17 Specialized Trails

Chapter

Specialized Trails

Figure 17-1. *Interpretive trails are specialized trails that provide educational information to trail users. All trail information should be provided in formats that are accessible to people with vision impairments.*

Many trails provide a unique experience for the user. Trails can provide an educational experience to learn about the natural environment or history and culture of the people who inhabited the area. Other trails are designed to lead the user to a particular destination to see unique features or spectacular views. In this section, the focus will be on designing these various types of trail experiences so that all may benefit from and enjoy the opportunities regardless of their abilities.

17.1 Viewpoints

Viewpoints and scenic overlooks should be designed so that everyone has the same opportunities for looking at the intended area. For example, if a high barrier made of a solid, opaque material, such as a stone wall, protects the viewpoint, people who use wheelchairs, adults of small stature, and children may be excluded from enjoying the view. In addition, the height of other types of barriers, such as safety railings, may prevent many users from enjoying the view.

To create a viewpoint that provides access to everyone, designers should adhere to the following recommendations:

- Depending on the location and purpose of the viewpoint, it should be located along a pathway that meets or exceeds the design recommendations for outdoor recreation access routes (ORARs), shared-use use paths, or recreation trails;

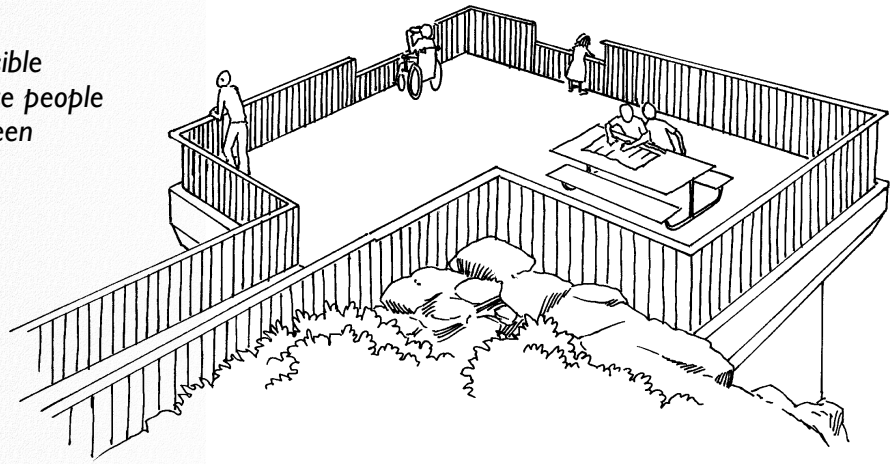
17 Specialized Trails

Chapter

Figure 17-2. *Scenic lookouts should provide a lowered viewing area for children, people who use wheelchairs, and people of short stature.*

- Each location that provides a viewing opportunity to one or more distinct points of interest should have at least one unrestricted viewing area;
- Unrestricted viewing should allow visibility for eye levels between 815 mm and 1.295 m (32 in and 51 in). Varying the heights of telescopes should provide opportunities for those of lower stature;
- The surface at the viewpoint should be firm, stable, and free of obstacles; and
- If turning is required, at least 1.525 m x 1.525 m (60 in x 60 in) should be provided to allow wheelchair users enough room to maneuver.

Figure 17-3.
GOOD DESIGN: Accessible viewpoints accommodate people whose eye level is between 815 mm and 1.295 m (32 in and 51 in).



The type of trail that is built leading to the viewpoint is dependent on where the viewpoint is located. For example, where a trail exists solely as a connection between a transportation stop, such as a parking lot and the viewpoint, the trail should be designed using the recommendations for outdoor recreation access routes (See Section 15.2). If the trail is a recreation opportunity itself, and the viewpoint is just one of the features included in the trail experience, then the trail leading to it should be designed according to the recommendations for shared-use paths or recreation trails.

17 Specialized Trails

Chapter

Figure 17-4. *Unimproved paths, such as the one pictured here, typically connect the off-beach facilities, such as parking, playgrounds, or concession stands, to the edge of the beach. Beach paths with improved access should be designed at regular intervals along a beach.*

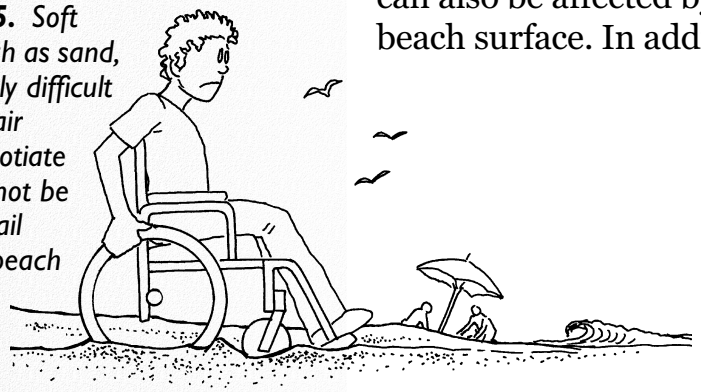


Figure 17-5. *Soft surfaces, such as sand, are extremely difficult for wheelchair users to negotiate and should not be used as a trail surface for beach access.*

17.2 Beach trails

Anyone who has traveled along a sandy beach knows how much energy and strength is required to travel on dry sand, loose gravel, or other soft surfaces. For people with mobility impairments, sand surfaces make both movement and balance almost impossible. Since the sand does not provide a firm surface, standard assistive devices will sink into the surface, requiring the user to spend more energy lifting and moving the device. Small-wheeled devices, such as wheelchairs, walkers, inline skates, skateboards, and strollers, will be virtually immovable on sand. Balance can also be affected by the instability of a beach surface. In addition, as the unstable surface changes in response to each user, the surface becomes deformed and uneven, which contributes to a further lack of stability and balance.

17.2.1 Beach access route specifications

In the past, beach paths were limited to pathways that connected the off-beach facilities, such as parking, playgrounds or concession stands, to the edge of the beach. Except where a wharf or dock facility was provided, access across the beach surface was typically left to the discretion of the user. For people with mobility impairments, this situation effectively eliminates access to the water or facilities that are located on the beach surface (e.g., beach furniture or volleyball courts). To increase beach access for people with mobility impairments, a beach access route should be provided. The beach access route should cross the surface of the beach and extend to the high tide level, mean river bed level, or the normal recreation pool level. One beach access route should be provided for every 0.8 linear kilometers (0.5 miles) of beach, and should be connected to an outdoor recreation route.

Beach access routes should be designed according to the following

17 Specialized Trails

Chapter

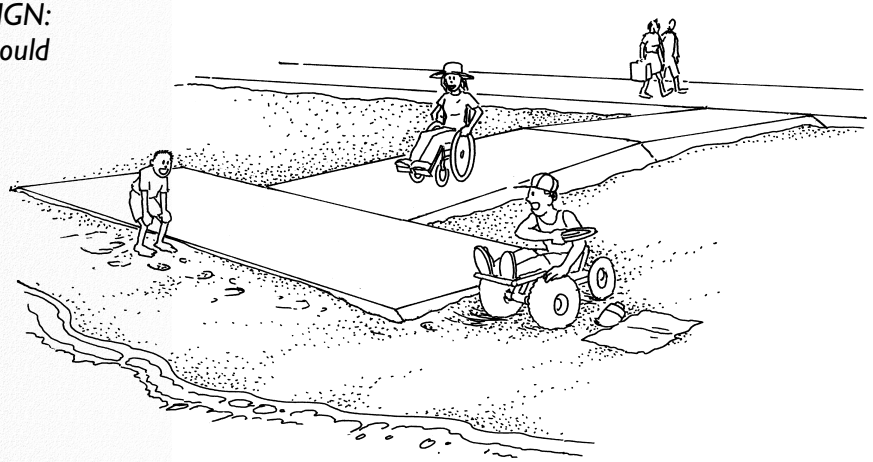


Figure 17-6. *GOOD DESIGN: Permanent beach paths should be firm and stable to allow people with mobility impairments to fully enjoy the beach environment.*

specifications, which are based on the report of the Regulatory Negotiation Committee on Outdoor Recreation Areas (U.S. Access Board, 1999):

- **Surface** — Firm and stable;
- **Clear tread width** — Minimum of 915 mm (36 in);
- **Openings** — Do not permit the passage of a 13 mm (0.5 in) diameter sphere. Elongated openings should be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel. If openings must run parallel to the path of travel, a 6.5 mm (0.25 in) sphere should not be able to pass through;
- **Protruding objects** — Objects between 685 mm (27 in) and 2030 mm (80 in) above the surface should not protrude into the route more than 100 mm (4 in);
- **Passing space** — 1.525 m x 1.525 m (60 in x 60 in) should be provided at maximum intervals of 61 m (200 ft) whenever the clear tread width is less than 1.525 m (60 in);
- **Maneuvering/Resting space** — 1.525 m x 1.525 m (60 in x 60 in) should be provided at the high tide level, mean river bed level, normal recreation water level, or end of the beach access route and should not overlap the beach access route;

CHAPTER 17 SPECIALIZED TRAILS

Case Study 17-1

Laquillo Beach Bathing Park, on Puerto Rico's northeast coast, has created a "Sea Without Barriers" through Transportation Enhancement funding. It is a recreational facility that provides access for wheelchair users. A system of ramps leading from the parking lot to a protected platform in the ocean enables a person in a wheelchair to enter into the water.

- **Running grade** — 5 percent or less for any distance; 8.33 percent for a maximum of 15.24 m (50 ft); and 10 percent for a maximum of 9.14 m (30 ft). If the running grade exceeds 5 percent, resting intervals should be provided before and after the maximum grade segment;
- **Cross slope** — Maximum of 3 percent to ensure proper drainage. A maximum of 5 percent may be permitted if needed to ensure proper drainage;
- **Changes in level** — Maximum height of 25 mm (1 in); and
- **Edge protection** — If the edge of the beach access route has a drop-off of 152 mm (6 in) or greater, an edge protection that is a minimum of 51 mm (2 in) in height should be provided. If the drop-off is greater than 25 mm (1 in) but less than 51 mm (6 in), the edge should be beveled.

17.2.2 Selecting surface materials

In tidal areas, the sand exposed during low tide is typically hard packed and firm. Making information about tide times widely available will help visitors make optimum use of the firm surface. In addition, a variety of surfaces can be used for beach access routes to provide pedestrian access. It is important that the surface be kept free of loose sand and drifts; otherwise the surface of the routes ceases to provide a means of access to the beach. The following surface materials could be considered for beach access paths:

- Asphalt, concrete, or soil stabilizers can be used to create a beach access route. Performing routine maintenance to ensure that the softer areas do not erode away from around the hardened surface will be necessary. It is recommended that the beveled edge of the path extend a minimum of 152 mm (6 in) below the soft surface of the beach; or

17 Specialized Trails

Chapter

Figure 17-7. *GOOD DESIGN: This temporary beach access route crosses the surface of the beach and extends to the high tide level.*

- Wood, concrete, or aggregates can be used to create a raised trail surface, boardwalk, or walkway. In designing a raised surface, the impact of the path on traffic patterns along the beach surface should also be considered.

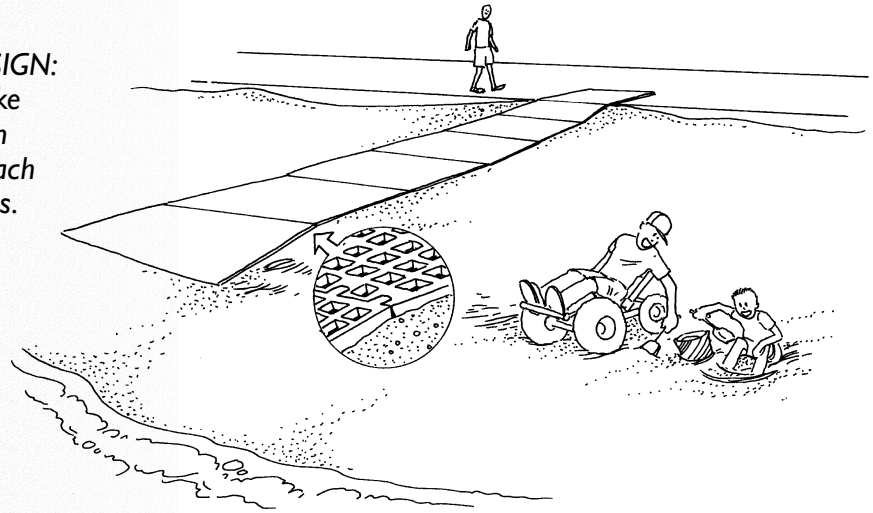


Figure 17-8. *GOOD DESIGN: Temporary beach paths, like this removable surface, can be laid out to enhance beach access for wheelchair users.*

17.2.3 Considering temporary paths

Rather than creating a permanent path, the installation of a temporary path may be preferred at some beaches. A variety of carpet or mat materials are commercially available and provide a firm, stable, and temporary surface in beach environments. If beach access is provided via a temporary path, it should be available whenever the beach is open. It is unacceptable for people to have to wait or to be denied access while a temporary path is installed after they arrive. When determining whether to rely on a temporary path, the following factors should be considered:

- Are staff readily available to install, remove, and ensure the integrity of the temporary path? The action of waves and shifting of the sand can quickly create an uneven surface.
- Does the opportunity or potential for property to be damaged or stolen exist in the particular location? Temporary surfaces laid out across

the sand are also prone to theft and vandalism.

- Do the beach conditions vary enough that the optimal path location may change on an hourly, daily, or seasonal basis? In areas with extreme tides, a permanent path may, at times, be submerged or end a long distance from the water's edge.
- Will seasonal variations in climate affect the integrity of the path from year to year? Winter ice levels are often much higher than summer water levels. Tremendous forces can be exerted as the ice shifts, breaks up, or moves away.
- Will travel patterns on the beach surface be interrupted or limited by a permanent path? Installation of a permanent beach access route will limit use of that section of beach for other recreational activities such as volleyball, football, or Frisbee.

17.2.4 Providing beach wheelchairs

Beach areas that provide recreational equipment, such as surfboards, may consider providing a beach wheelchair, in addition to providing a beach access route. Having a beach wheelchair available provides additional access to areas of the beach that are not connected with beach access routes; however, it does not satisfy the requirement to have beach access routes. There are several beach wheelchair models that are commercially available. Most feature oversized tires and some models allow for the user to independently propel the beach chair.

17.3 Trails in extreme climates

Trails in extreme climates can present additional challenges to some users with disabilities. Extreme climates can include places that receive heavy snow or rain, deserts with little available water, areas that experience very cold temperatures or high winds, and areas that experience very hot temperatures or high humidity. Some individuals with disabilities are

17 Specialized Trails

Chapter

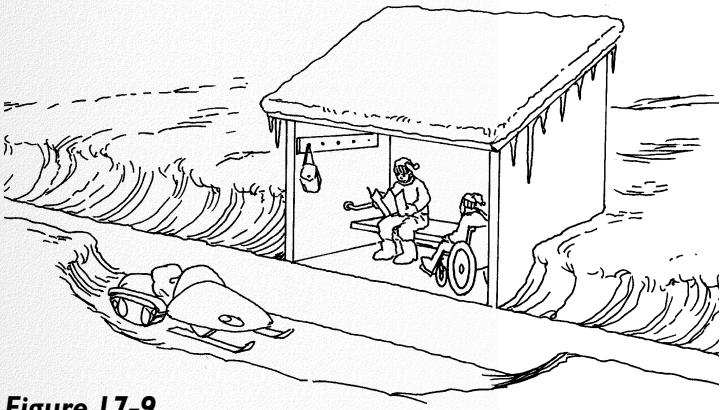


Figure 17-9.
Trails located in cold climates should provide sheltered rest areas to act as insulation and protection from the weather.

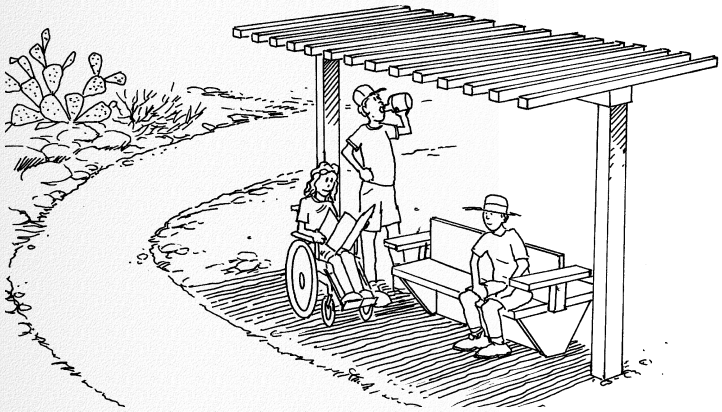


Figure 17-10.
In hot climates, frequent rest areas provide shaded relief for trail users.

particularly susceptible to thermal injuries, such as hypothermia and heat stroke, and face increased risks and discomfort.

Trails in areas with extreme climates should be designed to maximize the ability of users to adequately prepare for expected conditions and minimize the personal risks involved in trail use by providing:

- Information warning of conditions, such as extreme temperatures, severe wind or sun exposure, lack of drinking water, or sites where water is available;
- Shelters for shade and insulation from the weather;
- Amenities, such as drinking water, weather information, or emergency shelters that are accessible to people with disabilities; and
- Regular maintenance of facilities that provide services such as drinking water or shelter.

17.4 Interpretive trails

Interpretive trails are those that provide information about the environment to the user, usually through signage located along the trail or the availability of interpretive brochures. Incorporating opportunities for people to use multiple senses can enhance the interpretive trail experience for all users, regardless of abilities. Objects that can be examined or manipulated by the users should be durable enough to withstand handling by many people. Bronze castings of buildings or objects can provide information to the user about their shape, size, and location. Three-dimensional relief maps of a feature

17 Specialized Trails

Chapter

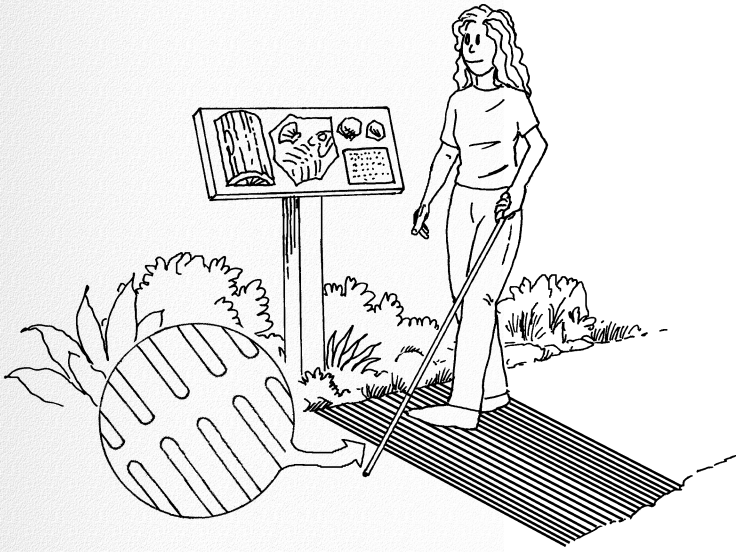


Figure 17-11. *In hot climates, frequent rest areas provide shaded relief for trail users.*

or the terrain are also useful in providing an overall description or directions within an area.

Information that is conveyed to trail users in written formats, such as signage or maps, should also be provided in alternative formats, such as audio, Braille, or large print. Audible formats benefit people of all ages and abilities who may not read text or Braille. On interpretive trails, wayfinding information can be used to identify points of interest for users with vision impairments. Key points of interest can be identified using a raised tactile surface, such as raised directional tiles (see Section 6.4). However, tactile surfaces and other wayfinding strategies on interpretive trails are only useful to people with vision impairments if they understand what the information means. For example, if raised directional tiles are used, information about the meaning of the change in surface should be provided to the user before embarking on the trail. This can be conveyed through recorded audio information, remote infrared audible signage, or Braille.