

GFCA Guidelines for Trail Design and Construction in Great Falls, VA

Great Falls Citizens Association (GFCA) supports the objective of planning and building a comprehensive trails system to connect the Great Falls community – allowing residents to transit and recreate from their neighborhoods to other points of interest in Great Falls – while maintaining and enhancing the historic, aesthetic, environmental and recreational characteristics of our community.

GFCA has developed these guidelines based on past experience with trails in Great Falls, including the Georgetown Pike Phase II path built in 2015/16. These guidelines are of two types:

- (1) broad policy guidelines, augmented by
- (2) detailed recommendations regarding trail design, construction and surfaces, called Trail Implementation Guidelines.

Included in this document as appendices are the GFCA Best Surfaces Policy for new Trails, comments from relevant Fairfax County Departments on these Guidelines, and railings specifications detail.

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Section 1 - Trail Policy Guidelines

1. Complete the Trails System

The Great Falls Trail System will be composed of a series of 'primary paths' and 'secondary trails'.

- Primary paths will serve as the backbone of the trails system. In general, these will be paths along the primary arteries of Georgetown Pike (from Seneca to Riverbend), Beach Mill (from Seneca to Riverbend), Utterback Store, Springvale, Walker, Riverbend (from Beach Mill to Georgetown Pike) and Arnon Chapel. Primary paths will be able to accommodate pedestrians, bicycles, strollers and other non-motorized wheeled equipment. Where feasible and appropriate the needs of the equestrian community should also be met – by alternatives such as parallel equestrian trails. Primary paths will also include those trails/sidewalks in our commercial areas (see Section 2.3) and those needed in the vicinity of our schools (see Section 2.2).
- Secondary trails will be all other trails along secondary roads, across properties, and through parks, and ideally will interconnect to the primary path system. They may serve a variety of uses, and may not all be multiuse paths. This may include pedestrian hiking trails, nature trails, mountain bike trails, horse trails, and connectors to the primary path system.

Prioritization and sequencing of new path/trail projects will consider how best to connect the most people with key destinations of interest, with a priority given toward building out the System rather than building unconnected trail segments.

The County Trail Map (part of the Comprehensive Plan) should be amended appropriately to reflect these guidelines where relevant (as in the case of trail surfaces). The location of a trail segment in the Trail Map on one side or the other of a road should not be taken as a given, but evaluated for optimal placement when a trail project is considered because the conditions affecting placement (such as developments and easements) may have changed since the Trail Map was initially devised. In addition, a "Special Planning District" for Great Falls may need to be pursued to facilitate implementation.

2. Maintain the Scenic, Historic and Aesthetic Character of Great Falls

In all the elements of trail design, location, construction and related trail infrastructure, consideration should be given to maintaining the scenic, historic and aesthetic nature of the community, with strong emphasis given to the preservation of mature trees and the protection of our natural environment and scenery.

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3. Limit Environmental Impact

Trail design and construction should avoid damaging resource protection areas or creating un-remediated water runoff or drainage issues affecting neighborhoods or public right of ways. Natural routing and design to take advantage of natural topology is preferred over excessive grading. Post construction landscaping should be a part of any trail project.

4. Ensure Trail Functionality and Sustainability

Path design and construction must be done in a fashion and with materials suited to the trail segment and surrounding topography to ensure:

- durability and longevity of the trail segment,
- suitability for intended use, and
- provision/ease of maintenance and long-term sustainability.

5. Enlist Ongoing Community Involvement

To encourage good design, strong community support, and plan alignment, directly-impacted property owners and neighborhoods should be made aware of specific trail plans and potential impacts, and their input should be solicited during both the design phase and then again prior to construction. A post-construction survey should be completed to gather lessons learned to inform improvement in future projects.

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Section 2 - Trail Implementation Guidelines – Primary Paths

For the Primary Path (backbone) system in Great Falls, the following are guidelines for design and construction – and are especially important along historic Georgetown Pike. These implementation guidelines are consistent with GFCA's Best Surface and Design Standards policies (attached).

1. Best Surface

To determine the best surface for a particular trail segment, consideration must be given to the segment's intended use (equestrian vs. pedestrian for example) so that the surface is suitable. Funding sources may put restrictions on allowed surfaces. A reliable party responsible for maintenance should be in place for any primary trail segment prior to construction to assure longevity of the primary trail system.

While natural surfaces like stone dust have been the preference for many years in Great Falls, experience shows this is often not the best surface, and can quickly lead to failure, trail disappearance, and even safety issues. For natural surface to be the appropriate surface for a particular trail segment, the following conditions must apply:

- 1) The natural surface is able to meet the usage needs of the segment. I.e. for primary paths – supporting walking, running, and the use of wheeled equipment like strollers, jogging strollers, family bikes, rollerblades, etc.
- 2) The natural surface is suitable to the topography: Trail bed is gradable (or naturally so already) no more than about 4 degrees of slope and is not subject to drainage or runoff from surrounding earth onto/across the trail. Trail surface must be graded so that rainfall drains off in sheets to either side without forming streams on the surface.
- 3) The natural surface is constructed based on specs to be established, which reflect a best-in-class proven design. Examples of best in class specifications include those referenced in the Indiana University study on trails and lessons learned from GTP Phase II. The surface should not contribute siltation into storm water runoff and avoid problems for culverts, runs, or ponds.
- 4) The natural surface will be maintained by a reliable organization (or individual) legally committed to maintenance of the trail segment. Natural surface trails require consistent and routine maintenance to be serviceable, safe, and lasting.

If a natural surface does not meet these conditions, or for any other reason is not feasible or not the best surface, other alternatives such as asphalt will be permitted. Any changes to either the wording or the interpretation of the county Comprehensive

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Plan (including the County Trail Map) regarding trails in Great Falls will be pursued to assure the proper implementation of the Best Surface Guidelines.

2. Sidewalks

County-standard cement sidewalks (and appropriate pedestrian crosswalks for safety) are encouraged along the main thoroughfares in the commercial districts of Great Falls, which are:

- Great Falls Village – Georgetown Pike bordered by Bucks Lane (northeast), the outer edge of the Safeway shopping center (southeast), the outer edge of the Post Office (southwest) and the outer edge of the Fire Station (northwest). Walker Road bordered by Columbine St (southwest), the outer edge of the Safeway shopping center (southeast), the outer edge of the Fire Station (northwest), and the outer edge of 711 Walker (northeast)
- Colvin Run – Colvin Run Rd bordered by the outer edge of 10202 Colvin Run (southwest), the outer edge of the Brightview facility (northwest), the outer edge of the Old Mill Market Square (northeast), and the outer edge of the Colvin Run Shopping Center (southeast). From Brightview to Rte 7 should be an asphalt path, connecting to the bus stop.
- Seneca Corner – along the boundaries of Seneca Square along Georgetown Pike and Seneca Rd, along Georgetown Pike from Rte 7 to the Dranesville Brethren Church driveway, and along Seneca from Rte 7 to the northern edge of the CVS center.

3. Paths to Schools – Special Considerations

County standards allow elementary school children to avoid busing within a mile of their school. Research cited by FCPS substantiates the benefits: better health, better energy, and better scholastic performance can come from walking or biking to school. County regulations require safe paths or trails for school children along arterial and collector roads to avoid busing, while other minor streets can be used without a separate path. The impacted roads in the vicinity of our elementary schools that require paths are portions of Utterback Store Rd, Georgetown Pike, and Walker Road within a mile of each school. To qualify, the paths must be safe and usable for school children, and provide appropriate crosswalks across major roads. FCPS supports a hard surface trail (cement or asphalt).

GFCA supports appropriate trails within at least a mile of our schools, connecting to similar trails to neighborhoods even farther away from where parents and children might choose to walk or bike to school.

Other arterials and collectors (away from our schools) are Seneca, Beach Mill, Riverbend, Springvale, Colvin Run, and Leigh Mill Roads where fewer bus stops may be possible if appropriate safe paths were provided.

Adopted 19 Sep 2017 by the GFCA Executive Board

Section 3 - Trail Implementation Guidelines – Secondary Paths

All trails that are not part of the Primary Path system will be considered Secondary Paths. These may or may not connect to the Primary Path system – but in general connection is encouraged to benefit residents' use and convenience. Secondary Paths may include trails built along minor roads, through neighborhoods, hiking trails, nature trails, horse trails, or any other use. They may be multi-use, or single-use. For Secondary Paths in Great Falls, the following are guidelines for design and construction. In addition, Secondary Paths should also comply with the requirements in Section 4.

1. Horse Trails – Special Considerations

[To be drafted in the future]

Section 4 - Trail Implementation Guidelines – All Paths/Trails

For all trails, GFCFA will establish specific guidelines for environmental and aesthetic dimensions of trail design that cover both Primary Trails and Secondary. Initial guidelines are:

1. **Rails should be aggressively avoided** and where unavoidable, should be minimally obtrusive. Where possible, such as side slopes, planting landscaping/vegetation instead of rails should be considered.

Where unavoidable rails should meet standards of design, profile, manufacture and installation to ensure they are compliant with pertinent regulations, sustainable and can accommodate topographical variations while avoiding short, irregular sections. Attached find both detailed design recommendations, and pictures depicting a best in class standard for adoption through the trail system.

See Appendix 3 for Standardized Railing Specifications to be used as the standard throughout Great Falls.

2. **Grading of the trail bed** prior to construction will ideally be done in such a way as to minimize the impact on local terrain and appearance while providing for a serviceable and lasting trail. Grading should always favor aesthetics and environmental preservation over ease of construction.
3. **Trees and local vegetation** should be respected and preserved as much as possible during trail design, including “meandering” around mature trees, and replanting appropriate local vegetation and ground cover following trail construction as part of the initial project. Post construction surface erosion protection such as sod/pinned jute mat should be used. Pre-construction clearing should always favor preserving trees and natural aesthetic vegetation over ease of construction. Especially where a trail is asphalt, ideally a border of grass on one or both sides can be provided to provide a cooler surface for dogs to walk on.
4. **Storm water contribution** should be minimized or eliminated through careful planning and best-in-class techniques.
5. **Width of trails** should be carefully calibrated to the segment uses, likely segment “traffic”, and natural aesthetics of the trail. Width should be sufficient to handle likely use and traffic, but not oversized.
6. **Community input** especially from impacted properties and neighborhoods should be sought during the project design and development, by (1) a meeting or meetings with impacted groups showing the preliminary design before it is locked down, soliciting comments to inform any needed changes, (2) the final design prior to construction, including construction plans and impacts.

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APPENDIX 1 – GFCA Trails “Best Surface” Policy

**GFCA Resolution on Trails Surfaces
(adopted Nov 17, 2015 by GFCA Executive Board)**

Whereas, in a 2014 survey the residents of Great Falls expressed their strong support for an interconnecting Trails System for recreational use which connects neighborhoods with the Village, schools, parks and other points of interest in Great Falls; and

Whereas, the Great Falls Citizens Association then established a Special Trails Committee to evaluate and pursue plans for such a Trails System in Great Falls, which Special Committee has included representation from many community groups including the Great Falls Trailblazers; and

Whereas, the Special Trails Committee has recommended that this Trails System be composed of a series of Primary Paths and Secondary Trails, where Primary Paths are envisioned as multiple use pathways serving as the backbone of the Trails System to which other secondary or overland trail would connect; and multiple use means use by pedestrians, bicycles, rollerblades, jogging strollers, and other non-motorized wheeled equipment as well as reflecting the needs of the equestrian community as much as possible; and

Whereas, the Special Trails Committee has studied and considered a wide range of trail surfaces for use in such a Trails System; and GFCA has in the past endorsed only stone dust trails throughout Great Falls, which policy may have contributed to both the current inadequate trail system that fails to meet the needs envisioned in the new Trails System; and

Whereas, our study of surfaces strongly suggests that for the Primary Trails, asphalt may be superior to stone dust in many situations due to its ADA compliance, cost, durability, range of use, low maintenance, resistance to grade and erosion, and availability of construction and maintenance funding from government and other sources; and finally

Whereas, a portion of our community is in favor of Stone Dust where it may be a practical option for Primary Paths; and there is a ‘pilot project’ currently underway evaluating optimal stone dust construction (the “Georgetown Pike Phase II” path) that may find that Stone Dust construction is practicable in certain applications where Trailblazers is able to fund and staff ongoing maintenance.

Therefore, be it resolved that GFCA hereby adopts a “whatever surface is best” philosophy relating to the construction of trails in Great Falls:

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1. GFCA supports the ability to use asphalt (or similar hard surfaces where advisable) for Primary Trails (as defined above and as determined by the Special Trails Committee) in Great Falls, and shall work with Fairfax County as needed to allow such construction.
2. GFCA maintains an open mind on the use of best-in-class stone dust construction for Primary Trail segments depending on the results of the Phase II path trial mentioned above, and where a stone dust surface can be shown to meet function, durability, maintenance and cost requirements, and where that surface will be properly maintained by a responsible party such as Trailblazers.
3. GFCA continues to support stone dust or other soft surfaces for Secondary Trails that do not require the load capacity, multi-use capability, or durability of Primary Trails, being mostly intended for pedestrian (e.g. hiking) or equestrian use. However, GFCA is not opposed to asphalt on Secondary Trails where its use is advantageous over stone dust.

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APPENDIX 2 – Comments from County Staff on Guidelines

GFCA solicited input and reactions from the county staff on these guidelines. Their comments are summarized in the following. Contributing to these comments were

- Brook Korashshadi – Section Chief, Transportation Design Division, FCDOT
 - Todd Minnix – Chief, Transportation Design Division, FCDOT
 - Doug Miller – Environmental Specialist, FCDOT
 - Karyn Moreland – Chief, Capital Projects Section, FCDOT
 - Bob Ayers – Project Manager, FCDOT
 - Andy Kolaitis – ROW Coordinator, FCDOT
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From: Ayers, Robert R. Robert.Ayers@fairfaxcounty.gov
Subject: FW: Comments on GFCFA design suggestions
Date: February 2, 2017 at 11:30 AM
To: Pifer Phil GFCFA (philip.pifer@gfca.org) philip.pifer@gfca.org



Phil,

We were requested to provide comments on the Great Falls Citizens Association draft Guidelines for Trail Design. I have discussed this with several staff members at length and following is our observations. Please remember that we are not a regulatory agency and cannot approve or disapprove the GFCFA draft but only offer comments. Any special design standards or planning guidelines must be approved by the Board of Supervisors.

The guidelines are not as simple as they seem at first glance. The vision put forth is reasonable as a concept for the area but there are potential problems with the details. From a practical standpoint, they are only suggestions. The only relevant design criteria are the VDOT Road and Bridge Standards, the County Public Facilities Manual, Americans with Disabilities Act and the Subdivision and Zoning ordinances all of which have been approved by legislative bodies. The Great Falls area is not a Board delineated area with special standards such as Reston, Burke Center and Tysons, etc., which have board approved standards for design, staff, and a designated source of funding. Additionally, funding sources used for projects also have limits, standards and stipulations as to how funds are used. Transportation enhancement grants, for example, do not allow for landscaping.

FCDOT is bound by design standard requirements of the Virginia Department of Transportation (VDOT), Fairfax County design standards and the Americans with Disabilities Act (ADA) in implementing trail projects. Furthermore, as stewards of the public's monies, we have to ensure that trails serve their intended purpose and provide for a useful life of years/decades, given the high cost of project development and construction, often in the amount of millions of dollars. Therefore although we appreciate the GFCFA and community's willingness to be flexible and accept that hard surfaces such as asphalt and concrete are necessary for trail construction, we must also communicate that we anticipate that FCDOT will no longer be able to construct stone-dust trails in the future due their limited usefulness and unrealistic maintenance requirements.

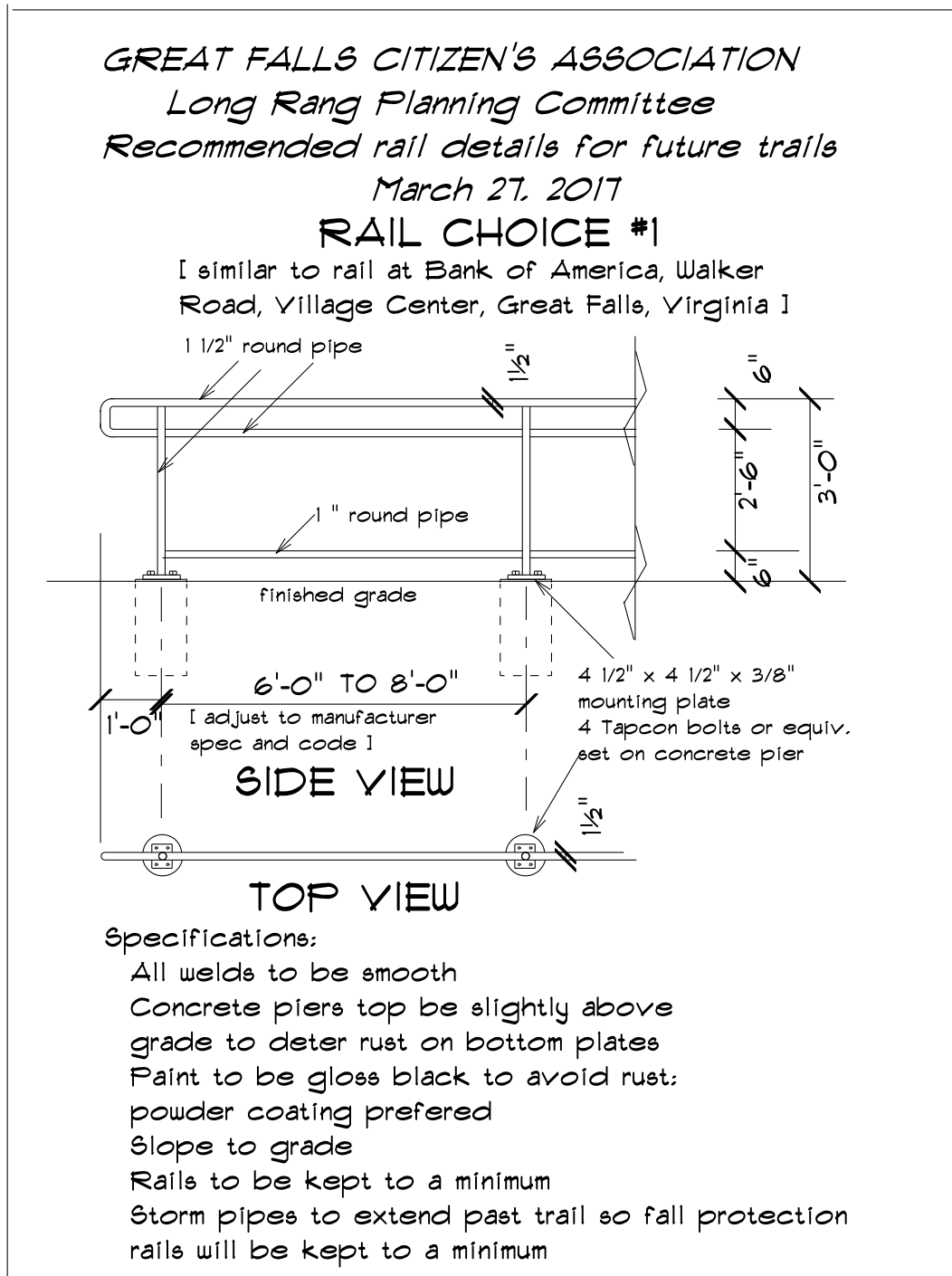
Fairfax County constructs pedestrian sidewalk/walkway and/or shared use path facilities that are part of a pedestrian transportation system along the public rights of way or adjacent easements. It does not build recreational trails, hiking trails or equestrian trails and does not maintain them. Such recreational facilities may be funded and constructed by a private developer on private land or by the Fairfax County Park Authority if it is located on Park property.

Any pedestrian walkway facility and/or Shared Use Path facility (for pedestrian and bike use) which is part of a public transportation network and is funded by public transportation funds and is to be maintained by County or VDOT shall meet the applicable state and federal design and environmental guidelines. This includes width, use of an ADA compliant surface material which is durable, economically feasible and easily maintained to ADA standards (such as concrete or asphalt), use of a standard barrier/and or handrail when required, and adhering to applicable local, state, and federal environmental and storm water management guidelines.

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APPENDIX 3 – Standardized Rail Specifications

The following rail design should be used throughout Great Falls.



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Here is a picture of the approved rail design, which for rust prevention should be set on a concrete pier and be powder coated (ideally):



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