

## Wilderness Park Trail Management Guidelines

2/18/16

The following is a list of simple guidelines for maintenance activities in Wilderness Parks, particularly for the maintenance of trails and crossings. These guidelines are based on the Wilderness Park Subarea Plan: Integration of Wilderness Park Studies with Park Management Recommendations, The National Park Service: North Country Trail Handbook, Rails-to-Trails Conservancy: Designing for User Type, National Recreational Trails Program: Trail Construction and Maintenance Notebook, and the long history of maintenance activities in Wilderness Park.

### National Standards:

There are widely varying standards for trails based primarily upon the level of use, the types of users, the general setting (remote vs urban) and the maintenance demands. There are no strict standards for width, but there are suggestions and best practices.

In general, Wilderness Park trails would be classified as follows according to the US Forest Service in their Trail Fundamentals documents. Trail Type is Terra, meaning they are on solid ground, although in some cases they could serve as Snow trails as well. The Trail Class would be best described as Class 4, which is considered Highly Developed. These trails are described as follows:

Tread is wide and relatively smooth, with few irregularities, made of native or imported materials, and may be hardened. Obstacles are infrequent and insubstantial and vegetation is cleared outside of trailway. Grades are usually 2 to 10% with short distances of up to 15%. Bridges and other crossings are frequently provided. Surface is compacted soil, wood chip, limestone or other material. Signage and amenities may be present.

The Managed Use of the Wilderness Park trails are all non-motorized uses with hikers and pedestrians confined generally to the east side of Salt Creek and Equestrian confined to the west side (Except for east of 14<sup>th</sup> Street where those uses are flipped). Although bicycle trails are located on shared pedestrian trails in some areas to the east of the creek, bicycles are primarily located on shared or individual trails west of Salt Creek. The Designed Use of trails is the Managed Use of the trail that requires the most demanding design, construction and maintenance parameters. In Wilderness Park, Designed Use should be Bicycle on the east side of Salt Creek, and Equestrian on the west side. The following Design Parameters are taken from the National Forest Service matrix.

### National Forest Service Trail Design Parameters (abbreviated):

Parameter	Hiker/Pedestrian	Bicycle	Equestrian
Tread Width	4 to 6 feet	4 to 7 feet	7 to 10 feet
Surface	Native with improved sections of imported material, protrusions uncommon, obstacles less than 8"	Native, graded, minor roughness, improved sections of imported materials, protrusions less than 3", obstacles less than 8"	Native, graded, minor roughness, improved sections of imported materials, protrusions less than 3", obstacles less than 3"
Grade	2 – 10% with short distances up to 15%	2 to 8% with short distances up to 10%	2 to 10% short distances of up to 15%
Cross Slope	3 to 7%	3 to 5%	0 to 5%
Clearing – Width	5 to 9 feet	7 to 10 feet	10 to 11 feet
- Height	8 to 10 feet	8 to 9 feet	10 to 12 feet

Maintenance needs must also be considered for trails. The Wilderness Park Subarea Plan recommends that trails and bridges be designed and maintained in a manner that allows small utility vehicles and rescue equipment. It is recommended that the US Forest Service parameters, and the Wilderness Park Subarea Plan maintenance recommendations, as well as the long history of maintenance experience in the park and the type of equipment used be considered in setting standards for trail parameters.

Recommended Wilderness Park Trail Design Parameters:

Parameter	
Tread Width	6 feet east, 8 feet west
Surface	Native material, minor roughness, some imported, protrusions less than 3", obstacles less than 3"
Grade	2 – 8%, 10% over short distances
Cross Slope	3 to 5%
Clearing – Width	10 feet
- Height	10 feet



Tread Width – the tread is the actual area that is walked upon. Tread Width recommendation should reflect the width to which any surfacing improvement (wood chips, limestone, turnpikes or others) should be made. This may not include an area that might be cleared of vegetation on either side through mowing.

Surface – recommend consideration of chipping cedars felled in the park and applying chips to low and chronically wet areas. May also need to consider turnpikes in some areas that are chronically wet.

Grade – will be difficult to maintain grade in such a flat area. Grade is preferable to perfectly flat in order to provide some drainage

Cross slope – desirable, when possible, for drainage.

Clearing Width - reflects the width from which tree trunks, large tree branches and other obstacles should be cleared. This should accommodate all maintenance and emergency equipment. It is not desirable to remove small branches, shrubs that yield to passage of equipment or other herbaceous vegetation from the entire zone. It is more visually pleasing to have an irregular and natural margin to the trail edges.

## Mowing

Mowing of trails and other park areas should be conducted annually at four points in time. These times will be dependent upon the ability to access park and trail areas which could be impacted by wet conditions and other factors.

Mowing will be conducted prior to:

Memorial Day

July 4<sup>th</sup>

Labor Day

End of Season

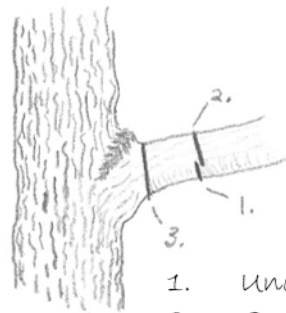
Mowing equipment currently used includes a tractor with a length of 12 feet and a pull-behind mower with a length of 11' and width of 94", for a total of 23 feet in length and about 8 feet in width. At one time smaller equipment was used including tractors that were 10 feet long and pull-behind mowers that were 9 – 10' long and about 80" wide, for a total of about 20 feet in length and 7 feet in width. Consideration should be given to acquiring equipment of a size similar to what was used in the past in order to maximize maneuverability and minimize path of disturbance.

## Tree Removal

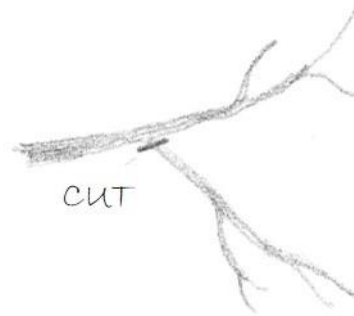
There are several instances in which trees may need to be removed: re-routing of unsafe trails, removal of invasive trees, removal of trees from areas designated as prairie or wetland sites, and removal of trees that threaten high value trees or vegetation. Parks and Recreation also has a responsibility to make sure visitors are reasonably safe and may need to remove dangerous trees that pose hazards to those visitors.

In all cases, the trees being removed should be confirmed for removal by qualified Park personnel prior to being removed. Park staff with knowledge of trees should check to make certain that the tree being removed is not a high value species and does indeed need to be removed to meet the goals of ecological and recreational use of the park. Park staff that remove the trees must be qualified for such work and have the proper safety and equipment training and tools. Temporary signage is recommended when trees are being trimmed or removed in order to alert users to activity in the area.

When a portion or branch of a tree is to be removed, the branch should be cut back to a logical fork of that branch or back to the trunk of the tree so as not to leave a protruding branch stub. If the removal of the branch threatens the health of a high value tree, consideration should be given to the necessity of that removal, treatment of the tree in order to prevent disease, or avoidance of the removal by re-routing the trail. If more than 50% of a tree is to be removed, consideration should be given to removing the entire tree.



1. Undercut - prevents damage
2. Second Cut - removes bulk
3. Trim as close to branch collar as possible



As branches and trees are removed, they should be disposed of in a way that their products of decomposition become part of the cycle of regeneration of the park. Branches should be stripped from trunks and dragged into the woods, trunk-end-first, and laid against the ground to facilitate decomposition. In some cases, a well-placed tree trunk on the edge of the trail can provide an opportunity for park visitors to observe the process of decomposition and the fungi that develop can be quite visually interesting. When a large number of trees are removed due to a project, such as bridge construction, consideration should be given to a pile burn, hauling some debris out of the park, chipping and spreading mulch, or distributing the debris over a broader area. Large piles of felled trees may not be attractive and can disturb some visitors who come for the experience of being in the woods.

### Trail Routing

Trail routing should be a process that is done infrequently and with cooperation between volunteers and Park personnel. The Parks and Recreation Department has a responsibility to make certain trail users are safe and the interests of the City are protected. To accomplish this, volunteers must inform Park personnel of their desire, or of the need, to reroute a trail and the two should work together to identify a safe and pleasant route. Likewise, Park personnel should make sure that volunteers are aware of the need to establish a new route and work with them to identify the best route. Because the Parks Department is not able to gather input from all users of the park, they will rely upon established groups for input in this endeavor.

In general, trails are currently established in the park and no new trails are planned at this time. However, as Nature works her magic, occasionally trails are washed out, or become unstable as Salt Creek meanders. Trails that are along creek banks that are currently stable, and where there is enough width for maintenance equipment to safely access the area, may remain along creek banks as long as it is determined there is low risk to users. Trails that are along banks that have shown signs of instability, are undermined, or have been washed out, will need to be relocated to at least 15 feet from the top of the bank as it exists. It is desirable to have some woody vegetation between the creek bank and the new alignment for stability. New routes will be selected so that they have minimal disturbance to the area, remove as few trees as possible, and create a pleasant path. When a route would impact the healthy growth of a high value tree consideration should be given to an alternative route. Again, any routes will be determined in cooperation with volunteers and use the tree removal policies described above if needed.



This trail should be re-routed

4 feet

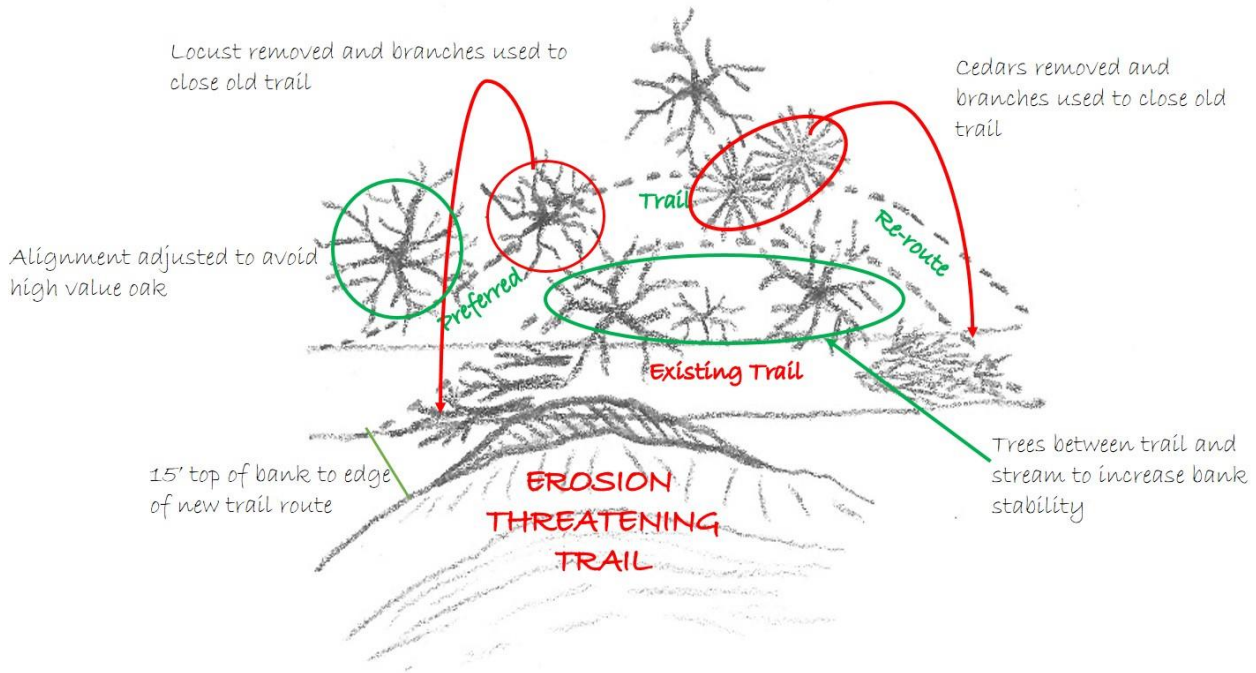
Too narrow for maintenance

Undercutting of bank



This trail is reasonably safe.  
Continue to monitor

Bank stable and vegetated, no undercutting  
Clear space sufficient for maintenance



When a trail is closed, or “plugged”, branches from trees should be dragged, trunk-end-first, into the old trail opening and layered one upon the other with the small branches facing outward. This creates a dense and difficult to penetrate obstacle, is difficult to pull out by the little branches sticking out, and is visually less disruptive and more easily overlooked by passersby. Laying logs crosswise in the opening is very obvious and logs are easily shoved out of the way. When possible, material that is not pleasant to grab hold of, such as cedar and black locust branches, makes an effective blockade. Once vegetation grows up along the old trail alignment there will be little impetus to try to re-establish it.

There are places in the park where informal trails have been established by users. While some of these may serve the purpose of allowing access to a viewpoint, shortcuts between loops of trails, and more challenging hiking routes, these trails should be discouraged. Trails that have not been vetted by Park personnel may not provide safe access for all users. They may also cause disturbance of habitat refuges for wildlife, erosion along stream banks, and destruction of vegetation and seedling trees. It is important that all trail routes are carefully considered before being established. The Wilderness Park Subarea Plan particularly recommends that the southern two thirds of the park include important wildlife habitat and plant communities and that new trails and other human disturbance should not be allowed in this area.

Resources:

Wilderness Park Subarea Plan: Integration of Wilderness Park Studies with Park Management Recommendations

<http://lincoln.ne.gov/city/plan/reports/subarea/wildpark.pdf>

The National Park Service: North Country Trail Handbook

<http://www.nps.gov/noco/learn/management/ncttrailconstructionmanual1.htm>

Rails-to-Trails Conservancy: Designing for User Type <http://www.railstotrails.org/build-trails/trail-building-toolbox/trail-building-and-design/designing-for-user-type/>

National Recreational Trails Program: Trail Construction and Maintenance Notebook

[http://www.fhwa.dot.gov/environment/recreational\\_trails/publications/fs\\_publications/00232839/toc.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/00232839/toc.cfm)

US Forest Service Trail Design Parameters

[http://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/National\\_Design\\_Parameters\\_10\\_16\\_2008.pdf](http://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/National_Design_Parameters_10_16_2008.pdf)