City of Alpharetta
Alpha Loop Design Guide

TRAIL AMENITIES & FURNISHINGS

Prepared for:

THE CITY OF ALPHARETTA GEORGIA

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May 2018

Cover sketch courtesy of: Pond and Company

PURPOSE AND USE

In 2016, the City of Alpharetta completed a master plan for the Alpha Loop, a shared-use linear park facility that will connect people to activity centers, parks, and jobs by a network of trails. The Alpha Loop will offer improved connectivity to neighborhoods, improve travel and mobility, spur economic development, and elevate the overall quality of life in the Technology City of the South. The project includes two interconnected routes with a three-mile inner loop characterized by a more natural feel, and the outer loop, a five-mile trail that links Downtown Alpharetta, Avalon, and Northwinds.

This Design Guide is a companion document to the Alpha Loop Master Plan. It provides tools, references, and standards that can be used by staff to create a trail experience for users of all types, for generations to come. The Design Guide is primarily intended for city staff, local elected officials, developers, planning and design firms, and trail organizations involved in the implementation of the Alpha Loop.

ALPHA LOOP BRAND

OVERVIEW

Trail amenities are important to the experience of the Alpha Loop. Just as the logo has become symbolic of the trail, amenities become the breadcrumbs of recognizable forms, patterns, texture, color, and rhythm that contribute to a consistent brand expression of safety, comfort, legibility, and community pride. Since the Alpha Loop traverses a range of landscapes, it is essential to provide a pattern of experiences that reflect the local color and context of natural, suburban, and urban settings within Alpharetta. This Design Guide will build upon the trail amenities, wayfinding, and character of Alpharetta to create a framework for the trail system as it is built out over time.

One of the most important functions of the Alpha Loop brand is to provide a cohesive look and feel for materials and messaging.

ALPHA
LOOP

GUIDING PRINCIPLES

CONTINUITY, CONNECTIVITY, AND ACCESSIBILITY

The Alpha Loop Trunk should be a continuous non-motorized multi-use pathway, accommodating all user types. This trunk line will connect directly to residential, commercial, and natural areas, with seamless and accessible connections to on-street facilities and secondary trails.

TRAIL EXPERIENCE

Trail design must be sensitive to the perspective of the visitor to promote use, enjoyment and a sense of stewardship and pride along the trail as a park space. This includes considering the impact on the five senses of the users and providing diverse and choreographed experiences. The trail corridor should ensure safety, provide visual interest, and stimulate the senses. Where feasible, the Alpha Loop should include passive areas along the trail for respite, socializing, and the enjoyment of public art.

RESOURCE STEWARDSHIP, COMPATIBILITY, AND SUSTAINABILITY

Wherever and whenever feasible use resilient materials that are responsively sourced. Consider furnishings that non-polluting, conserve energy, and use natural, recycled or recyclable materials.

PUBLIC AWARENESS AND TRAIL IDENTITY

The Alpha Loop will have a strong local and regional identity as a model for design excellence. The trail will be a centerpiece for Alpharetta recreation and transportation, resulting in trail-oriented development and greenspace preservation.

CONNECTIVITY

EXPERIENCE

SUSTAINABILITY

IDENTITY

Alpha Loop Trail Elements

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OVERVIEW

The following section contains guidance for trail infrastructure features and methods with notes for appropriate use in varying contexts that are consistent with a standard approved by city staff. During construction documentation, design judgment should be used in assessing the most suitable materials for each application. All trail infrastructure and associated amenities should be designed to accommodate surrounding land use and standards set forth by the Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), local regulations, current best practices, and Americans with Disabilities Act (ADA) standards.

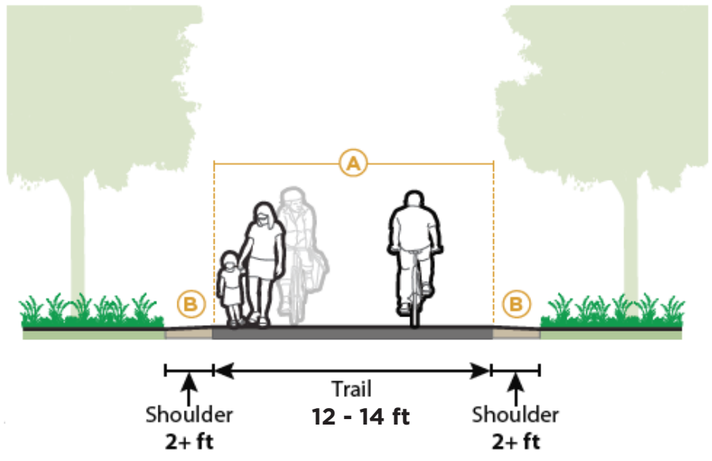
GENERAL TRAIL CONSTRUCTION

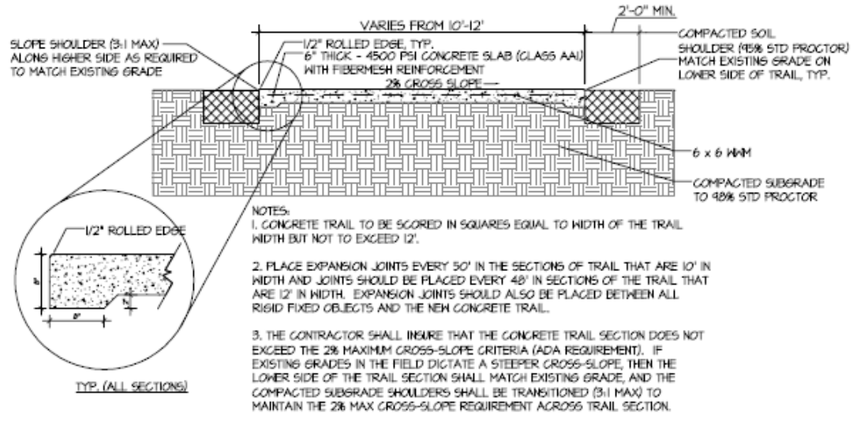
DESCRIPTION

All Alpha Loop trails shall be paved (concrete unless otherwise indicated) multi-use trails that accommodate pedestrians, bicyclists, skates, wheelchairs and other non-motorized uses.

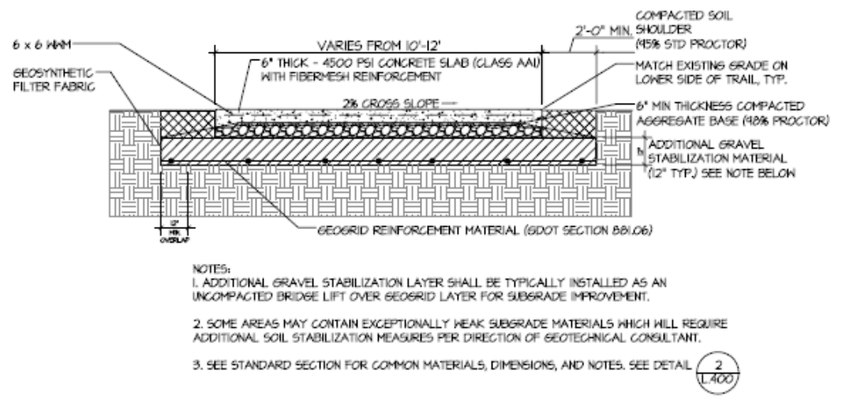
GUIDELINES

- A 12'-wide path (14'-wide in high volume areas) is the minimum for Alpha Loop trails. See A, in figure below.
- A 36" minimum clear zone, 5' preferred, on either side of the path including a minimum 2' shoulder. See B, in figure below.
- 8'-6" is the minimum overhead clearance (10' preferred).
- Provide a minimum of 8'-0" horizontal clearance along shoulders, where appropriate.
- The general design speed for Alpha Loop trails is 20 MPH, and therefore a minimum radius of 100' is preferred. Where design speeds are slower or there is limited ROW, smaller radii may be considered.
- Superelevation of 1.5% to 2% should be provided on most curves.
- Use 6" minimum depth 4000 psi concrete.
- Provide sawcut joints at intervals equal to width of trail (tooled to a depth of 1" with a width of 1/4").
- Where trail abuts existing buildings, use isolation joints.
- All Alpha Loop trail layout and alignment conforms to AASHTO guidelines.
- Class 5A aggregate compacted base depth varies depending on soil conditions.
- Minimum 1.5% cross slope for drainage and construction.
- Grades and superelevations conform to ADA standards for trails.
- Provide positive drainage to prevent water build-up on trail.
- Pavement markings per City and ADA standards (see Centerline Markings, pg 9).
- Trim hazardous overhanging branches and deadwood.
- A centerline pavement stripe may be required in certain situations such as high traffic areas, around tight curves or other appropriate site-specific applications (see Centerline Markings, pg 9).
- For streetside trails, provide a groomed meandering buffer zone between trail and curb where feasible (10' to 50' or more wide with mowed grass).
- Where ROW is constrained, provide a minimum 5' buffer (beauty strip) between road edge/back of curb and trail per AASHTO.
- Electrical and other utility lines in or adjacent to the trail should be buried or appropriately screened.
- Promote good visibility of the trail and lines of sight.





STANDARD CONCRETE TRAIL - TYPE A



3 SOFT SUBGRADE AREA CONCRETE TRAIL - TYPE B

UNIVERSAL ACCESS ON TRAILS

New shared use paths must meet accessibility guidelines to ensure that paths, street crossings, signals, and other facilities for pedestrian circulation and use are readily accessible to and usable by pedestrians with disabilities.

TYPICAL APPLICATION

Constructing outdoor shared use paths and trails may have limitations that make meeting ADA guidelines difficult and sometimes prohibitive. Prohibitive impacts include harm to significant cultural or natural resources; a significant change in the intended purpose of the trail; requirements of construction methods that are against federal, state, or local regulations; or terrain characteristics that prevent compliance.

GUIDELINES

- Path surfaces must be firm, stable surfaces, and are generally limited to hard surface such as asphalt, concrete, wood, compacted gravel. Some surface materials must be periodically maintained to meet accessibility requirements.

- The path running slope must be less than 5% without use of landings. Design with a 4.5% running slope target is recommended to account for variation in construction tolerances. Where the shared use path is contained within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.

- The path cross slope must not exceed 2%. Design with a 1.5% cross slope target is recommended to account for variation in construction tolerances.

- Paths must provide a 5 ft (1.5 m) minimum clear width to serve as an accessible pedestrian access route. A minimum clear width is 4 ft is acceptable if passing spaces are provided every 200 ft. Most shared used paths designed for bicycle access will meet this requirement (PROWAG 2011).

- On trails designated as accessible, provide rest areas or widened areas on the trail, optimally at every 300 feet.

FURTHER CONSIDERATIONS

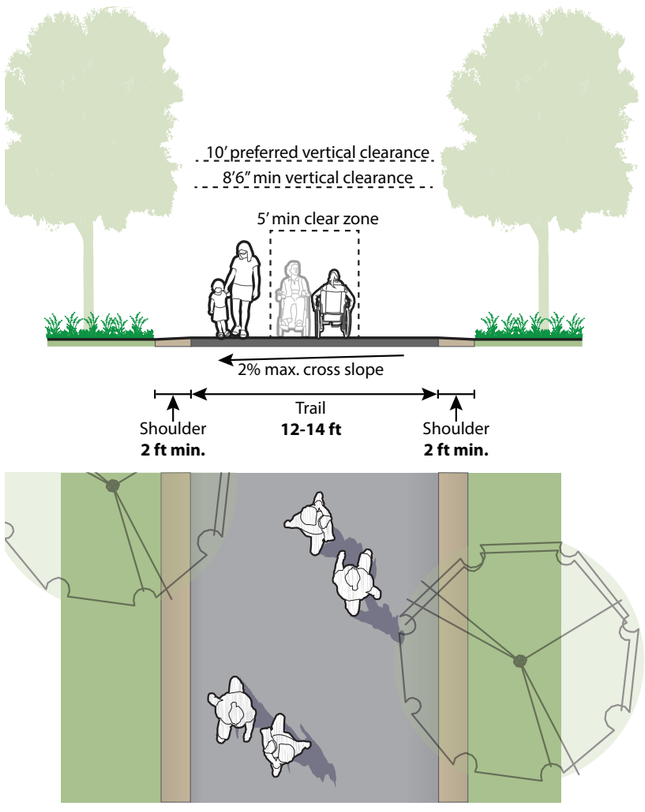
- Trailhead signage should provide accessibility information, such as trail gradient/profile, distances, tread conditions, location of drinking fountains, and rest stops.

- At trailheads there should be at least one accessible parking area per every 25 vehicle spaces.

- Trail amenities, drinking fountains and pedestrian-actuated push buttons should be placed no higher than four feet off the ground.

MAINTENANCE

The trail surface should be solid, free of obstacles and tripping hazards. Trail edge vegetation/screening, and signage should be maintained and located so as not to present obstacles for visually impaired trail users.



Some gravel and crusher fine trail material types are considered to be ADA compliant (Source: National Trails Training Partnership)

Trails should always use materials and be constructed such that they are well drained and dry as much as possible (Source: National Trails Training Partnership)

INTERSECTIONS WITH OTHER TRAILS

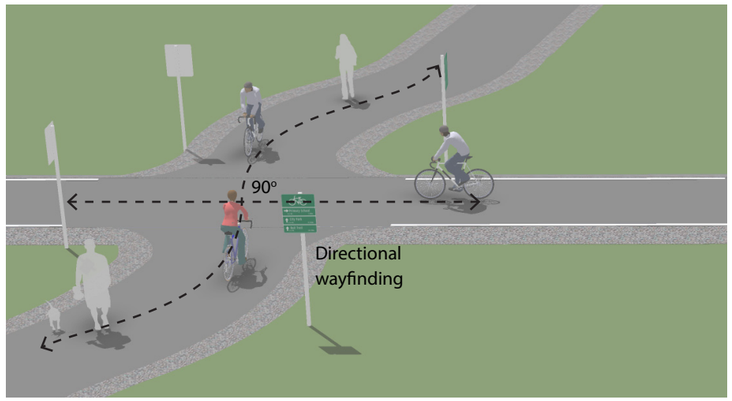
DESCRIPTION

At the intersection of two trails, users should be aware that they are approaching an intersection and of the potential for encountering different user types from a variety of directions. This can be achieved through a combination of regulatory and wayfinding signage and unobstructed sight lines.

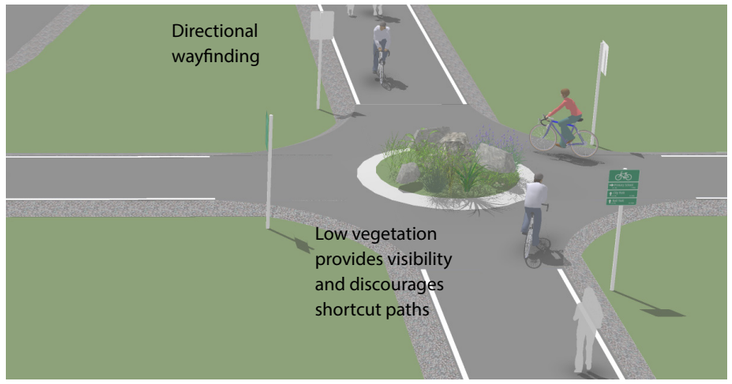
GUIDELINES

- Trails should be aligned to intersect at 90 degree angles when possible.
- Sight lines should be clear for all users.
- Consider off-setting the trail intersection and creating two three-way intersections rather than one four-way intersection.
- A traffic circle may be a viable design option to slow speeds and clarify expected operation.
- Include directional signage at intersections.
- If a traffic circle design is used, consider the use of landscaping with low growing (no more than 24 inches high) and minimally spreading native shrubs and groundcover that require little maintenance and provide clear sight lines.
- Other material can be used within traffic circles such as boulders and public art to discourage shortcut paths through the central island as long as clear sight lines under 36 inches are maintained.

Reorient angled crossings to approach at 90 degrees



Trail "traffic circle"



Trail at Sidewalk intersection

CENTERLINE MARKINGS

DESCRIPTION

Centerline striping can be used to delineate lanes for each direction of travel, or to indicate where it is unsafe to pass others on the trail. Under most conditions, centerline markings are not necessary. Centerline markings should only be used if necessary for clarifying user positioning or preferred operating procedure. Centerlines help communicate that in order to pass slower traffic, trail users must merge into a lane of opposing traffic. FHWA research suggests this results in more cautious passing maneuvers, but that it also depresses bicyclist level of service.

GUIDELINES

- Solid line indicates no passing, dashed line indicates lane placement
- Trails with a high volume of bidirectional traffic should include a centerline. This can help communicate that users should expect traffic in both directions and encourage users to travel on the right and pass on the left.
- Where there is a sharp blind curve, painting a solid yellow line with directional arrows reduces the risk of head-on collisions.
- When striping is required, use a 4 inch dashed yellow centerline stripe with 4 inch solid white edge lines.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

BOARDWALKS

DESCRIPTION

Boardwalks are elevated structures that allow the trail to pass through or over wetlands, water bodies, unstable soils, and other sensitive areas. Depending on conditions and other trail planning considerations, boardwalks may be only a few inches off the ground or several feet or more above the surface. Low decks may have no defined edge or a curb, with deck surface 30" or more off the ground surface or where a hazard is present will have a safety railing.

GUIDELINES

- Boardwalks have a clear unobstructed width (inside of curb or handrails) and should match or exceed the specified widths of the trails they serve. In some instances, however, there may be a transition area to allow tapering to interface the trail with the boardwalk while meeting safety standards.

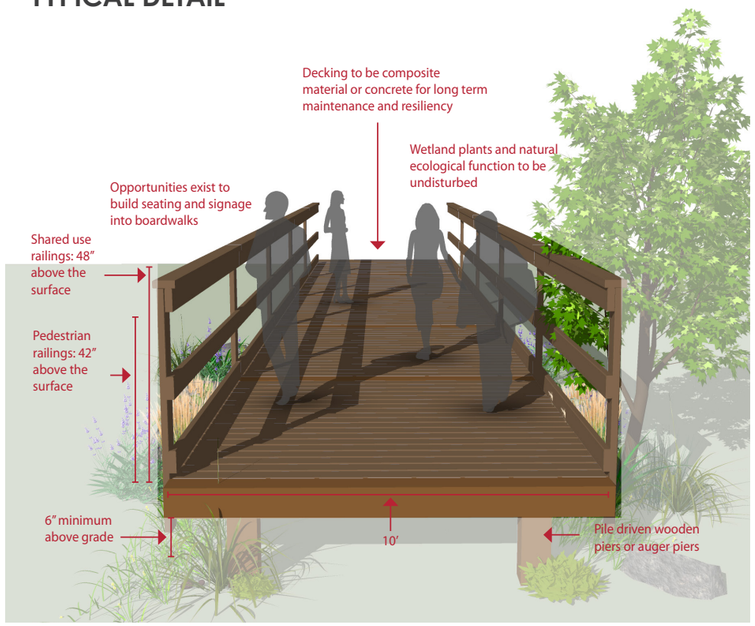
- Sustainable design techniques are used to minimize adverse impacts or intrusion of the structure on the environment during both construction and use.

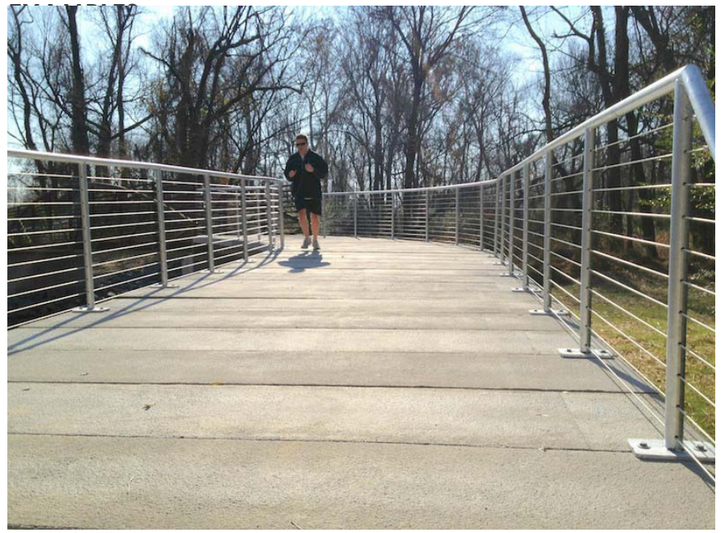
- Hand railing heights meet local and national code standards for the anticipated use including heights specified in the AASHTO Guide to the Development of Bicycle Facilities. Provide a minimum 42" high for low drops and 54" for high drop offs. Railings are designed to protect small children with appropriate minimal gaps where conditions dictate.

- Use resilient materials with low maintenance. Concrete decking and steel or cable railing is preferred. Decking may be composite material or concrete for long term maintenance and resiliency.

- Boardwalk design and materials should fit with the branding and furnishing styles of the various character districts of the Alpha Loop.

TYPICAL DETAIL





STREAM CROSSINGS

DESCRIPTION

Shared use path stream crossings provide Alpha Loop access over natural features, such as streams and rivers. The type and size of bridge can vary widely depending on the trail type and specific site requirements.

Bridges often used for multi-use trails include suspension bridges, prefabricated span bridges and simple girder bridges. When determining bridge design for multi-use trails, it is important to consider emergency and maintenance vehicle access.

GUIDELINES

- Pedestrian spans should be able to carry weight of maintenance and emergency vehicles (12,000 pounds) unless alternative access is available.

- Spans should be wide enough to accommodate both trail traffic and people who may want to linger on the span to enjoy the view. Absolute minimum width should be 12' but 14' is preferable, both to accommodate those who linger and possible future trail widening. In some instances, such as higher traffic areas, a "belvedere" or small "balcony" may be attached to the side of the bridge deck to accommodate people wanting to linger out of the path of trail traffic.

- All railings should be at least 44" high (54" on highly elevated decks and bridges). Provide approach railings as safety dictates leading to bridges with the opening flared. Approach railing styles should match bridge styles and materials.

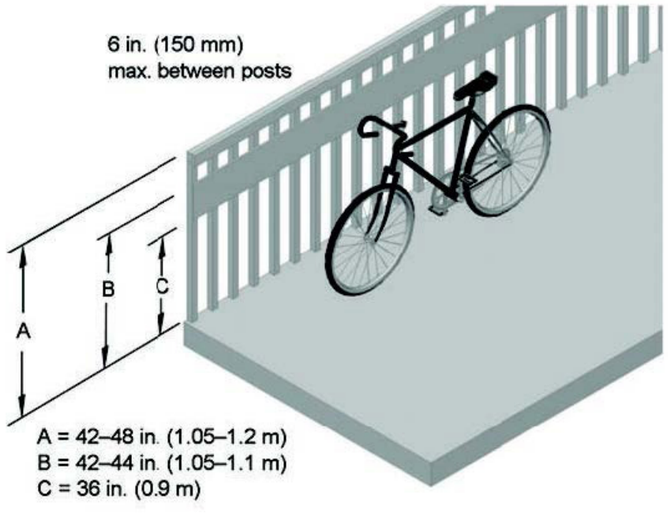
- Clear-span crossings are preferred, as opposed to low water crossings on multi-use trail. This will avoid washouts and sediment build-up problems. Clear spans should be placed above the 100-year flood level wherever possible, but in some instances may be lower, provided the structure will not raise the 100-year flood level in developed areas without proper mitigation (an engineer with flood expertise should be consulted).

- Generally, pre-manufactured, self-weathering steel structures are preferred for cost-effective construction and maintenance.

- Wherever appropriate, cost-effective and feasible bridges could include enhancements such as abutment trim, monuments, arches and artistic components.

- Trail above 10-yr flood elevation preferred.

- Optimize headroom vs. trail elevation above river invert (bottom) to minimize frequency/duration of inundation.



Source: AASHTO Guide for the Development of Bicycle Facilities (2012), Figure 5-11.

STREET UNDERPASSES AND OVERPASSES WITH RAMPS

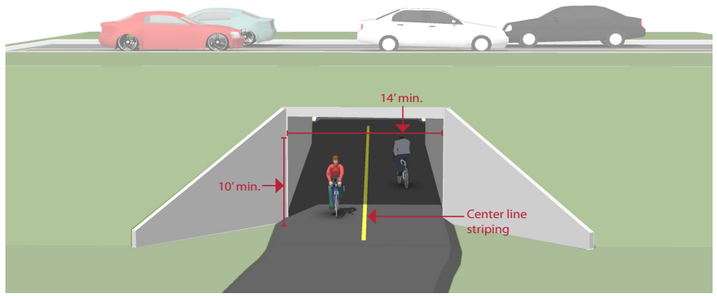
DESCRIPTION

Bicycle/pedestrian underpasses and overpasses with ramps provide critical non-motorized system links by joining areas separated by barriers such as railroads and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.

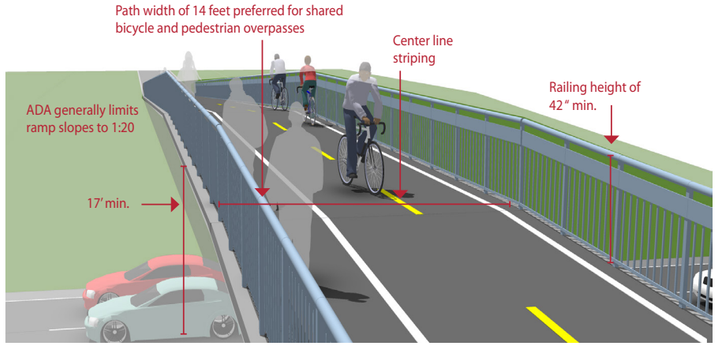
GUIDELINES

- Trail width, surface, lines of sight, grades and other design factors should be in conformance with AASHTO and ADA.
- Concrete surfaces are preferred in flood prone areas to minimize risk of washouts.
- Trail above 10-yr flood elevation preferred for tunnels.
- Use appropriate safety signage/warnings such as curve arrows per MUTCD.
- Provide a minimum of 8' of headroom for multi-use (bikes and peds.) 10' min. if equestrian use though 12' of headroom is preferred.
- Provide centerline stripe to promote user safety.
- Provide clear line of sight under bridge with no hiding places.
- 24" edge/rumble strip on each side of path preferred.
- Provide bypass ramps to a safe road crossing point for high water events.
- For attached shared-use path provide min. 12' width and min. 54" safety barrier (min. 42" barrier between path and traffic lane may apply in some instances). Refer to AASHTO and traffic engineers.
- Work with qualified lighting engineer to provide appropriate 24-hour lighting in all tunnels/underpasses.
- In some locations, the trail will go under bridges or through low areas subject to flooding. In some cases, the trail will need to be substantially anchored (with concrete, rock, Geoweb or similar system) and armored with rock where appropriate to prevent wash out from flowing water. A engineer with flood expertise should be consulted to ensure the underpass is durable and will not adversely impact flood conveyance.

UNDERPASS



OVERPASS



EXAMPLES

RETAINING WALLS

DESCRIPTION

In general, any slope in excess of 3:1 grade will require stabilization or retention to control erosion. In many cases this will require a structural retaining wall. Walls may vary in height from a 6" curb to a higher wall or wall system of 5- to 12' or more. Walls should be built of stone or brick, or may have a stamped façade over a concrete base.

GUIDELINES

- Where possible, it is desirable to keep wall height less than 4'. On steep, high slopes this may require "splitting" a wall with half of the height on the uphill side of the trail and half on the downhill side or "terracing" the slope with multiple shorter walls.

- Walls should be designed by a qualified professional and walls in excess of 4' high should be reviewed and approved by a qualified engineer.

- Where feasible, stacked-natural stone walls are preferred for aesthetics, although segmental retaining walls may be used (see image).

- Where stone is not feasible, wall surfaces should be faced with a natural appearing stone façade such as Tennessee fieldstone.

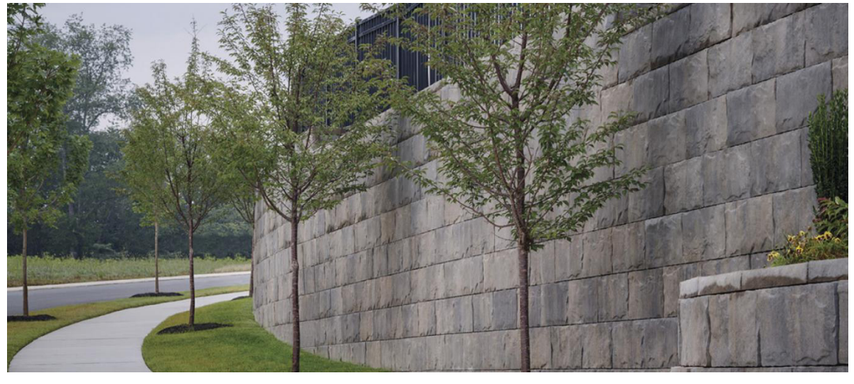
- Protruding and sharp edges should be avoided and where this is not feasible, such as the ends of walls, blunt ends should be marked with "hazard" demarcation panels per the Manual of Uniform Traffic Control Devices if they are within 30" of the edge of the trail.

- Walls can be constructed of concrete, anchored block system, stone or other appropriate material.

EXAMPLES

Tennessee fieldstone

Mortared granite stone



Larger walls may use Belgard segmental retaining wall

HANDRAILS AND GUARDRAILS

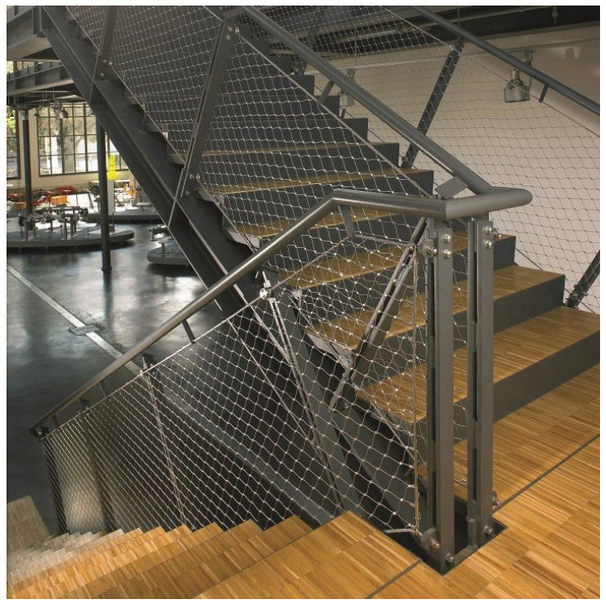
DESCRIPTION

Handrails and guardrails are safety barriers that serve several functions depending on the situation. A "handrail", for example, is primarily a safety device intended to protect trail users from a potential hazardous condition including keeping small children and toddlers from slipping through the railing.

A "guardrail" primarily serves to protect bicyclists, roller skaters and other higher speed wheeled users from a hazardous situation. In some instances, such as above a vegetated embankment where the threat of impact is minimal the railing may be lower in height. Where the threat of impact is substantial, such as over a highway, the rail would be higher. (Heights are determined per national published bicycle design standards.) In many cases, particularly where the drop off is more hazardous, the safety barrier serves both a handrail and guardrail function.

GUIDELINES

- For handrails, if there is a drop-off in excess of 18" or other hazard, openings on the rail should not pass a 4" sphere (confirm with local codes).
- A guardrail should withstand a 250 lb. load with 1/2" deflection with a w=50 pound per linear foot transverse and vertical load capacity.
- Rails should not present sharp or protruding edges and ends should be flanged and marked with MUTCD-specified hazard panels to reduce the chance of injury from collision.
- Handrails should conform to local and national building codes.
- Guardrails and guardrail/handrail combinations should conform to the specified minimum heights per the AASHTO Guide to The Development of Bicycle Facilities and other local and state standards—ranging from 42" to 54" depending on the situation.
- Where bicycle traffic will be present, an off-set "rub rail" should be provided to prevent entanglement of bicycles with the railing structure. Rub-rail is optional on overlooks, or pull-offs out of main stream of bike traffic.
- There should be a minimum clear-zone (typically 10') between the insides of the railings when rail is on both sides of the trail.
- Structures should be durable and affordable to build and maintain, such as weathered steel or powder coated steel.
- Aesthetic designs should conform to overall branding standards including consistent selection of materials and colors per each character district.



Webnet by Jakob or equal

EXAMPLES

Cable railing with aluminum posts and hand rail

TRAIL & ROADWAY INTERSECTIONS

DESCRIPTION

The specific type of treatment for Alpha Loop trail crossings may range from a simple marked crosswalk to full traffic signal or grade separated crossing.

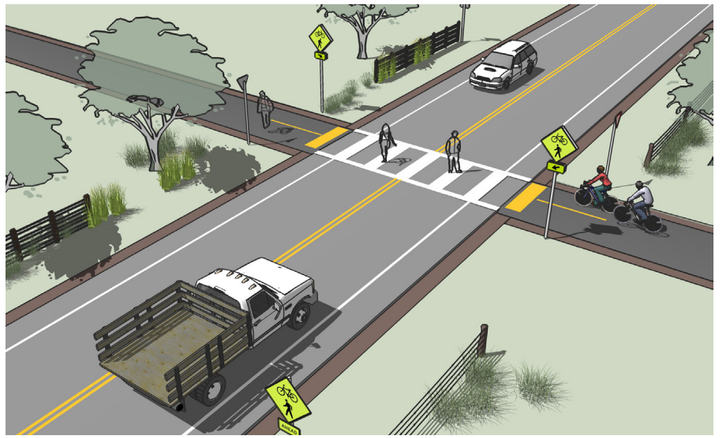
The table below presents a high-level assessment of potential crossing treatment options for a variety of contexts. Enhanced treatments require additional site by site analysis and should be implemented based upon a safety engineering evaluation, and identified community need. The evaluation should consider the number of lanes, the presence or lack of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted or statutory speed limit or 85th-percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.

PEDESTRIAN CROSSING CONTEXTUAL GUIDANCE At unsignalized locations	**Local Streets** 15-25 mph		**Collector Streets** 25-30 mph			**Arterial Streets** 30-45 mph							
FACILITY TYPE	2 lane	3 lane	2 lane	2 lane with median refuge	3 lane	2 lane	2 lane with median refuge	3 lane	4 lane	4 lane with median refuge	5 lane	6 lane	6 lane with median refuge
Crosswalk Only (high visibility)	✓	✓	EJ	EJ	X	EJ	EJ	X	X	X	X	X	X
Crosswalk with warning signage and yield lines	EJ	✓	✓	✓	✓	EJ	EJ	EJ	X	X	X	X	X
Hybrid Beacon	X	X	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓	✓	✓
Full Traffic Signal	X	X	EJ	EJ	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓
Grade separation	X	X	EJ	EJ	EJ	X	EJ	EJ	EJ	EJ	EJ	✓	✓

LEGEND	
Most Desirable	✓
Engineering Judgement	EJ
Not Recommended	X

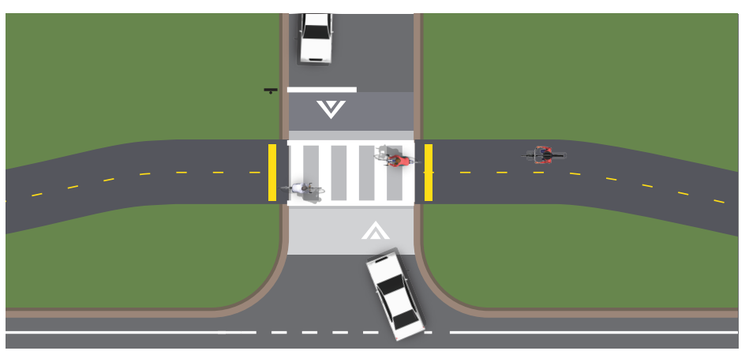
MARKED CROSSWALK GUIDELINES

- High visibility "ladder" style crosswalk markings
- A Bicycle/Pedestrian warning sign (W11-15) with downward arrow plaque (W16-7P) at the crossing, on both sides. Bicycle and Pedestrian figures on the sign should always face toward the crosswalk.
- A Bicycle/Pedestrian warning sign (W11-15) with "ahead" plaque (W16-9) before the crossing.



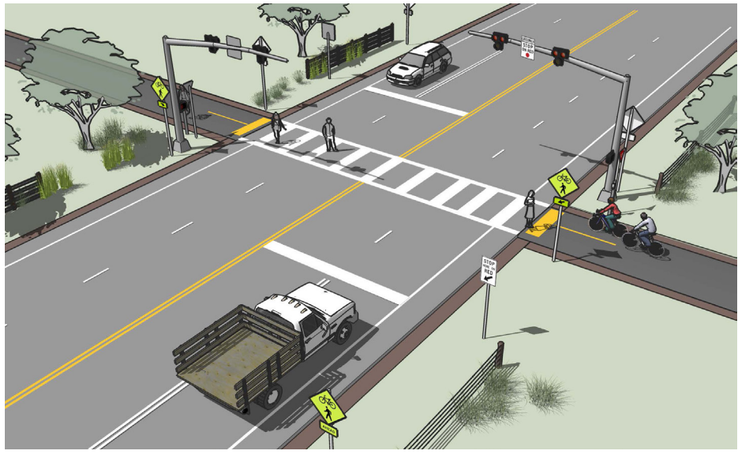
RAISED CROSSWALK GUIDELINES

- Use detectable warnings at the curb edges to alert vision-impaired pedestrians that they are entering the roadway.
- Approaches to the raised crosswalk may be designed to be similar to speed humps.
- Raised crosswalks can also be used as a traffic calming treatment.



PEDESTRIAN HYBRID BEACON GUIDELINES

- Pedestrian Hybrid Beacon Crossings with a R10-23 or R10-23a should be paired with a Marked Crosswalk and Advance Stop Bar crossing treatment package.
- A stop line and STOP HERE ON RED sign (R10-6) should be used.
- Push buttons should be easy to identify and located on the right-hand side of the path. They should be positioned so that bicyclists do not have to dismount to activate.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.

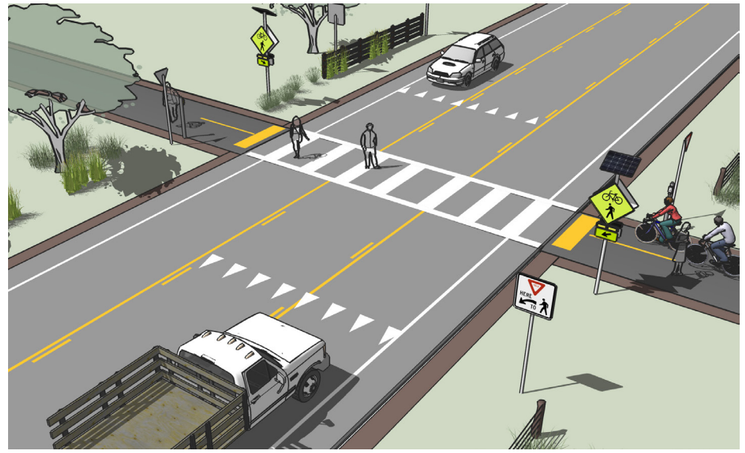


STAMPED CROSSWALKS

Marked crosswalks, raised crosswalks, and pedestrian hybrid beacons can all be combined with a stamped crosswalk to reinforce the trail's brand and add aesthetic interest.

RECTANGULAR RAPID FLASH BEACON

- Rectangular Rapid Flashing Beacon Crossings should be paired with a Marked Crosswalk and Advanced Yield Line crossing treatment package.
- Push buttons should be easy to identify and located on the right-hand side of the path. They should be positioned so that bicyclists do not have to dismount to activate.
- Where possible, RRFBs work well as multi-beacon installations on mast arms, or Median Refuge Island Crossings to improve driver yielding behavior.



SHADE STRUCTURES

DESCRIPTION

Whether it be protection from the rain or a place to rest during a sunny day, shade structures and shelters create comfort and protection for all trail users. Shade structures should be sensitive to context and designed to integrate with intended function of the site and trail user needs. All structures will require approval from City staff and should include little to no maintenance.

GUIDELINES

- The orientation of structures should be considered to provide maximum protection from elements.
- Can be placed in any setting (grass, concrete, asphalt, etc) with considerations for ADA access to and into the structure.
- Plants may be incorporated into the design of the structures especially where they can provide additional user benefits (vines or greenwall for cooling effect). Plant material should be context sensitive and low maintenance.
- Structures should not impede bicycle and/or pedestrian movement and shall be located adjacent to the trail (not within the travelway).
- Structures should not block viewsheds of historic, natural, or cultural elements.
- Structures should incorporate other amenities, especially benches and picnic tables.
- Colors should fit into a natural setting and not be bright oranges, pinks, blues, etc.
- Provide shade structures, particularly where mature trees are not available to provide shade.
- Appropriate shade tolerant grasses should be used under shade structures when grass is desired underneath.

EXAMPLES

Shade sails provide spatial flexibility and color options

EROSION CONTROL, SLOPE PROTECTION, AND BANK RESTORATION

DESCRIPTION

In a number of instances, steep slopes, stream banks, construction cuts, and other areas subject to erosion will require erosion control and stabilization improvements. In instances where retaining walls are not needed, other forms of erosion control and slope protection will be required.

GUIDELINES

- Typically erosion control should be considered where grades exceed 3:1 unless well stabilized by vegetation .
- Consider incorporating raingardens and bioretention areas along trail to handle storm runoff from paved sections, especially in areas with steeper slopes to prevent erosion from runoff.
- Where feasible, use natural or natural-appearing stabilization that promotes the re-growth of vegetative cover such as woven plant fiber matting.
- If rock rip rap is used for stabilization provide an adequate buried toe along river and stream banks and bury rock with soil that is stabilized and revegetated to conceal rock and promote a more natural slope.
- Along river and stream banks and other embankments terrace slopes to create a natural appearance and establish a healthy riparian edge with reforestation.
- Wherever feasible restore disturbed slopes with appropriate indigenous vegetation.
- Local and state guidelines prevail for all erosion and sediment control in Georgia. Refer to the Georgia Soil and Water Conservation Commission's manual.

REST AREAS AND OVERLOOKS

DESCRIPTION

Rest areas and overlooks afford places to stop, rest, eat a snack, have a drink, take refuge from the sun or enjoy a view. These spots may also offer interpretive, cultural and wayfinding information as well as public art. Several kinds of rest areas could be provided including rest pads, larger rest areas, overlooks, and trail pavilions.

A larger rest area might include two or more benches and possibly a drinking fountain with a toilet facility nearby. A pavilion rest area might include a shelter and picnic table(s). An overlook is a special kind of rest area tied to a view of special interest. An overlook might include interpretive signage describing the area being viewed.

GUIDELINES

- All rest areas and overlooks should be designed to move users and their bicycles off the main trail to eliminate any possible traffic hazard.
- Rest areas and overlooks should be located in attractive, quiet, secure-feeling settings away from traffic noise and not close to private residences.
- Rest areas and overlooks should be accessible per the ADA and should offer shade with either trees or a sun shelter.
- Rest areas, at least rest pads, should be located every 1/4 to 1/2 mile depending on grade.
- Larger rest areas or overlooks should generally be located every one to two miles and should include a crushed stone or concrete pad with benches, a bike rack, informational signage, trash receptacle and drinking fountain.
- Larger rest areas and overlooks, especially those with trash receptacles should be readily accessible by maintenance vehicles.
- Consider storm shelters, sunshade structures and picnic shelters appropriately grounded for lightning.

RESTROOMS AND DRINKING WATER

DESCRIPTION

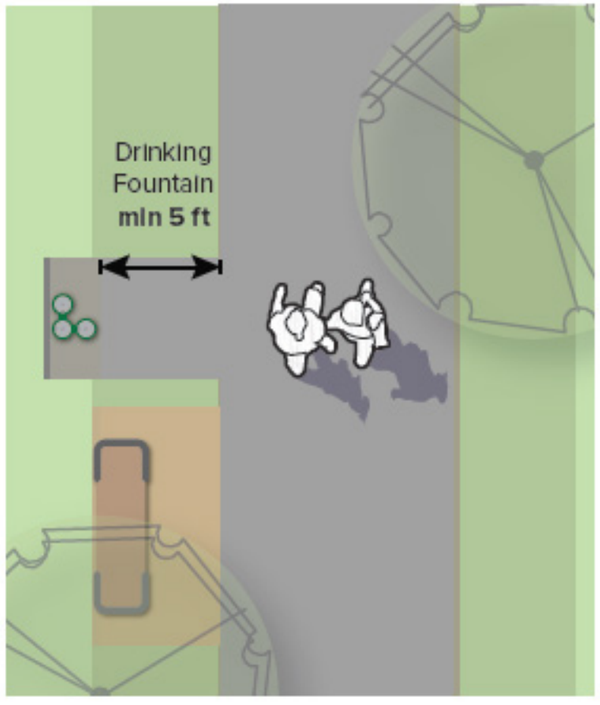
Careful consideration should be given to a number of factors before locating restrooms for the Alpha Loop including available land, size of gateway or trailhead, frequency of use, existing restroom facilities within the trail system, utility availability, and user need. Public restrooms require considerable maintenance and service. Access to these resources should be a strong consideration when planning for restroom buildings.

Access to drinking water is crucial to safety and trail enjoyment for multiple user types. Sources of potable water should be identified along the trail alignment with spacing of five miles or less. If access points are more than five miles apart, signs should be placed at potable water access points to indicate distance to the next source.

GUIDELINES

- Restrooms should be located at all major access points and recreational areas.
- Spacing between restrooms should not exceed 5 miles.
- Restrooms should be housed in architecturally appropriate facilities and property screened and buffered from adjacent private properties.
- Drinking water should be available at all major trailheads/ access points. A commercially manufactured water fountain product is recommended and should have a spigot for filling water bottles and pet drinking bowls.
- Directional signage should be provided indicating the location and directions to convenience stores and other commercial “way-stations” where food and drinks may be purchased.
- All facilities should be accessible per the ADA.

TYPICAL DETAIL



EXAMPLES

Including bottle filling stations at drinking stations as appropriate

VEGETATION MANAGEMENT AND TRAIL EDGE GROOMING

DESCRIPTION

There are several areas of landscape management to promote both an ecologically and user-friendly greenway and trail system. For the Alpha Loop, these include areas such as river edge and wetlands; multi-use trail edge/shoulder; "streetside parkways"; parks and feature areas; and managed "natural" areas.

Multi-Use Trail Edge — the zone immediately adjacent to and above paved multi-use pathways. Vegetation management refers to trimming the shoulder and beyond to assure a safe, usable trail. It also includes maintaining (trimming and/or mowing) an under-story "clear zone" back into the adjacent vegetation to promote lines of sight for safety and security and a more groomed appearance of the trail corridor. This edge should appear natural and should undulate and can vary in some areas from 5' to 20' back into the adjacent forest or meadow.

Streetside Parkways — Alpha Loop sections visible from nearby streets with a more parklike open landscape setting. These reaches may vary from 50' to 200 feet wide and are intended to create a more formal park feel. There may be mowed turf grass or other managed landscape including tree groupings with cleared understory.

Parks and Feature Areas — more formal areas of the Alpha Loop that incorporate parks and other attractions along the corridor. Typically these are turf grass areas, plazas or other more formal areas maintained by Parks and Recreation.

Managed "Natural" Areas — are designated areas with scenic enhancement or interpretation. An example of this might be a meadow planted in wildflowers or a variety of ornamental grasses.

GUIDELINES

- Regularly monitor activities and conditions in natural areas including proposed public works projects such as stream channel and utility work.
- Groom larger trees in the buffer zones to 8'-10' above ground.
- Plant and groom low to medium height grasses and wildflowers on opposite side of trail from roadway in a meandering swath 10' to 50' in width.
- Thin understory and groom trees along opposite side of trail from roadway in a 10' to 50' meandering swath.
- Regularly monitor tree growth around the trail and remove potentially hazardous overhanging branches and deadwood.
- Regularly monitor for invasive and pest species and eradicate using environmental sustainable methods.
- Use native species in all landscapes.
- Consider including the removal of exotic and invasive species along the trail system.
- Promote a natural look in grooming and mowing with undulating edges that follow the landscape rather than straight lines or shapes that don't match the local terrain. This might include "articulated" mowing of trail edges to create attractive curves and sweeps.
- Where appropriate, provide and maintain vegetated buffer zones between activity areas and sensitive landscapes such as wetlands.
- Pruning and tree care should follow ANSI A300 Tree Care Guidelines.

VEGETATIVE SCREENING AND FENCING

DESCRIPTION

In some instances screening is desired either to conceal visually unattractive objects (such as overhead power lines) from trails or to screen from adjacent land uses such as residences in the interest of privacy. This may be accomplished with plantings, screen fences or other delineators such as a rail-type fence to create a sense of delineation.

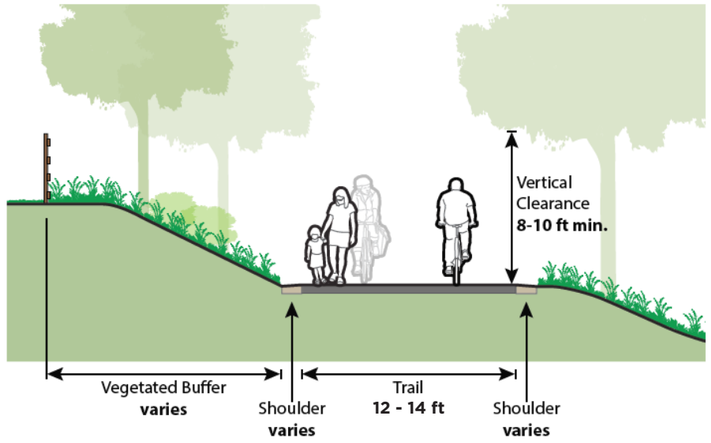
SCREENING GUIDELINES

- All groundcover should be trimmed to a maximum of 24" above ground level height.
- Where vegetative screens are recommended to provide privacy for private properties, they are not to exceed 4' in height.
- Consider Crime Prevention Through Environmental Design (CPTED) principles when providing screening along trails.
- Trees should be trimmed to provide a minimum of 8 ft (2.4 m) of vertical overhead clearance, 10 ft (3.0 m) preferred (AASHTO Bike Guide).
- Tree canopies should not obstruct pathway illumination.
- Select and place trail vegetation to provide seasonal comfort; shade in the warmer months and sunlight in colder months.

FENCING GUIDELINES

- Minimize use of fencing, height and type of fencing (i.e. simple post and wire to protect an area where security or privacy is not a major concern). A 48" height is preferred to 72" unless higher required by security or safety concerns.
- Avoid opaque fencing to permit visibility.
- Attempt to conceal fencing behind vegetation where feasible.
- When securing private property include placards that state: "Private Property: Please Respect Owner's Privacy"
- As much as possible fencing should blend with the natural trail environment.
- Where appropriate affix "Do Not Trespass", or "Sensitive Wildlife Area" or other appropriate regulatory or informational signage to fences.

TYPICAL DETAIL



LANDSCAPE

DESCRIPTION

Native vegetation along the Alpha Loop provides visual interest as well as habitat for animals and insects that may use the trail corridor for migration or habitat. A primarily native plant palette should be used when feasible, and include layering for all seasons inclusive of canopy trees, understory trees, shrubs, herbaceous plants, and groundcovers. Planting plans should consider local guidance for canopy goals, habitat creation, stormwater best practices, screening, disease resistance, avoidance of invasive species, and maintenance requirements.

GUIDELINES

- Planting should be used to provided a buffer between off-road sections of the trail and adjacent uses.
- Shade trees should be strategically placed near rest areas to provide shade to seating areas and other amenities.
- Soil and drainage conditions should be considered prior to final plant palette selection.
- Consider Crime Prevention Through Environmental Design (CPTED) principles when providing landscape along trails.
- Planting Plans should be designed by a Professional Landscape Architect registered in GA.
- Trees used around seating areas should be have minimal leaf, fruit, and flower litter.
- Appropriate shade tolerant grasses should be used under shade structures when grass is desired underneath.

RECOMMENDED LANDSCAPE PLANTS

The University of Georgia's cooperative extension provides a publication, *Landscape Plants for Georgia*, with suggested plants organized into various sizes and groups. The focus of the list is a showcase of the best possible groupings according to the principles and requirements of good landscape design and plant maintenance.

http://extension.uga.edu/publications/detail.html?number=B625

Native plants should be used for all proposed landscape on the Alpha Loop.

BIKE FIX-IT STATIONS

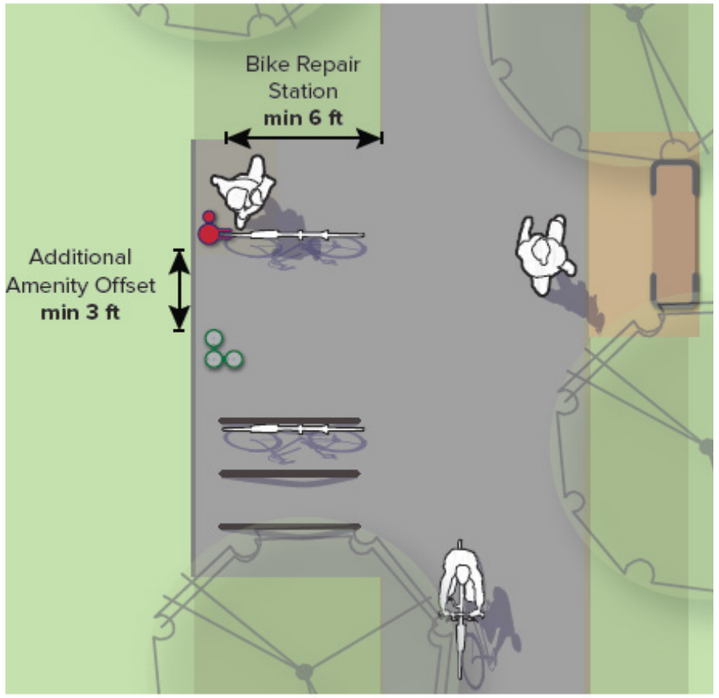
DESCRIPTION

Bicycle repair stations are self-serve kiosks designed to offer a complete set of tools necessary for routine bicycle maintenance. Popular locations include gateways, trailheads, plazas, farmer's markets, and any public center of activity that is well monitored and easily accessible by foot or bicycle.

GUIDELINES

- Group with other amenities in areas such as trailheads, parking lots, public spaces, and major trail intersections.
- Bicycle repair stations should be at least 6' from trail edge to allow room to repair bicycles.
- Stations should be secured to a durable pad, such as concrete.
- Bicycle repair station tools are secured by high security cables, but will still be an attractive target for theft. Proper placement of kiosks in areas of high activity is one key strategy to reduce potential vandalism.

TYPICAL DETAIL



EXAMPLES

https://www.dero.com/product/fixit/

PUBLIC ART

DESCRIPTION

The Alpha Loop offers many opportunities for public art. Artists could be engaged in the design and installation of both free-standing art works as well as incorporating art into the design of furnishings, signage, branding, paving surfaces, and other infrastructure along the trail. Art might also be used for murals on building walls, bridge abutments or other structures.

GUIDELINES

- Public art is best utilized in urban and residential districts although more natural art displays can be used in Green Space Districts.
- Generally, public art along a trail is most appropriate in association with infrastructural elements along or in association with the trail such as: bridges, underpasses, building walls, and on buildings.
- Artistic designs should be durable and maintainable.
- Art should not pose hazards to users.
- For infrastructure and furnishings, generally promote artistic design consistent with the character district branding scheme in color, shape form and texture.
- Where possible, local artists should be involved in the art selection and design process.
- Art may be used to delineate the three character districts, as well as cultural, community and neighborhood identity.

EXAMPLES

ENTRY MONUMENTATION

DESCRIPTION

Monumentation consists of decorative structures that demark points of entry to the trail system— from a street, a trailhead/ parking area or other entry to the trail. These may vary in size with larger structures for intermodal trailheads (with parking) and smaller structures for local access points. Monumentation should also include larger identity monuments—large structures, prominently located within sight of major roads and highways that provide a high level of visibility and help build community awareness of the Alpha Loop.

GUIDELINES

- Entry monumentation should be consistent with the aesthetic for each character district.
- Trail identity monuments should be provided at key locations along the Alpha Loop corridor. These should be clearly visible and recognizable from nearby major roadways.
- Intermodal entry monumentation should be clearly visible and recognizable from passing vehicles. Size and scale should vary based upon site and location conditions.
- At local access points, use monuments that are more modest than those at the intermodal entryways. Local access markers are lower key and should be compatible with local neighborhoods.
- Monuments may be placed on one or both sides of trail at both local access and intermodal entry points.

TYPICAL DETAIL

CONCEPT DESIGN IS IN PROGRESS

EXAMPLES

TRAIL MEDALLIONS

DESCRIPTION

Trail medallions are primarily used to brand trails, but can also be effective tools for route reinforcement and confidence marking. Used primarily in urban settings, trail medallions can help supplement or reinforce signage. Alpha Loop trail medallions are not substitutes for mile markers.

GUIDELINES

- Alpha Loop medallion dimensions are:
- Use bronze finish stamped with Alpha Loop logo.
- Roadway/trail intersections should prevail as point-of beginning for medallion placement. From back of curb/ edge of road, medallion should be offset 30-50' preceding and following each intersection.
- Place every 400-600' in center of trail, favoring clockwise orientation for path of travel.
- Placement should be flush with tread.

EXAMPLES

WAYFINDING SIGNAGE

DESCRIPTION

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TYPICAL DETAIL

CONCEPT DESIGN IS IN PROGRESS

EXAMPLES

BIKE PARKING

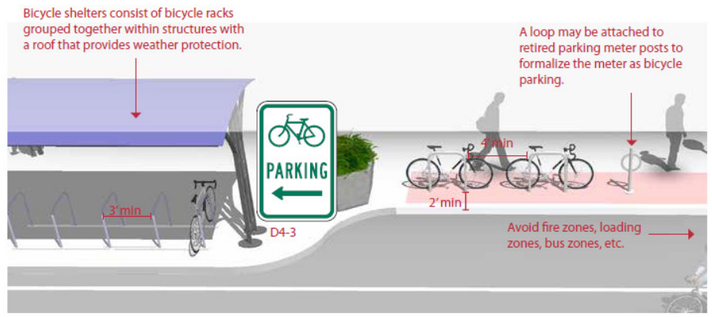
DESCRIPTION

Short-term bicycle parking is meant to accommodate users departing in two hours or less. In places where bicyclists will want to leave their bikes for significantly longer, it may be appropriate to provide long-term storage in the form of bicycle shelters or Secure Parking Areas (SPAs). Racks should be placed adjacent to comfort stations, visitor centers, seating areas, and be weather protected where possible. The Association for Pedestrian and Bicycle Professionals (APBP) provides standards for bike rack design, spacing, and placement. Local, state, and federal codes should be consulted for additional count requirements and installation regulations.

GUIDELINES

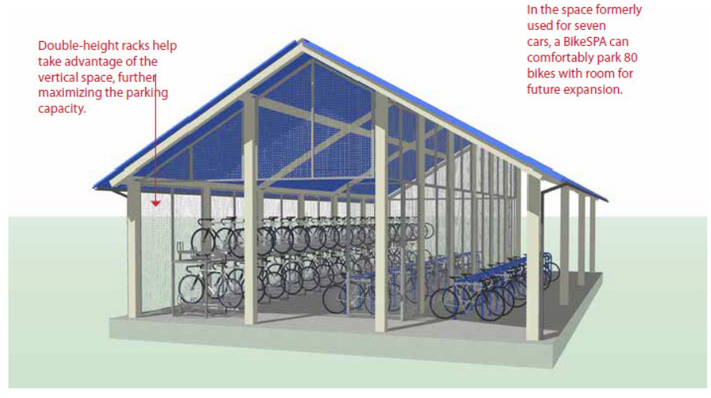
- In urban settings: 2' minimum from the curb face to avoid 'dooring.'
- As close to destinations as feasibly possible; 50' maximum distance from main building entrance.
- Minimum clear distance of 6' should be provided between the bicycle rack and a property line.
- Should be highly visible from adjacent bicycle routes and pedestrian traffic.
- Locate racks in areas that cyclists are most likely to travel.
- Provide racks that support the frame in at least two places such as a U-shape, arch, hoop, or other single form.
- Finish should be matte black or silver

TYPICAL DETAIL

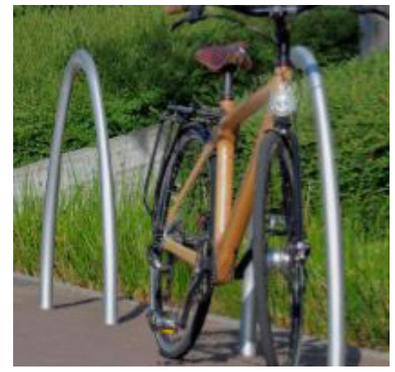


BIKE SPAS

A Secure Parking Area for bicycles, also known as a BikeSPA or Bike & Ride (when located at transit stations), is a semi-enclosed space that offers a higher level of security than ordinary bike racks. Accessible via key-card, combination locks, or keys, BikeSPAs provide high-capacity parking for 10 or more bicycles. Increased security measures create an additional transportation option for those whose biggest concern is theft and vulnerability.



BIKE RACK EXAMPLES



TimberForm - Cycloop Arch - 2178-84-E-C, Galvanized

SKTRO Trio Bike Rack

SEATING

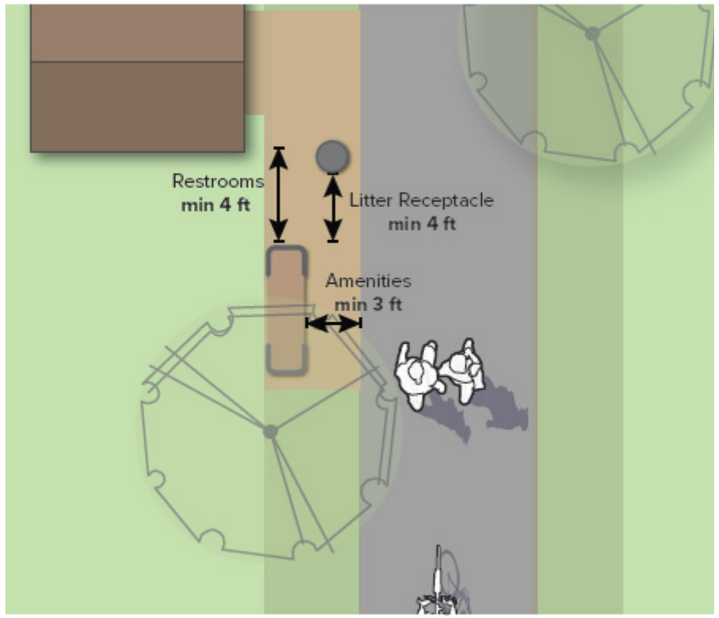
DESCRIPTION

Seating along trails provides a place for trail users to rest, congregate, contemplate, or people-watch along trails and throughout the trail system. Benches can be designed to create identity in a place or along the trail or be strictly utilitarian. Picnic tables provide places for trail users to congregate for meals or to just and relax.

GUIDELINES

- Locate benches at all gateways, trailheads, picnic areas and at regular intervals along the trail.
- Locate all seating (and other site furniture) a minimum of 3' from the edge of the trail.
- Swing benches should be located a minimum of 10' from the edge of the trail.
- Locate benches a minimum of 4' from restrooms, phone booths and drinking fountains and a minimum of 2' from trash receptacles, light poles and sign posts.
- Seating should be placed in shaded area, especially where there is minimal shade available.
- Drainage should slope away from the bench and the trail.

TYPICAL DETAIL



EXAMPLES

Victor Stanley recycled solid steel RB-28 bench, black, powder coat finish

Wabash Valley Swing Bench (use black powder coat finish)

TRASH RECEPTACLES

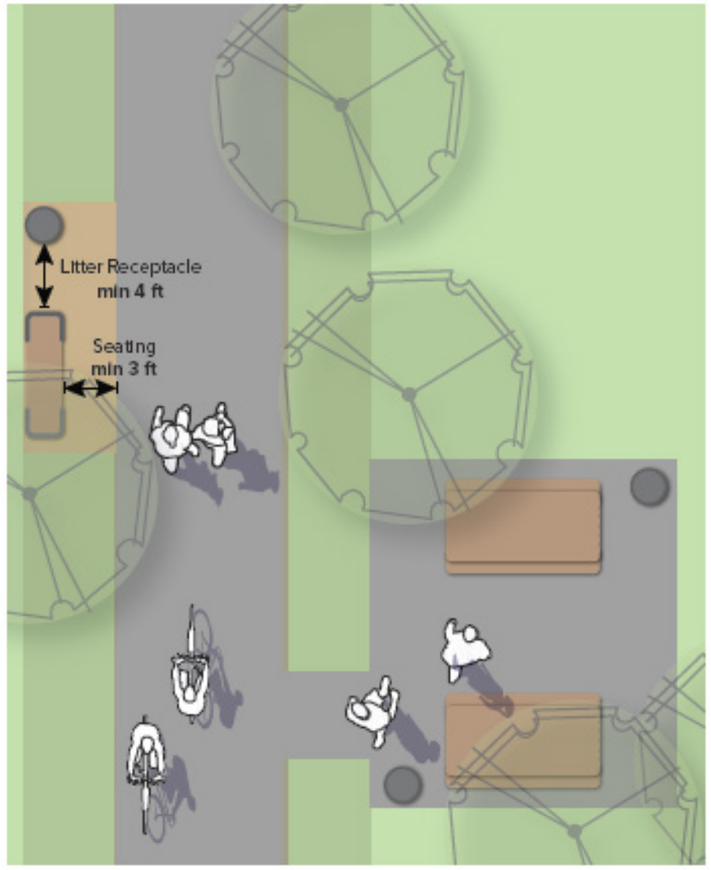
DESCRIPTION

Trash and recycle receptacles provide for proper maintenance and appearance of the trail system. Trash and recycle receptacles should be placed at gateways, rest stops or comfort stations, concession facilities, or area where users might stop to drink and eat.

GUIDELINES

- Locate receptacles at each trailhead and each seating area (1 per every 1 picnic table, 1 per every 2 benches).
- Locate receptacles a minimum of 4' from edge of trail.
- Placement of other receptacles will depend upon the location of concessions, facilities and areas of group activities.
- Receptacles should be selected using the following criteria:
  - Expected trash amount
  - Maintenance program requirements
  - Types of trail users
  - Durability

TYPICAL DETAIL



EXAMPLES

Victor Stanley

LIGHTING

DESCRIPTION

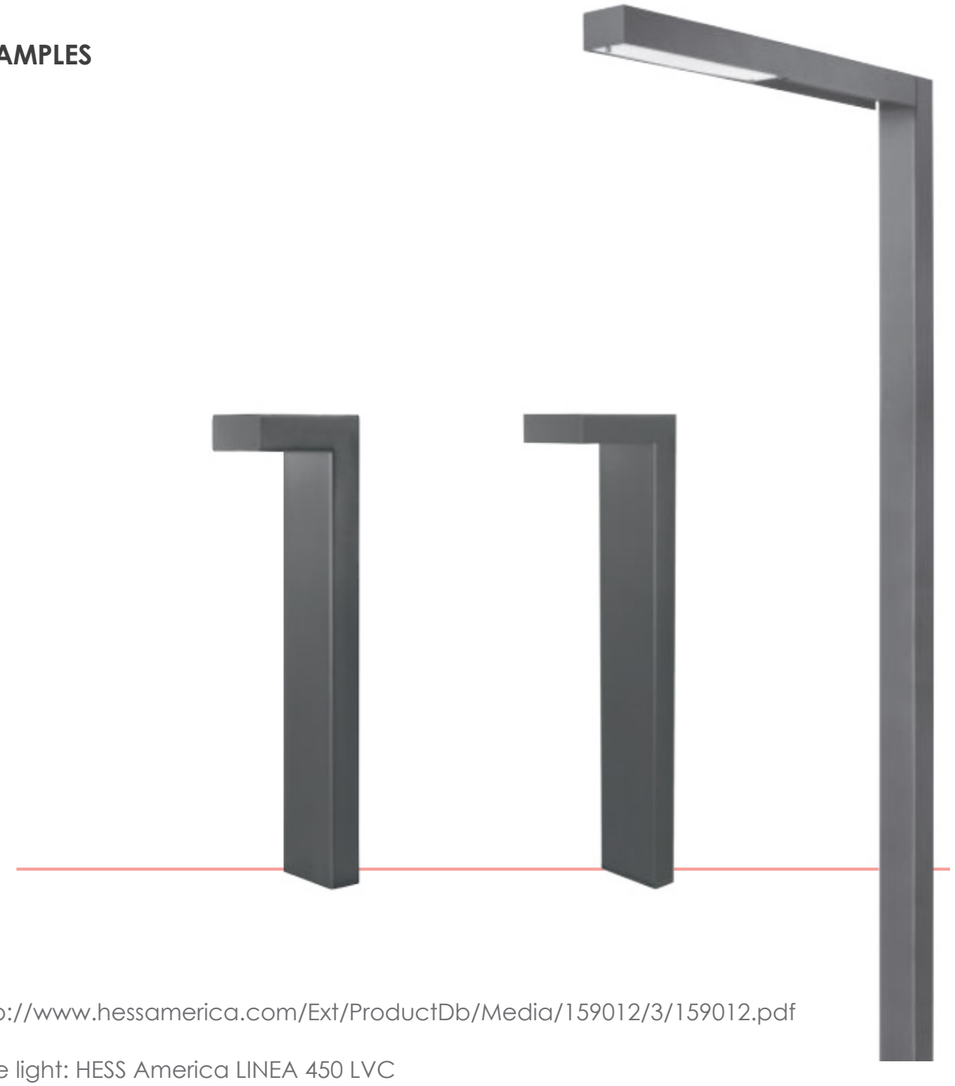
Lighting for trails should be analyzed per segment context with full consideration for safety needs, sensitive habitats, trail function, and maintenance commitments. In general, lighting is not appropriate for trails in remote areas, trails with low use, or where there is little to no development.

Street lighting can improve visibility of the crossing and trail users for motorists. Lighting may also be necessary for day-time use in trail tunnels and underpasses.

GUIDELINES

- Lighting should be at pedestrian scale. Placement, spacing, and other finish specifications depends on the fixture and optics.
- Place lighting at decision points and areas of interest, such as street crossings, intersections with other trails, trail spurs, and near commercial and mixed-use developments.
- Consider CPTED principles whenever lighting is introduced, such as color rendering, dimly lit "hiding places" and abstracted illumination.
- Lighting should avoid trees and be placed outside of canopy edge at all times.
- Solar powered lighting is available where utility connection is difficult or when alternative energy sources are desired. Daylight hours should be analyzed per season prior to specifying solar lighting.
- Avoid light fixtures at eye level that could impair visibility.
- Dependent upon trail hours, consider uses in urban and/or commercial land use areas.
- All fixtures should be LED 2700K color temperature when possible.

EXAMPLES



http://www.hessamerica.com/Ext/ProductDb/Media/159012/3/159012.pdf

Pole light: HESS America LINEA 450 LVC

Illuminating Bollard: HESS America LINEA LED