

TRAIL DESIGN CRITERIA

1. Alignment

The overall shape will depend upon many factors. Generally, it should be in the form of a loop or figure eight. Generally, the trail should be winding. Switchbacks should be avoided where practical. If they become necessary, a stone wall or row of shrubs should separate the segments above and below the switchback to prevent cross cutting and to protect travelers on the lower side of the curve from stones dislodged by travelers on the trail above.

The minimum sight distance for equestrian and bicycle trails should be fifty (50) feet.

2. Grade

Pedestrian

Sustained grades should not exceed 10%. Pitch grades of as much as 20% for distances of 200 feet or less are acceptable. Slopes greater than 20% can be exceeded for short distances (less than 25 feet) if "easing off" sections with a grade of 5% or less follow. When practical, steps may be used where there is no reasonable alternative.

Equestrian

Slopes should not exceed 8% on sustained grades. A maximum slope of 15% is permissible for very short distances.

Bicycles

Average grades should not exceed 5% with sustained grades of 8%. Maximum grades should never exceed 10% unless level resting areas can be provided.

3. Width and Height

Pedestrian

The minimum tread width shall be no less than 3 feet. Trail clearance height should be at least 8 feet.

Equestrian

Minimum widths are 8 feet, with a height clearance of at least 12 feet.

Bicycle

Minimum width should be 6 feet. A height clearance of 10 feet is required.

4. Side Slopes

Cut and fill slopes shall not exceed a 1½:1 ratio except where the cut is in stable material such as hard shale or rock. The slopes will be such as will be stable for the soil or soil material.

5. Clearing

Clearing shall be held to a minimum. However, it shall be extended to at least one foot beyond the limits of the cut and fill sections, or on each side of tread if no cut or fill is involved.

6. Drainage

Adequate surface drainage shall be provided by means of side ditches, diversions, culverts and grade dips. Closed drains shall be provided as needed for control of springs, seeps and high water tables. The tread shall have a cross slope of not less than one-half inch per foot of width in the direction of best drainage and erosion control. A raised or elevated trail or path may be required for wet sites that cannot be drained.

Bridges will be installed where required in accordance with a design prepared for the individual site and type of usage. Type of bridge material (such as timber or rock) should conform to the natural setting where possible. They will be designed for the maximum expected loading, but not less than 100 pounds per square foot.

7. Erosion Control

The plans shall include provisions for control of erosion on all disturbed areas and at all culverts and other drainage structures.

8. Surfacing

Trails and paths will be firm and stable enough to withstand the traffic and elements at the site. Unless trails are heavily used, no special surfacing other than native materials or vegetation is required.

Surfacing with gravel or other approved material:

- A. The durable materials shall be cinders, pit or creek-run gravel, washed gravel, crushed stone, slag or select, durable shale.
- B. Generally, the diameter of the durable aggregates shall not exceed one-half inch.
- C. The minimum thickness of the treatment should be two inches.
- D. Non-durable materials such as sawdust or bark may be used if the plan calls for periodic renewal of the surfacing.

9. Steps

Steps where needed will be designed and installed in accordance with the requirements of the site. Rise height of steps should be approximately 8 inches, but no greater than 12 inches.

Tread width should be approximately 12 inches, but not less than 8 inches. Stone should be used where possible.

10. Safety

Protection from slides and falling rock should be considered. Also, inspection of the trail for standing dead trees, limbs or other overhead hazards should be done.