Who is Beneficial Designs?

Beneficial Designs works towards universal access through research, design, and education. We believe all individuals should have access to the physical, intellectual, and spiritual aspects of life. We seek to enhance the quality of life for people of all abilities, and work to achieve this aim by developing and marketing technology for daily living, vocational, and leisure activities.
Peter Axelson, Founder and Director of R&D, leads BD and spends much of his time traveling throughout the world to attend meetings and present our work. He's also a pilot and avid mono-skier.
Beneficial Design’s History with Outdoor Recreation

ADA Outdoor Recreation Committee
Workshop Agenda

Module 1: Why Accessibility and a Transition Plan are important and Where to Start

Module 2: Outdoor Recreation Trails and Access Routes

Module 3: Outdoor Constructed Features
Workshop Agenda

Module 4: The Developed Outdoor Recreation Assessment Process (DORAP)
Module 5: Implementing a Transition Plan and Summary
Module 6: DORAP Field Session
Why is Assessment of Outdoor Developed Areas Important?

Physical Access Barriers

Asset Management

It is the law...
Physical Access Barriers
Greatest Barrier to Outdoor Facility and Trail Use

Lack of knowledge about actual on-site conditions or about where access is possible
Universal Design

Philosophy that designs for all potential users to the greatest extent possible

Principles include:
- equitable use
- flexible use
- simple & intuitive use
- perceptible information
- tolerance for error
- low physical effort
- size and space for approach and use
Asset Management

Compile a complete inventory of Features, Barriers, and potential hazards

Create annual re-evaluation schedule

Manage End-of-Life and replacement schedules

Prioritize funding allocations
Legal Requirement of the ADA

Discrimination... includes a failure to design and construct facilities... that are readily accessible to and usable by individuals with disabilities.

Alterations... shall be made so as to ensure that, to the maximum extent feasible, ... are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.

(Subpart D of 28 CFR Part 36)
Why use the ABA (Title I) when governed by the ADA (Title II)

ADA - where no standards exist... general non-discrimination prohibition and program accessibility requirements for state and local governments apply (includes Trails, Picnic & Camping Elements, and Viewing Areas)

To determine appropriateness of using ABA Chapter 10 for access routes contact the DOJ – 800-514-0301
ADA Transition Plan is Required by Law

Title II of the ADA [28 CFR Section 35.150 (d)(1)] requires that state and local entities develop a Transition Plan.

(d) Transition plan. (1) ...a public entity that employs 50 or more persons shall develop... a transition plan ...
Requirements of The Transition Plan

(i) Identify physical obstacles…
(ii) Describe in detail the methods…
(iii) Specify the schedule… to achieve compliance…
(iv) Indicate the official responsible for implementation

Title II of the ADA [28 CFR Section 35.150 (d)(3)]
Where to begin?

Appoint an ADA Coordinator
Certification process available through Great Plains ADA Center & University of Missouri – School of Health Professions
www.adacoordinator.org

Establish ADA Grievance Policy

Generate Public Participation in Methods and Process

Perform a Self Evaluation
Perform the Self Evaluation

Priority elements first
• Primary Features
• Highly Used
• Accessory Facilities
What criteria do I use to evaluate my Outdoor Recreation Areas?

- Architectural Barriers Act, Chapter 10 (Federal only)
- Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG)
- Forest Service Trail Accessibility Guidelines (FSTAG)
- Research local PW, Building, & Parks Departments to identify adopted codes
Outdoor Developed Areas

Viewing Areas
Outdoor Developed Areas

Outdoor Recreation Access Routes (ORAR)
Outdoor Developed Areas

Trails
Outdoor Developed Areas

Beach Access Routes
Acknowledgement

Phase I & II funding for the Developed Outdoor Recreation Assessment Process was provided by the U.S. Department of Agriculture through the Small Business Innovation and Research program Grant number 2013-33610-21051
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Working toward universal access through research, design & education
Outdoor Recreation Trails and Access Routes
Pedestrian Routes

Trails
Outdoor Recreation Access Routes (ORAR)
Beach Access Routes
Trail

Pedestrian route developed primarily for outdoor recreational purposes

Newly constructed/altered trail directly connected to a trailhead or another trail that substantially complies with guidelines
Trail Guidelines

Grade

1:20 (5%) to 1:12 (8.33%) 200 feet max
1:12 (8.33%) to 1:10 (10%) 30 feet max
1:10 (10%) to 1:8 (12%) 10 feet max

Cross Slope

1:20 (5%) maximum unless concrete, asphalt or boards, then 1:48 (2%)
Trail Guidelines

Width
36 inches minimum width
Passing spaces – every 1,000 feet where less than 60 inches in width

Tread obstacles
2 inches maximum, except concrete, asphalt, or board = ½ inch

Openings
½ inch maximum
Conditional exceptions

Apply on a provision-by-provision basis

Where full compliance with a technical provision is not possible because of the limitations and constraints included in the conditional exceptions... the portion of the trail shall comply with the provision to the “extent practicable.”
Conditional exceptions

...not practical due to terrain
Conditional exceptions

...cannot be accomplished with the prevailing construction practices
Conditional exceptions

Compliance would fundamentally alter the function or purpose of the facility or the setting
Conditional exceptions

Compliance is precluded by the:

• Endangered Species Act;
• National Environmental Policy Act;
• National Historic Preservation Act;
• Wilderness Act; or
• Other Federal, State, or local laws
Trailheads

Outdoor space developed to serve as an access point to a trail

Not a junction of two or more trails where no other access point is provided
Min Requirements for Trail Signs

New trail information signs provided at trailheads... shall include the following information:

1. Length of the trail or trail segment
2. Surface type
3. Typical and minimum tread width
4. Typical and maximum running slope
5. Typical and maximum cross slope

ABA-2013, Section 1017.11 & FSTAG-2013 Section 7.4.11.2
Outdoor Recreation Access Routes - ORAR

Connecting common use and public use areas in picnic, camping, and viewing areas.
Outdoor Recreation Access Routes - ORAR

Connecting recreation facilities
Outdoor Recreation Access Routes

Grade

Between 1:20 (5%) and 1:12 (8.33%), 50 feet maximum

Between 1:12 (8.33%) and 1:10 (10%), 30 feet maximum

Cross Slope

1:33 (3%) maximum unless concrete, asphalt or boards, then 1:48 (2%)
Outdoor Recreation Access Route

Surface
   firm and stable

Width
   36 inches min

Passing space
   required where width is less than 60 inches
      every 200 ft. max

Openings
   < 0.5 inch sphere
Beach Access Route
Beach Access Route

Permanent or removable

Minimum number

at least one for each ½ mile of shoreline managed by the entity

Not required to exceed the number of pedestrian access points to a beach provided by the entity
Beach Access Route

Grade
Between 1:20 (5%) and 1:12 (8.33%),
50 feet maximum
Between 1:12 (8.33%) and 1:10 (10%),
30 feet maximum

Obstacles
1 inch max, except concrete, asphalt,
or boards = ½ inch
Surface

... shall be firm and stable
Surface Firmness & Stability

Series 100 Rotational Penetrometer (RP)

A reliable, objective, portable, precision instrument for measuring the firmness and stability of ground and floor surfaces.

Available from Beneficial Designs
Rotational Penetrometer

The RP is used by surface manufacturers, land & trail managers, school & park facilities, and ADA accessibility consultants and is the only device of its kind.
## Rotational Penetrometer Readings

<table>
<thead>
<tr>
<th>Surface</th>
<th>Firmness</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposed Granite</td>
<td>0.18</td>
<td>0.82</td>
</tr>
<tr>
<td>Gravelpave2</td>
<td>0.17</td>
<td>0.38</td>
</tr>
<tr>
<td>Geoblock2</td>
<td>0.17</td>
<td>0.41</td>
</tr>
<tr>
<td>Envirogrid Geoweb</td>
<td>0.18</td>
<td>0.44</td>
</tr>
<tr>
<td>EGA20 Geoweb</td>
<td>0.20</td>
<td>0.62</td>
</tr>
</tbody>
</table>
Dissemination of Access Information to the Public

Facility Brochures
Online
Panel Maps & Kiosks
Trailhead Signs
Trail Access Information (TAI) to Convey to Users

- Grade
- Cross Slope
- Tread Width
- Surface
- Obstructions
<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sparks Blvd. Bike Path</strong></td>
<td></td>
</tr>
<tr>
<td><strong>City of Sparks</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Truckee River to Pyramid Hwy.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>6.8 mi (10.9 km)</td>
</tr>
<tr>
<td><strong>Hikers</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dogs on Leash</strong></td>
<td>per posted restrictions</td>
</tr>
<tr>
<td><strong>Bikes</strong></td>
<td></td>
</tr>
<tr>
<td><strong>No Equestrians</strong></td>
<td></td>
</tr>
<tr>
<td><strong>No Motorized Vehicles</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td>Typical Grade 1.7%</td>
</tr>
<tr>
<td></td>
<td>4% of the trail is 5% to 8%</td>
</tr>
<tr>
<td></td>
<td>131 ft (40 m) is 8% to 15%</td>
</tr>
<tr>
<td></td>
<td>2% grade is a standard ramp</td>
</tr>
<tr>
<td><strong>X-Slope</strong></td>
<td>Typical Cross Slope 2.3%</td>
</tr>
<tr>
<td></td>
<td>5% of the trail is 5% to 8%</td>
</tr>
<tr>
<td></td>
<td>185 ft (56 m) is 8% to 14%</td>
</tr>
<tr>
<td><strong>Tread Width</strong></td>
<td>Typical Tread Width 10 in (275 mm)</td>
</tr>
<tr>
<td><strong>Surface Type</strong></td>
<td>Concrete / Asphalt</td>
</tr>
<tr>
<td><strong>Typical Firmness</strong></td>
<td>0.19</td>
</tr>
<tr>
<td><strong>Minimum Firmness</strong></td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Typical Stability</strong></td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Minimum Stability</strong></td>
<td>0.27</td>
</tr>
<tr>
<td><strong>Trail Access Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>100% is Firm and Stable</strong></td>
<td></td>
</tr>
<tr>
<td><strong>100% is Firm and Stable</strong></td>
<td></td>
</tr>
</tbody>
</table>
QR Codes take TAI to the next level
### Bartley Ranch Regional Park and Anderson Park

#### Trail Use
- **Hiking**
- **Bicycles**
- **Equestrians**
- **Dogs on Leash**
- **No Motor Vehicles**

#### Legend
- **Bridge**
- **Parking**
- **Restroom**
- **Picnic Area**
- **Western Heritage Interpretive Center**
- **Robert Z. Hawkins Amphitheater**

#### Trail Map
- **Ranch Loop Trail**
- **Quail Run Trail**
- **Flume Trail**
- **Anderson Trail**
- **Park Loop**

#### Trail Information Table

<table>
<thead>
<tr>
<th>Trail Name</th>
<th>Length</th>
<th>Typical Grade</th>
<th>Maximum Grade</th>
<th>Typical Cross Slope</th>
<th>Maximum Cross Slope</th>
<th>Typical Trail Width</th>
<th>Minimum Clearance Width</th>
<th>Surface Type</th>
<th>Surface Firmness Typical West</th>
<th>Surface Firmness Typical East</th>
<th>Surface Stability Typical West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranch Loop Trail</td>
<td>1.5 mi</td>
<td>4.5%</td>
<td>371 ft is 16% - 25%</td>
<td>2.8%</td>
<td>18 ft is 16% - 20%</td>
<td>90 in</td>
<td>40 in</td>
<td>Aggregate/Gravel</td>
<td>0.19</td>
<td>0.22</td>
<td>0.36</td>
</tr>
<tr>
<td>Quail Run Trail</td>
<td>0.4 mi</td>
<td>7.3%</td>
<td>186 ft is 20% - 40%</td>
<td>3.5%</td>
<td>46 ft is 18% - 30%</td>
<td>80 in</td>
<td>25 in</td>
<td>Aggregate/Gravel</td>
<td>0.19</td>
<td>0.22</td>
<td>0.39</td>
</tr>
<tr>
<td>Flume Trail</td>
<td>0.2 mi</td>
<td>4.6%</td>
<td>37 ft is 14% - 19%</td>
<td>3.9%</td>
<td>47 ft is 12% - 14%</td>
<td>48 in</td>
<td>20 in</td>
<td>Soil</td>
<td>0.23</td>
<td>0.25</td>
<td>0.38</td>
</tr>
<tr>
<td>Anderson Trail (Round Trip)</td>
<td>1.7 mi</td>
<td>2.5%</td>
<td>196 ft is 14% - 21%</td>
<td>2.4%</td>
<td>311 ft is 7% - 11%</td>
<td>76 in</td>
<td>48 in</td>
<td>Aggregate/Gravel</td>
<td>0.19</td>
<td>0.22</td>
<td>0.39</td>
</tr>
<tr>
<td>Park Loop</td>
<td>0.2 mi</td>
<td>16%</td>
<td>64 ft is 4% - 5%</td>
<td>1.8%</td>
<td>230 ft is 3% - 4%</td>
<td>84 in</td>
<td>84 in</td>
<td>Aggregate/Gravel</td>
<td>0.18</td>
<td>0.19</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**WARNING:** Trail conditions may have changed since these trails were assessed. Secondary trails are shown in white. Signage created by Beneficial Designs Inc. using data collected by a certified trail maintenance coordinator.

**A** Trail Access Information
Acknowledgement

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Working toward universal access through research, design & education
Outdoor Constructed Features

Society of Outdoor Recreat Professionals

Beneficial Designs
Designing beyond the norm to meet the needs of all people.
Outdoor Constructed Features
Picnic Facilities

Developed for outdoor recreational purposes that contains picnic units
Picnic Unit

Outdoor space in a picnic facility that contains outdoor constructed features
Picnic Facilities

At least 20% of picnic units in picnic facility where two or more picnic units are provided

Two or fewer = each accessible
Camping Facilities

Camping facility – developed for outdoor recreational purposes that contains camping units
Camping Unit

Outdoor space in a camping facility that contains outdoor constructed features, RV parking spaces, tent pads or tent platforms, or camp shelters
# Camping Facilities

<table>
<thead>
<tr>
<th>Total Number of Camping Units Provided in Camping Facility</th>
<th>Minimum Number of Accessible Camping Units Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 to 25</td>
<td>2</td>
</tr>
<tr>
<td>26 to 50</td>
<td>3</td>
</tr>
<tr>
<td>51 to 75</td>
<td>4</td>
</tr>
<tr>
<td>76 to 100</td>
<td>5</td>
</tr>
<tr>
<td>101 to 150</td>
<td>7</td>
</tr>
<tr>
<td>151 to 200</td>
<td>8</td>
</tr>
<tr>
<td>201 and over</td>
<td>8, plus 2 percent of the number over 200</td>
</tr>
</tbody>
</table>
Common Use Areas

20% of outdoor constructed features in public and common use areas serving accessible picnic units

Dispersion of accessible picnic units required

ORAR connection
Viewing Area

Outdoor space developed for viewing a landscape or point of interest
Outdoor Constructed Features:

- Bench
- Camp Shelter
- Fire Ring, Grill, Wood Stove, & Fireplace
- Outdoor Rinsing Shower
- Parking Space
- Picnic Table
- Tent Pad
Outdoor Constructed Features:

- Tent Platform
- Trash/Recycling Receptacle
- Utility/Sewage Connection
- Viewing Area
- Viewing Scope
- Water Spout
Benches

Clear Ground Space:
36” min x 48” in any orientation to the bench.
Positioned for Shoulder to Shoulder recommended
Not to overlap ORAR or Trail
Camp Shelters
Camp Shelters

Clear Ground Space:
48” min x 36” min
Oriented Parallel
Can Overlap ORAR

Turning Space Inside:
Per section 304.3

Platform Height:
19” max
Fire Rings, Grills, Fireplaces, and Wood Stoves
Fire Rings, Grills, Fireplaces, and Wood Stoves

Clear Space: 48” x 48” on all useable sides
Fire Rings, Grills, Fireplaces, and Wood Stoves

Cooking Surface: 15” min - 34” max

Fire Building Surface: 9” min above adjacent surface

Raised Edge or Wall: 10” wide max
Outdoor Rinsing Shower
Outdoor Rinsing Shower

Clear Space:
60”min x 60”min
Centered on Shower Head
Shower pedestal or wall
with shower head at rear
Outdoor Rinsing Shower

Shower Head:
- Hand-held spray unit with a hose 59” long minimum
- At least one fixed position located 15” min and 48” max above the ground

EXCEPTION: Where vandalism is a consideration, a fixed shower head located at 48” is permitted in place of a hand-held
Parking Spaces Within Camping & Picnic Units

Recreational Vehicle Pull-up Spaces

Clear Width: 20ft wide min
Parking Spaces Within Camping & Picnic Units

Other Vehicles

Clear Width: 16ft wide min

1012.3 Other Vehicles
Parking Spaces within Accessible Camping Units and Picnic Units and Pull-Up Spaces at RV Dump Stations
Parking Spaces Within Camping & Picnic Units

Surface:
Firm and stable

Slope:
Not steeper than 2% in any direction

EXCEPTION: Where the surface is other than asphalt, concrete, or boards, slopes not steeper than 5% shall be permitted when necessary for drainage
Picnic Tables
Picnic Tables

Clear Ground Space:
36” min all useable sides

1011.2.1 Clear Ground Space - Picnic Tables
Wheelchair space:
Min one for each 24 linear ft of usable surface perimeter
Picnic Tables

Wheelchair spaces

- 30” min by 48” min
- Positioned for forward approach
- Knee and toe clearance complying with 306 under the table.

1011.4 Picnic Tables
Wheelchair space
Wheelchair spaces

Knee and toe clearance complying with Sec 306

Picnic Tables
Tent Pads & Tent Platforms

Clear Ground Space:
provided on all usable sides of pads and platforms
48” min width

Surface:
Firm & Stable, but allow use of tent stakes and other tent securement devices
Tent Pads & Tent Platforms

Slope:
2% max any direction
EXCEPTION: 5% max unpaved surface where necessary for drainage

Platform Height:
19” high max
Measured from the clear ground space to the tent platform surface
Trash & Recycling Receptacles
Clear Ground Space:

36” x 48” min at Forward Approach

60” x 30” min at Parallel Approach
Trash & Recycling Receptacles

Operable Parts:

Receptacles with hinged lids and controls to keep out large animals shall comply to the extent practicable.

Dumpster type receptacles shall not be required to comply.
Utility or Sewage Hookup

Clear Space:
- 30” by 60” min
- Long side adjoining or overlapping accessible parking or pull-up
- Locate so hook-ups are at rear center
- Not obstructed by bollards or other barriers
**Clear Ground Space:**
Provided at each distinct viewing location
36” min by 48” min

**Clear Viewing Space:**
From 32” max to 51” min
Clear Ground Space:
36” min x 48” min
Centered on Eye Piece
Knee & Toe Clearance per Sec 306
Eye Piece Height:
43” min and 51” max

1011.2.1 Clear Ground Space
Viewing scopes, Knee & Toe Clearance (306)
Water Spouts

Clear Ground Space:
72”min x 48”min
Spout located 11-12” from back center
Adjoin or overlap ORAR, Trail or other Clear Space
Spout Height:
28” min and 36” max above ground surface

Operable parts:
Comply with 309.3 & 309.4 to extent practicable

1011.6 Water Hydrants
Acknowledgement (DORAP)

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Working toward universal access through research, design & education
The Developed Outdoor Recreation Assessment Process (DORAP)
Developed Outdoor Recreation Assessment Process
Tools Required

- Smart Level
- Tape Measure
- Roll-a-Wheel
- Force Gauge
- GPS (Smartphone)
- Paper Data Forms
DORAP for Laptop PC

[Image of a person using a grill in a forest setting with a laptop in the background]

[Image of a computer screen showing a software interface for DORAP]
DORAP for mobile devices
Knee & Toe Clearance Profile Tool

BD Profile Tool
Specify the Approach Type

Verify that a Clear Space is positioned for Forward Approach to Tables

Using the appropriate profile, verify that the minimum clear space is provided below the table surface at each wheelchair space provided

The Length of the Parallel Approach Clear Space must be centered on the Fixture

Measure the Vertical Distance from the Ground Surface to the top of the Knee Clearance
Base Components

Elements typical of most features

• Clear Spaces
• Wheelchair Space
• Operable Parts
• Dimensions
Clear Spaces

Two types of Clear Spaces

Clear Space to access a feature

Clear Space around a feature
Clear Space to Access a Feature

Length and Width

Determine the Approach Direction that a user would typically use to access the feature

This determines the direction of the Path of Travel
Clear Space to Access a Feature

Length and Width

Length is always parallel to the Path of Travel. Measure from the front of the object to the nearest obstruction.

Width is always perpendicular to the path of travel. Measure from the center of the feature to the nearest obstruction.
Clear Space to Access a Feature

Grade and Cross Slope

Select and measure the typical grade and cross slope within the clear space to access the feature.

This can be done by standing back and squatting down to look at the clear space from approximately 10 feet away like a golfer.
Clear Space to Access a Feature

Max Grade and Max Cross Slope

If and only if there is a portion of the clear space that has a different grade or cross slope than the typical grade or cross slope, measure and record this as the maximum grade or cross slope.
Clear Space Around a Feature

Width

Measure the width from the edge of the feature to the nearest obstruction.

This is the Min Clear Width
Clear Space Around a Feature

Grade and Cross Slope

Grade is the slope along the path of travel around the feature.

Cross Slope is the slope away from the feature.
Clear Space Around a Feature

Grade and Cross Slope

Select and measure one location along each of four sides of the feature which represent the typical grade and cross slope along that side of the feature.

This can be done by standing back and squatting down to look at the clear space from approximately 10 feet away like a golfer.
Clear Space Observations

Connected to an Access Route?

Is the clear space connected to or overlapping an access route or another clear space?

Collection varies slightly between feature types, some can overlap and others must be adjacent without overlap.
Clear Space Observations

Connected to an Access Route?

The Clear Spaces around each of the three features in this picture are overlapping.
Clear Space Observations

Connected to an Access Route?

The path of travel between the Grill and the Picnic Table in this picture must comply with the ORAR requirements.
Clear Space Observations

Connected to an Access Route?

Within the Access Route Component

Identify the Maximum Grade and Maximum Cross Slope of the Access Route between features
Wheelchair Space

Some features require that a Wheelchair space be provided to ensure that a person using a mobility device can sit close to the feature. Wheelchair spaces are required to provide Clear Ground Space, Unobstructed Knee Clearance, and Unobstructed Toe Clearance.
Wheelchair Space

Clear Ground Space

Required to be Forward Approach

Length is from the obstruction at the table to the nearest obstruction

Width is typically between the two benches or protruding elements of the table frame
Wheelchair Space

Unobstructed Knee Space

Must be a minimum of 8 inches deep at 27 inches above the ground surface, **AND** 11 inches deep at 9 inches above the ground surface.
Wheelchair Space

Unobstructed Toe Space

Must be a minimum of 17 inches deep and extend at least 9 inches above the ground surface
Wheelchair Space Profile Tool

Unobstructed Knee & Toe Space

Use of the Profile Tool
Operable Parts

Elements with Operable parts such as handles, levers, and latches, must comply with the technical requirements of sections 309.3 and 309.4 of the ABA Standards.

If there is an exemption, compliance is required to the extent practicable.
Operable Parts

Height of Part / Reach Range

Typically, the height of an operable part, when the clear space is unobstructed, is between 15 inches minimum and 48 inches maximum.

Measure the height from the ground surface to the operable part.
Operable Parts

Operation requirements

Must be a operable with one hand, AND must not require tight grasping, pinching or twisting of the wrist
Operable Parts

Operation requirements

Must NOT require more than 5 lbs of force to operate the part

Use a force gauge or a fish scale to measure the amount of force required to operate the part.
Dimensions

Dimension measurements are required at nearly every feature

Each measurement is defined within each feature
Atypical Measurements...

At benches, the Clear Space can be oriented in any direction adjacent to the bench, so long as it does not overlap the ORAR, trail tread, or another clear ground space.
Atypical Measurements...

At Fire Rings, the surface height is required to be 9 inches above the adjacent ground surface. Two measurements are required

“Edge Height” and “Inside Depth”
At prefabricated Fire Rings or Grills, the “Edge Width” measurement may not seem appropriate, but is required to verify that the max width is conforming at fire rings or cooking grills.

Why?
Atypical Measurements...

At pivoting grills, the grill must be rotated to verify minimum and maximum heights when the clear ground space is sloped or uneven.
Atypical Measurements...

At Tent Pads, the Clear Space “Grade” and “Cross Slope” Measurements are taken around the edge of the tent pad. This is to accommodate where a user would have to traverse to erect their tent.
Atypical Measurements...

At Water Hydrants, the clear space is to be measured such that the water spout is located between 11 and 12 inches from the rear center of the clear space. Again requiring two measurements.

“Width Front” and “Width Rear”
Acknowledgement (DORAP)

Phase I & II funding for the Developed Outdoor Recreation Assessment Process was provided by the U.S. Department of Agriculture through the Small Business Innovation and Research program Grant number 2013-33610-21051.
Beneficial Designs, Inc.
Minden, Nevada

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Working toward universal access through research, design & education
How to Communicate Access Through Signage
Use of the International Symbol of Accessibility (ISA)

Use of the ISA can convey mixed meanings
Use of the International Symbol of Accessibility (ISA)

The Blue ISA implies a specific level of access in the built environment.
Use of the International Symbol of Accessibility (ISA)

NPS and USFS use Brown as a standard for signage in their parks

The ISA should only be used when all elements of the feature displaying it are accessible
Public Outdoor Recreation Area Survey

The purpose of this survey is to establish the best way to display information about accessibility for all users at Outdoor Recreation Areas. The intention of this survey is to evaluate your preferences as a user of outdoor recreation areas; questions do not have a correct or incorrect answer.

For the purpose of this survey, we are using the campsite and the NPS campsite symbol as the example for each question.
Survey Question 1

Should the Blue or Brown ISA be used in the Outdoor Recreation Environment?

☐ Blue should be used

☐ Brown should be used

☐ Either Blue or Brown can be used
Survey Question 2

Would it be acceptable to pair the ISA in brown with the campsite symbol?

☐ Yes
☐ No
Survey Question 3

Would use of the Brown ISA at a campsite imply that the campsite is reserved?

☐ Yes
☐ No
Survey Question 4

Do you think the following statement should be included on signs at designated campsites with access features to suggest using another campsite, when access features are not required or needed, and to remove possible confusion about the site being reserved?

- Yes
- No
- Yes, However with the times set based on local conditions
- Yes, However I prefer alternate language
Survey Question 4

For those **not** requiring access and mobility features...
Please do not use this site until after 6 pm
Please move to another site prior to 11 am

- Yes
- No
- Yes, However with the times set based on local conditions
- Yes, However I prefer alternate language
Survey Question 5

If a moveable picnic table is provided, moving the table might cause the campsite to be inaccessible. Would the following statement, with an image, be appropriate at designated campsites that provide accessibility features?

- Yes
- No signage is necessary
- Yes, However I prefer alternate language
Survey Question 5

Yes

No signage is necessary

Yes, However I prefer alternate language
Public Outdoor Recreation Area Survey

The remainder of this survey is trying to determine the best type of signage for the situation where some access elements are provided at a campsite.

Please answer the following questions assuming that some type of signage would be provided when one or more accessible elements are provided.
Survey Question 6

Shown is Campsite Access Information for a site with fully accessible elements. A fully accessible campsite might be signed like this. Please note any elements of the sign that are unclear or should be removed. Do you feel that this system would work to indicate the difference between a fully accessible campsite and one with some access features?
Survey Question 6

Is it clear that this site is fully compliant?

☐ Yes  ☐ No
Survey Question 7

This is an example of Camp Access Information for a campsite with some accessible elements. After reviewing the sign, is the level of access provided at the campsite clear and understandable to you?

☐ Yes
☐ No
Survey Question 7

Site 17

This campsite contains access features

For those NOT requiring access and mobility features...
Please do not use this site until after 6 pm
Please move to another site prior to 11 am

Accessible Elements

- Fire Ring
- Pivot Grill
- Table

Non Accessible Elements

Tent Pad

Size: 18.5 ft x 16.0 ft
Accommodates: 4 Men Tent
Typical Slope: 3.6%
Max Slope: 6.2%
Surface Type: DG Fill

Before you go
Please return the elements so this campsites remains accessible

WARNING: Trail conditions may have changed since June 2015 when this trail was assessed. Temporary obstacles were not mapped.

Signage created by Beneficial Designs Inc. using data collected by a certified trail assessment coordinator.

Funded by the Nevada Recreational Trails Program.
Survey Question 8

Is Campsite Access Information that provides basic access information for all campers useful even if there are non-accessible elements at the campsite? Note any elements on the sign that are unclear or should be modified.

- Yes, general access information is helpful at campsites with or without access elements.
- No, only campsites with accessible elements should have general access information.
Survey Question 8

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<thead>
<tr>
<th>Site 15</th>
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### Survey Question 8

#### Pivot Grill

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<td>Surface Type</td>
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#### Pivot Grill

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#### Tent Pad

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*WARNING: Trail conditions may have changed since June 2015 when this trail was assessed. Temporary obstacles were not mapped.*

*Signage created by Beneficial Designs Inc. using data collected by a certified trail assessment coordinator. Funded by the Nevada Recreational Trails Program.*
Comments?

Do you have any other comments to make this concept of signage work better?
Acknowledgement

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Working toward universal access through research, design & education
Implementing a Transition Plan
How to make a Transition Plan

I. Make a Self Evaluation
   A. Make an assessment of Trails, Facilities, and Access Routes
   B. Quantify Barriers Discovered

II. Prioritize Improvements
   A. Sites easiest to make Accessible (low hanging fruit)
   B. Most used/visited features
   C. Most significant features in site
   D. Provide equitable options geographically

III. Establish a Method to Remove Barriers
   A. Solution for each barrier
   B. Follow best practices (Forest Service website, ABA guidelines)

IV. Create a Timeline
   A. Examples of Timelines
   B. Funding Ideas

V. Summary
Self Evaluation: Make Assessments on Trails

Universal Trail Assessment Process (UTAP)

High Efficiency Trail Assessment Process (HETAP)
Self Evaluation: Make Assessments on Facilities

Make assessments on all facilities and check them with the appropriate accessibility guidelines.
Self Evaluation: Make Assessments on Access Routes

- ARs vs. ORARs guidelines
- Clear space

- Surface types (sidewalks vs. dirt paths)
- Firm and Stable
Self Evaluation: Quantify Barriers Discovered
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Query: 89 ms, Grid Generation: 60.00 ms
Prioritizing: Sites Easiest to Make Accessible

- Sites with some accessible facilities
- Trails with mild slopes
- Barriers that can be removed with little capital investment
- Features that can be improved with little staff time
Prioritizing: Sites Most Used/Visited

Facilities that receive high volumes of visitors

Popular trails or scenic views

Access Routs that connect multiple features

Trailheads
Prioritizing: Significant Features

Questions to ask:

What is the reason the facility exists?
What is the experience provided?
What programmatic access needs to be provided?
What access routes are provided?
Prioritizing: Equitable Options Geographically

Ensure that there are accessible sites spread throughout an area

Plan to make at least one of each type of facility accessible in an area

Select sites that have the potential to serve the highest number of users
Establishing a Method: Solutions for Each Barrier

Create standard solutions for similar issues
Provide alternative experiences
Think outside the box
Establishing a Method: Solutions for Each Barrier

Display objective information and let the user decide what is accessible
Establishing a Method: Follow Best Practices

ABA Guidelines for Trails and ORARs

Appropriate accessibility guidelines per state

Consider following US Forest Service model and replace or install only assessable features
Timeline: Examples

Five year target: Facilities

Add accessible features to 40% of all campsites and make 20% of all campsites fully accessible
Timeline: Examples

Five year target: Trails

Upgrade trail to most outstanding feature of the park to be fully accessible per appropriate accessibility guidelines
Timeline: Examples

Five year target: Access Routes

Ensure all ARs and ORARs have surfaces that are firm and stable
Timeline: Examples

Five year targets: Pre-existing Issues

Correct all access deficiencies in built facilities (bathrooms, information center etc.) per accessibility guidelines
Timeline: Funding Ideas

Social Media Campaign

Delegate to outside advocates (boy scouts, trail groups, etc)

Outside funding and grants

Complete through current funding/budgets
Summary: Land Manager Benefits

Increased user safety and satisfaction

Provide more recreation opportunities

Monitoring of environmental impact

Asset Management
Summary: Land Manager Benefits

- Identification of work priorities
- Enhanced planning & budgeting of projects
- Provides information for GIS
F244.2.1 Alterations and Additions
EXCEPTION: Where an entity is implementing a transition plan for program accessibility that designates specific camping units to provide mobility features. The entity shall not be required to comply when altering individual elements within camping units that are not designated to provide mobility features.
Summary: User Benefits

Consistent information

Increased independence, safety, opportunities and enjoyment

Responsible and informed facility selection

Knowledge of actual conditions
Information available...

...Plan accordingly
Everyone benefits!

People with Disabilities

Users with limited experience

Adults who are older or less fit

Children
Acknowledgement (DORAP)

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