FOLLY ROAD: MULTI-USE PATH GUIDANCE

Background

The four jurisdictions that encompass Folly Road (i.e., Charleston County, City if Charleston, Town of Folly Beach, and Town of James Island) have regulations requiring construction of a 12-foot minimum multi-use path on all parcels with frontage along Folly Road or are in the process of updating their regulations to include such. This is a result of previous efforts, particularly the Rethink Folly Road Plan, which calls for a multi-use path on both sides of Folly Road to ensure the corridor is:

- A safe environment for pedestrians, bicyclists, and motorists;
- A major element that contributes to a connected built environment;
- Sustainably constructed and resilient;
- A valuable place where people choose to live, work, shop, and play; and
- Physically and visually cohesive regardless of changes in jurisdiction.

Image 1: Multi-use path along roadway

Multi-Use Path Design

A multi-use path is a two-way facility physically separated from motor vehicle traffic and used by bicyclists, pedestrians, and other non-motorized users. Depending on location and surface material, they may be referred to as shared use paths, shared use paved trails, greenways, or sidepaths. Multi-use paths are regularly constructed along roadways where traffic volumes, posted speed limits, parking turnover, and heavy vehicle traffic are too high for on-street bicycle facilities to be safe. When constructed along roadways, bicyclists and pedestrians often have increased interactions with motor vehicles at driveways and intersections. They are also built as off-road facilities and may be placed within a riparian buffer, utility easement, or abandoned railbed.

Design Considerations

The multi-use path must be a minimum of 12 feet. This aligns with the 2012 American Association of State Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*. The forthcoming 2021 Edition of the *Guide for the Development of Bicycle Facilities* is anticipated to recommend that multi-use paths be 14 feet wide.

Compliance

Paths must be designed according to state and national standards. This includes establishing a design speed and designing path geometry accordingly. Consult the latest edition of the *Guide for the Development of Bicycle Facilities* for guidance on geometry, clearances, traffic control, railings, drainage, and pavement design. Each jurisdiction has their own requirements for right-of-way buffer width and landscape design.

Materials

Surface materials impact the look, feel, cost, and maintenance of multi-use paths. Paved surfaces provide the highest level of comfort for people using wheeled devices. While concrete is more expensive than asphalt, it is low maintenance, long lasting, and is more resistant to upheaval and cracking, especially in flood prone areas.

NOTE: These design guidelines were produced by Toole Design Group; unless otherwise noted, all information, photos, and graphics are sourced to Toole Design Group.

Signage and Wayfinding

In addition to providing signage per the Manual on Uniform Traffic Control Devices (MUTCD) and *Guide for the Development of Bicycle Facilities*, signage can:

- Provide branding and identity
- Guide path users to commercial businesses
- Alert users to detours and closures
- Establish path etiquette

Design Standards

The following drawings provide guidance for the development of multi-use path facilities. All designs should be determined by a civil engineer and/or landscape architect with experience in pedestrian and bicycle facility design.

Typical Sections

The standard minimum width is 12 feet wide. Widths as narrow as 8 feet may be acceptable for short distances if physical constraint is demonstrated. Warning signs should be considered at these locations.

Figure 1: Folly Road multi-use path typical cross sections

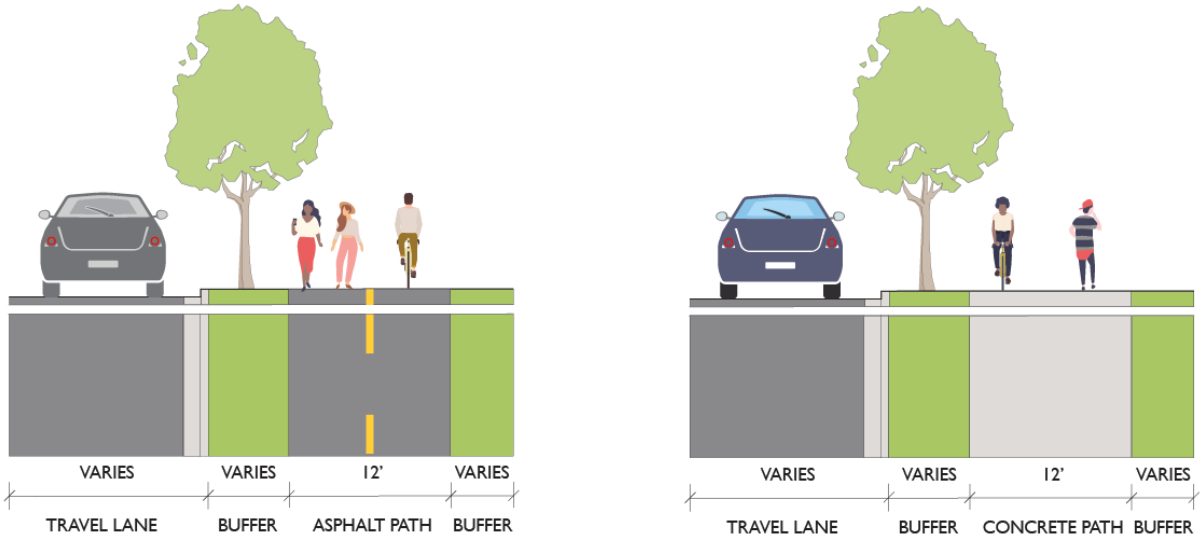


Figure 2: Asphalt multi-use path typical pavement section

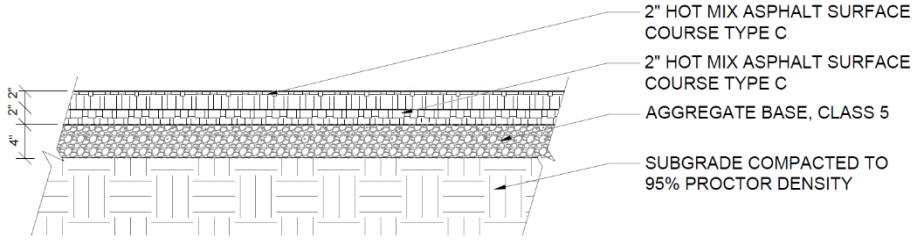
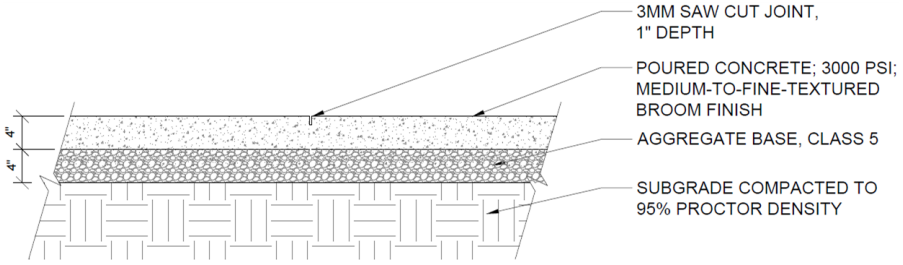


Figure 3: Concrete multi-use path typical pavement section



Constrained Situations

Alternatives to the typical sections may be warranted when a physical constraint is demonstrated and alternative designs are approved through all pertinent agencies. In constrained situations, designers must maintain an 8-foot width, proper separation from vehicular traffic, ADA accessibility, and adequate transitions. Alternatives to the 12-foot standard should only be used in short segments where 12 feet is not achievable. The graphics below show examples of multi-use path design in constrained situations.

Image 2: Multi-use path without back of curb buffer

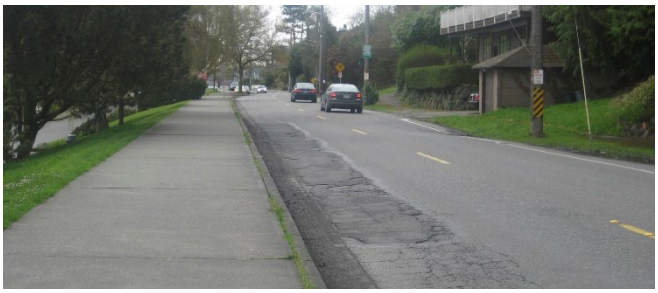
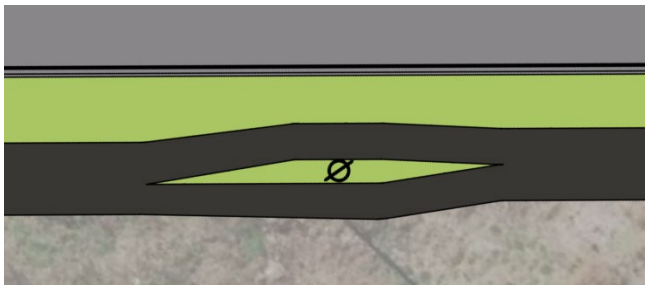


Figure 4: Multi-use path split around utility pole



Tapers

Adequate taper length is needed to ensure multi-use path users have enough time and space to safely adjust to shifts and changes in facility designs. Tapers are necessary when a multi-use path changes width, moves laterally, or transitions to a different type of facility (i.e., such as a sidewalk or on-street bike lane). Figure 5 shows the taper equation for bicycle facilities, including multi-use paths, which can be found in the latest edition of the AASHTO *Guide for the Development of Bicycle Facilities.*

Figure 5: Bicycle facility taper equation

Shifting Taper Equation		
$L = \frac{WS^2}{60}$		
Where:		
L	=	longitudinal lane shift (ft), minimum 20 ft
W	=	lateral width of offset (ft)
S	=	target bicyclist operating speed (mph)

Transitions

Implementation of the Folly Road multi-use path will be incremental as development occurs but will ultimately result in a continuous pedestrian and bicycle facility along the corridor. As such, it is vital for each segment of the multi-use path to include a logical beginning and end, and to avoid abruptly forcing path users to interact with vehicles. Transitions must include sufficient tapers, warning signs, and pavement markings.

Figure 6: Ramp from multi-use path to street-level bike lane

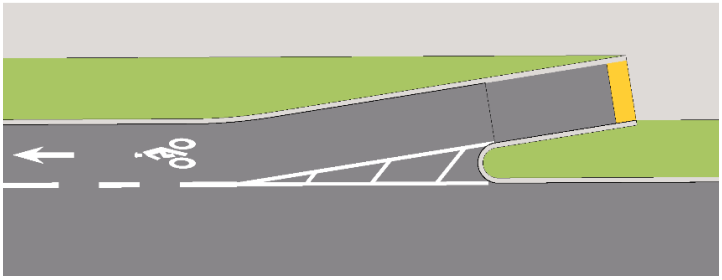


Figure 7: Multi-use path to sidewalk transition (TDG)

Intersections

Intersections and driveways increase the risk of conflicts between path users and vehicles. Conflicts can be reduced by minimizing the number of driveway and street crossings along a path and providing crossing treatments. Generally, corner lots require more space dedicated to multi-use path facilities as intersections require curb ramps, transitions to adjacent facilities, and signage. Signal poles for path users to request a signalized crossing are often necessary at intersections.

Intersection and mid-block crossing designs should:

- Delineate a preferred route for path users through the intersection;
- Give priority to path users through pavement markings and signage; and
- Encourage driver yielding behavior, where applicable.

Designers should consider:

- Colored and/or stamped pavement, as shown in Figure 8;
- An actual curb radii that is between 10’ to 25’;
- Raised crossings to promote driver yielding and increasing visibility of path users;
- Signal operation and phasing to manage conflicts between turning vehicles and bicyclists; and
- Removal of parking prior to intersection and mid-block crossings (generally within 20-40’ of crossing).

Figure 8: Multi-use path crossing with high visibility conflict markings

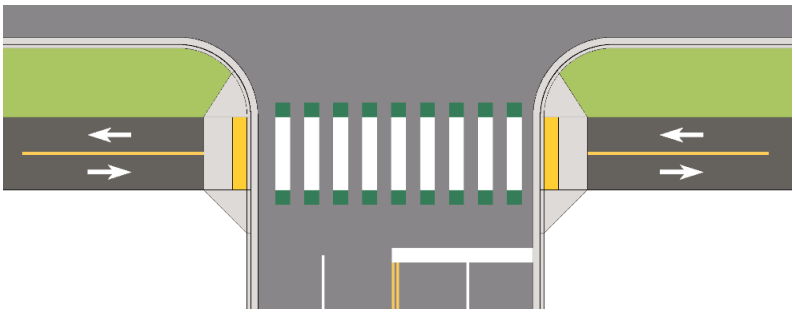


Image 3: Busy multi-use path crossing

Driveways

While private driveways for single-family residences may not require pavement markings, driveways with higher volumes (i.e., commercial and multi-family driveways) often warrant pavement markings and signage. Colored and/or textured surfaces can draw attention to conflict areas and complement other design details. Designers must ensure applications of color remain consistent with the latest interpretations of the MUTCD.

Figure 9: Driveway with green paint

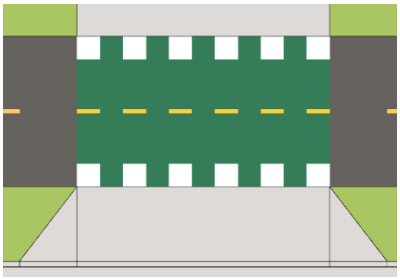


Figure 10: Driveway with red paint

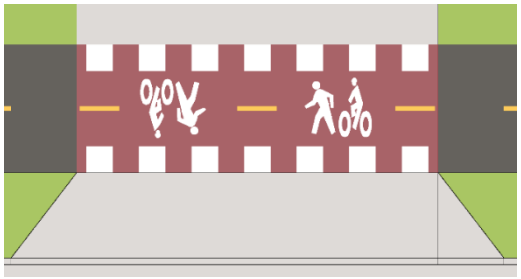


Image 4: Red driveway crossing

Curb Ramps

Multi-use paths require ADA accessible curb ramps, which should match path width. Signs can help keep vehicles from entering paths. If used, bollards or planted areas should be visible through lighting or reflective materials.

Image 5: Curb ramp with bollards

Image 6: Curb ramp with planted area