



# Access Today

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## What is an Accessible Trail?

Previous accessibility standards such as the Uniform Federal Accessibility Standards (UFAS) and the Americans with Disabilities Act Accessibility Guidelines (ADAAG) address the built environment, "the bricks and mortar." These guidelines do not transfer well to the natural environment. The built environment is open to manipulation. For example, if there is a hill where someone wants to build the parking lot for a store, then a bulldozer is used to level the area. In contrast, the natural environment includes factors, such as the weather, that are out of human control. The natural environment is part of the experience people wish to enjoy on a trail.

An accessible trail is a trail that is accessible to and usable by people with disabilities. Accessible trails are identified as meeting minimum guidelines established by the U.S. Access Board. The Access Board is the Federal agency responsible for creating guidelines and standards for



*An accessible trail is a trail that is accessible to and usable by people with disabilities.*

accessible environments. After an Advanced Notice of Proposed Rulemaking that drew input across the spectrum of outdoor facilities a Regulatory Negotiations Committee was created by the Access Board to come to consensus on technical provisions for accessibility in outdoor areas. Currently, The Access Board is preparing a Notice of Proposed Rule based on the Regulatory Negotiation Committee's report. The proposed rule, once published, will be available for public comment, issued as a final rule and

then adopted by the Department of Justice. During the process of the guidelines being issued and adopted, facilities need to use the "best available information." For outdoor environments, the current best available information is the *Outdoor Developed Areas Final Report*. The remainder of this technical assistance paper will draw from the Regulatory Negotiation Committee's Final Report: Recommendations for Accessibility Guidelines- Outdoor Developed Areas (September 1999).

## Background

The minimum requirements found in the Outdoor Developed Areas Final Report are based on several principles. They include:

1. Protect resource and environment
2. Preserve experience
3. Provide for equality of opportunity
4. Maximize accessibility
5. Be reasonable
6. Address safety
7. Be clear, simple, and understandable
8. Provide guidance
9. Be enforceable and measurable
10. Be consistent with ADAAG (as much as possible)
11. Be based on independent use by persons with disabilities

One of the challenges the committee faced was building consensus on criteria for accessible trails. Trails provide unique outdoor experiences that at times may be difficult to make accessible while maintaining the natural elements. Accessibility requirements vary for each individual. For example, a person who uses a manual wheelchair with a strong upper body may be able to easily transverse slopes that a mother pushing a stroller could have difficulty maneuvering. In other words, useable does not necessarily indicate accessible.

The purpose of the trail should be kept in mind. For example, if the purpose of the trail is to provide a hiking challenge, mountain biking or horseback riding, then accessibility is not an issue. However, if the trail is simply for recreational pedestrian use, it needs to meet the minimum proposed guidelines. Shared use paths that allow bicycles, equestrians and other non-pedestrian modes of transportation have their own design and construction guidelines. The primary guide for bicycle and shared use facilities is from the American Association of State Highway and Transportation Officials (AASHTO). The AASHTO guide has different requirements than those for pedestrian use trails. A trail designed only to



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Department of Recreation and Park Administration and is funded in part by the U.S. Congress through the National Park Service. NCA focuses primarily on accessibility as it relates to parks, recreation, and tourism industries. Major objectives include: conducting research, providing technical assistance, developing resources and training materials, and conducting educational programs.

**Access Today** is a publication of the National Center on Accessibility. As a continuing service of technical assistance, the National Center on Accessibility has published a series of tech sheets on access to outdoor recreation environments. These tech sheets are intended to be used only as a resource. They are not intended to be used as a design guide. As a result of evolving accessibility guidelines, some technical specifications presented herein may change as new accessibility guidelines are released. This publication is available in alternate format upon request.

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## Accessible Routes, Outdoor Access Routes & Trails

Accessible routes, outdoor access routes and trails are all paths that have varying requirements based on their purpose, what they connect to and the environment they fall within. The following table identifies the technical provisions as they apply to each of the different paths.

	Access Route (ADAAG)	Outdoor Access Route	Trail
Surface	Stable, firm, Slip resistant	Firm and Stable	Firm and Stable <i>Exception*</i>
Max Running Slope	1:12	1:20 (for any distance) 1:12 (for max 50 ft) 1:10 (for max 30 ft)	1:20 (for any distance) 1:12 (for max 200 ft) 1:10 (for max 30 ft) 1:8 (for max 10 ft) <i>Exception 1:7 (for 5 ft max for open drainage structures)</i> <i>Exception*</i>
Max Cross Slope	1:50	1:33 <i>Exception 1:20 (for drainage purposes)</i>	1:20 <i>Exception 1:10 (at the bottom of an open drain where clear tread width is a min of 42 inches)</i>
Min Clear Tread Width	36 inches 32 inches (for no more than 24 inches)	36 inches <i>Exception 32 inches when * applies</i>	36 inches for any distance <i>Exception 32 inches when * applies.</i>
Edge Protection	Where provided, min of 2 inches.	Where provided, min of 3 inches.	Where provided, 3 inches min.
Tread Obstacles	(Changes in Level) 1/4 inch (no beveled edge) 1/4-1/2 inch must have a beveled edge with a max slope of 1:2. Over 1/2 inch=ramp.	1 inch high max <i>Exception 2 inches high max (where beveled with a slope no greater than 1:2 and where * applies.)</i>	2 inches high max <i>Exception 3 inches max (where running and cross slopes are 1:20 or less)</i> <i>Exception*</i>
Passing Space	Every 200 feet where clear tread width is less than 60 inches, a minimum 60 X 60 inch space, or a t-shaped intersection of two walks or corridors with arms and stem extending min of 48 inches.	Every 200 feet where clear tread width is less than 60 inches, a minimum 60 X 60 inch space, or a t-shaped intersection of two walking surfaces with arms and stem extending min of 48 inches. <i>Exception every 300 feet where * applies.</i>	Every 1000 feet where clear tread width is less than 60 inches, a 60 X 60 inch min passing space or a t-shaped intersection of two walking surfaces with arms and stem extending min of 48 inches. <i>Exception*</i>
Resting Intervals	(Landings) 60 inch min length, min width as wide as the ramp run leading to it, if change in direction occurs, must have 60 X 60 inch space	60 inches min length, width at least as wide as the widest portion of the trail segment leading to the resting interval and a max slope of 1:33 <i>Exception a max slope of 1:20 is allowed for drainage purposes.</i>	60 inches min length, width at least as wide as the widest portion of the trail segment leading to the resting interval and a maximum slope of 1:20. <i>Exception*</i>

\*(16.1.1 Conditions for Departure) The provision may not apply if it cannot be provided because compliance would cause substantial harm to cultural, historic, religious or significant natural features or characteristics; substantially alter the nature of the setting or purpose of the facility; require construction methods or materials that are prohibited by Federal, state or local regulations or statutes; or would not be feasible due to terrain or the prevailing construction practices.



## "Background"

*continued from page 2*

meet the proposed accessibility guidelines for trails may not be adequate, and possibly hazardous for bicyclists.

Similar to ADAAG, the proposed guidelines apply to newly constructed or altered trails. An alteration involves changing the trail from its original condition as opposed to maintenance, which does not trigger the requirements in the proposed guidelines. Maintenance to a trail returns the trail to its original condition. For example, changing the trail surface would be an alteration whereas filling in holes in the trail surface that have been caused by use, animals, weather or water would be considered maintenance.

Newly constructed trails are trails constructed in an area where previously no trail existed. When constructing a new trail, accessibility should be included in the design stages.

Begin with the attitude of making the entire trail accessible instead of what is the minimum required for compliance. Accessibility will be much easier to accomplish initially instead of applying the provisions as an afterthought.



*A clear tread width of a minimum 36 inches allows a wide enough area for a person using a wheelchair to comfortably stay on the trail.*

## Technical Provisions

The Outdoor Developed Areas Final Report addresses ten provisions of trail accessibility:

- Surface
- Clear Tread Width
- Openings
- Protruding Object
- Tread Obstacles
- Passing Space
- Slope
- Resting Intervals
- Edge Protection
- Signage

### Surface

An accessible trail includes a route from accessible parking to the trailhead. Once on the trailhead, the first issue addressed is surface. The trail surface must be firm and stable. Firmness refers to the

penetration of the surface that occurs when force is applied, for example when stepped on. Stability on the other hand, refers to the displacement of the surface when a turning motion is applied to the surface such as the twisting of a foot. In other words, firmness is a vertical measure of penetration and stability involves how much surface material shifts when rotated pressure is applied. Examples of firm and stable surfaces include concrete and asphalt. Soil stabilizers are sometimes used to make otherwise inaccessible surfaces more firm and/or stable. (See "Trail Surfaces: What Do I Need to Know?").

## Clear Tread Width

The next provision involves clear tread width, or the unobstructed width of the trail. The clear tread width of an accessible trail must be a minimum of 36 inches. This allows a wide enough area for a person using a wheelchair or scooter to comfortably stay on the firm and stable trail surface.

## Openings

The third guideline addresses openings in trail surfaces, such as spaces between the boards of a boardwalk. These spaces may not allow the passage of a sphere one-half inch in diameter. In addition, the long dimension must run perpendicular or diagonal to the main direction of travel preventing casters from wheelchairs, or tips of canes from being caught in the spaces.

## Protruding Objects

The fourth requirement addresses the needs of people who are visually impaired. Protruding objects are required to allow a minimum of 80 inches clear headroom space above the trail. In other words, any protruding objects, including vegetation, must be above a minimum of eighty inches

from the ground. This space prevents people who are blind from bumping their heads on tree branches or other objects hanging above the trail. Simple maintenance of trails is often the solution to preventing accessibility issues resulting from protruding objects.

## Tread Obstacles

The fifth aspect of the guidelines addresses tread obstacles. Examples of tread obstacles include tree roots, rocks, brush, downed trees or branches projecting from the trail. Tread obstacles cannot exceed a maximum height of two inches. An exception occurs if running and cross slopes are 1:20 or less, then the obstacle may be three inches in height.



*Examples of tread obstacles include tree roots, rocks, brush, downed trees or branches projecting from the trail.*



## Passing Space

The sixth technical provision, passing space, allows people who use wheelchairs to pass other hikers easily. Passing spaces need to be a minimum of 60 X 60 inches and occur at 1,000 feet intervals when the clear tread width of the trail is less than 60 inches. An alternative is a T-shaped space providing the arms and stem extend at least 48 inches beyond the intersection. The T-shape still needs to occur every 1,000 feet, whenever possible, the 60 X 60 space should be utilized to offer a more convenient way for people to pass one another.



*Resting intervals must be 60 inches minimum in length, and have a width as wide as the widest portion of the trail segment leading to the resting interval.*

## Resting Intervals

Provision eight addresses resting intervals. Resting intervals must be 60 inches minimum in length, and have a width as wide as the widest portion of the trail segment leading to the resting interval. The slope may not exceed 1:20 in any direction.



*An example of a resting area designed a few feet from the main traffic of the trail, providing an area for meditation and conversation.*

## Edge Protection

The ninth guideline regarding edge protection states edge protection is not necessarily required, however where it is provided, it must have a minimum height of 3 inches.



## Slope

The seventh provision addresses two slopes that are crucial elements to people with mobility impairments—running slope and cross slope. With the exception for drainage, the cross slope of an accessible trail should be less than 1:20. In addition, running slopes must comply with one or more of four provisions with no more than 30 percent of the total trail length exceeding 1:12.

The four provisions are as follows:

- Running slope cannot exceed 1:20 for any distance.
- If resting intervals are provided every 200 feet, the running slope may be a maximum of 1:12.
- If resting intervals are provided every 30 feet, the running slope may be a maximum of 1:10.
- If resting intervals are provided every 10 feet, the running slope may be a maximum of 1:8.

## Signage

Signage is the final aspect addressed in the Final Report. Accessible trails should include signage with information on the total distance of the accessible segment and the location of the first point of departure from the technical provisions. Although no specific symbol has been chosen to represent an accessible trail one of the four examples displayed here may be utilized.



*Examples of symbols that could be used to represent a trail that fully complies with Section 16.*

# Conditions for Departure

Due to the dynamic nature of the outdoor environment, the Outdoor Developed Areas Final Report identifies four conditions for departure or circumstances that allow deviation from the technical provisions. These conditions apply to each of the designated areas in the report. The application of one or more of the conditions is not an overall exemption of the entire trail. When the condition for departure no longer exists, the technical provisions re-apply. The exemption only applies to the respective technical provision, all other aspects should comply. For example, if an endangered plant species only allows 30 inches of clear tread width, the surface should still be firm and stable in addition to compliance with the remaining provisions other than clear tread width. After passing the plant the clear tread width should return to at least 36 inches. The conditions for departure are:

## Condition 1

**Where compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics.**

Examples of cultural features include such areas as archaeological sites, burial grounds or Indian tribal protected sites. Historic features include properties such as those listed or eligible for the National Register of Historic Places. Examples of religious features include Indian sacred sites and other properties designated or held sacred by an organized religious belief or church. Natural features include properties such as those protected by Federal or State laws and areas with threatened or endangered species.



Photo courtesy PEL Consulting.



Photo courtesy Karl Knapp.

## Condition 2

**Where compliance would substantially alter the nature of the setting or the purpose of the facility, or portion of the facility.** This condition addresses concerns relating to people who choose to recreate in an outdoor setting for a higher degree of challenge and risk. If the designed purpose of the trail were a cross-country training trail, accessibility would interfere with the intended experience.



### **Condition 3**

**Where compliance would require construction methods or materials that are prohibited by Federal, State or local regulations or statutes.** For example, mechanized equipment may be restricted in State designated wilderness areas, or the introduction of imported materials may be prohibited in order to maintain the natural ecosystem. Although State and local statutes are taken into consideration, new regulations may not be initiated to prevent compliance.



*Photo courtesy Peter Jensen.*

### **Condition 4**

**Where compliance would not be feasible due to terrain or the prevailing construction practices.** If typically a team of volunteers with hand tools does alterations, there is not an expectation of bringing a bulldozer in to establish a new trail. In addition, this condition applies to soils susceptible to erosion, interfering with the natural drainage, and other issues related to the natural terrain.



*Photo courtesy Peter Jensen.*

### Cross slopes

A 18%

B 16%

### Running slopes

A 23%

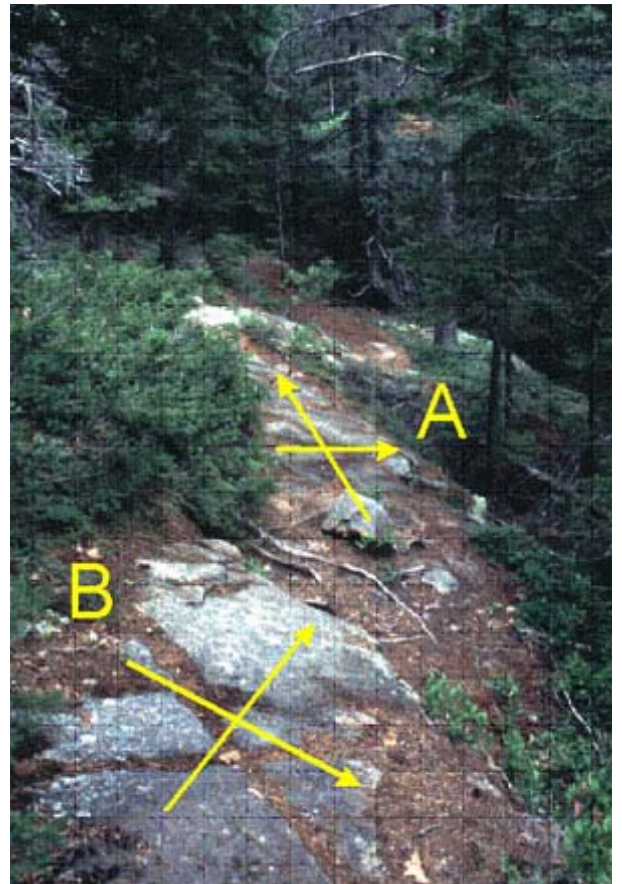
B 31%

### Combined slopes

A 41%

B 49%

Tread length: 38 ft



## Exceptions

In addition to the conditions for departure, the proposed guidelines provide general exceptions addressing the technical provisions for trail accessibility. The exceptions are based on the following conditions:

- The combination of running slope and cross slope exceeds 40 percent for over 20 feet.
- A trail obstacle 30 inches or more in height across the full tread width of the trail.
- The surface is neither firm nor stable for a distance of 45 feet or more.
- A clear width less than 12 inches for a distance of 20 feet or more.

When one or more of the conditions for departure are met and a departure from the technical provisions occurs for over 15 percent of the length of the trail, the provisions no longer apply after the first point of departure. In other words, if over 15 percent of the total trail length cannot be made accessible due to the conditions of departure, the trail only needs to be made accessible up to the first point of departure.

## Additional Exceptions

Additional exceptions address the provisions individually:

- A firm and stable surface is not required where at least one condition for departure applies.
- Where at least one of the four conditions occurs, clear tread width may be reduced to a minimum of thirty-two inches. Unless one of the four conditions prevents thirty-two inches of clear tread width then the provision does not apply.
- Elongated openings are permitted to be parallel to the dominant direction of travel where the opening is smaller than one quarter of an inch. Openings can go up to three quarters of an inch where one of more of the conditions for departure apply unless one or more of these conditions prevent an opening of three quarters of an inch to be allowed.
- Where at least one of the four conditions apply, vertical clearance may be reduced to less than eighty inches and a barrier to warn people who are blind or visually impaired.
- Tread obstacles may be three inches maximum where running slopes and cross slopes are a maximum of 1:20, unless one or more of the conditions for departure apply.
- Passing space may not be provided where at least one of the four conditions for departure exist preventing the passing space from being provided.
- For open drainage structures, a running slope of fourteen percent is permitted for a maximum of five feet with a maximum cross slope of 1:20. Cross slope is permitted to be 1:10 at the bottom of the open drain, where clear tread width is a minimum of forty-two inches unless at least one of the conditions for departure applies.
- Resting intervals are not required where one or more of the conditions apply.



*Tread obstacles may be three inches maximum where running slopes and cross slopes are a maximum of 1:20, unless one or more of the conditions for departure apply.*





## Resources

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## Why Accessibility?

There are more than 53 million Americans with disabilities in the United States. This translates to one in five individuals having some type of functional limitation that substantially limits one or more major life activities. Recreation

*The ultimate goal is to provide trail access for all to nature's wonders while protecting the environment through which these new trails pass.*

*-Peter Jensen, Trail Designer  
Open Space Management  
and Member of the Regulatory  
Negotiating Committee*

opportunities give people with disabilities and people without disabilities the opportunity to enjoy life, benefit from the experience and contribute to their own sense of health and wellness. Ensuring recreation opportunities are accessible, such as trails, can create more opportunities for people with disabilities to participate with their families and friends.

There is also a business aspect to providing programs and facilities that are accessible to people with disabilities.

Accessible facilities and programs can increase the number of prospective visitors, their family members and friends, thus increasing participation and added revenue.