



CITY OF  
**ORLANDO**

## 2021 ADA TRANSITION PLAN UPDATE

NOVEMBER 30, 2022



Prepared by: Southeastern Surveying & Mapping Corporation

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# City of Orlando 2021 ADA Transition Plan Update

## Section 1: EXECUTIVE SUMMARY

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The City of Orlando 2021 ADA Transition Plan Update documents the existing conditions of the City's public rights-of-way (PROW) and identifies the improvements necessary to make them accessible and usable for persons with disabilities. This ADA Transition Plan is an update to the City's original ADA Transition Plan created in 1992 and the City's existing Sidewalk and Curb Ramp Inventory created in 2008 to support the ADA Transition Plan. An earlier Transition Plan Update was prepared in 2018, and this 2021 Update is a revision and refresh of the 2018 Transition Plan Update.

This Transition Plan Update is pursuant to the Americans with Disabilities Act (ADA), which requires that all public agencies perform a self-evaluation and develop and update a transition plan to improve all PROW for pedestrian access. Key infrastructure components of these Pedestrian Access Routes are the City's Sidewalks, Curb Ramps, Pedestrian Crosswalks, and Pedestrian Signalization.

### 1.1 Purpose of this Report

The purpose of this report is to update the City's 1992 ADA Transition Plan. The primary focus of this Transition Plan Update falls within Title II of ADA and deals primarily with accessibility on PROW owned and/or maintained by the City of Orlando.

The Self-Assessment portion of this Transition Plan Update contains detailed summaries of the estimated number of physical barriers along the Pedestrian Access Routes within the PROW and the projected budgetary costs necessary to mitigate those barriers. The PROW includes routes used by pedestrians and adjacent private property (e.g., residential and commercial driveways, utility poles and vaults, guy wires, and storm drains) that connect to and from public sidewalks and streets.

The Self-Assessment portion of this Transition Plan Update does not address the existing barriers or costs for compliance for other facilities such as buildings parking lots and City parks, however this Transition Plan Update outlines a methodology and framework for these facilities to be assessed in the future.

The ADA Transition Plan Update has been prepared pursuant to the ADA, which requires that all public agencies develop a transition plan for installing curb ramps, sidewalks, and related facilities within the PROW. This plan includes a detailed survey of the physical barriers found in the PROW under the City's jurisdiction. It also includes a plan, schedule, and recommended procedures for removing these barriers in order to achieve program access.

### 1.2 Self-Evaluation

A primary component of the ADA Transition Plan is the self-evaluation, which includes an inventory of the existing pedestrian facilities within the City public right-of-way (PROW). In 2008, the City performed a comprehensive inventory of existing sidewalks and curb ramps in order to determine where there were gaps and deficiencies in the City's Pedestrian Access Routes. These gaps and deficiencies identified in 2008 have been used by City staff as a baseline for the planning and construction of sidewalk and curb ramp improvements for the past 13 years as the City worked to comply with ADA requirements.

As part of this 2021 Transition Plan Update, the City selected Southeastern Surveying and Mapping Corporation (SSMC) to perform a new baseline assessment of facilities and barriers and prepare a 2021

update to the City's ADA Transition Plan which documents the work performed by the City to comply with ADA requirements and prepare a set of budgetary cost estimates which can be used to estimated projected future costs for compliance.

### 1.3 ADA Transition Plan Update

The ADA Transition Plan Update presents a prioritized list specific items of work to repair or replace the sidewalks and curb ramps that are not compliant with the ADA. This plan anticipates an approximate 20-year implementation period to fully achieve compliance with ADA program accessibility requirements. Because of the large number of elements identified for improvement, this approach determined that there was a need to prioritize projects to allow for phased implementation.

Some improvements will be implemented as part of other ongoing projects, including Capital Improvement Projects (CIP), resurfacing, safety improvements, and private commercial land development projects completed along the City's roadways. As noncompliant elements are addressed, they will be removed from the list of noncompliance. In the case of the public rights-of-way, improved pedestrian facilities will be designed to meet the latest Public Rights-of-Way Accessibility Guidelines (PROWAG). When it is not possible to meet these guidelines, projects will, at a minimum, meet ADA Accessibility Guidelines (ADAAG).

### 1.4 Monitoring and Status Reporting

The City of Orlando is engaged in an ongoing effort to construct and repair sidewalks, curb ramps, and other facilities at numerous locations throughout the City. This construction activity involves several types of projects, including street overlay projects, streetscape projects, utility construction projects and other Capital Improvement Projects within the Public Rights-of-Way.

While it is important to ensure that standards used to design sidewalks, curb ramps, and related improvements are current, it is equally important to monitor construction to ensure that the construction is performed according to the approved specifications. The monitoring of construction activities and reporting of the status of improvements is vital to ensure an effective overall ADA compliance program. The 2021 ADA Transition Plan Update also includes the development of a Geographic Information Systems (GIS) database of pedestrian facilities and deficiencies which public works staff can use to record the improvements observed by monitoring these construction activities and for tracking the status of ADA compliance throughout the City.

By updating this database as improvements are made along the pedestrian access routes, the City will always have a current model representing the status of the City's ADA compliance which can be used to continuously track remaining necessary improvements.

### 1.5 Self-Evaluation Summary

A self-evaluation of deficiencies and barriers along the City's pedestrian access routes was performed in connection with this project. 100% of the City maintained roadway network was reviewed using 2020 Orange County aerial photography, 2020 street level images, and City maintenance records. Sidewalks are a critical component to the evaluation of the City's pedestrian access routes. The following Key Performance Indicators (KPIs) were used to evaluate the City's progress in complying with ADA requirements for Sidewalks:

- **Total City Maintained Miles of Sidewalk** – Total length of existing sidewalks along City maintained roads
- **Number of Sidewalk Gaps** – Count of missing sections of sidewalk between two existing sidewalk sections
- **Total Length in feet of Sidewalk Gaps** – Total length in feet in missing sidewalk sections
- **% of Sidewalk Gaps** – Percentage of the total sidewalk length that has missing sections

- **Sidewalk Grinding & Repair Completed** – Total length in miles of sidewalks where grinding and repair maintenance work has been completed
- **% of Grinding & Repair Completed** – Percentage of sidewalks where maintenance work has been completed
- **Number of Grinding Repair Locations Completed** – Count of locations where sidewalk grinding repair was performed
- **Number of Damage Repair Locations Completed** - Count of locations where sidewalk damage repair was performed

The table below presents these key performance indicators for Sidewalks Citywide.

<b>Sidewalk Key Performance Indicators (KPI)</b>	<b>KPI Value</b>
Total City Maintained Miles of Sidewalk	983.6 miles
Number of Sidewalk Gaps	226 gaps
Total Length in feet of Sidewalk Gaps	16,813 feet
Percent of Sidewalk Gaps	0.32%
Miles of Sidewalk Grinding & Repair Completed	832.1 miles
Percent of Total Sidewalks where Grinding & Repair is Completed	84.6%
Number of Grinding Repair Locations Completed	174,449 sites
Number of Damage Repair Locations Completed	6,505 sites

Curb Ramps are locations where the sidewalk meets the roadway. Curb Ramps are a critical component to the evaluation of the City’s pedestrian access routes. The following Key Performance Indicators (KPIs) were used to evaluate the City’s progress in complying with ADA requirements for Curb Ramps:

- **Total Number of Curb Ramps and At-Grade Pedestrian Crossings** – Count of locations where an existing sidewalk meets the roadway with no pedestrian barrier
- **Total Number of Non-Compliant (Missing) Curb Ramps** – Count of locations where an existing sidewalk meets the roadway and the curb forms a barrier
- **Total Number of Future Curb Ramps needed to close existing Sidewalk Gaps** – Count of locations where a gap between the sidewalk and the roadway exists and a ramp should be added to facilitate crossing the roadway.
- **% of Non-Compliant (Missing) and Future Curb Ramps** – Percentage of Ramps that require constructing compared to the total existing ramps.
- **Total Number of Ramps Requiring Installation of Detectable Warning Surfaces** – Count of locations where truncated dome detectable warning surfaces need to be added to existing ramps.
- **% of Ramps Requiring Installation of Detectable Warning Surfaces** – Percentage of Ramps where a truncated dome detectable warning surface needs to be installed.

The table below presents these key performance indicators for Curb Ramps Citywide.

<b>Curb Ramp Key Performance Indicators (KPI)</b>	<b>KPI Value</b>
Total Number of Curb Ramps and At-Grade Pedestrian Crossings	16,137 curb ramps
Total Number of Non-Compliant (Missing) Curb Ramps	638 curb ramps
Total Number of Future Curb Ramps needed to close existing Sidewalk Gaps	208 curb ramps
Percent of Non-Compliant (Missing) and Future Curb Ramps	5.2%
Total Number of Ramps Requiring Installation of Detectable Warning Surfaces	6,877 curb ramps
Percent of Ramps Requiring Installation of Detectable Warning Surfaces	42.6%

This ADA Transition Plan Update presents a summary of the estimated number of ADA barriers Citywide and the projected budgetary expenditures that will be required to mitigate those barriers in a timely process.

The mitigation schedule to implement this ADA Transition Plan throughout the City of Orlando will span multiple fiscal years, and shall include the installation, repair, and replacement of identified ADA barriers on an annual basis. A summary of the anticipated mitigation costs by category is listed below.

<i>Expenditure Type</i>	<i>Total Expenditure</i>
<i>Gaps in Sidewalk</i>	<i>\$1,150,345</i>
<i>Insufficient Passing Space</i>	<i>\$151,826</i>
<i>Curb Ramps</i>	<i>\$15,889,177</i>
<i>Detectable Warning Surfaces</i>	<i>\$4,380,285</i>
<i>Pedestrian Signals</i>	<i>\$8,071,143</i>
<i>Crosswalks</i>	<i>\$59,820</i>
<i>Obstacles</i>	<i>\$1,555,632</i>
<i>Hazards</i>	<i>\$1,293,012</i>
<i>Damage</i>	<i>\$2,391,344</i>
<b>Total for All Expenditures</b>	<b>\$34,942,584</b>

An anticipated budget schedule has been developed requiring approximately \$2,600,000 annually for 20 years to strategically mitigate the identified existing ADA barriers over a 20-year period.

In the earlier 2018 Transition Plan document, the City had estimated a backlog of \$61,686,200 in expenditures requiring a 30-year schedule to address the required capital improvements and maintenance. For this 2021 Transition Plan Update, thanks to aggressive mitigation work by the City and its contractors since publishing the 2018 Transition Plan Update, this estimated remaining cost has decreased significantly to an estimated \$34,942,584 due to the following factors:

**1. Refinement of the estimated maintenance responsibilities**

In the 2018 Transition Plan Update, it was assumed that the City of Orlando was responsible for maintaining all sidewalks along public roadways within the City. For the 2021 update, each sidewalk and curb ramp were tagged with the Agency responsible for maintenance, based on roadway designation, interlocal agreements, and public rights of way. Maintenance responsibility was recorded as maintained by the City of Orlando, the Florida Department of Transportation, Orange County, or another entity. After identifying the non-City maintained sidewalks, the total mileage of City maintained sidewalks decreased from 1,108 sidewalk miles to 983 sidewalk miles resulting in an 11% reduction.

**2. Aggressive Citywide mitigation of sidewalk damage through grinding and repair work**

In 2018, the City had completed barrier removal along 344 miles of sidewalk covering an estimated 31.1% of the total sidewalk network. By mid-2021, the City has completed barrier removal along 832 miles of sidewalk covering an estimated 84.6% of the total sidewalk network, thereby significantly reducing the future backlog.

**3. Progress made constructing missing curb ramps**

In the 2018 Transition Plan Update, the City had 721 non-compliant (missing) curb ramps where a sidewalk met the roadway with the curb as a pedestrian barrier. Through the City’s construction programs, by mid-2021 the City had reduced that number to 638 curb ramps remaining to be constructed, which is a reduction of 12%.

**4. Progress made constructing missing sidewalk gaps**

In the 2018 Transition Plan Update, the City had 19,536 linear feet of sidewalk gaps. Through the City's construction programs, by mid-2021 the City had reduced that number to 16,813 linear feet of gaps remaining to be constructed, which is a reduction of 14%.

**5. Progress made installing detectable warning surfaces on existing curb ramps**

In 2018, the City had a backlog of 8,690 existing curb ramps that did not have truncated dome detectable warning surfaces. By mid-2021, the City had reduced that backlog to 6,879 detectable warning surfaces remaining to be installed, reducing this backlog by 21%.

**6. Reduction in Construction Costs**

Due to more construction contractors focusing on ADA related pedestrian improvements, the estimated unit costs for construction of curb ramps have fallen from an estimated typical unit cost of \$4,390 per curb ramp in 2018 to an estimated typical unit cost of \$3,603 per curb ramp in 2021 resulting in a cost reduction of 18%.

Similarly, the estimated typical unit cost for the installation of Detectable Warning Surfaces on existing curb ramps has fallen from \$735 per detectable warning surface in 2018 to \$447 in 2021 resulting in a cost reduction of 61%.

**7. Exclusion of Utility Related Mitigation Needs**

In the 2018 Transition Plan Update, the cost of mitigating utility related obstructions such as Utility Poles, Light poles, Fire Hydrants and Water Meter Boxes obstructing the pedestrian access routes was included in the total mitigation cost estimate as a cost burden for the City's Public Works Department. The estimated mitigation cost for these items in the 2018 Transition Plan Update came to \$3,636,824. It is assumed that this cost and work effort for relocating the utility and removing the obstruction will be addressed by the individual utility companies responsible for the facility within the rights of way and was removed from the City's Public Works cost estimate.

## Section 2: INTRODUCTION & ADMINISTRATIVE INFORMATION

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The Americans with Disabilities Act of 1990 (ADA) has been hailed as one of the most significant civil rights laws since the Civil Rights Act of 1964. Its intent is to ensure that people with disabilities are able to participate in and enjoy the benefits of the services and activities of state and local governments, as well as most private entities, without experiencing discrimination. It also requires newly designed and constructed or altered local government facilities are readily accessible to and usable by people with disabilities. In 2010, the U.S. Census Bureau announced that approximately one in five adults living in the United States – over 56 million people – have one or more disabilities, including those affecting sight, hearing, and mobility, as well as mental disabilities and learning disabilities, many of which are not readily visible. The impact of the ADA has an even broader application than the statistics provided by the census data. The ADA’s comprehensive civil rights protections extend to people who have disabilities or are regarded as having a physical or mental impairment that substantially limits a major life activity. The ADA Amendments Act of 2008 (ADAAA) clarified that the definition of “disability” is intended to be broadly inclusive. The key principles of Title II of the ADA promise full access to state and local government services and activities. It consists of four principles:

**1. Policy and Operations**

*Make reasonable modifications and accommodations to policies and practices.*

**2. Communication**

*Ensure effective communication with people with disabilities affecting hearing, vision, or speech through the provision of auxiliary aids and services.*

**3. Integration**

*Offer services in the most integrated setting appropriate to the needs of individuals with disabilities.*

**4. Physical Access**

*Meet accessibility standards for new and altered buildings and ensure that programs are accessible as a whole.*

Equal Opportunity underlies all the principles and requirements of the ADA. The law does not require equal treatment but does require modifying policies or the way they are implemented, providing auxiliary aids, and ensuring programmatic accessibility in order to ensure that people with disabilities are offered the same opportunity as others to benefit from the City of Orlando’s services.

This ADA Title II Self-Evaluation & Transition Plan Update has been prepared to fulfill the requirements set forth in Title II of the ADA. The ADA states that a public entity must reasonably modify its policies, practices, or facilities to avoid discrimination against people with disabilities. To develop this plan, the City of Orlando completed a comprehensive re-evaluation of its facilities and programs to determine the extent to which individuals with disabilities may be restricted in their access to City of Orlando services and activities.

The City of Orlando has a long history of providing accessible services to the community through accessible pedestrian improvements, accessible building renovations and the inclusive delivery of services. July 2015 marked the twenty-fifth anniversary of the ADA. Prompted in part by the law’s anniversary, and amendments which have occurred since the original evaluation was completed, the City determined the need to update the assessment. The ADA Title II Self-Evaluation & Transition Plan Update is significant in that it establishes the City’s ongoing commitment to the development and maintenance of policies, programs and facilities with consideration of the needs of people with disabilities.

This update describes the process developed to complete the re-evaluation of the City’s accessibility, provides program and procedures recommendations, and presents a transition plan update for the modification to facilities to ensure programmatic accessibility. This document will guide the planning and implementation of necessary program and facility modifications over the next several years.

## 2.1 Federal Requirement

The ADA is a comprehensive civil rights law for persons with disabilities in both employment and the provision of goods and services. The ADA states that its purpose is to provide a “clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities.” Congress emphasized that the ADA seeks to dispel stereotypes and assumptions about disabilities and to promote equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities.



The development of a transition plan is a requirement of the federal regulations implemented in the Rehabilitation Act of 1973, which requires that all organizations receiving federal funds make their programs available without discrimination toward people with disabilities. The Rehabilitation Act, which is often referred to as the civil rights act of persons with disabilities, states that:

No otherwise qualified [disabled] individual in the United States shall, solely by reason of [disability], be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. (Section 504)

Subsequent to the enactment of the Rehabilitation Act, Congress passed the Americans with Disabilities Act on July 26, 1990. Title II of the ADA emphasizes the accessibility of programs, activities and services of public entities. The Department of Justice’s Title II regulation adopts the general prohibitions of discrimination established under Section 504 of the Rehabilitation Act and incorporates specific prohibitions of disabilities that are at least equal to those provided by the nondiscrimination provisions of Title V.

Specifically, the City of Orlando may not, either directly or through contractual arrangements, do any of the following:

- Deny persons with disabilities the opportunity to participate as members of advisory boards and commissions.
- Deny persons with disabilities the opportunity to participate in services, programs, or activities that are not separate or different from those offered others, even if the City offers permissibly separate or different activities.

- In determining the location of programs or services, make selections that have the effect of excluding or discriminating against persons with disabilities.

Included in Title II are administrative requirements for State and local governments. These administrative requirements are:

- Completion of a self-evaluation of programs, services, and activities that may not be accessible to persons with disabilities.
- Development of an ADA grievance procedure to respond to complaints regarding accessibility.
- Designation of a person who is responsible for overseeing Title II compliance.
- Development of a transition plan if the self-evaluation identifies any programmatic or structural modifications necessary for compliance, which must be retained for three years; and
- Provide an opportunity for interested persons, including individuals with disabilities, or organizations representing individuals with disabilities, to participate in the development of the Transition Plan by submitting comments and making specific recommendations.

The complete text of the Act's Title II language and requirements can be located in Appendix A.

## 2.2 Discrimination and Accessibility

There are two kinds of accessibility: Program accessibility and Physical accessibility. Absence of discrimination requires that both types of accessibility be provided. Physical accessibility requires that a facility be barrier-free. Barriers include any obstacles that prevent or restrict the entrance to or use of a facility. Program accessibility includes physical accessibility, but also entails all of the policies, practices, and procedures that permit people with disabilities to participate in programs and to access important information. Program accessibility requires that individuals with disabilities be provided an equally effective opportunity to participate in or benefit from a public entity's programs and services. Program accessibility may be achieved by either structural or non-structural modification methods.

## 2.3 ADA Coordinator

The City of Orlando's ADA Coordinator has been designated by the City's Legal and Human Resources Departments. The ADA Coordinator, or designee, is responsible for ensuring that all programs, services, and activities of the City of Orlando are accessible to and usable by individuals with disabilities and coordinates the implementation of plans, policies or accommodations to comply with the Title II. Department employees notify the ADA Coordinator regarding the needs of their department and the programs that department is responsible to manage. The City's ADA Coordinator is:

Ana Palenzuela, ADA/Title VI Coordinator  
 400 South Orange Avenue  
 Orlando, FL 32801  
 Phone: (407) 246-2057  
 Email: Ana.Palenzuela@CityofOrlando.net

## 2.4 Undue Burden

The City of Orlando does not have to take any action that it can demonstrate would result in a fundamental alteration in the nature of its program or activity, would create a hazardous condition resulting in a direct threat to the participant or others, or would represent an undue financial burden or administrative burden on the operation of the City's business. This determination can only be made by the ADA Coordinator or

designee and should be accompanied by a written statement from the department, ADA Coordinator or designee of the reasons for reaching that conclusion.

The determination that an undue burden would result will be based on a case-by-case evaluation of all resources available for use in the City. For example, if a barrier removal action is judged unduly burdensome, the City will consider other options for providing access to the benefits and services of the program or activity by individuals with disabilities.

Upon receipt of a request for modification to enhance accessibility and/or participation by persons with a disability in City programs or services, the City will undertake an evaluation of the following:

- The potential benefit that can be accomplished by the requested modification.
- The immediate and future costs of the requested modification.
- Alternative modifications which provide reasonable access.
- Whether the proposed modification would impose an undue financial or administrative burden.
- Whether the requested modification would require a fundamental alteration in the nature of the program or service at issue.
- The impact of the requested modification on other City programs or services.

## 2.5 Requesting Accommodations or Alternate Formats

Direction regarding how the public can request a modification or accommodation (i.e. translator, barrier removal, etc.) or requests for materials in alternate formats may be obtained by contacting the City's ADA Coordinator, and may be included in correspondence or advertisements used to announce, invite or promote the City of Orlando program or service. Requests can be submitted to the responsible department or to the City's ADA Coordinator (see contact information on page 8), and most accommodation requests can be addressed with at least 72 hours' notice before the scheduled event.

Requests for accommodations for a City meeting or public gathering should include:

- The requestor's name, address, email and telephone number (if available);
- The location of the program, service or meeting; and
- A brief description of the requested accommodation and why it is needed.
- Requests for materials in alternate formats should include:
  - The requestor's name, address, email and telephone number (if any);
  - The name or description of the City document or materials to be reformatted.
  - What type of format is desired (i.e., Braille, audio recording, digital file, etc.).
  - A brief description why the alternate format is needed.

The City's ADA Coordinator or the responsible department's ADA Representative will respond to the request within 2 business days or in advance of a scheduled meeting or event. If the response does not satisfactorily resolve the issue, the requestor may file a grievance with the City.

## 2.6 Filing a Grievance

The City of Orlando has established a discrimination complaint procedure set forth below and will take prompt and reasonable action to investigate and eliminate discrimination when found. Any person who believes that he or she has been subjected to discrimination based upon race, color, national origin, sex, religion, age, disability, family, or income status in any of the City's programs, services or activities may file a complaint with the City of Orlando ADA/Title VI Coordinator:

Ana Palenzuela  
ADA/Title VI Coordinator  
400 South Orange Avenue  
Orlando, Florida, 32801

Ana.Palenzuela@cityoforlando.net  
Phone: (407) 246-2057  
Facsimile: (407) 246-2027

If possible, the complaint should be submitted in writing and contain the identity of the complainant; the basis for the allegations (i.e., race, color, national origin, sex, religion, age, disability or family status); and a description of the alleged discrimination with the date of occurrence. If the complaint cannot be submitted in writing, the complainant should contact the City of Orlando ADA/Title VI Coordinator for assistance.

The City of Orlando ADA/Title VI Coordinator will endeavor to respond to the complaint within thirty (30) calendar days and will take reasonable steps to resolve the matter. The City of Orlando ADA/Title VI Coordinator has direct access to the City's Chief Administrative Officer (CAO) and is not required to obtain management or other approval to discuss discrimination issues with the CAO.

## 2.7 Transition Plan Update Requirements

The ADA sets forth specific requirements for preparation of an acceptable transition plan:

- A list of the physical barriers in the city's facilities that limit the accessibility of its programs, activities, or services to persons with disabilities.
- A detailed description of methods to be used to remove these barriers and make the facilities accessible.
- Project cost estimates for their removal.
- A schedule for taking the steps necessary to achieve compliance with the ADA, Title II; and
- The name of the individuals responsible for the plan's implementation.
  - The Department of Public Works, Streets and Stormwater Division Director is the City of Orlando's official responsible for the implementation of any required physical alterations to existing roads, curbs, and sidewalks under the City's jurisdiction, and/or their designee.
  - The Department of Public Works Director is the City of Orlando's official responsible for the implementation of any required physical alterations to new and existing city facilities, and/or their designee.
  - The Human Resources Director is the City of Orlando's official responsible for implementing required policy or program modifications and equivalent facilitation for all programs and services offered by the city, and/or their designee.
- A record of the opportunity given to the Disability Community and other interested parties to provide feedback on the process and development of the plan.

A copy of the Act's Title II language and requirements can be located in Appendix A.

## 2.8 Summary of the City of Orlando's Approach to ADA Compliance

The City of Orlando continually seeks to make its programs and facilities accessible in accordance with existing laws and in the spirit of service to all. The Bureau of Facilities Management initiated a plan in 1989 to bring all City facilities in compliance with the then existing disability codes. This effort continues in the City's pursuit of compliance with the ADA. The facilities management bureau was charged with the identification of existing barriers and developing a time frame for appropriate feasible removal. Priority was

set for high use public facilities such as City Hall, Centroplex, Parks and Recreation facilities and parking facilities.

The City's first Transition Plan for the Implementation of the Americans with Disabilities Act was completed in 1992. As part of the compliance effort, an operational task force was established to ensure compliance with the ADA. The task force was divided into two working groups. One group was responsible for the coordination of compliance as it regards to employment practices. The second group was responsible for structural modification and public works aspect of the Act. In addition, each Department Director was charged with reviewing his/her department to identify barriers that would inhibit program accessibility to the disabled. While the assessment was thorough and extensive, many changes to the City's infrastructure have occurred since the original plan was developed.

In 2008, the City conducted a comprehensive City-wide, sidewalk and curb ramp inventory which formed the basis of the City's first ADA self-assessment along the roadway rights of way. The results of that inventory became the guiding blueprint for the City's efforts for ADA compliance with respect to the pedestrian routes within the public rights of way.

This 2021 transition plan update is both an update to the City's original 1992 Transition Plan and an update to the 2008 sidewalk and curb ramp self-assessment. This report and certain documents incorporated by reference establish the City's 2021 ADA Title II Self-Evaluation & Transition Plan Update to the original assessment. The project goals included:

- Development of a comprehensive inventory of identified barriers.
- Provide a detailed outline of the methods to remove barriers.
- Provide a prioritized implementation schedule for removal of barriers.
- Improve accessibility for all citizens.
- Document existing public participation methods
- Educate City staff and the public on the requirements of the ADA.

## Section 3: FACILITIES SELF-ASSESSMENT SURVEY

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The City owns and either operates or leases a number of municipal and technical buildings, historic properties, parking structures, community centers, parks, trails, and sports fields. Some of these properties are not open for public use or do not house public services or programs but many do.

The City conducted a variety of site visits, surveys, meetings and inventories of its buildings, facilities, and parks after the ADA became law in 1992. Since the initial effort, the City has made improvements to several of its buildings, sold non-complaint buildings and relocated many of its important public services to more accessible facilities. Today, most of the City's public services and programs are offered in facilities that are considerably more accessible and progress continues to increase accessibility Citywide.

As a follow-on activity in conjunction with the ADA Transition Plan Update, it is recommended that the City conduct a Facilities Self-Assessment Survey in order to create an identified barrier database, which will reflect not only the access deficits of each site, but also the elements that comply with the 2010 Standards. The elements and their related features which will be surveyed in the facility assessments should include:

### Building or Site Features

- Parking Areas
- Passenger Loading Zones
- Curb Ramps
- Accessible Routes
- Ramps
- Stairways
- Hazards
- Doors or Gates
- Signage
- Drinking Fountains
- Public Telephones
- Elevators or Platform Lifts
- Reception Counters

### Types of Spaces

- Corridors or Aisles
- Activity Rooms
- Assembly Areas
- Single User Restrooms
- Restroom Stalls
- Shower Facilities
- Locker Rooms
- Area of Rescue/Assistance
- Detention Facilities

### Recreation Features

- Sports Activity Areas
- Team or Player Seating Areas
- Exercise Equipment & Machines
- Swimming Pools/Wading Pools/Spas
- Play Areas
- Golf Facilities
- Polling Areas

Once completed, a facility report will be produced for each City-owned building and facility surveyed, detailing the identified barriers found to be in noncompliance with the 2010 Standard guidelines.

The facility report for each site should include:

- Identified Barrier or Deficiency
- Corrective Action or Solution
- Corrective Action Project Cost Estimate

Recognizing that the City has limited funds and cannot immediately make all buildings and facilities fully accessible, the Facilities Inventory should utilize the following criteria as the basis for prioritizing the high, medium, and low removal of architectural barriers at City inspected Facilities:

- Critical nature of the programs offered at the facility
  - Is there an immediate or advanced need for programmatic access?

- Uniqueness of the facility or program
  - Are the programs offered at one facility available at alternative, accessible locations?
- Geographic distribution:
  - Are accessible services distributed throughout the City to create maximum access for all residents?
- Quantity and frequency of public use
- Degree of complexity for the corrective action
- Overall construction cost estimates

Accordingly, it is anticipated that City staff will conduct a more detailed survey and cost estimate each year as part of the City’s annual capital improvement funding process for the facility upgrades applying for funding that year.

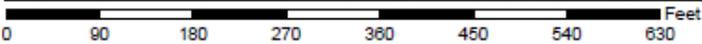
### 3.1. Listing of City Buildings to be audited in Future Facilities Self-Assessment Survey

In connection with this Transition Plan Update, a comprehensive review of all City owned real estate properties was performed in order to identify all physical building structures and facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 1,153 owned and leased buildings on City owned real estate properties including:

- |  |  |
|--|--|
| • 49 Administrative Buildings located on 6 sites               | • 3 Federal (Postal Service) Buildings located on 1 site |
| • 181 Airport Related Buildings located on 81 sites            | • 14 Parking Structures on 12 sites                      |
| • 3 Cemetery Buildings located on 1 site                       | • 35 Public Safety Buildings on 27 sites                 |
| • 178 Commercial and Educational Buildings located on 59 sites | • 486 Recreation Buildings on 105 sites                  |
| • 8 Cultural and Entertainment Buildings located on 6 sites    | • 49 Residential Buildings on 19 sites                   |
|  | • 147 Utilities Buildings on 30 sites                    |

Appendix C of this Report contains a collection of 389 City Owned Building and Parking Facilities Site Reports with a single report page for each evaluated site as seen in the example in the following page. Each site page contains the following information:

- |  |  |
|--|--|
| • Name of the site                           | • Site Latitude and Longitude                              |
| • Site ID Number                             | • Site Plan Map identifying Building and Parking Locations |
| • Type of the Site                           | • Key Map showing Site Location                            |
| • Site Address                               |  |
| • Orange County Property Appraiser Parcel ID |  |

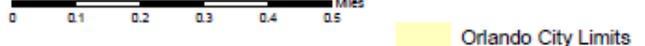
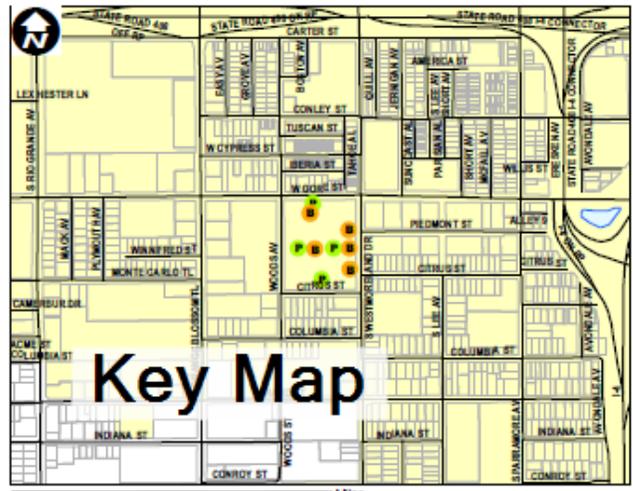


Site Type: Administration  
 Address: 1000 W GORE ST  
 Parcel ID: 342229635500020  
 Site Latitude: 28° 31.801' N  
 Site Longitude: 81° 23.643' W

**Site Info**

- |                          |                        |
|--------------------------|------------------------|
| <b>Orlando Buildings</b> | <b>Orlando Parking</b> |
| Not Leasehold (5)        | Not Leasehold (4)      |
| Leasehold (0)            | Leasehold (0)          |

**Legend**



### 3.2. Listing of City Parking Lots to be audited in Future Facilities Self-Assessment Survey

In connection with this Transition Plan Update, a comprehensive review of all City owned real estate properties was performed in order to identify all parking lot facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 554 parking lot facilities on City owned real estate properties including:

- 15 Administrative Parking Lots located on 5 sites
- 133 Airport Related Parking Lots located on 55 sites
- 2 Cemetery Parking Lots located on 2 sites
- 131 Commercial Parking Lots located on 51 sites
- 1 Educational Parking Lot located on 1 site
- 9 Cultural and Entertainment Parking Lots located on 4 sites
- 4 Federal (Postal Service) Parking Lots located on 1 site
- 33 Parking Lots located on 24 parking sites
- 46 Public Safety Parking Lots on 23 sites
- 118 Recreation Parking Lots on 70 sites
- 16 Residential Parking Lots on 6 sites
- 46 Utilities Parking Lots on 17 sites

Appendix C of this Report contains a collection of 389 City Owned Building and Parking Facilities Site Reports with a single report page for each evaluated site as seen in the example in the following page. Each site page contains the following information:

- Name of the site
- Site ID Number
- Type of the Site
- Site Address
- Orange County Property Appraiser Parcel ID
- Site Latitude and Longitude
- Site Plan Map identifying Building and Parking Locations
- Key Map showing Site Location

An example of the City Owned Building and Parking Facilities Site Reports can be seen on the previous page.

### 3.3. Listing of City Parks to be audited in Future Facilities Self-Assessment Survey

In connection with this Transition Plan Update, a comprehensive review of all City owned Parks and Recreation properties was performed in order to identify all parks and recreation facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 170 parks and recreation sites on City owned real estate properties including:

- |                                      |  |   |  |
|--------------------------------------|--|---|--|
| • Airport Lakes Park                 | • Carver Park                            | • College Park Community Center                       | • Demetree Park  |
| • Al Coith Park                      | • Central Florida Veterans Memorial Park | • Colonel Joe Kittinger Park                          | • Dickson Azalea Park                                    |
| • Albert Park                        | • Checker Park                           | • Colonialtown Neighborhood Center and John Long Pool | • Don Dudley Park  |
| • Audubon Park                       | • Cherokee Park                          | • Colonialtown Square Park                            | • Dover Shores Community Center                          |
| • Baldwin Park Entrance Park         | • Cherry Tree Park                       | • Constitution Green                                  | • Dr. I. Sylvester Hankins Park Recreation Site and Pool |
| • Big Tree Park                      | • Children's Safety Village              | • Dacey Park (Undeveloped)                            | • Dr. J.B. Callahan Neighborhood Center                  |
| • Bill Frederick Park at Turkey Lake | • Citrus Square Neighborhood Center      | • Dartmouth Park                                      | • Dr. James R. Smith Neighborhood Center                 |
| • Blue Jacket Park                   | • City Commons Plaza                     | • Delaney Park  |  |
| • Cady Way Trail                     | • Clear Lake Park                        | • Demetree Miracle Field                              |  |
| • Cady Way Trail Spur                |  |   |  |
| • Camping World Stadium              |  |   |  |

- *Dubsdread Golf Course*
- *Eagle Nest Park (4 sites)*
- *East Central Neighborhood Center*
- *East Park (Community Development District)*
- *East Park Lake Neighborhood Park*
- *El Dorado Park*
- *Emery Hamilton Sports Complex*
- *Engelwood Center Park*
- *Englewood Neighborhood Center and Pool*
- *Englewood Park*
- *Englewood Park 2 (Undeveloped)*
- *Gaston Edwards Park*
- *George Barker Park*
- *Gilbert McQueen Boat Ramp*
- *Gilbert McQueen Park*
- *Grand Avenue Park*
- *Greenwood Urban Wetlands*
- *Guernsey Park*
- *Hampton Park*
- *Harry P. Leu Gardens*
- *Heritage Square*
- *Iowa Place Park*
- *Ivanhoe Plaza Park*
- *Ivey Lane Park & Neighborhood Center*
- *Ivey Lane Recreation Site*
- *John H. Jackson Community Center and Pool*
- *L. Claudia Allen Senior Center*
- *Lace Fern Village Park*
- *LaCosta Urban Wetlands*
- *Lake Adair Park*
- *Lake Baldwin Park*
- *Lake Beauty Park*
- *Lake Cherokee Park*
- *Lake Como Fields*
- *Lake Como Park*
- *Lake Davis Park*
- *Lake Dot Park*
- *Lake Druid Park*
- *Lake Emerald Park*
- *Lake Eola Park*
- *Lake Estelle Park*
- *Lake Fairview Boat Ramp*
- *Lake Fairview Park*
- *Lake Formosa Park*
- *Lake Fran Bike Trail*
- *Lake Highland Park*
- *Lake Ivanhoe Park*
- *Lake Lancaster Park*
- *Lake Lawsona Park*
- *Lake Lucerne Park*
- *Lake Rowena Park*
- *Lake Underhill Park*
- *Lake Weldona Park*
- *Lakefront Park and Dock*
- *Leroy Hoequist Park*
- *Lighthouse Park*
- *Lizzie Rodgers Park*
- *Loch Haven Park*
- *Lorna Doone Park*
- *Malibu Groves Park*
- *Mathews Park*
- *Mayor Carl T. Langford Park*
- *Mayor Carl T. Langford Park*
- *Mayor William Beardall Senior Center*
- *McCoy Park*
- *McCracken Field*
- *Mitchell Nutter Park*
- *Northwest Community Center*
- *Orlando Cultural Park*
- *Orlando Downtown Recreation Complex*
- *Orlando Festival Park*
- *Orlando Loch Haven Park and Neighborhood Center*
- *Orlando Skate Park*
- *Orlando Wetlands Park*
- *Orwin Manor Park (4 sites)*
- *OUC Camp Down*
- *Overbrook Park*
- *Park - Lake Ivanhoe Plaza*
- *Park Lake Park*
- *Park of the Americas*
- *Parramore Community Garden*
- *Parramore Heritage Park*
- *Pleasant Valley Park*
- *Poppy Park*
- *Prince Hall Park (2 sites)*
- *Princeton Park and College Park Pool*
- *Rattlesnake Park*
- *Ravenall Park*
- *Recreation Area (7 sites)*
- *Reeves Terrace Recreation Site*
- *Rock Lake Park*
- *Rosemont Community Park & Center*
- *Rosemont Park*
- *Rosemont Preserve*
- *Senator Beth Johnson Park*
- *Signal Hill Park*
- *Songbird Park*
- *Southern Gateway (Lake Lucerne)*
- *Southport Park*
- *Spring Lake Park*
- *Spring Lake Park*
- *Springdale Green*
- *Traffic Island (12 sites)*
- *Trotters Park*
- *Wadeview Park and Community Center*
- *Washington Square Park*
- *West Lake Underhill Park*
- *Willie Mays Park*
- *Willows Park*
- *Z.L. Riley Park*

Appendix D of this Report contains a collection of 170 City Parks and Recreation Site Reports with a single report page for each evaluated site as seen in the example in the following page. Each site page contains the following information:

- Name of the Park site
- Type of the Park
- Park Address
- ADA Building and Parking Report Side ID (if buildings and Parking are present)
- Site Latitude and Longitude
- Site Plan Map identifying Building and Parking Locations
- Key Map showing Site Location

An example of the City Parks and Recreation Site Reports can be seen on the following page.



**Site Plan Map**

**Park Name**

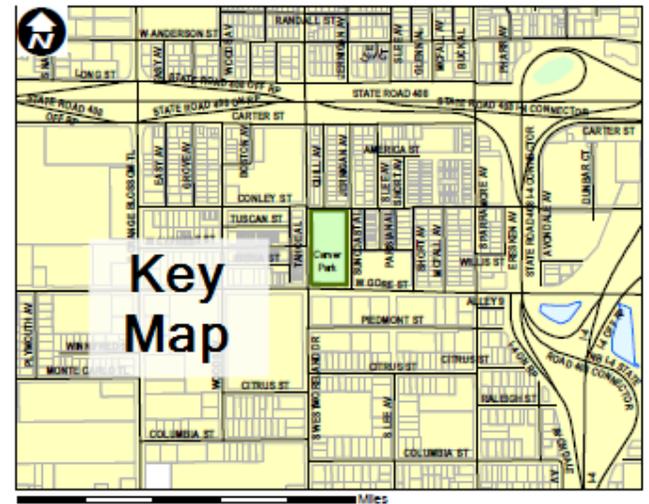
0 80 160 240 320 400 480 560 Feet

Park Type: Park  
 Address: 856 JERNIGAN AV  
 ADA Site ID: No Buildings or Parking Facilities  
 Site Latitude: 28° 31.923' N  
 Site Longitude: 81° 23.550' W

**Park Info**

- |   |   |
|---|---|
| <b>Orlando Buildings</b>  | <b>Orlando Parking</b>  |
|  Not Leasehold (0) |  Not Leasehold (0) |
|  Leasehold (0)     |  Leasehold (0)     |

**Legend**



**Key Map**

0 0.1 0.2 0.3 0.4 0.5 Miles  Orlando City Limits

## Section 4: PUBLIC RIGHTS OF WAY SELF-ASSESSMENT SURVEY

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The Americans with Disabilities Act (ADA, Public Law 101-336) was enacted in July 1990 and became effective in January 1992. The original ADA Standards were published in July 1991. New construction and alteration projects permitted after January 26, 1992 were required to follow the 1991 ADA Standards.

Based on updated guidelines issued by the U.S. Access Board, in November 2006 the USDOT issued new standards as the ADA Standards for Transportation Facilities (ADASTF). Transportation projects permitted after November 29, 2006 must follow the ADASTF.

Title II of the ADA prohibits local governments from discriminating against people with disabilities by excluding participation in or denying benefits of programs, services, or activities to people with disabilities. The public right-of-way (PROW) may be considered a public service in two ways:

- Streets, sidewalks, and curb ramps may be part of a continuous path of travel between programs, at various public and private facilities located on adjacent properties, such as public offices, schools, parks and recreational facilities, public service agencies, hospitals and health clinics, police facilities, and public housing.
- Streets, sidewalks, and curb ramps may be considered public infrastructure that are essential to the usage of the City's built environment.

Similar standards were issued by USDOJ in March 2012 as the 2010 ADA Standards for Accessible Design (ADASAD). At the same time, the State of Florida updated the Florida Accessibility Code (FAC) to incorporate the ADASAD and issued it in March 2012. All building projects must follow the FAC and either ADASTF or ADASAD. In July 2005, the U.S. Access Board issued guidelines for accessibility within public rights of way, known as proposed "Public Rights of Way Accessibility Guidelines" (PROWAG). These were revised and reissued as proposed guidelines in July 2011. The PROWAG criteria are intended to 'fill the gap' where the ADA Standards do not cover elements found primarily along roadways. PROWAG was updated in July 2011. In January 2006 USDOT issued a memo stating that, while the criteria in PROWAG are not enforceable in law, they constitute the 'state of the practice' for accessible public rights of way and should be followed where the ADA Standards don't address an issue. A copy of the PROWAG Guidelines is included in this report as Appendix B.

Respectively, public agencies with authority over roadways and walkways must include in their transition plan the methods and strategies for installing curb ramps or other sloped areas where pedestrian paths cross curbs as well as other improvements necessary to achieve programmatic accessibility for people with disabilities. The United States Access Board has proposed guidelines developed specifically for pedestrian facilities in PROW in order to address conditions and constraints that exist for people with disabilities. These draft guidelines are currently under public review and will be enforceable when the guidelines are adopted as standards by the Department of Justice and Department of Transportation. Until the proposed guidelines for accessible rights-of-way (PROWAG) are adopted, they should be referenced as a best practices manual in PROW by addressing the following:

- Pedestrian Access Route
- Curb Ramps and Blended Transitions
- Detectable Warning Surfaces
- Pedestrian Crossings
- Pedestrian Signals

The City has instituted a number of programs to increase pedestrian facility accessibility as budgets allow including a citizen complaint response web page form, an annual installation, repair and maintenance program,

street-related capital improvement projects and street overlay and reconstruction projects which include repair of sidewalk and construction of ADA complaint curb ramps.

The Streets and Stormwater Division oversees the ADA compliance upgrades and rehabilitations projects for existing pedestrian facilities, which include methods such as trip hazards mitigation, damaged sidewalk repair and curb ramp remediation. The division has been proactively and methodically addressing sidewalks and curb ramps found to be in noncompliance with the ADA guidelines through an in-house neighborhood sidewalk repair and compliance program.

Although the original ADA Self-Evaluation of 1993 was not specific to sidewalk infrastructure, best practices in sidewalk and curb ramp construction have been observed by the Streets and Stormwater Division and the Public Works Department, with increased emphasis being placed on the accessibility of pedestrian infrastructure by addressing absent pedestrian facilities and upgrading existing facilities through capital improvement projects and arterial street rehabilitation projects.

This Transition Plan Update has been developed to address the City’s ongoing efforts and methods to reconstruct noncompliant sidewalks and curb ramps to meet the current ADA standards, and to document the City’s approach to providing a prioritized plan for pedestrian access within public rights-of-way. Each of the following sections describes a different facet of the self-assessment to identify physical obstacles limiting accessibility along public rights of way.

The Self-Assessment performed in connection with this Transition Plan Update utilized a variety of sampling techniques, compilation methodologies and tools to assess the estimated total number of ADA barriers that currently still exist along the pedestrian access routes within the City of Orlando’s public rights of way. A listing of the sampling and assessment methodologies used for each ADA facility can be seen in the table below:

<b>ADA Facility / Barrier</b>	<b>Sample Description</b>	<b>Sample Size</b>	<b>Self-Assessment Methodology</b>
<b>Curb Ramps</b>	<i>Citywide Review of Curb Ramps along 983 miles of sidewalk along all 747 centerline miles of City public rights of way</i>	<i>100% of City Curb Ramps</i>	<i>Review of 2020 Orange County Aerial Photography, 360-degree spherical panoramic roadway imagery and Selected Site Visits to 309 curb ramps</i>
<b>Sidewalks and Sidewalk Gaps</b>	<i>Citywide Review of 983 miles of sidewalk along all 747 centerline miles of City public rights of way</i>	<i>100% of City Sidewalks</i>	<i>Review of 2020 Orange County Aerial Photography, 360-degree spherical panoramic roadway imagery and Selected Site Visits</i>
<b>Sidewalk Obstacles</b>	<i>Sampling of 63 miles of sidewalk and 55 intersections</i>	<i>6.8% of City Sidewalks</i>	<i>Review of 2017 360-degree panoramic roadway imagery collected along 42 centerline miles of public rights of way</i>
<b>Sidewalk Hazards</b>	<i>Sampling of 63 miles of sidewalk and 55 intersections</i>	<i>6.8% of City Sidewalks</i>	<i>Review of 2017 360-degree panoramic roadway imagery collected along 42 centerline miles of public rights of way</i>

<b>ADA Facility / Barrier</b>	<b>Sample Description</b>	<b>Sample Size</b>	<b>Self-Assessment Methodology</b>
<b>Sidewalk Damage</b>	<i>Sampling 832.1 miles of sidewalk out of 983 total miles</i>	<i>84.6% of City Sidewalks</i>	<i>Reviewed repair and remediation records for work performed for the City by American Grinding Corporation and Altair Environmental, Inc.</i>
<b>Sidewalk Insufficient Passing Space</b>	<i>Sampling 95.7 miles of sidewalk out of 983 total miles</i>	<i>9.7% of City Sidewalks</i>	<i>Measured Sidewalk widths from 2017 Orange County Aerial Photography, identified sidewalks narrower than 60" and reviewed sidewalks on aerials to identify passing space deficiencies</i>
<b>Pedestrian Signals</b>	<i>55 signalized intersections out of 546 total City maintained signalized intersections</i>	<i>10.1% of Signalized Intersections</i>	<i>On-site visits to inspect, pedestrian signal buttons, curb ramps, sidewalks and crosswalks at signalized intersections</i>
<b>Pedestrian Crossings</b>	<i>186 crosswalks out of 4214 marked crosswalks within City public rights of way</i>	<i>4.4% of crosswalks</i>	<i>On-site visits to inspect crosswalk condition and slopes at 55 signalized intersections</i>

### 4.1 Self-Assessment to Identify Sidewalk Gaps and Deficiencies

While the installation of sidewalks is not required under the ADA, what are required are ‘accessible routes’ connecting accessible entrances to buildings and facilities. An accessible route may be any surface that meets the criteria in the ADA Standards. If sidewalks are provided, they must also meet the criteria of the ADA Standards. Therefore, any gaps in the accessible route is considered to be a barrier and must be addressed as part of the Transition Plan.

If pedestrian facilities are within a public right of way, ‘pedestrian access routes’ are required. Some of the criteria for pedestrian access routes are different from the accessible route criteria, which takes into consideration differences that may occur for sidewalks along roadways. Criteria for sidewalks within public rights of way may be found in PROWAG Guidelines in Appendix B.

As part of the City’s ADA Self-Assessment, a citywide update of the City’s Sidewalk GIS layer has been performed using 2017 Orange County Aerial Photography and Existing Street Level Imagery. All sidewalks within or adjacent to the public rights of way have been added to the GIS database. Sidewalk lines have been classified as either **Present** (if the sidewalk currently exists), **Future** (if the sidewalk does not currently exist), or **Under Construction** (if the sidewalk is not currently completed). It is assumed for the purpose of this analysis, that all sidewalks that were under construction at the date of the photography (January 2020) currently exist and meet all current City codes with respect to ADA and PROWAG compliance. Future sidewalks were further classified into two categories: **Future for Network Completion** for sidewalks that, if constructed, would fill in small gaps in the pedestrian access routes, and **Future for Network Expansion** for sidewalks which, if constructed, would expand the pedestrian access routes. An example of a Future Sidewalk for Network Completion would be the construction of a 100-foot sidewalk to close a gap between two existing sidewalks on one side of a roadway. An example of a Future Sidewalk for Network Expansion would be the construction of a new sidewalk along the opposite side of a street from an existing sidewalk. Sidewalks identified for Future Network Completion were

considered to be ADA Barriers, while Sidewalks identified for Future Network Expansion were considered to be an enhancement to the pedestrian access routes and were not considered to be ADA Barriers.

#### 4.1.1 Sidewalk Gaps to be Constructed for Network Completion



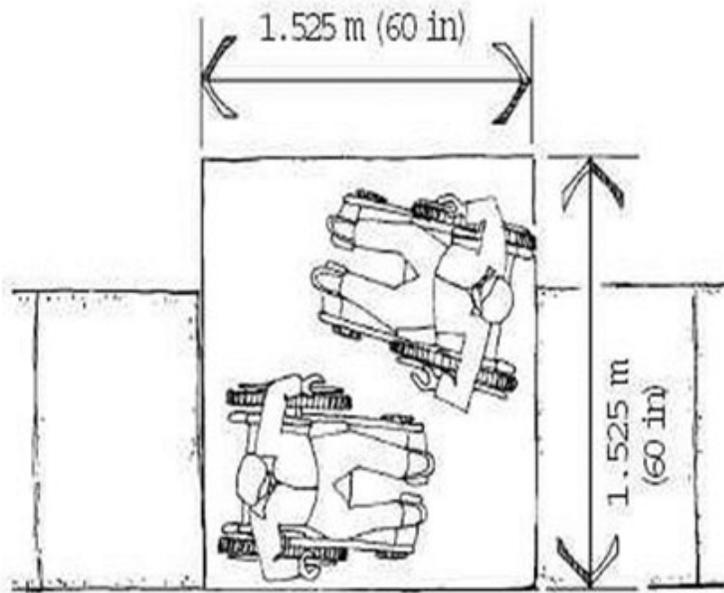
Sidewalk gaps are discontinuities in the pedestrian access route where the existing pedestrian access route ends abruptly or does not permit pedestrian access to the roadway as part of a pedestrian street crossing.

These gaps are typically short sections of sidewalk that, if constructed, would provide pedestrian access to cross a roadway at a crossing or connect to another existing section of sidewalk.

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified 226 gaps totaling 16,813 linear feet of sidewalks to be constructed in order to provide a continuous path along the pedestrian access route. The complete listing of the identified 226 sidewalk gaps citywide is provided in this report as Appendix F.

#### 4.1.2 Inadequate Passing Space

Areas with adequate passing space are those with an area that provides pedestrians in wheelchairs passing spaces within a sidewalk corridor. Passing spaces shall be 5 feet x 5 feet minimum, and no farther apart than 200 feet. Driveway crossings and curb ramps with level landings can also serve as passing spaces. If a sidewalk is less than 60" wide, then accommodations must be made for passing space areas to be provided. In areas with frequent driveway crossings, the driveway surface can serve to accommodate passing space at the point where the driveway intersects the sidewalk.



The ADA self-assessment reviewed the measured sidewalk widths along a sample of 95.7 miles of sidewalk within the City (9.7% sample) using high resolution 2020 aerial photography. Within that sample there were 7.9 miles of sidewalk narrower than 60" which might be candidates for having more than 200 feet of insufficient passing space.

A review of those sidewalks identified 18 locations where there was inadequate passing space which would require the construction of 60" x 60" passing zones. The complete listing of the identified 18 locations where there was inadequate passing space in the 8.6% sample is provided in this report as Appendix J.

## 4.2 Self-Assessment to Identify Curb Ramp Barriers and Deficiencies



A curb ramp is a short incline cutting through a curb or built up to it. If designed and constructed to be accessible, a curb ramp provides an accessible route that people with disabilities can use to safely transition from a roadway to a curbed sidewalk and vice versa. Curb ramps are critical to providing access between the sidewalk and the street for people who use wheelchairs. They are most commonly found at intersections, but they may also be used at other locations such as on-street parking, loading zones, bus stops, and midblock crossings.

Curb Ramps provide improved access for pedestrians of various physical abilities to make the transition from sidewalk elevation to street elevation and vice-versa. They also allow bicyclists and pedestrians with wheeled vehicles (i.e., strollers, scooters) easier access between street level and sidewalk level.

The implementing regulations under Title II of the ADA specifically identify curb ramps as requirements for existing facilities, as well as all new construction. Ramps for existing facilities must be included in Transition Plans. According to the Title II implementing regulations, priorities for the installation of curb ramps in existing facilities should include access to government facilities, transportation, public accommodations, and for employees to their place of employment.

As part of the City's ADA Self-Assessment, a citywide update of the City's Curb Ramp GIS layer has been performed using 2020 Orange County Aerial Photography and Existing Street Level Imagery. All interface points where a sidewalk meets a publicly maintained roadway were investigated and a Ramp point was placed in the GIS at each of these interface locations where a pedestrian would encounter vehicles along a roadway. Ramp points were classified by their Status. The Ramp Status is either Present (there is curbing at the ramp location and the ramp provides a transition through the curbing), **Future** (where a ramp does not exist at this location but should be constructed to facilitate a pedestrian access route), **N/A, No Curb** (where there is no curb at the interface point and the sidewalk is flush with the roadway pavement), **Non-Compliant** (where the sidewalk meets a curb but there is no grade transition through the curbing) or **Under Construction** (if the ramp is not currently completed). It is assumed for the purpose of this analysis, that all ramps that were under construction at the date of the photography (January 2020) currently exist and meet all current City codes with respect to ADA compliance.

Future ramps were further classified into two categories: **Future for Network Completion** for ramps that, if constructed, would fill in small gaps in the pedestrian access routes, and **Future for Network Expansion** for ramps which, if constructed, would expand the pedestrian access routes. Ramps identified for Future Network

Completion were considered to be ADA Barriers, while Ramps identified for Future Network Expansion were considered to be an enhancement to the pedestrian access routes and were not considered to be ADA Barriers.

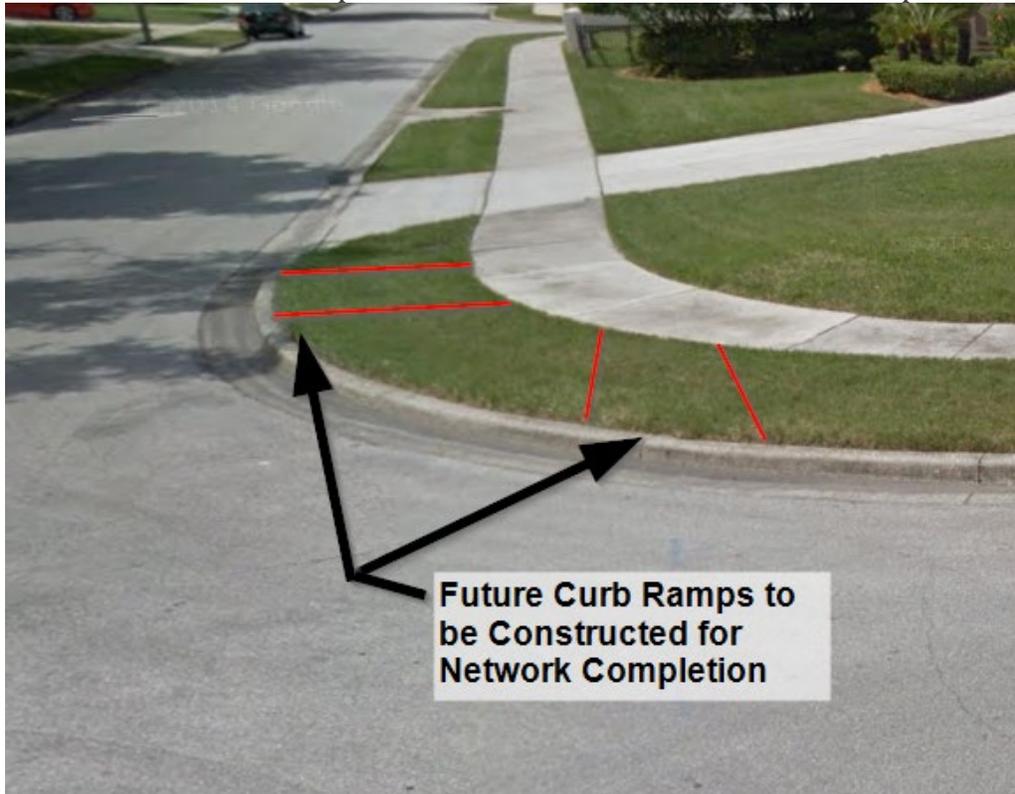
#### 4.2.1 Non-Compliant (Missing) Curb Ramps



A curb ramp or blended transition shall be provided wherever a public sidewalk or pedestrian route crosses a curb or other change in level, including at intersections, midblock crosswalks, medians and islands traversed by crosswalks, alleys, accessible parking aisles, passenger loading zones; and locations where the public sidewalk ends, and pedestrian travel continues in the roadway. If a pedestrian access route leads a pedestrian up to a curb with no accommodation for traversing the curb into the roadway, then that curb ramp is considered to be non-compliant or missing.

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 16,137 curb ramps that either currently existed or were under construction. A review of those curb ramps identified 638 non-compliant curb ramps citywide where curb ramp construction would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. The complete listing of the identified 638 non-compliant curb ramps citywide is provided in this report as Appendix E.

#### 4.2.2 Future Curb Ramps to be Constructed for Network Completion

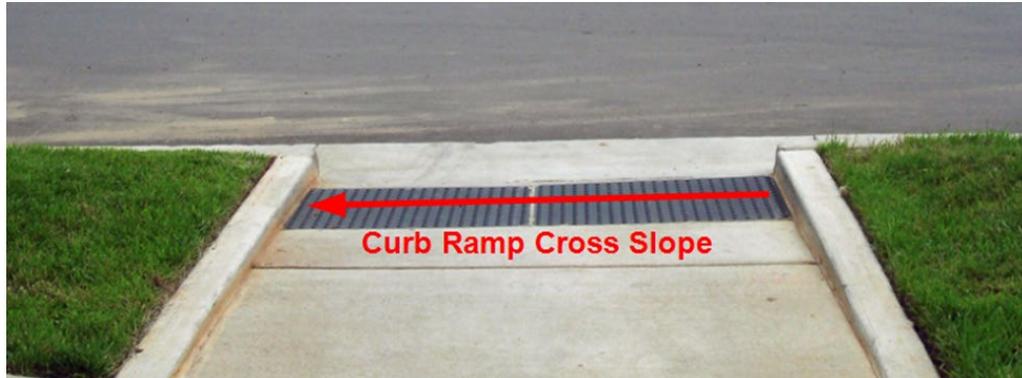


Ramps whose construction would provide an additional connection in the pedestrian access route were considered to be Future Curb Ramps to be Constructed for Network Completion.

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 2,265 future curb locations city-wide. A review of those curb ramps identified 208 future curb ramps citywide where the construction of the curb ramp would provide a compliant connection between the pedestrian access route and the roadway crossing. The complete listing of the identified 208 future curb ramps citywide is provided in this report as Appendix G.

### 4.2.3 Curb Ramps with Excessive Cross Slope or Running Slope

The curb ramp cross slope is measured across the width of the ramp while the curb ramp running slope is measured along the length of the ramp as shown in the images below:

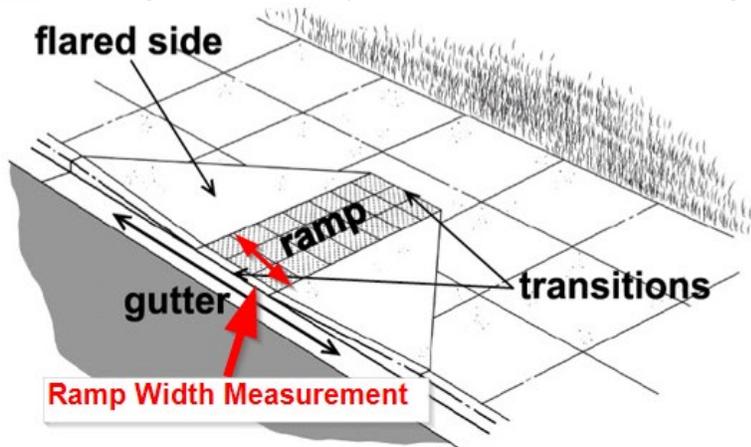


The PROWAG Guidelines Sections R304.2 – R304.4 specify a maximum allowable running slope of 8.3% and a minimum allowable running slope of 5% for compliant curb ramps. Section R304.5 of the same Guidelines specifies a maximum allowable cross slope of 2%.

As part of the ADA self-assessment, field visits were made to 55 intersections to measure 309 curb ramps out of the total of 16,779 curb ramps city-wide (1.8% sample). Measurements taken at those 309 curb ramps identified 30 structurally deficient curb ramps whose cross slope and/or running slope exceeded the PROWAG Guidelines. For these structurally deficient ramps, replacement curb ramp construction would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. The complete set of inspection reports for the 55 sampled intersections comprising the 1.8% sample is provided in this report as Appendix H.

#### 4.2.4 Narrow Curb Ramps

The curb ramp width is measured across the width of the ramp surface that the wheelchair is traveling down, **not** including the width of any side flares as shown in the image below:



The PROWAG Guidelines Section R304.5 specifies a minimum allowable ramp width of 4.0 feet (48"). Recognizing that the curb ramp can be a bottleneck to pedestrian flow, the minimum clear width of four feet matches the minimum 48-inch width of the pedestrian access route in several areas where exceptions to the 60-inch width are permitted. Wheelchair bases have gotten wider in recent years and three-wheeled scooter use has become more prevalent. In addition, the wider curb ramp widths allow for some wheelchair maneuvering on the curb ramp to adjust for approaching curb ramp bottoms that are skewed.

As part of the ADA self-assessment, field visits were made to 55 intersections to measure 309 curb ramps out of the total of 16,779 curb ramps city-wide (1.8% sample). Measurements taken at those 309 curb ramps identified 13 structurally deficient curb ramps whose width did not meet the minimum PROWAG Guidelines. For these structurally deficient ramps, replacement curb ramp construction would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. The complete set of inspection reports for the 55 sampled intersections comprising the 1.7% sample is provided in this report as Appendix H.

#### 4.2.5 Curb Ramps with Excessive Gutter Counter Slope

Gutter counter slope is the angle point or grade change where the down slope of the curb ramp meets the up cross slope of the gutter. It is the reverse slope that the pedestrian encounters at the bottom of the curb and gutter to travel back towards the roadway.



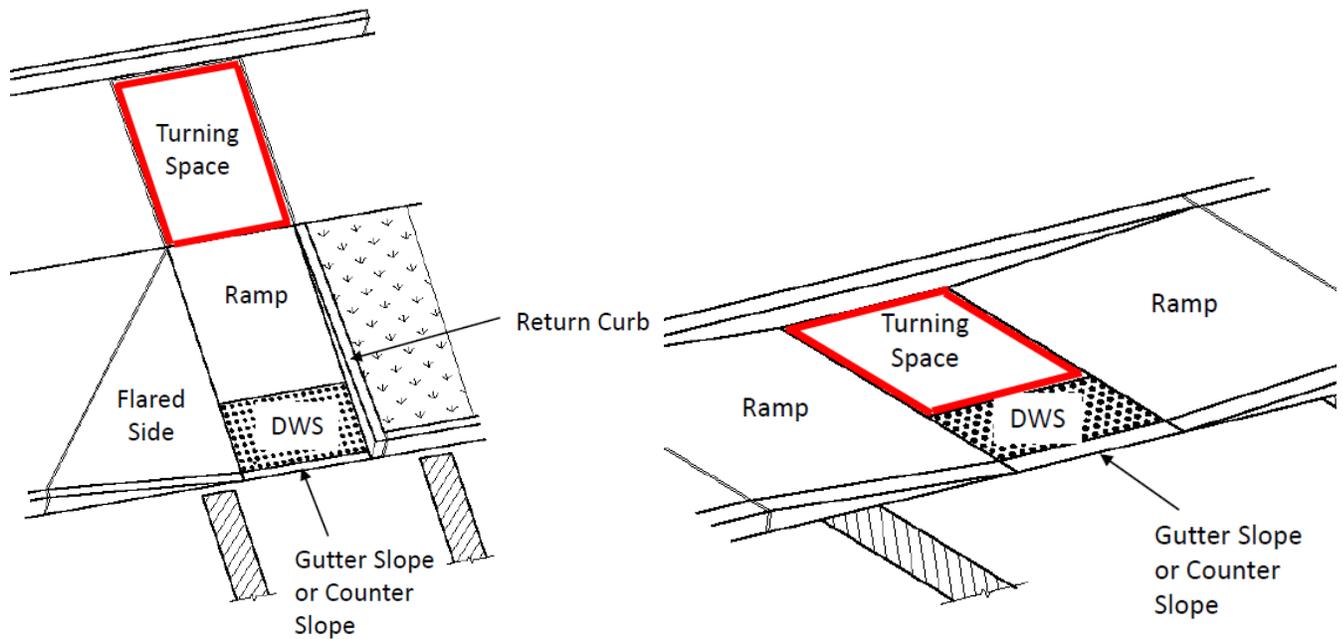
Steep counter slopes will cause some wheelchairs to catch on back rollers and lose drive wheel traction. For others, the steep counter slope will catch footrests.

The PROWAG Guidelines Section R304.5 specifies a maximum counter slope of 5 percent for the gutter or street at the foot of curb ramp runs, blended transitions, and turning spaces.

As part of the ADA self-assessment, field visits were made to 55 intersections to measure 309 curb ramps out of the total of 16,779 curb ramps city-wide (1.8% sample). Measurements taken at those 309 curb ramps identified 52 structurally deficient curb ramps whose gutter counter slope exceeded the maximum allowable 5% as specified in the PROWAG Guidelines. For these structurally deficient ramps, replacement of the gutter at the base of the curb ramps would be necessary. The complete set of inspection reports for the 55 sampled intersections comprising the 1.8% sample is provided in this report as Appendix H.

#### 4.2.6 Turning Space at Curb Ramps

Whenever a ramp requires a pedestrian to make a turn, either at the top or bottom of the ramp, there must be a clear space available on a level surface to make the turn. Examples of level turning spaces on perpendicular and parallel curb ramps are provided in the illustrations below.



The PROWAG Guidelines Section R304.2.1 specifies that Landings providing turning space, including flush landings, shall have a minimum clear dimension of a 60-inch by 60-inch (1525 by 1525mm) square or 60-inch diameter circle. Landings may overlap with adjacent landings, or a single landing may serve multiple curb ramps or transition ramps. Landings may overlap with the clear ground or floor space required at push buttons.

As part of the ADA self-assessment, field visits were made to 55 intersections to measure 309 curb ramps out of the total of 16,779 curb ramps city-wide (1.8% sample). Measurements taken at those 309 curb ramps identified 19 structurally deficient curb ramps that did not have a 60"x60" turning space as specified in the PROWAG Guidelines.

For these structurally deficient ramps, replacement of the ramp, or constructing an adjacent turning space landing (if sufficient right of way were available) would be necessary. The complete set of inspection reports for the 55 sampled intersections comprising the 1.7% sample is provided in this report as Appendix H.

## 4.2.7 Existing Curb Ramps Lacking Detectable Warning Surfaces

Detectable warnings are used, in the absence of a curb, to provide an 'edge cue' for people who are blind or have low vision at the junction of a pedestrian access route (i.e. sidewalk, etc.) and a vehicular way (i.e., street, roadway, etc.)



Detectable warnings are a distinctive surface pattern of truncated domes detectable by cane or underfoot that alert people with vision impairments of their approach to street crossings and hazardous drop-offs. They are used to indicate the boundary between pedestrian and vehicular routes where there is a flush connection instead of a curbed connection. The truncated domes are aligned on a square grid in the direction of pedestrian travel or installed radial to the grade break. Detectable warnings are not stamped into concrete. Detectable warnings contrast visually with the adjoining surface, either light-on-dark or dark-on-light (recommended bright red on concrete and bright yellow on asphalt).

Older curb ramps may have stamping in the concrete or lines drawn in the concrete. These older treatments are not valid Detectable Warning Surfaces.

The PROWAG Guidelines Section R304.2.1 specifies that detectable warnings are required at the following locations where a pedestrian access route crosses a vehicular way:

- Curb ramps and blended transitions at street crossings
- Cut-through pedestrian medians and refuge islands 6' wide or greater
- Pedestrian at-grade railroad crossings
- Edges of rail boarding platforms not protected by screens or guards
- Commercial driveways with a "STOP" sign or traffic signal



The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 16,779 curb ramps that either currently existed or were under construction. A review of those curb ramps identified 6,877 curb ramps citywide where the curb ramp did not have a high contrast detectable warning surface consisting of truncated domes. For these ramps, curb ramp modification consisting of the installation of truncated dome detectable warning surfaces would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. At the time of alteration to add the truncated dome detectable warning surface, the City will also be required to verify that all other aspects of the ramp are compliant with ADA and PROWAG guidelines. The complete listing of the identified 6,877 existing curb ramps lacking truncated dome detectable warning surfaces citywide is provided in this report as Appendix K.

#### 4.2.8 Existing Curb Ramps Where Detectable Warning Surfaces Lack Full Coverage



Detectable warning surfaces indicate the boundary between a pedestrian route and a vehicular route where there is a flush rather than a curbed connection for pedestrians who are blind or have low vision. The truncated domes provide tactile feedback, while the high color contrast between the warning surface and the sidewalk are intended to provide visual feedback. For this reason, it is important that the detectable warning surface cover the full width of the ramp so that the pedestrian is guaranteed to encounter the surface before traveling into the roadway.

The PROWAG Guidelines Section R208 specifies that at curb ramps and blended transitions, detectable warning surfaces must extend the full width of the ramp run (excluding flared sides), blended transition, or turning space. At pedestrian at-grade rail crossings not located within a street or highway, detectable warning surfaces must extend the full width of the crossing.

As part of the ADA self-assessment, field visits were made to 55 intersections to measure 309 curb ramps out of the total of 16,779 curb ramps city-wide (1.8% sample). Measurements taken at those 309 curb ramps identified 42 curb ramps where the truncated dome detectable warning surface did not cover the full width of the ramp as specified in the PROWAG Guidelines. For these ramps, curb ramp modification consisting of the removal of the existing warning surface and installation of truncated dome detectable warning surfaces covering the full width of the ramp would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. The complete set of inspection reports for the 55 sampled intersections comprising the 1.8% sample is provided in this report as Appendix H.

### 4.3 Sidewalk Obstacles



Obstacles in the pedestrian environment are defined as objects that limit the vertical passage space, protrude into the circulation route, or reduce the clearance width of the sidewalk. Obstacles with large overhangs that protrude into the path of travel can be hazardous for people with visual impairments if they are difficult to detect. The full width of the circulation path should be free of protruding objects. Obstacles that reduce the minimum clearance width, such as decorative planters on a narrow sidewalk, can create significant barriers for wheelchair or walker users.

The PROWAG Guidelines Section R210 discusses protruding objects and states that objects that protrude into pedestrian circulation paths can be hazardous for pedestrians, especially pedestrians who are blind or have low vision. Objects along or overhanging any portion of a pedestrian circulation path must comply with the technical requirements for protruding objects. Objects also must not reduce the clear width required for pedestrian access routes. State and local governments must comply with the requirements for protruding objects and maintain the clear width of pedestrian access routes when installing or permitting the installation of street furniture on sidewalks, including street lights, utility poles and equipment cabinets, sign posts and signs, parking meters, trash receptacles, public telephones, mailboxes, newspaper vending machines, benches, transit shelters, kiosks, bicycle racks, planters and planted trees, and street sculptures.

The PROWAG Guidelines Section R302.3 specifies that the continuous clear width of pedestrian access routes shall be 1.2 m (4.0 ft) minimum, exclusive of the width of the curb and that additional maneuvering space should be provided at turns or changes in direction, transit stops, recesses and alcoves, building entrances, and along curved or angled routes, particularly where the grade exceeds 5 percent.

As part of the ADA self-assessment, spherical panoramic imagery was collected at 30-foot intervals along 63 miles of sidewalk and that imagery was inspected to identify sidewalk obstacles. In addition, 55 intersections were visited in the field and 402 sidewalk segments within 50 feet of those intersections were inspected for obstructions as well. This approach reviewed a total of 66.8 miles of sidewalk out of the City’s total of 983 miles of sidewalk resulting in a 6.8% sample of all of the City’s sidewalks. The review of the collected imagery and the field inspection results identified 66 sidewalk obstacles which reduced the pedestrian access route to less than 48” as classified below:

<b>Obstacles Identified in Sample Inspection</b>	<b>Inspection Count</b>
<i>Utility Pole within the pedestrian access route*</i>	<i>18</i>
<i>Light Pole within the pedestrian access route*</i>	<i>12</i>
<i>Bench within the pedestrian access route</i>	<i>1</i>
<i>Fire Hydrant within the pedestrian access route*</i>	<i>2</i>
<i>Sign Pole within the pedestrian access route</i>	<i>15</i>
<i>Signal Control Box within the pedestrian access route</i>	<i>15</i>
<i>Water Meter Box not flush with sidewalk surface*</i>	<i>1</i>
<i>Pedestrian Signal Pole within the pedestrian access route</i>	<i>1</i>
<i>Tree in Landscape Planter within the pedestrian access route</i>	<i>1</i>
<b>Total for all Obstacles in Inspected Sample Areas</b>	<b>66</b>

\*The City shall coordinate with the appropriate utility agency for necessary mitigation of these obstacles.

The obstruction inspection reports compiled as part of the self-assessment of the 63 miles of sidewalk are provided in this report as Appendix I.

#### 4.4 Sidewalk Hazards



Sidewalk Hazards are anything that can potentially cause a level of threat within an environment or a condition or situation that can cause the body physical harm or intense stress. Physical hazards can be both natural and human made elements. Hazard types such as unstable surfaces, protruding rails, excessive ramp transition grades, excessive running slope, excessive cross slope, drop offs, and sidewalk construction are potential areas in a pedestrian access route (PAR) that can cause a level of threat within that environment.

The PROWAG Guidelines Section R210 discusses hazards associated with protruding objects. The Guidelines state that objects that protrude into pedestrian circulation paths can be hazardous for pedestrians, especially

pedestrians who are blind or have low vision. The PROWAG Guidelines Section R302.5 addresses hazards associated with sidewalk grade. Grade is the running slope parallel to the direction of pedestrian travel. Grade is calculated by dividing the vertical change in elevation by the horizontal distance covered and is expressed as a percent.



Where pedestrian access routes are contained within a street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway, except that where pedestrian access routes are contained within pedestrian street crossings a maximum grade of 5 percent is required. This is consistent with the AASHTO "Policy on Geometric Design of Highways and Streets" which recommends that the sidewalk grade follow the grade of adjacent roadways, and also recommends maximum cross slopes for roadways. Where pedestrian access routes are not contained within a street or highway right-of-way, a maximum grade of 5 percent is required.

The PROWAG Guidelines Section R302.6 addresses hazards associated with sidewalk cross slope. Cross slope is the slope perpendicular to the direction of pedestrian travel. On a sidewalk, cross slope is measured perpendicular to the curb line or edge of the street or highway. Cross slope impedes travel by pedestrians who use wheeled mobility devices since energy must be expended to counteract the perpendicular force of the cross slope. Cross slope makes it more difficult for pedestrians who use wheelchairs to travel on uphill slopes and to maintain balance and control on downhill slopes. Cross slope also negatively affects pedestrians who use braces, lower limb prostheses, crutches, or walkers, as well as pedestrians who have gait, balance, or stamina impairments.



A maximum cross slope of 2 percent is specified for pedestrian access routes, except for pedestrian access routes contained within certain pedestrian street crossings in order to allow for typical roadway geometry. A 5 percent maximum cross slope is specified for pedestrian access routes contained within pedestrian street crossings without yield or stop control to avoid any unintended negative impacts on the control and safety of vehicles, their occupants, and pedestrians in the vicinity of the intersection. (Pedestrian street crossings without yield or stop control are crossings where there is no yield or stop sign, or where there is a traffic signal that is designed for the green phase.) At pedestrian street crossings without yield or stop control vehicles can proceed through the intersection without slowing or stopping. The cross slope of pedestrian access routes contained within midblock pedestrian street crossings is permitted to equal the street or highway grade.

As part of the ADA self-assessment, spherical panoramic imagery was collected at 30-foot intervals along 63 miles of sidewalk and that imagery was inspected to identify sidewalk hazards. In addition, 55 intersections were visited in the field and 402 sidewalk segments within 50 feet of those intersections were inspected for hazards as well. This approach reviewed a total of 66.8 miles of sidewalk out of the City's total of 983 miles of sidewalk resulting in a 6.8% sample of all of the City's sidewalks. The review of the collected imagery and the field inspection results identified 97 sidewalk hazards along the pedestrian access route requiring some form of mitigation:

<b>Hazards Identified in Sample Inspection</b>	<b>Inspection Count</b>
<i>Excessive Cross Slope on Sidewalk</i>	<i>54</i>
<i>Excessive Cross Slope on Driveway Aprons</i>	<i>14</i>
<i>Excessive Running Slope on Sidewalk</i>	<i>6</i>
<i>Drop Offs adjacent to sidewalk</i>	<i>23</i>
<b>Total for all Hazards in Inspected Sample Areas</b>	<b>97</b>

The hazard inspection reports compiled as part of the self-assessment of the 63 miles of sidewalk are provided in this report as Appendix I.

## 4.5 Sidewalk Damage



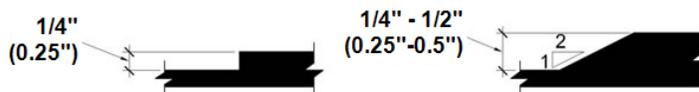
Sidewalks are prone to “Damage” caused by environmental conditions. Maintaining sidewalk elements in good condition is an essential part of providing access to public rights-of-way. Sidewalks in poor repair can limit access and threaten the health and safety of pedestrians. If sidewalks are in poor condition or nonexistent, pedestrians are forced to travel in the street.

Examples of sidewalk damage may include trip edges, heaving and settlement due to vegetation uplift and shattering due to excessive loading. Damage is typically considered to be vertical discontinuities of 0.25 in or greater at any point on the walkway that could cause pedestrians to trip, lock up the wheels of a wheelchair, or prevent the wheels of a wheelchair from rolling smoothly.

### 4.5.1 Trip Edges and Vertical Discontinuities

The presence of trip edges and vertical surface discontinuities result in an uneven surface which may be hazardous for a visually impaired pedestrian, or difficult to traverse for a pedestrian in a wheelchair. This barrier may be mitigated by grinding down the trip edge or removing and replacing an affected section of sidewalk. The PROWAG Guidelines Section R302.7.2 addresses the subject of vertical surface discontinuities. The allowance for vertical surface discontinuities is for occasional expansion joints and objects such as utility covers, vault frames, and gratings that cannot be located in another portion of the sidewalk outside the pedestrian access route. However, objects such as utility covers, vault frames, and gratings should not be located on curb ramp runs, blended transitions, turning spaces, or gutter areas within the pedestrian access route. This may not always be possible in alterations but should be avoided wherever possible. Vertical surface discontinuities between unit pavers should be minimized.

As specified in the Guidelines, vertical surface discontinuities shall be 0.5 inch maximum. Vertical surface discontinuities between 0.25 inches and 0.5 inches shall be beveled with a slope not steeper than 50 percent. The bevel shall be applied across the entire vertical surface discontinuity.



As part of the ADA self-assessment, historic sidewalk repair records were reviewed for work performed by City contractors from 2016 through 2021. During that time period, the contractors performed sidewalk grinding and other repairs, and documented the location of the repair using GPS receivers. The results of the repair work were provided to the City as Geographic Information System (GIS) data files which were used to map the locations of the repairs. This total of all work performed covered 832.1 miles of City sidewalks. Using these maintenance records as a sample, this approach identified 174,449 trip hazard locations along 832.1 miles of sidewalk out of the City’s total of 983 miles of sidewalk resulting in an 84.6% sample of all of the City’s sidewalks.

#### 4.5.2 Other Sidewalk Damage

Separate from trip edges, other sidewalk damage might include corner breaks, heaving, settlement, and shattering. These barriers result in an uneven surface which may be hazardous for a visually impaired pedestrian, or difficult to traverse for a pedestrian in a wheelchair. Typically, this other sidewalk damage is mitigated by removing and replacing an affected section of sidewalk.



The PROWAG Guidelines Section R302.7.1 addresses the subject of vertical alignment and surfaces. Pedestrian access route surfaces must be generally planar and smooth. Surfaces should be chosen for easy rollability. Surfaces that are heavily textured, rough, or chamfered and paving systems consisting of individual units that cannot be laid in plane will greatly increase rolling resistance and subject pedestrians who use wheelchairs, scooters, and rolling walkers to the stressful and often painful effects of vibration.

As part of the ADA self-assessment, historic sidewalk repair records were reviewed for work performed by City contractors from 2016 through 2021. During that time period, the contractors performed sidewalk grinding and other repairs, and documented the location of the repair using GPS receivers. The results of the repair work were provided to the City as Geographic Information System (GIS) data files which were used to map the locations of the repairs. This total of all work performed covered 832.1 miles of City sidewalks.

Using these maintenance records as a sample, this approach identified 6,505 damage repair locations along 832.1 miles of sidewalk out of the City's total of 983 miles of sidewalk resulting in an 84.6% sample of all of the City's sidewalks.

### 4.6 Self-Assessment to Identify Pedestrian Signalization Barriers and Deficiencies

At pedestrian signal crossings, there are multiple ADA facilities that work together to support the pedestrian access route across the roadway at the signalized intersection. The pedestrian signal detector allows the pedestrian to request the signal. The pedestrian signal head visually notifies that pedestrian that it is safe to cross. The curb ramp provides access from the sidewalk through the curb to the roadway. Finally, the marked crosswalk serves to provide visual guidance to the pedestrian, while alerting the motorist to look for pedestrians crossing at that location.

#### 4.6.1 Pedestrian Signal Detector Pushbutton Orientation

Pedestrian Signal Buttons and Informational Signs should be mounted in such a manner so that the face of the push button is parallel to the direction of crossing. This provides a clear indication to the pedestrian as to determine which detector button corresponds to the curb ramp and cross walk.



For example, if two crosswalks, oriented in different directions, end at or near the same location, the positioning of pedestrian detectors and/or the legends on the pedestrian detector signs should clearly indicate which crosswalk signal is actuated by each pedestrian detector and the button placement and sign orientation should be clearly placed parallel to the direction of the ramp crossing.



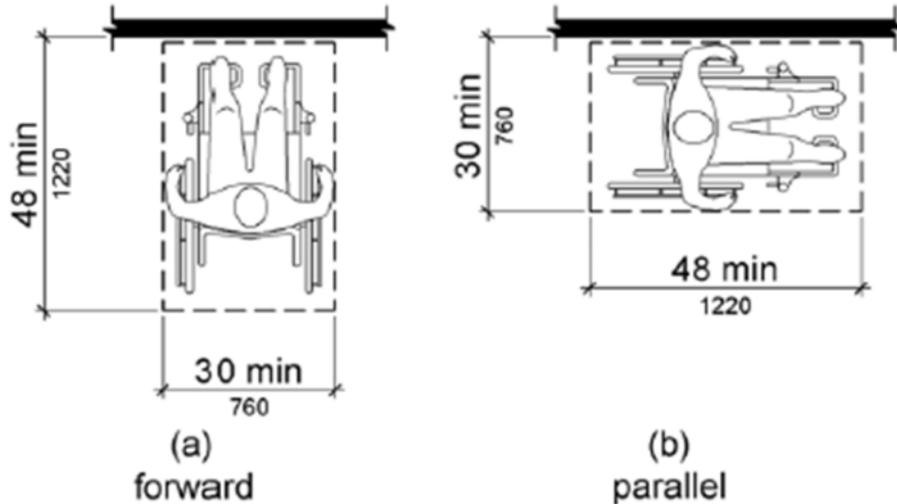
While the PROWAG Guidelines do not address pedestrian detector pushbutton orientation directly, the Guidelines incorporate the MUTCD Section 4E by reference, the 2009 Edition of the MUTCD Section 4E.08.04F calls for a pedestrian detector pushbutton orientation with "the face of the pushbutton parallel to the crosswalk to be used;"

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 312 pedestrian detector pushbuttons which were inspected. The self-assessment identified 180 pushbuttons that were not oriented parallel to the direction of the pedestrian crossing. For these pedestrian detector pushbuttons, they would need to be relocated or re-

arranged to be consistent with the guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

#### 4.6.2 Pedestrian Signal Detector Pushbutton Clear Space

In order to successfully maneuver a wheelchair along the side of a Pedestrian Signal Detector Pushbutton in order to operate the button from the seated position, it is important to have a level clear space in which to maneuver the wheelchair and maintain its position while the pushbutton is operated.



The PROWAG Guidelines Section R404 state that clear spaces are required at operable parts including accessible pedestrian signals and pedestrian pushbuttons and parking meters and parking pay stations that serve accessible parking spaces. Clear spaces are also required at benches and within transit shelters. Clear spaces must be 30" (2.5 feet) minimum by 48" (4 feet) minimum. Additional maneuvering space must be provided where an element is confined on all or part of three sides. The running slope of clear spaces is permitted to be consistent with the grade of the adjacent pedestrian access route. This requirement differs from the 2004 ADA and ABA Accessibility Guidelines which does not permit slopes steeper than 2 percent at clear spaces. A 2 percent maximum cross slope is specified for clear spaces.

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 68 pedestrian signal detector push buttons that did not have the required minimum clear space minimum of 30"x48". For these pedestrian detector pushbuttons, the pushbutton would need to be relocated or a level minimum clear space would need to be constructed to be consistent with the guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

#### 4.6.3 Pedestrian Signal Detector Pushbutton Size

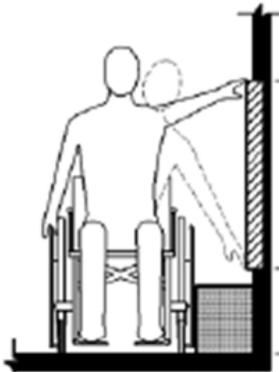
Some individuals may have difficulty operating pedestrian push buttons. In some instances, there may be a need to install a larger push button to accommodate certain extremity disabilities. For example, the pushbutton in the image below contains a small, recessed pushbutton which does not meet current standards. The U.S. Access Board Guidelines Section X02.5.1.2(A) states that Push buttons shall be a minimum of 2 inches across in at least one dimension. Section X02.5.1.2(C) states that push buttons shall be operable with a closed fist.



As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 54 pedestrian signal detector push buttons that did not have the required diameter of 2” and operable by a closed fist. For these pedestrian detector pushbuttons, the detector pushbutton unit would need to be replaced to be consistent with the guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

#### 4.6.4 Pedestrian Signal Detector Pushbutton Height

A pedestrian in a wheelchair has a limited range of height that can be reached from the sitting position. The PROWAG Guidelines Section R406 state that forward and side reach ranges must be between 1.25 feet 4 feet above the finish surface. The U.S. Access Board Guidelines Section X02.5.1.3D also states that the centerline of the push button shall be mounted 42 inches above the clear ground space for approach.



As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 16 pedestrian signal detector push buttons that had a button height greater than 48” (4 feet). For these pedestrian detector pushbuttons, the detector pushbutton unit would need to be removed and relocated to a height that is consistent with the guidelines.

#### 4.6.5 Pedestrian Signal Button Side Reach

Because of ground obstructions, a wheelchair may not be able to be positioned directly adjacent to a pushbutton. There may be landscaping, pole foundations or other obstructions that require the disabled pedestrian to reach beyond the envelope of the wheelchair.

The PROWAG Guidelines state that side reach over an obstruction is permitted where the depth of the obstruction between the clear space and the element is a maximum of 10 inches.



As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment.

At the 55 sampled intersections there were a total of 99 pedestrian signal detector push buttons that had a required button side reach greater than 10 inches. For these pedestrian detector pushbuttons, the detector pushbutton unit would need to be removed and relocated to a location that is consistent with the guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

#### 4.6.6 Pedestrian Signal Detector Pushbutton Curb Distance

The distance from the pedestrian signal detector pushbutton to the curb line at the bottom of the curb ramp increases the amount of time necessary to the disabled pedestrian to travel from the pushbutton, through the curb ramp and across the roadway.



While the PROWAG Guidelines do not specifically address this issue, the U.S. Access Board Guidelines Section X02.5.1.3E states that the push button shall be mounted no further than 5 feet from the extension of the crosswalk lines, and within 10 feet of the curb line, unless the curb ramp is longer than 10 feet.

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 171 pedestrian signal detector push buttons that were farther than 10 feet from the curb line at the curb ramp. For these pedestrian detector pushbuttons, the detector pushbutton unit would need to be removed and relocated to a location that is consistent with the guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

#### 4.6.7 Accessible Pedestrian Signals (APS)

An accessible pedestrian signal and pedestrian pushbutton is an integrated device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats (i.e., audible tones and vibrotactile surfaces) to pedestrians who are blind or have low vision.



The pedestrian pushbutton has a locator tone for detecting the device and a tactile arrow to indicate which pedestrian street crossing is served by the device. The MUTCD contains standards for accessible pedestrian signals and pedestrian pushbuttons but does not require that they be provided. The proposed guidelines require accessible pedestrian signals and pedestrian pushbuttons to be provided when new pedestrian signals are installed. For existing pedestrian signals, the proposed PROWAG guidelines require accessible pedestrian signals and pedestrian pushbuttons to be provided when the signal controller and software are altered, or the signal head is replaced. Accessible pedestrian signals and pedestrian pushbuttons must comply with the referenced standards in the MUTCD and Section R209 of the PROWAG Guidelines.

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were a total of 303 pedestrian signal detectors that did not meet APS Guidelines for non-visual communication formats. For these pedestrian detectors, as the signal controller and software are altered, or the signal head is replaced, the pedestrian signals and pedestrian pushbuttons will need to be removed and upgraded to meet the Accessible Pedestrian Signal (APD) guidelines. The complete set of inspection reports for the 55 sampled intersections comprising the 10% sample is provided in this report as Appendix H.

## 4.7 Self-Assessment of Pedestrian Crosswalks

Crosswalks are locations where the pedestrian access route intersects the roadway or other surface where vehicular traffic is expected. They may be marked or unmarked and may exist at intersections that are controlled by signalization or signage or are uncontrolled. Crosswalks constitute distinct elements of the right-of-way intended to facilitate pedestrian traffic across the roadway. A marked crosswalk can benefit pedestrians by directing them to cross at locations where appropriate traffic control, including traffic signals either currently exist or can be provided. However, marked pedestrian crosswalks, in and of themselves, do not slow traffic or reduce pedestrian crashes.



The PROWAG Guidelines do not specifically address where crosswalks are required, however, where crosswalks have been marked, PROWAG Section R302 specifies guidelines for the crosswalks.

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 548 City maintained signalized intersections citywide resulting in a 10% sample for the self-assessment. At the 55 sampled intersections there were 186 crosswalks. The self-assessment determined that there was a total of 6 crosswalks that had pedestrian signals but were not explicitly marked in the pavement. These were in intersections that had some form of streetscape pavers in the intersection. For those types of crosswalks, the City's Engineering Standards Manual (5<sup>th</sup> Edition) states:

*“Decorative crossings are permitted at locations where engineering analysis does not prohibit it. The details of the decorative crosswalk shall be approved by the City Transportation Engineer. Any proposed decorative crosswalk design shall incorporate the current FDOT standard crosswalk marking (2 parallel 12-inch thermoplastic markings and/or perpendicular 24-inch pavement markings).”*



For these crosswalks, the standard crosswalk pavement markings should be added to the intersections to be consistent with the current City Engineering Standards Manual.

## Section 5: MITIGATION STRATEGIES

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As part of the ADA Self-Assessment, each identified ADA feature (sidewalks, curb ramps, pedestrian signals and pedestrian crossings) is evaluated to determine if it meets current ADA standards. If a feature is determined to not be compliant with current standards, it is identified as an ADA barrier. Typical ADA barrier classification and mitigation strategies identify the types of solutions necessary to eliminate the identified ADA barriers. For example, an identified sidewalk gap barrier would be mitigated by installing a new five-foot width (5' width) sidewalk along the entire gap. Mitigation strategies are developed for each of the barrier types identified.

### 5.1 Requirements for Mitigation

Whenever the project impacts pedestrian facilities (i.e., sidewalks, curb ramps, crosswalks, etc.) The basic requirements of the ADA regulations are that each facility or part of a facility constructed by, on behalf of, or for the use of a public entity shall be designed and constructed so the facility or part of the facility is “readily accessible to and usable by” individuals with disabilities, if the construction was commenced after January 26, 1992. So, every ‘new construction’ or ‘alteration’ project must include accessible elements and features to ensure pedestrian facilities are “accessible to and useable by” people with disabilities.

The term ‘new construction’ is used to define a project involving the installation of vehicular and pedestrian facilities which did not exist previously, while the term ‘alteration’ refers to a project where there is a change that affects or could affect the usability of all or part of a facility such as a road. Altered streets, roads, and highways must contain curb ramps where there are curbs or other barriers to a pedestrian walkway (i.e., sidewalk).

The Department of Justice regulations do not identify specific road treatments that qualify as alterations versus treatments that qualify as maintenance. Early DOJ guidance based on court decisions stated that paving, repaving, or resurfacing were generally considered alterations while filling a pothole was not considered to be an alteration. Early Department of Justice guidance did not provide more specific examples of maintenance activities, leading to various interpretations by differing agencies.

To address this issue, the Department of Justice and the Department of Transportation through the Federal Highway Administration met from 2012 – 2013 with a desire to provide clarity and consistency in their requirements based on feedback in the form of comments and questions from States, local governments, disability rights advocates, and citizens. The Joint Technical Assistance report from these agencies resulting from these meetings distinguished alterations from maintenance based upon the type of road treatment applied to a roadway surface. Maintenance was considered to be performed when applying the following road treatments:

- Chip Seals
- Crack Filling and Sealing
- Diamond Grinding
- Dowel Bar Retrofit
- Fog Seals
- Joint Crack Seals
- Joint repairs
- Pavement Patching
- Scrub Sealing
- Slurry Seals
- Spot High-Friction Treatments
- Surface Sealing

Treatments classified as maintenance do not trigger any requirements for ADA upgrades within a public right of way.

An alteration was considered to be performed when applying the following road treatments:

- Addition of New Layer of Asphalt
- Cape Seals
- Hot In-Place Recycling
- Micro-surfacing / Thin-Lift Overlay
- Mill & Fill / Mill & Overlay
- New Construction
- Open-graded Surface Course
- Rehabilitation and Reconstruction

Treatments classified as alterations require upgrades within the affected public right of way.

## 5.2 Specific Mitigation Strategies based upon ADA Barrier Type

The Self-Assessment Inventory identified a variety of barriers and deficiencies. Each Barrier type is listed below along with a recommended typical mitigation strategy.

ADA Barrier	Typical Mitigation Strategy
<b>Sidewalk Barriers</b>	
<i>Sidewalk Gap</i>	<i>Construct a new 60" (5 foot) sidewalk</i>
<i>Insufficient Passing Space</i>	<i>Remove sidewalk panel and add 5' wide by 10' long panel for passing and turning</i>
<b>Curb Ramp Barriers</b>	
<i>Non-Compliant (Missing) Curb Ramps</i>	<i>Construct a new curb ramp</i>
<i>Future Curb Ramps for Network Completion</i>	<i>Construct a new curb ramp</i>
<i>Curb Ramps with Excessive Cross Slope or Running Slope</i>	<i>Remove the existing curb ramp and construct a new one</i>
<i>Narrow Curb Ramps</i>	<i>Remove the existing curb ramp and construct a new one</i>
<i>Curb Ramps with Excessive Gutter Counter Slope</i>	<i>Remove existing curbing at ramp and reconstruct curb</i>
<i>Insufficient Turning Space at Curb Ramps</i>	<i>Construct a 48" (4 foot) x 48" (4 foot) level turning space</i>
<i>Existing Curb Ramps Lacking Detecting Warning Surfaces</i>	<i>Add a truncated dome detectable warning surface</i>
<i>Existing Curb Ramps Where Detecting Warning Surfaces Lack Full Coverage</i>	<i>Remove the existing warning surface and add a full width truncated dome detectable warning surface</i>
<b>Obstacles</b>	
<i>Utility Pole within the pedestrian access route</i>	<i>Relocate Utility Pole, Replace 5' by 5' section of Sidewalk</i>
<i>Light Pole within the pedestrian access route</i>	<i>Relocate Light Pole, Replace 5' by 5' section of Sidewalk</i>
<i>Bench within the pedestrian access route</i>	<i>Relocate Bench</i>
<i>Fire Hydrant within the pedestrian access route</i>	<i>Relocate Fire Hydrant and Replace 5' by 5' Sidewalk Section</i>
<i>Sign Pole within the pedestrian access route</i>	<i>Relocate sign and Replace 5' by 5' Sidewalk Section</i>
<i>Signal Control Cabinet within the pedestrian access route</i>	<i>Relocate signal Control Cabinet and Replace 5' by 5' Sidewalk Section</i>
<i>Water Meter Box not flush with sidewalk surface</i>	<i>Adjust meter box lid flush with sidewalk surface and Replace 5' by 5' Sidewalk Section</i>
<i>Pedestrian Signal Pole within the pedestrian access route</i>	<i>Relocate Pedestrian Signal Pole and Replace 5' by 5' Sidewalk Section</i>
<i>Tree in Landscape Planter within the pedestrian access route</i>	<i>Realign Sidewalk by removing and Replacing 15 linear feet (LF) of sidewalk around landscape planter</i>

<b>ADA Barrier</b>	<b>Typical Mitigation Strategy</b>
<b>Hazards</b>	
<i>Excessive Cross Slope on Sidewalk</i>	<i>Remove and Replace 10 linear feet (LF) of sidewalk</i>
<i>Excessive Running Slope on Sidewalk</i>	<i>Remove and Replace 20 linear feet (LF) of sidewalk</i>
<i>Excessive Cross Slope on Driveway Aprons</i>	<i>Reconstruct driveway apron</i>
<i>Drop Offs adjacent to sidewalk</i>	<i>Install Handrail</i>
<b>Damage</b>	
<i>Trip Edges and Vertical Discontinuities</i>	<i>Grind each occurrence</i>
<i>Other Sidewalk Damage</i>	<i>Remove and Replace 10 linear feet (LF) of sidewalk</i>
<b>Pedestrian Signal Barriers</b>	
<i>Pedestrian Signal Detector Pushbutton Orientation</i>	<i>Relocate Pedestrian Signal Detector</i>
<i>Pedestrian Signal Detector Pushbutton Clear Space</i>	<i>Construct a 30" (2.5 foot) x 48" (4 foot) level clear space at the pedestrian signal detector</i>
<i>Pedestrian Signal Detector Pushbutton Size</i>	<i>Remove and Replace Pedestrian Signal Detector</i>
<i>Pedestrian Signal Detector Pushbutton Height</i>	<i>Relocate Pedestrian Signal Detector</i>
<i>Pedestrian Signal Button Side Reach</i>	<i>Relocate Pedestrian Signal Detector</i>
<i>Pedestrian Signal Detector Pushbutton Curb Distance</i>	<i>Relocate Pedestrian Signal Detector</i>
<i>Accessible Pedestrian Signals (APS)</i>	<i>Install APS Compliant Pedestrian Signal Detector and Signal Head</i>
<b>Crosswalk Barriers</b>	
<i>Missing Crosswalk Markings at Pedestrian Signals</i>	<i>Install Crosswalk Pavement Markings</i>

Note that these typical mitigation strategies are recommended for budgetary estimation only, and that the actual methodology for addressing each barrier and deficiency will need to be evaluated and designed on a case by case basis considering the specific site constraints and availability of public right of way.

### 5.3 Mitigation Strategy Cost Estimates

Costs to mitigate each identified ADA barrier type are estimated for each identified ADA barrier mitigation strategy. The estimated costs are based on a mid-range level of project complexity using 2021 dollars and typical costs. For example, constructing a new five-foot-wide sidewalk to close a gap in the pedestrian access route includes expenses for concrete, erosion control, clearing and grubbing, earthwork, and sod.

Quantities for each of the expense categories represent typical conditions for mid-range project complexity, and these item costs total into one unit cost for the mitigation strategy.

Unloaded costs are based upon Florida Department of Transportation (FDOT) historical costs, and recent City bid documents with American Grinding Company and Altair Environmental Group.

FDOT historic estimated unit costs are published by the Estimates Department in the Program Management Division. The FDOT publishes a standardized list of Design Quantities and Estimates containing pay items organized with a standardized code and description. The pay item cost history is published in reports based on executed FDOT construction contracts which have a letting date that falls within a specified date range.

The weighted average price is calculated based on awarded prices only and is weighted on item quantity. The pay item cost history is published within the following date ranges: Current 6 Month Moving Statewide Averages, Current 12 Month Moving Statewide Averages, and Current 12 Month Moving Market Area Averages.

FDOT Pay Item Cost Data can be found at the following web address:

<https://www.fdot.gov/programmanagement/estimates/historicalcostinformation/historicalcost.shtm>

Market Area averages are based upon geographic areas. The City of Orlando falls within FDOT’s “Area 8” which consists of average costs for contracts in Orange, Osceola, Seminole, Brevard, Polk, Hillsborough, and Pinellas Counties. Costs for this Transition Plan Update were based upon the current 12 month moving market area averages for Area 8 for the period of 4/1/2020 through 3/31/2021.

Published FDOT Costs were rounded for the basis of this ADA Transition Plan Cost Model. The following FDOT pay items were used to develop the City of Orlando mitigation costs in this report:

FDOT Pay Item Number	FDOT Pay Item Description	Weighted Average Cost	Pay Item Units
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	\$40.69	Square Yard (SY)
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	\$61.39	Square Yard (SY)
0104 12	STAKED TURBIDITY BARRIER- NYLON REINFORCED PVC	\$4.97	Linear Foot (LF)
0110 1 1	CLEARING & GRUBBING	\$26,851.06	Acre (AC)
0120 1	REGULAR EXCAVATION	\$8.92	Square Yard (SY)
0570 1 2	PERFORMANCE TURF, SOD	\$2.97	Square Yard (SY)
0527 2	DETECTABLE WARNINGS	\$27.68	Square Foot (SF)
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	\$23.79	Linear Foot (LF)
0715 4 60	LIGHT POLE COMPLETE, RELOCATE	\$3,397.65	Each (EA)
1644800	FIRE HYDRANT, RELOCATE	\$3,980.00	Each (EA)
0700 1 50	SINGLE POST SIGN, RELOCATE	\$346.96	Assembly (AS)
0670 5500	TRAFFIC CONTROLLER ASSEMBLY, RELOCATE CONTROLLER	\$2,955.31	Assembly (AS)
1080 21500	UTILITY FIXTURE, VALVE/METER BOX, ADJUST	\$997.92	Each (EA)
0646 1 40	ALUMINUM SIGNALS POLE, RELOCATE	\$1,294.59	Each (EA)
0665 1 40	PEDESTRIAN DETECTOR, RELOCATE	\$203.33	Each (EA)
0665 1 60	PEDESTRIAN DETECTOR, REMOVE	\$65.84	Each (EA)
0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	\$311.73	Each (EA)
0646 1 12	ALUMINUM SIGNALS POLE, FURNISH & INSTALL PEDESTRIAN DETECTOR POST	\$1,528.93	Each (EA)
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	\$2.54	Linear Foot (LF)
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	\$3.90	Linear Foot (LF)

These costs in the table above are considered to be unloaded costs. Estimated total costs are loaded costs. To calculate loaded costs, unloaded costs are multiplied by additional factors to account for Maintenance of Traffic (MOT), Mobilization, Contingency, Design, and Construction Engineering Inspection (CEI) which are added on a

percentage basis to the subtotal of the estimated mitigation costs. The table below lists the additional factors which are multiplied by the unloaded costs to obtain loaded costs for budgeting estimates:

Loading Factor	Additional Percentage	Loading Factor Multiplier
Maintenance of Traffic (MOT/TTC)	10%	1.1
Mobilization	10%	1.1
Contingency	20%	1.2
Engineering Design	15%	1.15
Construction Engineering & Inspection (CEI)	10%	1.1
<b>Total Multiplier (1.1 x 1.1 x 1.2 x 1.15 x 1.1)</b>		<b>1.83678</b>

For example, if the unloaded costs for constructing an item was \$100.00, the total loaded cost for that item would be the unloaded cost of \$100.00 x 1.83678. This means that the estimated budget amount for the loaded cost would be \$183.68.

The loaded costs do not include additions for right-of-way acquisition. All costs do not include the cost of the self-assessment data collection.

Estimates for the mitigation costs for each of the typical mitigation strategies are listed below.

### 5.3.1 Budgetary Cost Estimate for Filling Sidewalk Gaps

*Mitigation Strategy: Construct New 5-foot-wide sidewalk (4" Thick)*

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick	0.56	SY	\$41.00	\$22.96
Erosion Control	1	LF	\$5.00	\$5.00
Clearing and Grubbing	0.0002	AC	\$26,800.00	\$5.36
Earthwork	0.2	CY	\$9.00	\$1.80
Sodding, Match Existing	0.56	SY	\$3.80	\$2.13
<b>Total Cost Per Foot for Filling Sidewalk Gaps (Unloaded)</b>				<b>\$37.25</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Linear Foot for Filling Sidewalk Gaps (Loaded)</b>				<b>\$68.42</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.2 Budgetary Cost Estimate for Insufficient Passing Space

*Mitigation Strategy: Remove sidewalk panel and add 5' wide by 10' long panel for passing and turning*

Description	Quantity	Units	Unit Price	Subtotal
Remove & Replace Concrete Sidewalk 4" Thick	6	SY	\$50.00	\$300.00
Erosion Control	10	LF	\$5.00	\$50.00
Clearing and Grubbing	0.002	AC	\$26,800.00	\$53.60
Earthwork	2	CY	\$9.00	\$18.00
Sodding, Match Existing	6	SY	\$3.80	\$22.80
<b>Total Cost Per Insufficient Passing Space Occurrence (Unloaded)</b>				<b>\$444.40</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Insufficient Passing Space Occurrence (Loaded)</b>				<b>\$816.27</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.3 Budgetary Cost Estimate for Future Curb Ramps

Mitigation Strategy: Construct a New Curb Ramp

Description	Quantity	Units	Unit Price	Subtotal
Curb Ramp 6" Thick, New Construction	11.00	SY	\$62.00	\$1,045.00
Erosion Control	22	LF	\$5.00	\$44.00
Clearing and Grubbing	0.0060	AC	\$26,800.00	\$120.00
Earthwork	4.67	CY	\$9.00	\$23.35
Sodding, Match Existing	7	SY	\$3.80	\$31.50
Install Detectable Warning Surface	10	SF	\$28.00	\$400.00
Replace Curb & Gutter	22	LF	\$25.00	\$616.00
<b>Total Cost for Each New Future Curb Ramp (Unloaded)</b>				<b>\$1,851.43</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Each New Future Curb Ramp (Loaded)</b>				<b>\$3,400.67</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.4 Budgetary Cost Estimate for Structurally Deficient and Non-Compliant (Missing) Curb Ramps

Mitigation Strategy: Construct a New Curb Ramp

Description	Quantity	Units	Unit Price	Subtotal
Curb Ramp 6" Thick, Remove & Replace	11.00	SY	\$72.00	\$792.00
Erosion Control	22	LF	\$5.00	\$110.00
Clearing and Grubbing	0.0060	AC	\$26,800.00	\$160.80
Earthwork	4.67	CY	\$9.00	\$42.03
Sodding, Match Existing	7	SY	\$3.80	\$26.60
Install Detectable Warning Surface	10	SF	\$28.00	\$280.00
Replace Curb & Gutter	22	LF	\$25.00	\$550.00
<b>Total Cost for Each Structurally Deficient Curb Ramp (Unloaded)</b>				<b>\$1,961.43</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Each Structurally Deficient Curb Ramp (Loaded)</b>				<b>\$3,602.72</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.5 Budgetary Cost Estimate for Excessive Gutter Counter Slope

Mitigation Strategy: Remove the Existing Curbing at Ramp and reconstruct Curb to correct gutter counter slope

Description	Quantity	Units	Unit Price	Subtotal
Curb & Gutter, Type F Remove & Replace	15	LF	\$32.00	\$480.00
Turnout Reconstruction	2	SY	\$65.00	\$130.00
Replace Asphalt Pavement Edge	1	SY	\$70.00	\$70.00
<b>Total Cost for Each Replacement Gutter (Unloaded)</b>				<b>\$680.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Each Replacement Gutter (Loaded)</b>				<b>\$1,249.01</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.6 Budgetary Cost Estimate for Insufficient Turning Space at Curb Ramp

Mitigation Strategy: Construct a 4' x 4' level turning space

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, Remove and Replace	4	SY	\$50.00	\$200.00
Erosion Control	10	LF	\$5.00	\$50.00
Clearing and Grubbing	0.002	AC	\$26,800.00	\$53.60
Earthwork	2	CY	\$9.00	\$18.00
Sodding, Match Existing	6	SY	\$3.80	\$22.80
<b>Total Cost Per Turning Space (Unloaded)</b>				<b>\$344.40</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Turning Space (Loaded)</b>				<b>\$632.59</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.7 Budgetary Cost Estimate for Missing Detectable Warning Surfaces on Existing Curb Ramps

Mitigation Strategy: Add a Detectable Warning Surface to an Existing Curb Ramp

Description	Quantity	Units	Unit Price	Subtotal
Add Detectable Warning Surface (assumed 10 square feet)	10.00	SF	\$28.00	\$280.00
<b>Total Cost for Adding Detectable Warning Surfaces (Unloaded)</b>				<b>\$280</b>
Loading Factor Multiplier*				1.5972
<b>Total Cost for Adding Detectable Warning Surfaces (Loaded)</b>				<b>\$447.22</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.1 = 1.5972$

### 5.3.8 Budgetary Cost Estimate for Deficient Detectable Warning Surfaces on Existing Curb Ramps

Mitigation Strategy: Remove the Existing Detectable Warning Surface Add a Detectable Warning Surface to an Existing Curb Ramp

Description	Quantity	Units	Unit Price	Subtotal
Remove and Dispose of Existing Detectable Warning Surface	7	SF	\$10.00	\$70.00
Add Detectable Warning Surface (assumed 10 square feet)	10.00	SF	\$28.00	\$280.00
<b>Total Cost for Replacing Detectable Warning Surfaces (Unloaded)</b>				<b>\$350.00</b>
Loading Factor Multiplier*				1.5972
<b>Total Cost for Replacing Detectable Warning Surfaces (Loaded)</b>				<b>\$559.02</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.1 = 1.5972$

### 5.3.9 Budgetary Cost Estimate for Utility Pole Obstruction

Mitigation Strategy: Relocate an Existing Utility Pole, Replace 5' by 5' section of Sidewalk Ramp

Description	Quantity	Units	Unit Price	Subtotal
Relocate Utility Pole	1	EA	\$3,400.00	\$3,400.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Utility Pole (Unloaded)</b>				<b>\$3,550.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Utility Pole (Loaded)</b>				<b>\$6,520.57</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.10 Budgetary Cost Estimate for Light Pole Obstruction

Mitigation Strategy: Relocate an Existing Light Pole, Replace 5' by 5' section of Sidewalk

Description	Quantity	Units	Unit Price	Subtotal
Relocate Light Pole	1	EA	\$3,400.00	\$3,400.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Light Pole (Unloaded)</b>				<b>\$3,550.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Light Pole (Loaded)</b>				<b>\$6,520.57</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.11 Budgetary Cost Estimate for Street Furniture Obstruction

Mitigation Strategy: Expand Sidewalk Path to Relocate a Bench obstructing a Sidewalk Path

Description	Quantity	Units	Unit Price	Subtotal
Relocate Street Furniture	1	EA	\$500.00	\$500.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Street Furniture (Unloaded)</b>				<b>\$650.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Street Furniture (Loaded)</b>				<b>\$1,193.91</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.12 Budgetary Cost Estimate for Fire Hydrant Obstruction

Mitigation Strategy: Relocate Fire Hydrant and Replace 5' by 5' Sidewalk Section

Description	Quantity	Units	Unit Price	Subtotal
Relocate Fire Hydrant	1	EA	\$3,980.00	\$3,980.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Fire Hydrant (Unloaded)</b>				<b>\$4,130.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Fire Hydrant (Loaded)</b>				<b>\$7,585.90</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.13 Budgetary Cost Estimate for Sign Pole Obstruction

Mitigation Strategy: Relocate Sign Post and Replace 5' by 5' Sidewalk Section

Description	Quantity	Units	Unit Price	Subtotal
Relocate Single Post Sign	1	EA	\$350.00	\$260.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$120.00
<b>Total Cost for Relocating Sign Pole (Unloaded)</b>				<b>\$500.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Sign Pole (Loaded)</b>				<b>\$918.39</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.14 Budgetary Cost Estimate for Signal Control Cabinet Obstruction

Mitigation Strategy: Relocate Signal Control Cabinet and Replace 5' by 5' Sidewalk Section

Description	Quantity	Units	Unit Price	Subtotal
Relocate Signal Control Cabinet	1	EA	\$3,000.00	\$3,000.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Signal Control Cabinet (Unloaded)</b>				<b>\$3,150.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Signal Control Cabinet (Loaded)</b>				<b>\$5,785.86</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.15 Budgetary Cost Estimate for Water Meter Box Obstruction

Mitigation Strategy: Adjust meter box lid flush with sidewalk surface and Replace 5' by 5' Sidewalk Section

Description	Quantity	Units	Unit Price	Subtotal
Raise Water Meter Box Lid	1	EA	\$1,000.00	\$300.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$120.00
<b>Total Cost for Relocating Water Meter Box (Unloaded)</b>				<b>\$1,150.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Water Meter Box (Loaded)</b>				<b>\$2,112.30</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.16 Budgetary Cost Estimate for Pedestrian Signal Pole Obstruction

Mitigation Strategy: Relocate Pedestrian Signal Pole and Replace 5' by 5' Sidewalk Section

Description	Quantity	Units	Unit Price	Subtotal
Relocate Pedestrian Signal Pole	1	EA	\$1,300.00	\$1,300.00
Concrete Sidewalk 4" Thick, Remove & Replace	3	SY	\$50.00	\$150.00
<b>Total Cost for Relocating Pedestrian Signal Pole (Unloaded)</b>				<b>\$1,450.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost for Relocating Pedestrian Signal Pole (Loaded)</b>				<b>\$2,663.33</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.17 Budgetary Cost Estimate for Landscape Tree Obstruction

Mitigation Strategy: Realign Sidewalk by removing and Replacing 15 linear feet (LF) of sidewalk around landscape planter

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, New Construction	9	SY	\$41.00	\$369.00
Erosion Control	15	LF	\$5.00	\$75.00
Clearing and Grubbing	0.003	AC	\$26,800.00	\$80.40
Earthwork	3	CY	\$9.00	\$27.00
Sodding, Match Existing	9	SY	\$3.80	\$34.20
<b>Total Cost Per Landscape Tree Obstruction (Unloaded)</b>				<b>\$585.60</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Landscape Tree Obstruction (Loaded)</b>				<b>\$1,075.62</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.18 Budgetary Cost Estimate for Excessive Sidewalk Cross Slope

Mitigation Strategy: Remove and Replace 10 linear feet (LF) of sidewalk

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, Remove & Replace	6	SY	\$50.00	\$300.00
Erosion Control	10	LF	\$5.00	\$50.00
<b>Total Cost Per Excessive Sidewalk Cross Slope (Unloaded)</b>				<b>\$350.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Excessive Sidewalk Cross Slope (Loaded)</b>				<b>\$642.87</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.19 Budgetary Cost Estimate for Excessive Sidewalk Running Slope

Mitigation Strategy: Remove and Replace 20 linear feet (LF) of sidewalk

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, Remove & Replace	12	SY	\$50.00	\$600.00
Erosion Control	20	LF	\$5.00	\$100.00
<b>Total Cost Per Excessive Sidewalk Running Slope (Unloaded)</b>				<b>\$700.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Excessive Sidewalk Running Slope (Loaded)</b>				<b>\$1,285.75</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.20 Budgetary Cost Estimate for Excessive Sidewalk Cross Slope on Driveway Aprons

Mitigation Strategy: Remove and Replace 20 linear feet (LF) of sidewalk

Description	Quantity	Units	Unit Price	Subtotal
Driveway / Sidewalk 6" Thick, Remove & Replace	12	SY	\$68.00	\$816.00
Erosion Control	20	LF	\$5.00	\$100.00
<b>Total Cost Per Excessive Sidewalk Cross Slope on Driveway Aprons (Unloaded)</b>				<b>\$916.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Excessive Sidewalk Cross Slope on Driveway Aprons (Loaded)</b>				<b>\$1,682.49</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.21 Budgetary Cost Estimate for Sidewalk Drop Off

Mitigation Strategy: Install 15-foot Aluminum Handrail

Description	Quantity	Units	Unit Price	Subtotal
Install Aluminum Pipe Handrail	8	LF	\$65.00	\$520.00
<b>Total Cost Per Sidewalk Drop Off (Unloaded)</b>				<b>\$520.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Sidewalk Drop Off (Loaded)</b>				<b>\$955.13</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.22 Budgetary Cost Estimate for Sidewalk Trip Edge

Mitigation Strategy: Grind Trip Edge, Average Width 5 foot each

Description	Quantity	Units	Unit Price	Subtotal
Grind Sidewalk Trip Edge	5	LF	\$7.50	\$37.50
<b>Total Cost Per Sidewalk Trip Edge (Unloaded)</b>				<b>\$37.50</b>
Loading Factor Multiplier*				1.3915
<b>Total Cost Per Sidewalk Trip Edge (Loaded)</b>				<b>\$52.18</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.23 Budgetary Cost Estimate for Other Sidewalk Damage

Mitigation Strategy: Remove and Replace 10 linear feet (LF) of sidewalk

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, Remove & Replace	6	SY	\$50.00	\$300.00
Erosion Control	10	LF	\$5.00	\$50.00
<b>Total Cost Per Other Sidewalk Damage (Unloaded)</b>				<b>\$350.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Other Sidewalk Damage (Loaded)</b>				<b>\$642.87</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.24 Budgetary Cost Estimate for Deficient Pedestrian Signal Detector Orientation

Mitigation Strategy: Relocate Pedestrian Signal Detector

Description	Quantity	Units	Unit Price	Subtotal
Relocate Pedestrian Signal Detector	1	EA	\$210.00	\$210.00
<b>Total Cost Per Pedestrian Signal Detector Orientation (Unloaded)</b>				<b>\$210.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Pedestrian Signal Detector Orientation (Loaded)</b>				<b>\$385.72</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.25 Budgetary Cost Estimate for Insufficient Clear Space at Pedestrian Signal Detector

Mitigation Strategy: Construct a 2.5' x 4' level turning space

Description	Quantity	Units	Unit Price	Subtotal
Concrete Sidewalk 4" Thick, Remove and Replace	3	SY	\$50.00	\$150.00
Erosion Control	10	LF	\$5.00	\$50.00
Clearing and Grubbing	0.002	AC	\$26,800.00	\$53.60
Earthwork	2	CY	\$9.00	\$18.00
Sodding, Match Existing	6	SY	\$3.80	\$22.80
<b>Total Cost Per Insufficient Clear Space at Pedestrian Signal Detector (Unloaded)</b>				<b>\$294.40</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Insufficient Clear Space at Pedestrian Signal Detector (Loaded)</b>				<b>\$540.75</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.26 Budgetary Cost Estimate for Deficient Pedestrian Signal Detector Button

Mitigation Strategy: Remove & Replace Pedestrian Signal Detector Button Assembly

Description	Quantity	Units	Unit Price	Subtotal
Remove Pedestrian Signal Detector	1	EA	\$38.00	\$38.00
Furnish & Install Standard Pedestrian Signal Detector	1	EA	\$325.00	\$325.00
<b>Total Cost Per Deficient Pedestrian Signal Detector Button (Unloaded)</b>				<b>\$363.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Deficient Pedestrian Signal Detector Button (Loaded)</b>				<b>\$666.75</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.27 Budgetary Cost Estimate for Deficient Pedestrian Signal Detector Button Height

Mitigation Strategy: Relocate Pedestrian Signal Detector

Description	Quantity	Units	Unit Price	Subtotal
Relocate Pedestrian Signal Detector	1	EA	\$210.00	\$210.00
<b>Total Cost Per Pedestrian Signal Detector Button Height (Unloaded)</b>				<b>\$210.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Pedestrian Signal Detector Button Height (Loaded)</b>				<b>\$385.72</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.28 Budgetary Cost Estimate for Deficient Pedestrian Signal Detector Location

Mitigation Strategy: Remove & Replace Pedestrian Signal Detector

Description	Quantity	Units	Unit Price	Subtotal
Remove Pedestrian Signal Detector	1	EA	\$38.00	\$38.00
Furnish & Install Aluminum Pedestrian Signal Post	1	EA	\$1,550.00	\$1,550.00
Furnish & Install Standard Pedestrian Signal Detector	1	EA	\$325.00	\$325.00
<b>Total Cost Per Other Deficient Pedestrian Signal Detector Location (Unloaded)</b>				<b>\$1,913.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Deficient Pedestrian Signal Detector Location (Loaded)</b>				<b>\$3,513.76</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

### 5.3.29 Budgetary Cost Estimate for Missing Crosswalk Pavement Markings

Mitigation Strategy: Install FDOT Special Emphasis Crosswalk Markings across 48' Roadway

Description	Quantity	Units	Unit Price	Subtotal
Install Solid White 12" Thermoplastic Marking	96	LF	\$2.50	\$240.00
Install Solid White 24" Thermoplastic Marking	78	LF	\$4.00	\$312.00
<b>Total Cost Per Missing Crosswalk Pavement Markings (Unloaded)</b>				<b>\$552.00</b>
Loading Factor Multiplier*				1.83678
<b>Total Cost Per Missing Crosswalk Pavement Markings (Loaded)</b>				<b>\$1,013.90</b>

\*Loading Factor Multiplier for MOT (10%), Mobilization (10%), Contingency (20%), Engineering (15%), CEI (10%)  
 $1.1 \times 1.1 \times 1.2 \times 1.15 \times 1.1 = 1.83678$

## Section 6: SUMMARY OF COSTS TO MITIGATE ADA BARRIERS

An overall ADA retrofit cost estimate to mitigate all of the ADA barriers identified in the self-assessment sample area inventory was developed along with an extrapolated estimate of the City-wide costs. The City-wide costs are based on applying the same unit prices for the mitigation of barriers to the estimated number of City-wide barriers. The estimated total loaded costs by barrier type for both the self-assessment sample areas and City-wide are shown:

ADA Barrier	Self-Assessment Instances Found	Self-Assessment Sampling Description	Sample Size	City-wide Scale Factor	Estimated City-wide Instances	Approx. Mitigation Cost per Instance	Estimated Total City-wide Mitigation Cost
<b>Sidewalks</b>							
<i>Filling Sidewalk Gaps</i>	16,813 LF	100% Review of City from Aerial Photography	100%	1	16,813 LF	\$68.42 per LF	\$1,150,345.46
<i>Insufficient Passing Space</i>	18	Sampling 95.7 miles of sidewalk out of 983 total miles	9.7%	10.31	186	\$816.27 each	\$151,826.22
<b>Curb Ramps</b>							
<i>Non-Compliant (Missing) Curb Ramps</i>	638	100% Review of City from Aerial Photography	100%	1	638	\$3,602.72 each	\$2,298,535.36
<i>Missing Curb Ramps for Network Completion</i>	208		100%	1	208	\$3,400.67 each	\$707,339.36
<i>Structurally Deficient (Excessive Cross Slope or Running Slope) Curb Ramps</i>	30	Field inspection Sampling of 309 curb ramps out of 16,779 total curb ramps	1.8%	55.56	1,667	\$3,602.72 each	\$6,005,734.24
<i>Structurally Deficient Curb Ramps where minimum Ramp Width &lt; 4.0 feet</i>	13		1.8%	55.56	722	\$3,602.72 each	\$2,601,163.84
<i>Excessive gutter counter slope at ramps</i>	52		1.8%	55.56	2,889	\$1,249.01 each	\$3,608,389.89
<i>Insufficient Turning Space at Curb Ramps</i>	19		1.8%	55.56	1,056	\$632.59 each	\$668,015.04
<i>Missing Detectable Warning Surfaces on Existing Curb Ramps</i>	6,877	100% Review of City from Aerial Photography	100%	1	6,879	\$447.22 each	\$3,075,531.94
<i>Deficient Detectable Warning Surfaces on Existing Curb Ramps</i>	42	Field inspection Sampling of 309 curb ramps out of 18,467 total curb ramps	1.8%	55.56	2,334	\$559.02 each	\$1,304,752.68

ADA Barrier	Self-Assessment Instances Found	Self-Assessment Sampling Description	Sample Size	City-wide Scale Factor	Estimated City-wide Instances	Approx. Mitigation Cost per Instance	Estimated Total City-wide Mitigation Cost
<b>Obstacles</b>							
Street Furniture Obstructions	1	<i>Panoramic Imagery Inspection of 63 miles of sidewalk, and field inspection of 3.8 miles of sidewalk at 55 intersections (402 sidewalks at 50' each) out of 983 total miles of sidewalks</i>	6.8%	14.71	15	\$1,193.91 each	\$17,908.65
Sign Pole Obstructions	15		6.8%	14.71	221	\$918.39 each	\$202,964.19
Signal Control Cabinet Obstructions	15		6.8%	14.71	221	\$5,785.86 each	\$1,278,675.06
Pedestrian Signal Pole Obstructions	1		6.8%	14.71	15	\$2,663.33 each	\$39,949.95
Landscape Tree Obstructions	1		6.8%	14.71	15	\$1,075.62 each	\$16,134.30
<b>Hazards</b>							
Excessive Sidewalk Cross Slope	54	<i>Panoramic Imagery Inspection of 63 miles of sidewalk, and field inspection of 3.8 miles of sidewalk at 55 intersections (402 sidewalks at 50' each) out of 983 total miles of sidewalks</i>	6.8%	14.71	794	\$642.87 each	\$510,438.78
Excessive Sidewalk Running Slope	6		6.8%	14.71	88	\$1,285.75 each	\$113,146.00
Excessive Sidewalk Cross Slope On Driveway Aprons	14		6.8%	14.71	206	\$1,682.49 each	\$346,592.94
Sidewalk Drop Off	23		6.8%	14.71	338	\$955.13 each	\$322,833.94
<b>Damage</b>							
Sidewalk Trip Edge	174,449	<i>Sampling from actual repairs along 832.1 miles of sidewalk out of 983 total miles</i>	84.6%	1.18	31,401 (estimated remaining)	\$52.18 each	\$1,638,543.43
Other Sidewalk Damage	6,505	<i>Sampling from actual repairs along 832.1 miles of sidewalk out of 983 total miles</i>	84.6%	1.18	1,171 (estimated remaining)	\$642.87 each	\$752,800.77

ADA Barrier	Self-Assessment Instances Found	Self-Assessment Sampling Description	Sample Size	City-wide Scale Factor	Estimated City-wide Instances	Approx. Mitigation Cost per Instance	Estimated Total City-wide Mitigation Cost
<b>Pedestrian Signals</b>							
Deficient Pedestrian Signal Detector Orientation	180	On-site field inspections at 55 of 546 City Maintained Signalized Intersections	10.1%	9.90	1,782	\$385.72 each	\$687,353.04
Insufficient Clear Space at Pedestrian Signal Detector	68		10.1%	9.90	673	\$540.75 each	\$363,924.75
Deficient Pedestrian Signal Detector Button	54		10.1%	9.90	535	\$666.75 each	\$356,711.25
Deficient Pedestrian Signal Detector Button Height	16		10.1%	9.90	158	\$385.72 each	\$60,943.76
Deficient Pedestrian Signal Detector Side Reach > 10 inches	99		10.1%	9.90	980	\$666.75 each	\$653,415.00
Deficient Pedestrian Signal Detector Distance to Curb > 10 feet	171		10.1%	9.90	1,693	\$3,513.76 each	\$5,948,795.68
<b>Pedestrian Crosswalks</b>							
Missing Crosswalk Pavement Markings at Pedestrian Signals	6	On-site field inspections at 55 of 546 City Maintained Signalized Intersections	10.1%	9.90	59	\$1,013.90 each	\$59,8.10
<b>Total Projected Public Works Cost to Mitigate Estimated ADA Barriers Citywide</b>						<b>\$34,942,585.62</b>	

As shown in the table above, the total projected cost of mitigating ADA barriers City-wide for sidewalk, curb ramp, and other pedestrian barriers are anticipated to be over \$34.9 million.

There are also barriers along pedestrian access routes which are related to Utilities within the Public Rights of Way. While the cost of mitigating these barriers will not necessarily be the responsibility of the City of Orlando Public Works Department, the City will need to coordinate with the respective Utility owner agency (e.g., Duke Energy, and the Orlando Utilities Commission) for the mitigation of these barriers. Costs for Utility related mitigation are shown in the table on the following page.

ADA Barrier	Self-Assessment Instances Found	Self-Assessment Sampling Description	Sample Size	City-wide Scale Factor	Estimated City-wide Instances	Approx. Mitigation Cost per Instance	Estimated Total City-wide Mitigation Cost
<b>Utility Agency Mitigation</b>							
Utility Pole Obstructions	18	<i>Panoramic Imagery Inspection of 63 miles of sidewalk, and field inspection of 3.8 miles of sidewalk at 55 intersections (402 sidewalks at 50' each) out of 983 total miles of sidewalks</i>	6.8%	14.71	265	\$6,520.57 each	<b>\$1,727,951.05</b>
Light Pole Obstructions	12		6.8%	14.71	177	\$6,520.57 each	<b>\$1,154,140.89</b>
Fire Hydrant Obstructions	2		6.8%	14.71	29	\$7,585.90 each	<b>\$219,991.10</b>
Water Meter Box Obstructions	1		6.8%	14.71	15	\$2,112.30 each	<b>\$31,684.50</b>
<b>Total Projected Utilities Cost to Mitigate Estimated ADA Barriers Citywide</b>						<b>\$3,133,767.54</b>	

## Section 7: WORK PERFORMED SINCE LAST SELF-ASSESSMENT

The Streets and Stormwater Division’s sidewalk repair and upgrade program was created to address barriers for mobility-impaired pedestrians and otherwise improve neighborhood pedestrian facilities in the City by constructing sidewalk ramps and repairing damaged sidewalks in compliance with the ADA.

Approximately 80% of the City’s sidewalks were constructed before the ADA became law. It’s estimated that approximately 638 ramps must still be constructed at locations where sidewalks have curb barriers, and an additional 6,877 ramps are functional for mobility-impaired pedestrians however they lack tactile warning mats serving as detectable warning surfaces for visually impaired pedestrians.



The Streets and Stormwater Division of the Public Works Department performs a spectrum of engineering services which play an integral role in achieving accessibility within the public rights-of-way including capital improvement project (CIP) planning, design, and management. The CIPs include all types of accessibility improvements including curb ramps, sidewalk, pedestrian signals, pedestrian crossings, and pedestrian bridges.

### 7.1 Pedestrian Specific Budget Allocations

In fiscal years 2012/13, 2013/14, 2014/15, 2015/16, and 2016/17 the City of Orlando budgeted a total of \$7.6 million on sidewalk and pedestrian transportation projects and ended up spending over \$8.08 million for school safety and sidewalk repair projects as seen in the budget records below:

Project Name	Project	FY 2012/13 to FY 2016/17 Expenditures
<i>School/Safety Sidewalks - Gas Tax</i>	<i>STW0010_P School/Safety Sidewalks - Gas Tax</i>	<i>\$837,302.92</i>
<i>School/Safety Sidewalks - Capital Improvement Plan</i>	<i>STW0011_P School/Safety Sidewalks - Capital Improvement Plan</i>	<i>\$2,727,158.14</i>
<i>Miscellaneous Sidewalk Repair - Gas Tax</i>	<i>STW0012_P Miscellaneous Sidewalk Repair - Gas Tax</i>	<i>\$1,380,679.64</i>
<i>Miscellaneous Sidewalk Repair - Capital Improvement Plan</i>	<i>STW0013_P Miscellaneous Sidewalk Repair - Capital Improvement Plan</i>	<i>\$3,140,149.68</i>
	<b>Total</b>	<b>\$8,085,290.38</b>

Over the past four years, the City has spent approximately \$2.6 million per year on sidewalks, sidewalk repair and sidewalk remediation as shown in the table below:

Cost Center / Project / Grant	FY 2017/2018	FY 2018 / 2019	FY 2019 / 2020	FY 2020 / 2021 (Year to Date)	Total 4 Year Expenditure
STW0010_P School / Safety / Sidewalks - Gas Tax	\$571,828.56	\$53,625.88	\$249,317.95	\$96,991.00	\$971,763.39
STW0011_P School / Safety / Sidewalks - Capital Improvement Plan	\$166,351.50	\$504,633.40	\$852,320.50	\$583,513.69	\$2,106,819.09
STW0012_P Miscellaneous Sidewalk Repair - Gas Tax	\$170,809.44	\$3,524.61	\$137,522.54	\$60.38	\$311,916.97
STW0012_P Miscellaneous Sidewalk Repair - Capital Improvement Plan	\$621,439.59	\$351,657.70	\$405,570.37	\$219,760.56	\$1,598,428.22
STW0022_P ADA Sidewalk Transition Plan	\$148,681.68	\$44,604.50	\$0.00	\$49,530.21	\$242,816.39
STW0023_P ADA Sidewalk Remediation Program	\$842,083.42	\$1,202,292.56	\$1,606,531.71	\$747,792.05	\$4,398,699.74
<b>Annual Expenditure Totals</b>	<b>\$2,521,194.19</b>	<b>\$2,160,338.65</b>	<b>\$3,251,263.07</b>	<b>\$1,697,647.89</b>	<b>\$9,630,443.80</b>

## 7.2 Orlando Walks

The City has implemented a number of different pedestrian mobility initiatives. In 2013-2015 as part of the Orlando Walks program, the City secured more than \$6 million in Federal funds to support pedestrian transportation improvements. In addition to adding sidewalks on busy streets, the City also constructed new sidewalks with priority given to areas with small gaps in sidewalk segments and in locations that were in close proximity to schools, parks, bus routes, shopping, community centers and SunRail stations.



The first phase of the Orlando Walks initiative constructed 17 miles of new sidewalks, and the second phase constructed 22 miles of new sidewalks. Neighborhood and Roadway sidewalk projects included Florida Center, Southport, Airport North, Timberleaf, Lake of the Woods, Lake Como, Monterey, Englewood Park, Lorna Drive, Colonialtown South, Azalea Park, Princeton/Silver Star, College Park, Lake Formosa & Orwin Manor, Rowena Gardens, Colonialtown North & Coytown, and East Central Park.

## 7.3 Sidewalk Barrier Removal

From 2016 through 2021, the City contracted with outside contractors for concrete sidewalk repair and sidewalk construction.

### Sidewalk Grinding

In order to keep sidewalks safe and relatively level, the City of Orlando's Streets and Stormwater Division often grinds sections of sidewalks that have become lifted, cracked or uneven.

These uneven and cracked sections occur for many reasons. One of the main causes is tree roots. These sections of sidewalks, if not leveled, pose safety concerns to the public and can lead to trips and falls.

Sidewalk grinding often leaves a white finish where the top layer of concrete has been removed which allows you to see the stones (aggregate) in the sidewalk section.



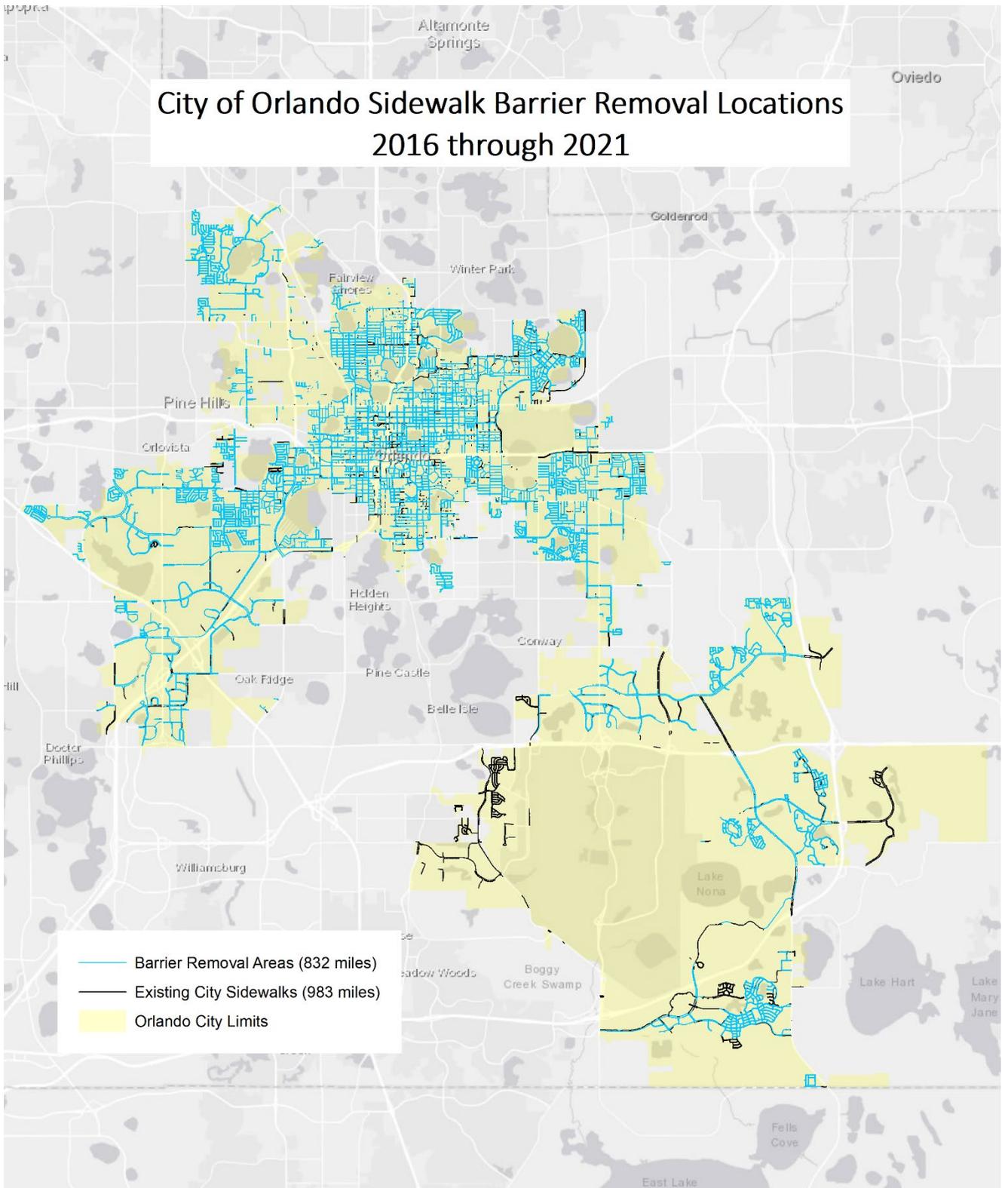

Contractor Crews identified and repaired minor trip hazards through grinding, and when grinding was not an effective solution, crews replaced damaged sections of sidewalk. From 2016 through 2021, contracted crews identified and removed trip hazards and repaired damage at 180,954 sites covering 832 miles of the City's 983 total miles of sidewalk.

The table below lists the annual work performed by the City's grinding and repair contractors:

Year	Grinding & Damage Repair Locations	Annual Sidewalk Length of Grinding and Repairs	Cumulative Length of City sidewalks where Grinding and Repair was Performed	% of City Sidewalks where Grinding and Repair was Performed
2016	17,919	98.6 miles	98.6 miles	10%
2017	24,017	141.9 miles	239.3 miles	24.3%
2018	32,017	164.3 miles	394.5 miles	40.1%
2019	47,225	243.5 miles	635.5 miles	64.6%
2020	49,891	367.7 miles	818.1 miles	83.2%
2021 (YTD)	9,885	81.5 miles	832.1 miles	84.6%
<b>Total</b>	<b>180,954</b>			

This barrier removal effort has been quite successful and has removed barriers along 832 miles of sidewalk covering 85% of the City's sidewalk network, as seen in the location map on the following page.

# City of Orlando Sidewalk Barrier Removal Locations 2016 through 2021



## 7.4 Summary of Sidewalk and Curb Ramp Improvements 2008-2021

The City's first sidewalk and curb ramp inventory and condition assessment was performed in 2008. A second inventory update was performed in 2017 and again in 2020 for the development of this ADA Transition Plan Update. Since 2008, the City has made significant upgrades to its pedestrian access routes. The number of curb ramps has increased by 41%, the number of non-compliant (missing) curb ramps has decreased by 38%. The number of ramps with truncated dome detectable warning surfaces has increased by 353%.

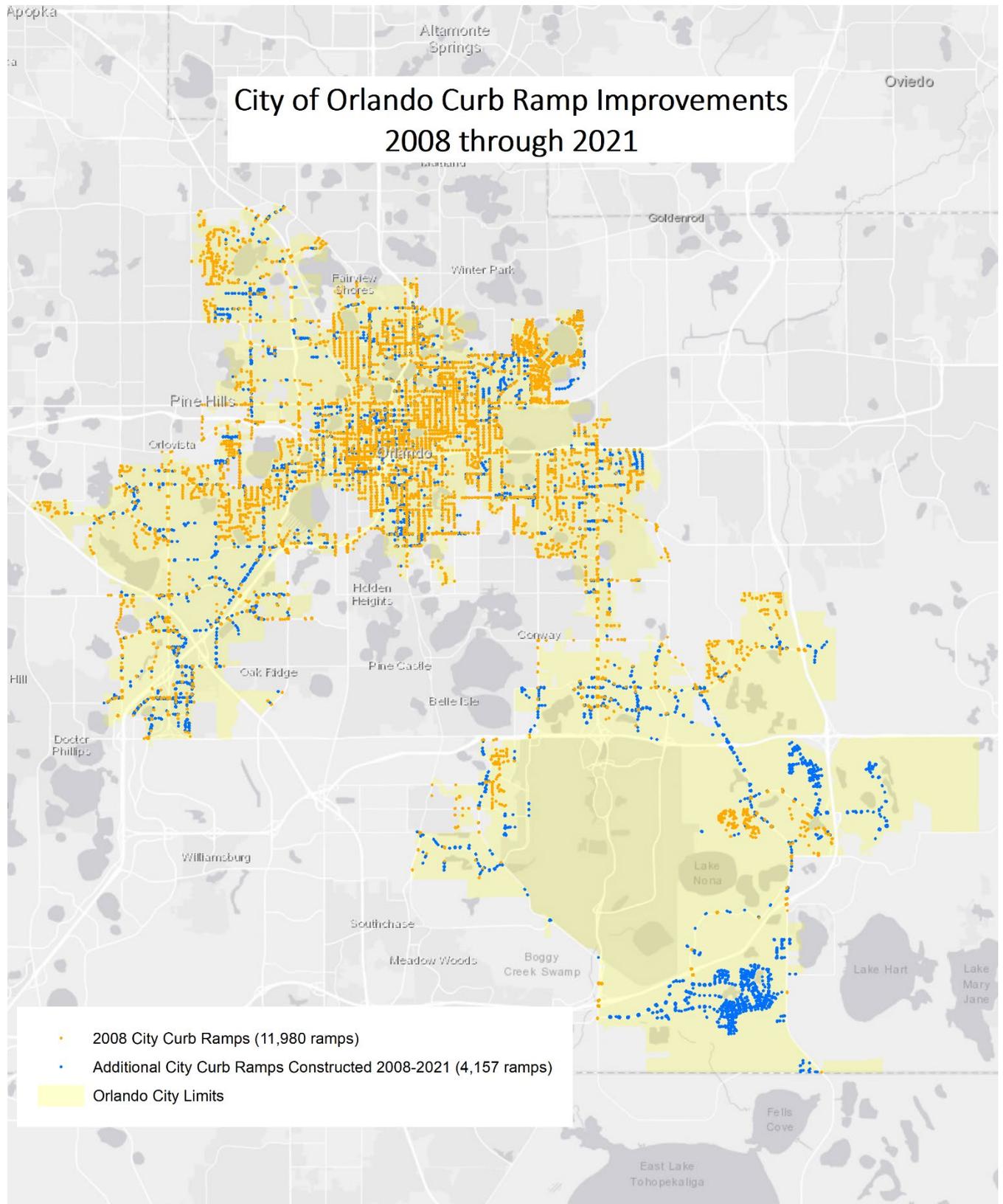
The tables below provide an overview of the ADA facilities constructed within the City between 2008 and 2021:

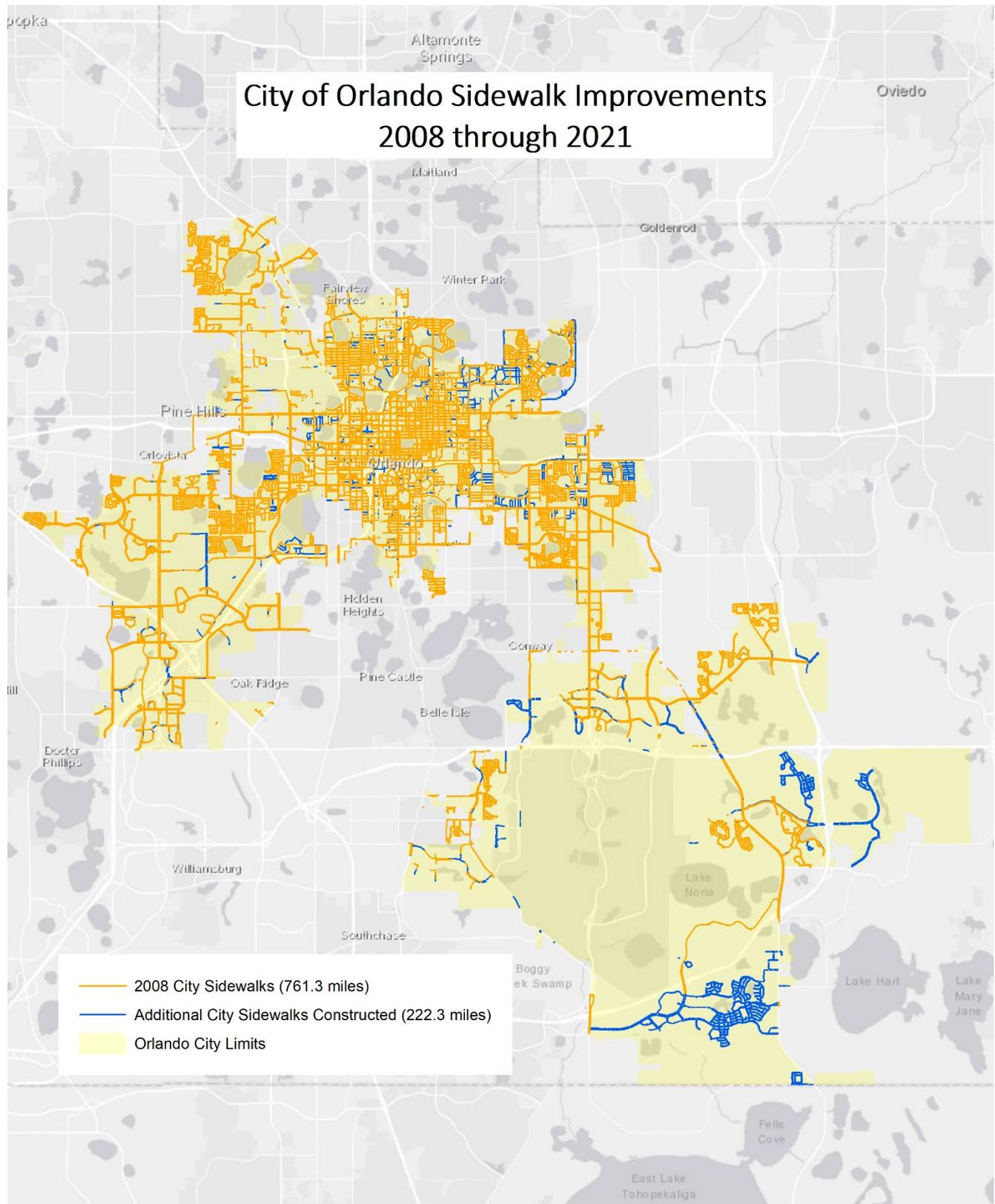
<b>Curb Ramps</b>	<b>2008</b>	<b>2017</b>	<b>2021</b>
<i>Total Number of Present Curb Ramps</i>	10,939	14,379	15,438
<i>Total Number of Non-Compliant (Missing Ramps)</i>	1,033	721	638
<i>Total Number Currently Under Construction</i>	8	53	31
<b>Total</b>	<b>11,980</b>	<b>15,153</b>	<b>16,137</b>

<b>Detectable Warning Surfaces at Ramps</b>	<b>2008</b>	<b>2017</b>	<b>2021</b>
<i>Total Number of Ramps with Truncated Domes</i>	2,044	6,798	9,260
<b>% of Existing Ramps with Truncated Domes</b>	<b>17%</b>	<b>49%</b>	<b>57%</b>

<b>Sidewalk Gaps</b>	<b>2017</b>	<b>2021</b>
Total Number of Sidewalk Gaps	263	226
Total Length of Sidewalk Gaps (in feet)	19,536	16,813

Maps showing the locations and increase in the number of curb ramp and sidewalk facilities between 2008 and 2021 are shown on the following pages.





## Section 8: PRIORITIZATION METHODOLOGIES

### 8.1 Prioritization Methodology Overview

The prioritization of all improvements is based upon the concept of a Prioritization Score. In the City’s Sidewalk and Curb Ramp Inventory created in 2008, a methodology for calculating a Sidewalk Prioritization Score was developed based upon the Sidewalk’s proximity to pedestrian generators including Schools, Parks, Recreation Facilities, Libraries, Transit Stops, Shopping facilities, Functionally Classified Roadways, Social Service Facilities, Medical Service Facilities, and Senior / Temporary / Affordable and Public Housing.

In 2008, a unique Prioritization Score was calculated for each existing and future sidewalk segment, and those original prioritization scores were utilized for this 2021 Transition Plan Update. Existing and future Curb Ramps inherited the Prioritization Score of the sidewalk segment that the curb ramp is connected with.

### 8.2 Sidewalk Prioritization Methodology

Each sidewalk segment is given a priority (1 to 100) based on the sidewalk’s proximity to various community assets (Schools, Parks and Recreation Centers, Bus Stops, etc.). Each priority was based on points given for the segment’s distance from the asset and a weight based on the asset type itself.

<b>Pedestrian Generator Category</b>	<b>Proximity to Pedestrian Generator</b>	<b>Points Allocated</b>	<b>Weighted % of Total</b>
<b>Schools</b>	Segment is within 1/8 mile of a School	100 points	30%
<b>Schools</b>	Segment is within 1/4 mile of a School	80 points	30%
<b>Schools</b>	Segment is within 1/2 mile of a School	60 points	30%
<b>Schools</b>	Segment is within 3/4 mile of a School	40 points	30%
<b>Schools</b>	Segment is within 1 mile of a School	20 points	30%
<b>Parks/Recreation/Libraries</b>	Segment is within 1/8 mile of a Park/Rec/Library	100 points	15%
<b>Parks/Recreation/Libraries</b>	Segment is within 1/4 mile of a Park/Rec/Library	80 points	15%
<b>Parks/Recreation/Libraries</b>	Segment is within 1/2 mile of a Park/Rec/Library	60 points	15%
<b>Parks/Recreation/Libraries</b>	Segment is within 3/4 mile of a Park/Rec/Library	40 points	15%
<b>Parks/Recreation/Libraries</b>	Segment is within 1 mile of a Park/Rec/Library	20 points	15%
<b>Transit</b>	Segment is within 1/8 mile of a Bus Stop	100 points	20%
<b>Transit</b>	Segment is within 1/4 mile of a Bus Stop	80 points	20%
<b>Transit</b>	Segment is within 1/2 mile of a Bus Stop	50 points	20%
<b>Transit</b>	Segment is within 1/4 mile of a Rail Stop	100 points	20%
<b>Transit</b>	Segment is within 1/2 mile of a Rail Stop	80 points	20%
<b>Transit</b>	Segment is within 3/4 mile of a Rail Stop	50 points	20%
<b>Shopping</b>	Segment is within 1/8 mile of Shopping	100 points	5%
<b>Shopping</b>	Segment is within 1/4 mile of Shopping	70 points	5%
<b>Shopping</b>	Segment is within 1/2 mile of Shopping	50 points	5%
<b>Shopping</b>	Segment is within 3/4 mile of Shopping	20 points	5%
<b>Roadway Type</b>	Segment is on an Arterial Roadway	100 points	20%
<b>Roadway Type</b>	Segment is on a Collector Roadway	80 points	20%



## Section 9: IMPLEMENTATION SCHEDULE AND BUDGET

The mitigation schedule to implement this ADA Transition Plan throughout the City of Orlando will span multiple fiscal years, and shall include the installation, repair, and replacement of identified ADA barriers on an annual basis. Detailed descriptions of the strategies for mitigating the identified ADA barriers are located in Section 5. A summary of the anticipated mitigation costs by category is listed below.

<b>Expenditure Type</b>	<b>Funding Category</b>	<b>Total Expenditure</b>
<i>Gaps in Sidewalk</i>	<i>Sidewalk Capital Improvement Plan</i>	<i>\$1,150,345</i>
<i>Insufficient Passing Space</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$151,826</i>
<i>Curb Ramps</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$15,889,177</i>
<i>Detectable Warning Surfaces</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$4,380,285</i>
<i>Pedestrian Signals</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$8,071,143</i>
<i>Crosswalks</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$59,820</i>
<i>Obstacles</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$1,555,632</i>
<i>Hazards</i>	<i>ADA Compliance Capital Improvement Plan</i>	<i>\$1,293,012</i>
<i>Damage</i>	<i>Sidewalk Maintenance</i>	<i>\$2,391,344</i>
<b>Total for All Expenditures</b>		<b>\$34,942,584</b>

In the table below, a preliminary 20-year budget schedule to strategically mitigate the identified existing ADA barriers has been outlined. It should be noted that this preliminary 20-year schedule will be amended and potentially extended to account for the completion of projects, additional projects, new cost information and additional financial resources/funding. Proposed mitigation construction costs have been estimated to increase at 4% annually. The exact locations and detailed schedule of work will be determined based on the precise mitigation projects being implemented and are subject to review and recommendations by the City and the public. Note that this schedule addresses existing barriers identified at the time of the 2020 inventory. Certain types of barriers, such as those related to sidewalk damage, will increase over time, and will need to be budgeted for on an ongoing basis as part of the City’s maintenance operations, beyond the budgetary costs presented in this transition plan.

<b>Plan Year</b>	<b>Fiscal Year</b>	<b>Gaps in SW</b>	<b>In-sufficient Passing Space</b>	<b>Curb Ramps</b>	<b>Detectable Warning Surfaces</b>	<b>Pedestrian Signals</b>	<b>Cross walks</b>	<b>Obstacles</b>	<b>Hazards</b>	<b>Damage</b>	<b>Annual Total</b>
1	2021-2022	\$84,600	\$34,100	\$1,169,200	\$322,300	\$593,900	\$13,400	\$114,500	\$95,100	\$176,000	\$2,603,100
2	2022-2023	\$84,600	\$34,100	\$1,169,200	\$322,300	\$593,900	\$13,400	\$114,500	\$95,100	\$176,000	\$2,603,100
3	2023-2024	\$84,600	\$34,100	\$1,169,200	\$322,300	\$593,900	\$13,400	\$114,500	\$95,100	\$176,000	\$2,603,100
4	2024-2025	\$84,600	\$34,100	\$1,169,200	\$322,300	\$593,900	\$13,400	\$114,500	\$95,100	\$176,000	\$2,603,100
5	2025-2026	\$84,600	\$34,100	\$1,169,200	\$322,300	\$593,900	\$13,400	\$114,500	\$95,100	\$176,000	\$2,603,100
6	2026-2027	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
7	2027-2028	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
8	2028-2029	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600

<i>Plan Year</i>	<i>Fiscal Year</i>	<i>Gaps in SW</i>	<i>In-sufficient Passing Space</i>	<i>Curb Ramps</i>	<i>Detectable Warning Surfaces</i>	<i>Pedestrian Signals</i>	<i>Cross walks</i>	<i>Obstacles</i>	<i>Hazards</i>	<i>Damage</i>	<i>Annual Total</i>
9	2029-2030	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
10	2030-2031	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
11	2031-2032	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
12	2032-2033	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
13	2033-2034	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
14	2034-2035	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
15	2035-2036	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
16	2036-2037	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
17	2037-2038	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
18	2038-2039	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
19	2039-2040	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600
20	2040-2041	\$84,600		\$1,169,200	\$322,300	\$593,900		\$114,500	\$95,100	\$176,000	\$2,555,600

This schedule may also be adjusted in the future after a more detailed review by project and program managers. It should also be noted that this preliminary schedule does not account for projects, or portions of projects, which may be incorporated into other City programs for mitigation. An ongoing assessment of funding vs. implementation and needs will be completed in the updates to the ADA Transition Plan and during future Capital Improvement Plan (CIP) budgeting by the City. This mitigation schedule, as currently illustrated, is not representative of the current estimated fiscal allocations and simply represents the complete estimated \$34.9 million of ADA infrastructure needs extrapolated over a 20-year timeframe. This schedule is subject to change following results of the CIP budgeting.

## 9.1 Schedule and Incorporation into Capital Improvement Program

As the City develops candidate projects for the CIP, such as resurfacing, new sidewalks, and sidewalk repairs, traffic signal maintenance, and corridor improvements, the ADA infrastructure needs of individual projects will need to be assessed following the ADA self-assessment procedures developed as a part of this plan. Candidate resurfacing projects along with identified ADA retrofit project areas will be reviewed to identify the specific ADA infrastructure needs of each individual project. The individual results will be incorporated into an updated Citywide ADA needs estimate, which will include the further refinement of City-wide needs forecasts and estimates. As a part of the assessment, improvements that are deemed technically infeasible or lacking the required right-of-way will be documented and tracked.

### 9.1.1 Relationship to Resurfacing Projects

It is estimated that there are approximately \$34.9 million in ADA barriers on a City-wide basis using 2021 costs with no adjustments for the time value of money. Since the removal of ADA barriers is required when work is performed on a roadway, a large portion of the required ADA compliance work will be triggered by the performance of periodic road re-surfacing work, which is completed on an annual basis as part of the City of Orlando's Pavement Management Program.

This will require the City to incorporate project level ADA self-assessment and planning and design of barrier removal projects to coincide with the City's re-surfacing program to ensure ADA compliance and minimize disruption by implementing the ADA barrier removal and resurfacing simultaneously. In the past, this City has not tightly coordinated its sidewalk and curb ramp projects with its resurfacing projects. This means that for some roadways that have been resurfaced, there are still ADA improvements to be made along those roadways.

A review of the curb ramps along recently resurfaced roadways projects reveals this to be primarily existing curb ramps requiring the installation of truncated dome detectable warning surfaces. Moving forward, the City intends to couple their sidewalk and resurfacing projects more tightly, and the City intends to address its current backlog of required ADA improvements along recently resurfaced roadways over the next two fiscal years.

### 9.1.2 ADA Retrofit Project Distribution

The City will be completing ADA improvements through the completion of projects that can be categorized into six project types. The six categories and brief descriptions of how they will include ADA improvements to rights-of-way infrastructure are as follows:

1. Resurfacing Program – Corridors that are candidates for resurfacing projects in the CIP will be reviewed with an ADA assessment completed for the existing pedestrian infrastructure in the right-of-way for each individual project. The result of the assessment will be a documented list of ADA barriers and deficiencies along each of the resurfacing project corridors. The barriers and deficiencies will then be addressed as either a part of the resurfacing project or through a companion project or program that will complete or implement the identified improvements and document those improvements for the subsequent ADA Transition Plan update.
2. New Sidewalk Program – As new sidewalk locations are identified and specific sidewalk projects are developed, existing sidewalks and ramps immediately adjacent to the new sidewalk locations should be assessed by the staff managing the completion of the new sidewalks. Staff should identify ADA barriers and deficiencies at these locations. Improvements to address the ADA barriers and deficiencies should be included as a part of the new sidewalk projects. The barriers and deficiencies addressed should be documented as completed ADA improvements.
3. Sidewalk Maintenance Program – As the City identifies locations of damaged sidewalks and develops projects to address them, City staff should also identify ADA deficiencies within the limits of the areas of sidewalk maintenance projects and incorporate improvements to address the deficiencies as well. The completed improvements should be documented for the subsequent ADA Transition Plan update.
4. Traffic Signal Maintenance Program – The City should standardize the timeframe of inspecting City maintained traffic signals. The inspections should identify signal components that do not meet current ADA standards. These inspections will also identify specific necessary upgrades to Accessible Pedestrian Signals (APS) as signal heads and controllers are replaced. Until the official adoption of PROWAG Guidelines as standards, APSs are installed upon request according to the procedure established in the City's Engineering Standards Manual. When PROWAG is adopted as the official standard, APSs will be required for all new pedestrian signal installations and alterations to existing pedestrian signals (i.e.,

upgrades, replacements, repairs, etc.). Individual traffic signal improvement projects addressing the traffic signal ADA deficiencies could be completed on a regular basis documented as completed ADA improvements.

5. Corridor Improvement Projects – A primary purpose of the corridor improvement project process is to assist in the coordination of corridor reconstruction or widening projects with maintenance improvement projects to avoid rework and ensure efficient use of resources. This is also true for ADA improvements as specific ADA improvements would not be planned or implemented on a corridor that is scheduled for reconstruction.
6. ADA Retrofit Projects – The prioritization process has resulted in the identified areas where ADA improvements will be most beneficial based on land use and other roadway characteristics. Since ADA improvements will make the greatest impact in these areas, specific ADA retrofit projects should be developed in areas with the highest prioritization scores rather than waiting for other improvement programs to occur in these areas.

Distributing the ADA improvements as described above allows for individual ADA barriers to be mitigated in a timely and fiscally responsible manner, while still providing flexibility to the City to address high priority areas and specific retrofit projects as needed. Once each ADA retrofit project has been assigned to a program or project, each individual program or project is then responsible for identifying the project timeframe to completion and developing a self-assessment process and schedule to ensure that the retrofit project will comply with current ADA standards.

## Section 10: FUNDING SOURCES

The most immediate funding available to address ADA Transition Plan items is to incorporate the ADA improvements into planned maintenance and remediation projects, such as road resurfacing projects. However, this would result in the ability to complete fewer resurfacing projects. The positive aspect would be that the resurfacing projects completed would address ADA features.

Additional language in CIP project descriptions related to mitigating ADA barriers, if present, could also be incorporated into future projects, ensuring a focus on ADA occurs as the project is completed. Similar to other Florida cities, the City of Orlando could consider the following sources of funding for the ADA Transition Plan:

- Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program
- Federal Transit Administration Capital Funds
- Associated Transit Improvement
- Highway Safety Improvement Program
- National Highway Performance Program/National Highway System
- Recreational Trails Program
- Surface Transportation Program
- Transportation Alternatives Program/Transportation Enhancement Activities
- Statewide or Metropolitan Planning
- Safe Routes to School Program

Detailed descriptions of each of these programs, descriptions of competitive projects to receive the grants, and funding applications/uses are presented below.

The receipt of any of the additional funding sources mentioned above would increase the City of Orlando’s fiscal strength and allow the City to allocate more funding to ADA retrofit projects.

Funding Source	Description	Funding Agency	Current Application Requirements Webpage
<i>Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program</i>	<i>BUILD Transportation grants are for investments in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant local or regional impact. BUILD funding can support roads, bridges, transit, rail, ports or intermodal transportation.</i>	U.S. DOT	<a href="https://www.transportation.gov/BUILDgrants">https://www.transportation.gov/BUILDgrants</a>
<i>Federal Transit Administration Capital Funds</i>	<i>Finances the construction, operation and maintenance of public transportation systems.</i>	FTA	<a href="https://www.transit.dot.gov/funding/grants/grant-programs">https://www.transit.dot.gov/funding/grants/grant-programs</a>
<i>Associated Transit Improvement</i>	<i>Appropriation of Federal Transit Administration Capital Funds.</i>	FTA	<a href="https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/livable-sustainable-communities/fta-program-bicycle">https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/livable-sustainable-communities/fta-program-bicycle</a>

<b>Funding Source</b>	<b>Description</b>	<b>Funding Agency</b>	<b>Current Application Requirements Webpage</b>
<i>Congestion Mitigation and Air Quality Improvement Program</i>	<i>Supports surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief.</i>	FHWA	<a href="https://www.fhwa.dot.gov/environment/air_quality/cmagg/">https://www.fhwa.dot.gov/environment/air_quality/cmagg/</a>
<i>Highway Safety Improvement Program</i>	<i>Funding to support projects that achieve a significant reduction in traffic fatalities and serious injuries on all public roads.</i>	FHWA	<a href="https://safety.fhwa.dot.gov/hsip/resources/fhwasa15011/">https://safety.fhwa.dot.gov/hsip/resources/fhwasa15011/</a>
<i>National Highway Performance Program/National Highway System</i>	<i>Provide support for the condition and performance of the National Highway System</i>	FHWA	<a href="https://www.fhwa.dot.gov/specialfunding/nhpp/160309.cfm">https://www.fhwa.dot.gov/specialfunding/nhpp/160309.cfm</a>
<i>Surface Transportation Program Block Grant Program</i>	<i>Provide support to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities.</i>	FHWA	<a href="https://www.fhwa.dot.gov/specialfunding/stp/160307.cfm">https://www.fhwa.dot.gov/specialfunding/stp/160307.cfm</a>
<i>Transportation Alternatives Program/Transportation Enhancement Activities</i>	<i>Provides support for programs and projects defined as transportation alternatives.</i>	FHWA	<a href="https://www.fhwa.dot.gov/environment/transportation_alternatives/">https://www.fhwa.dot.gov/environment/transportation_alternatives/</a>
<i>Transportation Alternatives Program/Transportation Enhancement Activities</i>	<i>Provides funding opportunities to help expand transportation choices and enhance the transportation experience related to surface transportation.</i>	FHWA	<a href="https://www.fhwa.dot.gov/environment/transportation_enhancements/">https://www.fhwa.dot.gov/environment/transportation_enhancements/</a>
<i>Recreational Trails Program</i>	<i>Provides funds to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail users.</i>	FHWA	<a href="https://www.fhwa.dot.gov/environment/recreational_trails/">https://www.fhwa.dot.gov/environment/recreational_trails/</a>
<i>Safe Routes to School Program</i>	<i>Provides funds to support communities to make walking and bicycling to school a safe and routine activity (funding awarded after 2012 is offered through the TAP program through MAP-21)</i>	FHWA	<a href="https://www.fhwa.dot.gov/environment/safe_routes_to_school/">https://www.fhwa.dot.gov/environment/safe_routes_to_school/</a>
<i>Statewide or Metropolitan Planning</i>	<i>Provide support for the development of planning maps, safety brochures/books, bicycle and pedestrian system planning training, etc.</i>	FHWA	<a href="https://www.fhwa.dot.gov/planning/">https://www.fhwa.dot.gov/planning/</a>
<i>State and Community Highway Safety Grant Program</i>	<i>Provides grants to states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes.</i>	GHSA	<a href="https://www.qhsa.org/about/federal-grant-programs">https://www.qhsa.org/about/federal-grant-programs</a>

Funding Source	Description	Funding Agency	Current Application Requirements Webpage
<i>Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program)</i>	<i>Provides support to improve the transportation infrastructure owned and maintained by the National Park Service (NPS), US Fish and Wildlife Service (FWS), USDA Forest Service (Forest Service), Bureau of Land Management (BLM), and US Army Corps of Engineers (USACE).</i>	FHWA	<a href="https://flh.fhwa.dot.gov/programs/fltp/">https://flh.fhwa.dot.gov/programs/fltp/</a>

## Section 11: PUBLIC PARTICIPATION

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There are multiple ways that the Public can contact the City regarding suggestions for improvements in the pedestrian access routes throughout the City. In addition to contacting the Streets and Stormwater office directly at (407) 246-2238 the City of Orlando also hosts an online “Streets and Sidewalks Maintenance Notification Form” that can be filled out by members of the general public to report potholes, curb, or sidewalk issues:

<http://www.Orlando.gov/Parking-Transportation/Report-a-Transportation-Issue/>

Upon review and acceptance by the City, the contents of this Transition Plan Update and associated documents will be posted for general public inspection via a digital platform. The online public comment forum associated with this digital platform will provide the general public an opportunity to review the Transition Plan Update including the City’s proposed prioritized barrier remediation efforts, and implementation timeline. The public comment forum will be available for sixty days from the establishment of the digital platform and comments received during the 60-day period will be incorporated as an appendix to this Transition Plan Update.

Section 504 of the Rehabilitation Act of 1973 (Section 504), the Americans with Disabilities Act of 1990 (ADA) and related federal and state laws and regulations forbid discrimination against those who have disabilities. The City of Orlando is committed to compliance with the ADA and these laws. Reasonable accommodations, including equal access to communications, will be provided upon request. Requests for reasonable accommodations should be directed to the City of Orlando ADA/Title VI Coordinator whose contact information is listed below.

The City of Orlando does not tolerate discrimination in any of its programs, services, or activities. Pursuant to Title VI of the Civil Rights Act of 1964 and other federal and state authorities, the City of Orlando will not exclude from participation in, deny the benefits of, or subject to discrimination anyone on the grounds of race, color, national origin, sex, age, disability, religion, income, or family status.

The City of Orlando has established a discrimination complaint procedure set forth below and will take prompt and reasonable action to investigate and eliminate discrimination when found. Any person who believes that he or she has been subjected to discrimination based upon race, color, national origin, sex, religion, age, disability, family, or income status in any of the City’s programs, services or activities may file a complaint with the City of Orlando ADA/Title VI Coordinator:

Ana Palenzuela  
ADA/Title VI Coordinator  
400 South Orange Ave, Orlando, Florida, 32801  
Ana.Palenzuela@Cityoforlando.net  
Phone: (407) 246-2057, Facsimile: (407) 246-2027

If possible, the complaint should be submitted in writing and contain the identity of the complainant; the basis for the allegations (i.e., race, color, national origin, sex, religion, age, disability, or family status); and a description of the alleged discrimination with the date of occurrence. If the complaint cannot be submitted in writing, the complainant should contact the City of Orlando ADA/Title VI Coordinator for assistance.

The City of Orlando ADA/Title VI Coordinator will endeavor to respond to the complaint within thirty (30) calendar days and will take reasonable steps to resolve the matter. The City of Orlando ADA/Title VI Coordinator has direct access to the City’s Chief Administrative Officer (CAO) and is not required to obtain management or other approval to discuss discrimination issues with the CAO.

## 11.1 ADA Transition Plan Update Public Participation

For the City's 2021 ADA Transition Plan Update, public participation was provided through four mechanisms: the plan was posted on the City's website, the website contained a survey soliciting comments and feedback, a public meeting was held on 6/8/2022 at Lighthouse Central Florida, and a second public meeting was held on 10/17/2022 at the L. Claudia Allen Senior Center. The feedback provided by the public is described below.

### 11.1.1 Public Posting of the Draft Update and Feedback through Public Feedback Form

The draft of the City's ADA Transition Plan update was posted on the City's web site at:

<https://www.orlando.gov/Building-Development/City-Projects/2021-ADA-Transition-Plan-Update>

The main page as seen in the image below, provided an explanation of the plan, links to the plan documents and a link to the survey on the feedback form.

The screenshot shows the City of Orlando website page for the 2021 ADA Transition Plan Update. The page features the City of Orlando logo and a search bar at the top. The main content area includes a title, a photograph of a park, and a description of the plan. A list of documents is provided at the bottom, and a 'Project Snapshot' section is on the right side.

**2021 ADA Transition Plan Update**

The City of Orlando continues to identify necessary improvements for usability and accessibility for all our city residents. The city's Public Works Department and Transportation Department are working in conjunction with a consultant to update the city's ADA Transition Plan.

A draft update is now available for public comment. If you would like to suggest a pedestrian access improvement or provide a comment to the [2021 Transition Plan Update](#), please complete our [feedback form](#).

**Executive Summary** (+)

**Purpose of Report** (+)

**Self Evaluation** (+)

**Monitoring and Status Reporting** (+)

**ADA Transition Plan Update** (+)

**Project Snapshot**

- Type: Public Works-Transportation
- District(s): 1, 2, 3, 4, 5 & 6

**Contact Us**

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**2021 Consultant**

Southeastern Surveying & Mapping Corporation

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### 11.1.2 Public Comments Obtained through the Public Feedback Form

The feedback form consisted of twelve questions:

1. Are you completing this survey on behalf of an organization?
2. What is the name of your organization?
3. What is your Zip Code?
4. Does a health problem, disability or condition make it difficult to walk or navigate streets within the city?
5. Please share any kind of difficulties you experience while navigating the City of Orlando.
6. What barriers in the right-of-way do you encounter when walking in Orlando?
7. How familiar are you with the City of Orlando's 2021 ADA Transition Plan Update draft?
8. How satisfied or dissatisfied are you with the city's new ADA efforts in its streets infrastructure?
9. Please provide any comments or feedback you may have regarding the draft City of Orlando 2021 ADA Transition Plan Update for consideration by the City of Orlando.
10. What is your experience with the accessibility with Orlando's rail stations?
11. What is your experience with accessibility with Orlando's bus stops?
12. How much trust or distrust do you have in the City of Orlando when it comes to handling local problems?

The City made a concerted effort to obtain both on-line responses and in-person responses (42 paper survey responses were received) which were distributed to our recreation centers with senior programs. A total of 97 responses were received via the online survey and paper surveys. A summary of the responses received can be found in Appendix M – Public Participation Comments.

### 11.1.3 Lighthouse Central Florida Public Meeting on 6/8/2022

Lighthouse is Central Florida's only private, non-profit agency offering a comprehensive range of services to people living with sight impairment in Central Florida and the City of Orlando is a Community Partner with Lighthouse Central Florida. Through effective programs, proven curricula, certified instructors and years of personal and professional experience, Lighthouse ensures that individuals of all backgrounds have the tools they need to lead productive, independent lives beyond the restrictions once promised by vision loss. On 6/8/2022, a public meeting was held at Lighthouse's office at 215 East New Hampshire Street in Orlando. Attendees from the City of Orlando included Mr. Charles Ramdatt, Coordinator of Smart Cities and Special Projects, Mr. Howard Elkin, Division Manager, for the City's Streets and Stormwater Division and Ms. Gedline Lincifort, Neighborhood Relations Coordinator for the City's Communications & Neighborhood Relations Office. Also representing the City was Brian Garvey, Vice President of Southeastern Surveying and Mapping Corporation. Approximately 50 public attendees included staff members and volunteers from Lighthouse Central Florida, as well as their clients who are blind or visually impaired.

The meeting began with an introductory presentation about the ADA Transition Plan, an overview of the City's role in improving the pedestrian access routes and continued with an in-depth question and answer period followed by an open discussion about challenges that the visually impaired community faces when navigating within the City of Orlando and around Central Florida. A summary of the discussion topics and comments provided can be found in Appendix M – Public Participation Comments.

#### 11.1.4 L. Claudia Allen Senior Center Public Meeting on 10/17/2022

The City of Orlando has community programs at eight Neighborhood Centers and two Senior Centers. On 10/17/2022, a public meeting was held at the L. Claudia Allen Senior Center at 1840 Mable Butler Avenue in Orlando. Attendees from the City of Orlando included Mr. Charles Ramdatt, Coordinator of Smart Cities and Special Projects and Ms. Gedline Lincifort, Neighborhood Relations Coordinator for the City's Communications & Neighborhood Relations Office. Also representing the City was Brian Garvey, Vice President of Southeastern Surveying and Mapping Corporation. Approximately 80 public attendees included Senior Center staff members and volunteers, as well as Senior Citizens and local residents.

The meeting began with an introductory presentation about the ADA Transition Plan, an overview of the City's role in improving the pedestrian access routes, a discussion of the division of responsibilities between the City of Orlando and Orange County and continued with an in-depth question and answer period. A summary of the discussion topics and comments provided can be found in Appendix M – Public Participation Comments.

#### 11.1.5 Other Related City of Orlando Public Outreach Programs

In addition to specific public forums related to the City's ADA Transition Plan, the City of Orlando has other initiatives specifically related to pedestrian mobility and pedestrian safety which obtains public input and comment. While not specifically ADA focused, because they address pedestrian mobility, safety, and access, they share overlapping constituencies and stakeholders. Some of these representative initiatives include:

##### **Orlando Vision Zero Program**

The City's Vision Zero mission is to eliminate traffic fatalities and serious injuries within the City by 2040. Vision Zero is a systemic approach to increase safety and mobility for all roadway users. This includes prioritizing areas with high numbers of pedestrians, cyclists, and transit riders.

<https://www.orlando.gov/Initiatives/Vision-Zero>

##### **Livable Orlando Age Friendly Action Plan**

In October 2019, the City of Orlando joined the AARP network of Age-Friendly Communities. As a member of the network, the City has committed to conducting a community assessment to determine our city's age-friendliness, to develop an action plan based on its findings and implement age-friendly initiatives. Transportation is one of the top focus areas.

<https://www.orlando.gov/Community-Programs-Events/AARP-Age-Friendly-Community>

### 11.1.6 Partner Programs for Community Outreach

Because pedestrian travel does not stop at the City limits, the City of Orlando also partners with other local agencies and organization for public outreach related to pedestrian safety including the following:

#### **Best Foot Forward**

As a pedestrian safety initiative, Best Foot Forward focuses on one simple, measurable goal: to get more drivers to yield and stop for pedestrians in marked crosswalks, as Florida law requires. Best Foot Forward works to accomplish this goal using the proven, “Triple-E” approach of combining community education with low-cost engineering changes and high-visibility enforcement.

<http://www.iyield4peds.org/>

#### **Bike/Walk Central Florida**

Bike/Walk Central Florida educates and advocates to make communities more walkable, bikeable, and rollable. BWCF strives towards a connected and equitable transportation system that is safe and comfortable for all.

<http://bikewalkcentralflorida.org>

#### **FDOT Pedestrian Safety**

Florida's Pedestrian and Bicycle Strategic Safety Plan (PBSSP) is the state's five-year comprehensive implementation plan to drive down traffic crashes resulting in serious or fatal injuries to pedestrians and bicyclists through goal-oriented decision-making, data-driven investments, and strategic resource allocation.

<https://www.fdot.gov/Safety/programs/pedestrian-and-bicycle-safety>

#### **MetroPlan Orlando**

MetroPlan Orlando’s pedestrian program uses a complete streets approach to help residents and visitors reach their destinations by foot, car, train or bicycle. One major objective of our planning is to fill gaps in the pedestrian network. We also partner with other organizations to offer educational resources related to pedestrian safety for people of all ages.

<https://metroplanorlando.org/plans/pedestrian-program/>

#### **Orange County Pedestrian Safety**

Through their INVEST program, Orange County Public Works addresses pedestrian and bicycle safety in a coordinated, comprehensive, and consistent manner at selected intersections and provides corridor improvements.

<http://www.orangecountyfl.net/TrafficTransportation/PedestrianSafety.aspx#.WI-xnNlrLmE>

## Section 12: REVIEW OF CITY'S EXISTING DESIGN STANDARDS

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As part of this ADA Transition Plan Update, a review of the City's Engineering Standards was performed to verify that the published standards and guidelines are aligned with the current ADA and PROWAG requirements.

Three documents were reviewed:

- City of Orlando Engineering Standards Manual (5<sup>th</sup> Edition)
- City of Orlando Paving and Drainage Standard Engineering Details
- City of Orlando Signalization General Notes

These documents serve as a resource for the City of Orlando to communicate project expectations and descriptions to consultants and contractors during the planning, design, and construction of roadways. The recommended changes implemented are summarized below:

### 12.1 City of Orlando Engineering Standards Manual (5<sup>th</sup> Edition) Review

The provisions of the Engineering Standards Manual are established in order to effectively carry out the purposes of the Code of the City of Orlando and other ordinances, policies and standards in the interests of public health, safety and welfare of the citizens of Orlando. The following items were identified as potential modifications to the Engineering Standards Manual to more closely align with PROWAG Guidelines.

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**Document Location:**

Section 6.12 Sidewalks/Bike Paths, Concrete Curb, Etc., Item A. Curbs and Gutters, (Page 69)

**Proposed Additional Text:**

*"Where pedestrian curb ramps meet the gutter, the gutter counter slope shall not exceed 5% at the foot of the curb ramp runs, blended transitions and turning spaces."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R304.5.4

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**Document Location:**

Section 6.12 Sidewalks/Bike Paths, Concrete Curb, Etc., Item B. Handicap Ramps, Paragraph 2(Page 70)

**Proposed Text Modification:**

Replace: *"Ramps shall be required at all intersections and be in compliance with Americans with Disability Act (A.D.A.) guidelines as prescribed by law."*

With: *"Ramps **with a minimum width of 48 inches** shall be required at all intersections and be in compliance with Americans with Disability Act (A.D.A.) guidelines as prescribed by law."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R304.5.1

---

**Document Location:**

Section 6.12 Sidewalks/Bike Paths, Concrete Curb, Etc., Item B. Handicap Ramps, Paragraph 2(Page 70)

**Proposed Additional Text:**

*"Typically, two curb ramps must be provided at each street corner unless existing physical constraints prevent two curb ramps from being installed at a street corner."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R207

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**Document Location:**

Section 6.12 Sidewalks/Bike Paths, Concrete Curb, Etc., Item B. Handicap Ramps, Paragraph 2(Page 70)

**Proposed Text Modification:**

Replace: *"In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12."*

With: *"In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:10."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R304.2.3

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**Document Location:**

Section 6.12 Sidewalks/Bike Paths, Concrete Curb, Etc., Item B. Handicap Ramps, Paragraph 4(Page 70)

**Proposed Text Modification:**

Replace: *"Each curb ramp shall have a level area 48 inches long min. by 36 inches wide min. at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch min. by 36 inch min. area shall be oriented so that the 48 inch min. length is in the direction of the running slope of the curb ramp it serves. The 48 inch min. by 36 inch min. areas and the accessible route shall be permitted to overlap."*

With: *"Each curb ramp shall have a level area 48 inches long min. by 48 inches wide min. at the top of the curb ramp in the part of the island intersected by the crossings. The 48 inch min. by 48 inch min. areas and the accessible route from each curb ramp shall be permitted to overlap."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R304.2.1

---

**Document Location:**

Section 8.08 Intersection Pedestrian and Americans with Disabilities Act (ADA), Paragraph 2(Page 107)

**Proposed Additional Text:**

*"Typically, two curb ramps must be provided at each street corner unless existing physical constraints prevent two curb ramps from being installed at a street corner."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R207

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**Document Location:**

Section 8.11 Driveways and Entrances, Item E. Design Specifications, Add Item 7(Page 117)

**Proposed Additional Text:**

*"7. Pedestrian Considerations*

*Where a sidewalk meets a driveway, detectable warning surfaces should not be provided at crossings of residential driveways since the pedestrian right-of-way continues across residential driveway aprons. However, where commercial driveways are provided with yield or stop control, detectable warning surfaces should be provided at the junction between the pedestrian route and the vehicular route."*

**Discussion / Justification:**

Referencing Guideline: As specified in PROWAG Section R208.1

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## 12.2 City of Orlando Paving and Drainage Standard Engineering Details

The City of Orlando Standard Engineering Details provide a graphical representation of the City's Design Standards for use by consultants and contractors during the planning, design, and construction of roadways. The following items were identified as potential modifications to the Paving and Drainage Standard Engineering Details to more closely align with PROWAG Guidelines.

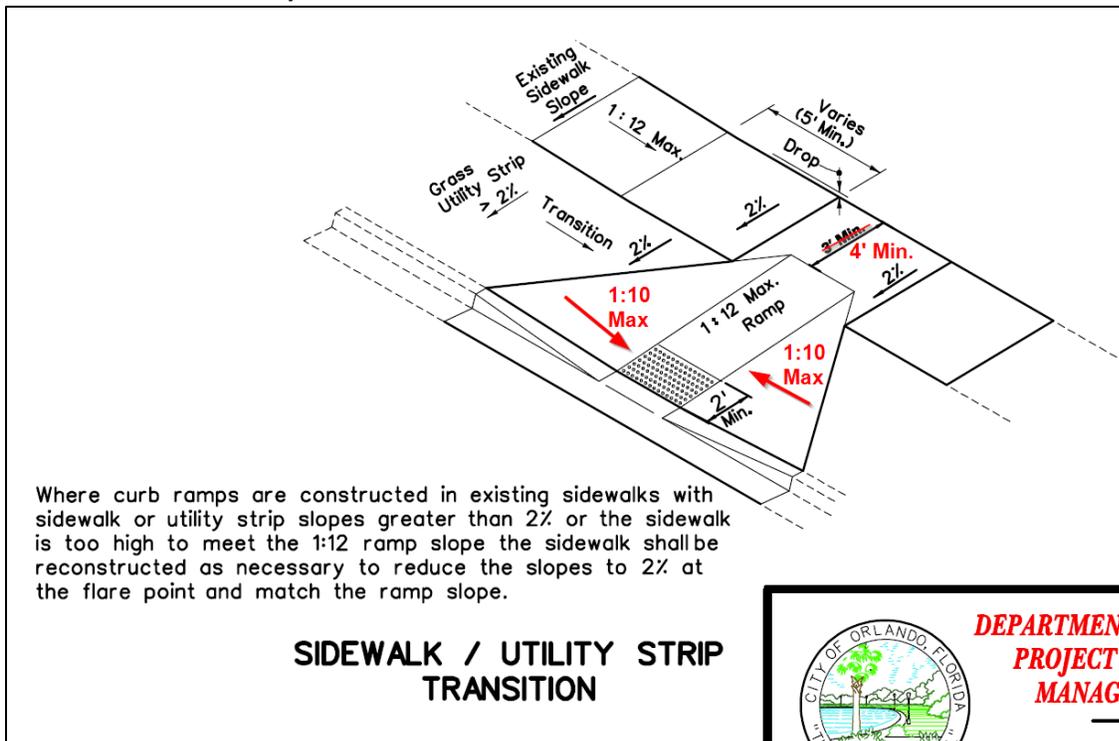
### Sheet 2 Title: Driveways: Residential & Commercial Approaches

#### NOTES:

1. 3000 PSI CLASS 1 CONCRETE REQUIRED
2. EXISTING HIGH CURB SHALL BE REMOVED AND REPLACED WITH DROP CURB
3. 6" S.W. SECTION SHALL BE INSTALLED THROUGH DRIVEWAY
4. Where Sidewalks intersect commercial driveways, Detectable Warning Surfaces shall be installed if the intersection of the driveway and the roadway are controlled with a Stop sign, Yield sign, or Traffic Signal.

Referencing Guideline: As specified in PROWAG Section R208.1

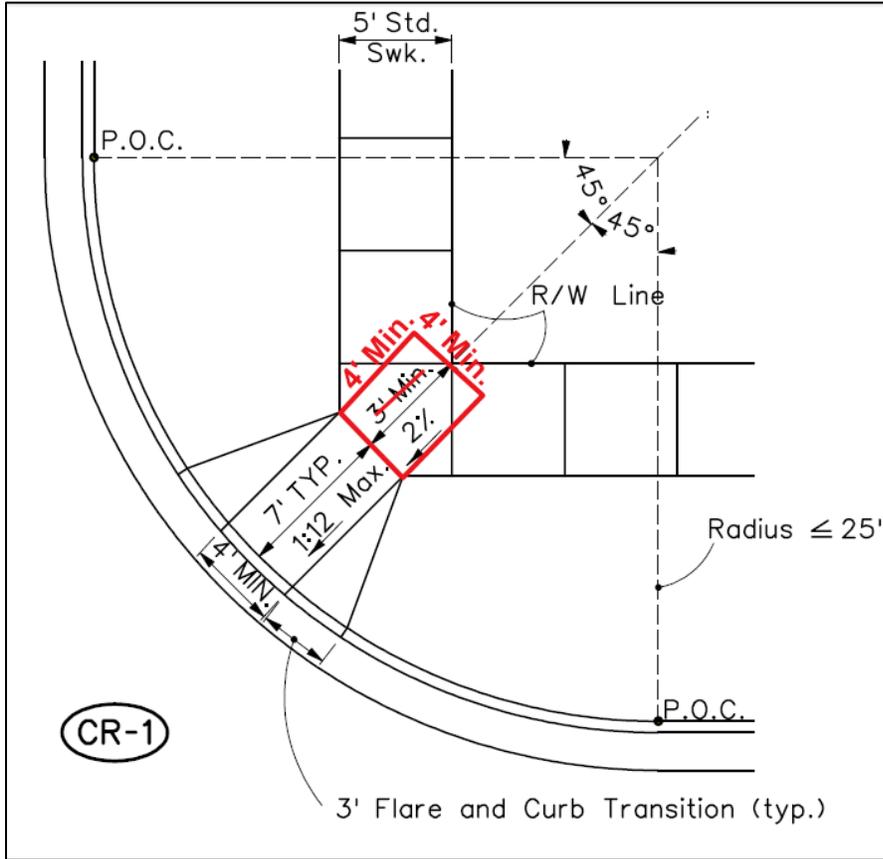
### Sheet 5 Title: Curb Ramp Notes & Details



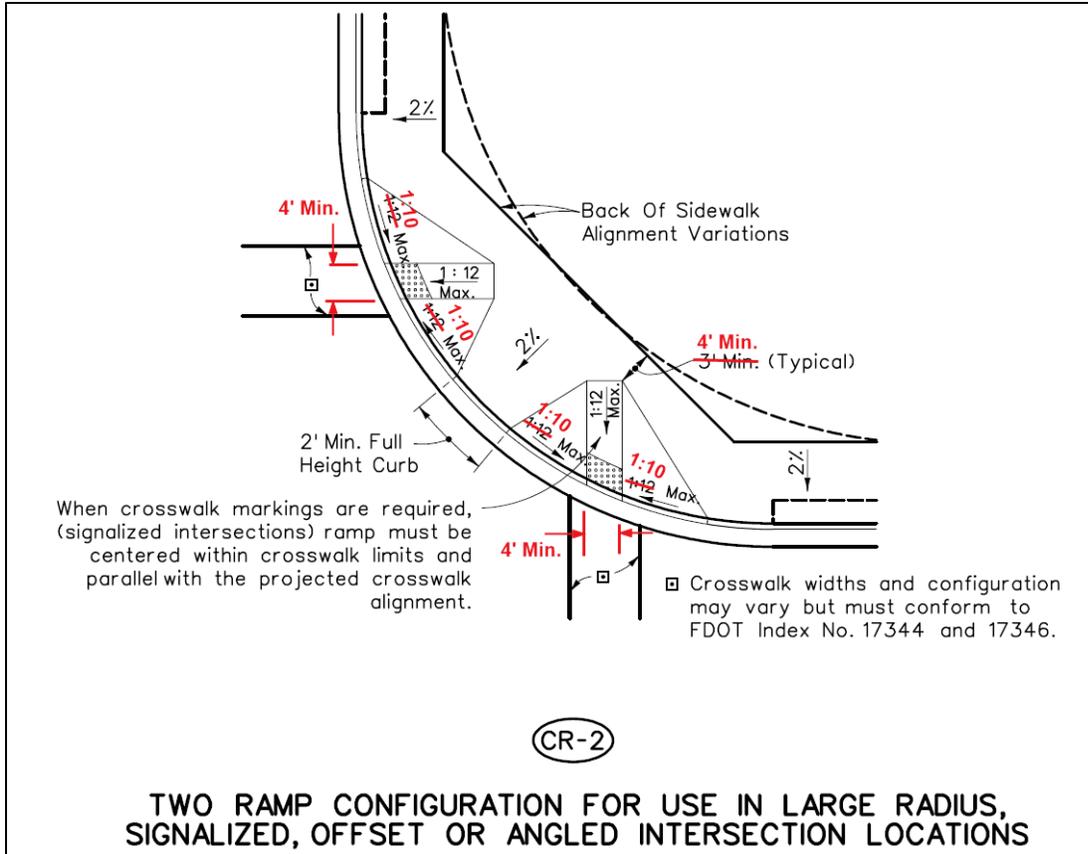
Referencing Guideline: As specified in PROWAG Sections R304.2.1, R304.2.2, R304.2.3

**Sheet 5A Title: Curb Ramp Details**

Curb Ramp Detail should show a 4-foot by 4-foot level turning space if unconstrained or 4-foot by 5-foot space if constrained by something such as a wall at the back edge of the sidewalk.

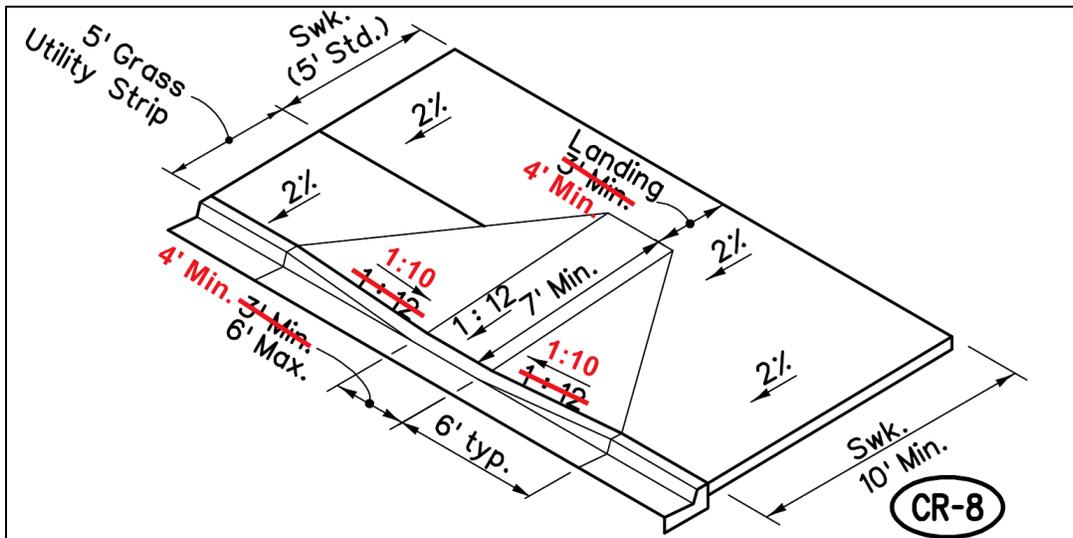
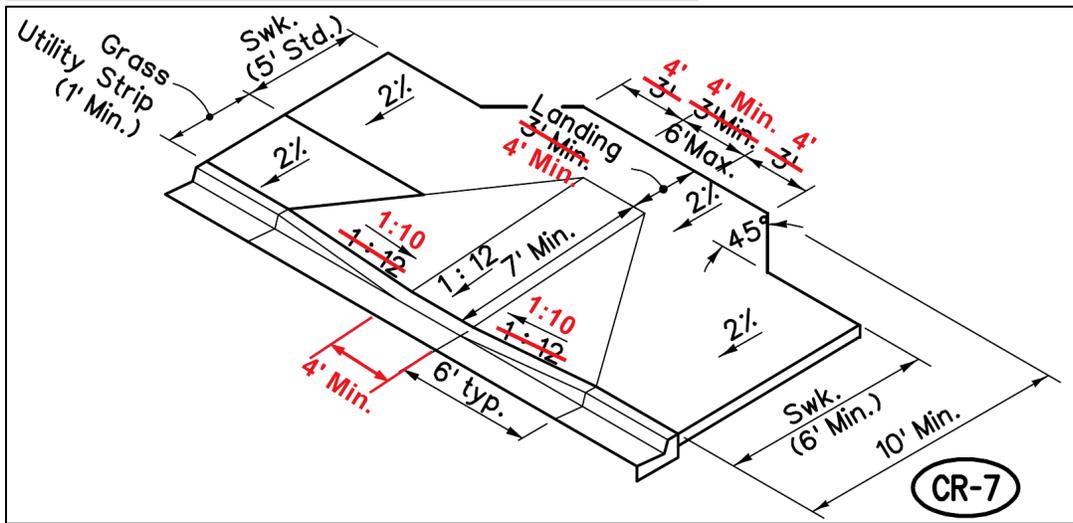
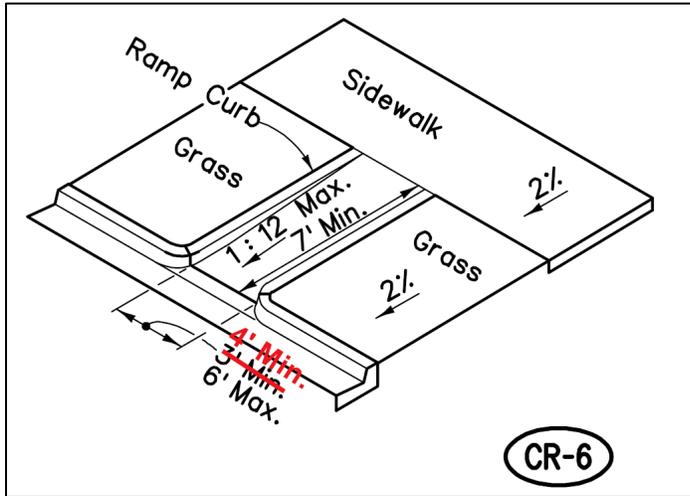


The City should also consider removing this ramp example representing a shared diagonal ramp for both pedestrian travel directions. The U.S. Access Board states: “do not use this (diagonal ramp) design unless constraints require it, paired ramps are always preferred”. PROWAG R207 states that “typically two curb ramps must be provided at existing street corners”, “unless physical constraints prevent two curb ramps from being installed”. The single shared diagonal ramp provides no direction guidance for the visually impaired pedestrian and the single shared landing eliminates the ability to separate the APS push buttons on two poles. Referencing Guideline: Turning Space As specified in PROWAG Sections R304.5.1



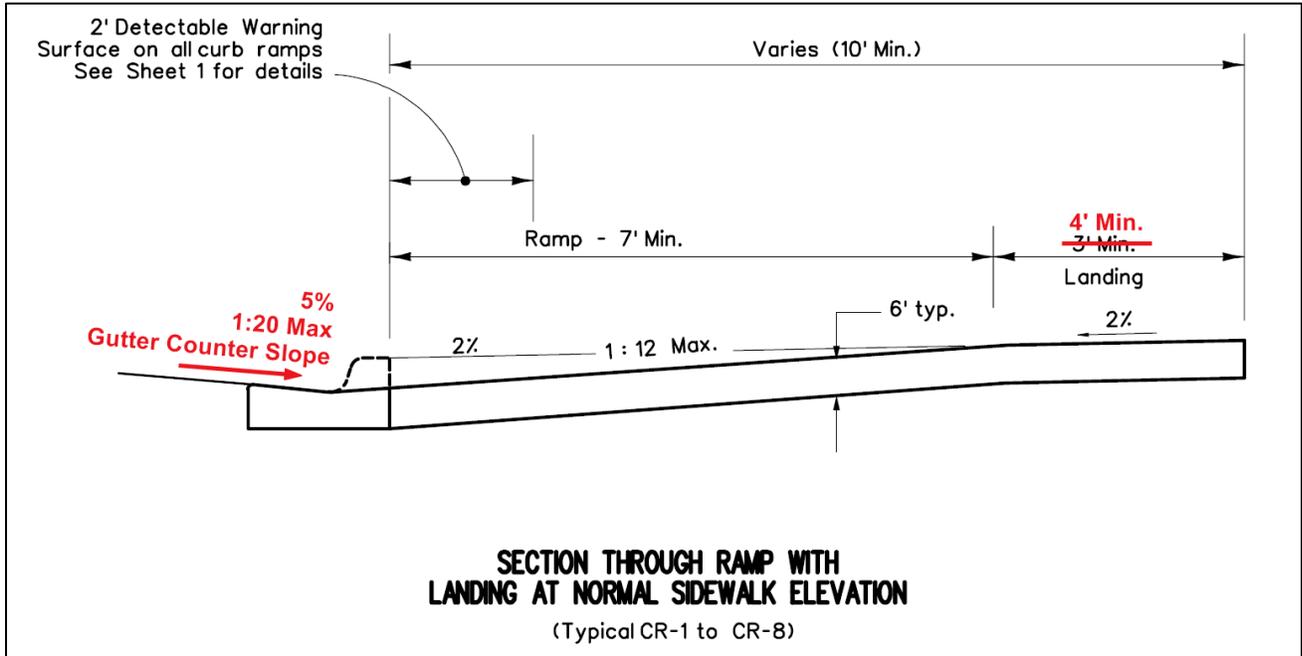
Referencing Guideline: As specified in PROWAG Sections R304.2.1, R304.2.2, R304.2.3

Sheet 5B Title: Curb Ramp Details



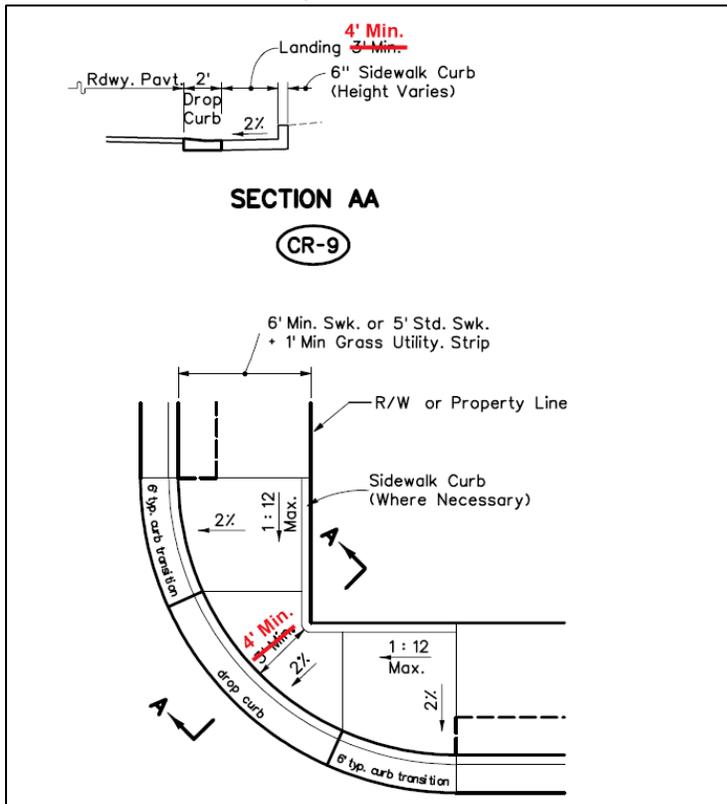
Referencing Guideline: As specified in PROWAG Sections R304.1, R304.2.1, R304.2.2, R304.2.3

**Sheet 5B Title: Curb Ramp Details**



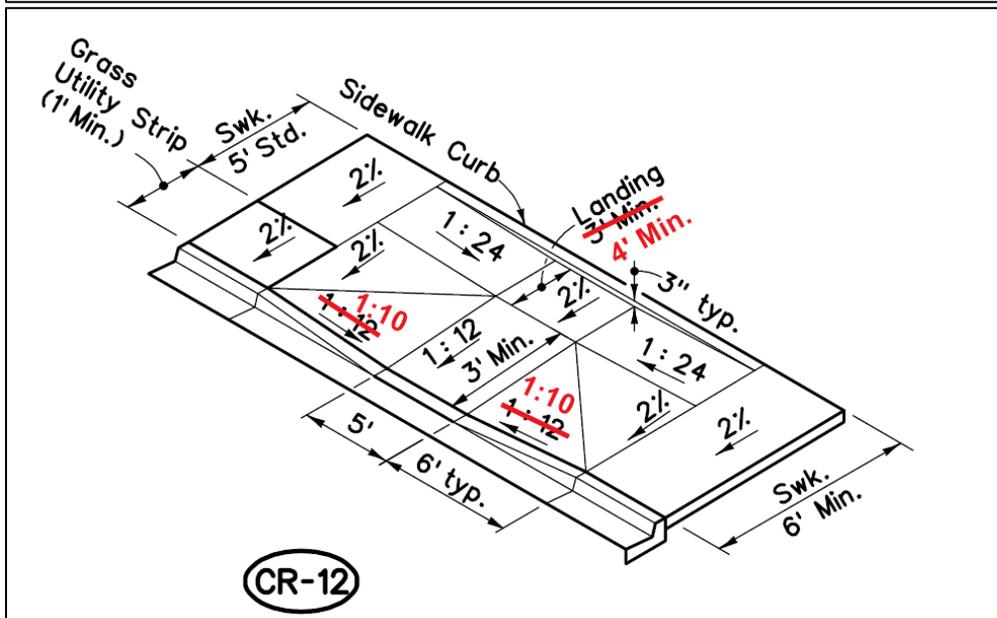
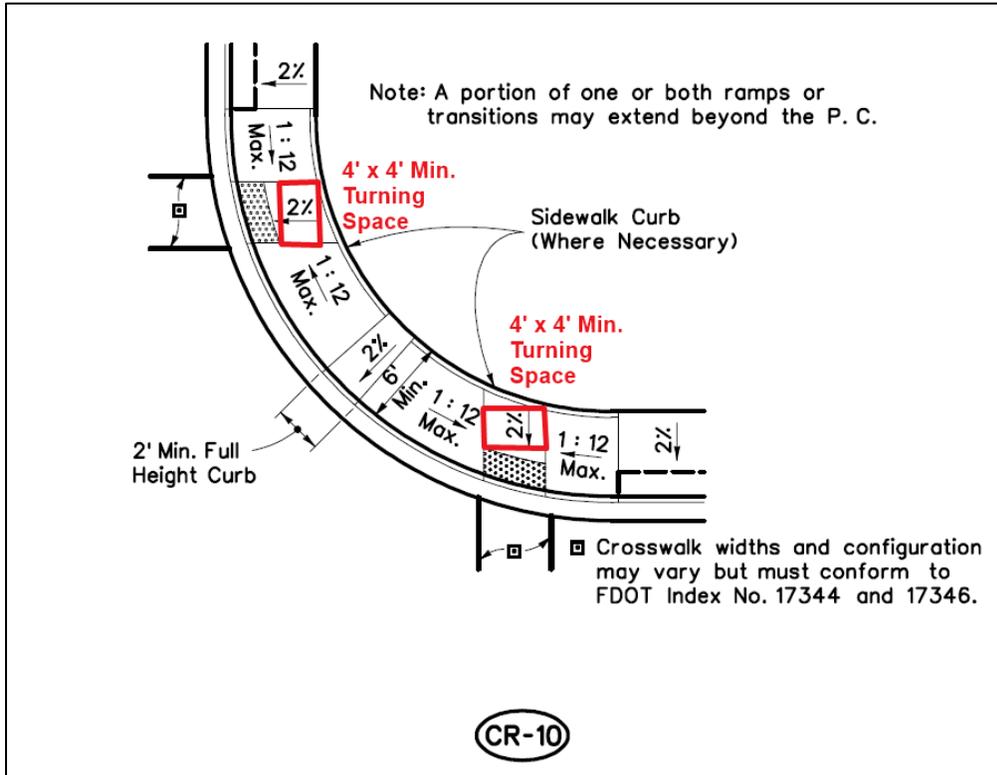
Referencing Guideline: As specified in PROWAG Sections R304.2.1, R304.5.4

**Sheet 5C Title: Curb Ramp Details**



Referencing Guideline: As specified in PROWAG Sections R304.3.1

Sheet 5C Title: Curb Ramp Details



Referencing Guideline: As specified in PROWAG Sections R304.2.1, R304.2.2, R304.2.3

### 12.3 City of Orlando Signalization General Notes

There were no identified required modifications to be made to the Signalization General Notes to comply with current accessibility Standards and Guidelines.

## Section 13: PLAN RECOMMENDATIONS

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It is recommended that the City of Orlando will implement an ADA Representative “system” to better address the needs of employees and citizens with disabilities. This system will identify an ADA Representative, or designee, within each department who will collaborate with the City’s ADA Coordinator regarding the needs of their department and the programs their department is responsible to manage. The benefits of having an ADA Representative from each department makes it easier for citizens and customers to identify someone to help them with questions and concerns about disability discrimination, provides a subject matter expert so department specific questions can be answered quickly and consistently, and creates a team effort instrumental in moving compliance plans forward. The City’s ADA Coordinator, or designee, will follow-up with each department ADA Representative to coordinate the implementation of plans, programs, policies, and procedures.

In those situations where a policy, program, or procedure creates a barrier to accessibility that is unique to a department or a certain program, the ADA Coordinator, or designee, will coordinate with the department’s ADA Representative or program manager to address the removal of the barrier in the most reasonable and accommodating manner in accordance with applicable law.

The City may achieve program accessibility by a number of methods:

- Structural methods such as altering an existing facility.
- Acquisition or redesign of equipment.
- Assignment of aides.
- Providing services at alternate accessible sites.

When choosing a method of providing program access, the City will endeavor to give priority to the one which results in the most integrated setting appropriate to encourage interaction among all users, including people with disabilities. In compliance with the requirements of the ADA, the City will strive to provide equality of opportunity but does not guarantee equality of results.

### 13.1. Identify an ADA Representative in each Department / Division

It is recommended that the City identify an ADA Representative for each department/division who will work with the City’s ADA Coordinator to educate staff to the needs of the disabled and to report on all planned ADA improvements to the City’s ADA Coordinator. The contact listing of the City’s ADA Coordinator and each Department / Division ADA Representative can be published on the City’s intranet. Working with the City’s ADA Coordinator, the ADA Representative could provide training for City staff on general information about the ADA and its legal requirements as it pertains to the City of Orlando. Any changes to the law affecting the City should be monitored and shared as appropriate to department ADA Representatives and staff who have contact with citizens in person or over the phone.

This may include educating staff on the City’s procedure to receive requests for program or facility modifications, and possible remedies, which may include redesign of equipment, assignment of aides to persons with disabilities, and provisions of services at alternate accessible sites.

### 13.2. Perform a Comprehensive Facility Survey

It is recommended that the City conduct a physical audit of all City owned buildings, parking lots and Parks and Recreation sites accessible by the public to identify structural barriers and make recommended alterations in order to meet State and Federal accessibility standards. The survey process should be performed using field staff equipped with measurement devices and survey forms. The surveys will identify physical barriers in City facilities

based on the 2010 ADA Standards for Accessible Design guidelines for buildings and facilities, “2010 Standards” (effective March 15, 2012). Each physical barrier identified as part of the facility surveys should be given a removal priority based on the immediate necessity of programmatic access, uniqueness of program or facility, geographic distribution, quantity and frequency of public use, degree of complexity, and overall construction cost estimates. The list of facilities to be surveyed will include:

- City-owned buildings
- City-owned parks
- City-owned parking lots and structures

Sites to be surveyed were identified as a building or other facility physically located on real estate properties owned by the City. The list of City-owned buildings and parking facilities and public parks to be surveyed for structural barriers is provided in Appendices “C” and “D” of this report.

### 13.3. Host the Contents of this 2021 ADA Transition Plan Update Online

Upon review and acceptance by the City, the contents of this Transition Plan Update and associated documents will be posted for general public inspection via a digital platform. The online public comment forum associated with this digital platform will provide the general public an opportunity to review the Transition Plan Update including the City’s proposed prioritized barrier remediation efforts, and implementation timeline. The public comment forum will be available for sixty days from the establishment of the digital platform and comments received during the 60-day period will be incorporated as an appendix to this Transition Plan Update.

### 13.4 Incorporate ADA Compliance into the City’s Re-Surfacing Process

Title II of the Americans with Disabilities Act (ADA) stipulates that accessible curb ramps are to be provided when streets, roads or highways are altered through resurfacing. Alterations include activities such as reconstruction, rehabilitation, resurfacing, widening, and other projects of similar scale and effect.

Because pavement alteration is now a trigger for ADA compliant upgrades, the City should consider implementation an ADA barrier and deficiency removal program which would complement the City’s current pavement preservation program.

As the City’s pavement preservation program identifies roadway corridors for scheduled resurfacing, an assessment of ADA deficiencies and barriers along the corridors should be performed. This assessment should review the following:

- All pedestrian street crossings (street and cross street; marked or unmarked) must have curb ramps that meet applicable accessibility requirements to the maximum extent feasible, regardless of the project's construction impact zone.
- A crosswalk (marked or unmarked) served by a curb ramp must also have a curb ramp in place on the receiving end unless there is no curb or sidewalk on that end of the crosswalk.
- Within the project limits evaluate existing sidewalks for spot improvements to remove accessibility obstructions (e.g., sidewalk panel heaving, landscape encroachments, etc.) to pedestrian access.
- Evaluate and modify existing traffic islands and raised medians (mainline and cross streets) located within a pedestrian access route to meet applicable accessibility requirements to the maximum extent feasible.
- Modify existing pedestrian pushbuttons associated with a City of Orlando maintained pedestrian signal system to meet applicable accessibility requirements to the maximum extent feasible, regardless of the

project's construction impact zone. This may also trigger modification of adjacent pedestrian facilities to achieve location, clear space (maneuvering space), reach range, and other APS pushbutton criteria.

The result of the assessment will be a documented list of ADA barriers and deficiencies along each of the resurfacing project corridors. The barriers and deficiencies will then be addressed as either a part of the resurfacing project or through a companion project or program that will complete or implement the identified improvements and document those improvements for the subsequent ADA Transition Plan update.

### 13.5 Develop a Set of ADA Compliance Guidelines

ADA Compliance should be integrated in the City's current design review and construction inspection processes. Design documents and construction improvements to the public rights-of-way should undergo reviews and inspections that include an emphasis on ADA compliance. There are two main types of improvements being completed to the public rights-of-way.

- Private Development Plans/Construction – These are plans completed by engineers working for the private development community. The construction is typically completed by a private contractor who is working for a developer. The improvements address either existing public rights-of-way or areas that will be future public rights-of-way.
- Public Infrastructure Plans/Construction – These are plans designed and constructed by the City of Orlando or another government agency such as the Florida Department of Transportation, the Central Florida Expressway Authority, or a local municipality. The design can be completed by engineering consultants and the construction can be completed by a private contractor, but the client is the public agency.

For both Private Development Plans/Construction and Public Infrastructure Plans/Construction, a design exception process should be utilized if or when accessibility is technically or structurally infeasible. The Private and Public developments must coordinate closely with the Public Works ADA Representative to determine appropriate methods and strategies for the development of solutions to mitigate ADA barriers and deficiencies during the design phase of a project.

Once construction has been completed, before the work is accepted by the City, there should be a standardized ADA specific Construction Engineering Inspection (CEI) of constructed infrastructure projects. Typically, the City of Orlando has a team of staff who complete inspections and oversight of the work completed by the selected contractors. The inspectors should be equipped with standardized City ADA compliance checklists for ensuring compliance of the installed improvements with established ADA Standards and Specifications as called for in the project plans and specifications.

### 13.6 Develop an Accessible Pedestrian Signals (APS) Policy

Many local agencies are converting from traditional to the countdown style pedestrian signal heads shown in the Manual on Uniform Traffic Control Devices (MUTCD). The countdown style tells sighted pedestrians how long they have to cross an intersection. This improves the signal's communication to these users. Title II of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act requires that the signal be made accessible to pedestrians with vision disabilities. This is being done through the implementation of Accessible Pedestrian Signals (APS). According to the 2009 Manual on Uniform Traffic Control Devices (MUTCD) and the Draft Public Rights-of-Way Accessibility Guidelines (PROWAG), an accessible pedestrian signal and pushbutton is an integrated system that communicates to pedestrians in a visual, audible, and vibrotactile manner about when to cross a street at a signalized intersection.

This is different from the more common audible pedestrian signal. An audible pedestrian signal typically describes an older-style pedestrian signal that communicates the WALK phase using a series of audible cuckoos

and chirps. While this type of pedestrian signal system was meant to communicate the WALK phase to pedestrians with no or low vision, it does not satisfy the current ADA and MUTCD requirements for accessible pedestrian signals and pushbuttons.

FHWA requires that public entities with more than 50 employees and those that use federal funding follow Title II of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Is an intersection being converted from traditional to countdown style pedestrian signal heads? Are signal controllers or cabinets being upgraded in order to convert from a traditional to a countdown pedestrian signal head now or in the future? Converting from a traditional to a countdown style improves the communication to sighted users. The intent of the ADA and the Rehabilitation Act are that communication is also improved for pedestrians who are blind or have low vision.

### 13.6.1 APS Technical Requirements

Pedestrian signals and pushbuttons are considered to be communication devices under the ADA. The following is a summary of the features:

1. Pushbutton locator tone.
2. Vibrotactile arrow on the pushbutton that indicates the crossing direction and the start of the WALK phase indication.
3. Audible WALK phase indication in the form of either:
  - Percussive tone if pushbutton stations are spaced 10 ft. or more apart.
  - Speech walk message if pushbutton stations are spaced less than 10 ft. apart.
4. Automatic volume adjustment for both the pushbutton locator tone and the walk phase indication to maintain a volume level above the ambient sound level.

The MUTCD recommends that pushbuttons be separated by a distance of at least 10 feet. Also, there are several optional features that may be incorporated into an APS system, including pushbutton pilot lights, tactile crosswalk maps, Braille, and extended pushbutton press options.

### 13.6.2 APS Implementation Timeline

Once finalized and adopted by the Department of Justice and the U.S. Department of Transportation, the *Public Rights-of-Way Accessibility Guidelines (PROWAG)* will be the standard for public right-of-way facilities. Until that time, FHWA requires State DOTs and local agencies to develop and follow a reasonable and consistent policy for addressing accessible pedestrian signals and pushbuttons (APS) in the public right of way. An APS policy is a plan and schedule that describes when their existing pedestrian signal systems will be upgraded to accessible pedestrian signals and pedestrian pushbuttons. This plan and schedule should be used in conjunction with the City's ADA transition plan since this Transition Plan update does not currently address APS. The APS policy should also describe how the agency plans to respond to public requests for APS at specific locations.

The current City of Orlando Engineering Standards Manual (5<sup>th</sup> Edition) references APS Implementation for new construction in Section 8.16 Traffic Signals and ITS in Section C, Line 10 on page 125 by stating:

*“Pedestrian detectors: equip signals with audible “(accessible) “pedestrian detectors, unless waived by TSM.” (Transportation Systems Management Section) “Those not equipped with audible pedestrian detectors must be designed to accommodate them in the future.”*

## Section 14: REPORT APPENDICES

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### Appendix A - Complete Text of the Department of Justice's 2010 ADA Standards for Accessible Design

The ADA Standards are issued by the Department of Justice (DOJ) and the Department of Transportation (DOT) and apply to facilities covered by the ADA in new construction and alterations. DOJ's 2010 ADA Standards apply to all facilities covered by the ADA, except public transportation facilities, which are subject to DOT's 2006 ADA Standards.

Both standards are very similar and are closely based on the Board's ADA Accessibility Guidelines (ADAAG). However, each contains a few unique provisions, which are noted in this edition of the standards.

#### **Department of Justice ADA Standards (2010)**

DOJ's ADA standards (2010) became mandatory on March 15, 2012. They include additional provisions concerning:

- Assembly Areas (221)
- Medical Care Facilities (section 223)
- Places of Lodging (sections 224)
- Housing at Places of Education (224 and 233)
- Detention and Correctional Facilities (section 232)
- Social Service Center Establishments (233)
- Residential Dwelling Units (section 233)

#### **Department of Transportation ADA Standards for Transportation Facilities (2006)**

DOT's ADA standards (2006) apply to facilities used by state and local governments to provide designated public transportation services, including bus stops and stations, and rail stations.

They include unique provisions concerning:

- Location of Accessible Routes (206.3)
- Detectable Warnings on Curb Ramps (406.8)
- Bus Boarding and Alighting Areas (810.2.2)
- Rail Station Platforms (810.5.3)

The attached Appendix A to this document contains a complete listing of the combined DOJ 2010 ADA Standards and the DOT 2006 ADA Standards.

### Appendix B - Complete Text of Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

The U.S. Architectural and Transportation Barriers Compliance Board (Access Board) published the "Draft ADAAG Guidelines for Public Rights-of-Way" on November 24, 2005 with the intent to replace the current ADAAG guidelines. The guidelines cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. On July 26, 2011, the Board released proposed guidelines for public comment. The Access Board is reopening the comment period for the notice entitled "Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way," that appeared in the Federal Register on July 26, 2011 (76 FR 44664). In that notice, the Access Board proposed guidelines for accessible public rights-of-way and requested comments by November 23, 2011.

On the day the comment period ended, the Access Board received a request from the National Association of Counties, the National League of Cities and the U.S. Conference of Mayors to extend the comment period for at least 90 days to provide local governments with additional time to review and more fully assess the proposed rule. In addition, just prior to the closing of the comment period, the American Council of Engineering Companies requested an unspecified extension of the comment period. Although the Access Board has already provided a 120-day comment period and has held two public hearings on the proposed rule, the Board will provide additional time for the public to submit comments on this proposed rule. The new comment period ended on February 2, 2012. On February 13, 2013, the Access Board issued a notice to supplement the proposed guidelines for public rights-of-way to address shared use paths.

The guidelines have not been approved by the U. S. Department of Justice (DOJ) but are represented to be the most current state-of-the-art with respect to accessibility in the public right-of-way. The guidelines were also written to apply to new construction. Once adopted by the USDOJ the PROWAG Standards would supersede all other standards.

## Appendix C - Listing of City Owned Building and Parking Facilities

In connection with this Transition Plan Update, a comprehensive review of all City owned real estate properties was performed in order to identify all physical building structures and facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 1,153 owned and leased buildings on City owned real estate properties. In addition, a comprehensive review of all City owned real estate properties was performed in order to identify all parking lot facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 554 parking lot facilities on City owned real estate properties.

Appendix C of this Report contains the following items:

1. Introductory text explaining the contents of Appendix C
2. A sample checklist titled “ADA Checklist for Existing Facilities” prepared by the Institute for Human Centered Design which contains forms which can be filled out as the assessment survey is performed for each building and parking lot.
3. A listing of 1,153 owned and leased buildings on City owned real estate properties identified as needing a possible barrier assessment survey.
4. A listing of 554 owned and leased buildings on City owned real estate properties identified as needing a possible barrier assessment survey.
5. A collection of 389 City Owned Building and Parking Facilities Site Reports with a single report page for each evaluated site.

## Appendix D - Listing of City Parks Facilities

In connection with this Transition Plan Update, a comprehensive review of all City owned Parks and Recreation properties was performed in order to identify all parks and recreation facilities which may need a Facilities Self-Assessment Survey. This Transition Plan Update has identified 170 parks and recreation sites on City owned real estate properties.

Appendix D of this Report contains the following items:

1. Introductory text explaining the contents of Appendix D
2. A listing of 170 parks and recreation facilities on City owned real estate properties identified as needing a possible barrier assessment survey.

3. A collection of 170 City Park Site Reports with a single report page for each evaluated site.
4. A sample checklist titled “ADA Checklist for Existing Facilities” prepared by the Institute for Human Centered Design which contains forms which can be filled out as the assessment survey is performed for each park site, along with supplemental checklists for recreation facilities.

## Appendix E - Listing of Non-Compliant (Missing) Curb Ramps

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 16,137 curb ramps and at-grade sidewalk road crossings that either currently existed or were under construction. A review of those curb ramps identified 638 non-compliant curb ramps citywide where curb ramp construction would be necessary to provide a compliant connection between the pedestrian access route and the roadway crossing. Appendix E documents the priority and locations of the 638 non-compliant curb ramps throughout the City which were identified as part of the ADA self-assessment. Appendix E of this Report contains the following items:

1. Prioritized Listing of Non-Compliant Curb Ramps sorted from highest to lowest priority and grouped by Commission District
2. Prioritized Listing of Non-Compliant Curb Ramps sorted from highest to lowest priority and grouped by Neighborhood
3. Non-Compliant Curb Ramp Report showing location and description of each missing ramp sorted by Ramp ID Number

## Appendix F - Listing of Sidewalk Gaps for Network Completion

Sidewalk gaps are discontinuities in the pedestrian access route where the existing pedestrian access route ends abruptly or does not permit pedestrian access to the roadway as part of a pedestrian street crossing. These gaps are typically short sections of sidewalk that, if constructed, would provide pedestrian access to cross a roadway at a crossing or connect to another existing section of sidewalk.

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified 226 gaps totaling 16,813 linear feet of sidewalks to be constructed in order to provide a continuous path along the pedestrian access route. These gaps were identified as relatively short sidewalk segments connecting to existing sidewalks which, if constructed, could make a significant improvement to the pedestrian access routes and the completion of the Pedestrian Network. Appendix F documents the priority and locations of the 226 sidewalk gaps throughout the City which were identified as part of the ADA self-assessment. Appendix F contains three items:

1. Prioritized Listing of Sidewalk Gaps sorted from highest to lowest priority and grouped by Commission District
2. Prioritized Listing of Sidewalk Gaps sorted from highest to lowest priority and grouped by Neighborhood
3. Future Sidewalks for Network Completion Report showing location and description of each sidewalk gap sorted by Sidewalk ID Number

## Appendix G - Listing of Future Curb Ramps to be Constructed for Network Completion

Ramps whose construction would provide an additional connection in the pedestrian access route were considered to be Future Curb Ramps to be Constructed for Network Completion. The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 2,265 future curb locations city-wide. A review of those curb ramps identified 208 future curb ramps citywide where the construction of the curb ramp would provide a compliant connection between an existing pedestrian access route and the roadway crossing. Appendix G documents the priority and locations of the 208 future curb ramps to be constructed for network completion throughout the City which were identified as part of the ADA self-assessment. The Appendix contains three items:

1. Prioritized Listing of Future Curb Ramps for Network Completion sorted from highest to lowest priority and grouped by Commission District
2. Prioritized Listing of Future Curb Ramps for Network Completion sorted from highest to lowest priority and grouped by Neighborhood
3. Future Ramps for Network Completion Report showing location and description of each future ramp sorted by Ramp ID Number

## Appendix H – Signalization Inspection Self-Assessment Reports

At pedestrian signal crossings, there are multiple ADA facilities that work together to support the pedestrian access route across the roadway at the signalized intersection. The pedestrian signal detector allows the pedestrian to request the signal. The pedestrian signal head visually notifies that pedestrian that it is safe to cross. The curb ramp provides access from the sidewalk through the curb to the roadway. Finally, the marked crosswalk serves to provide visual guidance to the pedestrian, while alerting the motorist to look for pedestrians crossing at that location.

As part of the ADA self-assessment, a detailed field inspection was performed at 55 signalized intersections out of the 546 City maintained signalized intersections citywide resulting in a 10.1% sample for the self-assessment. At the 55 sampled intersections the following pedestrian facilities were inspected:

- 312 Pedestrian Detector Pushbuttons
- 309 Curb Ramps
- 402 Sidewalk Segments
- 186 Crosswalks

Appendix H Summarizes the self-assessment inspection results for the signalized intersections, presents the tabulated inspection results for each of the 55 intersections which were part of the self-assessment sample, and then documents the signalized intersection inspection process.

## Appendix I – Barrier Self-Assessment Reports

Part of the ADA Self-Assessment included identifying ADA Barriers including obstacles and hazards along a sample selection of pedestrian access routes along City maintained rights of way. For obstacles and hazards, as part of the ADA self-assessment, spherical panoramic imagery was collected at 30-foot intervals along 63 miles of sidewalk and that imagery was inspected to identify sidewalk obstacles and barriers. In addition, 55

intersections were visited in the field and 402 sidewalk segments within 50 feet of those intersections were inspected for obstructions as well. This approach reviewed a total of 66.8 miles of sidewalk out of the City's total of 983 miles of sidewalk resulting in a 6.8% sample of all of the City's sidewalks.

Appendix I contains a set of Barrier Reports documenting the obstacles and hazards obtained from the imagery captured along 63 miles of sidewalks in the sampled areas. Each Obstacle and Hazard is documented with a two-page report describing the barrier along with its location and a photograph.

## Appendix J – Insufficient Passing Space Self-Assessment Reports

Areas with adequate passing space are those with an area that provides pedestrians in wheelchairs passing spaces within a sidewalk corridor. Passing spaces shall be 5 feet x 5 feet minimum, and no farther apart than 200 feet. Driveway crossings and curb ramps with level landings can also serve as passing spaces. If a sidewalk is less than 60" wide, then accommodations must be made for passing space areas to be provided. In areas with frequent driveway crossings, the driveway surface can serve to accommodate passing space at the point where the driveway intersects the sidewalk.

The ADA self-assessment reviewed the measured sidewalk widths along a sample of 95.7 miles of sidewalk within the City (8.6% sample) using high resolution 2020 aerial photography. Within that sample there were 7.9 miles of sidewalk narrower than 60" which might be candidates for having more than 200 feet of insufficient passing space. A review of those sidewalks identified 18 locations where there was inadequate passing space which would require the construction of 60" x 60" passing zones.

Appendix J contains a set of Insufficient Passing Space Self-Assessment Reports documenting the areas within the sample that did not meet the adequate passing space criteria. Each insufficient passing space location is documented with a one-page report describing the location of the identified sidewalk segment.

## Appendix K - Listing of Existing Ramps Missing Truncated Dome Detectable Warning Surfaces

Detectable warnings are a distinctive surface pattern of truncated domes detectable by cane or underfoot that alert people with vision impairments of their approach to street crossings and hazardous drop-offs. They are used to indicate the boundary between pedestrian and vehicular routes where there is a flush connection instead of a curbed connection. The truncated domes are aligned on a square grid in the direction of pedestrian travel or installed radial to the grade break. Detectable warnings are not stamped into concrete. Detectable warnings contrast visually with the adjoining surface, either light-on-dark or dark-on-light (recommended bright red on concrete and bright yellow on asphalt). Older curb ramps may have stamping in the concrete or lines drawn in the concrete. These older treatments are not valid Detectable Warning Surfaces.

The ADA self-assessment reviewed the entire sidewalk network totaling 983 miles of sidewalk within the City (100% sample) using high resolution 2020 aerial photography and identified a total of 16,137 curb ramps that either currently existed or were under construction. A review of those curb ramps identified 6,877 curb ramps citywide where the curb ramp did not have a high contrast detectable warning surface consisting of truncated domes. Appendix K documents the priority and locations of the 6,877 existing curb ramps that do not have truncated dome detectable warning surfaces which were identified as part of the ADA self-assessment. The Appendix contains three items:

1. Prioritized Listing of Existing Ramps Missing Truncated Dome Detectable Warning Surfaces sorted from highest to lowest priority and grouped by Commission District.
2. Prioritized Listing of Existing Ramps Missing Truncated Dome Detectable Warning Surfaces sorted from highest to lowest priority and grouped by Neighborhood.
3. Ramps Missing Truncated Domes Report showing location and description of each existing ramp missing truncated domes sorted by Ramp ID Number.

## Appendix L - Explanation of ADA Transition Plan Update GIS Database

All of the ADA barriers and rights of way infrastructure to facilitate pedestrian accessibility in connection with this ADA Transition Plan Update is modeled in a Geographic Information Systems database which was compiled for use in this report and is delivered so that it can be used for future update and maintenance as the City installs new accessible facilities and removes ADA barriers. Appendix L provides a description of the features included in this GIS database.

## Appendix M – Public Participation Comments

For the City's 2021 ADA Transition Plan Update, public participation was accommodated through four mechanisms: the plan was posted on the City's website, the website contained a survey soliciting comments and feedback, a public meeting was held on 6/8/2022 at Lighthouse Central Florida, and a second public meeting was held on 10/17/2022 at the L. Claudia Allen Senior Center. The feedback and comments provided by the public via the web survey and public meetings is provided in Appendix M of this document.