

DESIGN STANDARDS - ACCESSIBILITY CONSIDERATIONS

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Accessibility considerations are intended to eliminate design barriers so that every person, regardless of age or physical/mental ability, has an opportunity to enjoy and participate in the built environment. Design guidelines for accessibility are conveyed in the *2012 Florida Accessibility Code for Building Construction* and various engineering design standards that provide a foundation for how the CC2ST network infrastructure should be constructed. During the implementation of the CC2ST Master Plan, all facilities will be developed according to current applicable standards with the goal of providing universal accessibility.

STANDARDS FOR SHARED-USE PATHS AND TRAILHEADS

Standards for shared-use paths can be found in Chapters 14 and 15 of the Federal Highway Administration's *Best Practices Design Guide*. These design standards are summarized below.

Surface Material

The surface material used for shared-use paths should be firm, stable, and slip resistant to provide all users, especially those who require mobility devices, with a safe foundation. A firm surface is described as one that does not compress when weight is applied; any surface that compresses less than 0.3 inches using a wheelchair caster is considered firm. A stable surface is described as one that is able to return to its original condition after weight is removed; any surface that remains out of place 0.5 inches or less using a wheelchair caster is considered stable. Shared-use path surface material that qualifies as firm, stable, and slip resistant includes asphalt, concrete (smooth or broom finish), soil with stabilizer, crushed rock with stabilizer, or wooden planks. However, asphalt or concrete should be the primary choice of surface material when designing shared-use paths in locations that are developed, involve fragile environments, are subject to flooding and drainage problems, or have steep terrain. Asphalt and concrete are also necessary for paths, such as the CC2ST, to be accessible by wheelchair users and users of other mobility devices, bicyclists, and inline skaters.

Path Width

The width of a shared-use path ultimately determines how many and what type of users are able to utilize a path at a given time. If the path is too narrow, congestion among pedestrians, cyclists, inline skaters, and people using mobility devices impairs the traffic flow, especially when users are simultaneously moving in both directions along the pathway. In order to accommodate all types of users at any given time, the path must be a

minimum of ten feet wide for a regularly used path. If the path is proposed for heavy use, it must be a minimum of 12-feet wide. Additionally, either side of the path must have a graded buffer of at least two feet. The CC2ST network is proposed to be 12 feet wide to accommodate all user types. In areas where use of the trail is anticipated to be heavy, such as segments near Class 1 trailheads, widths greater than 12 feet should be considered. (As shown in *Figures 38 - 40* in the Design Guidelines section.)

Cross Slope

The cross slope, the lateral slope of a path, must be no steeper than two percent for asphalt or concrete, and no steeper than five percent for non-paved surfaces. These percentages are steep enough to allow for proper drainage, yet flat enough to ensure people using mobility devices can easily travel along the pathway. These cross slopes also enable users to maintain their lateral balance.

Grade

The grade, or incline, is an important consideration when designing a shared-use path for mobility impaired users. Steep inclines become unsafe for wheelchair users going downhill and become difficult for the elderly or wheelchair users to climb when going uphill. Thus, the grade of a shared-use path should not exceed five percent and must be as gradual as possible. However, if steeper segments must be incorporated, then the length should be minimized, be free of obstructions, and include rest areas. The general guidance for steep segments incorporated on a shared-use path is:

- A grade of 8.3 percent must be no longer than 200 feet
- A grade of 10 percent must be no longer than 30 feet
- A grade of 12.5 percent must be no longer than 10 feet
- Total length of steep segments greater than 8.3 percent must be less than 30 percent of the total path length
- Rest intervals should be within 25 feet of the top and bottom of each steep segment

Rest Intervals and Areas

Rest intervals are required 25 feet before and after steep grade segments to ensure that any user, especially the elderly or mobility impaired, has an area to take a break after exerting extra effort. Rest areas must be, at minimum, five feet in length with a width greater than or equal to the width of the path. Rest intervals should also ideally be adjacent to the path, rather than on the path, so that resting users do not inhibit the traffic flow of those who

continue moving along. Rest areas have the same dimensional requirements as rest intervals, but differ because they provide amenities such as benches, wheelchair space, and shelters for users needing a break. Rest areas should also be provided on both sides of the path in congested locations.

Tread Obstacles

Tread obstacles, such as tree roots and rocks, create a dangerous scenario for path users, especially the elderly and people using mobility devices. On a paved shared-use path, obstacles are not allowed. Unpaved paths may have obstacles smaller than two inches as long as there is a clear path of travel, 36 inches wide, around the obstacle.

Protruding Objects

Ideally, no object, such as tree limbs, should protrude horizontally into or vertically over the shared-use path. If, however, a protruding object is unavoidable, objects must protrude no more than four inches into the travel space. For objects protruding horizontally into the path, a four-foot minimum clearance is required around the object. Objects that protrude vertically over the path must have at least an eight-foot clearance unless an underpass is incorporated, then a minimum 10-foot clearance is necessary.

Openings

For the safety of the mobility impaired, openings in the pathway should be avoided. If, however, an opening such as a grate, storm drain, or utility access is unavoidable along the pathway, then the width of the opening should be no wider than 0.5 inches. The opening should also be oriented so that the longer side is perpendicular to the direction of travel. These dimensions ensure that mobility devices do not get caught in the openings and that the likelihood of anyone tripping over an opening is minimized.

Level

Changes in level should be avoided in the construction of new shared-use paths; however, a change in level less than 0.25 inches is acceptable without any edge treatment. If an abrupt change in level between 0.25 to 0.5 inches is unavoidable along a paved path, then a beveled surface with a maximum slope of 50 percent is required. Any level changes greater than 0.5 inches either require a ramp or must be removed for the safety and usability of all users.

Railings

Railings are required for the safety of trail users only in locations where an edge protection is needed such as along steep drop-offs or over bridges.

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The minimum height of a railing should be no shorter than 42 inches so that both pedestrians and bicyclists are protected. If a handrail is included as part of the railing, then ADA requirements for handrails need to be met.

Pedestrian Bridges

Bridges should be a minimum of 12 feet wide. If the shared-use path is wider than 12 feet, then the bridge should be as wide as the shared-use path. Bridges need to be flush with the path surface so that people using mobility devices can maneuver onto and off of the bridge effortlessly. Bridges also need to have a flat grade, provide railings, and be evenly aligned with the path prior to and after the bridge.

Intersections

Intersections need to be indicated so that users have ample time to prepare for oncoming traffic or a change in topography. Paths should intersect at 90 degree angles with a smooth surface connection, if possible. When two or more pathways intersect, clear sight lines of the intersection should be provided at seated (wheelchair and bicycle) and standing height. When more than two paths intersect at a given location, the best option is to offset the intersections so that traffic does not bottleneck into the intersection at once. It is also recommended that signs be posted prior to intersections, which specify what user has the right-of-way, any preferred travel direction, and lengths of the additional paths. In the instance that the shared-use path would intersect with a road, these same recommendations apply; however, a visible crosswalk is recommended for the safety of the path users.

PARKING LOT DESIGN

The parking lots at trailheads along the CC2ST network will be designed to ensure that all users are easily able to access the trail and the amenities. The design of designated parking spaces and loading areas within each parking lot must also be in accordance with accessibility requirements as presented in the *2012 Florida Accessibility Code for Building Construction*.

Designated Parking Spaces

According to ADA regulations, a ratio of one to 25 is required for the number of designated parking spaces to regular spaces in each lot. Of these designated parking spaces, a ratio of one to six is required for the number of van accessible spaces. Designated parking spaces for both cars and vans must be clearly marked with appropriate signage and located closest to the trailhead entrance. Designated parking spaces for cars must have a minimum width of eight feet and at least a five-foot access isle, while designated parking spaces for vans must have a minimum width of 11 feet and at least a five-foot access isle. However, if an access isle is shared between a van and car parking space, then the minimum width for both parking spaces is eight feet with a shared access isle of eight feet. While not a requirement, it is recommended that both regular and designated parking spaces be angled between 45 and 60 degrees because of the ease of navigation the angled spaces provide to drivers. In areas of high anticipated usage, additional designated parking spaces should be considered.

Passenger Loading Zones

Passenger loading zones must have a minimum width of eight feet and minimum length of 20 feet. These loading zones enable vehicles to pull up to the entrance of a trailhead for convenient pickup of passengers.

Access to Trails

Access points along the CC2ST network should be accessible to all users. Trailheads should conform to ADA Accessibility Guidelines for parking and bathrooms, and amenities should be connected with a pathway that meets the accessible design recommendations for shared-use paths.

AMENITIES

All amenities provided at each trailhead and along the pathways must meet ADA requirements as detailed in the 2012 Florida Accessibility Code for Building Construction. These amenities are presented in *Figure 47*.



Handicap Parking on the St. Marks Trail

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TABLE 47: AMENITY DESIGN STANDARDS

AMENITY	DESCRIPTION	ADA REQUIREMENTS
Benches	<ul style="list-style-type: none"> Provide a place for elderly, mobility impaired, and other users to take a break Ideal at trailheads, rest intervals, and rest areas Armrests are recommended but not required 	Must meet ADA standards for: <ul style="list-style-type: none"> Height Seat dimensions Backrest dimensions
Drinking Fountains	Recommended at trailheads for visitor and pet use	Must meet ADA standards for: <ul style="list-style-type: none"> Knee and toe clearance Height Control locations Water spout
Map Kiosks	Provide trail information at each trailhead that includes: <ul style="list-style-type: none"> Trail length Parking lot locations Restroom, shelter, and water fountain locations Intersecting trails 	Must meet ADA standards for: <ul style="list-style-type: none"> Location Height Sign font and graphics Alternative formats (Braille, Audio)
Restrooms	Recommended at trailheads	Must meet ADA standards for: <ul style="list-style-type: none"> Number of stalls Stall and door dimensions Seat dimensions Grab bars and flush controls Mirror, sink, and counter dimensions

AMENITY	DESCRIPTION	ADA REQUIREMENTS
Signage	<ul style="list-style-type: none"> Recommended at trailheads, trail intersections, along the pathway Provide trail conditions with easily understood texts and images Provide trail information that includes: <ul style="list-style-type: none"> Trail name Acceptable users Trail length and minimum width Elevation, grades, and cross slopes Surface material, firmness, stability, and slip resistance 	Must meet ADA standards for: <ul style="list-style-type: none"> Location Height Font and graphic size Font and graphic finish Alternative formats (Braille, Audio)
Shelters	<ul style="list-style-type: none"> Recommended along the pathway at appropriately distributed locations or rest intervals Provide protection for the sun, rain, and other weather conditions 	Must meet ADA standards for: <ul style="list-style-type: none"> Shelter dimensions Wheelchair accessible space

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Emergency 911 Decal

Source: AmericanTrails.org

U.S. National Grid (USNG) Emergency Location Markers

In the instance that users may need immediate emergency assistance, USNG Emergency Location Markers can be incorporated along the CC2ST pathways for efficient emergency response efforts. Each location marker along the pathway has a unique eight-digit GPS code. The code is read to an emergency responder, who compares the code to a USNG gridded map in order to locate the trail user. These location markers make it easier for respondents to identify the location of the person needing assistance, significantly decreasing the response time. If USNG Emergency Location Markers are utilized, the signs must meet ADA requirements for signage as presented in **Figure 47**. In cases where the technology available, a smart phone App can also provide this type of emergency support.

Emergency 911 Decals

Emergency 911 decals have become a popular amenity along trails to help first responders find the exact location of an emergency on the trail. The decals are low-cost sticker decals that provide location information for emergency responders. Trail users can also use the decal to report maintenance problems along the trail, such as a fallen tree in the area. Emergency 911 decals should be placed every 200 feet along the trail to ensure adequate retrieval by trail users. This type of emergency marker is better than having emergency call boxes, which tend to be a major target for vandalism as well as having infrastructure needs, costs, and

maintenance. The 911 decals are easily replaceable due to their low cost.

Charging Stations for Electric Mobility Devices

Charging stations are not required under ADA minimum standards, but should be considered at trailheads and at appropriately distributed locations along the trail. These charging stations enable people who use electric mobility devices the opportunity to recharge the devices along the CC2ST network, allowing for longer trips along the network.

OTHER CONSIDERATIONS

Best Management Practices

The following best management practices should be considered during the implementation of the CC2ST network to allow for the greatest amount of user types:

- Consider shared-use path widths greater than 12 feet in areas of anticipated higher usage
- Use porous pavement and recycled materials utilized when possible
- Improve the aesthetic appeal with material and color, landscaping, public art, lighting, and signs
- Install uniform signage along the network and at all trailheads to provide users with the information needed to assist them in decision-making for trips

Exceed Minimum Requirements

At trailheads near accessible features, such as where 'Sportsability' or other special events could be held, minimum requirements for designated parking spaces and other amenities could be exceeded if appropriate. For example, the ADA design standard for designated parking spaces to regular spaces is 1:25, but CC2ST trailheads may exceed this ratio to accommodate more users. Sportsability events are events where the differently abled compete in a variety of sporting events.

Loop Trails

During meetings with both David Jones, founder of the Florida Disabled Outdoors Association, and J.R. Harding, External Affairs Manager for the Florida Agency for Persons with Disabilities, the importance of "loop trails" was heavily discussed. "Loop trails" are one to two-mile long routes that loop back to a destination so users do not have to go back and forth along the same path, making the trip more scenic and desirable. It was noted that loop trails provide persons who are differently abled with increased trail options and enhanced safety by remaining in close proximity to trailheads.

The purpose of these "loop trails" is to connect to a specific destination along the network so there is a primary reason to visit the segment. CC2ST will strive to provide "loop trails" along the network as often as possible and near desired destinations.

SUPPORTIVE INFRASTRUCTURE

As the CC2ST network is constructed, communities in the study area should assess existing and planned infrastructure needs and identify gaps that separate people from the trails. Supportive infrastructure should be planned and prioritized to provide logical connections to and from the CC2ST network. Supportive infrastructure includes any facilities and amenities that help safely bring citizens to the CC2ST network, for both transportation and recreation. Creating facilities that will expand the accessibility of the network will enhance user experiences.

WAYFINDING SIGNAGE

Wayfinding signage is an essential design element for supporting and promoting the CC2ST network. There are two forms of wayfinding signage to assist trail users, wayfinding signage along the network to get users to other amenities and destinations, and wayfinding signage to get to the CC2ST network. Wayfinding signage along the trails is ideal for notifying trail users of surrounding amenities or destinations such as nearby restaurants, lodging, parks, trailheads, or recreational activities that can be accessed while on the network. As trail users approach a destination, signage should be available to direct the users to a community or downtown area. This will allow the trail user to make informed decisions about whether to continue on the network or stop at a destination. Additionally, wayfinding signage within the local communities and along roadways will inform visitors on where to access various CC2ST trailheads. This wayfinding signage will be located in downtown areas and communities to direct trail users to the most accessible entrance, from that destination, onto the CC2ST network. Wayfinding signage is also necessary to ensure that the CC2ST network is easily reachable for trail visitors, both knowledgeable and unfamiliar to the area.

PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian and bicycle facilities are ideal for providing connectivity from the local communities to the CC2ST network. Such supportive infrastructure

