feet or greater, a sidewalk with less than 5 feet, or no sidewalk.
2. **Curb Type:** Specifies whether the curb is rural or urban.
3. **Loading pad:** Whether or not there is a 5x8 loading pad to help people in wheelchairs board the transit vehicle.
4. **Obstructions:** Whether or not there are obstructions that will prevent people in wheelchairs from accessing the stop, including obstructions in any access direction.
5. **Curb cut:** Whether or not there are ramps to allow people in wheelchairs to get to the transit stop.
6. **Nearby Pedestrian Crossing:** Whether there is a nearby pedestrian crossing that may be used by people in wheelchairs.
7. **Terrain:** The general terrain where the stop is located. The dropdown list includes the following items: Flat, Minor Slope, and Major Slope.
8. **Surface:** The ground surface near the stop. The dropdown list includes the following items: Mostly Concrete, Mostly Brick, Mostly Wood, Mostly Gravel, Mostly Grass, Mostly Soil/Sand, and Other.
9. **ADA access:** Three levels of ADA accessibility are used: Accessible, Functional, and Not Accessible. A transit stop is considered accessible when people in wheelchairs can access it and meets the ADA requirements. A functional stop can be accessed by people in wheelchairs, but do not meet the ADA requirements. A stop is considered inaccessible if people in wheelchairs cannot reach it.
10. **Cross Slope:** The percentage of the cross slope at the stop.
11. **Running Slope:** The percentage of the running slope at the stop.
12. **ADA Compliance Notes:** A “note” field is included for the assessor to document any special conditions that exist at the stop.

ADA Compliance

Sidewalk: <input type="text" value=""/>	Curb Type: <input type="text" value=""/>	
Loading Pad: <input type="checkbox"/>	Obstruction: <input type="checkbox"/>	Curb Cut: <input type="checkbox"/>
	Nearby Ped Crossing: <input type="checkbox"/>	
Terrain: <input type="text" value=""/>	Surface: <input type="text" value=""/>	ADA Access: <input type="text" value=""/>
Cross Slope: <input type="text" value=""/> %	Running Slope: <input type="text" value=""/> %	
ADA Compliance Notes: <input style="width: 100%; height: 40px;" type="text"/>		

Figure 2-4. ATSIM data entry section for ADA-Compliance settings.

Miscellaneous Attributes

The Miscellaneous Attributes section contains additional attributes. Figure 2-5 shows the ATSIM Miscellaneous Attributes.

1. **Notes:** A “note” is included for the assessor to document any special conditions that exist at the stop.
2. **Bike Lane:** Whether or not a bike lane exists in front of the transit stop. The standard selections include the following items: On Road, Lane with Barrier, Multiuse Trail, Sharrows, and None.
3. **Stop Sign:** Whether or not there is a transit stop sign.
4. **Sign Mount:** The type of post to hold the transit stop sign. It can be a dedicated post used exclusively for the stop sign, a utility pole, or any other type of pole. The standard selections include the following items: Pole, Post, Shelter, Building, and Other.
5. **Posted Speed:** The posted speed limit on the street at which the transit stop is located.
6. **Bus Bay:** Whether or not a bus bay exists; it is a specially constructed area separated from the travel lanes, located off the normal section of a roadway.
7. **Stop Sign not Clear:** Whether or not the information on the transit stop sign has become difficult to read.
8. **Trees:** Whether or not there are trees blocking the stop.

The screenshot shows a form titled "Miscellaneous" with the following fields:

- Bike Lane:
- Stop Sign:
- Sign Mount:
- Posted Speed: mph
- Bus Bay:
- Sign Not Clear:
- Trees:
- Miscellaneous Notes:

Figure 2-5. ATSIM Data Entry Section for Miscellaneous Attributes.

Customizable Attributes

The ATSIM Add Fields section, as shown in Figure 2-6, allows individual agencies to include up to twenty additional attributes to meet agency-specific needs. These attributes can be used when agency-specific attributes do not exist in ATSIM and can be customized by the designated ATSIM Administrator (see the Field Management section in Chapter 7). They include eight entry field attributes (i.e., Other1, Other2, Other3, Other4, Other17, Other18, Other19, and Other20), eight drop-down attributes (i.e., Other5, Other6, Other11, Other12, Other13, Other14, Other15, and Other16), and four checkbox attributes (i.e., Other7, Other8, Other9, and Other10).

Add Fields

Other1: <input type="text"/>	Other2: <input type="text"/>
Other3: <input type="text"/>	Other4: <input type="text"/>
Other5: <input type="text"/>	Other6: <input type="text"/>
Other7: <input type="checkbox"/>	Other8: <input type="checkbox"/>
Other9: <input type="checkbox"/>	Other10: <input type="checkbox"/>
Other11: <input type="text"/>	Other12: <input type="text"/>
Other13: <input type="text"/>	Other14: <input type="text"/>
Other15: <input type="text"/>	Other16: <input type="text"/>
Other17: <input type="text"/>	Other18: <input type="text"/>
Other19: <input type="text"/>	Other20: <input type="text"/>

Figure 2-6. ATSIM Add Fields settings section.

Images Attributes

The Images Attributes section allows the ATSIM system to store multiple pictures in the database. The user should read their device manual on using the camera to take pictures. Figure 2-7 shows the ATSIM upload system screen. More information on the ATSIM upload system can be found in the Camera Upload Feature section.

Images

Upload Files:

Figure 2-7. ATSIM Upload System.

Key Functions

ATSIM provides additional functionality through icons, located at the top of the Data Collection page. This section describes each of the key functions. Figure 2-8 shows these functions in order: First Record icon, Previous Record icon, Search Type Field with Go button, Next Record icon, Last Record icon, Map icon, Add Record icon, Save Record icon, Delete Record icon, Print Record icon, Background icon, and Log Out icon.



Figure 2-8. ATSIM Key functions.

Search

The search function allows the user to search the database for transit stop records through two different methods: 1) Type the stop number in the Search Text Field and press the “Go” button, or 2) Use the navigation arrows to browse through the records. Figure 2-9 illustrates the stop number search function. In order to navigate and search for stops, the user can also click on the First Record, Last Record, Previous or Next icons.



Figure 2-9. Stop Number Search Function.

Map

This function displays the stop on a Google map by using the acquired GPS latitude and longitude coordinates. To view the current location of a particular stop, click/tap the Map icon.



Figure 2-10. Map icon.

Add

This function is used to add a record. To create a new record, click/tap the Add icon.



Figure 2-11. Add Record icon.

Save

This function saves a record. Click/tap the Save icon at the top of the screen to save the record.



Figure 2-12. Save Record icon.

Delete

This function deletes a record. To delete a record, click/tap the Delete icon.



Figure 2-13. Delete Record icon.

Print

This function prints stop records, reports, etc. To print a record, click/tap the Print icon.

Important: Print settings will vary depending on each user’s printing capabilities. Printer settings may need to be adjusted if difficulties arise when attempting to print.



Figure 2-14. Print Record icon.

Background Color Changer

This function changes the background color when it is difficult to see the screen, depending on the lighting situation. This function is useful while out in the field. Options include three different background colors: medium gray, light gray, and white.



Figure 2-15. Background Color Changer icon.

Move Back

This function allows to move back to the previous screen by pressing the Move Back icon.



Figure 2-16. Move Back icon.

Log Out

This function allows the user to log out of the ATSIM system. To log out, simply click/tap the Log Out icon to exit the system.



Figure 2-17. Log Out icon.

GPS Feature

In order to use ATSIM effectively, the data collection device should have a built-in GPS receiver with access to a wireless network. Therefore, a data plan (at least 4G is recommended) should be purchased from AT&T, Verizon, Sprint, T-Mobile, or other cellular service provider. When accessing ATSIM on a computer or a tablet, “Allow” in the pop-up window must be clicked for the GPS function to work. This will allow to acquire the latitude and longitude coordinates of the user’s current location. Figure 2-18 shows an example of the pop-up window.

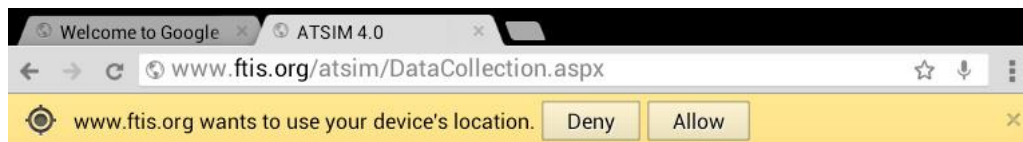


Figure 2-18. Share location pop-up window.

Note: The pop-up window message may vary depending on browser and device.

Important: If the “Allow” button is not pressed, an error message may pop up when trying to get the GPS coordinates.

Figure 2-19 shows the results of a search for latitude and longitude coordinates after the “Get GPS” button is pressed. Once the GPS coordinates are acquired and the record is saved (press

the “+” icon on top), the “Map it” icon will appear to the right of the “GPS” icon. The “Map It” button allows users to see the location of the transit stop in Google Maps or Satellite views. This allows users to click on the “red” icon and easily move a stop to a new location. This can be useful for correcting GPS locations that may not be accurate. If the GPS coordinates are known, users can enter them manually and, after saving the record, the “Map It” icon can be pressed to be able to move the location icon as needed. Figure 2-20 depicts a transit stop using the enhanced Map It function with Goggle Satellite maps.

Latitude: Longitude:

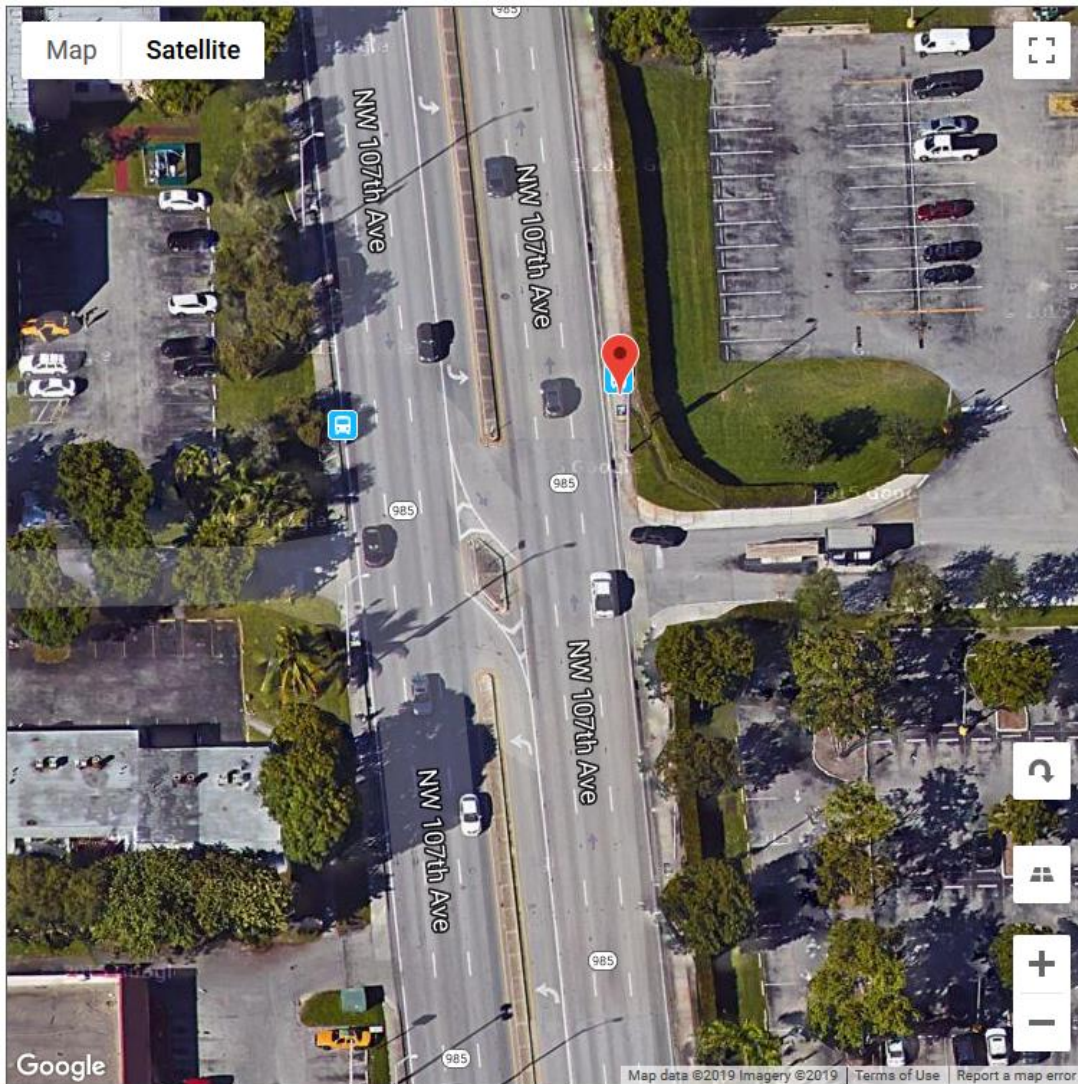


Image Upload Feature

The upload function allows a crew member to upload multiple transit stop images to the database. See Figure 2-7 for a screenshot of the ATSIM upload function. There are two ways to take pictures: using the camera or using the pictures stored in the gallery.

To take pictures, press the “Select File” button on the ATSIM upload function, and a menu will pop up (see Figure 2-21). Select the camera option. This will bring up another screen, as shown in Figure 2-22. Use the display as a viewfinder, compose the picture by aiming the lens at the subject, and touch the “Capture” button on the Android device. Then click “save” or discard the image to take a new picture. The following figures were created using the Samsung Galaxy tablet.

Important: Pictures can be taken with the highest resolution possible; however, larger-size pictures will take longer to upload.

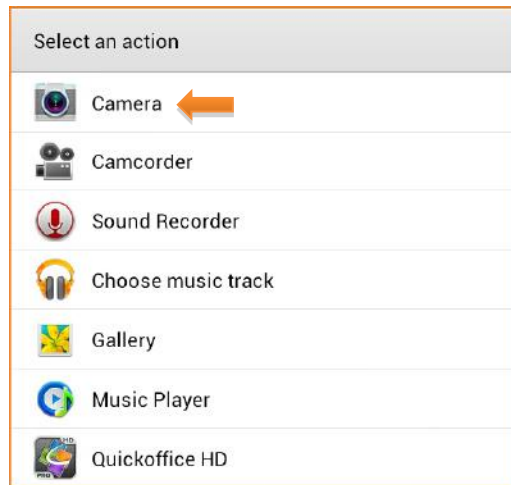


Figure 2-21. Android camera menu.

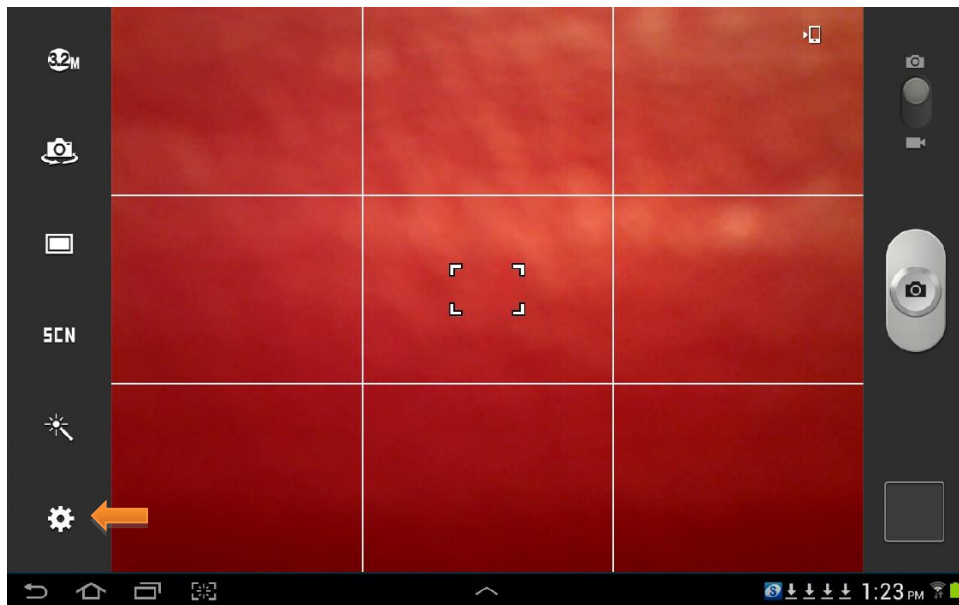


Figure 2-22. Android camera screen.

Note: To configure camera options, click the setting icon (lower left-hand corner).

Tip: To take better photos with the camera, focus the square bracket area at the center of the camera screen on the main object being photographed (for example, a transit stop sign). Also, in order to avoid changing the orientation of pictures, always take photos in the landscape feature, as shown in Figure 2-22.

Another way to upload pictures is to select “Gallery” in the camera menu. This allows the user to select multiple images (see Figure 2-23). Double-click/tap on a picture to select it. Click/tap “upload” in the ATSIM web-based application. The picture is now uploaded to the system.

Note: The actual display of pictures may vary, depending on different Android operating systems or any changes to the device’s settings.

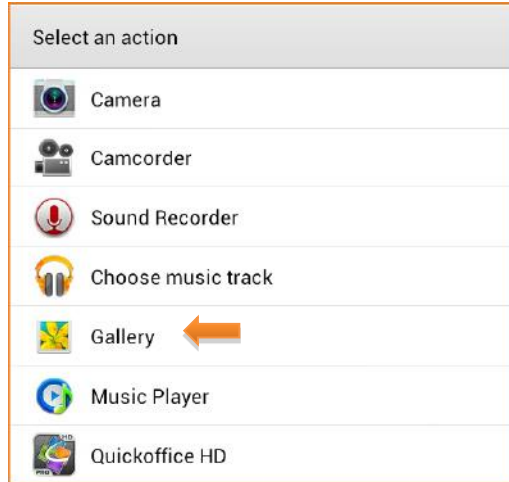


Figure 2-23. Android camera menu.

Once the images are uploaded, the upload function will change (see Figure 2-24). An image can only be removed after saving the record or removing the image before uploading (see Figure 2-25).



Figure 2-24. ATSIM upload system when images are uploaded.

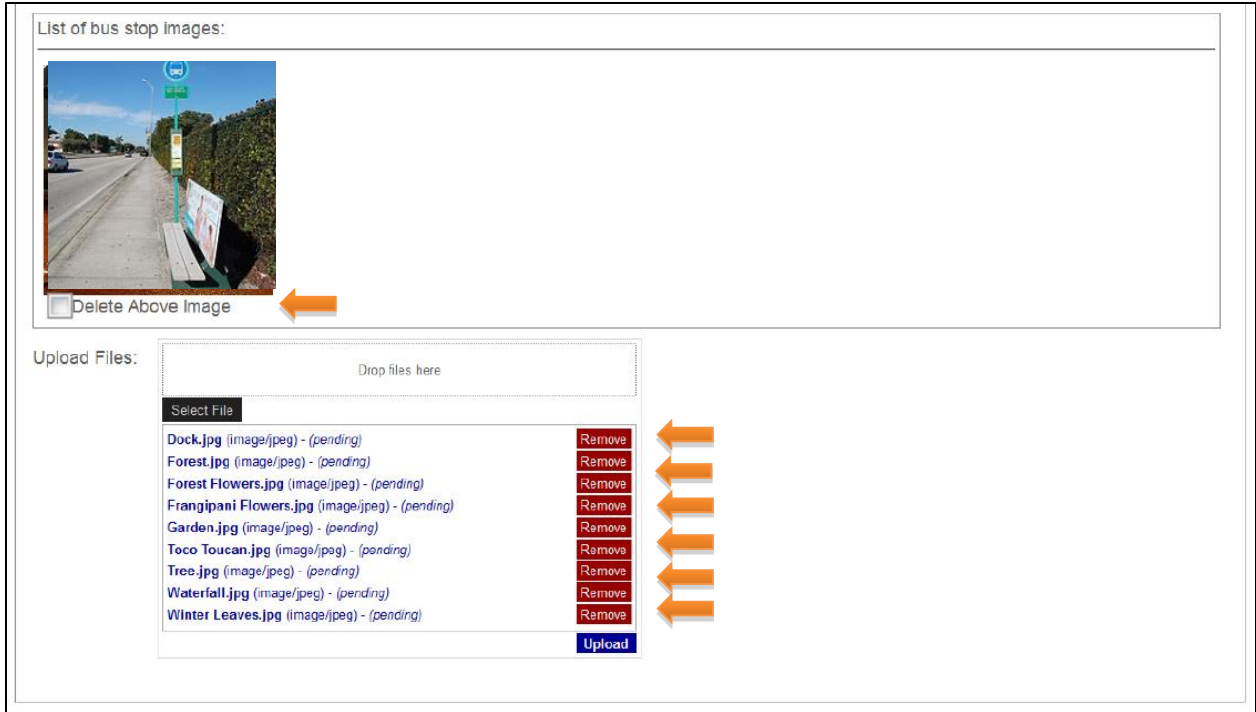


Figure 2-25. ATSIM upload system after record has been saved.

3 Data Management

The Data Management button allows users to export data and pictures, view and print reports, and generate queries and charts. To access the Data Management component, click the “Data Management” button (see Figure 1-3) from the main menu. Figure 3-1 shows the ATSIM “Data Management” button; Figure 3-2 shows the different functions within Data Management.



Figure 3-1. ATSIM Data Management button.



Figure 3-2. ATSIM Data Management button.

Export

The first function in Data Management is the Export function. This function allows users to export data in three different formats (CSV, GTFS, GIS), as well as export stop pictures, such as JPEGs (PICS). Figure 3-3 displays the ATSIM “Export” button.

- CSV (Comma Separated Value): CSV will save as a text file, which can be opened in Microsoft Excel.
- GTFS (General Transit Feed Specification): GTFS will save as a zip file, which contains text files.
- GIS (Geographic Information Systems): GIS will save as a zip file, which contains the three main GIS shapefiles (.dbf, .shp, shx).
- PICS: PICS will save as a zip file, which contains JPEGs or images for all stops.



Figure 3-3. ATSIM Export button.

Queries

The Queries function allows users to quickly retrieve transit stops based on specific criteria. The function is accessible by clicking the “Data Management” button from the ATSIM main menu, then selecting the “Queries” button (see Figure 3-4). Also Figure 6-4 depicts the Transit Stop Query user interface, showing the results of a query. Additional information can be found in Chapter 6 of this report.



Figure 3-4. ATSIM Queries Button.

Charts

The Charts function allows users to quickly obtain graphical information on the number and percentage of many stop attributes such as ADA, Bench, Bus Bay, Loading Pad, Shelter, Stops Position, Surface, etc. There is also an Export function at the top menu to save charts as a JPG or PDF. The chart can also be printed. This particular function can be accessed by selecting the “Data Management” button on the ATSIM main screen, then selecting the “Charts” button (see Figure 3-5). More detailed information on the charts feature can be found on the Transit Stop Summary and Charts section.



Figure 3-5. ATSIM Charts button

Reports

The Reports function allows users to generate and print reports based on information from transit stops. Figure 3-6 displays the ATSIM "Reports" button with the different reports available in ATSIM.



Figure 3-6. ATSIM Reports button.

4

Maps

The Google Maps function allows users to view and print current transit stops and surrounding areas using Google Map. It also allows users to quickly search stops on Google Maps and edit stop information. To access Google Maps, click the “Maps” button from the ATSIM main menu. Figure 4-1 displays the ATSIM Maps button and Figure 4-2 shows a typical ATSIM Map display. For additional information on the Google Maps functions, see the “Retrieving Transit Stop Attributes and Pictures” section in Chapter 6.



Figure 4-1. ATSIM Maps button.

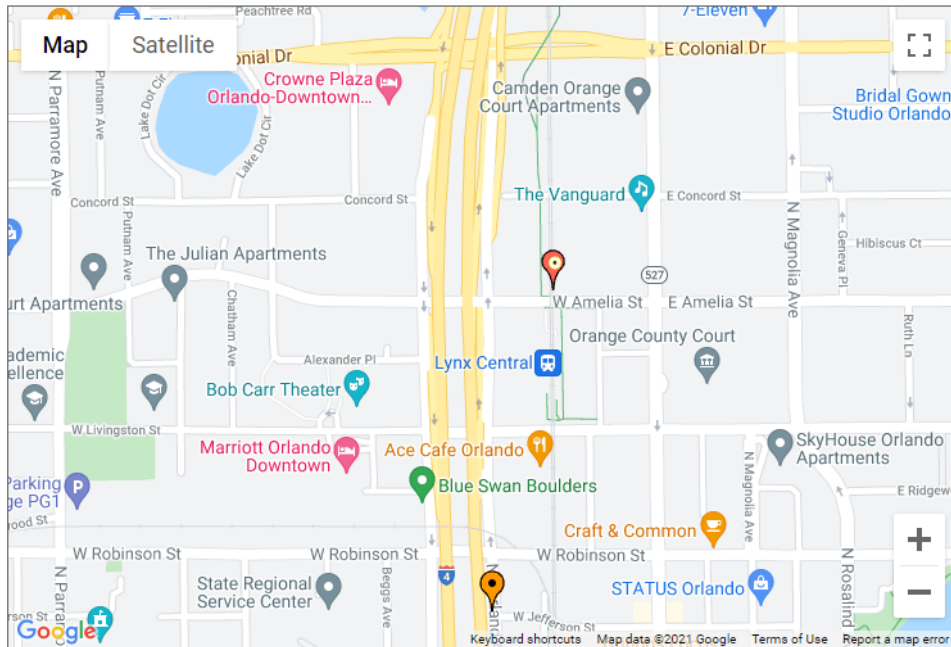


Figure 4-2. ATSIM Map display.

5 Work Orders

The Work Orders module allows the management of the work performed on transit stops. To access the work orders, click/tap the “Work Orders” button from the main menu (see Figure 5-1).



Figure 5-1. ATSIM Work Orders button.

Figure 5-2 shows the Work Orders main menu screen, which is the entryway to accessing the various functions in the Work Orders Module.



Figure 5-2. Work Orders main menu screen.

The Work Orders main menu consists of four submodules:

1. Work Orders
2. Queries
3. Maps
4. Reports

Work Orders

This submodule allows users to manage the work orders. The Work Orders submodule consists of five sections: Agency Information, Request, Assignment, Status, and Images.

Agency Information

The Agency Information is the section displayed at the top of the Work Order. Figure 5.3 displays the agency information section screen.

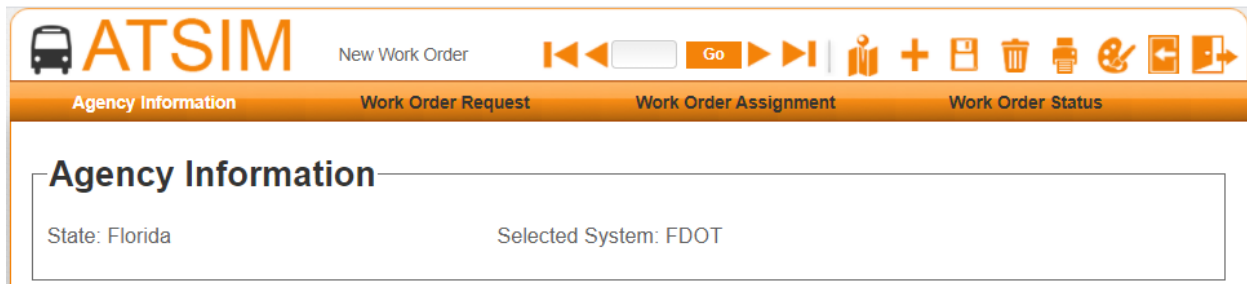


Figure 5-3. Work Orders Agency Information section.

The Agency Information contains the following attributes:

1. **State:** The state where the transit agency is located.
2. **Selected System:** The name of the selected agency.

Request

The Request section allows users to enter the work order information, based on a request for the work to be performed. Figure 5-4 displays the Request section. It includes the following items:

1. **Work Order Number:** A unique identifier assigned to a work order. This is a computer-generated number. As default, this number is automatically generated in incremental order. If an agency prefers entering this number manually, the system allows to change this setting. See the Work Orders Field Management section at the end of this chapter.
2. **Request Date Time:** The date and time when a work order is first created. This is automatically generated by the system when the work order is saved.
3. **Requested By:** The name of the person that made the request. The persons listed in the drop-down menu can be entered using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.

4. **Requested Sent to:** The name of the person that received the request. The drop-down menu contains the names of Supervisors or Managers that handle the Work Orders. These users can be added using the User Management interface (see Chapter 7).

Request

Work Order Number: <input type="text" value="73"/>	Request Date Time: 05/11/2021 07:25:10
Requested By: <input type="text"/>	Request Sent to: <input type="text"/>
Bus Stop Number: <input type="text" value="990"/>	Municipality: Coral Gables
Main Street: Ponce Deleon	Cross Street: SW 40th St
Request Notes: <input type="text"/>	
Other1: <input type="text"/>	Other2: <input type="text"/>

Figure 5-4. Work Order Request Section

5. **Stop Number:** A valid stop number. If the stop number does not exist, the Stop Number entry field will remain blank.
6. **Municipality:** If the name of the municipality where the stop is located. If this information exists in ATSIM, this field will be populated automatically.
7. **Main Street:** The name of the street along a transit route. If this information exists in ATSIM, this field will be populated automatically.
8. **Cross Street:** The name of the closest cross-street to the stop location. If this information exists in ATSIM, this field will be populated automatically.
9. **Request Notes:** This field allows entering information about the work order request.
10. **Other1.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.
11. **Other2.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.

Assignment

The Assignment section allows users (Supervisors or Managers) to assign the work to employees, based on the work to be performed. Figure 5-5 displays the Assignment section. It includes the following items:

1. **Assigned Employee:** The employee assigned to conduct the work. The name of the employees can be added using the Field Management interface. Once the employees are added, they will be displayed in the drop-down menu of the Assigned Employee field.
2. **Date and Time of Assignment:** The date and time when the work is assigned. This is automatically generated by the system.

3. **Supervisor or Manager:** The name of the person who assigns the work to be performed. The drop-down menu contains the names of Supervisors or Managers that handle the Work Orders. These users can be added using the User Management interface (see Chapter 7). To be able to edit this section, users need to have Assignment Work Orders permission or Approval Work Orders permission (see Chapter 7).

Assignment

The screenshot shows a form titled "Assignment" with the following fields:

- Assigned Employee: [Dropdown menu]
- Supervisor or Manager: [Dropdown menu]
- Safety issues: Yes No
- Average time to do the work: [Text input] days
- Date and Time of Assignment: [Text input]
- Service Type: [Dropdown menu]
- Expected completion date: [Text input]
- Assign Notes: [Large text area]
- Other3: [Text input]
- Other4: [Text input]

Figure 5-5. Work Order Assignment Section

4. **Service Type:** The type of work to be performed (e.g., installation, maintenance, repairs, etc.). The service types can be added using the Field Management interface. See the Work Orders Field Management section at the end of this chapter. Once these service types are added, they will be displayed in the drop-down menu of the Service Type field.
5. **Safety Issues:** This field allows users to choose (Yes or No) if the work to be performed is in response to a safety issue or not. This can help agencies track the work done to address safety issues.
6. **Estimated Days to Complete Work:** The estimated number of days of the work to be performed.
7. **Expected Completion Date:** This is the estimated completion date, based on the entered number of days of the work to be performed.
8. **Assignment Notes:** This field allows entering information regarding the assigned work. The information entered in this field will be also added to the Notes for field personnel in the Field Report.
9. **Other3.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.
10. **Other4.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.

Status

The Status section allows users (Supervisors or Managers) to enter information on the status of the work order. Figure 5-6 displays the Status section. It includes the following items:

1. **Current Status:** The field drop-down menu allows users to select the following information about the work order: Requested, Assigned, In-process, Completed, and Other.

2. **Last Status Changed:** The date and time when the information in the Current Status field is modified.
3. **Status Change Notes:** This field allows entering information regarding the status of the work order.

Status

Current Status: Last Status Change:

Status Change Notes:

Completed Date: (mm/dd/yyyy) Closed by:

Completed Notes:

Other 5: Other 6:

Figure 5-6. Work Order Status Section

4. **Completed Date:** This field allows users to enter the date when the work order is completed.
5. **Closed By:** The drop-down menu contains the names of Supervisors or Managers that approve the completed Work Orders. These users can be added using the User Management interface (see Chapter 7). Users in this category need to have Approval Work Orders permission (see Chapter 7).
6. **Completed Notes:** This field allows entering information regarding the work that has been completed.
7. **Other5.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.
8. **Other6.** This field can be used to enter additional information. The name of the field can be changed using the Field Management interface. See the Work Orders Field Management section at the end of this chapter.

Images

The Images section allows users to upload images related to the work being performed. Multiple pictures can be selected and uploaded into the system. Figure 5-7 shows the Work Order Image screen.

Images

Upload Files:

Figure 5-7. Work Order Images Section

Queries

The Queries function allows users to quickly retrieve work orders' information, based on specific criteria. This function is accessible by clicking the "Queries" button in the Work Orders module (see Figure 5-8).



Figure 5-8. Work Orders Queries button.

Querying Work Orders

After selecting Work Orders from the main menu and choosing the Queries option, the system will bring up the screen shown in Figure 5-9 depicts the user interface for the Work Order Query. Query statements act as filters for the work orders attributes and retrieve information from the work orders. Work Orders can be queried by Work Order Number, Request By, Request Sent To, Stop Number, Assigned Employee, Supervisor or Manager, Service Type, Safety Issues, Current Status, and Close By. Note that Map icon will not show up when the stop number has not been entered or when the stops do not have GPS coordinates. As the functionality of this feature is similar to the general Transit Stop Query, please refer to Chapter 3 (Data Management) and Chapter 6 (Transit Applications) of this report.

The screenshot shows the ATSIM application interface for the Work Order Query. At the top left is the ATSIM logo with a bus icon. The main content area is titled "Work Order Query" and contains a "Query Condition" section with dropdown menus for "Field Name", "Operator", and "Value", radio buttons for "AND" (selected) and "OR", and an "Add" button. Below this is a "Query Editor" text area containing the query "WorkOrderNum=2". There are "Reset" and "Apply" buttons below the editor. At the bottom, it shows "Total records: 1" and "Map" and "Export" buttons. A table displays the query results.

Work Order No.	Request Date	Requested by	Stop No.	Assignment Date	Assigned Employee	Service Type	Safety Issues	Current Status	Last Status Change	Completed Date	Closed by	Action	Action
2	08/19/2021	John Doe	9	08/20/2021	Maintenance worker	Install Sign	No					Edit	Map

Figure 5-9. User Interface for the Work Orders Queries.

Maps

The Work Orders Maps function allows users to view and print work order information. It includes Google maps to display the location of the stop where work is being performed. It allows users to quickly search work orders. To access the Work Orders Maps, click the “Maps” button from the Work Orders menu. Figure 5-10 displays the Work Orders Maps button. Figure 5-11 shows a typical Work Orders Map display. As this feature is similar to the general ATSIM Maps, please refer to see Chapters 4 and 6 for additional information on the Maps function.



Figure 5-10. Work Orders Maps button.

A screenshot of a Google Maps interface. On the left, there are tabs for "Map" and "Satellite". The map shows a street grid in Miami with several location pins. A red pin is highlighted. On the right, there is a "Work Order Information:" panel with two sections: "Request" and "Assignment".

Work Order Information:	
Request	
Work Order Number:	2
Request Date:	08/19/2021
Requested by:	4
Request Sent to:	0
Stop Number:	9
Municipality:	Miami
Main Street:	NW 107 Ave
Cross Street:	Flagler St
Request Notes:	test
Other 1:	3
Other 2:	
Assignment	
Assigned Employee:	1
Assignment Date:	08/20/2021
Supervisor or Manager:	0
Service Type:	1

Figure 5-11. Work Orders Map

Reports

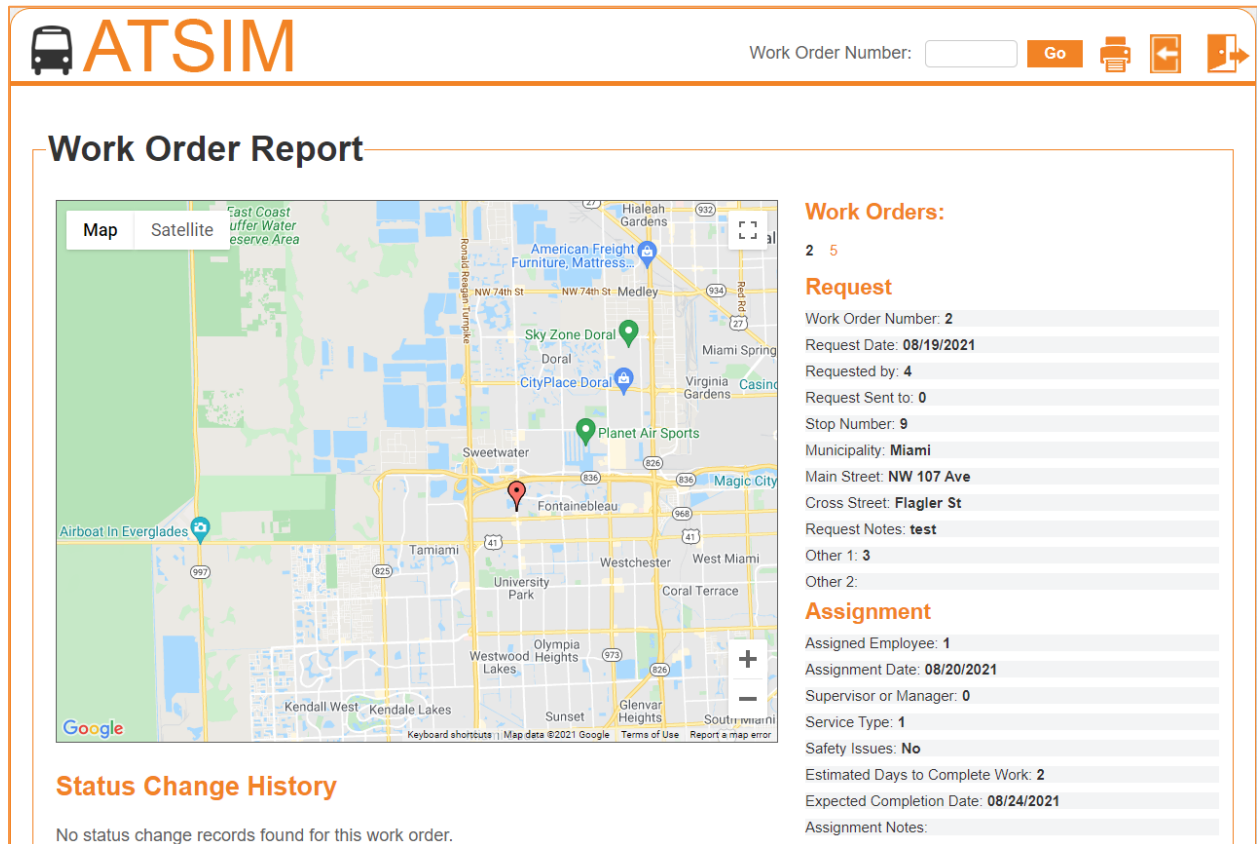
The Reports function allows users to generate and print reports based on information from the work orders. Figure 5-12 displays the ATSIM “Reports” button with the different reports available: Full Report and Field Report.






Figure 5-12. ATSIM Work Orders Reports button.

Full Report

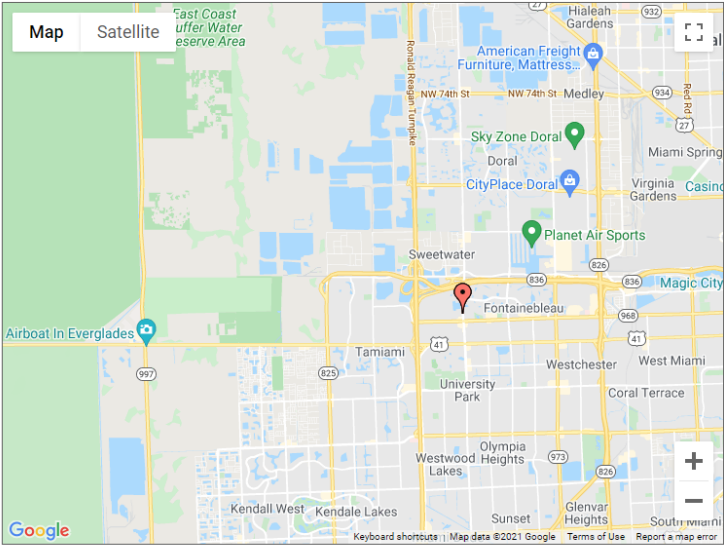
This report provides full information on a particular work order. A work order number can be searched using the search box on the top right of the full report web page. Figure 5-13 presents a partial screenshot of the Full Report page. The report also includes a map with the location of the stop where work is being performed.



ATSIM Work Order Number: **Go**   

Work Order Report

Map Satellite



Work Orders:
2 5

Request
Work Order Number: 2
Request Date: 08/19/2021
Requested by: 4
Request Sent to: 0
Stop Number: 9
Municipality: Miami
Main Street: NW 107 Ave
Cross Street: Flagler St
Request Notes: test
Other 1: 3
Other 2:

Assignment
Assigned Employee: 1
Assignment Date: 08/20/2021
Supervisor or Manager: 0
Service Type: 1
Safety Issues: No
Estimated Days to Complete Work: 2
Expected Completion Date: 08/24/2021
Assignment Notes:

Status Change History
No status change records found for this work order.

Figure 5-13. Work Orders Full Report

Field Report

This report provides information on a particular work order, see Figure 5-14. This report can be used to convey information to the field personnel on the work that needs to be performed. The work order number can be searched using the interface shown in Figure 5-15. The Work Orders Field Report can be saved as pdf and then printed. If no number is entered and the “Create PDF” button is pressed, a blank Field Report (Figure 5-16) will be generated in pdf format.

Work Order Number: 79		
On Street: NW 107 Ave	Reported by:	ADA Compliant: (Circle One) YES NO
At Street: Flagler St	Priority type: 1) Hazard/Emergency 2) Routine 3) Re-align rt. 4) RUSH/time deadline-do by _____	
Municipality: Miami	Work Type: 3) Remove 6) Re-install & Repair 1) Install new sign 4) Repair	
Bus travel direction: SB	2) Re-Install 5) Relocate	
Placement: 0) None 1) Far 2) Near 3) MidBlock 4) Terminal	Corner Side:	
Install Type: 1) Square post in concrete 2) Post-in ground 3) existing Square post 4) bare anchor- needs post _____ 5) existing u-iron in concrete 6) existing u-iron in ground 7) Other	Sign Type: 1) New style sign 2) No Parking-Bus 3) Do Not Enter 4) Bus Stop & No Prkg 5) No Prkg/No Entry/Bus Stop Zone 6) Bus stop/No Entry 7) Other	
Amenities: 1) Shelter 2) Bench 3) Trash can 4) Lighting 5) Other		
Route/destination decal list:	Sign size: Number of decals spaces needed _____	
1.	6.	
2.	7.	
3.	8.	
4.	9.	
5.	10.	
<p>Location Map</p>		
Notes: Replace stop pole.		
Supervisor / Manager:	Facilities Crew:	
Assigned Date:	Date Work Completed:	

Figure 5-14. Work Orders Field Report

Search

Please enter the work order number for the field report to be printed.

Work Order Number:

Figure 5-15. Work Orders Field Report Search Function

Stop Number:		
Bus Stop Work Order:	Inventory number:	Requisition Number:
On Street:	Reported by:	ADA Compliant: (Circle One) YES NO
At Street:	Priority type: 1) Hazard/Emergency 2) Routine 3) Re-align rt. 4) RUSH/time deadline-do by _____	
Municipality:	Work Type: 3) Remove 6) Re-install & Repair 1) Install new sign 4) Repair 2) Re-Install 5) Relocate	
Bus travel direction:	Corner Side:	
Placement: 0) None 1) Far 2) Near 3) MidBlock 4) Terminal	Install Type: 1) Square post in concrete 2) Post-in ground 3) existing Square post 4) bare anchor- needs post _____ 5) existing u-iron in concrete 6) existing u-iron in ground 7) Other	
Sign Type: 1) New style sign (blue & green) 2) No Parking-Bus 3) Do Not Enter 4) Bus Stop & No Prkg 5) No Prkg/No Entry/Bus Stop Zone 6) Bus stop/No Entry 7) Other		
Amenities: 1) Shelter 2) Bench 3) Trash can 4) Lighting 5) Other		
Route/destination decal list:	Sign size: Number of decals spaces needed _____	
1. _____	6. _____	
2. _____	7. _____	
3. _____	8. _____	
4. _____	9. _____	
5. _____	10. _____	
Date:	Field Check:	Status:
Location Map		
Notes:		
MDT Investigator: _____		Facilities Crew: _____
Date: _____		Date Work Completed: _____

Figure 5-16. Blank Work Orders Field Report

Work Orders Field Management

The Works Orders Field Management can be accessed by clicking the “wheel” icon on the top right of the Work Orders main page. This feature allows the customization of the following fields: Work Orders Requestors, Assigned Employee, Service Type, and several customizable fields. At the bottom of the page, users can select how the Work Order number is to be generated by the system: automatically or not. The default is that the work order numbers are generated automatically. Figure 5-17 shows the Work Orders Field Management User Interface.

Field Management

Field Number	Field Name	Edit												
1	<input type="text" value="Work Order Requestor"/>													
	<table border="1"><thead><tr><th>No.</th><th>List Option</th><th>Edit</th><th>Delete</th></tr></thead><tbody><tr><td>1</td><td>Jerry Kira</td><td>Edit</td><td></td></tr><tr><td>2</td><td>Tom Smith</td><td>Edit</td><td></td></tr></tbody></table>	No.	List Option	Edit	Delete	1	Jerry Kira	Edit		2	Tom Smith	Edit		
No.	List Option	Edit	Delete											
1	Jerry Kira	Edit												
2	Tom Smith	Edit												
	Add New Option													
2	Other1	Edit												
3	Other2	Edit												
4	Assigned Employee	Edit												
5	Service Type	Edit												
6	Other3	Edit												
7	Other4	Edit												
8	Other5 middle	Edit												
9	Other6 change	Edit												

Work Order number generated by system automatically:

Figure 5-17. Field Management User Interface

6

Transit Applications

In addition to using ATSIM for stop management and reporting, data can be used for other transit applications, such as shapefiles for GIS systems; stop data for transit planning; images and stop information for marketing applications; and data queries that can be tailored to answer many planning questions.

Retrieving Transit Stop Attributes and Pictures

A basic need on the part of transit agencies for transit stop information is to be able to quickly determine the conditions at a transit stop and its surrounding area. ATSIM provides several functions that allow users to conveniently retrieve the stop information of a transit stop, including pictures. These functions are listed as follows:

1. Data Collection
2. Queries
3. Maps
4. Reports
5. Exports

For example, transit stop information can be retrieved by clicking the “Maps” button on the ATSIM main screen (Figure 1-3). Once the map is displayed, enter the stop number on the search field at the top of the page to retrieve data, including the pictures. Figure 6-1 depicts a portion of the Transit Stop Map, retrieved from Maps. This will display the location of the stop on a map, the list of key features on the right side, and pictures at the bottom of the page. Similarly, Figure 6-2 shows a portion of the Transit Stop Map, retrieved from Full Report.

As added functionality, users can also navigate on the map to retrieve another stop information. Clicking on any transit stop icon on the map will retrieve and display the transit stop data. In addition, when using Maps (see Figure 6-1), users can select different attributes (e.g., ADA, Shelter, Stop Position, etc.) that will display the color-coded results on the map, based on the selected attribute.

Transit Stop Map

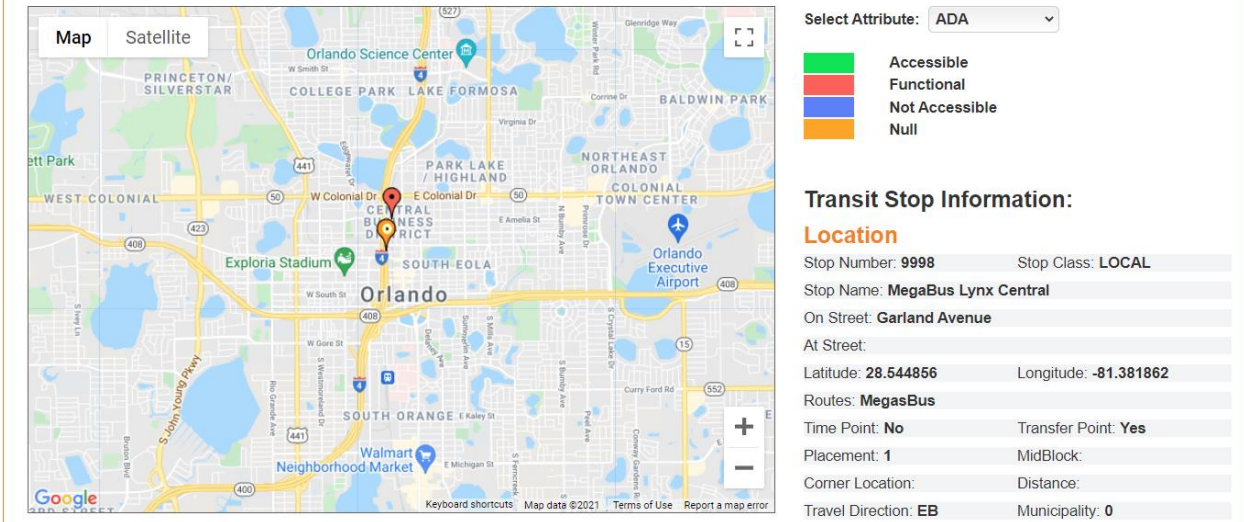


Figure 6-1. Retrieved Transit Stop Attribute Data from Maps.

Transit Stop Map

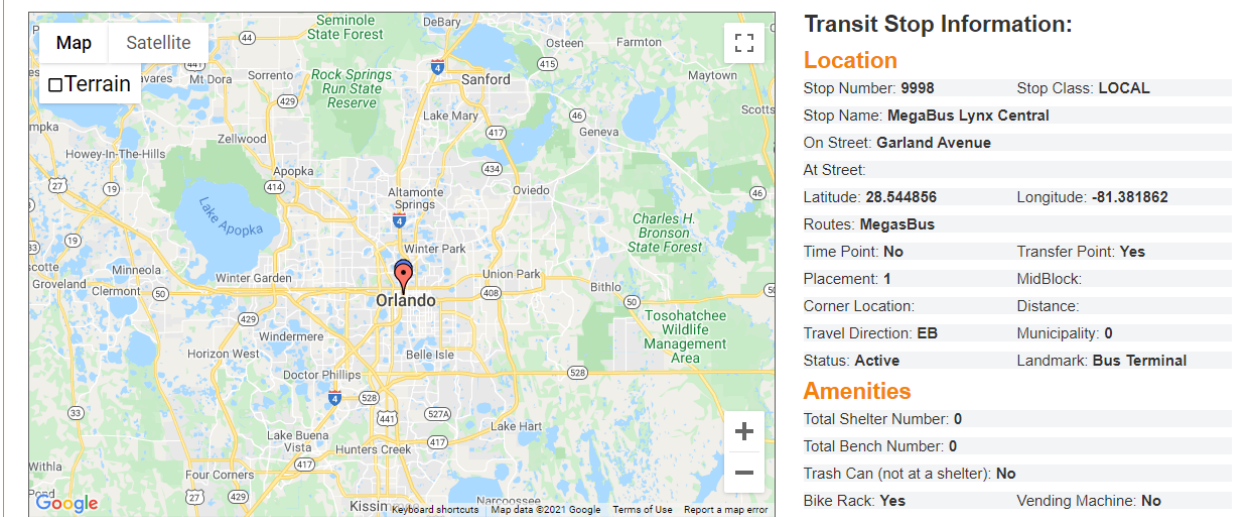


Figure 6-2. Retrieved Transit Stop Attribute Data from Reports.

Query Function

ATSIM includes a query function that quickly identifies transit stops possessing a specific set of features. The function is accessible by selecting “Data Management” from the ATSIM main menu (see Figure 1-3 and Figure 3-1). Selecting this menu option will bring up the screen displayed in Figure 6-3.



Data Management

The Data Management screen features four main categories, each represented by a rounded square button with an orange gradient and a dark border:

- Export**: Lists supported formats: CSV, GTFS, GIS, and PICS.
- Queries**: Represented by an icon of a database cylinder with a question mark.
- Charts**: Represented by an icon of a bar chart with five bars of varying heights.
- Reports**: Lists report types: FULL REPORT and SUMMARY REPORT.

Figure 6-3. ATSIM Data Management screen.

Querying Transit Stop Inventory

After selecting Data Management from the main menu and choosing the Queries option, the system will bring up the screen shown in Figure 6-4. Query statements act as filters for the transit stop attributes and only retrieve information of the stops that meet the specified condition(s), in which the following rules apply:

- By default, the “Query Editor” is empty. Selecting the “Search” button while these fields are empty will retrieve all stop records in the database.
- Specific query conditions are chosen by selecting an option from the drop-down menu. Then click the Add to Query button to write the Query statement,
- Multiple query conditions may be specified using the AND/OR operators.
- When multiple conditions are specified for an attribute, the “OR” logical operator is applied. For example, when “SB” and “NB” are selected for travel directions, the query will return transit stops in the southbound direction, plus those in the northbound direction.
- When conditions are specified for more than one attribute, the “AND” logical operator is applied. For example, checking Transfer Point = Yes in the query condition, and adding Time Point = Yes will cause the query to only return transit stops that have transfer points and time points.
- For query applications that require other combinations of “OR” and “AND” logical operators, users should click the “Add to Query” button after each condition to construct the query statement.
- The operator “=” should be used when the data to be retrieved is based on an exact match (e.g., PLACEMENT='Far'). This will retrieve records where the stop locations are “Far Side”.
- The operator “Like” can be used to retrieve data that contains specific characters (e.g., ON_STREET Like '%Flagler%'). This will retrieve records where the word “Flagler” exists in the ON_STREET data field.

Transit Stop Query

Query Condition:

Field Name Operator Value AND OR

Query Editor:

Total records: 1

Stop No.	Stop Name	Stop Class	Routes	On Street	At Street	Time Point	Transfer Point	Place-ment	Travel Dir	Munici-pality	Shelter	Bench	Status	Last Updated	Action	Action
2488	Palm Tran	COUNTY 1		Electronics Way	35th St	Yes	Yes	MidBlock	SB		1	1	Active	09/27/2013	Edit	Map

Figure 6-4. ATSIM Transit Stop Query User Interface.

Once the query specifications are completed, click the “Apply” button to execute the query. All transit stops that satisfy the query conditions will be listed at the bottom of the screen. The “Reset” button can be used to bring the “Transit Stop Query” to its original state. That is, the “Query Editor” will be empty, and all the stops will be displayed at the bottom.

The next step will be to click on the “Map” or “Export” buttons to display the results or to export the result to a CSV file,” which can be useful for data analysis in Excel. Note that Map icon will not show up when the transit stop does not have GPS coordinates. Figure 6-5 depicts the data export in Excel for the query statement STOP_NUM=9.

Assessor	Stop Num	Stop Nam	Stop Clas	On Stree	At Street	Latitude	Longitude	Routes	Time Poir	Transfer	Placemer	Mid Block	Corner Lo	Distance	Travel Dir	Municipa	Status	Landmark	Location	Shelter	Bench	Lighting	Newspap	Trash Can
LCTR	9	FIU Stop	1	NW 107 A	Flagler St	25.77094	-80.369	137	0	0	1	0	0	12	2	3	1	310	FIU Stop	0	1	0	0	1

Figure 6-5. CVS file in Excel.

As mentioned before, the “Map” and “Export” features can be useful to visualize or obtain information for a particular condition/s (e.g., ADA_ACCESS='Accessible' or ADA_ACCESS='Accessible' AND SHELTER>=1).

Note: Once the query statement is in the text field “Query Editor”, it can be manually edited.

Tip: After becoming familiar with the ATSIM query statements, queries can be written directly on the “Query Editor” field. Copying and saving these query statements in a Word document can be useful for future reference.

Transit Stop Summary and Charts

Summary Report

ATSIM includes a summary function that allows users to quickly obtain important stop information. This function is accessible by selecting Data Management from ATSIM main menu, then selecting the “Summary Report” link on the “Report” button. Figure 6-6 shows an example of the ATSIM Summary Report.

ATSIM Summary Report

Transit Agency

Location

Stop Class			
County stops: 11	Local stops: 27	Private stops: 3	State stops: 0

Placement			
Nearside: 18	MidBlock: 12	Farside: 5	Terminal: 1

Time point stops: 30	Transfer point stops: 13
----------------------	--------------------------

Five Most Used Landmarks				
1) SC Number: 5	2) OFC Number: 4	3) PK Number: 2	4) TRM Number: 2	5) ML Number: 2

Amenities

Number of shelters: 36	Number of benches: 23
------------------------	-----------------------

Shelter condition - Good: 6	Average: 5	Poor: 0
-----------------------------	------------	---------

Bench condition - Good: 9	Average: 6	Poor: 0
---------------------------	------------	---------

Number of stops with trash cans: 27	Number of stops with bike racks: 11
-------------------------------------	-------------------------------------

Number of stops with graffiti: 9	Number of stops with advertising: 10
----------------------------------	--------------------------------------

Stops with lighting: 11	Stops without lighting: 1
-------------------------	---------------------------

ADA Compliance

Number of stops with sidewalks: 32	Number of stops without sidewalks: 1
------------------------------------	--------------------------------------

Stops with 5x8 loading pads: 30	Number of ADA accessible stops: 23
---------------------------------	------------------------------------

Number of ADA functional stops: 4	Number of ADA non-accessible stops: 7
-----------------------------------	---------------------------------------

Total number of stops: 81

Figure 6-6. ATSIM Summary Report.

Charts

ATSIM also includes a Chart function that allows users to quickly obtain important stop information in a graphic format. This function is accessible by selecting an attribute from the Chart pulldown list. The Chart attributes include many fields such as ADA, Bench, Bench Condition, Bus Bay, Landmark, Municipality, Restroom, Shelter, Shelter Condition, Sidewalk, Sign Mount, Stop Amenities, Status, Stop Class, Stop Position, Stop Sign, etc. The charts can be displayed as number of stops (bar chart) or as percentage of stops (pie chart). Figure 6-7 displays a screen capture of an ADA chart. These charts are dynamically generated by ATSIM using data directly from the database. The graphs can be printed or exported to jpg and pdf formats.

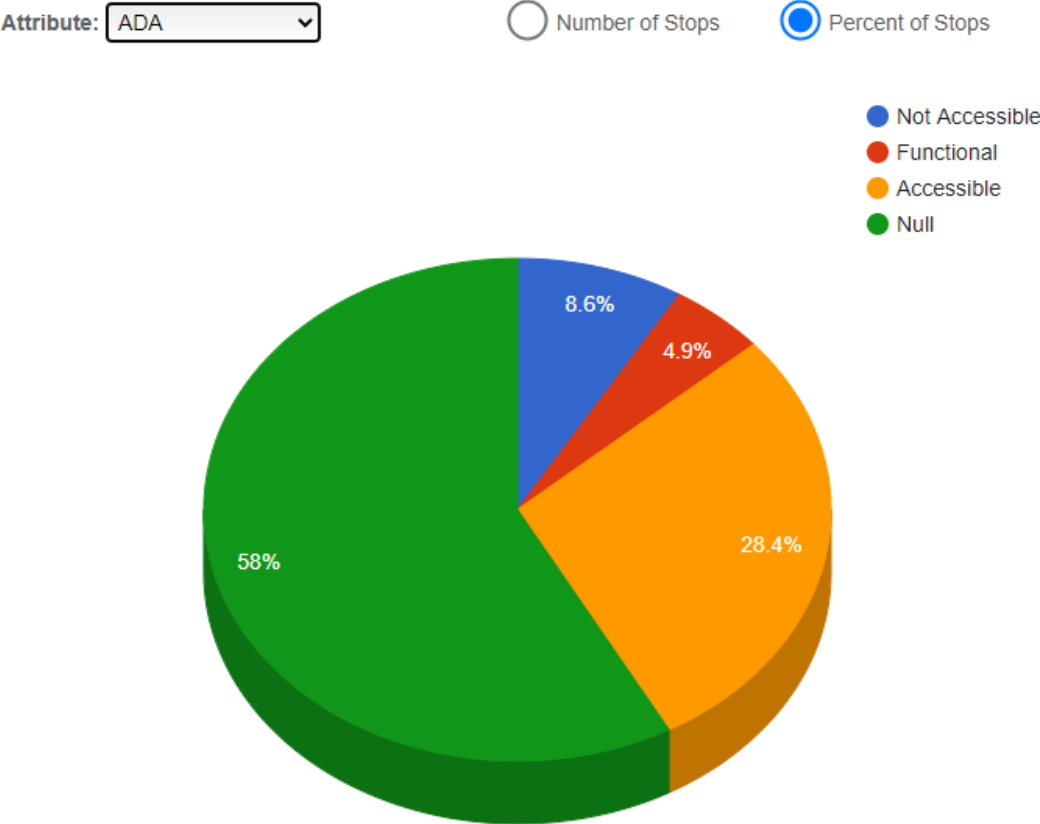


Figure 6-7. Output Transit Stop summary displayed by Chart.

7 Administration Features

This administration section allows the management of users and to give some flexibility to users. It contains two key elements: User Management and Field management. These features are only available to the Administrators. Figure 7-1 depicts the User Management icon and Figure 7-2 shows the top part of the ATSIM User Management Interface.

User Management - Allows Administrators to create usernames and passwords.



Figure 7-1. User Management icon.

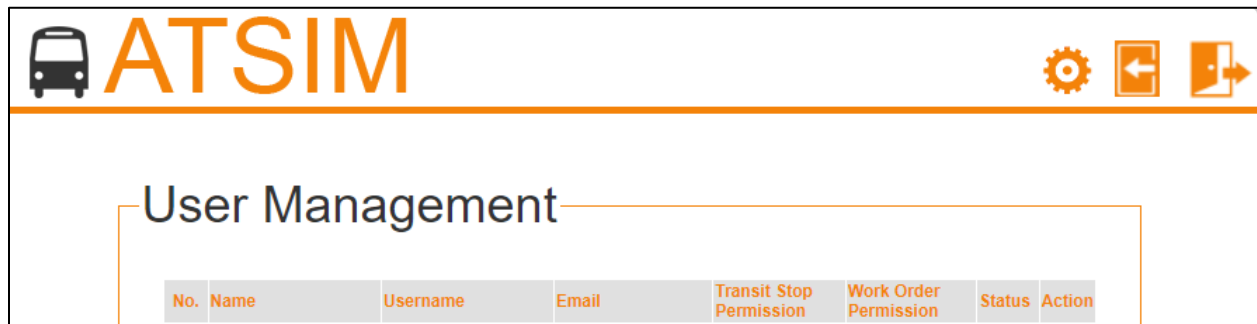


Figure 7-2. User Management Interface.

Add New User

Figure 7-2. Add New User Button.

In the User Management module, users can be added or edited. Administrators can create or edit users and set the appropriate permissions to the ATSIM transit stops and/or work orders. For the Transit Stops, administrators can give users the following privileges/permissions: Read Only, Read & Write, or Administrator. For the Work Orders, administrators can give users the following privileges/permissions: Read Only, Assignment & Approval. In addition, the status of users can be modified to be Active or Inactive. Figure 7-3 shows a screenshot on how to Add a User. Similarly, Figure 7-4 shows a screenshot on how to Edit a User.

Name:

Username:

Email:

Phone:

Password:

Transit Stop Permission: Read Only Read & Write Administrator

Work Order Permission: Read Only Assignment Approval

User Status: Active Inactive

[Add](#) [Cancel](#)

Figure 7-3. Adding Users.

12	Jane Doe	Jdoe		Read Only	Read Only	Inactive	Edit
----	----------	------	--	-----------	-----------	----------	----------------------

Name:

Username:

Email:

Phone:

Password:

Transit Stop Permission: Read Only Read & Write Administrator

Work Order Permission: Read Only Assignment Approval

User Status: Active Inactive

[Save](#) [Cancel](#)

Figure 7-4. Editing Users.

Field Management - Allows Administrators to enter the municipalities within the transit service area, customize the 20 additional fields available in the Add Fields section of the data collection module. Figure 7-4 shows the Field Management icon and Figure 7-5 shows the Transit Stop Field Management Interface. Figure 7-6 depicts a screenshot of the Editing Customizable Fields where it shows the edit functionality of the Transit Stop Field Management Interface.



Figure 7-4. Field Management icon.



Transit Stop Field Management

Field Number	Field Name	Field Type	Action
1	Other1	Text Box	Edit
2	Other2	Text Box	Edit
3	Other3	Text Box	Edit
4	Other4	Text Box	Edit
5	Other5	Dropdown List	Edit
6	Other6	Dropdown List	Edit
7	Other7	Check Box	Edit
8	Other8	Check Box	Edit
9	Other9	Check Box	Edit
10	Other10	Check Box	Edit
11	Other11	Dropdown List	Edit
12	Other12	Dropdown List	Edit
13	Other13	Dropdown List	Edit
14	Other14	Dropdown List	Edit
15	Other15	Dropdown List	Edit
16	Other16	Dropdown List	Edit
17	Other17	Text Box	Edit
18	Other18	Text Box	Edit
19	Other19	Text Box	Edit
20	Other20	Text Box	Edit
21	Municipality	Dropdown List	Edit

Figure 7-5. Transit Stop Field Management Interface.

Transit Stop Field Management

Field Number	Field Name	Field Type	Action
1	Other1	Text Box	Edit
2	Other2	Text Box	Edit
3	Other3	Text Box	Edit
4	Other4	Text Box	Edit
5	Other5	Dropdown List	Edit
6	Other6	Dropdown List	Edit
7	Other7	Check Box	Edit
8	Other8	Check Box	Edit
9	Other9	Check Box	Edit
10	Other10	Check Box	Edit
11	Other11	Dropdown List	Edit
12	Other12	Dropdown List	Edit
13	Other13	Dropdown List	Edit
14	Other14	Dropdown List	Edit
15	Other15	Dropdown List	Edit
16	<input type="text" value="Other16"/>	Dropdown List	Save Cancel
		No dropdown list option found.	Add
17	Other17	Text Box	Edit
18	Other18	Text Box	Edit
19	Other19	Text Box	Edit
20	Other20	Text Box	Edit
21	Municipality	Dropdown List	Edit

Figure 7-6. Editing Customizable Fields.

8

Field Guidelines

This section provides procedural guidelines for fieldwork for the automated transit stop data collection system developed in this project. A significant portion of the guidelines presented were based on lessons learned from a field test on transit stops on a major route for the Palm Tran transit system. Palm Tran was chosen mainly because of the high interest the agency expressed in this project, as well as for its proximity to Florida International University. The major route selected for the field test was Route 1, which runs mainly along U.S. Highway 1, and had about 450 transit stops at the time of data collection. Palm Tran has planned for this to be a major corridor for implementation of Advanced Public Transportation Systems (APTS) or Transit Intelligent Transportation Systems (ITS) technologies, which requires accurate stop data.

Data Collection Plan

Initial Field Survey

- Before the actual data are collected, it is important that an initial field survey be conducted to obtain field conditions, followed by the design of the data collection plan that best fits the field conditions.
- During the field survey, it is advisable to have a camera ready to capture any special field conditions. These pictures can also be used for crew training, described later in this section.

Date and Time

- Transit stop inventories should be collected during daylight hours, on any day of the year.
- Data collection under rainy conditions should not be performed so as to avoid water damage to devices.
- Data collection on weekends generally offers the benefit of faster data collection and better safety due to lighter traffic, especially at busy intersections.
- Assignments at transit stops on congested roadway sections should be avoided during rush hour.

Crew Assignment

- The number of crew members to use for data collection depends on availability of equipment and personnel. Larger agencies will require more crew members to ensure the job can be completed within a reasonable amount of time.
- Fewer crew members will take longer to complete the data collection, but the total cost of data collection may be reduced, and the quality of data may be improved, as it gives time for the survey crew to become experienced.

Mode of Travel

- A passenger vehicle is the most convenient mode of transportation for traveling from one stop to another, as it offers good travel speed, provides the survey crew with a refuge from rain and heat, allows for recharging of equipment, shields the survey crew from other vehicles, and provides a place to store items such as the tablet, measuring wheel, food, water, garments, shoes, etc. A vehicle also allows the survey crew to quickly travel to a new survey location, as well as to and from restaurants, restrooms, hotels, etc.
- For the safety of both the survey crew and the general traveling public, the survey vehicle, if possible, should not block a travel lane during data collection.
- A pick-up truck is the preferred type of vehicle, as it offers the height and power needed to drive onto a curb when necessary. Agencies should check with the local jurisdictions to determine if temporary parking on the curb is allowed. Figure 8-1 shows a pick-up truck parked on a sidewalk area.
- Walking is another potential alternative for areas with dense transit stop locations and/or with limited space for vehicle parking. Walking offers the convenience of easy access and does not require the extra fuel cost. However, a major problem with this alternative is that the survey crew will quickly become tired from prolonged walking, thus, this mode of transportation may shorten the number of work hours and reduce work productivity.



Figure 8-1. Survey vehicle parked on curb/sidewalk.

Safety Accessories

- An emergency flashing light should be used to alert drivers and provide safety to the crew. The light should ideally be located on top of the vehicle and toward the side of the travel lane to increase visibility to other drivers. In addition, the emergency stop lights of the survey vehicle should be turned on at all times during data collection. Figure 8-2 shows an example of an emergency flashing light and stop lights.



Figure 8-2. Use of emergency flashing light and emergency stop lights.

- Due to the frequent stops that will be made by the survey vehicle, a large display sign mounted on the back of the survey vehicle is used to alert motorists that there is a survey in progress.
- Each member of the survey crew should wear an orange vest. Not only is this recommended for safety purposes, but also indicates to people waiting at transit stops that data are being collected for official purposes, hence reducing uneasiness when having their pictures taken at a transit stop.

Miscellaneous Items

- Each survey crew should carry a letter issued by the transit agency. The letter should be on agency letterhead and include the data collection period, the contact person at the agency, and the purpose of data collection effort.
- Bottled water, snacks, and other food items may be carried in the vehicle.
- Hats and sunglasses should be used on sunny days.
- Unless it is needed to obtain an accurate distance of a stop location from the nearest intersection, a measuring wheel is not needed. Estimates based on “eye measurement” should generally be sufficient.

Crew Training

- Crew training is important to ensure that all crew members are familiar with both the operation of the equipment and the data collection procedure.
- The trainer should explain each attribute, preferably with examples and pictures of different actual transit stops, to illustrate specific attribute options.
- Potential problems that may be encountered in the field should be pointed out during the training session.
- The training session should include a field test to collect data from several stop locations. A follow-up session right after the field test should be conducted to share questions and answers among the survey crew.

Data Collection Procedure

Equipment Setup

- Refer to Sections 1 and 2 on getting started and using ATSIM for the transit stop data collection.
- The survey crew must check all equipment to make sure it functions properly before each trip to the field.

Pictures

- Pictures of transit stops are optional data for a transit stop inventory.
- If an agency wishes to collect pictures of transit stops, it is recommended that three pictures be taken at each stop. The first includes a close-up view of the transit stop sign, which usually displays route information and sometimes the transit stop number. A second can provide a clear view of the transit stop amenities that are easily identifiable. A third can provide a broader view of the transit stop's surrounding area.
- Photographing front views of transit stops, which may require that the survey crew cross the street, is both time-consuming (waiting for traffic to clear) and is a safety hazard and should be avoided.

Batteries

- Most tablets are powered by a rechargeable battery. Therefore, the survey crew should make sure that the tablet is fully charged before going out in the field. To check the level of the main battery on the tablet, tap the battery icon in the System Bar (near the bottom of the screen) to bring up the screen shown in Figure 8-3.

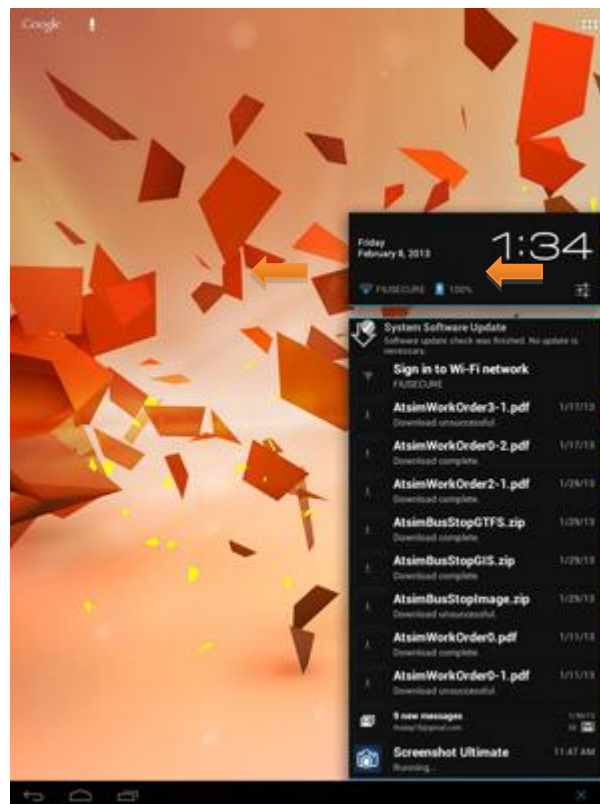


Figure 8-3. Screen for checking the battery level.

- Depending on the device, the battery may last between four and eight hours of continuous/active usage. When a survey vehicle is not in use, it is advisable to have the battery recharged between shifts, such as over a lunch break in a restaurant. It may take a few hours to fully recharge an empty battery. The survey crew should make sure the restaurant they dine in allows for the recharging of equipment. Most fast-food places do not provide electrical outlets.
- A regular charger and a car battery charger are needed to avoid work interruptions due to a low battery.
- The tablet should be recharged after each data collection session.

Note: Battery life is related to CPU usage, along with screen brightness, Wi-Fi, Bluetooth and other features. Close all unnecessary applications to extend battery life.

Data Quality Assurance

- To ensure quality of data, quality assurance (QA) needs to be performed. Field verification of a randomly selected set of transit stops from different survey crew members from different areas and different days should be conducted.
- The sample size can be reduced over the data collection period. Field verification for the first few days is especially important because it will help correct any problems early on.
- Data quality deemed unacceptable should be redone.
- If pictures are collected, a final verification of random samples can be performed by matching what is observed in the pictures to what is recorded for particular stops.

Technical Support

For technical support or additional information, please contact Dr. Fabian Cevallos or Dr. Albert Gan, as follows:

- **Email:** fabian.cevallos@fiu.edu or gana@fiu.edu. This is the preferred method of contact.
- **Phone:** (305) 348-3144 for Fabian Cevallos, Ph.D. or (305) 348-3116 EC 3674 for Albert Gan, Ph.D.
- **Mail to:** Lehman Center for Transportation Research
Florida International University
10555 West Flagler Street
Miami, Florida 33174

For overall information about ATSIM, please visit <http://www.ftis.org/atsim.html>. To access the ATSIM application, please visit <http://ftis.org/atsim>.

Appendix A: Quick Reference Guide

Accessing ATSIM Data Collection on a device/computer

Step 1: On the device, select an Internet Browser.

Step 2: Enter the web address where the ATSIM application is deployed.

Step 3: Log-in using the username and password that was provided by the transit agency. After logging in, you will see the ATSIM main menu.

Step 4: Click the Data Collection button.

Step 5: Click the tabs at the top to access different sections of the web field collection system, scroll by using the mouse wheel or the scroll bars on the right hand side of the browser, or use the touch screen top navigation, if the device has this feature. After collecting the information, click the Save icon to save the record.

Accessing Work Orders on a device/computer

Step 1: On the device, select an Internet Browser.

Step 2: Enter the web address where the ATSIM application is deployed.

Step 3: Log-in using the username and password that was provided by the transit agency. After logging in, you will see the ATSIM main menu.

Step 4: Click the Work Orders button.

Step 5: The Work Orders module includes the following components: Work Order, Reports, Queries, and Maps. The Works Order Field Management allows customization of fields and users. Work Orders users can be added using the ATSIM User Management tool (see Section 8). Refer to Section 3 for additional information on Work Orders.

Accessing Data Management on a device/computer

Step 1: On the device, select an Internet Browser.

Step 2: Enter the web address where the ATSIM application is deployed.

Step 3: Log-in using the username and password that was provided by the transit agency. After logging in, you will see the ATSIM main menu.

Step 4: Click the Data management button.

Step 5: There are four options.

- You can choose to export in four different formats (CSV, GTFS, GIS, and PICS for pictures).
- You can choose to view or print stop reports, work orders, and summary reports.
- You can choose to run queries. The query functionality allows to display the query results on a map or to export the data to a text file.
- You can choose to generate Charts and export the chart images in jpg and pdf formats.

Accessing Maps on a device/computer

- Step 1:** On the device, select an Internet Browser.
- Step 2:** Enter the web address where the ATSIM application is deployed.
- Step 3:** Log-in using the username and password that was provided by the transit agency. After logging in, you will see the ATSIM main menu.
- Step 4:** Click the Maps button.
- Step 5:** Type in Stop Number or select a stop on the map to view specific information about that stop. You can also edit a stop, search for bus stops, or print the map and stop information.



ATSIM 6.0

User's Guide



Lehman Center for Transportation Research
Department of Civil and Environmental Engineering
Florida International University
10555 W. Flagler Street, EC 3680
Miami, FL 33174
Tel: (305) 348-3144 | Fax: (305) 348-2802



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Florida International University