Signs and Trail Markers for Protected Lands:

RI Guidelines on Best Practices and Sources
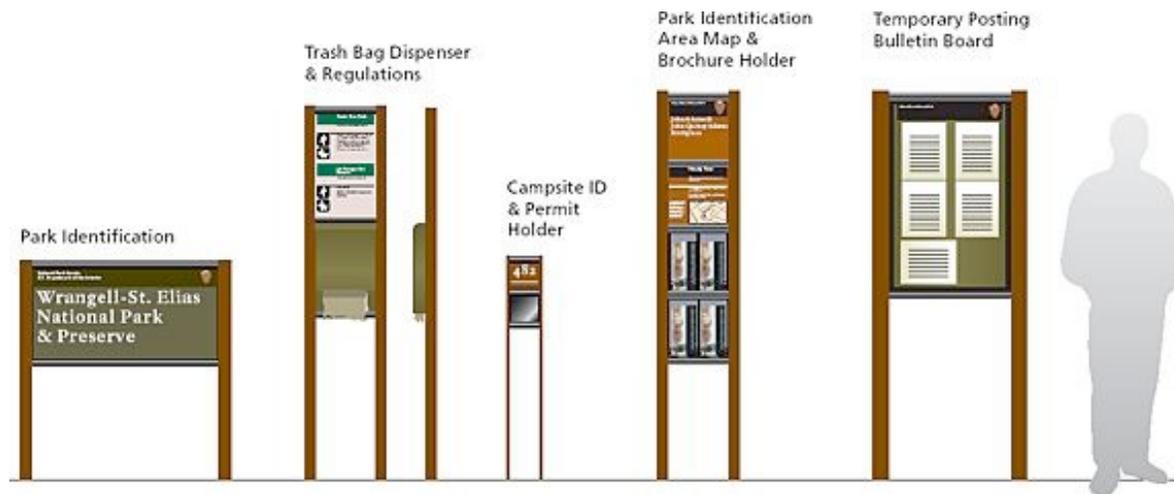
Image from National Park Service

"Signs are probably the quickest and easiest way to leave the trail user with a positive impression. If the signs are high quality, well maintained, and properly located, other trail problems are often over-looked. Consistent signs are the quickest way to increase the trail's identity and the public's support for the trail."

-National Park Service

March 2013

Contents

Purpose of the Signage Guidelines

Contents

These guidelines provide recommendations for the design and installation of signs to assist Rhode Island land trusts in protecting, maintaining and meeting public expectations for lands under their control.

Signs of various kinds have been posted in public access areas for years with little or no coordination amongst the entities. "Branding' is a term often used to help identify significant or special interests' areas, whether along motor routes, trails, or shorelines. A consistent look to signage, sometimes referred to as 'branding,' can help people more easily identify what a sign is about, and can also help to let people know that they are on a land trust property.

The Rhode Island Coastal Resource Management Council developed its Urban Coastal Greenway signage program in a similar manner to the San Francisco Bay Conservation and Development Commission's Shoreline Signs guide upon which this document was also based.

This guide provides a consistent and comprehensive approach to the design of land trust signage so that the public can more easily find and enjoy public access areas.

Good signage should be informative and attractive without diminishing the visual qualities of the land and surroundings that it's designed to protect and/or inform the viewer.

Although the public access design guidelines are advisory, they are intended to be used consistently in public access areas around land trust lands as readily recognizable signs that inform visitors that an area is open (or not) to the public.

These standards are designed to promote consistent, good-looking signage within a given property and across the properties of a given land trust. Thus, if you choose to diverge from these standards you should do so consistently. This helps to creating the branding mentioned earlier and also simply looks more professional.

How to use this document

Land trusts can use this guide to develop a comprehensive sign program for both public access areas as well as those areas not open to the public. The land trusts can use this guide to determine the types of signs needed to make public access areas easy to use and to guide in proper management of areas under their control.

Where to get the Signs

The signs shown in these guidelines can be fabricated by most sign manufacturers. Additional information on sign fabrication and specifications can be found within each section and on page 21. Four helpful fact sheets have been developed by the Southern Rhode Island Conservation District (http://sricd.org) that can be used to help simplify the process of deciding what kind of signage to use and how to obtain it locally.

Objective of a Good Public Access Signage Program

A good public access signage programs provides clear and understandable signs that are posted in public access areas that:

- Inform the public where public access areas are located and how to reach them, including parking;

- Describe what recreational opportunities are available at the site;

- Describe how the public can use the area, consistent with the rules governing appropriate behavior; and

- Provide the interpretation of natural, historic and cultural features in or near the public access areas.

A good signage program should include directional signs on the road system, trail head informational signs, and directional signs and/or blazing on the trail to reassure the travelers of their location. Signs should display a uniform color and detail that successfully "brand" the trail as part the land trust holdings. Along the trails it is desirable to include signage describing special site features, wildlife habitats, or rules and restrictions associated with management and proper use of the area.

Using a unified design in every application makes all access areas easily identifiable by the public, and will increase the public's recognition and appreciation of the sponsor organization. This approach will likely increase the number of people enjoying the trail, and consequently membership and financial support. Remember: select and install signs that are in scale with the environment.

Identification

Public Access Cube   Post-mounted Column-mounted   Public Access Small Plaque   Public Access Parking

Wayfinding
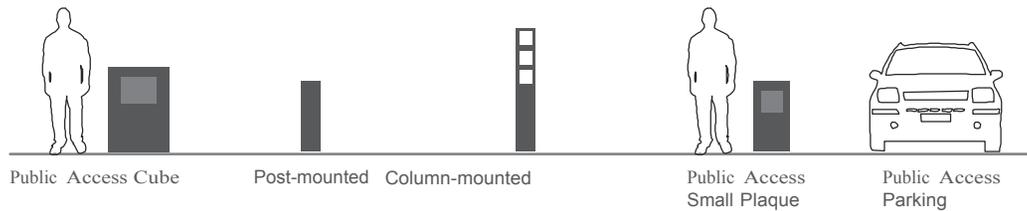
Pedestrian Wayfinding   Vehicular Wayfinding

Informational and Advisory

Advisory/Informational

Area Maps & interpretive
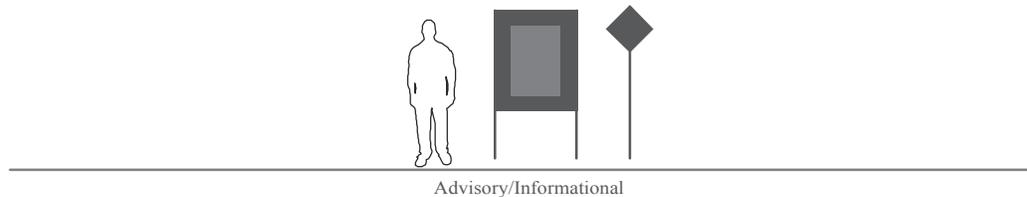
Area Maps   Tabletop Interpretive   Rall-mounted Interpretive   Freestanding Interpretive
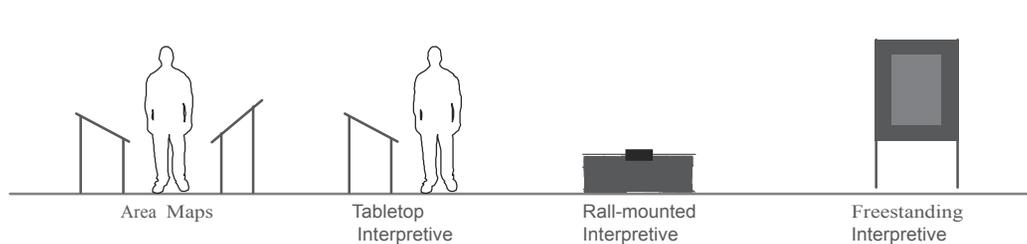
Signage Types

"Menu" of Signs

Several kinds of signs have been designed to work together in various combinations to communicate a unified public message on various sites and facilities. Within these guidelines is an inventory of sign types.

- Public Access and Identification Signs
- Wayfinding Signs
- Informational / Advisory Signs
- Area Maps and Interpretive Signs

Implementation guidelines and details for each type are shown here and on the pages that follow.

Creating New Sign Types

This guide attempts to provide formats for all anticipated public communication sign needs. But not every sign type or need is represented in this document as the list could be endless.

"Advisory" signage is becoming more and more important to public lands and its intent is to protect the public while using public lands. These signs should address those concerns such as health and welfare of the public, including, but not limited to injury from falling trees, contact with noxious and poisonous plants, insects and other animals.

Additionally, personal security of the individuals and their property should also be a concern, and it is recommended that visitors take care to lock their vehicles while walking the trails.

Image from NPS

Photo Courtesy of American Trails

Public Access Signs

Purpose

The public access sign can be the centerpiece of the land trust sign program. The design should emphasize bold lettering for quick reading, while offering flexibility for adding other necessary information. The public access sign is designed to work individually, or in conjunction with other land trust signs, such as a special project sign, nature trail signage and interpretive signs.

It is important that the public access sign appear the same way in every application so that public access areas are easily identifiable by members of the public. Install where needed to identify dedicated public access areas, parking spaces or other areas to motorists.

Identification Signs

Purpose

These signs identify public access areas by the land trust, including property boundary signs. Install at entrances to public access areas and at key places along trails and points of public access, such as public road rights-of-way and property boundaries. The identification sign may also be installed on posts with other existing or proposed signs, for example, those identifying project names or providing directions into a project.

When installing signs on property boundaries and other rights-of-ways; first be certain of the exact location of the line. Seek professional surveying advice if you have any doubts.

Parking signs may be 18" or 12" wide
and may be mounted on metal posts of
various heights, as appropriate.
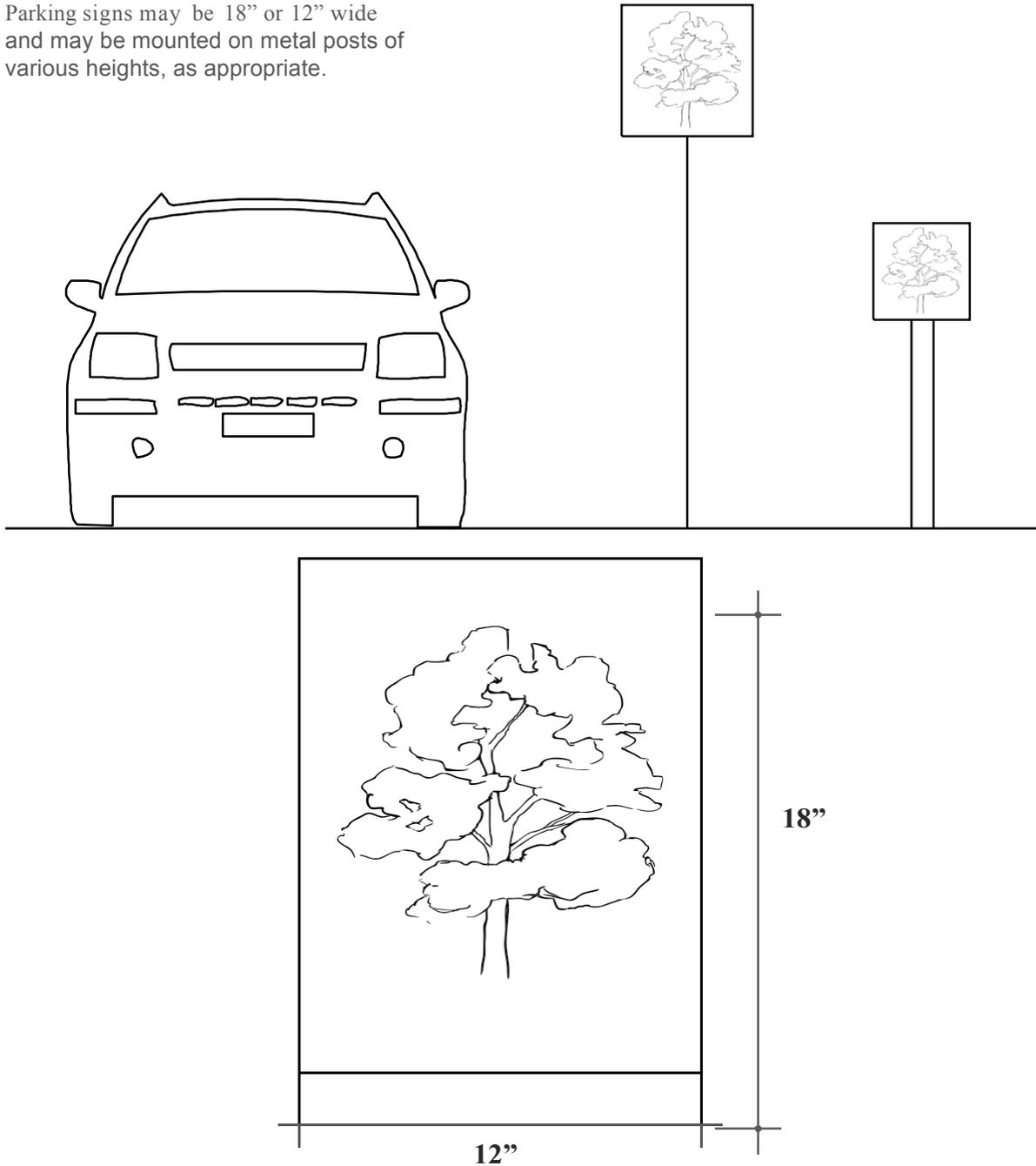
Description for Public Access / Identification Signs

All public access / Identification signs should be a square or rectangle sign panel with either profile or landscape orientation (common property boundary signs are often on a diagonal aspect).

Sign information/content for public access land can be either words (i.e. PARKING ONLY) or a standard symbol (i.e. 'P') either in a positive or negative display or both word and symbol.

Size Selection

It is important to select and install signs that are in scale with the environment.

Message context controls overall physical size of signs. Whenever practicable, the overall dimension of the sign plates should be in multiples of 6" (150mm). For public entrance signs for conventional roads in rural districts on major routes, the principal legend on guide signs shall be at least 6" (150 mm) in height. On low–volume roads and on urban streets with speeds of 25 mph or less (40 km/h), the principal legend shall be in letters at least 4" (100 mm) high.

There are typically three preferred sizes of the public access sign mounted to trees, posts or columns: 18", 12" and 3".

Sign Fabrication and Mounting

See pages 21 and 22 for information on sign specifications, materials, sign-making techniques, installation and maintenance.

Public Access signs may be made of any one of a variety of rigid, durable materials, including: silk-screened on aluminum, acrylic, or digitally printed.

Signs may be mounted on fences or walls or projected off surfaces (blade-mounted). The small sign may be mounted at the top of square posts. The Public Access Sign may share a post with other signs.

Note: Hand paint or hand lettered signs done by freehand are a lot less expensive than getting a commercial sign done, when a small property sign might be all that is needed – but it is recommended that the use of inexpensive templates or stencils might result in clearer and easier-to-read lettering. Templates and stencils in the appropriate fonts and recommended heights and can be found at local craft stores.

Image from NPS

Photo Courtesy of American Trails
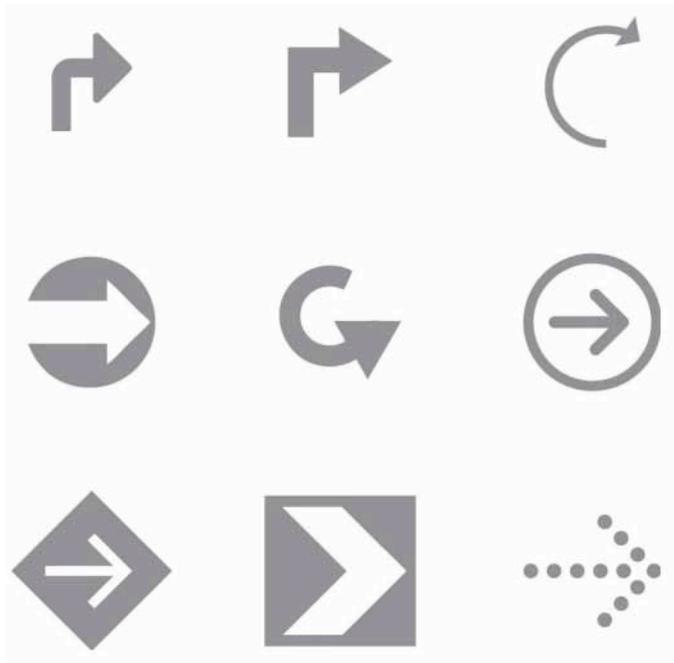
Image from NPS

Purpose

The Wayfinding Sign may be installed on trees, fences, posts or flexible delineator posts with other existing or proposed signs, for example, those identifying project names or providing directions into a project.

Description

Square or rectangular sign panels. Use standard symbols/ content / such as shown on this and following pages directional arrows if appropriate. This format may be used for signs directing to the public areas, trails, parking, restrooms or ancillary destinations.

Intersection Signs

Photo from MA DCR Trail Guidelines

Wayfinding signs should be placed at trail intersections. Depending on the setting, trail class signs should either be placed at most intersections or at main intersections, decision points, and spur junctions. Ideally, intersections signs should be mounted on 4"x4" wood posts. Post-type signs should be consistent within the site. In areas with vandalism or other issues, intersection signs may be mounted high on trees. Trails names and arrows may also be placed vertically on wood or 'Carsonite' type posts.

Intersection Wayfinding signs are the most important source of information for users and can serve to enhance safety, avoid bad user experiences, and increase use of under- used sections of the trail.

Intersection signs should include the following information:

- Signboard should be sized depending on the number of destinations or information to be conveyed;
- All text in 1" capitals;
- All text shall be routed with a ¼" veining bit with a minimum depth of 1/8" and a maximum depth of ¼";
- The closest significant destination (such as a view, summit, waterfalls, etc.) in each direction;
- The closest trailhead / parking area;
- References should indicate the next trail intersection/ major destination and be rounded to the nearest tenth of a mile;
- References shall be listed in the following order: straight, left, right;
- Total number of directional references should not exceed four;
- Sign should be affixed with lag bolts to a single 4"x4" pressure treated wood post planted 24-36" in the ground. Top of sign should be installed 1" down from top of 4"x4". Post could be the same color brown as sign;
- The top of the 4"x4" pressure treated post should be beveled 45 degrees to back with 1" flat on top (same side as sign);
- Top of signboard should be approximately 36" from the ground;
  The sign or post may also include markings for allowed or restricted uses / trail difficulty; and
- Intersection number placed in the lower left corner on sign.

In complex trail systems with numerous intersections, intersection numbering can be used and these numbers listed on an accompanying trail map. Numbers should not be used instead of directional signage, but can be used in conjunction and can be placed on the intersection wayfinding sign in the lower left corner.

Sign Materials

Wayfinding signs may be made of any one of a variety of rigid, durable materials, including: wood, silk-screened on aluminum, acrylic, or digitally printed.

Sign Fabrication & Mounting

See pages 21 and 22 for information on sign specifications, materials, sign-making techniques, installation and maintenance.

Photos Courtesy of
American Trails

Trail Blazes
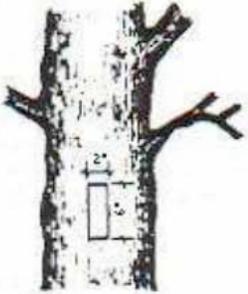
Trail blazes or reassurance markers are important trail elements that allow the user to stay on trails and provide a sense of reassurance. The recommended guidelines are consistent with best management practices for trail marking.

"Official trails are often blazed with vertical painted blazes. Those sites with multiple trail systems will use rectangles, circles, triangles, crosses, etc. in marking a particular trail. Plastic blazes should be avoided and replaced when trails are re- blazed, upgraded of maintained. Painted blazes are more vandal resistant, do less damage than nail-on blazes, and are easier to alter

Blazes are placed on trees, slightly above eye level so that hikers, bikers or riders can see them easily when traveling in either direction. Blazes should generally be within "line of sight," i.e. when standing at a blaze marker, the user should just about be able to see the next one. It is not desirable to have more than one blaze visible in either direction at any one time. One well-placed blaze is better than several that are poorly placed, and it is important to strike a balance between "over-blazing" and "under blazing." (An exception to the line-of-sight blazing policy are areas where blazing is not generally recommended.)

Remember that a well-worn trail, or even a trail defined by logs laid along both sides or by low growth along both sides, can be completely hidden by a few inches of snow, leaving winter trail users searching for the next blaze to see where the trail goes.

Standard blazes should be 2" x 6" vertical rectangles. If using other symbols on marking multiple trails on a site, try to match the over-all symbol dimensions to a similar size to ensure good visibility. Edges and corners should be crisp and sharp. Dripping paint, blotches and over-sized blazes should be avoided. On rough barked trees, the tree will first need to be smoothed using a paint scraper, wire brush, or drawk n i f e . A high quality, glossy, exterior acrylic paint such as Sherman Williams Metalatex or Nelson Boundary Paints should be used for long durability.

Vegetation should be pruned from in front of the blazes to ensure visibility in all seasons.

In non-forested areas, blazes may be placed on wooden or Carsonite-type posts 4 feet above the ground or stone cairns may be used to mark the trail. Blazes can be painted on exposed rock, but not be visible in the winter.

Colors and Shapes

The general recommended standard for blaze colors should be white for long-distance trails. Many trails within a property may have specific colors and shapes associated with their identity. It is acceptable to use different colors and shapes to denote specific trails or trail loops. For example the "Red Dot Trail" may be blazed in red circular blazes. Colors should be distinguishable from boundary paint colors. Particularly for longer distance trails that may go through a number of trails types, property ownership and across roads having a particular blazing identity can provide additional user reassurance. Also, in more complex trail systems, loops blazed in a specific color can guide users on a particular user experience. However, efforts should be made to avoid multiple colors and shapes of blazes on any particular segment of trail.

Directional change indicators

Double blazes should be used in places that require extra user alertness (e.g. important turns, junctions with other trails, and other confusing locations). They should be used sparingly so that they do not become meaningless or visually obtrusive. They are unnecessary at gradual turns and well- defined trail locations such as switchbacks.

A reassurance marker should be placed so that it can be seen from the direction indicator. Be sure to mark confusing areas to guide users coming from both (or all) directions.   Avoid arrows as blaze markings.

Mile Markers

Rail trails and long-distance trails may have mile markers posted at each mile from their origin. These can be placed on Carsonite or similar type posts, nailed to trees, or, on rail trails, they may be on granite markers or similar posts.

Photos Courtesy of American Trails

Purpose

Install where needed to communicate general information and behavioral rules and expectations. Informational and advisory signs may be installed on posts with other existing or proposed signs, for example, those providing directions to a specific area or site.

Consider installing signs where needed in the special areas of concern. Advisory signs should follow local and/or RI DEM regulations for proper placement and spacing of signs (i.e. No Hunting, Trespassing, etc.).

Description

Square sign panel with informational and regulatory content for Public Access that may include a land trust information line and standard symbol (s) as either positive or prohibitive behaviors (i.e. use a red circle and slash to show prohibited behaviors).

Trailhead Kiosks and/or Signs - Trailhead kiosk or signs may come in different forms depending on the setting, complexity, and information needs.

For more developed, popular trails or high profile trails, a designed and professionally fabricated trailhead sign is appropriate. This template includes:

- A signboard minimum of approximately 20" wide by 24" in height (5:6 portrait orientation);

SENSITIVE HABITAT
DO NOT
ENTER

NO DOGS
ALLOWED

NO
SWIMMING

BICYCLES
YIELD TO
PEDESTRIANS

BICYCLE
SPEED LIMIT DOGS ON LEA
**15MPH**
AT ALL TIME

Standard regulatory signs should be 12" wide and may be mounted on posts of various heights, as appropriate.

Small icon-only signs of 3" may be grouped together on posts.

54"   **3"**   **12"**   **60"**   **60"**
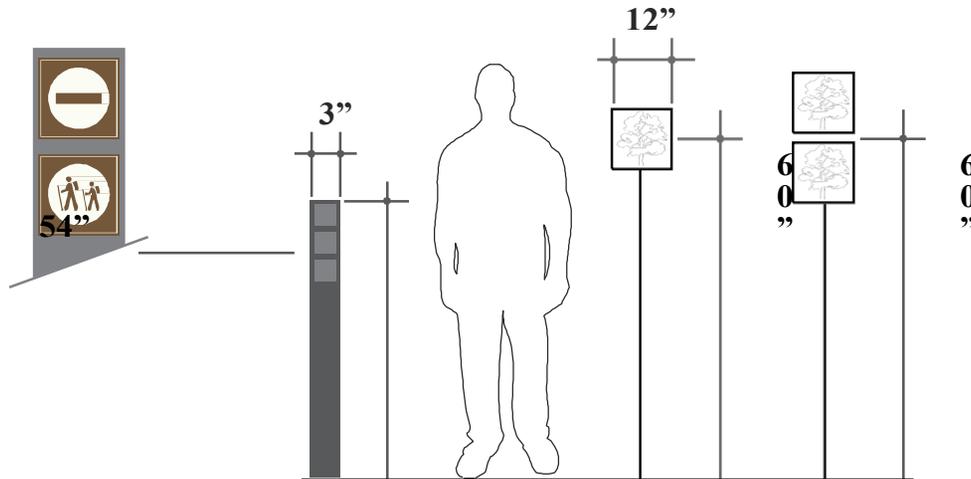
- Text message with trail description and perhaps additional information (including warnings of risks) placed in the upper left text box;
- A map showing features destinations, distances and connections in the upper right;
- Standard (and edited as needed) "Trail User Etiquette" is typically in a brown box in the lower left;
- 'Allowed and prohibited' use symbols are typically in the lower right corner;
- Allowed and prohibited use symbols may also be in 4" x 4" square signs mounted on the posts below the sign; and
- Site name is in capitals, left justified at the bottom with the logo (if available) in the lower right corner.

On roadsides or at lower profile trailheads, simpler routed wood signs are preferred. These should be:

- A signboard of approximately 21" wide by 15" in height (5:7 ratio landscape orientations);
- All text should be 1";
- All text shall be routed with a ¼" veining bit with a minimum depth of 1/8" and a maximum depth of ¼";
- Site name in caps at the bottom plus logo (if available) in the lower right corner;
- Information and symbols showing allowed and prohibited
- Trail uses and trail difficulties. This information may be in 4x4" or 3"x3" square signs mounted below the sign;
- Sign should be affixed with lag bolts to a single 4"x4" pressure treated wood post planted 24-36" in the ground;

- Top of sign should be installed 1" down from top of 4"x4";

- Post should be the same color brown as sign;

- The top of the 4"x4" pressure treated post should be

Photo Courtesy of American Trails

beveled 45 degrees to back with 1" flat on top (same side as sign); and

- Top of signboard should be approximately 36" from the ground.

Sign Materials

Signs may be made of any one of a variety of rigid, durable materials, including: acrylic, or digitally printed.

Sign Fabrication & Mounting

Public Access Information / Regulatory Signs may also be installed on posts with other existing or proposed signs, for example, those providing directions into a project. See pages 21 and 22 for information on sign specifications, materials, sign-making techniques,   installation and maintenance.

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Image Courtesy of NPS

Photo Courtesy of American Trails

Area Maps and Interpretive Signs

Description

Area maps help visitors find the way along the trails. Designed correctly, maps can enhance a public access visit by presenting geographic context. All developers and operators of publicly accessible properties are encouraged to create and install area maps.

Interpretive signage is permanently posted information about local history, natural features or events that enhance the visitor experience. Developers and operators of publicly accessible properties are encouraged to create and implement such displays, thereby adding value to public access visits.

Content guidelines

Area maps should be centered on the site where the map is located, should describe the immediate inland areas within an appropriate radius of the site, should include points of interest that fall within the area of the map and a small key map or overview of the larger area, highlighting the area shown on the main map. Maps should have a scale and provide information about walking times and distances to points of interest.

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Photo Courtesy of American Trails

The best interpretive displays are usually based on a series of simple, but inter-related topics or stories. Each individual display should focus on a single topic; a series of closely located displays can illuminate a various aspects of a subject. For example, two or three displays at a point or landing can present related single topics such as origin of the point's name, its commercial history and its military relevance.

Design guidelines

Area Maps should be simple, clear art style is best with bold lines for trails. Incorporate symbols or pictographs where possible to reinforce meaning.

Interpretive planners have found that illustrated panels, mounted on posts and parallel to a pedestrian path, is the most effective way of attracting usage. This "wayside" design approach is found in national parks and historic sites throughout the U.S. Panels are mounted low and at an angle to allow viewing while not disturbing the scenic view.

Typical colors schemes for Public Access Identification and Wayfinding Signs

USFS Brown / Cream / Brown   Brown / White / Brown

Typical Colors for Boundary and Advisory Signs

White / Green / White   Yellow / Black / Yellow

Photo Courtesy of Glocester Land Trust   Photo Courtesy of American Trails

Typography

All public access signs are recommended to be composed with the Frutiger, Helvetica, or Arial type font family. The font was selected for its boldness and clarity. Do not use any other type fonts on signs. Do not modify the proportions of Frutiger, Helvetica, or Arial type font.

Note: Hand paint or hand lettered signs done by freehand are a lot less expensive than getting a commercial sign done when a small property sign might be all that is needed - but it is recommended that the use of inexpensive templates or stencils might result in clearer and easier-to-read lettering. Templates and stencils in recommended fonts and heights can be bought at local craft stores.

Symbols

Non-verbal pictograms or symbols help reinforce written messages and can be recognized and understood quickly. This group of symbols has been selected to work well together and to compliment the Frutiger, Helvetica, or Arial type font.

Always print the 'strike-out' circle and slash in red. Do not modify the symbols in any way. Additional symbols may be used to address unique site conditions.

Sign colors

Generally, combination of colors should be chosen for visibility and consistency. It is recommended that following the standard colors of brown background (Lodge Brown) with white or yellow (Safety Yellow) lettering is consistent within most park facilities. Other color options are shown. The more visible colors of blue, red and yellow backgrounds are often used for advisory signage.

Sign Fabrication

The following are general trail sign standards:

• Signage within a single facility should be consistent with respect to colors, materials, and look. Ideally, adjacent facilities will also be consistent;

• the ideal trail signage standard should be brown signs with white or off-white lettering;

• for simple trailheads and intersection signage, routed wood signs are preferred as they are aesthetically appealing and resistant to damage and vandalism; and

• it is also acceptable that trail signage be vinyl lettering on composite (carbonite- type) sign boards.

Materials

Signs may be made of any one of a variety of rigid durable materials, including: wood, aluminum, acrylic, porcelain enamel or phenolic resin. Some manufacturers and companies offer reinforced 100% recycled plastic lumber as 4"x4" and 6"x6" posts in lengths up to 10 feet. These posts are reinforced with fiberglass for increased structural integrity and do not need painting or staining.

Specifications

Materials for sign faces should be of the highest quality available. Inks and screen paints should be fade resistant for a minimum of five (5) years. Select signs that will last for at least five years. Fasteners should be tamper-proof. Edges of sign panels should be "eased" to eliminate sharp edges.

Wooden posts should be pressure treated lumber that is rated at .60 for ground contact.
Steel posts should be hot-dipped galvanized to conform to American Society of Testing Materials (ASTM).

Graphics Application

Graphics may be applied to the panel in any number of recognized signage techniques including option like silk screened, digital printing, porcelain enamel image or phenolic resin image.

Sign Mounting

Signs should be firmly attached to the post, wall or with tamper-proof hardware. While it is preferred that signs be mounted with concealed fasteners, bolting through the sign face is acceptable. The size of visible bolt heads should be minimal. Do not bolt through lettering or symbols.

Aluminum Mounting Nails

The use of aluminum mounting nails prevents corrosion problems and rust marks that occur when steel nails are used. The use of aluminum nails is also safer when your sign is being nailed to a tree. If the tree is ever harvested, saws will cut through aluminum nails easily, preventing harm to both the saw blade and sawyer.

When nailing signs to trees, it is advisable to leave a 1" space between the sign and the tree to allow for tree growth while still securing the sign to the tree. Experience has shown that this technique will allow the sign mounting to last approximately five years before re-applying it.

Leave the nail a little short of "all the way in", about 1/2" left to go, so that a few of the rings on the nail shank still show. This leaves room for the tree to grow out, while preventing the sign from being pushed off the nail, and keeping the sign mounted longer.

Use large headed aluminum nails, for loggers' safety, that are long enough to leave at least ½" of the head exposed to accommodate the growing tree.

- Placing signs high enough on trees, or post in open areas, so that it is difficult for vandals to reach easily
- Placing signs close enough so that you can see a sign from the adjoining signs
- Place signs on live, long living, hardwood trees
- Place signs on obvious travel routes such as old roads crossing the boundary, ridge tops, creek bottoms
- Clean brush, limbs, etc. from around signs so that they can be seen easily

Sign Maintenance

Sign maintenance is critical to the operation of a quality trail system. Well-maintained signs that are repaired promptly convey a sense of pride and reduce further vandalism. Signs are a highly visible representation of the quality of the trail. Their maintenance or lack of maintenance leaves the visitor with a positive or negative impression about the trail.

Signs convey many kinds of information and it is critical that they be in good shape. Special attention should be given to those that are damaged from shooting and other factors, those that are faded or brittle from long exposure, and those that are simply missing.

All signs that are damaged or weathered no longer convey a good impression or serve the intended purpose, and should be repaired or replaced. Periodic painting and other maintenance is a necessity and will prolong the life of a sign.

Trail Ratings

Typical difficulty of trails at site (considering both terrain and skill needed to follow trails):

Trails are often rated as to difficulty. The following information is provided to be a guide as to what a hiker might expect for the difficulty of a particular trail. What one person thinks of as an "easy" hike, someone else might call "moderate"–so this legend explains what the difficulty ratings mean. These ratings were adapted from ones used on the Hikes News England's website (www.hikenewengland.com).

Note that these ratings pertain to "summer" hiking under normal conditions. Winter hikes are usually more difficult since walking on unpacked snow may be more difficult and there is a possibly dealing with ice – not to mention dealing with colder temperatures and shorter daylight hours. Spring hikes may be complicated by high water flows and difficult or impossible stream crossings. So the hike ratings reflect the difficulty level of the hike under normal "summer" conditions, regardless to the season that the actual hike occurred.

If a hiker is unsure whether or not of his/her fitness and comfort level fits in with these ratings, it's always best to start with an easier hike. Then depending on how that felt, the hiker can better judge what they are capable of for their next outing.

Easy – Trails are relatively smooth, mostly level and the route is quite obvious and marked with signage, such as trail blazes.

These trails can be a single point-to-point trail or an easy network of trails in an urban or suburban setting where help is always readily at hand. A map may be useful but is not necessary.

A hiker can certainly expect tree roots, small rocks, and things of that sort on any trail walk but for hikes rated as "easy" there won't be any big-step-up boulders to get past and no rock scrambling

If a hike is long and flat it will likely get a rating of "easy" in spite of its long distance. If a hike is short but has more than minimal elevation gain, it can also be rated as "easy" due to the overall levelness of the hike (i.e., if a big hill only accounts for a tenth of a mile of a hike, then it's probably something that people who are accustomed to walking on flat terrain can handle).

Easy hikes are generally suitable for anyone that enjoys walking. Just remember to choose an easy hike with a distance that can be comfortably handled.

Photo credit: Hike New England.com

Intermediate (Moderate) – Somewhat more strenuous trails or harder to follow trails. Trails are well-marked but following them requires a trail map and a trail map is readily available; preferably at the site.

This rating typically describes hikes that are not flat but whose elevation gain is less than 500 feet per mile, but may have sections that reach elevation gains of up to 800 feet per mile. For an easy/moderate hike, hikers should definitely be prepared for a lot of uphill walking. Overall the uphills will be on the gentle side but there may be some short steeper sections.

Difficult – Strenuous trails, trail systems that mostly involve multi-mile loops and trail systems where there is no available, functional trail map or the trails are not marked.

The hike is clearly difficult with steep inclines and often-rough footing and/or rock scrambles. The elevation gain is usually greater than 800 feet or more per mile (which is very steep).

A hike may also fall in the "difficult" level if the terrain is very challenging: such as for certain rock scrambles, boulder-strewn summits where there is no typical "trail" but rather a constant procession of boulders underfoot, talus slopes, etc. Even if a hike's average elevation gain is less than 800 feet per mile, a hike will be rated as "difficult" if there are significant sections of the route that gain more than 800 feet per mile.

Photo credit: Hike New England.com

Image courtesy of NPS

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a piece of legislation intended to reasonably accommodate millions of Americans with disabilities in terms of services, accessibility and employment. The ADA reaches into many areas of society, including accessibility standards for public places. The U.S. Access Board develops accessibility guidelines to comply with the ADA, and they have issued guidelines that pertain to newly constructed or altered outdoor trails as part of their work.

New Trails vs. existing Trails

There are separate standards when it comes to accessibility to trails depending on whether the trail is a new development or an existing trail that needs to be altered. Any new trail being developed is subject to accessibility standards set by the access board.

However, the many trails already available to the public in parks, along greenways or other outdoor recreational locations, may not need to change unless alterations to the trail's layout will be made. Any new portions of the existing trail are covered under the guidelines. According to the U.S. Access Board website, routine maintenance such as removal of debris or vegetation, filling ruts or other wise repairing the trail, erosion control or repairing structures along the trail are exempt from the ADA guidelines.

Technical Trail Requirements

When a trail is developed or is being modified to the extent at which the guidelines must be met, there are specific technical requirements for developers to follow. According to the specifications, the trail surface should be firm and stable. The tread width of the trail should be a minimum of 36 inches and clear. Openings in the surface of the trail should be no larger than a half-inch and any protruding objects should allow for a minimum of 80 inches of headroom. Tread obstacles should be no more than two inches in height. If the trail is less than 60 inches wide, there should be adequate passing room at least every 100 feet.

Compliance Exemptions

There are some exceptions to the guidelines that allow modifications to existing trails or new developments to stray from the rules. According to the U.S. Access Board website, if compliance with guidelines would "cause substantial harm to cultural, historic, religious, or significant natural features or characteristics" then the particular trail is exempt from the accessibility guidelines. Trails that pass through areas with endangered species habitats, for example, would be exempt. If construction would cause damage to a significant site along the trail is another reason for exemption. If the construction methods necessary to comply with the guidelines are not permitted in the area where the trail exists, it is also exempt. These circumstances are common in federally protected natural areas. If the construction necessary for compliance is not feasible in some way it may also qualify for exemption.

Qualifying Trails

While public trails exist in many forms, the accessibility guidelines may not apply to all of them. An ATV trail through a rugged wilderness area, for example, may not fall under the jurisdiction of the guidelines. Meanwhile, a city greenway would likely need to conform to the guidelines. The trail in question must have been designed with pedestrian use as one of the planned activities. Typically a trail that is subject to these guidelines must be connected to a designated trailhead or must be connected to another existing accessible trail.

Other Resources for information and guidance: http://www.access-board.gov/outdoor/draft-final.htm
http://www.americantrails.org/resources/accessible/index.html#1.

References and Resource Materials

<u>**Trail Design and Construction Resources**</u>

The USDA Forest Service *Trail Construction and Maintenance Notebook* at www.fhwa.dot.gov/Environment/fs-pubs/00232839/index.htm includes excellent descriptions and diagrams of various trail construction and maintenance techniques from tread maintenance to grade dips to switchbacks to bridges.

Appalachian Mountain Club's - *The Complete Guide to Trail Building and Maintenance* 3rd Edition by Carl Demrow and David Salis- bury. Includes the essentials for creating environmentally sound trails: how to plan, design, build, and maintain trails; protective gear; choice of tools for each job; building ski trails, bridges, stiles, and ladders. Updated techniques focus on stonework, drainage, and erosion control, and working with private landowners. Photos and illustrations are also included.

The Appalachian Trail Conservancy's - *A.T. Design, Construction, and Maintenance* by William Birchard, Jr., Robert D. Proudman, and the Regional Staff of the Appalachian Trail Conservancy. Second edition (2000) of the definitive handbook on trail work, from land- scape values to the nitty-gritty of moving rock.

Student Conservation Association's *Lightly on The Land*: The SCA Trail Building and Maintenance Manual, 2nd Edition by Bob Birkby. For half a century, the Student Conservation Association (SCA) has inspired people of all ages to take part in projects that enhance the environment. In settings from city parks to backcountry wilderness, the practical skills presented in its pioneering handbook have been tested in the field by volunteer and professional work crews throughout the nation. Their input enriches every chapter of the new edition with fresh approaches, new ideas, and modern applications of traditional skills.

Minnesota Department of Natural Resources' *Trail Planning, Design, and Development Guidelines* manual provides guidelines for developing sustainable motorized and non-motorized trails. Extensive attention is given to developing trails that are physically, eco- logically, and economically sustainable. A newly-developed trail classification system is described to enhance consistency in how dif- ferent types of trails are planned and designed. The principles of trail design emphasize the art of designing trails to make them more visually appealing and enjoyable. Technical design guidelines for various types of trails are also extensively considered in the manual. Click the link below to download--CAUTION! This is a very large file, almost 700 MB. www.bestpracticesmn.org/presentations/NRW9-20-06/FULL%20DOCUMENT%20no%20cover.pdf

USDA Forest Service *Accessibility Guidebook for Outdoor Recreation and Trails* is a guidebook intended to help users apply the Forest Service Outdoor Recreation Accessibility Guidelines and Forest Service Trail Accessibility Guidelines.
Available at: www.fs.fed.us/recreation/programs/accessibility/htmlpubs/htm06232801/index.htm

University of Minnesota *Trail Design for Small Properties* provides simple, inexpensive solutions for designing, building, and maintaining sustainable trials—trails for hiking, horseback riding, bicycling, cross-country skiing, snowmobiling, off-highway motorcycles (OHMs), and all-terrain vehicles (ATVs). www.extension.umn.edu/distribution/naturalresources/DD8425.html

University of Minnesota *Recreational Trail Design and Construction Manual* is a guide for private woodland owners, organizations, and businesses (including nature centers, youth groups, schools, conservation clubs, and resorts) that are interested in designing and constructing trails. It describes step-by-step construction methods ways to handle trail obstacles, and recommended standards for the most common types of trails. www.extension.umn.edu/distribution/naturalresources/DD6371.html