

Access Board Cost Analysis of Outdoor Developed Areas

**A Research Report Studying the Cost
Implications of Proposed Americans with
Disability Act Accessibility Guidelines on Trails,
Picnic Areas, Camping Areas, and Beaches**

**Prepared by
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Introduction

The primary goal of this document is to identify the scope of trails, picnic areas, camping areas, and beaches that are anticipated to be built or significantly altered per year in the U.S., and to determine the economic impact of the proposed accessibility standards on agencies that construct these outdoor developed areas.

The U.S. Bureau of Public Debt contracted with Wilderness Inquiry, Inc., to conduct the study requested. A 501(c)(3) organization, Wilderness Inquiry provides activities that integrate people with and without disabilities into the outdoor environment, including many that take place in the outdoor developed areas being discussed for inclusion in the American's with Disabilities Act Accessibility Guidelines (ADAAG).

The cost analysis report is based on proposed scoping and technical provisions developed by the Regulatory Negotiation Committee. The most recent material developed by the Committee is available for review through the Access Board.

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Executive Summary

To achieve the goal of the research, we surveyed outdoor developed area managers, followed-up with those managers to obtain complete information, and developed representative case studies of examples that provide a good understanding and diversity of environments. A complete discussion of the survey methodology can be found in the Study Overview section of the report.

The research resulted in the following statistics which are intended to give the reader a general overview of the study. A full and detailed breakdown of these results can be found in the Findings section of this report.

Trails:

Number of miles of trails nationally:

	No. currently	No. developed/year	No. altered/year
TOTAL	15,864,000	142,776	47,592

Average Percent increase in costs to implement the proposed standards:

Outdoor Developed Area	Average Percent Increase
Trails	9.2%

Picnic Areas:

Number of picnic areas nationally:

	No. currently	No. developed/year	No. altered/year
TOTAL	23,410	351	1,194

Average Percent increase in costs to implement the proposed standards:

Outdoor Developed Area	Average Percent Increase
Picnic Areas	12.6%

Camping Areas:

Number of camping areas nationally:

	No. currently	No. developed/year	No. altered/year
TOTAL	19,280	231	944

Average Percent increase in costs to implement the proposed standards:

Outdoor Developed Area	Average Percent Increase
Camping Areas	0.6%

Beaches:

Number of beaches nationally:

	No. currently	No. developed/year	No. altered/year
TOTAL	8,191	58	278

Average Percent increase in costs to implement the proposed standards:

Outdoor Developed Area	Average Percent Increase
Beaches	14.5%

It was also noted through the survey responses that cost variation was not noticeably related to regional variation. All regions can contain areas of extreme topography. Cost was most noticeably associated with two elements:

- 1) The topography of the area (grades present on the site)
- 2) The type of trail being constructed (Paved bike/pedestrian trails are much more costly than backcountry foot paths).

Study Overview

Scope of Study

The study is intended to accomplish the following objectives:

1. Review and summarize the total number of trails, picnic areas, camping areas, and beaches that currently exist in the U.S.
2. Review and summarize the estimated number of trails, picnic areas, camping areas, and beaches that will be constructed or significantly altered on a yearly basis in the future.
3. Survey federal, state, county, municipal, and private outdoor recreation agencies throughout the U.S. to determine what current construction practices are, and to estimate what the cost increase associated with implementation of the proposed accessibility guidelines might be.
4. Identify major trends associated with implementation of the proposed accessibility standards.

Limitations of Study

This report fairly and accurately represents the issues considered. However, as with any study, it is important to note its limitations in order to establish its validity. Several limitations must be considered when interpreting this report.

1. The study is exploratory in nature. Many of the questions were designed to obtain qualitative information to help identify important issues. Every effort was made to accurately portray the answers given, and to maintain their meaning as they were grouped into categories for analysis and clarity of presentation.
2. For the case studies, we attempted to balance the number of areas designed for accessibility from their inception, with those that were not. None the less, readers should keep in mind that many examples provided in the survey responses originate from projects that were designed according to current accessibility design practices.
3. In some cases, the guidelines used for recent construction were more restrictive than the suggested guidelines. For example, some picnic areas indicated that they required 100% site accessibility, and some trails were designed as 5-10 foot wide paved trails.

4. Low survey return rates made generating reliable cost figures difficult (especially for beaches). Therefore, information generated from survey responses was primarily used to identify representative case studies that could be further researched and clarified.
5. In several cases, case study respondents were unable or unwilling to distinguish elements of construction that are not included in the proposed standards for outdoor developed areas. Those elements are included in the overall cost of construction of the project, and are itemized to clarify where the costs originate.

Study Methodology

Surveys were developed (see Appendix C) and distributed to 220 managers and designers of trails, picnic areas, camping areas, and beaches throughout the nation. Respondents were chosen to provide an accurate proportional portrayal of outdoor recreation service providers in the U.S. by agency type and by region.

The responses to the Cost Analysis Survey provided the framework upon which a series of case studies were chosen. This allowed for a wide range of environments and situations. The case studies presented are the results of returned surveys as well as detailed phone interviews. They attempt to determine all relevant details of the projects and the costs associated with the many variables. They are intended as examples of general trends, not as all-encompassing studies of any situation that may be encountered.

1. Cost Analysis Surveys

How were the respondents chosen?

220 surveys were sent to outdoor recreation area providers that span the spectrum of opportunities available in the U.S. We identified representatives of federal, state, county, municipal, and private agencies throughout the country. We also included equal numbers of respondents from each of the regions listed below.

The following operational definitions were used in the surveys to obtain consistent responses:

Trails:

A primarily pedestrian path for recreation and/or transportation within a park, natural environment, or designated corridor that is not classified as a highway, road, or street. A recreational trail is a corridor which provides an active or passive recreational experience in the outdoor environment.

Picnic Areas:

A congruous geographic region designated for day use activities, adjacent to an individual recreation area or usage (lake, ball fields, beach, playground, etc.). For purposes of this survey, count only areas consisting of 5 or more picnic tables (with any associated picnic elements). Restroom facilities, visitor centers, changing rooms, etc. are not covered in this survey.

Camping Areas:

A congruous geographic region designated for overnight use activities. For purposes of this survey, count only areas consisting of 5 or more directly associated camping sites. Restroom facilities, visitor centers, changing rooms, etc. are not covered in this survey.

Beaches:

A designated area at the shore of a body of water providing pedestrian entry for the purposes of water play, swimming or other water shoreline related activities. Restroom facilities, visitor centers, changing rooms, etc. are not covered in this survey.

Regional Breakdown:

Northeast	Maine, New Hampshire, Vermont, New York, Massachusetts, New Jersey, Delaware, Pennsylvania, Maryland, District of Columbia.
Southeast	Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida.
Midwest	Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Nebraska.
South	Kansas, Missouri, Oklahoma, Arkansas, Mississippi, Alabama, Louisiana, Texas.
Rocky Mountains	Montana, Idaho, Wyoming, Colorado.
Southwest	Nevada, Utah, Arizona, New Mexico.
West	Alaska, Washington, Oregon, California, Hawaii.

Information solicited in the surveys:

The surveys elicit responses that outline two types of trends. First, was to identify how many outdoor developed areas currently exist, and how many will be constructed in the future. Second, was to identify cost data associated with construction according to proposed technical and scoping provisions developed by the Committee.

In order to determine the total number of trails, picnic areas, camping areas, and beaches in the country, we used the survey responses as a representative sample. We extrapolated the total number that exist, and how many on average are constructed or significantly altered per year. This information was then compared to external sources of information like past studies of numbers of developed areas, and agency reports and inventories (see Appendix B: References).

In order to identify the costs of construction, the responses were closely examined for thorough and consistent data. To develop representative case studies, land managers were chosen from many different regions and agencies who provided thorough and consistent information. These case studies represent many variables involved in construction of outdoor developed areas according to proposed accessibility standards. The case studies convey a comprehensive picture of the financial effects of compliance with the proposed standards.

2. Interviews

Who was chosen for interviews?

Interviews were conducted with land managers specified previously. They were 30-45 minutes long. Content of the interviews included sharing the most recent information available regarding the direction of the Committee on the proposed standards, and clarifying all aspects of the projects outlined in the survey responses.

Information solicited in the interviews:

Once understanding of the proposed technical and scoping provisions was agreed upon, the numbers provided on the survey were reviewed to ensure accuracy. Any discrepancies were clarified to maintain consistency between the manager's responses and the intent of the proposed standards. Managers were also asked if any conditions for departure applied to the given project, and to what degree they applied.

Finally, respondents were asked to associate a cost with all elements provided for the sole purpose of accessibility. Many of these responses were vague, and should be taken as a general feeling, rather than confirmed data. They provide an overview of the issues that land managers will come to face as the proposed standards are implemented.

Findings

1. TRAILS

General estimates of the number of miles of trails nationally & General breakdown on the operators of trails

Number of miles of new trails developed annually & Number of miles of trails considered small businesses or operated by small entities

	No. currently (miles)	No. developed/year* (miles)	No. altered/year** (miles)
Large Public Agency (Federal and State)	262,000	2358	786
Small Public Agency (County & Municipal)	102,000	918	306
Small business / Private Agencies***	15,500,000	139,500	46,500
TOTAL	15,864,000	142,776	47,592

* Based on a 0.9% average rate of new construction identified in survey results.

** Based on a 0.3% average rate of alteration identified in the survey results.

*** Includes private roads. (Unable to break out private roads constructed from private trails constructed.)

Summary of current design practices and trends for accessible trails

Trails Case Study #1:

Region: **Rocky Mountain**
 Trail Type: **Backcountry**
 Agency/Ownership: **State Government**
 Designed as Accessible According
 to Current Construction Practices: **No**

Current Construction Practices: (Condition of Trail as Constructed)

Surface: Native soil, rock

Maximum grades:	Consistently 8 - 20% grades throughout trail
Maximum Cross-slopes:	Consistently 5 - 15% x-slopes throughout trail
Width of trail:	24 - 30 inches wide throughout trail
Obstacles in trail bed:	Frequent rocks/rock outcrops, multiple steps
Bridges:	3 Small trestle-type bridges, 10-15 ft in length
Drainage Structures:	None
Other:	None

Cost data related to the construction of trails currently.

Project Cost:	\$25,000
Length of Trail Project:	7 miles
Cost per mile:	\$3,571

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost:	\$25,000
Length of Trail Project:	7 miles
Cost per mile:	\$3,571

% of Trail that Meets Conditions for Departure: 100%

Conditions for Departure Met:

- 1) Meets general exception 16.1 by not being connected to a trailhead or an accessible trail.
- 2) Also meets 16.1.1 condition for departure #4 - infeasible due to characteristics of the terrain, for surface and width requirements throughout trail.

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Estimated Additional Costs if Exceptions Are Not Permitted: \$120,000

Major Factors Affecting Accessibility Related Costs:

- 1) Provision of an accessible surface material other than native soils would need to be air lifted in at great expense (\$80,000).
- 2) Width increase to 36 inches would create much cut and fill in mountainous environment (estimate would increase labor costs by 400%).

Trails Case Study #2:

Region: **Southeast**
Trail Type: **Backcountry**
Agency/Ownership: **Non-profit Agency**
Designed as Accessible According to Current Construction Practices: **No**

Current Construction Practices: (Condition of Trail as Constructed)

Surface: Native clay soil & exposed bedrock
Maximum grades: Consistently 8 - 16% grades throughout trail
Maximum Cross-slopes: Less than 5% x-slopes throughout trail
Width of trail: 24 - 30 inches wide throughout trail
Obstacles in trail bed: Frequent rocks/rock outcrops and minimum widths
Bridges: None
Drainage Structures: Grade dips used instead of water bars
Other: Full bench construction

Cost data related to the construction of trails currently

Project Cost: \$15,000 (plus 3,000 volunteer man-hours)
Length of Trail Project: 1.2 miles
Cost per mile: \$12,500

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost: \$23,250 (plus 4,500 volunteer man-hours)
Length of Trail Project: 1.86 miles
Cost per mile: \$12,500

% of Trail that Meets Conditions for Departure: 0%

Conditions for Departure Met: 1) Potential to meet 16.1.1 condition #2 (alters the fundamental experience) for surfacing and width requirements throughout the trail.

% Increase in cost Associated with Development According to the Proposed Standards: 65% overall increase in project costs
0% increase in cost per mile.

Estimated Additional Costs of Accessibility Related Elements: \$8,250 (plus 1,500 volunteer man-hours)

Major Factors Affecting
Accessibility Related Costs:

- 1) Improving grades to 8% maximum lengthens trail by .66 miles .
- 2) Width increase to 36 inches creates 50% greater volunteer labor requirements.
- 3) Assumes natural soil surface (clay and exposed bedrock) meets firm & stable surface requirements.

Trails Case Study #3:

Region: **Midwest**
Trail Type: **Backcountry**
Agency/Ownership: **State Agency**
Designed as Accessible According
to Current Construction Practices: **No**

Current Construction Practices: (Condition of Trail as Constructed)

Surface:	Native soil (silt loam & vegetative debris)
Maximum grades:	Consistently 8 - 16% grades throughout trail
Maximum Cross-slopes:	Less than 5% x-slopes throughout trail
Width of trail:	36 inches wide throughout trail
Obstacles in trail bed:	Frequent rocks and roots up to 4 inches in height
Bridges:	None
Drainage Structures:	Occasional culverts
Other:	None

Cost data related to the construction of trails currently

Project Cost:	\$8,000 (labor costs only for "scraping" trail bed into the soil)
Length of Trail Project:	2 miles
Cost per mile:	\$4,000

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost:	\$8,000
Length of Trail Project:	2 miles
Cost per mile:	\$4,000

% of Trail that Meets Conditions
for Departure: 100%

Conditions for Departure Met:	1) Potential to meet 16.1.1 condition #2 (alters the fundamental experience) for surfacing and grade requirements throughout the trail.
% Increase in cost Associated with Development According to the Proposed Standards:	0%
Estimated Additional Costs of Accessibility Related Elements if Exceptions Are Not Permitted:	\$20,000 in materials and \$2,000 in design costs (this creates a 375% increase)
Major Factors Affecting Accessibility Related Costs:	1) Providing a compacted 3/8 inch gravel surface in order to meet firm & stable requirements, and to cover rocks and roots. (Gravel is less expensive than bituminous, Road-Oyl, etc. and matches the environment better) 2) Grade improvements to less than 8% maximum grade would add an estimated .5 mile in trail length.

Trails Case Study #4:

Region:	West
Trail Type:	Frontcountry
Agency/Ownership:	Private Agency
Designed as Accessible According to Current Construction Practices:	No

Current Construction Practices: (Condition of Trail as Constructed)

Surface:	Paved 60%; Native soil 40% leading down bluffs
Maximum grades:	Greater than 16% grades on trails down the bluffs.
Maximum Cross-slopes:	Less than 5% x-slopes throughout trail
Width of trail:	60+ inches wide on paved portions, 24 - 36 inches wide on trails down the bluffs.
Obstacles in trail bed:	Steps, rocks & min. widths on trails down the bluffs
Bridges:	2 accessible bridges on top of bluffs.
Drainage Structures:	Drainage dips on trails down the bluffs.
Other:	None

<i>Cost data related to the construction of trails currently</i>

Project Cost:	\$200,000
Length of Trail Project:	2.5 miles
Cost per mile:	\$80,000

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost:	\$200,000
Length of Trail Project:	2.5 miles
Cost per mile:	\$80,000
% of Trail that Meets Conditions for Departure:	40%
Conditions for Departure Met:	<ol style="list-style-type: none"> 1) Foot trails down the bluffs meet 16.1.1 condition #1 (harm to endangered plant life). 2) Foot trails down the bluffs also meet 16.1.1 condition #4 (due to characteristics of the terrain).
% Increase in cost Associated with Development According to the Proposed Standards:	0%
Estimated Additional Costs of Accessibility Related Elements if Exceptions Are Not Permitted:	\$50,000 + to improve grades alone, but Coastal Commission would not allow this type of construction on coastal bluffs.
Major Factors Affecting Accessibility Related Costs:	<ol style="list-style-type: none"> 1) Grade requirements would lengthen foot trails down the bluffs an estimated 40%. 2) Paving or hard surfacing the foot trails would be nearly impossible due to the steep grades.

Trails Case Study #5:

Region:	Southwest
Trail Type:	Frontcountry
Agency/Ownership:	Federal Agency
Designed as Accessible According to Current Construction Practices:	Yes

Current Construction Practices: (Condition of Trail as Constructed)

Surface:	Hardened Natural (Road-Oyl), Exposed Aggregate and Native Soil
Maximum grades:	Less than 8% generally, with 200 ft section of native soil trail having up to 25% maximum grades.
Maximum Cross-slopes:	Less than 5% x-slopes throughout trail
Width of trail:	60 inches.

Obstacles in trail bed:	None
Bridges:	None
Drainage Structures:	6 blind drains (hand built, stone).
Other:	3 overlook platforms to provide safe, accessible viewing.

<i>Cost data related to the construction of trails currently</i>

Project Cost:	\$65,570
Length of Trail Project:	.59 miles
Cost per mile:	\$111,136

<i>Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.</i>

Project Cost:	\$65,570
Length of Trail Project:	.59 miles
Cost per mile:	\$111,136

% of Trail that Meets Conditions for Departure:	7%
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Conditions for Departure Met:	1) Native soil section of trail meets 16.1.1 condition #4 (due to characteristics of the terrain). Also, an alternate route exists for this difficult section of trail.
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% Increase in cost Associated with Development According to the Proposed Standards:	0%
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Estimated Costs of Accessibility Related Elements:	\$34,420 (\$10 / ft to build this entirely as a native surface "nature" trail).
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Major Factors Affecting Accessibility Related Costs:	<ol style="list-style-type: none"> 1) Provision of a firm & stable surface. 2) Running slope provisions add length to and create resource damage on the native soil section. (Would lengthen by 40%) 3) Accessible viewing platforms (3) = \$14,700. 4) Accessible water hydrant at trailhead = \$1,900.
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Trails Case Study #6:

Region: **Southeast**
Trail Type: **Frontcountry**
Agency/Ownership: **Federal Agency**
Designed as Accessible According to Current Construction Practices: **Yes**

Current Construction Practices: (Condition of Trail as Constructed)

Surface: Crushed Greenstone & 130 ft wooden boardwalk.
Maximum grades: Less than 8% grades throughout trail.
Maximum Cross-slopes: 5 - 8% maximum x-slopes throughout trail.
Width of trail: 60 inches.
Obstacles in trail bed: Exposed bedrock outcrops requiring wooden boardwalk construction to traverse.
Bridges: 65 ft wooden bridge
Drainage Structures: Log cribbing to prevent washout erosion.
Other: Bench rest stops every 400 ft.

Cost data related to the construction of trails currently

Project Cost: \$78,000
Length of Trail Project: 1.3 miles
Cost per mile: \$60,000

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost: \$78,000
Length of Trail Project: 1.3 miles
Cost per mile: \$60,000

% of Trail that Meets Conditions for Departure: 0%

Conditions for Departure Met: 1) Potential to have met 16.1.1 condition #4 on 20% of trail to avoid construction of wooden boardwalks over the bedrock outcrops.

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Estimated Costs of Accessibility Related Elements: \$70,000

Major Factors Affecting Accessibility Related Costs:

- 1) Site allowing 8% maximum grades or better was nearly impossible to find.
- 2) Avoiding geologic obstacles (i.e. the boardwalks and bridge over the exposed bedrock)
- 3) Providing the firm & stable Greenstone surface.
- 4) Built to current accessibility standards which tend to be more restrictive than the proposed standards.

Trails Case Study #7:

Region: **Southeast**
Trail Type: **Shared-use**
Agency/Ownership: **Municipal Agency**
Designed as Accessible According to Current Construction Practices: **Yes**

Current Construction Practices: (Condition of Trail as Constructed)

Surface:	Concrete
Maximum grades:	Less than 8% grades throughout trail.
Maximum Cross-slopes:	Less than 5% x-slopes throughout trail.
Width of trail:	10 ft.
Obstacles in trail bed:	None.
Bridges:	None.
Drainage Structures:	None.
Other:	Bollards, gates, fences, gaurdrails, shelter with restrooms, and water, sanitary, and electricity lines at the trailhead.

Cost data related to the construction of trails currently

Project Cost:	\$65,000
Length of Trail Project:	.25 miles
Cost per mile:	\$260,000

Cost data related to the construction of new trails consistent with the proposed technical and scoping provisions developed by the Committee.

Project Cost:	\$65,000
Length of Trail Project:	.25 miles
Cost per mile:	\$260,000

% of Trail that Meets Conditions for Departure:	0%
Conditions for Departure Met:	Not Applicable
% Increase in cost Associated with Development According to the Proposed Standards:	0%
Estimated Costs of Accessibility Related Elements:	\$0 for the trail, as it would have been built the same for bicycle use as for accessibility.
Major Factors Affecting Accessibility Related Costs:	1) Firm & stable concrete surface. 2) Accessible facilities at the trailhead cost approximately \$20,000 - \$25,000, but are not directly associated with trail construction.

2. PICNIC AREAS

Number of picnic areas nationally & Number of new picnic areas developed annually

Number of picnic areas considered small businesses or operated by small entities

	No. currently (areas)	No. developed/year* (areas)	No. altered/year** (areas)
Large Public Agency (Federal and State)	9,090	136	463
Small Public Agency (County & Municipal)	5,320	80	271
Small business / Private Agencies	9,000	135	459
TOTAL	23,410	351	1,194

* Based on a 1.5% average rate of new construction identified in the survey results.

** Based on a 5.1% average rate of alteration identified in the survey results.

Summary of current design practices and trends for accessible picnic areas

Cost data related to the purchase of accessible and non-accessible picnic tables. (Based on data gathered from outdoor recreation area providers and equipment manufacturers)

Average Cost for Standard Picnic Table:	\$430
Average Cost for Accessible Picnic Table:	\$525

Picnic Area Case Study #1

Region: **Midwest**
Environmental Type: **Suburban**
Agency/Ownership: **Municipal Agency**
Designed as Accessible According to Current Construction Practices: **No**

Cost data related to constructed picnic areas currently (specific data on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Picnic Area as Constructed)

Elements Included:	Picnic tables (fixed), grills, surface preparation (including grading and seeding), ORAR's (gravel walkways)
Number of Sites:	15
No. of Accessible Sites:	5
Site Grades Present:	Less than 8% grades.
Site Surface(s):	Natural grass with gravel pathways
Project Cost:	\$25,000
Cost per site:	\$1,667

Cost data related to newly constructed picnic areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above. Increased need for grading of site surface.
Number of Sites:	15
No. of Accessible Sites:	8 (3 additional)

Site Grades Present:	Extra grading needed to keep surface grades and access routes to 40% of the accessible sites below 5%.
Site Surface(s):	Natural grass with gravel pathways
Project Cost:	\$32,000
Cost per site:	\$2,133

% of Picnic Area that Meets Conditions for Departure:	0%
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Conditions for Departure Met:	Not Applicable
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% Increase in cost Associated with Development According to the Proposed Standards:	28%
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Major Factors Affecting Accessibility Related Costs:	1) Keeping site grades below 5% require s additional site surface grading (\$4,000) and longer access routes (\$3,000).
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Estimated Costs Associated with Accessibility Related Elements:	\$7,000
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Picnic Area Case Study #2

Region:	South
Environmental Type:	Suburban
Agency/Ownership:	State Agency
Designed as Accessible According to Current Construction Practices:	No

<i>Cost data related to constructed picnic areas currently (specific data on typical costs related to any surface preparation, constructed elements, etc.)</i>

Current Construction Practices: (Condition of Picnic Area as Constructed)

Elements Included:	2 Shelters, 2 Vault Toilets, 20 picnic tables, grills, surface preparation, and ORAR's.
Number of Sites:	20
No. of Accessible Sites:	5
Site Grades Present:	Consistent grades of 20 - 25%.

Site Surface(s):	Natural grass and dirt.
Project Cost:	\$180,000
Cost per site:	\$9,000

<i>Cost data related to newly constructed picnic areas consistent with the proposed technical and scoping provisions developed by the Committee.</i>

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above.
Number of Sites:	20
No. of Accessible Sites:	5
Site Grades Present:	Extra grading would be need but is prohibited by the terrain. (Impossible to get 50% of sites grades below 5%)
Site Surface(s):	Natural grass and dirt.
Project Cost:	\$180,000
Cost per site:	\$9,000

% of Picnic Area that Meets Conditions for Departure:	75%
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Conditions for Departure Met:	1) Meets 16.1.1 condition #1 (causes harm to natural characteristics) 2) Also meets 16.1.1 condition #4 (due to characteristics of the terrain)
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% Increase in cost Associated with Development According to the Proposed Standards:	0%
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Major Factors Affecting Accessibility Related Costs:	1) Topography will not allow 50% of the sites to have accessible clear space with less than 5% slope without severe resource damage. 2) 40% of the access routes to accessible sites would not be possible to keep below 5% maximum grade.
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Estimated Costs Associated with Accessibility Related Elements if Exceptions are not Permitted:	\$270,000 (accessibility costs for surface preparation and access routes that comply with proposed standards)
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Picnic Area Case Study #3

Region: **Southwest**
Environmental Type: **Suburban**
Agency/Ownership: **State Agency**
Designed as Accessible According to Current Construction Practices: **No**

Cost data related to constructed picnic areas currently (specific data on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Picnic Area as Constructed)

Elements Included:	Picnic tables, grill, surface preparation, and ORAR's.
Number of Sites:	12
No. of Accessible Sites:	2
Site Grades Present:	Less than 8% throughout area.
Site Surface(s):	Natural grass and concrete picnic pads and paths.
Project Cost:	\$106,150
Cost per site:	\$8,845

Cost data related to newly constructed picnic areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above, plus an accessible drinking fountain & an accessible parking space and curb cuts.
Number of Sites:	12
No. of Accessible Sites:	6
Site Grades Present:	No change
Site Surface(s):	No change, except for more concrete pads and paths.
Project Cost:	\$117,736
Cost per site:	\$9,811

% of Picnic Area that Meets Conditions for Departure: 0%

Conditions for Departure Met: Not Applicable

% Increase in cost Associated with Development According to the Proposed Standards: 10%

Major Factors Affecting Accessibility Related Costs:

- 1) Addition of accessible elements and slope grading at 4 additional sites (to meet the 50% requirement for accessible sites).
- 2) Providing accessible ORAR's to 40% of the accessible sites would require 1 additional firm & stable ORAR.
- 3) Providing an accessible drinking fountain.

Estimated Costs Associated with Accessibility Related Elements \$11,586

3. CAMPING AREAS

Number of camping areas nationally & Number of new camping areas developed annually
Number of camping areas considered small businesses or operated by small entities

	No. currently (areas)	No. developed/year*	No. altered/year**
Large Public Agency (Federal and State)	9,569	115	469
Small Public Agency (County & Municipal)	2,744	33	134
Small business / Private Agencies	6,967	83	341
TOTAL	19,280	231	944

* Based on a 1.2% average rate of new construction identified in the survey results.

** Based on a 4.9% average rate of alteration identified in the survey results.

Summary of current design practices and trends for accessible camping areas

Cost data related to the purchase of accessible and non-accessible camping elements (average cost data gathered from outdoor recreation area providers and equipment manufacturers):

Standard Picnic Table:	\$430
Accessible Picnic Table:	\$525
Standard Fire Ring:	\$178
Accessible Fire Ring:	\$239
Standard Grill:	\$214
Accessible Grill:	\$356
Standard Tent Pad:	\$1,016
Accessible Tent Pad:	\$1,200

Camping Area Case Study #1

Region: **Southeast**
 Environmental Type: **Primitive**
 Agency/Ownership: **Private Agency**
 Designed as Accessible According to Current Construction Practices: **No**

Cost data related to constructed camping areas (specific data is needed on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Camping Area as Constructed)

Elements Included:	3-sided lean-to shelter with small signage. (Helicopter cost \$3000 to fly in materials)
Number of Sites:	1
No. of Accessible Sites:	1
Site Grades Present:	Level site surrounded by rugged mountains.
Site Surface(s):	Natural surface on-site, soil and rock.
Project Cost:	\$13,000 (plus 500 volunteer hours)
Cost per site:	\$13,000

Cost data related to newly constructed camping areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above.
Number of Sites:	1
No. of Accessible Sites:	1

Site Grades Present:	No change
Site Surface(s):	No change
Project Cost:	\$13,000
Cost per site:	\$13,000

% of Camping Area that Meets Conditions for Departure: 100%

Conditions for Departure Met: 1) Meets 16.1.1 condition #4 (due to characteristics of the terrain) for exemption from site surface and slope requirements.

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Major Factors Affecting Accessibility Related Costs If Exceptions are not Permitted: 1) Remote location. (Importing surface materials and equipment for regrading area to 3% maximum)

Estimated Costs Associated with Accessibility Related Elements if Exceptions Are Not Permitted: Cost would increase an estimated 150%, making it entirely prohibitive. This camp site would not be built.

Camping Area Case Study #2

Region:	Midwest
Environmental Type:	Suburban
Agency/Ownership:	State Agency
Designed as Accessible According to Current Construction Practices:	Yes

Cost data related to constructed camping areas (specific data is needed on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Camping Area as Constructed)

Elements Included:	Unfixed picnic tables, fire rings, ORAR's, raised tent pads, vault toilets, registration station, and well concrete pad.
--------------------	--------------------------------------------------------------------------------------------------------------------------

Number of Sites:	24
No. of Accessible Sites:	18
Site Grades Present:	Access route grades less than 8% and site surface grades up to 3%.
Site Surface(s):	Compacted aggregate paths (5" depth), and site surface (2" - 5" depth).
Project Cost:	\$36,610
Cost per site:	\$1,525

Cost data related to newly constructed camping areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above.
Number of Sites:	24
No. of Accessible Sites:	18 (Far exceeds the required 2 accessible sites)
Site Grades Present:	No change
Site Surface(s):	No change
Project Cost:	\$36,610
Cost per site:	\$1,525

% of Camping Area that Meets Conditions for Departure: 0%

Conditions for Departure Met: Not Applicable.

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Major Factors Affecting Accessibility Related Costs:

- 1) Access Routes for this area cost \$5,400
- 2) Machine grading of sites cost \$8,630
- 3) Site was designed as accessible and greatly exceeds proposed standards.

Estimated Costs Associated with Accessibility Related Elements \$14,030 (This is 40% of total costs for area)

Camping Area Case Study #3

Region: **Rocky Mountain**
Environmental Type: **Suburban**
Agency/Ownership: **Federal Agency**
Designed as Accessible According to Current Construction Practices: **Yes**

Cost data related to constructed camping areas (specific data is needed on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Camping Area as Constructed)

Elements Included:	Fixed picnic tables, fire rings, grills, ORAR's, restrooms/showers, registration station, pumphouse and hydrants (4), signage, sanitary station, office, and parking .
Number of Sites:	20
No. of Accessible Sites:	16
Site Grades Present:	Access route grades less than 8% and site surface grades up to 3%.
Site Surface(s):	Concrete paths, and compacted aggregate site surfaces (2" - 5" depth).
Project Cost:	\$295,000
Cost per site:	\$14,750

Cost data related to newly constructed camping areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above.
Number of Sites:	20
No. of Accessible Sites:	16 (Far exceeds the required 2 accessible sites)
Site Grades Present:	Level sites (see above)
Site Surface(s):	No change
Project Cost:	\$295,000
Cost per site:	\$14,750

% of Camping Area that Meets 0%

Conditions for Departure:

Conditions for Departure Met: Not Applicable.

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Major Factors Affecting Accessibility Related Costs:

- 1) Building 4 accessible water hydrants (\$64,700).
- 2) Concrete paths throughout camping area.
- 3) Aggregate site surface preparation

Estimated Costs Associated with Accessibility Related Elements \$142,000 (48% of total costs of camping area)

Camping Area Case Study #4

Region: **Midwest**
Environmental Type: **Suburban**
Agency/Ownership: **State Agency**
Designed as Accessible According to Current Construction Practices: **No**

Cost data related to constructed camping areas (specific data is needed on typical costs related to any surface preparation, constructed elements, etc.)

Current Construction Practices: (Condition of Camping Area as Constructed)

Elements Included:	Unfixed picnic tables, fire rings, ORAR's, raised tent pads, signage, and parking spaces.
Number of Sites:	25
No. of Accessible Sites:	2
Site Grades Present:	Access route grades less than 8% and site surface grades up to 5%.
Site Surface(s):	Concrete paths, and natural and compacted aggregate site surfaces.
Project Cost:	\$50,000
Cost per site:	\$2,000

Cost data related to newly constructed camping areas consistent with the proposed technical and scoping provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above.
Number of Sites:	25
No. of Accessible Sites:	2
Site Grades Present:	Level sites (need some grading to maintain 3% slopes, however).
Site Surface(s):	No change
Project Cost:	\$51,250
Cost per site:	\$2,050
% of Camping Area that Meets Conditions for Departure:	0 - 10%
Conditions for Departure Met:	1) Potential to meet 16.1.1 condition #4 (due to characteristics of the terrain) to avoid grading of site surfaces.
% Increase in cost Associated with Development According to the Proposed Standards:	2.5 %
Major Factors Affecting Cost Increase:	1) Grading of sites to less than 3% maximum grade.
Estimated Costs Associated with Accessibility Related Elements	\$1,250

4. BEACHES

General estimates of the number of beaches nationally & General breakdown on the operators of beaches

Number of beaches considered small businesses or operated by small entities

	No. currently (areas)	No. developed/year* (areas)	No. altered/year** (areas)
Large Public Agency (Federal and State)	3,691	26	125
Small Public Agency (County & Municipal)	700	5	24
Small business / Private Agencies	3,800	27	129
TOTAL	8,191	58	278

* Based on a 0.7% average rate of new construction identified in the survey results.

** Based on a 3.4% average rate of alteration identified in the survey results.

Summary of current design practices and trends for accessible beaches

Beach Case Study #1

Region:	Northeast
Environmental Type:	Primitive Lake
Agency/Ownership:	State Agency
Designed as Accessible According to Current Construction Practices:	No

Cost related to developing newly constructed beaches

Current Construction Practices: (Condition of Beach as Constructed)

Elements Included:	A log bench, and weed and brush removal of existing remote access beach.
Number of Access Routes:	0
Site Grades Present:	Access route grades up to 14%.
Surface(s) Used:	Native grass, soil and sand.
Project Cost:	\$960

Cost related to constructing accessible paths consistent with the proposed provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above, plus a roll of temporary matting for access to water's edge.
Number of Sites:	1
Site Grades Present:	Would need to grade access routes by hand to get below 8% maximum grades.
Site Surface(s):	Same as above, plus a roll of temporary matting over the sand beach surface.
Project Cost:	\$1,350

% of Beach that Meets Conditions for Departure: 0%

Conditions for Departure Met: 1) Potential to meet 16.1.1 condition #2 (alters fundamental experience of wilderness setting) to avoid access route grading and surfacing.

% Increase in cost Associated with Development According to the Proposed Standards: 41%

Major Factors Affecting Cost Increase: 1) Providing temporary accessible surface other than native grass and sand.
2) Labor costs for grading routes with hand tools. (Mechanized tools are not allowed in wilderness area)

Estimated Costs Associated with Accessibility Related Elements \$390

Beach Case Study #2

Region:	Midwest
Environmental Type:	Lake
Agency/Ownership:	Municipal Agency
Designed as Accessible According to Current Construction Practices:	No

Cost related to developing newly constructed beaches

Current Construction Practices: (Condition of Beach as Constructed)

Elements Included:	Picnic Tables, permanent beach access route (parking to edge of sand), outdoor rinsing shower.
Number of Access Routes:	1 permanent
Site Grades Present:	Access route grades less than 8%.
Surface(s) Used:	Recycled boardwalks and concrete patio for ORAR, natural grass and sand.
Project Cost:	\$93,072

Cost related to constructing accessible paths consistent with the proposed provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included:	Same as above, plus 1 temporary beach access route to water's edge and accessible outdoor rinsing showers.
Number of Sites:	2 (1 permanent, 1 temporary)
Site Grades Present:	Same as above.
Site Surface(s):	Same as above, plus temporary matting to traverse the sand beach surface.
Project Cost:	\$109,000

% of Beach that Meets Conditions for Departure: 0%

Conditions for Departure Met: Not Applicable

% Increase in cost Associated with Development According to the Proposed Standards: 17 %

Major Factors Affecting Cost Increase: 1) Adding grab bars, accessible controls, and cement pad to outdoor rinsing showers.
2) Providing a temporary path over sand beach surface.

Estimated Costs Associated with Accessibility Related Elements \$15,928

Beach Case Study #3

Region: **South**
Environmental Type: **Human-made**
Agency/Ownership: **State Agency**
Designed as Accessible According to Current Construction Practices: **Yes**

Cost related to developing newly constructed beaches

Current Construction Practices: (Condition of Beach as Constructed)

Elements Included: Picnic Tables, permanent beach access route, outdoor rinsing showers, and an outdoor swimming pond with filtration and pump system.
Number of Access Routes: 1 permanent
Site Grades Present: Access route grades less than 8%.
Surface(s) Used: Concrete access route to water's edge.
Project Cost: \$150,000

Cost related to constructing accessible paths consistent with the proposed provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included: Same as above. Outdoor rinsing shower is expensive if accessible.
Number of Sites: 1 permanent
Site Grades Present: Same as above.
Site Surface(s): Same as above.
Project Cost: \$150,000

% of Beach that Meets Conditions for Departure: 0%

Conditions for Departure Met: Not Applicable

% Increase in cost Associated with Development According to the Proposed Standards: 0%

Major Factors Affecting Cost Increase: 1) Providing grab bars, accessible controls, and cement pad for outdoor rinsing showers is expensive (\$2,500 per shower). 2) Providing a accessible surface for path over sand beach surface (approximately 530 ft).

Estimated Costs Associated with Accessibility Related Elements \$22,500

Beach Case Study #4

Region: West
Environmental Type: Tidal
Agency/Ownership: State Agency
Designed as Accessible According to Current Construction Practices: Yes

Cost related to developing newly constructed beaches

Current Construction Practices: (Condition of Beach as Constructed)

Elements Included: Shower/comfort station renovation, parking lot, walkway (parallel to beach on grass), temporary rubber access route across beach to high water mark, irrigation system, play area.
Number of Access Routes: 1 permanent, 1 temporary
Site Grades Present: Access route grades up to 14%.
Surface(s)Used: Interlocking rubber matting and bituminous pathways.
Project Cost: \$517,000

Cost related to constructing accessible paths consistent with the proposed provisions developed by the Committee.

Construction Practices Necessary According to the Proposed Standards:

Elements Included: Same as above.

Number of Sites:	1 permanent, 1 temporary
Site Grades Present:	Same as above.
Site Surface(s):	Same as above.
Project Cost:	\$517,000
% of Beach that Meets Conditions for Departure:	0% (unless sand shifts to create excessive grades on beach access route.
Conditions for Departure Met:	Potential for 16.1.1 condition #4 (due to characteristics of the terrain) for grade requirements. Shifting sand may cause extreme grades one day, and gentle grades the next. It is impossible to permanently fix or alter to improve grades.
% Increase in cost Associated with Development According to the Proposed Standards:	0%
Major Factors Affecting Cost Increase:	1) Providing accessible surface access routes, and temporary route over shifting sand beach. 2) Providing personnel necessary to install and remove temporary rubber matting over sand.
Estimated Costs Associated with Accessibility Related Elements:	Unable to estimate costs associated strictly with accessibility.

Conclusions

Analysis of surveys, interviews, and case studies demonstrated several trends:

1. *Cost increases for compliance with the accessibility guidelines tend to be nominal when case study respondents are allowed to use the conditions for departure liberally.* The average cost increase identified in the case studies when the conditions for departure are used as seen fit is:

Outdoor Developed Area	Average Percent Increase
Overall	9.1%
Trails	9.2%
Picnic Areas	12.6%
Camping Areas	0.6%
Beaches	14.5%

2. *Cost increases for compliance with the accessibility guidelines are substantial if the conditions for departure are not allowed.* The case study respondents were asked in the interview to estimate what costs are incurred strictly to meet accessibility standards. The following average increases in cost were suggested when conditions for departure are not allowed:

Outdoor Developed Area	Average Percent Increase
Overall	144%
Trails	333%
Picnic Areas	63%
Camping Areas	119%
Beaches	59%

3. **39%** of the case study respondents suggested all or a portion of their outdoor developed area would meet one or more of the specific conditions for departure listed in 16.1.1 and 16.1.2 of the proposed standards.
4. *It was noted through the survey responses that cost variation was not noticeably different regionally.* All regions can contain areas of extreme topography. Cost was most noticeably associated with two elements:
 - 1) The topography of the area (grades present on the site)
 - 2) The type of trail being constructed (Paved bike/pedestrian trails are much more costly than backcountry foot paths).

5. When asked to identify the major factors that lead to additional costs for accessibility according to the proposed standards, case study respondents identified following factors:

<u>Trails:</u>	<u>Frequency of Response:</u>
Provision of a Firm and Stable Surface	100 %
Meeting Grade Requirements	71%
Meeting Width requirements of 36" minimum	29%
Accessible facility provision (water source, overlooks, etc)	43%
Avoiding geologic obstacles	14%

<u>Picnic Areas:</u>	<u>Frequency of Response:</u>
50% of site grading to below 5% maximum	100%
40% of accessible sites connected by ORAR w/ 3% max grade	67%
Water source accessibility	33%

<u>Camping Areas:</u>	<u>Frequency of Response:</u>
Remote Location (material import)	25%
Provision of a Firm and Stable Surface	75%
50% of site grading below 3% maximum	75%
Water source accessibility	25%

<u>Beaches:</u>	<u>Frequency of Response:</u>
Provision of a Firm and Stable Surface Over Sand	100%
Additional Labor Costs for Installing Accessible Elements	25%
Provision of accessible elements to outdoor showers	50%
Personnel necessary for installation of temporary path	25%

Appendix A: Acknowledgements

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Francine Wai, Hawaii Commission on Persons with Disabilities
Everett Werness, American Camping Association

Appendix B: Resources

1. Alig and Healy, (1987). National Resources Inventory.
2. Cordell, K. (1999). Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends.
3. Hardt, M.M. (1995). "Trends in Trails." Proceedings of the Fourth International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference.
4. The National Association of State Park Directors, (1999). The 1999 Annual Information Exchange: A Statistical Report of State Park Operations for the Period July 1, 1997 through June 30, 1998.
5. USDA Forest Service, (1996). Outdoor Recreation in the U.S.: Results from a National Survey on Recreation and the Environment.
6. Private and Outdoor Recreation in the U.S.
Website: <http://www.agecon.uga.edu/~erag/nplostxt.htm>
7. Woodall, (1999). Woodall's Campground Directory.

Appendix C: Cost Analysis Survey

Addendum #1

Response to questions posed by Access Board Representatives on 10/19/99:

Question #1:

With respect to the chart on page 6 (actually referring to page 10), which source did you rely upon for this particular information?

Answer:

No single source exists to determine the total numbers of trails in the nation. Therefore, we used the following sources to extrapolate an estimate of these numbers.

1. Hardt, M.M. (1995). "Trends in Trails." Proceedings of the Fourth International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference.
2. The National Association of State Park Directors, (1999). The 1999 Annual Information Exchange: A Statistical Report of State Park Operations for the Period July 1, 1997 through June 30, 1998.
3. USDA Forest Service, (1996). Outdoor Recreation in the U.S.: Results from a National Survey on Recreation and the Environment.
4. Private and Outdoor Recreation in the U.S.
Website: <http://www.agecon.uga.edu/~erag/nplostxt.htm>

Question #2:

Is this data broken down into the number of "backcountry" or "urban" trails?

Answer:

There are very few sources for this type of information. By looking at the funding allotments distributed through the ISTEA Enhancements Program in 1991, we learned that 51% of the money was used in constructing Rail - Trails (15.9%) and bicycle/pedestrian multi-use trails (35.4%). Using this percentage as a basis for our assumptions, we decided that between 60% and 80% of new construction must be constructed in the urban/suburban environment.

In order to validate this assumption, we conducted an unscientific survey of outdoor developed area managers throughout the country. This inquiry determined that 79% of the respondent examples fell under the urban/suburban category (31 out of 39 examples) and 21% fell under the backcountry category.

However, we must also consider that the responses were solicited as examples of cost increases associated with compliance with accessibility guidelines. This caused a bias towards providing examples of trails that were already "accessible" to some degree.

Since urban/suburban trails tend to naturally be more accessible than backcountry trails, we likely received a greater proportion of the urban/suburban type trails than actually exist overall.

Taking this bias into account, we feel that the response validates the general assumption that between 60% and no more than 80% of newly constructed trails fall into the urban/suburban category of trail construction.

Question #3:

What makes up the 15,500,000 (number of current miles) for small business/private agencies? Are long distance trails included here? Should Federal and State numbers be larger?

Answer:

This number includes any privately owned and operated trail. It includes any long distance or multi-jurisdictional trail that is administered by a private agency, non-profit organization, or for-profit business (i.e. - the Appalachian Trail) . This number also includes all privately constructed roads (for example, logging roads and other privately constructed vehicular access routes).

According to all information available, the Federal and State numbers are correct. The National Survey on Recreation and the Environment put Federal miles of trails at 160,000 miles (over 100,000 of which are on USDA Forest Service lands) and estimate state mileage to be 102,000 miles (corroborated by the State Park Directors Annual Information Exchange).

Question #4:

What did we use to distinguish the "small businesses"?

Answer:

The "small business" category is used to include any non-governmental agency or business that is privately owned and operated. It includes both non-profit and for-profit agencies of any size.

Question #5:

What was your main source of data on the beaches section? Where would a private resort with a beach be represented? Do we have a source for these types of private resorts?

Answer:

The beaches section numbers was an extremely difficult number to gain an accurate value for. The numbers given are extrapolated from a multitude of sources including:

1. Alig and Healy, (1987). National Resources Inventory.
2. The National Association of State Park Directors, (1999). The 1999 Annual Information Exchange: A Statistical Report of State Park Operations for the Period July 1, 1997 through June 30, 1998.
3. Private and Outdoor Recreation in the U.S.
Website: <http://www.agecon.uga.edu/~erag/nplostxt.htm>
4. Woodall, (1999). Woodall's Campground Directory.

Private resorts with a beach are included in the "Small business/Private agency" category. The number estimated to exist in the nation was extrapolated from resources #3 and #4 above. The Campground Directory provided a baseline number of camping resorts with beaches. We then extrapolated from that to estimate the total number of private resorts with beaches in the nation.

If you have any further questions on the Cost Analysis, please contact Mike Passo at (612)379-3858 or email: mikepasso@wildernessinquiry.org