

# **BEST PRACTICES FOR PARKS CANADA TRAILS**

**A Spectrum of Appropriate Trail Activities, Services and Facilities**

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# INTRODUCTION

As the population base in North America ages, participation in pleasure walking in natural environmental settings is expected to be one of the fastest growing segments of outdoor recreation over the next 20 years. Parks Canada has many high-quality walking and hiking trails, and provides other trail-related activities that allow visitors to experience some of the most spectacular, protected scenic landscapes in the world.

Trails provide the visitor with first hand opportunities to understand, appreciate, and enjoy key park/site heritage themes and values. They also provide opportunities for a range of environmental, personal, social, and economic benefits.

With this in mind, Parks Canada is concerned about continuing to provide high standards of heritage presentation and access to recreational opportunities through its trails. In its business plan highlights, *Into The Future*, Parks Canada recognizes that it must provide safe and affordable facilities in its existing parks. Trails play a vital role in helping Parks Canada achieve its mandate. Parks Canada also recognizes the need to manage and control its trail assets in a manner that promotes sustainable development.

## THE ROLE OF TRAILS

According to Parks Canada 1994 Policies, trails and their use are considered to be an appropriate activity. Trails are deemed essential in providing public access for a wide variety of appropriate visitor activities, from sightseeing to mountain climbing. The nature and attributes of each trail depends on the limitations of the park zone it is in, the benefits and experiences visitors are seeking, and the kind, quantity, and quality of the services needed to support each visitor activity. Trails offer both a general public benefit and a specific personal benefit to individual trail users.

## CONSIDERATIONS

Proposed user fees for park facilities (including trails) adds another factor to the management of trails. User fees may result in visitors continuing to demand the high-quality services they have come to expect. Parks will need to maintain, and in some cases enhance, the quality of the heritage presentation, as well as the recreational opportunities, activities, services, and facilities it offers to visitors. It may be necessary to rehabilitate or close some trails, depending on their educational and recreational benefits, life cycles, types, levels of use, environmental conditions, and influences on ecological integrity.

## OBJECTIVES

Best Practices for Parks Canada Trails and Asset Inventory for Parks Canada Trails provide a present-day snapshot of appropriate visitor activities and services, under the jurisdiction of Parks Canada, that trails and their associated facilities must support. These documents have been completed to meet the following basic objectives:

- Consolidation and analysis of the latest available information on trail-related visitor activities, services, and facilities in National Parks, Historic Sites, and Canals.
- Provision of guidelines that help translate existing trail standards into reality when future trail installations and recapitalization of older trails are required.
- Presentation of a spectrum of "Best Practice" examples and standards that reflect harmony among protection of heritage values, public safety, visitor activity requirements, and aesthetics (such as scale, form, and texture) in ways that are appropriate to the setting.

(Trail inventories, analysis, and summary and data sheets listing individual trails are contained in *Asset Inventory for Parks Canada Trails*.)

# 1.0 BEST PRACTICES

Determining “best practices” for trail-related visitor activities, services, and facilities involves identifying examples of appropriate trail design techniques that can be used as “standards”. Selected examples cover a range of environmental settings, conditions, and trail-related activities that typify those encountered across the country. This is accomplished by:

- obtaining and selecting good examples of trail designs, materials, and construction methods, and identifying qualities that make them appropriate;
- presenting photographs of these examples in an easily understood Spectrum Format that illustrates “Best Practice” solutions to trails withing identifiable surroundings and areas of use.

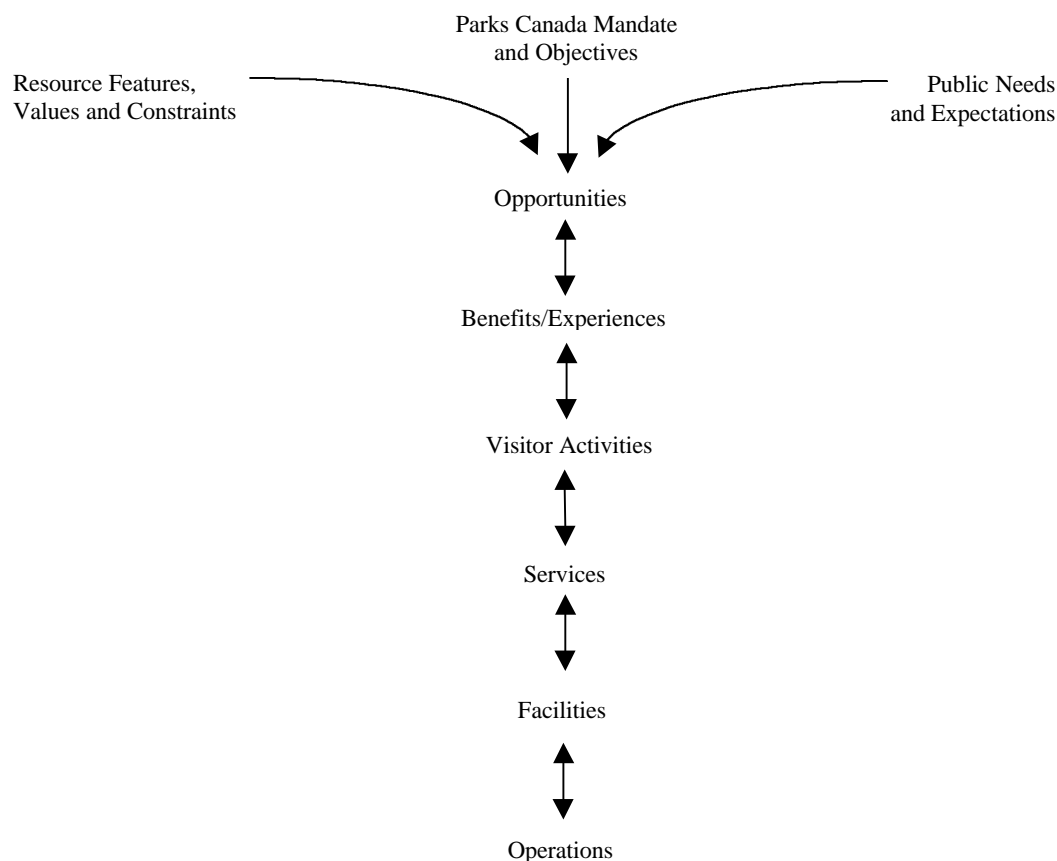
## 1.1 Definition

"Best Practices" refer to trails, and their components, that represent good examples of trail planning and design techniques that show respect for ecological and commemorative integrity, appropriate visitor opportunities, and sustainable practices. These trails should contribute to the presentation of heritage themes and messages, help minimize conflict between users, and have minimal environmental impact upon the heritage settings.

Trails that employ "Best Practices" possess the following qualities: pleasing aesthetics, solid construction using acceptable materials, informative offerings, and safety. They are provided with a wise and efficient use of resources. These trails are in scale with, complementary to, and appropriate for their natural and cultural surroundings and Park Zones. For details on how this is accomplished, refer to the *Trail Manual*.

## 1.2 Guiding Principles and Procedures

All physical planning exercises for public use opportunities in Parks Canada should follow a hierarchy of decision making, as illustrated by the Visitor Activities Management Process (VAMP) concept shown in Figure 1, below. Trails should be developed according to this concept.



**Figure 1:** Basic Visitor Activities Management Process (VAMP) Concept.

Trail-related visitor activities, as well as the access and circulation provided by trails, is to be defined by the management plan and must conform to park zoning. More detailed plans and levels of service for trails should be reflected in the service plan and in the public safety plan. Trails should also reflect appropriate site planning and sustainable design standards and maintenance practices. While the main body of the *Trail Manual* already sets forth, in considerable detail, good principles and procedures for trail planning and development, a checklist of its main points may prove useful to improve harmony and understanding and to help translate existing standards into reality.

A matrix of guiding principles and procedures is shown in Table 1, below.

**Table 1: Matrix of Guiding Principles and Procedures**

Legend      x = Denotes consideration	Phases of Project Development					
	Planning	Design				
		Construction	Operations			
			Maintenance	Rehabilitation		
<b>Market</b>						
Assess and monitor the size, mix, and trends in the market for trail-related visitor activities, services, and facilities.	x	x		x	x	x
Evaluate potential for trail-related activities, services, and facilities to create new opportunities and experiences for clients to visit the park or site.	x	x		x	x	x
Identify contribution of trail-related activities, services, and facilities to overall heritage tourism strategies and action plans.	x	x		x	x	x
Identify and consider competing trail-related activities, services, and facilities.	x	x		x	x	x
<b>Activities</b>						
Identify activities that promote appreciation of heritage area purpose and objectives, respect the integrity of natural and cultural resources, and require a minimum of built facilities.	x	x		x		
Identify and list an agreed upon range of existing and potential trail-related activities.	x	x		x		
Profile visitor activity groups benefits/experiences sought during trip cycle.	x	x		x	x	
Identify and access trail activity conflicts and mitigating measures.	x	x	x	x	x	x
<b>Experience and Benefits</b>						
Define and identify the range of visitor experiences and benefits that are to be offered by the setting and associated trail-related activities, services and facilities that are defined, and compared to regional supply.	x	x				x
Link visitors' experiences and benefits to appreciation, understanding, and enjoyment of the heritage areas themes and values.	x	x	x			x
<b>Natural and Cultural Resource Protection</b>						
Gather and assess baseline information on natural/cultural resources and ecosystem processes.	x	x		x		x
Agree upon and monitor resource protection standards and indicators.	x	x	x	x	x	x
Utilize sustainable, environmentally friendly practices and materials.	x	x	x	x	x	x
Establish and operationalize limits of acceptable change.	x	x	x	x	x	x
Apply principles and practices of Ecosystem Management and Cultural Resource management.	x	x	x	x	x	x



**Table 1: Matrix of Guiding Principles and Procedures**

Legend      x = Denotes consideration	Phases of Project Development					
	Planning	Design				
		Construction	Operations			
			Maintenance	Rehabilitation		
<b>Natural and Cultural Resources Protection (cont.)</b>						
Minimize habitat fragmentation.	x	x	x			x
Assess and mitigate cumulative affects of trail-related activities, services, and facilities.	x	x	x	x	x	x
Assess and mitigate effect of closures or rehabilitation in one area on adjacent areas.	x	x	x	x	x	x
Use strategies on the range of indirect (e.g., facility design, orientation) and direct (e.g., zoning, rationing use) where necessary to ensure resource protection.	x	x	x	x	x	x
Consider controlled access as a means of environmental protection.	x			x		x
Monitor trail activities to ensure continuation of ecological integrity.			x	x	x	
<b>Physical Setting</b>						
Review and analyze all baseline maps, charts, etc. Concerning the topography, soils, vegetation, and wildlife for the area(s) being studied.	x	x				x
Conduct field investigations to assess the various site conditions related to the intended trail project.	x	x				x
Determine the physical possibilities and constraints that need to be taken into account.		x	x	x		
Set capability and suitability zones for proposed trail-related activities, services, and facilities.	x	x	x			x
Identify, describe, and prioritize interpretation themes and values of the setting.	x	x				x
Ensure that the setting chosen for trail-related activities, services, and facilities provides a unique perspective on the heritage area and its interpretation themes and values.	x	x	x			x
<b>Services and Facilities</b>						
Define the type and levels of service and facilities as well as service priorities.	x	x	x	x	x	x
Prepare area and site plans that indicate possible trail route(s) with services and facilities.	x	x	x			x
Prepare facility detail drawings for trails and their components so that scale, site, accessibility, form, aesthetics, and function of trail-related activities, services, and facilities are in harmony with the setting.		x				

**Table 1: Matrix of Guiding Principles and Procedures**

Legend	x = Denotes consideration	Phases of Project Development					
			Planning				
			Design				
				Construction			
					Operations		
						Maintenance	
					Rehabilitation		
<b>Services and Facilities</b> <i>(cont.)</i>							
Ensure that design of services and facilities is subordinate to the ecosystem and cultural context.			x			x	
Ensure implementation adheres to all environmental mitigating measures, plans, and specifications.				x	x	x	
<b>Heritage Presentation</b>							
Present interpretation themes and values linked to setting, visitor activity profiles, services, and facilities in an integrated package.		x	x	x	x	x	
Present interpretation themes and values linked to broader environmental issues.		x	x	x	x		
<b>Visitor Risk Management</b>							
Examine existing or potential risks identified through a risk assessment that considers environmental, infrastructure, human characteristic, communications, and program management risk issues.		x	x	x			
Identify, evaluate, and implement risk control measures (e.g., information, signs, structures) consistent with existing legislation, policy, and standards.		x	x	x	x	x	
Inspect and monitor existing and potential risks as well as risk control measures.				x	x	x	
<b>Legislation and Policy</b>							
Ensure that activities, services, and facilities are in compliance with federal legislation, policy, regulations, and management direction, for example:		x	x	x	x	x	
National Parks Act							
Historic Sites and Monuments Act							
Canadian Environmental Protection Act (CEPA)							
Fisheries Act							
Canadian Environmental Assessment Act (CEAA)							
Guiding Principles and Operating Policies							
Park Management Plans							
Park Ecosystem Management Plan							
Trail Manual							
Trail Bridge Standards							
National Building Code							
Park Zoning							
Guide to Green Government							
Direction on Greening Government Operations							

*cont.*

**Table 1: Matrix of Guiding Principles and Procedures**

Legend      x = Denotes consideration	Phases of Project Development					
	Planning					
	Design					
	Construction					
	Operations					
					Maintenance	Rehabilitation
<b>Cost Benefit Analysis</b>						
Apply revenue management framework to identify costs and examine opportunities for cost recovery.	x	x				x
Analyze costs and benefits through processes such as value engineering.		x				x
Identify mechanisms for revenue management, capital, lifecycle, and operating costs accounted for in Business Plan.	x	x	x	x	x	x
Examine various options before proceeding, especially where rehabilitation or closures are involved.		x				x

## 1.3 Trail Classifications

Trail classifications are adopted from a system developed in our Alberta (Western) Region. This system is intended primarily to guide in the reconstruction of existing trails. Each classification is based on management objectives, levels of use, and relevant physical criteria:

- **Class 1 Primitive Trails** are marked, but generally unimproved except for clearing and some work on dangerous areas. Tread widths should be as narrow as possible, up to 70 centimetres (cm). The overall grade should be less than 25%, except for short distances, where it should not exceed 40%.
- **Class 2 - Minor Trails** are signed and improved to accommodate foot, horse traffic, or both. Tread widths should be 50 cm to 150 cm. The overall grade should generally be less than 25%, except for short distances, where it should not exceed 40%.
- **Class 3 - Major Trails** are signed and improved for foot, horse traffic, or both. A major trail usually reaches many of the main visitor attractions and serves as a terminus for minor and primitive trails. Tread width is usually 60 cm to 200 cm. The overall grade is less than 20%, except for short distances where it should not exceed 30%.

- **Class 4 - Walks** include boardwalks and bituminous trails that interconnect developed areas, or serve as short scenic walks. Tread widths should be 100 cm to 300 cm. Major boardwalks in urban settings may exceed these widths. The overall grade is less than 15%, except for short distances, where it should not exceed 25%. Stairways should be used on steep sections.
- **Class 5 - Special Purpose Trails** include bicycle, cross-country ski, and accessible trails for disabled persons.

## 1.4 Spectrum Format

The format for presenting examples of "Best Practices" is a matrix based on the Parks Canada zoning system and the kinds of facilities that support visitor activities. This zoning system provides a spectrum of opportunities and constraints for public appreciation, understanding, and enjoyment.

Selected examples of Best Practices are organized both vertically (Park Activity Zones) and horizontally (Facilities and Appearance) to create a Spectrum of Appropriate Trail Activities, Services, and Facilities. This spectrum, entitled *BEST PRACTICES for PARKS CANADA TRAILS*, is self-explanatory and is provided as a fold-out (see Appendix C) at the end of this report. The components of this spectrum include:

### **PARK ACTIVITY ZONES**

- 1) SPECIAL PRESERVATION
- 2) WILDERNESS
- 3) NATURAL ENVIRONMENT
- 4) OUTDOOR RECREATION
- 5) PARK SERVICES

### **Facilities and appearance**

- A) Trails
- B) Trail Bridges and Boardwalks
- C) Campsites, Shelters and Toilet Buildings
- D) Signage and Interpretation
- E) Disabled Access

## 1.5 Opportunities

The guidelines in providing and managing opportunities for visitors are spelled out in *Parks Canada's Spectrum of Appropriate National Parks Opportunities* currently under review.

The spectrum cells referred to above and shown in Appendix C permit varying levels of user experiences, trail services, and facilities. They range from primitive and rustic to refined and urban in character. Each of these cells offers a number of opportunities for trails and trail components, as indicated below.

- **Special Preservation**-The Special Preservation Zone, cells IA to IE, is an exception, as trails or their components are not usually permitted in order to isolate and protect threatened or endangered resources.
- **Wilderness**-Trails for experienced hikers and horseback riders only are permitted in this zone, depending on management plan direction. Trails should be natural in character and installed to the "most difficult" level of use. According to the Asset Management Plan, these trails have the lowest maintenance priority. Class 1 and 2 trails are most appropriate in this zone.
  - **Trails** should be very unobtrusive and rest gently on the landscape. Their width should be for persons walking single file. Their surfaces should be composed of native or native-appearing materials.
  - **Trail Bridges and Boardwalks** should be rudimentary and rustic in appearance. They should be narrow in width and built using undimensional, natural appearing materials. Synthetic fasteners may be used, with discretion.
  - **Campsites, Shelters, and Toilet Buildings** should be at the primitive level and strategically located in dry, protected areas near a potable water source. Campsites should be rudimentary and constructed using native materials (e.g., stones for fire circles and peeled logs for structures such as food caches). Shelters should be rustic and may contain a small manufactured wood stove. Synthetic fasteners may be used, with discretion. Latrines or composting toilets are used instead of regular toilet buildings.
  - **Signage and Interpretation** should be minimal. Signage should give direction and distances to primary landmarks or destination points and interpretive information should be limited to pre-trip hand-out material and trailhead displays.
  - **Disable Access** is allowed, although there is a high degree of difficulty and risk involved. Trails and components are totally unmodified to accommodate persons with disabilities; therefore, some users must have assistance.

- **Natural Environment-** Trails for hikers, dayusers, cyclists, and horseback riders are permitted. Trails should be somewhat rustic in character and installed to more difficult levels of use. These trails have a lower maintenance priority. Generally, Class 2 and 3 trails are suggested in this zone.
  - **Trails** should be unobtrusive and rest gently on the landscape. Their width may be for one or two persons. Surfaces should be built primarily of native or natural-appearing materials.
  - **Trail Bridges and Boardwalks** should be simple and rustic in appearance. They should be less narrow in width, designed to accommodate the intended use, and built using undimensional, natural appearing materials. Synthetic fasteners and materials may be used, with discretion.
  - **Campsites, Shelters, and Toilet Buildings** should be at the semi-primitive level and located in dry, protected areas near a potable water source. Campsites should be rudimentary and constructed using mainly native materials, (e.g., stones for fire circles and undimensional lumber for structures and food caches). Shelters should be somewhat rustic and may contain a stove or fireplace. Synthetic fasteners and materials may be used, with discretion. Latrines, pit privies, or composting toilets are used instead of regular toilet buildings.
  - **Signage and Interpretation** information should be more than minimal but somewhat limited. Signage should give direction and distances to primary landmarks or destination points. Interpretive information should be limited to pre-trip hand-out material, trailhead displays, and special trailside feature panels.
  - **Disable Access** may be provided. However, trails and components are difficult for persons with disabilities. Some special modifications to trails, or sections thereof, are made as per management direction. Some persons with disabilities will require assistance.
- **Outdoor Recreation-** Trails in this zone permit hiker, non-motorized, and limited-motorized access, depending on management direction. Trails should be rural in character and installed to somewhat difficult levels of use. These trails have a medium maintenance priority. Generally, Class 3, 4 and 5 trails are suggested in this zone.
  - **Trails** should be obvious and fit comfortably into the landscape. Their width may be for two or three persons. Their surfaces should be built primarily of natural or natural appearing materials.
  - **Trail Bridges and Boardwalks** should be simple and rustic in appearance. They should be less narrow in width, designed to accommodate the intended use, and built using undimensional, natural appearing, and synthetic materials and fasteners.

- **Campsites, Shelters and Toilet Buildings** should be compatible with the semi-serviced and group tenting levels. They are located in areas with a potable water supply. They should be simply constructed using native and manufactured materials. Synthetic fasteners and fixtures may be evident. Pit privies and rustic toilet buildings are used.
  - **Signage and Interpretation** information should be somewhat limited. Signage should give direction and distances to primary landmarks or destination points in accordance with the Trail sign Plan. Interpretive information should be provided at strategically located displays and special trailside feature panels.
  - **Disable Access** is provided. Trails and components are moderately difficult for persons with disabilities. Some special improvements or modifications to trails or components are made as determined by the Public Access Plan. Some users may need assistance.
- **Park Services-** Trails in this zone permit non-motorized and limited motorized access. All trails and components should be sympathetic to the broader surroundings and yet complement the characteristics of the immediate site. They may be refined and somewhat urban in character. Trails should be installed to least difficult levels of use and maintained at a high priority. Generally, Class 4 and 5 trails are suggested in this zone.
    - **Trails** should be very obvious and complement their immediate surroundings. Their width should accommodate two to four persons and their surfaces may be built using native, natural, and synthetic materials.
    - **Trail Bridges and Boardwalks** may be more refined and complex in construction and appearance. Their width should be for three to four persons and designed to accommodate the intended use. They should be built using natural looking and synthetic dimensional materials; fasteners and fixtures may be used and evident.
    - **Campsites, Shelters, and Toilet Buildings:** campsites should be compatible with the semi-serviced level, and shelters may be connected to a water and electrical supply. Both components may be more complicated in construction and use natural, manufactured, and synthetic materials. More urban-style toilet buildings are used.
    - **Signage and Interpretation:** Signage may give more detailed direction and distances to landmarks or destination points in accordance with the Trail Sign Plan. Interpretive information should be provided at strategically located displays and special trailside feature panels, wherever appropriate.
    - **Disable Access** is provided and trails and components should be easy to use. They should be fully accessible and practical for persons with disabilities. Special improvements or modifications to trails or components are made, as determined by the Public Access Plan. Most users should not require assistance.

## 1.6 Intervention Levels

Intervention levels refer to the risk and the degree of intervention that Parks Canada is prepared to undertake in preventing or warning of dangerous situations and/or to assist or rescue visitors/users in need of help (see the Spectrum Format Foldout).

## 1.7 Photographic Detail Sheets

A detailed Best Practices sheet has been prepared for the 20 cells contained in the Spectrum, ranging from A2 to E5 (see Appendix A). These sheets are composed of photographs with notes identifying the ways in which the examples shown are appropriate within their given zones, based on the “definition” of best practices (see also Spectrum Format Foldout, where these photographs are used).



## 2.0 CONCLUSIONS

### 2.1 Inventory and Analysis

*Best Practices* and the *Asset Inventory* provide a snapshot of existing conditions with regard to Parks Canada trails. Updating the National asset database for these two reports depended on co-operation from the Regional Offices, Parks, Canals, and Historic Sites.

The database provides a relatively accurate count of accessible trails and the number, kilometres (km) and replacement costs of trails. Data on trail bridges and interpretive panels is not quite as accurate. Visitor use statistics are not accurate owing to poor record keeping. Better record keeping will be necessary once user charges are required from visitors.

Parks Canada trails are in fairly good condition, with an overall rating of 84% in acceptable (i.e., good to fair) condition. The remaining 16% of these trails need to be examined to determine what options should be employed, in future years, to keep their standards at acceptable levels. This should be an ongoing process as trails continue to deteriorate depending on natural and user conditions, and how well they are maintained.

Weaknesses in the asset database and condition ratings should be corrected over the next few years, wherever possible.

### 2.2 Best Practices

This report also provides a spectrum of best practice examples that exist within Parks Canada trail systems across the country. An effort was made to select and present the most appropriate photographs submitted by the regions. These examples should be considered as guidelines against which future trails-related activities, services, and facilities can be measured.

Those involved with trail planning, design, and implementation will have to be quite conversant with the *Trail Manual*. As a result, a few tips on how to integrate the various aspects of subsequent work on trails are provided below:

- Ensure that there is a thorough understanding of the resource values and constraints, existing management direction, and public needs and expectations when defining opportunities and experience for trail-related activities, services, and facilities.
- Think in terms of sustainable design and maintenance practices that reinforce the holistic character and ecological integrity of the greater landscape through which the trail passes.
- Refer to the Guiding Principles and Procedures and the earlier sections of this manual for acceptable and proper site analysis, environmental impacts, designs, layouts, details, and construction techniques.

- Be aware that trails often pass through different Park Activity Zones, so tailor your plans, designs, and implementations to suit these slightly different conditions.
- Compare your ideas and plans against the Best Practices standards illustrated in this document. Certain modifications may actually be necessary to provide a more appropriate fit.

# **APPENDIX A**

## **— Photographic Detail Sheets**

**WILDERNESS**



This backcountry hiking trail through the mountains has been carefully fitted into the sub-alpine topography. This scene provides an overlook to the surrounding landscape.



The stepping stones of this trail traverse an alpine meadow.



Materials used are local, flat stones set slightly above the existing grades. The native ground cover plant have thus been preserved and protected with little or no environmental impact.



# TRAILS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### NATURAL ENVIRONMENT



Use of native logs in this railing is rustic in appearance and appropriate for this setting. Synthetic fasteners are used but not evident.

Lush undergrowth along this trail provides a natural forest atmosphere.

Colour and texture of the trail surface blends with the surroundings.

Native surface materials allows this trail to appear as a natural outgrowth of the canopied forest.

Low growth plants should be kept and not cut unless they impede user passage.



# TRAILS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### OUTDOOR RECREATION



Low log retaining wall is carefully fitted into the natural hillside topography.



A wide clearing through the trees gives ample space for horses along this riding trail.



Smooth surface and a gentle incline makes walking easy.



Special surface hardening should be considered due to tree root damage caused by horses hooves.





**TRAILS**

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES**

**PARK SERVICE**



A wide and winding trail allows many feet to transverse this setting near a day use area.

A scenic lookout is placed strategically along this riverside trail. The railings provide protection.

Alternative surfacing materials are more acceptable in this zone. Here cut logs have been used and the result is visually pleasant.

The width of this trail and its surface materials are in keeping with a more urban landscape.



# TRAILS BRIDGES & BOARDWALKS

BEST  
PRACTICES

A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

## WILDERNESS

### TRAIL BRIDGES



Provision of a rustic log handrail assists visitors in making a safer crossing.

Split log halves can be added to native timbers to provide a smoother surface.

Twin native, peeled logs provide a simple crossing of this stream. The bridge is compatible with the surroundings.

Understructure of two large member tree trunks make a rustic yet effective bridge for visitors.





# TRAILS, BRIDGES & BOARDWALKS

BEST  
PRACTICES

## A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

### NATURAL ENVIRONMENT

#### TRAIL BRIDGES



Trail surface is wide enough for its intended use and well fitted to the landforms.

Class “B” bridge is wide enough for two pedestrian hikers.

Class “A” bridge that is designed for a light vehicle or horseback traffic.

Split log halves are used as surface decking on this bridge. The supporting structure is not visible.



**OUTDOOR RECREATION**

**TRAIL BRIDGE**

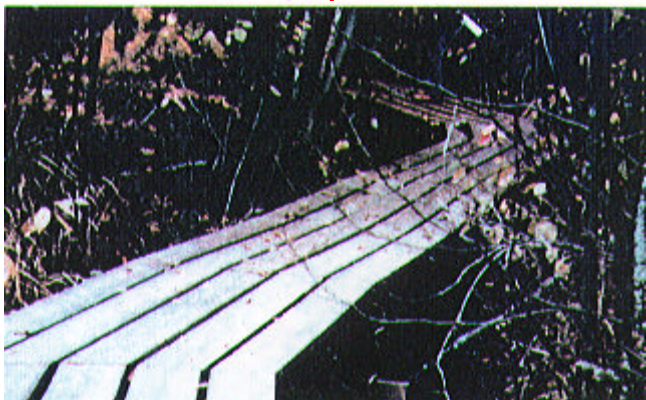


Bridge crossing over a deep canyon in the mountains. Handrail and structural components are designed for heavier pedestrian use.

Boardwalk through a damp area of the forest is wide enough for two persons.

Materials and design present a strong and safe appearance. Synthetic materials are used but not evident.

Parallel wood planks follow the contour of the ground. This boardwalk needs no handrailings. Use longitudinal joints only on level terrain.



**BOARDWALK**

# TRAILS, BRIDGES & BOARDWALKS

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES**

## PARKS SERVICES

### TRAIL BRIDGE



Dimensional wood handrailings are natural looking and provide a more sophisticated appearance near a townsite.

Bridge abutments carefully located to natural conditions.

Boardwalk and steps are fitted naturally into the sloping hillside.

Supporting beams may be manufactured but are not normally visible from the trail.

Decking material and colors are designed to blend into the setting. Dimensional wood can be used in more urban surroundings.



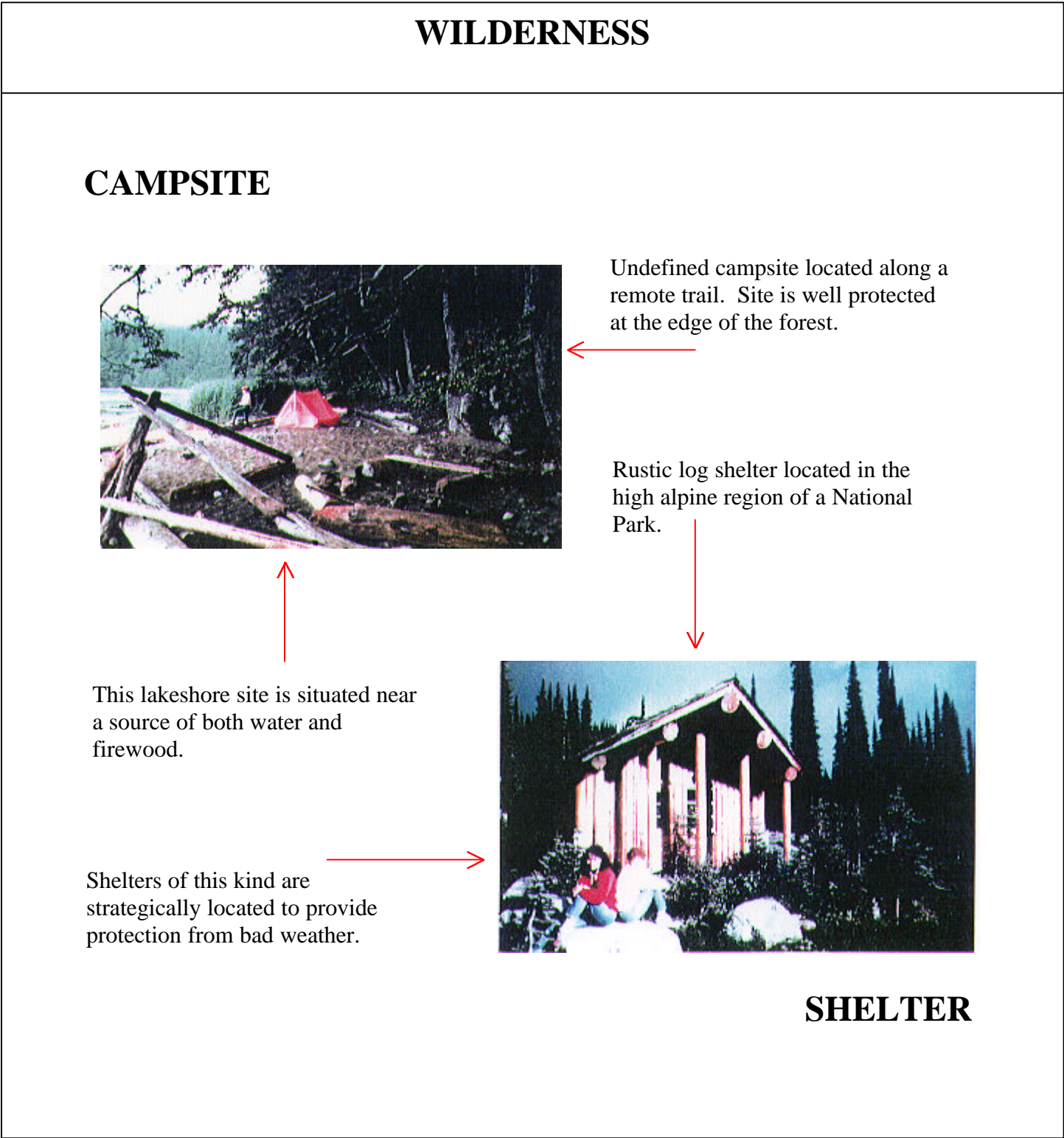
### BOARDWALK



**TRAILS, BRIDGES & BOARDWALKS**

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES**



**CAMPSITES, SHELTERS & TOILET BLDGS.**

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIITES, SERVICES & FACILITIES**

**NATURAL ENVIRONMENT**

**CAMPSITE**



A defined campsite along the trail near a lake. The tent site is sheltered from the wind.

Native ground covers have been preserved during construction thereby maintaining ecological integrity.

Rest stops, pit privies and cooking shelters are more common along trails in this zone.

The trail surface is built using native and natural looking materials.

Trail bridge is almost unnoticeable.

A narrow trail with easy walking surface materials passes through a remote mountain landscape.



**SHELTER**

**CAMPSITES, SHELTERS & TOILET BLDGS.**

**BEST PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES**

**OUTDOOR RECREATION**

**CAMPSITE**



Group campsites located in an open, yet sheltered area.



Picnic shelters and toilet buildings are simple in design and well positioned in the woods.



All these tenting sites are connected along a narrow secondary trail that loops back to the main trail.



The gray roof and wood construction blend with tree trunks giving a natural appearance.



Trail set slightly apart from shelter.



**SHELTER**



**CAMPSITES, SHELTERS & TOILET BLDGS.**

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIITES, SERVICES & FACILITIES**

**PARK SERVICES**

**CAMPSITE**



A defined campsite in a sheltered area using natural looking low timber walls that provide a level site.

Picnic shelters and toilet buildings in campground areas provide a protected place to cook, eat and wash.

Sandy soil fill provides a well drained site for comfort and for driving in the tent pegs.

Materials and colors are more urban. Here brick and wood are combined to provide an aesthetic facility.



**SHELTER**

# SIGNAGE AND INTERPRETATION

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### WILDERNESS

##### SIGNAGE



Clearly visible sign identifying the trail in a remote setting.

Provision of maps and brochures can be extremely useful in explaining about dangerous conditions in remote landscapes.

Rustic appearing sign built using a native log with a stone base at trailside.

High altitude trail built snugly into the mountain slope.



##### INTERPRETIVE



# SIGNAGE AND INTERPRETATION

BEST  
PRACTICES

A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

## NATURAL ENVIRONMENT

### SIGNAGE



Design combines native logs with an easily read description of the surroundings.

All interpretive display panel near the trailhead parking lot. Panel is situated at the forest edge.

The interpretive sign is located at an alpine lake. The trail materials go right up to the waters edge.

Panel is attractive, easy to read and well constructed.



### INTERPRETIVE

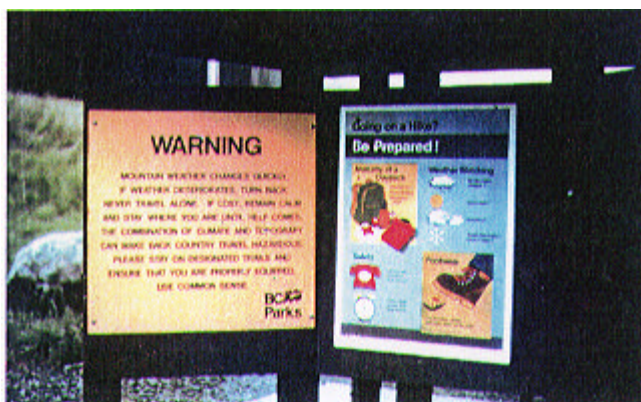
# SIGNAGE AND INTERPRETATION

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### OUTDOOR RECREATION

##### SIGN



Signage is located under a covered structure for protection from the often severe weather.



A Park Naturalist is conducting a guided walk along a Park trail.



Signs transmit essential information concerning risk and danger along trails.

Special guided walks are a good method of imparting interpretive knowledge and appreciation to Park visitors.



##### INTERPRETIVE

**SIGNAGE AND INTERPRETATION**

**BEST  
PRACTICES**

**A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES**

**PARK SERVICES**

**SIGNAGE**



Overhead protection is provided by this simple design that uses natural looking dimensional lumber.



Interpretive panels along this trail at a National Historic Site are informative and well positioned for the strolling public.



The attractive, more urban character of this signboard is in keeping with its immediate setting at a trailhead parking area.



Stone dust material gives a natural gray appearance that blends nicely with the roof of this nearby building.



**INTERPRETIVE**



## DISABLED ACCESS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### WILDERNESS

Trail surface here is on level terrain for ease of walking. However, only certain trails in the wilderness zone would be safe enough for persons with disabilities.



Large graphic sign located at the trailhead parking lot is easier to read for persons with visual impairment.

Trails in this zone are not modified for persons with disabilities.



#### SIGN AND TRAIL

# DISABLED ACCESS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### NATURAL ENVIRONMENT



The horizontal lines of the river bank are repeated in the handrailing and boardwalk design shown here.



Trail is identified with an interpretive panel for easy reading at wheelchair level.



Natural appearance of this wood boardwalk is carefully fitted into this riverside environment; note railings for protection.



Compacted stonedust provides a well defined and smooth trail surface for ease of access.



# DISABLED ACCESS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### OUTDOOR RECREATION



This facility is somewhat more rural in character. The horizontal lines of the setting are reflected in the deck design.

This river crossing bridge and trail, with signage is especially designed for a person with disabilities, and the general public.

Wooddeck colors are appropriate to the surroundings at this oceanside setting. The deck provides an excellent example of an overlook.

Asphalt pavement on this trail helps provide a smooth surface for walking or wheelchairs.





# DISABLED ACCESS

## BEST PRACTICES

### A SPECTRUM OF APPROPRIATE TRAIL ACTIVITIES, SERVICES & FACILITIES

#### PARK SERVICES



Full accessibility is provided to this lookout. Signage and interpretive information is well designed for wheelchairs.



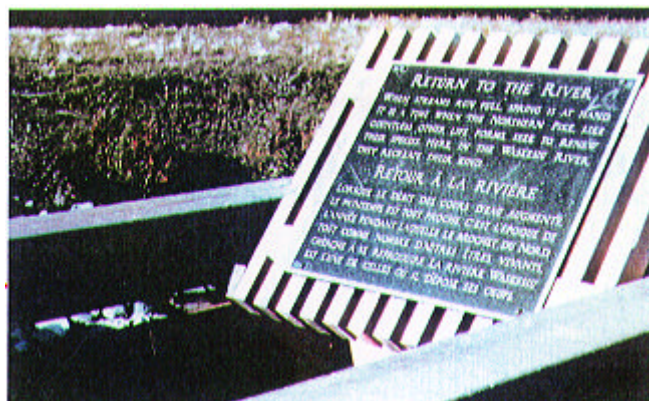
Angle and height of this sign is easy to read for a person using a wheelchair.



Deck construction and colours are appropriate and blend into this more urban location near a Park Townsite.



Guard railings of dimensional lumber provides a safe and sophisticated facility.



# APPENDIX B

## – References/Glossary

### B.1 References

*The Guiding Principles of Sustainable Design*

Denver Service Center, U.S. Dept. Of Interior, NPS D902 – Sept 1993

*Into the Future – Highlights*

Parks Canada, Dept. Of Canadian Heritage

*Trails Management Handbook – 2.25 Trail*

Bridge Guidelines, Region 6, Working Papers, U.S. Forest Service

*Recreation Opportunity Spectrum (ROS) User Guide*

USFS & USDA – Aug. 1982

*Spectrum of Appropriate National Park Opportunities*

RPS, PWGSC for Parks Canada, DRAFT under review (1996)

*Trail and Backcountry Facility Designs*

Parks, WRO, Environment Canada, by A&E, Visitor Services and J.S. Peepre & Associates

*Camping Manual*

A&ES and CPS, Dept. Of Environment, ISBN 0-662-97809-9, MSS – Ottawa, 1992

*Design Guidelines for Accessible Outdoor Recreation Facilities*

ISBN 0-662-22142, Parks Canada, March 1994

*Operations Manual Recapitalization Management Process*

Parks Canada and Architecture and Engineering – April 1, 1995

*A Review of CCA Treated Timber in National Parks and Historic Sites of the Canadian Parks Service*

RPS (CH-EC), PWGSC, Ottawa, 1993

*Visitor Activity Concept: VAMP Technical Group*

Visitor Activities Branch Parks Canada, 1991



## B.2 Glossary

**Backcountry Trails** are located in Wilderness and Natural Resources Zones (2 and 3). Trail conditions should be more rugged than those for frontcountry trails.

**Class “A” Trail Bridges** require formal design by a structural engineer in accordance with CSA CAN 3-56-M78. Loads and load combinations must be considered and load limits must be posted.

**Class “B” Trail Bridges**, with spans of 12m or less, require no formal design but should be built according to standards. They are usually limited to pedestrian and equestrian traffic.

**Frontcountry Trails** are located in Outdoor Recreation and Park Services Zones (4 and 5). Trail conditions should be less rugged than for those for backcountry trails.

**Sustainable Development** is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Facilities must be integrated and function within the natural and cultural constraints of the ecosystem.

**Value Engineering** is a methodology for solving problems using a function-oriented, systematic team approach. It is used to provide value in a product, project, system, or service while reducing costs and maintaining or improving performance and quality.

### Trail Condition Ratings:

**Good:** assets are safe to use and levels of service are not affected. There is no threat to the asset and routine maintenance can correct any defects. No recapitalization is needed for five years.

**Fair:** assets give a low probability of an accident occurring and levels of service being slightly disturbed. There is no risk of accelerated deterioration to the asset and defects can be readily repaired. Some components may require recapitalization in the next two to five years.

**Poor:** assets pose a real risk of an accident and deterioration. Levels of service are frequently lost. Recapitalization is needed in the next one to three years.

**Closure:** assets are not safe to use and level of service is nonexistent. There is a high probability of increased risk, and recapitalization is unlikely.




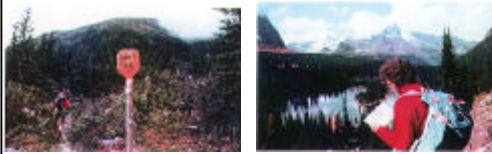

# **APPENDIX C**

## **– Spectrum Fold-out**



## Best Practices for Parks Canada Trails —

### PARKS CANADA ZONES

	1	2
	Special Preservation	Wilderness
OPPORTUNITIES	Solely for visitors seeking opportunities to undertake appropriate educational observations or studies of natural and cultural history. Physical or biological observations or research with no long term impact is permitted. Trails or their components are <u>not</u> normally permitted, in order to protect resources, although some may exist.	Opportunities to experience, first hand, the park's natural and cultural heritage as free as possible from the sights and sounds of humans and from human disturbances to the environment. Appropriate activities are those that create minimal environmental or visual impact within the Zone, and which can be undertaken in a self-relevant way through nonmotorized means.
TRAIL CLASSIFICATIONS	NONE OR CLASS 1	CLASS 1 & 2
TRAILS		 <p>Hiking trails often traverse sensitive landscape. Trails are built using local, native materials appropriate to this zone.</p>
TRAIL BRIDGES AND BOARDWALKS		 <p>Trail bridges should appear rustic and simple. Twin native logs or tree trunks can be used for short spans over water.</p>
CAMPSITES, SHELTERS & TOILET BUILDINGS		 <p>Campsites are usually undefined and near potable water. Shelters are infrequent and located where bad weather is a problem.</p>
SIGNAGE AND INTERPRETATION		 <p>Rustic signs, identifying the trail, are built using local, native materials. Interpretive maps and brochures may be provided.</p>
DISABLED ACCESS		 <p>Trailhead signs should be large and easy to read. In this zone, trails are <u>not</u> modified for persons with disabilities.</p>
INTERVENTION LEVELS	MINIMAL	MINOR

## A Spectrum of Appropriate Trail Activities, Services and Facilities

<div>3</div> <b>Natural Environment</b>	<div>4</div> <b>Outdoor Recreation</b>	<div>5</div> <b>Park Services</b>
<p>Opportunities to experience a park's natural and cultural heritage values through appropriate educational and recreational activities where remoteness, isolation and self-reliance are not prime requirements. Appropriate activities are those in which the setting will accommodate a broader range of compatible activities, possibly for more people, requiring only basic services.</p>	<p>The experience is directly related to significant features that represent the park themes and tends to be more passive, concentrating upon easier, safer, convenient opportunities without expectations of remoteness or isolation. The broadest range of activities permissible in national parks to suit the majority of visitors that do not impact upon Zones I, II and III.</p>	<p>The experience must satisfy the physical, biological and social expectations of specific segments of the vacationing public. Activities offered are those normally associated with a community or a resort centre, in order to satisfy the attributes sought by both the tourism market and the residents of the community.</p>
<p style="text-align: center;">CLASS 2 &amp; 3</p>	<p style="text-align: center;">CLASS 3, 4 &amp; 5</p>	<p style="text-align: center;">CLASS 3 &amp; 4</p>
<div data-bbox="97 615 566 758">  </div> <p>Trails should protect nearby native plants. Native building materials and surfaces should blend with the surroundings.</p>	<div data-bbox="573 615 1042 758">  </div> <p>Horseback trails need greater width and surface hardening. Construction should be well fitted to condition of the site.</p>	<div data-bbox="1049 615 1542 758">  </div> <p>A greater variety of materials can be used in this zone. Wider and hardened trails are needed where foot traffic is heavy.</p>
<div data-bbox="97 861 566 1003">  </div> <p>Class "A" trail bridges accept vehicles. Class "B" trail bridges are meant for pedestrians. Widths need to suit intended use.</p>	<div data-bbox="573 861 1042 1003">  </div> <p>Canyon crossings require handrails for safety, whereas, low boardwalks over damp areas may not require handrails</p>	<div data-bbox="1049 861 1542 1003">  </div> <p>Bridges near townsites allow greater sophistication in design. Boardwalks and steps must be suitable for the immediate site.</p>
<div data-bbox="97 1106 566 1249">  </div> <p>Campsites are semi-defined and protected from the wind. Shelters and pit privies are more common along trails in this zone.</p>	<div data-bbox="573 1106 1042 1249">  </div> <p>Group camping may occur in this zone. Tent sites here are located off the main trail. Picnic shelters and toilets are simple in design.</p>	<div data-bbox="1049 1106 1542 1249">  </div> <p>Campsites are well defined and built using dimensioned materials. Picnic shelters and toilet buildings are more refined in design.</p>
<div data-bbox="97 1352 566 1495">  </div> <p>Trailhead parking areas often have an interpretive sign or display. The design of which should be simple and informative.</p>	<div data-bbox="573 1352 1042 1495">  </div> <p>Signs at trailheads &amp; along trails are often protected under a shelter. A guided walk, with a park officer, helps impart of knowledge.</p>	<div data-bbox="1049 1352 1542 1495">  </div> <p>Signage along trails should be more urban in character. Interpretive panels and signs should be appropriate to the setting.</p>
<div data-bbox="97 1598 566 1740">  </div> <p>Trail surfaces and grades are modified somewhat for easy access. Structures have to suit the terrain and the intended use.</p>	<div data-bbox="573 1598 1042 1740">  </div> <p>More modifications for accessibility are made in this zone. Trailside overlooks and viewpoints are frequently provided.</p>	<div data-bbox="1049 1598 1542 1740">  </div> <p>Many trails have full or partial accessibility. Guardrails and trail definitions are provided. Designs and materials are more urban.</p>
<p style="text-align: center;"><b>MODERATE</b></p>	<p style="text-align: center;"><b>MAJOR</b></p>	<p style="text-align: center;"><b>MAJOR</b></p>