OCALA TPO
BUS STOP ADA ASSESSMENT
DRAFT REPORT

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Prepared For:

Greg Slay, AICP
121 SE Watula Avenue
Ocala, Florida 34471

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1.0 INTRODUCTION

Ocala Marion TPO and SunTran are interested in improving the access to and from, the security at, and the operations at its approximately 350 stand-alone bus stops and 2 transfer points.

This study includes a comprehensive inventory of the conditions at SunTran's bus stops and facilities and identifies and helps prioritize improvements to address accessibility, security, operation, and passenger comfort issues. Information relating to the accessibility of each bus stop and facility has been collected with the purpose of improving SunTran's staff's understanding of accessibility issues pertaining to Americans with Disabilities Act (ADA) requirements, as they relate to bus stops and transit facilities, as well as to identify which bus stops and facilities are in compliance with the ADA and which are not. Not only does the placement of bus stops and facilities affect passenger amenities, but service speed and schedule adherence also can be adversely impacted by the implementation of too many stops. SunTran recognizes, however, that it is important to strike a balance between the potential need to eliminate stops and the community's need for convenient access to bus service. In an effort to ensure all of SunTran's bus stops are compliant, safe, secure, and operationally efficient, all of SunTran's bus stops were considered in this review, regardless of whether the original bus stop implementation or any subsequent improvements to the stop precede the ADA and, are therefore, grandfathered from having to meet current ADA requirements.

This document serves as a summary report outlining the development of the bus stop inventory and database, the prioritization of bus stop improvements, and the phasing plan to implement improvements based on anticipated funding available over the next five years. A separate appendix document has also been prepared, which includes a more detailed discussion and results of the analysis.

2.0 INVENTORY PROCESS

This section describes the processes and methodologies used to develop the master inventory database, including field data collection, quality control, and compilation of the master database. In addition, this process also included the development of a new tablet based application in order to directly input raw data into a master database. The prioritized list of improvements and phased implementation plan developed as part of this project are the result of the data collection effort conducted during the inventory process.

The data collected are used to record infrastructure, characteristics, and location of each bus stop, which can be utilized by SunTran and other entities to identify infrastructure improvement needs.

2.1 FIELD DATA COLLECTION

After a half-day long training course, Ocala Marion TPO and SunTran staff and ADA experts were sent into the field to collect data using a tablet based questionnaire. The questions and answers used may be found in Appendix A at this end of this report. It should be noted that the data was collected in January and February 2013, with supplemental data collected through April 2013.

2.2 BUS STOPS

The first step of the inventory process was to identify the list of the data items to be collected. This list was developed based primarily on the bus stop inventory performed for Hillsborough Area Regional Transit, performed in 2007. It also includes any other data required to determine the accessibility of a bus stop using the ADA Accessibility Guidelines (ADAAG).

A comprehensive checklist of the data to be collected was prepared and developed into a software interface specifically designed and programmed for this study. The application developed allowed the surveyors to easily enter all the necessary data collected at each bus stop. The program also allowed the collected data to be exported to a database format for the analysis. This interface was accessed by the surveyors using Android tablets, Apple iPads, and smartphones. These devices all had wireless connectivity and GPS built into each of them. By utilizing the most up to date mobile technology, survey teams could determine the bus stops GPS coordinates, input data with prompted questions, and take photographs using a single tool. The following is a list of the primary equipment utilized by each survey team to conduct the inventory:

- Mobile Tablet or Smartphone
- Smart level
- Measuring wheel

- Compass
- Safety Vest

Figure 2-1 illustrates the primary equipment utilized by the surveyor teams during the data collection process.

Figure 2-1 Data Collection Tools

Following development of the program interface and distribution of the necessary data collection tools, the inventory process began. The inventory process consisted of three stages: a field test, data collection training, and the bus stop inventory.

• **Field Test** – The purpose of the field test was to check the established data collection methodology on several bus stops in order to determine whether any adjustments were needed prior to training.

• **Data Collection Training** – The data collection training presented the data collection process to the surveyors, including step-by-step instructions, reminders and pointers for collecting data at each stop, as well as contact information for appropriate project team members. Pertinent information related to the data collection was compiled into a Data Collection Training Manual for surveyors to use as a reference during the inventory process. The data collection training included one day of in-class training for all surveyors and two days of field training where the surveyors went out in smaller groups to practice at actual bus stops.

• **Bus Stop Inventory** – The inventory data collection was conducted by one- and two-person teams of Tindale-Oliver and Ocala Marion TPO staff on all stand-alone bus stops. TPO surveyors were trained by members of the project team with expertise in ADA requirements and bus stop surveying.

A copy of the Data Collection Training Manual provided to each surveyor during the data collection training class can be found in Appendix B. In addition, a comprehensive list of the data collected as part of the inventory process can be found in Appendix C.

2.3 TRANSIT FACILITIES

Accessibility assessments of SunTran's two Transit Centers were conducted by members of the project team. Detailed field assessments of all accessibility features provided at each of the facilities were conducted and inventory data comparable to the data collected during the bus stop survey effort were collected.

It is important to recognize that the transit centers present features that are not common to regular bus stops, such as buildings, restrooms, ticketing facilities, tactile transit signage, and parking facilities. Hence, the established database used for the bus stop inventory and deficiency reporting process did not lend itself to accommodating the captured data from the facilities assessments. Therefore, it was prudent to develop the stand-alone report document for these facilities.

2.4 QUALITY CONTROL AND COMPILATION OF MASTER DATABASE

The initial data collection process was conducted over a period of two months. During this time, quality control (QC) measures were continuously conducted by the project team to ensure that all information collected was complete and accurate. As the database was compiled, all records were reviewed and corrected for missing or incorrect data by matching the record to its corresponding photographs. Corrected information in the database was marked to reveal patterns of incorrect information in the database. Data elements with significant errors were closely analyzed to determine the source of the error (e.g., mis-entries, programming errors). It is important to note that some errors could be corrected by reviewing the photographs. Elements such as presence of benches or shelters could be corrected by viewing the photographs, while elements that require measurement, such as slope or width, could only be determined in the field.

Following the initial data collection and QC process, it was discovered that additional 3rd party benches were installed at a significant number of the previously surveyed bus stops. TPO staff then recollected data at these stops. The data recollection effort was conducted over approximately two months.

Following incorporation of the recollected data, the master database was finalized and prepared for analysis and is included in Appendix D. Following completion of the analysis, a digital version of the master database will also be transmitted to the Ocala Marion TPO.

It should be noted that the TPO intends to continuously maintain and update the inventory database to reflect ongoing changes made to the system's bus stops.

The initial analysis performed on the master database included the development of summary tables for each category of data collected during the inventory. Appendix E provides a series of tables summarizing the frequency and distribution of data for all of SunTran's bus stops collected during the inventory, including any applicable comments noted by the surveyors.

The remainder of this report summarizes the development of the Comprehensive Improvement Plan and associated data analysis. The purpose of this Plan is to identify and prioritize needed improvements and recommend a phasing program for implementing the needed improvements, based on anticipated funding.

3.0 ADA REQUIREMENTS AND DATA COLLECTION

An analysis of the collected data was undertaken to develop a comprehensive list of deficiencies present and the subsequent improvement needs. This section provides an overview of the general requirements pertaining to bus stops and facilities and then presents the findings of the inventory process as it relates to the specific improvement needs.

3.1 GENERAL ADA REQUIREMENTS

Two primary guidance documents were utilized during this project to highlight specific design and infrastructure requirements related to accessibility: the ADAAG and the FDOT Transit Facility Handbook. The general ADAAG/FDOT requirements for bus stops and transit facilities are as follows:

- The bus stop site must be chosen to provide the greatest degree of accessibility practicable.
- The boarding and alighting area must provide a firm, stable, slip resistant surface.
- The clear area of the boarding and alighting area must be equal to or no less than 60” parallel and 96” perpendicular to the curb or street/roadway edge and connected to the accessible route.
- The bus stop must have an accessible approach to the boarding and alighting pad and all amenities provided.
- The cross slope of the boarding and alighting pad (perpendicular to the curb) must be equal to or less than 2 percent.
- The running slope (parallel to the curb) of the boarding and alighting area should match the slope of roadway.
- The bus stop must be on or connect to an accessible route.
- Bus stop amenities must be connected to the accessible route, allow accessible maneuvering space, and be within 48” maximum reach range of all operating controls.
- If a shelter is provided, it must connect to the accessible route and allow a minimum space of 30” X 48” fully within the shelter.
- If a bench is included within a shelter, it must allow a minimum space of 30” X 48” resting/transfer space at one end of the bench.

Figure 3-1 illustrates a number of these general accessibility requirements.

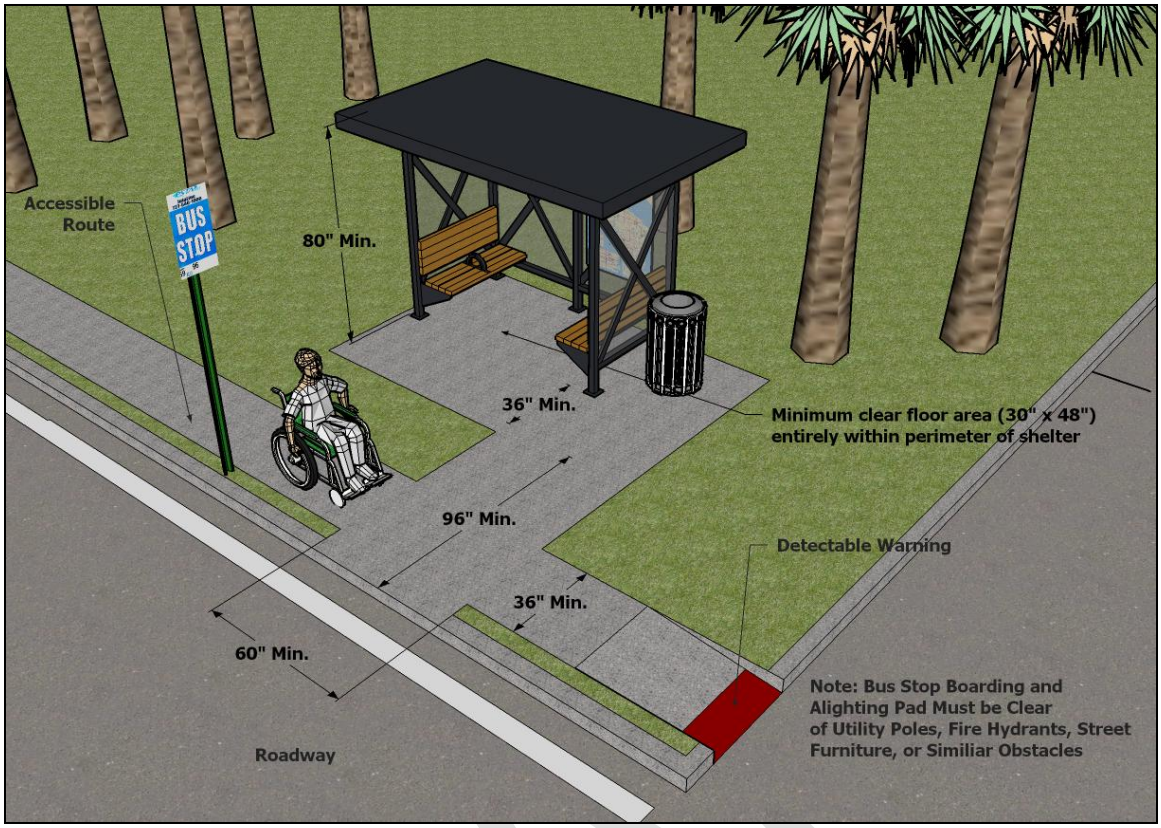

Figure 3-1 General Bus Stop Accessibility Standards Diagram

Many of the bus stops in the SunTran system are not located in a dense urban environment. Therefore, many of these standards would not apply to stops located in suburban or rural locations where curbs and sidewalks are not present. In fact, some SunTran bus stops located in suburban or rural areas have no more than a bus stop sign staked in the grass. Standards for these stops are significantly less since SunTran will not be required to implement much infrastructure like sidewalks and curbs. In these cases, SunTran will only be required to install a boarding and alighting pad that may not be connected with an accessible path to the surrounding area.

3.2 BUS STOP REQUIREMENTS

There are five major elements related to bus stops that primarily impact their accessibility and/or compliance with ADA requirements. These include:

- Boarding and alighting pads,
- Bus stop signs,
- Accessible routes and sidewalks,
- Curb ramps, and
- Obstructions.

This section discusses the standards related to these elements and addresses the deficiencies that were noted throughout the SunTran bus system.

3.3 BOARDING AND ALIGHTING PADS

Boarding and alighting pads (previously referred to as "landing" pads or areas) are critical for the safe and accessible boarding and alighting of passengers onto buses. They are particularly critical for the safe and accessible operation of wheelchair lifts.

Standards

Maximum width and length of the paved boarding and alighting area, as well as surface qualities, are regulated by the ADAAG/FDOT. Many of the same standards for sidewalk surfaces apply to landing areas. The standards for boarding and alighting areas are as follows:

- The clear area of the boarding and alighting area must be no less than 60" parallel and 96" perpendicular to the curb or street/roadway edge and connected to the accessible route.
- The cross slope of the boarding and alighting area (perpendicular to the curb) must be equal to or less than 2 percent.
- The running slope (parallel to the curb) of the boarding and alighting area should match the slope of roadway.
- The boarding and alighting area must provide a firm, stable, slip resistant surface.

Figure 3-2 illustrates some of these standards.

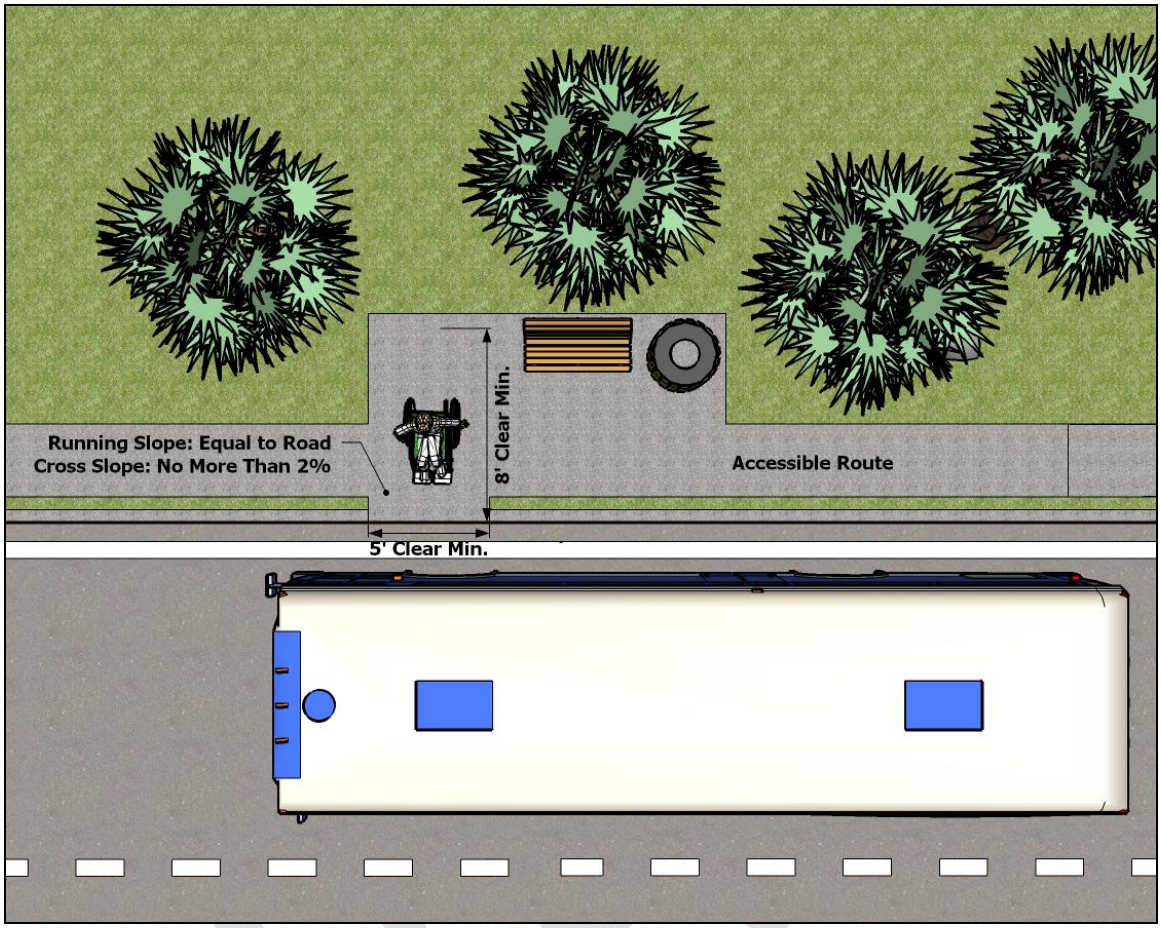

Figure 3-2 Landing Area Standards Diagram

Data Analysis and Results

To determine the deficiencies at each stop, data was collected in the field relating to the boarding and alighting areas. The following data elements were collected:

- Whether there is a boarding and alighting area of any kind present at the bus stop.
- Whether the boarding and alighting area is equal to or greater than 5-foot by 8-foot.
- Material of the boarding and alighting area.
- Whether the boarding and alighting area is free of defects such as cracks in the pavement.
- Whether the running-slope matches that of the road.
- Cross slope measurement.
- Running slope measurement.
- Whether there are any changes in elevation greater than 1/8".
- Whether there is a raised curb/landing area.

Data collected for the boarding and alighting area at each bus stop were analyzed for each of these elements. The results are displayed in Table 3-3.

Table 3-1 Total Deficiencies for Boarding and Alighting Areas

Deficiency	Total Stops
No boarding and alighting pad (1) present at stop	24
Defect in boarding and alighting pad	344
Cross slope is greater than 2%	192
Running slope does not match the road	77
Running slope is greater than 5%	3
Elevation changes greater than 1/4"	152
No raised curb	171
Total stops with problematic boarding and alighting areas(2)	**346**

(1) The presence of a boarding and alighting area refers to a clear area in which a person in a wheelchair could potentially access a wheelchair lift or ramp, regardless of standardized dimensions, slope, elevation changes, or connections to the surrounding area. Per the ADAAG, the material does not have to be concrete, but must be a firm and stable surface, such as packed dirt and not grass or gravel.

(2) A problematic boarding and alighting area at a stop may have more than one of the deficiencies listed in this table. As such, this figure does not represent a sum of the deficiencies in this table.

As presented in Table 3-3, 24 bus stops have no boarding and alighting area either, designated or undesignated, 344 bus stops have a defect in the boarding and alighting area, 192 bus stops have a cross slope greater than 2%, 152 bus stops have a change in elevation of greater than ¼", and 171 bus stops do not have a raised curb Therefore, 346 stops have some kind of boarding and alighting area deficiency.

3.4 BUS STOP SIGNS

Bus stop signs are important because they identify the location of an active bus stop, but they also serve other important purposes, as well. Bus stop signs are critical for showing passengers the correct area to board the bus and also serve as a guide to bus operators for positioning the bus. Bus stop signs must follow particular standards set by the ADAAG/FDOT for placement and visibility.

Standards

Bus stop signs providing route designations, bus numbers, destinations, and other access information must be designed for use by transit riders with vision impairments. The general ADAAG/FDOT standards for bus stop sign placement and visibility are as follows:

- The bottom of the sign should be at least 7 feet above ground level, however, it may be placed as low as 40 inches about ground level, and should not be located closer than 2 feet from the curb face. Placement of the sign is critical so that both passengers and drivers can identify and read the sign and so that the sign is not an obstruction to passing vehicles.
- Characters and the background of the sign should have a non-glare finish. This makes the sign clear and visible in bright sunlight or headlights.
- Minimum character height must be visible to the passenger and should comply with the ADAAG/FDOT standards detailed in the *Districts One and Seven Transit Facility Handbook*.
- Other signs sharing the mount location also should be properly mounted.
- Ideally, and especially for bus stops that serve more than one route, the bus stop sign should also include the bus route number(s) that provide services to the stop.

Table 3-2 Visual Character Height Standards

Height to Finish Floor or Ground From Baseline of Character	Horizontal Viewing Distance	Minimum Character Height
40 inches to less than or equal to 70 inches	Less than 72 inches	5/8-inch
	72 inches and greater	5/8-inch, plus 1/8-inch per foot of viewing distance above 72 inches
Greater than 70 inches to less than or equal to 120 inches	Less than 180 inches	2 inches
	180 inches and greater	2 inches, plus 1/8-inch per foot of viewing distance above 180 inches
Greater than 120 inches	Less than 21 feet	3 inches
	21 feet and greater	3 inches, plus 1/8-inch per foot of viewing distance above 21 feet

Data Analysis and Results

To determine the compliance of SunTran bus stop signs with the aforementioned standards, the following data elements were collected in the field:

- Whether there is a sign present at the bus stop.
- Whether the sign is the correct distance from the ground.
- Whether the sign follows the standards for proper visual character height and contrast.
- Whether the sign has an anti-glare surface.
- Whether signs that share the same location are properly mounted.

Following the field data collection, the information for these data elements was analyzed to determine the number of SunTran bus stop signs with specific deficiencies. Table 3-3 shows the stops noted for each element of deficiency.

Table 3-3 Total Deficiencies for Bus Stop Sign Placement and Visibility

Deficiency	Total Stops
No sign at stop	15
Sign not properly mounted	2
Characters not of proper height and contrast	3
No anti-glare surface	2
SunTran sign not compliant(1)	**17**

(1) A bus stop sign may have more than one of the deficiencies listed in this table. As such, this figure does not represent a sum of the deficiencies in this table.

In general, the typical sign design for SunTran meets the requirements of the ADAAG/FAC. There are 15 stops without a SunTran bus stop sign and 3 SunTran bus stops that have a bus stop sign with one or more issues, such as a sign that is non-compliant due to improper mounting, insufficient character size, or lack of anti-glare surface. Therefore, 17 bus stops have a SunTran bus stop sign deficiency or no SunTran bus stop sign present at the bus stop.

3.5 ACCESSIBLE ROUTES AND SIDEWALKS

Accessible routes and sidewalks leading to and from the bus stop are critical for all passengers, particularly those with disabilities, to reach the boarding and alighting area at the stop and any trip generators surrounding the stop.

Standards

An accessible route must be a sufficiently wide, continuous, and unobstructed path enabling passengers to access the bus stop and surrounding activity centers. The following are the specific guidelines for accessible routes and sidewalks set by the ADAAG/FDOT:

- Must be 36” minimum wide continuous unobstructed path.
- Must have a 32” minimum width at doorways.
- Must have 60” X 60” passing spaces at 200’ intervals.
- Running slope (parallel to direction of travel) must be equal to or less than 5 percent (>5% = ramp).
- Cross slope (perpendicular to direction of travel) must be equal to or less than 2 percent.
- Surface must be firm, stable, and slip resistant (wet or dry).

- Changes in level between 1/4” and 1/2” must be beveled at 1:2 slope.
- Changes in level greater than 1/2” are not allowed or must be ramped.
- Gaps in gratings must be no greater than 1/2” wide and openings must be aligned perpendicular to travel.

Figure 3-3 illustrates these accessible route standards.

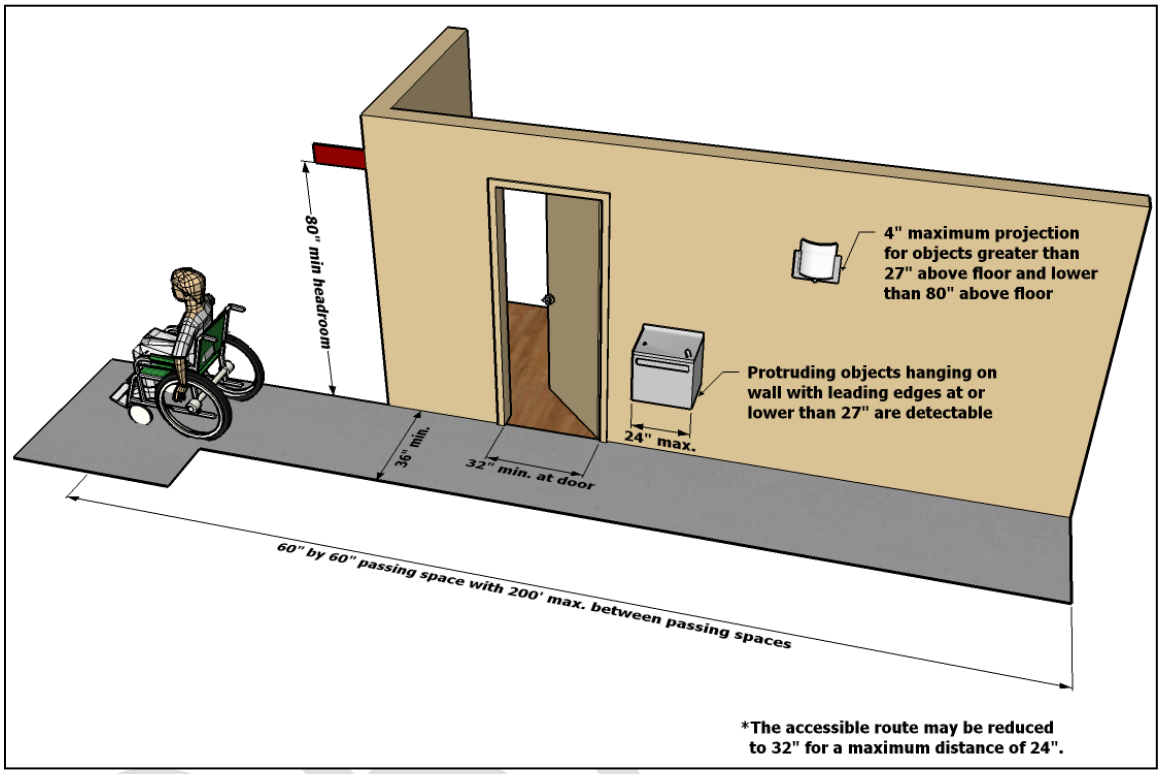

Figure 3-3 Accessible Route Standards Diagram

Data Analysis and Results

To determine the compliance of accessible routes and paths at SunTran bus stops, the following data were collected in the field:

- Whether a sidewalk is present at the stop.
- Whether the sidewalk at the bus stop is greater than or equal to 4 feet.

Following the field data collection, the information for these data elements was analyzed to determine the number of SunTran bus stop accessible routes and sidewalk deficiencies. Table 3-3 shows the stops noted for each element of deficiency.

Table 3-4 Total Deficiencies for Accessible Routes and Sidewalks

Deficiency	Total Stops
No sidewalk present	153
Sidewalk not compliant	153

As shown in Table 3-4, there are 153 stops that have no sidewalk present.

3.6 CURB RAMPS

Curb ramps provide a means of easily and safely accessing sidewalks from a crosswalk or other surface and should be provided wherever a curb is encountered along the path to transit services and facilities. These are particularly critical for those with disabilities requiring wheelchairs.

Standards

Particular standards limit the minimum width and maximum slope of the curb ramp to ensure accessibility. The following are the standards for curb ramps required by the ADAAG/FAC:

- The maximum ramp segment slope permitted is 1:12 (8.3%).
- The maximum cross slope permitted is 1:48 (2%).
- Curb ramps must have detectable warning material the full width of ramp and either the full length of ramp or 24" from back edge of curb.
- Curb ramps must have a 36" long landing at top of slope
- The ramped portion must be at least 36" wide. (Exception: Curb ramps that are part of an egress shall be not less than 44" wide.)
- Curb ramps must have detectable warnings in truncated domes with pattern and characteristics defined by regulations, including contrasting color.
- Detectable warnings also are required at landings and along with flush transitions at street crossings.

Figure 3-4 illustrates a number of these standards.

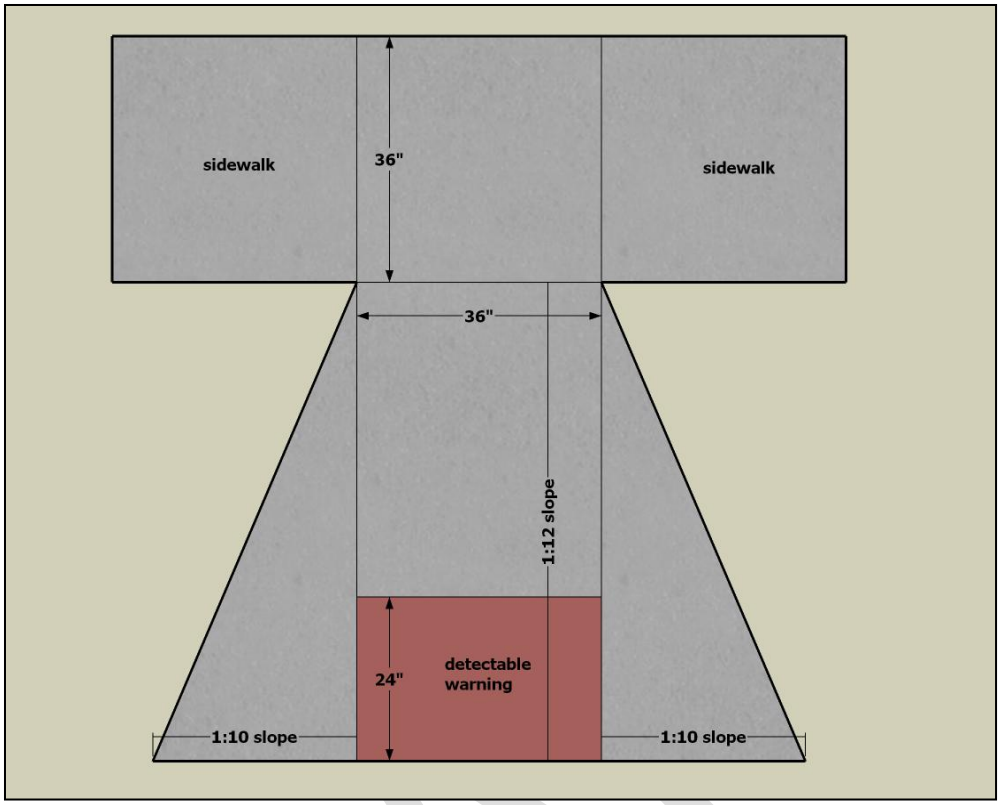

Figure 3-4 Curb Ramp Accessibility Standards Diagram

Data Analysis and Results

The compliance of curb ramps near SunTran bus stops was determined through an analysis and summary of data collected in the field. The following data elements were collected:

- Presence of curb ramps near the bus stop.
- Presence of detectable warnings on curb ramps.
- The condition of the detectable warnings,
- Whether the detectable warning is at least 24 inches from the throat of the ramp and extends the full width of the sidewalk,
- Whether the curb ramps are protected from being blocked by parked vehicles.
- Whether the transition of the curb ramp slope is flush and free of vertical change at top and bottom.
- Whether the slope of the curb ramp is 8.3 percent or less.
- Whether the surface of the ramped portion of the curb ramp is firm, stable, and slip resistant.

The curb ramp data were analyzed for each element. The summary results are presented below.

Table 3-5 Total Deficiencies for Curb Ramps

Deficiency	Total Stops
No curb ramps where sidewalk is present	13
Without detectable warning strips	115
Detectable warning strips in poor condition	15
Detectable warning extends the full width of the sidewalk	15
Protected from being blocked by parked vehicles	3
Without smooth transitions	19
Slope greater than 8.3%	37
Unstable surface	4
Total stops with non-compliant curb ramps(1)	**137**

Note: Many of these deficiencies are the responsibility of other jurisdictions and not SunTran.

(1) A cub ramp at a stop may have more than one of the deficiencies listed in this table. As such, this figure does not represent a sum of the deficiencies in this table.

The data show that there is a significant deficiency regarding curb ramps for many of the bus stops in the SunTran system. There are 13 bus stops without curb ramps where a sidewalk is present and 115 curb ramps with no detectable warning strips present.. Therefore, a total of 137 bus stops in the SunTran system have a deficient curb ramp or a sidewalk with no curb ramps.

3.7 OBSTRUCTIONS

Care should always be taken when designing or improving bus stops to keep the accessible path free of obstructions. Infrastructure such as shelters, benches, trashcans, utility boxes, and leaning rails should be placed in a manner as to not interfere with the sidewalks or the boarding and alighting area. Not only can these obstructions prevent passengers from using the path, but they can also present a potential safety concern.

To help clear SunTran's existing accessible paths from obstructions, data were collected in the field on infrastructure such as benches, garbage cans, and newspaper racks to see whether they present an obstruction. Benches are usually installed by either SunTran or the local Jaycees/Lion's Club, a community service organization with a program that places benches at bus stops with advertising on the backrest. Based on the data collected, the difficulty level of removing an obstruction could range from moving a non-fixed 3rd party bench out of the path to redesigning the accessible path around fixed infrastructure such as a utility pole. A summary of the obstruction deficiencies noted for SunTran's bus stops are listed below.

Table 3-6 Total Obstruction Deficiencies

Deficiency	Total Stops
Bench is inaccessible	145
Bench is an obstruction	83
Trash Can inaccessible	3
Total Stops obstructions/inaccessible amenities	**231**

As shown in Table 3-6, there are 145 stops that have inaccessible benches and 83 stops where the bench is an obstruction. Therefore, 231 stops have an amenity that is either inaccessible or an obstruction.

3.8 TRANSFER FACILITIES

As previously mentioned, assessments of the SunTran transfer facilities were performed separate from the process employed to inventory and assess the bus stops. Use of the Federal Transit Administration's Transportation Facilities Checklist, which was revised to conform to the revised ADAAG standards adopted by the U.S. Department of Transportation on November 29, 2006, was used as a tool during the assessment of SunTran's two bus transfer facilities.

Overview

The ADA mandates equal access to mass transit for all residents, thereby requiring every new bus, bus stop, and facility to be fully accessible to the maximum extent practicable. The elements of a bus stop, bus facility, and the public right-of-way are important aspects of providing an accessible environment and are mandated by the ADA.

SunTran provides two transfer and transit centers that are strategically placed to provide SunTran passengers with efficient transfer opportunities to maximize the ease of transferring between the various bus routes.

The two SunTran facilities were assessed for compliance with the ADAAG and FAC during this project. The information below details the assessment of each facility, the findings from the assessment, photos of the facility and specific deficiencies, recommendations for remediation of deficiencies, and a cost estimate for corrective actions. The standards of data capture and elements of concern for the bus stop survey have also been applied to the bus stops located within these facilities.

The assessment of the elements at the facilities included the following general categories:

- pedestrian access;
- passenger amenities;
- safety and security features;
- information/communication features;
- operational features; and
- parking facilities.

These broad categories include the following accessibility parameters as applied to the facilities assessments.

- **Accessible Routes**
  - Must be 36” minimum wide continuous unobstructed path.
  - Must have a 32” minimum width at doorways.
  - Must have 60” X 60” passing spaces at 200’ intervals.
  - Running slope (direction of travel) must be equal to or less than 5 percent (>5% = ramp).
  - Cross slope (perpendicular to direction of travel) must be equal to or less than 2 percent.

- **Surfaces and Sidewalks**
  - Surface must be firm, stable, slip resistant (wet or dry).
  - Changes in level between 1/4” and 1/2” must be beveled at 1:2 slope.
  - Changes in level greater than 1/2” are not allowed or must be ramped.
  - Gaps in gratings must be no greater than 1/2” wide and openings must be aligned perpendicular to travel.

- **Protruding Objects**
  - Objects at 27” to 80” above grade must not be more than a 4” protrusion.
  - Post-mounted objects must not be more than a 12” protrusion.
  - Overhead clearance must be equal to or greater than 80” above the surface.

- **Ramps and Curb Ramps**
  - The maximum ramp segment slope permitted is 1:12 (8.3%).
  - The maximum cross slope permitted is 1:48 (2%).
  - Level landings must be provided at each 30’ (1:12) or 40’ (1:16) horizontal projection.
  - Landings must be no less than 60” long and full width of ramp segment.
  - Handrails must be provided on both sides of ramp (handrails not required on curb ramps).
  - Edge protection must be provided on ramp drop-offs.
  - Change in direction on ramps must be equal to or greater than 60” X 60”.
  - Curb ramps must have detectable warning material the full width of ramp

and either the full length of ramp or 24” from back edge of curb.
    - Curb ramps must have a 36” long landing at top of slope.
    - Curb ramps must have detectable warning in truncated domes with pattern and characteristics defined by regulations, including contrasting color.
    - Detectable warning also required at landings and flush transitions at street crossings.

- **Bus Stops/Boarding and Alighting Areas**
    - Must be on or connect to an accessible route.
    - Must have an accessible approach to the boarding and alighting area and all provided amenities.
    - The clear area of the boarding and alighting area must be equal to or no less than 60” parallel and 96” perpendicular to the curb or street/roadway edge and connected to the accessible route.
    - Cross slope of boarding and alighting area (perpendicular to the curb) equal to or less than 2 percent.
    - The running slope (parallel to the curb) of the boarding and alighting area should match the slope of roadway.
    - The boarding and alighting area must provide a firm, stable, slip resistant surface.
    - The bus stop site must be chosen to provide the greatest degree of accessibility practicable.
    - Bus stop amenities must be connected to accessible route and allow accessible maneuvering space and be within 48” maximum reach range of all operating controls.
    - If a shelter is provided, it must connect to the accessible route and allow a minimum space of 30” X 48” fully within shelter.
    - If a bench is included within a shelter, it must allow minimum space of 30” X 48” resting/transfer space at one end of bench.

- **Bus Stop Signs**
    - Proper signs at bus stops are an important element of good transit service. Signs serve as a source of information to patrons and operators regarding the location of the bus stop and are excellent marketing tools to promote transit use. For example, letter styles, sign appearance, and color choice should be unique to the transit system so that passengers can readily identify bus stops. Double-sided signs that provide for visibility from both directions and reflectorized signs for night-time visibility are preferred.
    - Bus stop signs should be placed at the location where people board the front door of the bus. The bus stop sign shows the area where passengers should stand while waiting for the bus. It also serves as a guide for the bus operator in positioning the vehicle at the stop. The bottom of the sign should be at least 7 feet above ground level and should not be located closer than 2 feet

from the curb face.

- **Other Signage**
  - Signs providing route designations, bus numbers, destinations, and access information must be designed for use by transit riders with vision impairments. In some cases, two sets of signs may be needed to ensure visibility for most users and to assist users with sight limitations. Route maps or timetables are not required at the stop, though such information would be valuable to all passengers.
  - Specific guidelines are given for these signs in Section 703 of the ADAAG and must be followed to ensure compliance.

- **Other Parameters**
  - Transit route information can be displayed on shelters, in business lobbies, along developed walkways, and in other appropriate areas to provide accurate route and schedule information to the public. SunTran bus stop installations could include a route schedule sign display mounted to the bus stop sign post or on the shelter wall when provided.
  - Landscape features can be used at transit waiting areas to increase passenger comfort and to develop an attractive transit waiting area. Earth berming, trees, and other plantings can be used to provide shade, act as windbreaks, and offer an aesthetically appealing environment to transit users. However, passenger security, as well as the visibility of passengers waiting for the bus at the facility, must be considered when designing these features.

Data Analysis and Results

The table below details the findings of the facilities assessments and includes the recommended course of corrective action and the estimated cost for the recommended repair.

Central Downtown Transfer Station, Stop ID #2100

529 Northeast 1st Avenue, Ocala, FL 34470

Description

Located in the central downtown area of Ocala, this transfer station provides service to the 1, 2, 3, and 4 routes, as shown in Figure 3-5. A large covered bus loading island connecting to seven bus pull-in slips provides accessible access to boarding and alighting of the buses. Additional bus loading areas are provided in the parking/staging area of the facility which are accessed directly west from the bus loading island from a curb ramp along the sidewalk from the island and across the bus access roadway to the annex loading areas. The transfer station is lighted by parking lot pole lighting fixtures surrounding the facility and canopy ceiling light fixtures. Amenities for the boarding and alighting locations include

benches, signage displays, and waste receptacles. Public parking is provided at the facility and includes accessible parking.

The facility is shared by a Greyhound bus depot and, at one time, provided Amtrak service.

Figure 3-5 – Central Downtown Transfer Station Location

Access to the raised concrete bus loading island containing the transfer station and its amenities is unrestricted and routes to the bus boarding and alighting areas are fully accessible. Additionally, the connecting pathways from the bus boarding and alighting areas to the adjoining sidewalks, Greyhound depot, and parking areas are also compliant with minimum ADAAG and FAC regulations.

Deficiencies:

1. The cross slope of the bus loading island exceeds the maximum slope permitted by ADAAG. The average cross slope was measured at 3.5% where the ADAAG allows a maximum 2% cross slope.

2. The curb ramp to the bus loading island from the parking area nearest the Greyhound terminal has an excessive slope measured at an average 11%. ADAAG allows a maximum 8.33% slope on ramps.

3. The curb ramp from the bus loading island at the south end leading to the annex bus parking and loading area has an excessive slope averaging 9%. ADAAG allows a maximum 8.33% slope.

Recommendations:

1. When necessary to replace the bus loading island concrete surface, ensure that the replaced surfaces do not exceed a 2% cross slope.

2. Replacement of the curb ramp to remedy the excessive slope is necessary.

3. Replacement of the curb ramp to remedy the excessive slope is necessary.

LOOKING NORTH AT BUS LOADING ISLAND

LOOKING SOUTH AT BUS LOADING AREAS

ONE ACCESSIBLE PARKING AREA

CURB RAMP TO PARKING AREAS

CURB RAMP TO PARKING AREAS (OPP VIEW)

CURB RAMP FROM BUS LOADING ISLAND

Marion County Public Health Transfer Station, Stop ID#4057

1801 Southeast 32nd Avenue, Ocala, FL 34471

Description

A single bus shelter and stop is located adjacent to the perimeter walkway of the Marion County Public Health facility, as shown below in Figure 3-6. Facility includes one shelter with ambient lighting and typical amenities including benches, and a waste receptacle, and system signage.

Transfers between the Blue and Red lines (#2 and #5) are provided at the stop. The bus stop presents several accessibility deficiencies. There is no 5' X 8' boarding and alighting area, the shelter is not accessible, and benches located on each side of the shelter are not accessible. Additionally, the main entrance to the facility is not accessible requiring individuals with disabilities using wheelchairs or other mobility devices to use the accessible entrance just north of the bus stop. There is no signage providing this information at the bus stop.

Figure 3-6 Marion County Public Health Transfer Station Location

Deficiencies:

1. A 5' wide concrete sidewalk is provided at the bus stop and an unobstructed boarding and alighting area no less than 5' parallel to the edge of the roadway and 8' perpendicular to the roadway is not provided.

2. The floor of the shelter is approximately 4 inches above the surface of the sidewalk making the shelter non-accessible.

3. Masonry benches located on each side of the shelter are in sand surfaces and not accessible to individuals with disabilities.

Recommendations:

1. A 5' X 3' section of concrete pad will have to be installed to increase the existing area for boarding and alighting.

2. The shelter must be modified to eliminate the 4” rise in elevation to provide accessible use of the shelter.

3. The benches will have to be relocated to a surface or area making them accessible (no less than a 30” X 48” clear space that is firm, stable, and slip resistant adjacent to the front edges of the benches.)

SHELTER PLACEMENT AND BENCHES

SHELTER FLOOR 4 INCHES ABOVE WALK

VIEW OF BUS STOP W/ SHELTER

MAIN ENTRANCE (NOT ACCESSIBLE)

ACCESSIBLE ENTRANCE

STOP LOCATION IN RELATION TO PARKING

4.0 DEVELOPMENT OF IMPROVEMENT PROGRAM

The improvement needs presented in Section Three were reviewed and organized into categories or groups based on how they should be addressed and/or who would be responsible for addressing them. The development of the improvement program considered several steps, including:

- Step 1: Identify the entity responsible for the improvement (TPO/SunTran or other).
- Step 2: Determine whether stops can be removed, consolidated, or relocated.
- Step 3: Prioritize improvements that are the TPO's/SunTran's responsibility through:
    - Determining improvements that should be addressed immediately (referred to as "quick fixes");
    - Determining whether funds can be leveraged from other entities' projects to cover costs of the improvements; and
    - Creating a phased implementation plan of prioritized bus stop improvements.

Figure 4-1 illustrates the process used to develop the phased implementation plan.

STEP 1: IDENTIFY RESPONSIBLE ENTITY

The first step in developing the phased implementation plan was to determine which improvements are the responsibility of the TPO/SunTran versus those improvements that are the responsibility of other entities. Although many of the identified potential bus stop improvements will need to be addressed by TPO/SunTran, it also is the case that a number of the recommended improvements may fall under the responsibility of other entities such as FDOT, Marion County, City Ocala, and/or a private entity. Based on the responsible entities identified for each type of improvement, which are presented in Table 4-1, those improvements identified to be the responsibility of an entity other than the TPO/SunTran are removed from the list of improvements that are to be included in the phased implementation plan. These improvements will be considered separately, as the TPO/SunTran will need to coordinate with these entities to specify the needed improvements and determine the best course of action to complete them in an appropriate timeframe.

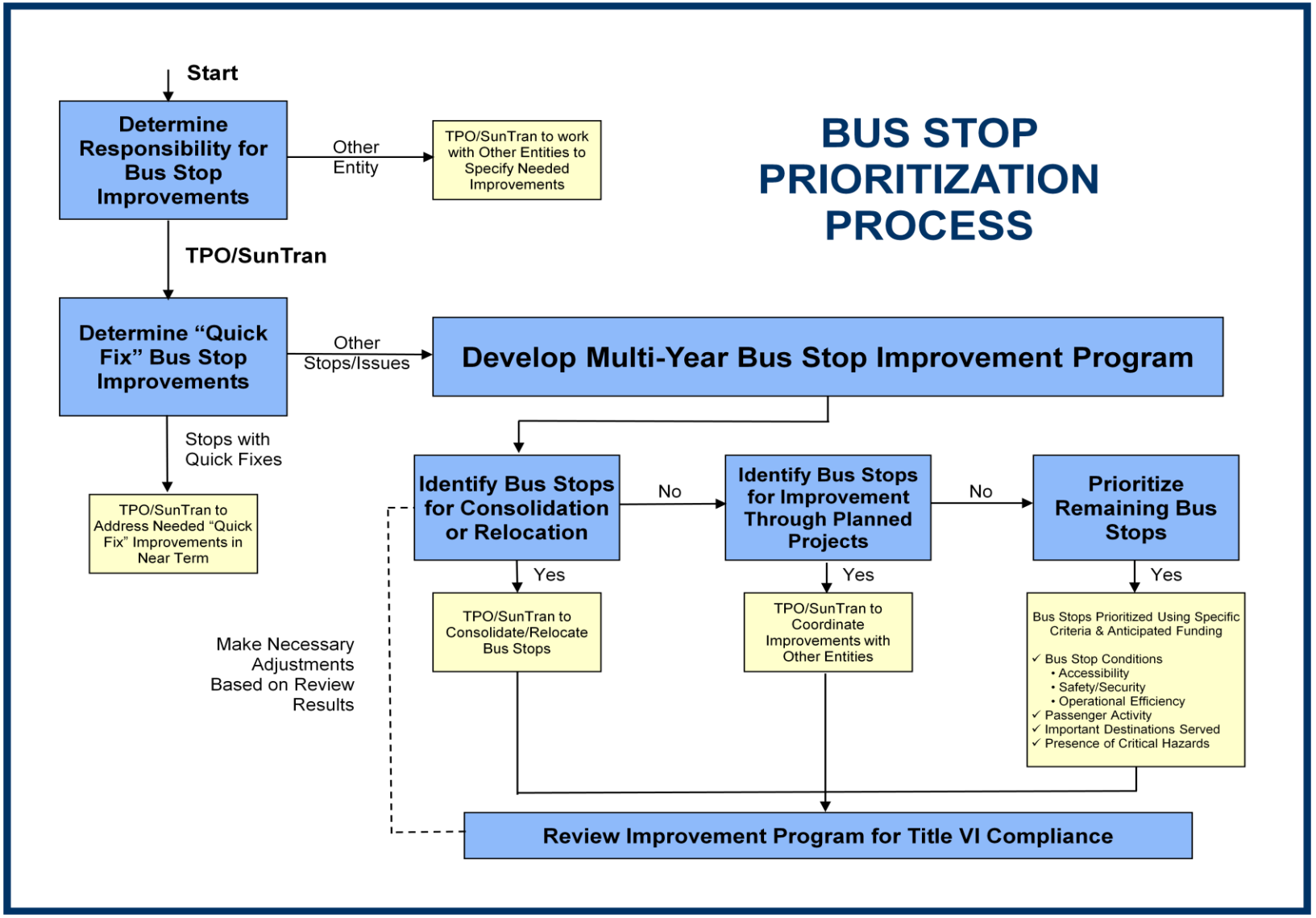

Figure 4-1 Prioritization Process Flow Chart

Table 4-1 Responsible Entity for Bus Stop Improvements

Description	Responsible Entity
Replace Sign at Stop	TPO/SunTran
Refurbish Shelter	TPO/SunTran
Lion's Club Bench Obstruction	Lion's Club
Install Lighting for Shelter	TPO/SunTran
Install Other Lighting Sources	Entity Bus Stop Located In
New Boarding and Alighting Area	TPO/SunTran
Resurface Boarding and Alighting Area	TPO/SunTran
New Connecting Path	TPO/SunTran
New Sidewalk	Entity Bus Stop Located In
Resurface Sidewalk	Entity Bus Stop Located In
New Curb Ramp	Entity Bus Stop Located In
Resurface Curb Ramp	Entity Bus Stop Located In
Relocate Bus Stop	TPO/SunTran

As seen in Table 4-1, the TPO/SunTran are not responsible for a number of infrastructure items that are primarily implemented and maintained by other jurisdictions. The TPO/SunTran are responsible for only the infrastructure pertaining to its bus stop directly, such as bus stop signs, shelters, and boarding and alighting areas. Sidewalks and curb ramps are maintained by other jurisdictional entities and the Lion's Club maintains its own benches. Although sidewalks are maintained by the jurisdictional entity where the bus stop is located, the TPO/SunTran are responsible for the installation of a connecting path from the landing area to the sidewalk if one is present.

STEP 2: IDENTIFY CONSOLIDATED/RELOCATED BUS STOPS

The second step in developing the phased implementation plan was to determine which SunTran bus stops have been identified for consolidation or elimination. With approximately 350 bus stops, it is possible that SunTran's system has some stops that can be consolidated (i.e., the grouping of two or more stops into a single stop) or eliminated altogether. The decision to consolidate or eliminate stops can be based on such factors as the existing level of passenger activity, the spacing between bus stops, the placement/location of the bus stop, and/or the severity of needed improvements. For this effort, the possibility of consolidating stops considered three specific criteria:

- *Distance* – A minimum bus stop spacing distance of one-eighth mile was considered for urban bus stops and one-quarter mile for suburban and rural bus stops. Stops that are spaced more closely than this were reviewed to determine whether consolidation may be feasible without negatively impacting passenger walk access to SunTran service.
- *Nearby Trip Generators* – The number of nearby trip generators were used to determine whether consolidation is recommended for each bus stop.
- *Bus Stop Conditions Priority Scoring* – The stage of the prioritization process that considered bus stop conditions (i.e., accessibility, safety/security, operational efficiency) was used to help determine the timing of the bus stops being proposed for consolidation (i.e., immediate, near term, long term).

Based on this analysis, 28 bus stops are recommended for initial consolidation, a list of which is presented in Table 4-2.

As a future activity, when ridership data becomes available, TPO/SunTran staff may want to review the location of other bus stops in the system in order to improve the operational efficiency of the service by eliminating low usage stops.

It should be noted that this effort also included identifying bus stops that the TPO/SunTran may want to consider relocating, based on safety/security or operational efficiency issues identified during the inventory process. Scenarios warranting possible relocation include the following:

- Bus stop is located just over the crest of a hill;
- Bus stop is located just after the curve in the street;
- Bus stop is located near a railroad crossing or track;
- Waiting passengers are hidden from view of oncoming traffic;
- A stopped bus straddles the crosswalk or obstructs a curb ramp;
- Bus stop discharges passengers onto driveway apron; and
- Bus stop discharges passengers onto roadway;

A total of 92 bus stops were identified as having safety/security or operational efficiency issues that warranted possible relocation, a list of which is presented in Table 4-3. .

Table 4-2 Bus Stops Recommended for Consolidation

#	Bus Stop ID	On Street	Cross Street
1	1015	MARICAMP RD	PINE RD
2	2080	NE 27 AVE	NE 3RD ST
3	3007	NW 14 TH ST	NW 17TH ST
4	3010	NW 20TH AVE	NW 11TH ST
5	3012	NW 20TH AVE	NW 11TH ST
6	3015	BLITCHTON RD	NW 23RD AVE
7	4001	NE 5TH ST	NE WATULA
8	4002	WATULA AVE	NE 5TH ST
9	4009	SE 36TH AVE	NE 3RD ST
10	4010	SE 36TH AVE	NE 3RD ST
11	4023	SE 3RD ST	SE 12TH ST
12	4027	MAGNOLIA EXT	SE 16TH PL
13	4028	MAGNOLIA EXT	OCALA MEDICAL PARK
14	4029	SE 17TH ST	SE 11TH AVE
15	4031	SE 17TH ST	WOODRIDGE BLDG
16	4035	SE 17TH ST	SE 11TH AVE
17	4044	SE 17TH ST	SE 25TH AVE
18	5006	SW 5TH ST	SW MLK AVE
19	5011	SW 5TH ST	MLK AVE
20	5020	SW 23RD AVE	SW 10TH ST
21	5021	SW 23RD AVE	SW 10TH ST
22	6016	NE 14TH ST	NE 30TH AVE
23	6026	NE 19TH AVE	NE 3RD ST
24	6027	NE 2ND ST	13TH AVE
25	6029	NE 19TH AVE	NE 2ND ST
26	6031	NE 2ND ST	SANCHEZ AVE
27	6035	NE 2ND ST	13TH AVE
28	6037	NE 2ND ST	SANCHEZ AVE

Table 4-3 Bus Stops Recommended for Relocation

#	Bus Stop ID	On Street	Cross Street
1	1002	SE 32ND AVE	SE 24TH ST
2	1005	CEDAR SHORES PLAZA	
3	1007	MARICAMP RD	ROTARY SPORTS COMPLEX
4	1008	MARICAMP RD	ROTARY SPORTS COMPLEX
5	1018	BAHIA RD	MIDWAY RD
6	1024	MIDWAY RD	SR 464
7	1027	SILVER COURSE	SILVER COURSE RD
8	1028	SILVER COURSE	SILVER COURSE RD
9	1036	MIDWAY DR	LAKE VILLAGE
10	1037	BAHIA RD	HWY 464
11	1038	BAHIA RD	PINE RD
12	1039	SILVER PASS	FAIRWAY CIR
13	1043	SPRING RD	PINE RD
14	1044	SPRING RD	PINE RD
15	1053	SILVER RD	OAK RD
16	1056	OAK RD	OAK CT
17	1061	SE 38TH ST	MARICAMP RD
18	2005	SILVER SPRINGS BLVD	NE 46TH CT
19	2025	NE 36TH AVE	NE 35TH ST
20	2027	NE 35TH ST	NE 49TH CT
21	2028	NE 35TH ST	LINDALE MOBILE HOMES
22	2034	NE 55TH AVE	NE 30ST ST
23	2041	NE 3RD ST	NE 22ND AVE
24	2042	NE 3RD ST	NE 22ND AVE
25	2043	NE 3RD ST	NE 25TH AVE
26	2046	NE 35TH ST	19TH AVE
27	2048	NE 35TH ST	PEARL BRITAIN PLAZA
28	2052	NE 28TH ST	JACKSONVILLE RD
29	2055	NE 28TH ST	JACKSONVILLE RD
30	2059	NW 1 AVE	NW 20 ST
31	2068	N MAGNOLIA	N 14TH ST
32	2070	NE 8TH AVE	NE 14TH ST
33	2081	NE 3RD ST	NE 26TH AVE
34	2082	NE 17TH AVE	NE 3RD ST
35	2084	LIBRARY	SILVER SPRINGS BLVD
36	2085	SLIVER SPRINGS BLVD	NE 7TH AVE
37	2090	MLK AVE	SW 2ND ST
38	2098	NE 8TH AVE	NE 4TH ST
39	2099	SE 25TH AVE	FORT KING ST
40	3008	NW 20TH AVE	NW 13TH PL

Table 4-3 Bus Stops Recommended for Consolidation, continued

#	Bus Stop ID	On Street	Cross Street
41	3011	MLK AVE	NW 12TH ST
42	3027	NW 4TH ST	NW 20TH AVE
43	3028	NW 4TH ST	MLK AVE
44	3032	NW 4TH ST	MLK AVE
45	3035	NW 2ND ST	NW 7TH AVE
46	3042	SILVER SPRINGS BLVD	SW 26TH AVE
47	3043	SW 33RD AVE	SR 40
48	3047	SW 33RD AVE	SW 13TH ST
49	3049	SW 31ST AVE	PADDOCK PARK APTS
50	4003	SR 40	SR 492
51	4007	NE 36TH AVE	NE 8TH PL
52	4013	SE 36TH AVE	FORT KING ST
53	4014	SE 36TH AVE	FORT KING ST
54	4017	WATULA AVE	SE 2ND ST
55	4020	SE 3RD AVE	SE 8TH ST
56	4021	SE 36TH AVE	SE 8TH ST
57	4022	SE 36TH AVE	SE 8TH ST
58	4025	SE 3RD AVE	MAGNOLIA EXT
59	4026	SE 3RD AVE	MAGNOLIA EXT
60	4033	SE 17TH ST	SE 14TH AVE
61	4039	SE 17TH ST	SE 22ND AVE
62	4040	SE 17TH ST	WOODRIDGE BLDG
63	4043	SE 17TH ST	SE 20 AVE
64	4045	SE 36TH AVE	SE 17TH ST
65	4046	SE 36TH AVE	SE 17TH ST
66	4051	SE 24TH ST	MILLENIUM DOG PARK
67	4052	SE 24TH ST	SE 36TH AVE
68	4053	SE 24TH ST	SE 36TH AVE
69	4054	SE 24TH ST	MILLENIUM DOG PARK
70	5002	MAGNOLIA AVE	FORT KING ST
71	5004	MAGNOLIA AVE	SW 3RD ST
72	5014	SE 1ST AVE	SE 7 ST
73	5015	SW 23RD AVE	SW 7TH PL
74	5016	SW 23RD AVE	SW 7TH PL
75	5022	PINE AVE	SW 12TH ST
76	5024	PINE AVE	SW 13TH ST
77	5027	SW 16TH ST	SW 1ST AVE
78	5029	SW 27TH AVE	N/A
79	5034	SW 32ND AVE	SW 34TH CIR
80	5039	SW 16TH ST	US 441

Table 4-3 Bus Stops Recommended for Consolidation, continued

#	Bus Stop ID	On Street	Cross Street
81	5040	SW 16TH ST	US 441
82	6001	NE 36TH AVE	NE 35TH ST
83	6011	NE 36TH AVE	VILLAGE SQUARE APTS
84	6014	NE 36TH AVE	NE 14TH ST
85	6021	NE 25TH AVE	SR 492
86	6023	NE 25TH AVE	NE 7TH ST
87	6025	NE 25TH AVE	NE 8TH PL
88	6028	NE 2ND ST	8TH AVE
89	6033	NE 2ND ST	11TH AVE
90	6036	NE 2ND ST	NE 19TH AVE
91	6041	NE 2ND ST	NE 15TH TERR
92	6042	NE 2ND ST	8TH AVE

STEP 3: PRIORITIZATION OF SUNTRAN'S IMPROVEMENT RESPONSIBILITIES

The third step in developing the phased implementation plan was to prioritize SunTran's bus stop improvement responsibilities. This was accomplished using additional process steps. First, "quick fix" bus stop improvements were ascertained by defining identified issues that could be quickly and easily addressed by TPO/SunTran staff at relatively low cost. Second, bus stops were identified that could possibly be improved in conjunction with planned transportation projects. Third, a five-year phased implementation plan was created to help guide the TPO/SunTran in addressing the more significant improvements at the remaining bus stops.

Identify Quick Fix Improvements

The first step in prioritizing SunTran's improvement responsibilities was to determine which improvements are "quick fixes" and can be made in the near-term. This includes stops with comparatively minor issues that can be addressed with minimal effort and/or cost. These types of issues would represent an opportunity for a "quick fix" that falls under the responsibility of the TPO/SunTran and that can be addressed right away without a significant budgetary impact.

For purposes of this analysis, a quick fix improvement consists of the following:

- The replacement or modification of the bus stop sign is required, or
- The order-of-magnitude cost estimate is less than or equal to $500 per stop

Other improvements, such as an obstruction or accessibility issue caused by a 3rd party bench or trash can, could be fixed rather easily; however, these improvements are not

the responsibility of the TPO/SunTran and are, therefore, not included in the list of quick fixes.

A list of those bus stops that have improvements considered to be quick fixes is presented in Table 4-4. It should be noted that this list was generated for those bus stops meeting the quick fix criteria needing the quick fix improvement listed above, regardless of whether other (non-quick fix) improvements also are needed at the bus stop. It should also be noted that "quick fix" does not mean full compliance when the work is complete; it is just addressing an immediate issue or deficiency.

Table 4-4 Bus Stops Recommended for Quick Fixes

#	Bus Stop ID	On Street	Cross Street
1	1011	MARICAMP RD	64TH AVE RD
2	1014	MARICAMP RD	PINE RD
3	1015	MARICAMP RD	PINE RD
4	1034	BAHIA RD	HWY 464
5	1042	SILVER RD	COMMUNITY CENTER
6	1045	SILVER RD	EMERALD RD
7	1051	SPRING RD	EMERALD RD
8	1058	OAK RD	MARICAMP RD
9	1060	LAKE WEIR HIGH SCHOOL	OAK TRACK
10	2007	SILVER SPRINGS BLVD	NE 40TH AVE
11	2008	SR 40	NE 40TH AVE
12	2016	SW 27TH ST	SW 17TH CIR
13	2020	SW 27TH AVE	BEST BUY
14	2044	NE 35TH ST	NE 28TH TERR
15	2051	NE 28TH ST	NE 4TH CT
16	2061	N MAGNOLIA	NW 20TH ST
17	2074	N MAGNOLIA	NE 9TH ST
18	2080	NE 27 AVE	NE 3RD ST
19	2083	NE 8TH AVE	SILVER SPRINGS BLVD
20	2096	SW 19TH AVE RD	SW 21ST CIR
21	2097	SW 19TH AVE RD	SW 21ST AVE
22	3007	NW 14 TH ST	NW 17TH ST
23	3010	NW 20TH AVE	NW 11TH ST
24	3012	NW 20TH AVE	NW 11TH ST
25	3013	NW 10TH ST	NW 22ND CT
26	3015	BLITCHTON RD	NW 23RD AVE
27	4001	NE 5TH ST	NE WATULA
28	4002	WATULA AVE	NE 5TH ST
29	4008	NE 36TH AVE	NE 7TH ST
30	4009	SE 36TH AVE	NE 3RD ST

Table 4-4 Bus Stops Recommended for Quick Fixes, continued

#	Bus Stop ID	On Street	Cross Street
31	4010	SE 36TH AVE	NE 3RD ST
32	4011	WATULA AVE	2ND ST
33	4016	WATULA AVE	SE 2ND ST
34	4023	SE 3RD ST	SE 12TH ST
35	4027	MAGNOLIA EXT	SE 16TH PL
36	4028	MAGNOLIA EXT	OCALA MEDICAL PARK
37	4029	SE 17TH ST	SE 11TH AVE
38	4031	SE 17TH ST	WOODRIDGE BLDG
39	4035	SE 17TH ST	SE 11TH AVE
40	4037	SE 17TH ST	SE 15TH AVE
41	4044	SE 17TH ST	SE 25TH AVE
42	4049	SE 36TH AVE	JERVEY GANTT PARK
43	4050	SE 36TH AVE	JERVEY GANTT PARK
44	5003	SE 1ST AVE	SE 3RD ST
45	5006	SW 5TH ST	SW MLK AVE
46	5007	SW 5TH ST	SW 20TH AVE
47	5011	SW 5TH ST	MLK AVE
48	5020	SW 23RD AVE	SW 10TH ST
49	5021	SW 23RD AVE	SW 10TH ST
50	5028	INSIDE THE PADDOCK MALL	MACYS
51	6004	NE 55TH AVE	SR 40
52	6005	NE 55TH AVE	SR 40
53	6016	NE 14TH ST	NE 30TH AVE
54	6026	NE 19TH AVE	NE 3RD ST
55	6027	NE 2ND ST	13TH AVE
56	6029	NE 19TH AVE	NE 2ND ST
57	6031	NE 2ND ST	SANCHEZ AVE
58	6035	NE 2ND ST	13TH AVE
59	6037	NE 2ND ST	SANCHEZ AVE

Identify Fund Leveraging Opportunities

The second step in addressing the TPO's/SunTran's improvement responsibilities was to determine which bus stop improvements can be completed in conjunction with various types of planned transportation projects, including roadway widening, and transportation enhancements being implemented by FDOT, Marion County, and/or various municipalities. It was found that in the FDOT's 5 year work program, project #429083-1, occurs on a section of road that currently contains two bus stops. Table 4-5 presents a list of the 2 bus stops whose improvements may be able to be "piggy backed" with other transportation projects.

Table 4-5 Potential Piggy-Backed Bus Stops

#	Bus Stop ID	On Street	Cross Street
1	3013	NW 10TH ST	NW 22ND CT
2	3014	NW 10TH ST	NW 22ND CT

While it is believed that some cost efficiencies would result, it is not known at this time the amount that the TPO/SunTran could potentially save by completing the bus stop improvements concurrent with planned transportation projects. Therefore, no attempt has been made in this study to estimate the amount that may saved. For those bus stop improvements that may be completed in conjunction with projects Florida Department of Transportation's (FDOT) Five Year Work Program for FY 2013-2018, the bus stops are noted in the phased implementation plan as possibly tying into the projects. The phasing takes into account the year the majority of project funding will be made available. Therefore, SunTran's bus stop improvement cost for each of the potentially leveraged stops in the phased implementation plan is tied to the year that the transportation improvement is planned to occur over the next five years.

Prioritization Process for Phased Implementation Plan

The TPO and SunTran's limited financial and staff resources prevent all of the required bus stop improvements from being implemented at one time. Therefore, a prioritization process was created with the intention to rate the conditions at each stop and assess needs to determine which improvements should be implemented first. This third and final step in addressing SunTran's improvement responsibilities involved ranking the remaining bus stop improvements with a two-step process:

- Step 1: Rate the accessibility, safety/security, and operational efficiency conditions of each bus stop.
- Step 2: Assess the potential benefit to be derived by the improvements by reviewing bus stop activity and trip generator activity factors (i.e., community facilities).

Step 1: Rate Conditions at the Bus Stops

The initial assessment of the remaining bus stop improvement needs focused on issues with the bus stops related to three major characteristics: accessibility, safety/security, and operational efficiency. To conduct this analysis, three steps were followed to guide the prioritization of bus stops related to these three major characteristics. As part of the inventory process, information on multiple data elements were collected to support the evaluation of the accessibility, safety/security, and operational efficiency of each bus stop. This information was utilized to determine whether the overall condition assessment of each characteristic falls into one of three rating ranges: high, medium, or

low. These ratings account for the fact that there are two factors that could drive the scores: the relative number of deficiencies present at the stop and the relative nature of those deficiencies (i.e., how critical they are compared to the deficiencies in other elements). Given these two factors, the meaning of each ratings range is as follows:

- High – Either the stop has no deficiencies or very few less-critical deficiencies.
- Medium – Either the stop has very few critical deficiencies or a greater number of less-critical deficiencies.
- Low – Either the stop has many critical deficiencies, a combination of critical and less-critical deficiencies, or all of its elements are deficient to some degree.

Accessibility

This category addresses how accessible and available the bus stop is to the passenger. It determines how easy or difficult the bus stop is to navigate by assessing obstructions within the accessible path or sidewalks, presence of infrastructure such as curb ramps or bus stop signs, and the compliance of that infrastructure. An overall accessibility score was developed for each bus stop using the following elements related to accessibility:

- bus stop location;
- presence of a controlled pedestrian crossing;
- presence of a curb and compliant curb ramp;
- ability to maneuver a wheelchair through shelter;
- bench obstruction;
- presence and compliance of a sidewalk;
- presence and compliance of landing area; and
- presence and compliance of the bus stop sign.

As noted previously, this information is utilized to determine whether the accessibility score calculated for each SunTran bus stop falls into one of three ratings ranges: high, medium, and low. Table 4-6 presents the distribution of the accessibility scores developed for SunTran's bus stops. Table 4-7 presents a list of the 10 bus stops with the highest accessibility scores. While Table 4-8 presents a list of the 10 bus stops with the lowest accessibility scores, signifying those stops with the greatest preponderance of accessibility issues.

Table 4-6 Distribution of Accessibility Scores

Ratings Range	# of Bus Stops	Distribution
Low (<=0)	156	44%
Medium (>0 & <5)	89	25%
High (>=5)	109	31%
Total	354	100%

Table 4-7 Bus Stops with Highest Accessibility Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	5019	SW 1ST AVE & SW 10TH ST	13
2	5001	SE 1ST AVE & FORT KING	11
3	5004	MAGNOLIA AVE & SW 3RD ST	11
4	2001	INSIDE WAL-MART & NE 24TH ST RD	11
5	5028	INSIDE THE PADDOCK MALL & MACYS	10
6	2097	SW 19TH AVE RD & SW 21ST AVE	9
7	1002	SE 32ND AVE & SE 24TH ST	9
8	2096	SW 19TH AVE RD & SW 21ST CIR	9
9	4012	WATULA AVE & 2ND ST	8
10	4049	SE 36TH AVE & JERVEY GANTT PARK	8

Table 4-8 Top 10 Bus Stops with Lowest Accessibility Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	4027	MAGNOLIA EXT & SE 16TH PL	-6
2	4025	SE 3RD AVE & MAGNOLIA EXT	-6
3	3047	SW 33RD AVE & SW 13TH ST	-5
4	1007	MARICAMP RD & ROTARY SPORTS COMPLEX	-5
5	1053	SILVER RD & OAK RD	-4
6	4001	NE 5TH ST & NE WATULA	-4
7	6027	NE 2ND ST & 13TH AVE	-4
8	4002	WATULA AVE & NE 5TH ST	-4
9	3020	BLITCHTON RD & NW 7TH ST	-4
10	1058	OAK RD & MARICAMP RD	-4

Safety/Security

Similar to the accessibility score, an overall safety/security score was developed for each bus stop using seven elements related to safety/security. This category rates how safe or secure the passenger is when accessing the stop or standing at the stop while waiting for the bus. This involves such issues as location of the bus stop and whether the passengers/pedestrians would be visible to oncoming traffic, or potential hazards at the bus stop such as steep swales or guide wires. The following elements were used to develop the safety/security score:

- bus stop location;
- presence of a controlled pedestrian crossing;
- presence of detectible warnings on the curb ramp;
- presence of marked crosswalk(s);
- potential hazards;
- landing area in a safe location; and
- presence of lighting.

This information is utilized to determine whether the safety/security score calculated for each SunTran bus stop falls into one of three ratings ranges: high, medium, and low. Table 4-9 presents the distribution of the safety/security scores developed for SunTran's bus stops. Table 4-10 presents a list of the 10 bus stops with the highest safety/security scores, while Table 4-11 presents a list of the 10 bus stops with the lowest safety/security scores, signifying those stops with the greatest preponderance of Safety/security issues.

Table 4-9 Distribution of Safety/Security Scores

Ratings Range	# of Bus Stops	Distribution
Low (<=0)	42	12%
Medium (>0 & <5)	148	42%
High (>=5)	164	46%
Total	354	100%

Table 4-10 Top 10 Bus Stops with Highest Safety/Security Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	5019	SW 1ST AVE & SW 10TH ST	10
2	4037	SE 17TH ST & SE 15TH AVE	10
3	6016	NE 14TH ST & NE 30TH AVE	10
4	4012	WATULA AVE & 2ND ST	10
5	4049	SE 36TH AVE & JERVEY GANTT PARK	10
6	2039	NE 14TH ST & NE 33 AVE	10
7	4019	SE 3RD AVE & SE 8TH ST	10
8	2002	SILVER SPRINGS BLVD & NE 49TH TERR	10
9	2003	SILVER SPRINGS BLVD & NE 49TH CT	10
10	2061	N MAGNOLIA & NW 20TH ST	10

Table 4-11 Bottom 10 Bus Stops with Lowest Safety/Security Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	1021	SILVER COURSE & MIDWAY RD	-4
2	2024	NE 35TH ST & COEHADJOE PARK	-4
3	2050	NE 14TH AVE & NE 31ST PL	-4
4	2034	NE 55TH AVE & NE 30ST ST	-4
5	6001	NE 36TH AVE & NE 35TH ST	-4
6	2025	NE 36TH AVE & NE 35TH ST	-4
7	5014	SE 1ST AVE & SE 7 ST	-4
8	4044	SE 17TH ST & SE 25TH AVE	-3
9	6027	NE 2ND ST & 13TH AVE	-2
10	2005	SILVER SPRINGS BLVD & NE 46TH CT	-2

Operational Efficiency

Lastly, an overall operational efficiency score was developed for each bus stop. This category rates each bus stop by its effectiveness to facilitate timely and efficient operation of the transit system. The following five elements related to operational efficiency were used to develop the score:

- bus location when stopped (e.g., right-turn lane, curb lane, parking lane, etc.);
- bus stop relation to nearest intersection (e.g., near side, far side mid-block, etc.)
- presence of controlled pedestrian crossing;
- potential hazards; and
- presence and compliance of a sign at the bus stop.

This information is utilized to determine whether the operational efficiency score calculated for each SunTran bus stop falls into one of three ratings ranges: high, medium, and low. Table 4-12 presents the distribution of the operational efficiency scores developed for SunTran's bus stops. Table 4-13 presents a list of the 10 bus stops with the highest operational efficiency scores, while Table 4-14 presents a list of the 10 bus stops with the lowest operational efficiency scores, signifying those stops with the greatest preponderance of operational efficiency issues.

Table 4-12 Distribution of Operational Efficiency Scores

Ratings Range	# of Bus Stops	Distribution
Low (<=0)	37	11%
Medium (>0 & <5)	284	80%
High (>=5)	33	9%
Total	354	100%

Table 4-13 Top 10 Bus Stops with Highest Operational Efficiency Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	4037	SE 17TH ST & SE 15TH AVE	5
2	6016	NE 14TH ST & NE 30TH AVE	5
3	4032	SE 17TH ST & SE 22ND AVE	5
4	2039	NE 14TH ST & NE 33 AVE	5
5	2002	SILVER SPRINGS BLVD & NE 49TH TERR	5
6	2003	SILVER SPRINGS BLVD & NE 49TH CT	5
7	3022	MLK AVE & NW 7TH ST	5
8	2074	N MAGNOLIA & NE 9TH ST	5
9	2013	SW 27TH AVE & SW 14TH ST	5
10	4036	SE 17TH ST & LAKE WEIR AVE	5

Table 4-14 Bottom 10 Bus Stops with Lowest Operational Efficiency Score

Ranking	Bus Stop ID	Intersection	Accessibility Score
1	6004	NE 55TH AVE & SR 40	-2
2	3028	NW 4TH ST & MLK AVE	-2
3	2083	NE 8TH AVE & SILVER SPRINGS BLVD	-1
4	4030	SE 17TH ST & LAKE WEIR AVE	-1
5	6030	2ND ST & WATULA	-1
6	3002	NW 2ND ST & MAGNOLIA AVE	-1
7	2005	SILVER SPRINGS BLVD & NE 46TH CT	-1
8	1037	BAHIA RD & HWY 464	-1
9	5002	MAGNOLIA AVE & FORT KING ST	-1
10	1034	BAHIA RD & HWY 464	-1

Step 2: Assess Factors Related to the Need for Improvements

The second step in the process was assessing factors that relate to the need for the improvement – where would the most benefits be derived. Typically, passenger activities at the stop in conjunction with the adjacent destinations are used to make this determination. However, passenger counts are unavailable for all stops in the SunTran system. Therefore, the following two factors that were used for this assessment:

- Perceived passenger activity at the stop - based on professional judgment, which stops appear as if they would have the highest usage
- Destinations – which stops serve important community destinations

Bus Stop Activity

Bus stop activity is typically assessed for each stop using Automatic Passenger Counter (APC) data. Bus stop activity is defined as the total number of passengers boarding and alighting at a single stop over the course of an average weekday. This particular criterion is important in helping establish the relative "necessity" of each stop because of the level of patron use. The higher the usage of the stop, the more pertinent are the deficiencies. APC data is not currently collected by SunTran. However, in the future, if APC data is available, this assessment can be revised based on the passenger activity levels.

Nearby Trip Generators

During the inventory process to collect SunTran bus stop information, the surveyors also assessed and recorded information on various key trip generators (e.g., schools, offices, shopping centers, social service agencies, etc.) that were located near each bus stop. This information was taken into consideration when analyzing the stops, since some of these generators are typically more closely related to transit use. This criterion is also important in establishing the relative "necessity" of a particular stop. Stops that serve nearby transit generators are critical despite the level of ridership because the trips are critical. The more trip generators around the stop, the more pertinent the deficiencies. Table 4-15 list 25 bus stops that serve important trip generators that were noted during the inventory process.

Table 4-15 Stops Serving Major Trip Generators

Bus Stop ID	Intersection	Trip Generator
4001	NE 5TH ST & NE WATULA	Park, Transit Station/Bus Transfer
4002	WATULA AVE & NE 5TH ST	Park, Transit Station/Bus Transfer
4025	SE 3RD AVE & MAGNOLIA EXT	Medical/Rehab
4028	MAGNOLIA EXT & OCALA MEDICAL PARK	Medical/Rehab, Office/Commercial, Retail
4044	SE 17TH ST & SE 25TH AVE	Medical/Rehab, Office/Commercial
4048	SR 464 & SE 30TH ST	Medical/Rehab, Office/Commercial
2005	SILVER SPRINGS BLVD & NE 46TH CT	Government
2001	INSIDE WAL-MART & NE 24TH ST RD	Retail, Transit Station/Bus Transfer
5019	SW 1ST AVE & SW 10TH ST	Medical/Rehab, Office/Commercial
5018	SW 1ST AVE & SW 10TH ST	Medical/Rehab, Office/Commercial
5023	SW 1ST AVE & TOP OF HILL	Medical/Rehab
5025	SW 1ST AVE & TOP OF HILL	Medical/Rehab
5026	SW 16TH ST & SW 1ST AVE	Medical/Rehab, Office/Commercial
5027	SW 16TH ST & SW 1ST AVE	Medical/Rehab, Office/Commercial
2022	SW 27TH AVE & 19TH AVE RD	Medical/Rehab, Office/Commercial, Retail
5031	SW 27TH AVE & SW 32ND PL	Medical/Rehab
5036	SW 32ND AVE & SW 33RD RD	Medical/Rehab
5034	SW 32ND AVE & SW 34TH CIR	Medical/Rehab
5032	SW 32ND AVE & SW 31ST RD	Medical/Rehab, Retail
5033	SW 32ND AVE & SW 31ST RD	Medical/Rehab, Retail
5037	SW 32ND AVE & SPECIALTY SURGERY	Medical/Rehab
5030	SW 32ND AVE & SW 31ST RD	Mall, Medical/Rehab, Retail
3033	MLK AVE & NW 4TH ST	Housing authority, Residential
2097	SW 19TH AVE RD & SW 21ST AVE	Medical/Rehab, Retail
2092	SW 20TH CT & MARION SENIOR SERVICES	Medical/Rehab

ADDITIONAL CONSIDERATION OF POTENTIAL HAZARDS

Generally speaking, a potential safety hazard is one that can be controlled, while a potential risk hazard is something that must be fixed. As part of the analysis, a separate score was developed for each bus stop pertaining to both potential safety and potential risk hazards. Those bus stops that have a rating of "0" indicate that no potential hazards were found, while bus stops with a rating of "3" had the highest level of potential hazards.

DRAFT IMPLEMENTATION PLAN

All of the previous factors were reviewed and a draft implementation program was prepared to prioritize the improvements. This draft implementation program was then reviewed to determine compliance with Title VI of the Civil Rights Act of 1964. As a federally funded transit system, SunTran must ensure that the services and programs are in compliance with Title VI requirements, as described below:

> "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participating in, or denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The grantee must ensure that federally supported transit services and related benefits are distributed in an equitable manner." (Source: FTA Triennial Review Workbook, FY 2008)

To review Title VI compliance, a GIS-based analysis of the SunTran service area was completed to assess the comparative nature and distribution of the proposed bus stop improvements, consolidations, and deletions with regard to both minority and non-minority portions of the service area.

Figure 4-2 illustrates the GIS analysis conducted and resulting Title VI areas in the SunTran service area. Similarly, Table 4-13 summarizes the distribution of the total number of bus stops, the total number of improvements needed, and the number of bus stops marked for consolidation for those bus stops considered to be Title VI bus stops versus other, non-Title VI bus stops. Based on this analysis, xx percent of both the total bus stops and those bus stops identified as needing improvements are located in Title VI areas. In addition, xx percent of the bus stops identified for consolidation are located in Title VI areas. Based on this review, it was concluded that the draft implementation program is in compliance with Title VI requirements.

Figure 4-2

Marion County Title VI Areas

[Insert Title IV Map]

Table 4-13

Summary of Title VI Impact

[Insert Title IV Table]

5.0 IMPLEMENTATION AND FINANCIAL PLAN

In the previous sections, the improvements that are required to improve accessibility conditions at bus stops and facilities were identified, and the entity responsible for undertaking the improvements was determined. The next step in the process is the development of an Implementation and Financial Plan for the TPO and SunTran's required improvements. This was undertaken through the following efforts:

- preparing cost estimates for the required improvements;
- identifying funding that is available for the improvements; and
- reviewing the specific improvements in more detail and categorizing them into two separate groups. These include:
    - quick fix improvements; and
    - improvements that require more time, effort, and/or funding.

It should be noted that, in an effort to ensure that all of SunTran's bus stops are compliant, safe and secure, and operationally efficient, all of SunTran's bus stops were considered in this review, regardless of whether the original bus stop implementation or any subsequent improvements to the stop precede the ADA and, are therefore, grandfathered from having to meet current ADA requirements.

DEVELOPMENT OF IMPROVEMENT COSTS

In order to develop the Implementation and Financial Plan, unit costs for each type of improvement were developed. These unit costs were based on recent experiences with other transit agencies and, when available, standard industry costs when local data was not available. **It is important to note that the unit costs include across-the-board assumptions that will need to be reviewed prior to the actual improvement being completed**.

Table 5-1 includes the unit costs for each type of improvement that were used to estimate the order-of-magnitude improvement costs. In addition, this table includes the total number of bus stops needing each type of improvement, as well as the total cost by improvement type.

Table 5-1

Order of Magnitude Cost Estimates

Improvement	Cost	Number of Bus Stops	Total Cost
Remove Bus Stop	$ 200 each	28	$ 5,600
Relocate Bus Stop	$ 400 each	92	$ 36,800
New Boarding & Alighting Area	$ 1,200 each	159	$ 190,800
Partial Boarding & Alighting Area	$ 150 per sf @ 5' wide	157	$ 73,950
New Connecting Path	$ 25 linear foot	87	$ 89,825
Add/Replace Bus Sign At Stop	$ 175 each	16	$ 2,800
Move 3rd Party Bench	$ 145 each	138	$ 20,010
Detectable Warning	$ 100 per stop	136	$ 13,600
Raised Curb	$ 100 each @ 5' wide	199	$ 19,900
Other Improvements		254	$ 61,200
Total Order of Magnitude Cost Estimates			**$ 514,485**

A contingency for additional design and construction management costs has been added to the costs of improvements identified at SunTran's bus stops and facilities.

Again, it should be noted that the estimates are intended to reflect the order-of-magnitude costs for SunTran's overall bus stop improvement needs over the timeframe of the plan; for specific projects nearing implementation, it will be necessary for the TPO/SunTran to conduct a more detailed cost assessment.

As noted previously in Section Four, the order-of-magnitude costs do not address any consolidation or relocation of bus stops. A total of 28 bus stops are recommended for consolidation and 92 bus stops were found to have potential safety/security or operational efficiency issues, such as the stops being located in front of a driveway, over the crest of a hill, where the passengers are not in view of oncoming traffic, etc. The total number of bus stops recommended for consolidation or relocation is 120. Relocation of the identified bus stops would provide many benefits, including correcting the potential safety hazards to passengers and/or increasing the overall operational efficiency of the bus stop.

TPO/SunTran staff will need to review each of the bus stops recommended for both consolidation and/or relocation in more detail following completion of this study to determine if it is appropriate to consolidate or relocate the bus stop, or instead make improvements to the stop at its current location. Any combination of consolidation, relocating, and improving the stops identified for consolidation and/or relocation will result in adjustments to the cost estimates, depending on whether the cost of needed improvements is less than or greater than the cost of relocating the bus stop.

The effort to determine which stops should be changed (e.g., removed, consolidated, or relocated) will require a focused effort by TPO/SunTran staff. The analysis undertaken in this study provides specific information on bus stops with locational issues, such as the stop being located just over the crest of a hill, just after a curve, where waiting passengers are not in view of traffic, etc.

DEVELOPMENT OF THE IMPLEMENTATION AND FINANCIAL PLAN

Individual Bus Stops

Following the development of the Improvement Plan in Section Four, the Implementation and Financial Plan was developed to identify when the improvements should occur, based on the relative priority of the improvements and anticipated level of funding that would be available for the TPO/SunTran to address the improvements. The Implementation and Financial Plan includes all improvements that are the TPO's and SunTran's responsibility and does not include improvements, such as sidewalk resurfacing, curb ramps, etc., that are the responsibility of other entities.

Due to the nature of the quick fix improvements, it is assumed that one-third of the quick fix improvements identified in the previous table will be completed this fiscal year (FY 2013) and the remaining two-thirds will be completed in the following fiscal year (FY 2014). Therefore, the funding plan that was developed reflects this assumption of the quick fix improvements being implemented over an 18-month period.

As previously mentioned in Section Four, it would be ideal if the TPO/SunTran could take advantage of "piggy backing" needed bus stop improvements with planned roadway projects. Under ideal circumstances, this would permit the TPO/SunTran to benefit either because the project directly addresses some or all of the needed stop improvements, or the project allows the TPO/SunTran to reduce its improvement costs due to the concurrent construction activities. It is not known at this time the amount of implementation costs that could potentially be saved by completing the bus stop improvements concurrent with planned transportation projects. Therefore, potential cost savings through fund leveraging are not included in the Implementation and Financial Plan at this time. In the future, should the desire and ability to estimate the amount of costs that could be reduced through fund leveraging, the cost of the improvements for those impacted stops may be adjusted.

To develop the plan, the prioritized list of bus stop improvements determined to be the TPO's/SunTran's responsibility were incorporated into the Implementation and Financial Plan based on the amount of anticipated funding available each year for the improvements.

It should be stressed that the Implementation and Financial Plan will serve as a general guide for the planning of bus stop and facility improvements and that several factors will influence the timing for implementation of specific improvements and the overall cost of the program, including:

- Opportunities for partnering with other jurisdictions or organizations on implementing improvements.
- Specific site conditions at individual stops, including landscaping, utilities, drainage, which can have a significant impact on the type of improvements required and the associated cost.
- Contracting opportunities, including awarding a unit-price contract for the implementation of improvements at multiple locations.
- Additional opportunities to relocate or consolidate individual bus stops.

On an annual basis, the list of needed improvements will be reviewed against the funding that is available that year to develop a specific work program. As previously mentioned, this will involve development of more detailed cost estimates based on a review of site conditions at individual stops.

Transfer Facilities

As previously mentioned, a separate assessment was conducted at SunTran's two transit facilities. The assessment conducted at Suntran's facilities includes cost estimates for needed improvements totaling approximately $12,200, as described below.

Table 5-1 Transfer Facilities Cost Estimate

Facility	Deficiency	Recommendation	Estimated Cost	Status/Action
Central Downtown Transfer Station	Curb ramps with excessive slopes; cross slope issues	Refer to section 3.8	$ 6,500	City/SunTran action
Marion County Public Health Transfer Station	Non-accessible boarding and alighting area; shelter not accessible; benches not accessible	Refer to section 3.8	$ 5,700	To be discussed with property owner/SunTran action

FUNDING PLAN FOR NEEDED IMPROVEMENTS

Improvements to the TPO's/SunTran's bus stops and shelters are financed through several funding sources, which include:

[Insert Funding Sources]

Projections of the amount of revenue that could be obtained from these sources are:

[Insert Amount of Revenue]

A total of $xxx,xxx is projected to be available from all sources over the next five-year period. It should be stressed that this figure is an estimate of future revenues that **could be** available for this program. Many factors will affect the actual revenues received by the TPO/SunTran, including future reauthorization of the federal transportation funding program, collections by local taxing authorities for the impact fees from developers, and future allocations of the competitive funding from other agencies.

To prepare a funding plan, costs for all the various improvements were calculated and then compared to the amount of funding projected to be available over the next five years. This comparison is shown below:

Program Expenses:

Study Improvement Needs	$472,085
Relocation of bus stops	$36,800
Removal of bus stops	$5,600
Transfer facilities	$12,200
Total program	$526,685
Anticipated Revenues:	$xxx,xxx
Estimated Shortfall:	$xxx,xxx (five-year total)

The relocation of bus stops assumes that all 92 stops will be relocated.

Table 5-2 presents the recommended funding and expenditure program for the study improvements as well as shelter and bus stop improvements. It should be noted that the costs are order-of-magnitude estimates, with the ultimate costs dependent upon how the work is undertaken, site conditions at individual stops, and material and labor prices in future years. The number of stops that are consolidated or relocated will also be an important variable.

It should be noted that other ongoing efforts will accelerate the implementation of the improvements, including:

- Road improvement projects undertaken by local jurisdictions and FDOT.
- Projects undertaken by developers through land use and concurrency agreements in the City of Ocala and Marion County.

Table 5-2

TPO/SunTran Phased Implementation Plan for Bus Stop Improvements

[Insert Phased Implementation Plan]

Annually, the improvements will be need to be reviewed and a work program developed specifying the improvements that will be undertaken. The improvements would be undertaken through task orders. It is envisioned that the effort would focus on implementation of improvements along specific corridors, which would enable improvements to be implemented more quickly.

The phased implementation plan, which identifies the number of improvements by type of improvement to be undertaken each year of the plan, is presented in Table 5-3. A detailed plan showing the specific improvements by bus stop for each year of the plan has been provided to TPO/SunTran staff for use in updating the Implementation and Financial Plan on an annual basis, including developing a specific action program for implementing the improvements.

It should be stressed that this plan is presented as an overall guide to the implementation of improvements. TPO/SunTran staff will need to review the needed improvements and the available funding on an annual basis to develop the annual improvement program.

Table 5-3
Phased Implementation Plan - Identification of Improvements by Year

[Insert Identification of Improvements by Year]

6.0 NEXT STEPS

The following is a summary of next steps for TPO/SunTran to consider to ensure that the major goals of the Bus Stop and Facility Accessibility Study are achieved and maintained over time.

BUS STOP AND FACILITIES STANDARDS

- TPO/SunTran shall use the standards manual concerning the concepts of accessibility, safety/security, and operational efficiency to guide the design of new bus stops and facilities, as well as improvements to existing bus stops and facilities.

FUNDING FOR IMPROVEMENTS

- TPO/SunTran shall seek additional funding for bus stop improvements.

GIS ANALYSIS TO DETERMINE JURISDICTIONAL RESPONSIBILITY

- TPO/SunTran shall conduct a GIS analysis to determine the specific improvements that fall within the responsibility of each respective jurisdiction (City of Ocala, Marion County, and FDOT).
- TPO/SunTran shall formally advise each jurisdiction of the specific improvement needs that are within their responsibility, based on the results of the GIS analysis.

ADVISE ENTITIES RESPONSIBLE FOR IMPROVEMENT NEEDS

- TPO/SunTran shall advise each entity of the list of needed improvements that fall within their responsibility.
- TPO/SunTran shall review and update standards as necessary (as ADAAG/FAC requirements change, etc.).
- TPO/SunTran shall continue to coordinate with FDOT and local jurisdictions on the development and implementation of strategies to implement accessibility improvements.

BUS STOP CONSOLIDATION/RELOCATION

- TPO/SunTran shall review the initial list of bus stops recommended for consolidation and confirm the final list of stops to be removed.
- TPO/SunTran shall provide the list of consolidated bus stops to TPO/SunTran maintenance staff to flag each bus stop identified for consolidation, which shall provide notice to the riders utilizing the stop(s) identified for consolidation.
- TPO/SunTran shall determine additional public outreach efforts, as appropriate, based on the number and scale of the bus stops recommended for consolidation.
- TPO/SunTran shall conduct bus stop consolidation reviews to correspond with the service change route mark-ups that occur multiple times throughout the year.
- TPO/SunTran shall conduct a comprehensive review of additional stops that can be eliminated, relocated, or consolidated, using the spacing standards as well as ridership and bus stop inventory data.
- TPO/SunTran staff shall continue to identify consolidation opportunities as part of roadway improvement reviews requested by other agencies, including FDOT, Marion County, and the city of Ocala.
- TPO/SunTran staff shall review the list of bus stops identified for relocation and determine whether the bus stops should be relocated or improvements made to correct any accessibility, safety/security, or operational efficiency issues, if feasible.

TPO/SUNTRAN TRAINING

- TPO/SunTran shall review and discuss the standards for bus stops and facilities on an ongoing basis to ensure that staff has an understanding of accessibility issues, requirements, and procedures.
- TPO/SunTran shall review and discuss the procedures and responsibilities for implementing new stops and updating the inventory on an ongoing basis.

DATABASE MAINTENANCE PROCEDURES

- TPO/SunTran shall finalize the procedures and staff responsibilities for keeping the inventory up-to-date and ensuring that all new bus stops implemented are in compliance with TPO/SunTran's adopted standards.
- TPO/SunTran shall integrate the inventory database SunTran's scheduling software.
- TPO/SunTran shall, in the future, utilize the updated inventory to enable Customer Service, Service Planning, and Scheduling staff to access information on each stop, including photographs, list of available amenities, conditions at bus stop, and list of planned improvements.

IMPLEMENTATION SCHEDULE FOR QUICK FIX IMPROVEMENTS

- TPO/SunTran shall develop a schedule for TPO/SunTran Maintenance staff to complete the “quick fix” improvements.

REVIEW IMPLEMENTATION AND FINANCIAL PLAN

- TPO/SunTran Engineering and Development Department staff shall be provided the specific phasing plan for use in updating the Implementation and Financial Plan on an annual basis, including developing a specific action program for implementing the improvements.
- TPO/SunTran shall pursue mechanisms for increasing the efficiency with which improvements identified in the Implementation and Financial Plan are completed (i.e., pursuing unit price contracts, etc.).
- TPO/SunTran shall conduct high-level coordination between TPO, SunTran, FDOT, and local jurisdictions to ensure that necessary improvements are addressed.

UPDATE INVENTORY DATABASE REGULARLY

- TPO/SunTran shall update the inventory on a regular basis to reflect any revisions to routes and bus stops undertaken since completion of the initial inventory, including any stops that are removed or relocated to address bus stop consolidation and/or relocation issues.

ANNUAL REVIEW OF PROGRESS

- TPO/SunTran shall review the progress of addressing improvements identified in the Implementation and Financial Plan on an annual basis.
- TPO/SunTran shall coordinate with local jurisdictions, FDOT, and stakeholder groups on strategies for implementing improvements.
- TPO/SunTran shall update the following year’s work program to reflect the new list of needed improvements.

REGULARLY REPORT PROGRESS OF IMPLEMENTATION

- TPO/SunTran shall regularly report the progress of implementing improvements to:
  - TPO/SunTran Board;
  - FDOT; and
  - TPO/SunTran ADA Subcommittee and local jurisdictions.

- TPO/SunTran shall continue to coordinate with local jurisdictions, the development community, and stakeholder groups to advise them of the established standards and discuss strategies for implementing improvements.

REGULARLY UPDATE GIS ANALYSIS

- TPO/SunTran shall provide updated GIS information and the results of GIS analyses conducted for TPO/SunTran bus stops to local jurisdictions and FDOT.

EXPLORE FUTURE APPLICATIONS FOR INVENTORY INFORMATION

- TPO/SunTran shall explore future applications for making information from the inventory available to the public, including a list of amenities, conditions, and photographs for each bus stop, potentially tied to a system map and/or individual route maps and available via the Internet.
- TPO/SunTran shall explore the feasibility of providing inventory information to the public via Google Transit.