

# Saanich Parks and Recreation Trail Guidelines 2007



June 12, 2007

## Acknowledgements

The **Trail Guidelines** were substantially prepared by Judith Cullington & Associates. The document has been revised through a subsequent collaboration and editing process with staff from Saanich Parks & Recreation Department. Photographs were provided by Judith Cullington and Saanich Parks, unless otherwise noted.

**Thank you!** to the many Saanich residents who participated in the development of the guidelines through meetings, public open houses, surveys and discussions.



“For all trails, a good trail is one that makes us feel alive.”

The Saanich Parks Trail Guidelines were presented to the Parks Trails and Recreation Advisory Committee and the Bicycle and Pedestrian Mobility Advisory Committee for endorsement.

In October 2007, the Parks Trails and Recreation Committee made the following motion:

**“That the Parks, Trails and Recreation Advisory Committee endorse the trail guidelines as an internal working tool, and that this tool be used by Parks staff when engaging public in determining the appropriate development standards for individual projects.”**

In February 2008, the Bicycle and Pedestrian Mobility Advisory Committee made the following motion:

**“That the Saanich Bicycle and Pedestrian Mobility Advisory Committee endorse the Parks Department’s Trail Guidelines 2007 as an internal document for staff to engage in discussions with the community to guide future trail planning, design and development.”**

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# PART A: GUIDELINES

## 1.0 Introduction

The District of Saanich (Saanich) has more than 85 km of trails. These range from regional trails such the Lochside Regional Trail or the Galloping Goose Regional Trail to local trails through neighbourhood parks to narrow tracks such as some of the hiking trails in Mount Douglas Park.

The trail system will continue to grow and change over the next 15–20 years. New initiatives such as the Centennial Trails Project will continue to provide new opportunities throughout the community. There will also be upgrades to existing trails as budgets will allow. New demands will be made on the trail system to reflect the changing needs, technology, and preferences of the population. Changes such as the use of different types of bicycles and the increasing use of trails for commuter cycling will have an effect.

To guide future trail planning, design and development, Saanich Parks and Recreation has prepared these Trail Guidelines.



## 1.1 Purpose

The purpose of the Trail Guidelines is to establish a set of trail types for Saanich, with design guidelines for each trail type. These guidelines are intended to establish a set of principles and identify a trail hierarchy in order to guide new trail construction, trail upgrading and regular maintenance in Saanich.

## 1.2 Scope

The trail design guidelines in this document will apply to designated trails which are managed by the Parks and Recreation Department. It does not apply to:

- ♦ Trails on private and other public lands - such as other agencies like CRD Parks or other organizations, for example - the School Districts, the Federal or Provincial Government, BC Hydro, or post-secondary institutions.
- ♦ On-road cycling lanes, sidewalks, and walkways connecting street to street.

Saanich will continue to work with these other land managers to promote a seamless system as much as possible.

This document proposes a set of trail types and design guidelines. It does not specify which trail type should apply to a particular trail. This will be a subject for ongoing review by Saanich. Amenities which are an important part of trail development, such as benches, landscape, and signs will also be considered later, as part of the detailed design for trails.



### 1.3 The Value of Trails

Trails in Saanich serve many needs and must respond to a wide range of conditions. Trails are seen to contribute to:

1. **A recreational infrastructure for a variety of ages and abilities for the following activities:**

- ♦ Hiking/walking
- ♦ Jogging/running
- ♦ Recreational cycling
- ♦ Mountain biking
- ♦ People using Mobility Aids
- ♦ Families using Strollers
- ♦ Horse riding
- ♦ In-line skating & roller-skating
- ♦ Skateboarding
- ♦ Nature appreciation

2. **The regional and local transportation network.**

- ♦ Trails provide a safer, alternative route for people commuting to work or school or travelling to shops or playgrounds.
- ♦ Saanich is committed to the Regional Transportation Strategy that promotes walking and cycling.

3. **The environmental network**, including:

- ♦ 'Green' corridors which are used by local wildlife
- ♦ An opportunity for children and adults to appreciate nature and learn about natural values

4. **Personal health and fitness.**

- ♦ Trails can provide an easy and inexpensive way for people to be outdoors for fresh air and exercise
- ♦ Trails contribute to the 're-creation' of residents and their physical and psychological health and well being

5. **The economic community of Saanich.**

- ♦ Local businesses benefit from the sale of a wide range of products and services such as: hiking boots, bikes and bike parts, equestrian gear and other outdoor supplies
- ♦ The local tourism industry benefits from the variety and attractiveness of trails in the region, particularly those in Saanich due to its central location



## 2.0 Goal and Principles

Based on the research and the input from Saanich residents, Parks and Recreation has identified the following goal and principles to guide the development and management of the trail network in Saanich.

### 2.1 Goal

Saanich will aim to meet the following goal in creating and managing the trail network:

**To provide a network of interconnected trails that offers a range of opportunities for recreational activities, transportation, and is respectful to the environment.**

### 2.2 Principles

Saanich will be guided by these principles when developing and upgrading trails.

- **Inclusiveness.** The trail network will be designed to accommodate a variety of needs, activities and ability.
- **Environmental protection.** Trails will be designed and built following established best practices for the protection of the natural environment and sensitive ecosystems.
- **Safety.** Safety of trail users will be a priority.
- **Enjoyment.** The trail network will provide an enjoyable trail experience for a wide range of users.
- **Connectivity.** Connections to key destinations and other trails will be an important aspect of the network.
- **Community involvement.** The public and community groups will be consulted on significant trail decisions, and involved as partners in the care of the trail network.
- **Fiscal responsibility.** The management, development and maintenance of the trail network will consider the lifecycle and operating costs.



### 3.0 Trail Types

The trail system in Saanich will have five trail types:

- ◆ Regional Trail
- ◆ Community Trail
- ◆ Neighbourhood Trail
- ◆ Rustic Trail
- ◆ Specialty Trail

#### 3.1 Regional Trails

Regional Trails are intended to foster trail use over longer distances, usually passing through other municipalities in the region. The Galloping Goose and Lochside Regional Trails are managed by CRD Parks with support from the District of Saanich. Design guidelines for these trails will be determined jointly by the CRD and Saanich, but may be similar to those guidelines for the community trails.





## 3.2 Community Trails

### Intended use

- ♦ Be used by the widest range of trail users for recreation and alternative transportation.
- ♦ Be designed as barrier-free and suitable for trail users with the widest range of physical capabilities.
- ♦ Be used by recreational and commuter cyclists, walkers, joggers/runners, in-line skaters and skateboarders, horse riders and people using mobility aids.
- ♦ Be used for emergency access.

**Examples:** Glendale Trail, Interurban Rail Trail, Blenkinsop Greenway, Royal Oak Trail.

### Design Guidelines: Community Trails

#### Surfacing:

These trails will be asphalt or in some special rural circumstances, compacted gravel.

#### Width:

Surfaced width	3 - 5 m
Cleared width	1.0 m minimum each side of trail

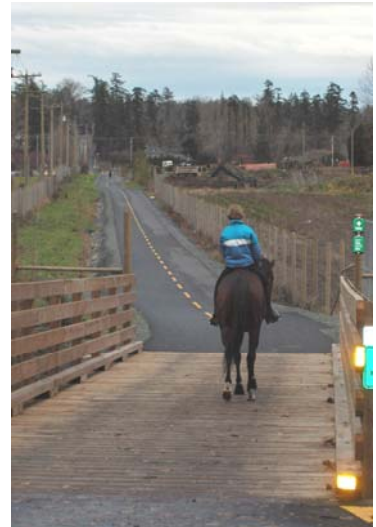
**Vertical Height Clearance:** 3.2 m

**Longitudinal Grade:** Grades along the trail should generally be less than 5%. This is best for wheelchair access. Short sections may be steeper (ideally, less than 8%) but these may need transition zones, switch-backs, steps and/or have advisory signs.

**Cross slope:** Grades across the trail should be 3% or less for wheelchair and mobility scooters

#### Other Considerations:

- ♦ Design for bikes travelling at higher speeds with appropriate sightlines and no sharp curves.
- ♦ Barrier-free design providing accessibility for all, including the physically and visually challenged.
- ♦ Trail should be wider in hazard zones (e.g., intersections, viewing areas).
- ♦ Trails may be narrower in short sections (e.g. to accommodate trees, bridge decks, etc.).
- ♦ Where gravel is used, it should be fine aggregate and well compacted.





### 3.3 Neighbourhood Trails

#### Intended Use

- ◆ Be used to connect neighbourhoods and be the neighbourhood link to the Community Trails.
- ◆ Be used by: Walkers, joggers/runners, cyclists, people with mobility aids, horse riders and other trail users where terrain permits.

**Examples:** Trails in Rosedale, Maynard, Lambrick, Layritz, Feltham and Playfair parks

#### Design Guidelines: Neighbourhood Trails

**Surfacing:** Asphalt or compacted, granular surface.

<b>Width:</b>	Surfaced width	2.0 – 3.0 m
	Cleared width	1.0 m minimum each side of trail

**Vertical Height Clearance:** 3.2 m

**Longitudinal Grade:** Generally less than 5%. Short sections may be steeper (ideally, less than 10%) and could include steps or stairs with handrails.

#### Other Considerations:

- ◆ Trails may be narrower in some sections e.g., going between trees or rocks
- ◆ If the trail is frequently used by equestrians or there are other factors, it may include wider sections or 'pull-outs' to allow two trail users to pass
- ◆ Trails are intended to be as barrier free as possible where terrain permits



### 3.4 Rustic Trails

#### Intended Use

- ♦ Be used in natural areas having topographic or special environmental features.
- ♦ Use may be limited to some users and in some cases – single use only.
- ♦ Be used by hikers, joggers/runners, horse riders. Some trails may have restrictions on users.

**Examples:** Trails in Knockan Hill, Glencoe Cove Kwatsech, Logan, Grant, Boulderwood parks

#### Design Guidelines: Rustic Trails

**Surfacing:** Compacted Gravel, Natural soil/rock surface

**Width:** Surfaced width                    1–2 m  
                  Cleared width                    0.5 m minimum each side of trail

**Vertical Height Clearance:** 3.2 m (high enough for horses and riders). ‘Pedestrian only’ trail sections should be at least 2.2 m high

**Longitudinal Grade:** This depends on the terrain and it may include steep sections with steps or stairs if the grade exceeds 15%

#### Other Considerations:

- ♦ These trails may have restrictions on the use of the trail to protect the natural environment, or for safety, or other considerations.
- ♦ Trail is to be designed to ‘blend in’ with natural environment as much as possible.
- ♦ Gravel and rock will be added to the natural surface as needed to improve drainage or to harden the surface to make it more resilient and durable.



### 3.5 Specialty Trails

#### Intended Use

- ♦ Be used in areas having topographic or special environmental features.
- ♦ Be used by: walkers, joggers/runners, horse riders, mountain bikers. Some trails may have restrictions on users to protect the natural environment. For example, bikes are not allowed in Mount Douglas Park except on the paved roadways
- ♦ Some trails will be purpose-built for a specific user group, such as equestrian trails in rural Saanich or the hiking-only trails in Mount Douglas Park. Other trails are unique because of their steepness, or because there is a need to protect sensitive environmental features. At some future date, Saanich could have mountain-biking trails or a technical bike training area.
- ♦ Some of these trails may be single-purpose, e.g., hiking/walking only. Others may permit multiple uses. The types of permitted use will depend on the purpose of the trail.

**Examples:** Cedar Hill Golf Course; Mt Douglas Park, Rithet's Bog Conservation Area



#### Design Guidelines for Specialty Trails

The design will vary according to the trail purpose. Design guidelines for these trails should be developed in conjunction with the appropriate user groups and the community.



**Table A-1: Trail Guidelines Summary**

Trail Type	Users	Surfacing	Width	Height	Grades	Comments
Regional trail	Standards determined by CRD Parks with input from Saanich.					
Community trail	Multi use: commuter and recreational cyclists, in-line skaters, walkers, joggers, wheelchairs, strollers, equestrians, motorized scooters	Asphalt (or compacted granular in certain conditions)	3-5 m Cleared width 1 m each side of trail.	3.2 m	Grades generally <5% Ideally less than 8% Cross slope 3% or less	Barrier free design Centre line painted on paved sections Trail bollards at least 1.5 m apart
Neighbourhood trail	Multi-use: walkers, cyclists, equestrians. Some trails accessible for wheelchairs.	Compacted granular or asphalt	Trail width 2 -3 m Cleared width 1m each side of trail	3.2 m	Grades generally <8% Maximum grade 15% over short distances, provide steps or stairs with handrails for steeper sections Cross slope 3% or less	Barrier free design where possible Mark level of accessibility at trailhead
Rustic trail	Multi-use: walkers/hikers/joggers, equestrians, cyclists. Some trails may restrict access to specified user groups (e.g., no bikes).	Gravel added where needed for drainage/ prevention of soil erosion Natural soil/rock	Trail width 1 – 2 m Narrower trails to include pull-outs for passing Cleared width 0.5 m each side of trail	3.2 m or 2.2 m for pedestrian only	Depends on terrain. May include steps or stairs if grade over 15%.	
Specialty trail	Specified uses only	Depends on specified use	Depends on specified use	3.2 m or 2.2 m for pedestrian only	Depends on specified use	



## PART B: BACKGROUND STUDIES

### 4 Consultation and Research

#### 4.1 Methodology

From the outset, this project was conceived to create trail design guidelines with a ‘made in Saanich’ approach. It was important to learn from the experiences of other communities, and at the same time to seek input from Saanich’s residents and other trail users (who may live outside of Saanich). In addition to researching information from other communities, we sought input through meetings with user groups and other interested parties, conducted community surveys, and held an open house.

##### 4.1.1 Information from Other Communities

The consultant<sup>1</sup> researched trail standards from other communities in British Columbia and beyond. Detailed information was gathered from seven jurisdictions (Calgary, Prince George, Whistler, Langley, Highlands, Langford, and Pitkin County (USA)). These were selected because these communities include a mix of urban and rural environments, and have developed simple trail standards. This provided information on different trail categories, the user groups, trail surfaces, and design elements (height, width, gradients), as well as a variety of useful ‘tips’ that can be applied in Saanich. The table in Appendix A summarises the design standards (e.g., width, height, gradients) for these various trail systems. Research was also conducted into standards required for ‘barrier-free’ design for people with disabilities (see Appendix B).

##### 4.1.2 Meetings with User Groups

The consultant and Parks staff held a series of meetings and discussions with different types of trail users and interested parties. These included:

- ◆ The Saanich Parks, Trails and Recreation Committee
- ◆ The Saanich Bicycle Advisory Committee
- ◆ Cycling interests (commuter cyclists, recreational cyclists and mountain bikers)
- ◆ Walkers, hikers and joggers
- ◆ Equestrians
- ◆ Seniors
- ◆ Youth representatives
- ◆ Representatives from environmental organizations
- ◆ Disabled users (physically and visually disabled)
- ◆ Saanich Community Action Network (SCAN)
- ◆ Cadboro Bay Residents Association

The input from these meetings is summarized in Appendix C.

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<sup>1</sup> Judith Cullington & Associates

### 4.1.3 Surveys

The District of Saanich arranged for two surveys to be conducted. One was a telephone questionnaire of Saanich residents. This was conducted by R.A. Malatest and Associates Ltd., and represents a statistically valid sample of the population. There were 400 completed surveys. A summary of the responses is included in Appendix D.

The other was the Trail and Walkway Survey (Appendix E). Two thousand copies of this a questionnaire were printed and distributed through Recreation Centres, Saanich Municipal Hall, Cedar Hill Golf Course and available on the District Web site. There were approximately 100 responses to this survey. Results of this survey are summarized in Appendix F.

### 4.1.4 Open House

Draft trail design guidelines were prepared and presented at a public open house/meeting on May 18, 2005. Approximately 90 people attended to view the displays, hear presentations and provide comments. Copies of a response form were made available at the meeting and on the District Web site, and 72 response forms were returned.

A summary of input from the open house and response forms is provided in Appendix G.



## 4.2 Overview of Input

### 4.2.1 What We Learned from Other Communities

The wisdom from other communities can be summarized as follows:

- ◆ Keep to a simple set of trail categories
- ◆ Provide different trail types to meet a variety of recreational uses
- ◆ Provide some barrier free trails for use by wheelchair users and other less able trail users
- ◆ Be flexible—for example, a “2 metre wide” trail might be narrower to go round a significant tree
- ◆ Design for enjoyment—create interest, viewpoints, curves
- ◆ Connect trails to each other and to key destinations (e.g., playgrounds, schools, commercial areas), so that users can get where they want to go, or do loop routes
- ◆ Design for safety—minimize hazards such as blind corners. Where there are hazards, make sure trail users are warned. Make trails wider in hazard zones like intersections
- ◆ Protect the natural environment. Avoid sensitive natural environments or design trails carefully. Use switchbacks or stairs to avoid erosion of steep slopes
- ◆ Think about life-cycle costs—including installation and maintenance—when selecting trail design and surfacing. Considerations for popular surfaces are:
  - ▲ Concrete: expensive to install but durable
  - ▲ Asphalt: less expensive than concrete, fairly durable (chip sealing can be used to extend its life) and there may be situations where it will be slippery.
  - ▲ Gravel/compacted granular surface: less expensive than asphalt to install, but may require frequent maintenance—depending on slope and rainfall
  - ▲ Wood fibre (hogfuel): less expensive to install but requires frequent maintenance. Its lifespan may be extended if laid over a gravel base
  - ▲ Natural soil: inexpensive, but cannot tolerate high use levels

## 4.2.2 Barrier-free Design

Many communities recognize the importance of having barrier-free (universally accessible) design for at least some of the trails. This means providing trails—and associated amenities such as washrooms, viewpoints and parking areas—that can be used by everyone, regardless of their ability level.

The goal of barrier-free design is to provide access to the widest possible range of trail users, including people with disabilities. The benefit of this approach is that it creates trails that are safer and more welcoming for many types of users. Places that a wheelchair can go are also more accessible for parents pushing a children’s stroller. A trail that has a more uniform surface is easier for seniors as well as for visually impaired people. For more detail on barrier-free design, see Appendix B.



## 4.2.3 Input from User Groups

The input from user groups represented a diverse range of interests, and an equally diverse ‘wish list’ for Saanich trails. However, all groups were supportive of the trail system in Saanich and keen to see it maintained and expanded.

Not all trail users want the same types of trails. Below is a summary of some of the preferences and dislikes raised by various user groups (see Appendix C for more detail):

- ♦ **Recreational cyclists:** prefer hard surface (asphalt or hard-packed gravel). Widths (including between bollards) should allow for travel trailers on bikes.
- ♦ **Commuter cyclists:** prefer hard surface (asphalt) trails that are designed for speeds of up to 30 kph, with no sharp bends. Grades should be less than 5% where possible. Loose gravel trails are a hazard, especially on slopes. Centre lines should be marked on trails.
- ♦ **Mountain bikers:** prefer natural surface trails with obstacles to challenge riders. Steep grades add to the fun! Riders would like to develop purpose-built mountain biking trails in Saanich (other than at Mount Work-Hartland Regional Park).
- ♦ **Equestrians:** prefer ‘soft’ surface trails (natural soils or hogfuel). Trails should be cleared to a height that allows for horse and rider (minimum 3 m). Some equestrians do not put shoes on their horses—they prefer only soft-surface trails. Most shoe their horses, and will ride gravel trails, provided that the small diameter, rounded gravel is used (so as do not to hurt the horses’ feet). Asphalt can be slippery for horses and the smooth surface makes it hard to hear bikes coming, which can startle the horse. Some horse riders do use paved trails, however.
- ♦ **Walkers:** will walk on any surface type, although softer trails are often preferred (natural soil, hogfuel or gravel). Variety is good as individuals may have preferences for harder or softer surfaces. Steps, stairs or ramps should be provided for steeper sections.
- ♦ **Hikers:** prefer the challenge of natural trails. Moderately steep grades are not a concern.
- ♦ **Joggers/runners:** most prefer softer surfaces such as natural soil, hogfuel or compacted gravel, while some like paved surfaces.
- ♦ **Wheelchair users:** prefer uniform, hard surfaces (asphalt, concrete or well-packed gravel). Trail widths should allow for two wheelchairs to pass, and space between trailhead bollards should be at least 1.75 m. The entire trail should be wheelchair accessible, with signs at the trailhead to provide this information. There should be a physical barrier at the edge of steep drop-offs. Allow for mobility scooters on some trails. However, there are also off-road wheelchair users who like more challenging trails.
- ♦ **Visually-impaired individuals:** prefer a hard surface (asphalt, concrete or hard pack gravel). Ensure that overhanging branches are pruned, and trail edges are well defined. Provide a change of texture at intersections as a warning. Provide edging at the foot of safety rails that canes will detect.
- ♦ **Seniors:** less-able seniors generally prefer hard surface trails with minimal steep sections. However, there are a wide range of abilities.

- ♦ **Youth:** prefer trails wide enough for two or more people to walk and talk. On routes to schools, trails should accommodate bikes and children's strollers.
- ♦ **Other wheeled users (in-line skaters, skateboarders, children's strollers):** prefer asphalt trails. The typical broom-finished concrete is not usually as smooth and makes for a bumpier ride.
- ♦ **Environmental groups:** commented that there should be a variety of trails meeting different user needs. Trails should blend with natural surroundings and avoid environmentally sensitive areas and off-trail impacts.

Table 1 summarizes user preferences for trail surfaces. Asphalt surfaces provide an easily-travelled surface for all user groups, and are the most 'multi-use' surface (although they are not a preferred surface for some).



Photo: Saanich Parks



**Table B-2: User preferences for trail surfaces**

This information is derived from consultations with user groups, and research from other communities. This is a generalization—individual preferences vary.

Key: ● = Preferred surface  
 ◐ = Acceptable surface  
 ○ = Less desirable or inappropriate surface

User Type	Asphalt	Concrete	Gravel	Hogfuel/wood	Natural soil
In-line skater	●	◐	○	○	○
Skateboarder	●	◐	○	○	○
Wheelchair user	●	◐	◐	○	○
Children's stroller	●	◐	◐	○	○
Commuter cyclist	●	●	◐	○	○
Mobility scooter user	●	●	◐	○	○
Recreational cyclist	●	●	●	○	○
Mobility impaired	●	●	●	○	○
Visually impaired	●	●	●	◐	◐
Walker/dog walker	●	●	●	●	●
Hiker	◐	◐	●	●	●
Runner/jogger	◐	◐	●	●	●
Equestrian	○	○	◐	●	●
Mountain biker	○	○	◐	◐	●

## 4.2.4 Input from Surveys

### Telephone Survey

There were 400 responses to the random telephone survey (conducted by R.A. Malatest and Associates). Results from the telephone survey are statistically valid, and can be assumed to be representative of the concerns and wishes of Saanich residents in general.

The random telephone survey (Appendix D) indicated that:

- ◆ About two-thirds (66%) of residents are 'somewhat' or 'fairly' familiar with the trail system. Another 10% were 'very' familiar with trails.
- ◆ The 'top three' trail systems used by Saanich residents are the Cedar Hill Golf Course, Lochside Trail (south section) and trails in Mount Douglas Park.
- ◆ For most people, their neighbourhood walk is the most commonly used trail. 'Proximity/convenience' was the most commonly given reason for identifying a trail as a 'favourite'.
- ◆ 'Walking/hiking/jogging for recreational purposes' was the most common activity on trails. (Among dog owners, walking the dog on Saanich trails was the most common activity.) Recreational cycling was the next most popular activity. Overall, use of trails for commuting was relatively low.
- ◆ Most respondents (83%) felt that there were no barriers to their using the trail system. Of the remainder, most notable were that one-quarter (25%) of horse owners and about 14% of wheelchair owners felt that there were barriers to recreational use of the trails.
- ◆ When asked what kept them from using the trails more often, respondents identified personal time constraints (38%) or health constraints (10%) as the main issue. Over 21% said there were no constraints to additional trail use.
- ◆ No single improvement or modification to the trail system was cited as likely to increase trail usage.
  - ▲ Items cited as being the most effective were more maps (60%), more signs directing people to trails (59%), more restrooms (51%), and more signs on the trail (50%). 'Build more trails' was cited by 43% of respondents.
  - ▲ 'Make trails more accessible for wheelchairs and strollers' was considered effective by 35% of respondents.
  - ▲ 'Change the surface of the trails' was considered effective by 29% of respondents.
  - ▲ 'Widen existing trails' was considered effective by 26% of respondents.
- ◆ When asked for the most effective way to communicate with Saanich residents, respondents chose:
  - ▲ Saanich News (67%)
  - ▲ Municipal program (58%)
  - ▲ Direct mail (56%)
  - ▲ Brochures at bike/sporting goods stores (54%)
  - ▲ Shopping centre displays (52%)



**Table B-3: Most Frequent Activities Undertaken on Saanich Trails and Walkways**

The information below is taken from the Malatest household survey. “Frequency scores” are assigned based on a maximum of 3—the higher the number, the more frequent the activity. Each person’s response was assigned a value (0 = “never,” 1 = “rarely,” 2 = “sometimes,” and 3 = “often”) and a mean was calculated based on the proportion of responses.

Activity	Frequency Score	Comments
Walking, hiking or jogging for recreational purposes	2.39	
Cycling for recreational purposes	1.12	1.59 for bicycle owners
Walking dog(s)	0.90	2.59 for dog owners
Walking for commuting purposes	0.88	
Cycling for commuting purposes	0.69	0.97 for bicycle owners
Rollerblading	0.37	0.93 for owners of rollerblades
Wheelchair or scooter access for recreational purposes	0.12	1.19 for wheelchair/scooter owners
Horseback riding	0.11	1.63 for horse owners
Wheelchair or scooter access for commuting purposes	0.04	0.38 for wheelchair/scooter owners

Of the Saanich households surveyed:

- ♦ 69.0% of households surveyed included **bicycle** owners;
- ♦ 37.8% of households surveyed included someone owned **roller blades**;
- ♦ 29.0% of households surveyed had a **dog**;
- ♦ 5.3% of households surveyed included someone who owned or leased a **wheelchair** or **scooter**; and
- ♦ 2.0% of respondents indicated that they or someone in their household owned or leased a **horse**.

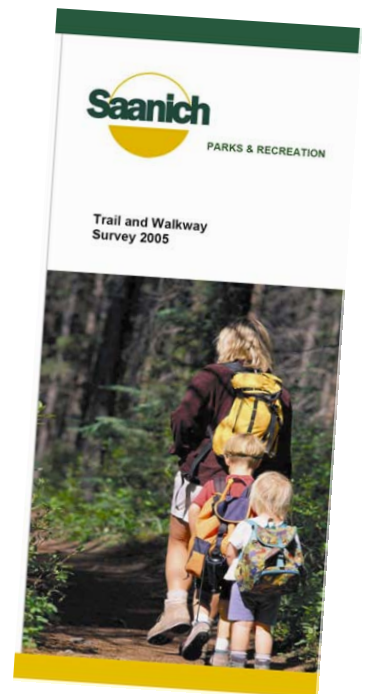
*From Malatest 2005.*

## Handout Survey

There were 99 responses to the Trail and Walkway (handout) Survey conducted by Saanich Parks staff (Appendix E). Results from this type of survey are not statistically valid, because they reflect only the views of those who were aware of the survey and chose to respond. This survey does however provide important information on the views of trail users.

It is interesting that the handout survey produced some similar results (see Appendix F) to the telephone survey. The handout survey results indicated that:

- ◆ Most respondents use the trail system for exercise, recreation and enjoyment of nature.
- ◆ Most respondents use the trail system year round, more than three times per week.
- ◆ The majority of respondents felt 'very safe' or 'somewhat safe' undertaking their activity on trails, but there were several suggestions on ways to improve trail safety.
- ◆ Walking/hiking for recreation was the most popular activity (65%), followed by recreational cycling (37%).
- ◆ Most (90%) felt that the existing trail system is 'good', 'very good' or 'excellent'.
- ◆ Features that they liked about the trail system were 'no cars', 'accessible', 'neighbourhood and regional connections', 'scenery', 'close to home' and 'well-maintained' (all chosen by more than half the respondents).
- ◆ Preferred trail surfaces varied, with asphalt (45%), hard packed gravel (41%) and wood fibre (hogfuel or wood chips) (41%) being the most popular.
- ◆ Walkers generally found existing trail widths 'about right', while cyclists and in-line skaters were more likely to identify trails as 'too narrow'.
- ◆ Suggested improvements were 'more trails' (51%), 'more signs' (34%) and 'kiosks' (22%), 'more lighting' (19%) and 'widen trails' (19%). Several people asked for more washrooms.
- ◆ Most people claimed to be familiar with trail etiquette.
- ◆ Respondents felt the most effective ways to communicate information would be on the trail itself (maps and other information) and through the local newspaper.



### 4.2.5 Input from Open House/Response Forms

Draft Trail Design Guidelines were presented at the open house and on the District Web site. People made comments both at the open house and through response forms.

As with the handout survey, the results from the response forms and open house comments are not statistically valid, but are very useful in gauging response from trail users. Seventy-two response forms were completed.

While many people agreed in general with the proposed trail categories, a number of concerns were expressed (see Appendix G). These included:





- ◆ The difference between ‘regional’ and ‘community’ trails was confusing.
- ◆ Paved trails are not acceptable to most horse riders.
- ◆ There should be different guidelines for trails in urban versus rural parts of Saanich.
- ◆ Rustic trails should be multi-use (not pedestrian only)
- ◆ Regional/community trails should be dual surface (or have parallel trails) allowing hard surfaces for cyclists and softer surfaces for joggers and equestrians.
- ◆ Trails should only be built in places and in ways that would not damage the natural environment.
- ◆ Some respondents felt trails should be wider; others felt that wider trails would be less safe as this would encourage higher speeds.
- ◆ Some respondents felt that all trails should be paved for greatest accessibility, while others felt there were too many paved trails already.
- ◆ Asphalt was generally preferred over concrete.
- ◆ Better trail etiquette is needed.
- ◆ More signage and amenities (benches, washrooms) are desirable.

#### **4.2.6 Trail Signs, Amenities and Etiquette**

During this study, many people spoke about the importance of signage, amenities and trail etiquette. These are all important contributors to the trail experience, which will be addressed in subsequent reports and projects.

The input from all of these sources has been used in the development of the Trail Design Guidelines.



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# Appendix A: Trail Standards in Other Communities

## Calgary

The City of Calgary is expanding rapidly. The trail system doubles as an off-road transportation network as well as a recreational facility.

### Trail categories

Calgary has two trail types: 'pathways' and 'trails.'

- ♦ **Pathways** form a network that link together residential areas, parks, natural areas, riverbanks and public recreational facilities. The pathways are divided into:
  - ▲ **Regional pathways.** These are hard-surfaced (typically asphalt), off-road trails, designed for multiple users. These are linked together as a network that provides an off-road transportation system.
  - ▲ **Local pathways.** These are secondary routes within neighbourhoods that link to the regional pathway system.Pathways are designed for multiple use, meeting the needs of walkers, children's strollers, runners, wheelchair users, cyclists, in-line skaters and skateboarders.
  
- ♦ **Trails** are paths in natural areas. They have a granular (gravel) or natural surface and are constructed primarily for pedestrian use. Trails are intended as a secondary system to pathways, and provide a low impact and low cost alternative for access to natural areas and steep slopes where pathways would be inappropriate.

### Tricks and tips

- ♦ Pathways are designed to connect destinations – schools, places of business, shopping, cultural centres, residential areas.
- ♦ Pathways should serve for transportation, recreation and fitness. Where there is a conflict, recreational use is given the higher priority. (Within river valleys and natural areas, protection of the resource takes precedence.)
- ♦ Regional pathways are designed, maintained and retrofitted to accommodate multiple uses.
- ♦ Pathways are built to barrier-free standards.
- ♦ Where high use is expected, pathways should be wider than usual, or twinned.
- ♦ Pathways are snow-ploughed during the winter to allow year round commuter cycling. In twinned sections, only one section of the pathway is ploughed.
- ♦ Asphalt is preferred over concrete. This is smoother for wheeled traffic, less expensive. A yellow centre line is imperative.
- ♦ Developers are keen to build linkages to the pathway system, as this is a selling feature for new subdivisions. The City of Calgary provides developers with their trail standards, and developers pay for the cost of pathway installation. In some cases, they may add some design features (e.g., paving stones to mark the entrance to their subdivision).



## Prince George

Prince George developed a trail system master plan in 1998.

### Trail types

There are three off-road trail types:

- ♦ **City trail:** a city wide route linking major destinations, designed to accommodate a wide variety of users on a wide (3 m) asphalt surface.
- ♦ **Neighbourhood trail:** secondary and loop trails in natural areas and parks, designed to accommodate multiple users on a 2 m wide granular surface.
- ♦ **Rustic trail:** narrower trails (1 m or less), located in natural settings, with limited facilities. Surfacing depends on local needs and users.

### Tips and tricks

- ♦ Trails are defined by width, surface, maximum grades and geographic location. Prince George recognizes that there are times when standards will have to be adjusted to respond to local conditions.
- ♦ Trails are built using quality construction, as this minimizes the costs of maintenance.
- ♦ Drainage is critical, or it will erode the subbase and subgrade.
- ♦ Clearing vegetation on the trail sides helps with sightlines. Vegetation clearing should include digging up roots to minimize the rate of grow-back.
- ♦ The trail corridor should be wide enough to allow for passage of construction equipment and emergency vehicles.
- ♦ Each of the trail types has specific maintenance schedules.
- ♦ The plan advocates having specialized trails for mountain bikers. Horses are confined to designated trails to reduce conflicts.
- ♦ Estimated costs are \$100/linear metre for asphalt; \$60/l.m. for granular and \$25/l.m. for unsurfaced trails.

## Whistler

The Resort Municipality of Whistler has developed a set of trail standards to guide the management and expansion of the neighbourhood trail network. This is focused primarily on mountain bike trails.

### Trail types

- ♦ **Type I trails:** paved (asphalt), two-way trails for smooth, all-weather use. These trails are 2–3 m wide, found in developed areas and are designed for the highest use levels. They are all technically easy.
- ♦ **Type II trails:** surfaced (crushed limestone) trail, single track (1 m) or double track (2–3 m). Technical level ranges from easiest to more difficult in developed areas.
- ♦ **Type III trails:** unsurfaced single track trails, 1.1–1.3 m wide. Technical difficulty ranges from easy to most difficult in developed areas.
- ♦ **Type IV and V trails:** are highly technical trails in rough terrain.

### Tips and tricks

- ♦ Trails should avoid hazard and sensitive areas, such as unstable slopes, habitat for fragile plant species, archaeological sites.
- ♦ Whistler sets priorities for frequency of trail inspection and maintenance, with the Type I trails being

highest priority (inspected twice a year), and Type II trails being medium priority (inspected each spring).

- ♦ Trails are only de-activated after public notice and consultation.

## Langley

The Township of Langley developed plans for a municipal trail network in 1994.

### Trail types

Trail types include on-road and off-road trails and are defined by the user groups:

- ♦ **Single-use trails:** are designed for pedestrians, equestrians, or cyclists (on-road or mountain bikes).
- ♦ **Shared-use trails:** are designed for two or more user groups.

Design specifications vary according to the types of user groups (see Appendix A).

### Tips and tricks

- ♦ Trails are designed for transportation as well as recreation.
- ♦ Trail planning should incorporate views, cultural features, environmentally sensitive areas and interpretive signage.
- ♦ Design guidelines and maintenance standards should be a reasonable balance between level of service for residents and costs to the Township.
- ♦ Pedestrian routes are asphalt in urban areas, and gravel screenings in rural areas. All trails used by equestrians are gravel screenings rather than asphalt.

## Highlands

The District of Highlands prepared a Greenways/Trails Network Master Plan in 1977. Trail standards were included as part of this plan.

### Trail types

- ♦ **Single-use off-road:** Trail designed for a single activity (pedestrian, equestrian, leisure cycling or mountain biking). Specifications vary according to activity (see Appendix A).
- ♦ **Multi-use off-road:** Trail designed for multiple uses (1.5–2.5 m wide, natural soil surface, compact gravel added to wet areas).
- ♦ **Roadside trails:** Trails within road right of way, multiple use (1.5–2.5 m wide, natural soil surface, compact gravel added to wet areas).
- ♦ **Commuter cycling lanes:** within paved surface of road.

### Tips and tricks

- ♦ CRD regional trails within the Highlands are all designed for multiple use.
- ♦ Highlands recognizes regional trails (part of CRD regional trails network), sub-regional trails (important connectors to regional trails) and neighbourhood trails (small trails connecting to sub-regional trails).
- ♦ Trail construction and maintenance should be undertaken with the least amount of vegetation removal.
- ♦ Greenways can combine recreational and wildlife habitat values.
- ♦ Ecological sensitivity should be the primary criteria for trails near streams, wetlands and other sensitive areas.
- ♦ Separate trails for conflicting user groups are introduced as funds permit.

- ♦ Low impact gravel surface parking areas should be provided at trailheads.

## Langford

The District of Langford prepared a Trail Master Plan in 1998, which includes trail construction guidelines. These are guidelines for preliminary planning – detailed design standards are developed on an individual trail basis.

### Trail types

- ♦ **Hiking trail:** pedestrian use only, single file, natural soil surface.
- ♦ **Multi-use trail:** multiple simultaneous users (pedestrians and cyclists), longer connector trails, gravel (or asphalt if designed as barrier-free).
- ♦ **Pedestrian easements and walkways:** pedestrian links between subdivisions, gravel surface.
- ♦ **Multi-use easements and walkways:** short urban connector trails, barrier-free design for walkers, cyclists and wheelchairs, asphalt surface.

### Tips and tricks

- ♦ Design criteria include intended mode of use (pedestrian, bicycles, equestrian, mixed use); estimated amount of use; cost of construction; hazards (liability and risk management); amenities; route requirements; and maintenance considerations.
- ♦ Hogfuel is not recommended for use on Langford trails. (This is due in part to cost, and in part as some dog owners have raised concerns that hogfuel harbours fleas.)

## Pitkin County

Pitkin County is in Colorado, U.S.A. The Open Space and Trails Program for the County has prepared an extremely detailed manual (*Trails Design and Management Handbook*) that is recommended for detailed trail design and construction standards.

### Trail categories

There are three trail categories.

- ♦ **Hard Surface Multiple Use Paths** are high-use trails designed to accommodate a wide range of non-motorized use, including wheelchair accessibility. These are surfaced with asphalt or concrete.
- ♦ **Crusher Fines Surface Paths** are designed for moderate use levels in urban, suburban and easily-accessed undeveloped areas. They are designed for hiking, running, mountain biking and/or equestrian use, and are barrier-free for disabled users as much as possible. Construction standards vary slightly according to user groups (bike paths/pedestrian and wheeled traffic/pedestrian only).
- ♦ **Natural Surface Trails** are designed for low to moderate use frontcountry and backcountry hiking trails. In some places, they may also be used by mountain bikes and equestrians.

### Tricks and tips

- ♦ Trails are designed for recreation, and where feasible for transportation as well.
- ♦ Trail types are determined by the level of use. (High use is more than 400 users per day, moderate use is 100–200 users per day.)
- ♦ Trail widths are determined by levels of use and safety considerations. Extra width is added for hazard zones, such as at viewpoints (where some users are stopped and looking while others are trying to pass).
- ♦ Sightlines are an important aspect of safety. Sightlines for cyclists should be at least 200 ft (61 m), based on travel at 20 mph (30 kph).

- ♦ On high use trails, an adjacent and roughly parallel crusher fines trail should be provided for walkers and runners, with a varying width median to separate the two where possible.
- ♦ Trails should be designed to include features of interest such as viewpoints.
- ♦ Trail design can help to avoid conflicts between user groups, e.g., through width and parallel trails.
- ♦ Trail design should respect the natural environment and local wildlife.
- ♦ Trail design is important for safety. Aspects such as sightlines (avoiding blind curves), handrails by drop-offs, and minimizing road crossings are important.



**Table B-3: Comparisons from other communities: width, height, surfacing**

Agency	Trail type	Uses	Min width	Av width	Max width	Width cleared	Height	Surfacing
<b>Trans Canada Trail</b>								
Trans Canada Trail (Cowichan River Prov Park)	rail to trail	walk bike horse		3.5 m		4.0 m		3/8" aggregate crusher fines
<b>BC Parks</b>								
BC Parks	type I foot trail	short walks, 2 way foot traffic, wheelchairs		2.0 m				surfaced
BC Parks	type II foot trail	walking trails		1.25 m				may be surfaced
BC Parks	type III foot trail	longer hiking trails, single file			0.75 m			
BC Parks	type I horse trail	high use, day use, two-way traffic				2.5 m	3 m	crushed stone (unless soils suitable)
BC Parks	type II horse trail	moderate use	0.45 m		1.0 m	2.5 m	3 m	Existing soil surface, except in wet or fine soils. Even surface free of rocks or roots. Wood chips or wood shreds/Gravel or crushed stone mixed with soils.
<b>Whistler</b>								
Whistler	Type I	walk bike in-line skate wheelchair	2.0 m		3.0 m	6.2 m	3.0 m	asphalt or chip-seal coat
Whistler	Type II	walk bike		2 - 3 m for 2-way, 1 m for 1-way or mtn bike		5.0 for 2-way, 1.4 for 1-way	2.4 m	crushed limestone with fines, well compacted gravel or existing old railbeds
Whistler	Type III	unsurfaced 1-way	0.5 m		0.7 m	1.0 - 1.5 m	2.4 m	native soil

Agency	Trail type	Uses	Min width	Av width	Max width	Width cleared	Height	Surfacing
Whistler	Type IV	unsurfaced 1-way, some rough terrain	0.3 m		0.5 m		2.4 m	native soil
<b>Prince George</b>								
Prince George	City Trail	walking, jogging, cycling, skateboarding, in-line skating, wheelchairs and strollers	2.5 m	3.0 m		5 m preferred, 4.5 m minimum		asphalt, lain to 75 mm thick
Prince George	Neighbourhood trail	walking, hiking, jogging, cycling, x-co skiing, horse riding	1.5 m	2.0 m		4 m preferred, 2.5 m minimum		granular: finely crushed sandstone or limestone with particle size 3/4" minus (19 mm), at least 100 mm (4") thick, well compacted
Prince George	Rustic Trail	hiking, mountain biking, x-co skiing, horse riding	0.8 m	1.0 m		4 m preferred, 2 m minimum		packed native soil, with wood chips or gravel if heavy use. Clear all roots, stumps and large rocks
<b>Highlands</b>								
Highlands	Roadside trail	multi-use	1.5 m		2.5 m	5.0 m	2.75 - 3.75 m	compact native soil, covered with compact gravel in wet areas
Highlands	Multi-use off road trail		1.5 m		2.5 m		2.5 - 3.0 m	
<b>Langley</b>								
Township of Langley	single use: pedestrian only (off-road)	pedestrian	1.0 m rural, 1.5 m urban	1.5 m rural, 2.0 m urban	3.0 m	0.5 m either side	2.0 m	Gravel on low volume trails. Wood chips or bark mulch softer, easier to install but not in sensitive areas where they could leach into streams.

Agency	Trail type	Uses	Min width	Av width	Max width	Width cleared	Height	Surfacing
Township of Langley	single use: equestrian	horse riding	2.0 m (single file)	3.0 m (two-way)		1 m either side of one-way trail, 0.5 m either side of two-way trail)	3 m	hemlock-fir hogfuelled over gravel sub-base (allows for quiet dry ride with stable, dry footing). Also use 'gyrosand' - a fine dust from rock grinding (but costly)
Township of Langley	single use: off-road cyclists	commuter, recreational biking	1.5 m (one way)	2.5 m (two way)		0.5 m either side	2.5 m	Gravel and asphalt. On shared trails, gravel helps to slow bikes and let other users hear them coming.
Township of Langley	shared use trails	pedestrian, equestrian and/or cyclists	depends on uses		4.0 m	0.5 m either side	3 m (2.5 m if no horses)	Gravel - allows horses to hear other users coming. If horses not permitted, then asphalt or screenings.
<b>Calgary</b>								
Calgary	Regional Pathway	walkers, dog walkers, cyclist, in-line skaters, skateboarders, disabled (wheelchairs), runners	2.5		3.5	1 m each side of path	3 m	asphalt (a few sections of concrete or interlock brick, asphalt preferred)
Calgary	Local Pathway	walkers, dog walkers, cyclist, in-line skaters, skateboarders, disabled (wheelchairs), runners		2 m		1 m each side of path	3 m	asphalt (a few sections of concrete or interlock brick, asphalt preferred)
Calgary	Trail	information coming						
<b>Langford</b>								
District of Langford	Hiking Trail	pedestrian hiking only, single file	0.45 m		0.6 m			natural soil, grubbed out but not surfaced
District of Langford	Multi-use trail	longer connector trails, pedestrians and cyclists	2.0 m		3.0 m			gravel (not barrier-free), 100 mm of 3/4"-crushed gravel compacted to 95% proctor. Asphalt for sections designated barrier-free

Agency	Trail type	Uses	Min width	Av width	Max width	Width cleared	Height	Surfacing
District of Langford	Easements and walkways (multi-use)	pedestrians, cyclists, wheelchair access	2.0 m		3.0 m			Asphalt - 50 mm of hot mix asphalt
<b>Pitkin County</b>								
Pitkin County, Colorado	hard surface multiple use	cyclists, strollers, walkers, inline skaters, runners, wheelchair users (possibly others)		2.5 m	3.5 m (high use), higher in hazard zones			hard surface - concrete or asphalt
Pitkin County, Colorado	crusher fines surface	bikes, pedestrian/bikes, pedestrian only	1.5 m	2 - 2.5 m	3.5 m (high use, especially if used by bikes)		3 m (for bikes and horses)	crusher fines - see manual for specifications
Pitkin County, Colorado	natural surface	hikers, runners (possibly others)	0.5 m	1.0 m	2.0 m (high use)			natural surface

**Table B-4: Comparisons from other communities: grade, subsurface**

Agency	Trail type	Av. Grade	max grade	Subsurface	Edge	Other comment
Trans Canada Trail						



Agency	Trail type	Av. Grade	max grade	Subsurface	Edge	Other comment
Trans Canada Trail (Cowichan River Prov Park)	rail to trail					
<b>BC Parks</b>						
BC Parks	type I foot trail	5%	8%			may need engineered bridges
BC Parks	type II foot trail	5-8%	10%			
BC Parks	type III foot trail		15%			simple log crossings
BC Parks	type I horse trail	0-10%	15%			
<b>Whistler</b>						
Whistler	Type I					
Whistler	Type II					
Whistler	Type III					
Whistler	Type IV					
<b>Prince George</b>						
Prince George	City Trail	Where slopes exceed 4% sign as such for wheelchairs	7% for long runs (up to 200 m), up to 10% for short runs (up to 50 m). Over 10% use stairs or switchbacks.		grassed boulevard and shade trees - will need regular grass cutting	Needs minimum maintenance (crack patching), life expectancy of 15-20 years. Frequent use helps maintain pliable surface.
Prince George	Neighbourhood trail		12% for long runs (200 m+), 15% for short runs (up to 50 m). Over 15% provide stairs or switchbacks.	Use geotextile fabric between subgrade and subbase to prevent vegetative growth	Native plants and trees, with some low introduced material. Need to keep corridor clear and annual mowing.	Will require new stone and regrading after 10 yrs, plus some spot repairs.

Agency	Trail type	Av. Grade	max grade	Subsurface	Edge	Other comment
Prince George	Rustic Trail		20% for long runs (200 m+), 30% for short runs (<50 m). Over this use stairs or switchbacks.		Natural. Minimal clearing to keep sightlines clear.	Locate trail in well-drained area to minimize damage from water erosion. Removing vegetation growth will be ongoing maintenance item. Wood chips are popular with hikers and horseriders but has poor durability, needs replenished every 2-3 yrs. Wood bark or fines are longer-lasting.
<b>Highlands</b>						
Highlands	Roadside trail		5% sustained grade, 8% over short distances		minor clearing of brush, low shrubs and ground cover to remain and provide screening from road	
Highlands	Multi-use off road trail		10% sustained grade, 15% over short distances			
<b>Langley</b>						
Township of Langley	single use: pedestrian only (off-road)		8% for strollers and wheelchairs, or marked if higher grades used			
Township of Langley	single use: equestrian		15 - 20%			
Township of Langley	single use: off- road cyclists		10%			Most are designed for 30 kph (but cyclists may go up to 50 kph). Slower on steep hills.
Township of Langley	shared use trails		10 - 20 % (dep on users)			
<b>Calgary</b>						

Agency	Trail type	Av. Grade	max grade	Subsurface	Edge	Other comment
Calgary	Regional Pathway		8% (where steeper, marked as 'steep hill')		Clear shrubs to 1 m height for sightlines (2 m in natural areas)	Pathways are important part of transportation network. Designed for bike speeds of 20 kph (max allowed speed), slower in areas e.g., bridges, steep hills, poor sightlines)
Calgary	Local Pathway		8% (where steeper, marked as 'steep hill')		Clear shrubs to 1 m height for sightlines (2 m in natural areas)	Role is to connect within communities and to regional pathways. Design standards similar except for width.
Calgary	Trail					
<b>Langford</b>						
District of Langford	Hiking Trail	0 - 5%	10% for long runs, 25% for short distances			
District of Langford	Multi-use trail	0 - 3%	5% sustained, 8% for short distances (up to 15% for cyclists)	Under gravel: 50-150 mm of pit run gravel compacted, where required place 75 mm clear rock for drainage in low areas		Hogfuel not recommended for trail surfaces.
District of Langford	Easements and walkways (multi-use)	0 - 3%	5% sustained, 8% for short distances	100 mm of pit run gravel compacted		
<b>Pitkin County</b>						
Pitkin County, Colorado	hard surface multiple use	0 - 5%	8%, 10% for short distances. Over 5% is not wheelchair accessible.	Concrete can be laid on compacted subgrade, use road base if poor subgrade. Base course under asphalt, thicker over medium soils and wetter conditions		Manual provides detailed specifications

Agency	Trail type	Av. Grade	max grade	Subsurface	Edge	Other comment
Pitkin County, Colorado	crusher fines surface	0 - 3% (for bikes)	5% (8% if asphalt surface used). No max for pedestrian use only if steps used			Manual provides detailed specifications. Sightlines of at least 35 m for bikes unless signed.\
Pitkin County, Colorado	natural surface	up to 10%				Manual does not provide detailed specifications

## Appendix B: Barrier-free Design

Many communities stress the importance of having barrier-free design for at least some trails. This means providing trails – and associated amenities such as washrooms, viewpoints and parking areas – that can be used by everyone, regardless of their ability level.

The goal of barrier-free design is to provide access to the widest possible range of trail users, including people with disabilities. The benefit of this approach is that it creates trails that are safer and more welcoming for many types of users. Places that a wheelchair can go are also more accessible for parents pushing a children's stroller. A trail with an even surface is easier for many seniors as well as for visually impaired people.

Elements of barrier-free design include:

- ♦ Smooth, even, trail surfaces. Where pavers or concrete is used, joints should be flush (less than 6 mm difference in height.<sup>1</sup>)
- ♦ Trail surface should be at least 1 m wide, and preferably at least 1.5 m<sup>2</sup>. Where trails are too narrow for two wheelchairs to pass, wider passing spaces should be provided (especially over boardwalks and other places with restricted widths), preferably every 60 m if possible.<sup>3</sup>
- ♦ Gentle grades (5% is usually considered the maximum grade<sup>4</sup>), with no steps or stairs. Slopes could be steeper over short distances if rest areas are provided.<sup>5</sup>
- ♦ Opportunities to sit and rest along trail routes.
- ♦ Edging or a surface change along trail edges so that people with a cane can recognize the edge.
- ♦ Any projections (e.g., overhanging branches) have been removed to a height of 2 m. Where projections are unavoidable, provide fencing.
- ♦ Any openings (e.g., grates) should be small enough to prevent a 13 mm sphere going through.
- ♦ Gentle cross-slope (maximum 3%, 5% if needed for drainage<sup>6</sup>).
- ♦ Protective fencing or edging<sup>7</sup>) by drop-offs (to prevent wheelchairs from going over).
- ♦ Amenities that are accessible: signs with large print, parking spaces for disabled users, accessible washrooms, drinking fountains and picnic tables that can be accessed by wheelchairs.
- ♦ Signage that indicates which trails are 'easily' or 'moderately' accessible.

Since some of these design requirements are suggested for built environments, it may be necessary to make exceptions to accommodate the reality of trail terrain. Where there are more challenging sections of trail, these should be marked at on-site and at the trailhead.

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<sup>1</sup> BC Building Code

<sup>2</sup> Access Board 1999. The BC Building Code suggests 1.5 m to allow for a person walking and a wheelchair to pass.

<sup>3</sup> Access Board 1999.

<sup>4</sup> The BC Building Code recommends a gradient of not more than 1 in 20 (5%).

<sup>5</sup> 8.33% with resting intervals every 15.5 m, 10% with resting intervals every 9 m (Beneficial Designs).

<sup>6</sup> Access Board 1999.

<sup>7</sup> BC Building Code suggests 75 mm minimum to prevent the front wheel of a wheelchair from going over the edge, wherever the drop itself is greater than 75 mm. Fencing provides greater protection where there are higher drop-offs.

# Appendix C: What User Groups Told Us

## Saanich Parks and Recreation Committee

*(Meeting held September 30, 2004)*

- ♦ Put information on public input in Times-Colonist as well as Saanich News
- ♦ Talk to each community about how well trails in their area have worked
- ♦ Think about how Saanich standards will match with neighbouring communities (e.g. CRD trails)
- ♦ Paving Interurban Trail seems inconsistent with rural nature of this part of Saanich
- ♦ Survey should have examples to show people – but then people get site-specific. The tough question will be: which trails types are in which location?

## Saanich Bicycle Advisory Committee

*(Meeting held September 29, 2004)*

- ♦ Trail based survey will be biased because of the time of year (e.g. fewer rollerbladers and family cyclists)
- ♦ Contact Bike to Work Victoria
- ♦ Note that some trails e.g. Lochside are both long-distance routes, coupled with people doing shorter trips in some sections (potential for conflict)
- ♦ For trail such as Interurban, would prefer asphalt (for broadest possible multi-use) or stable gravel surface, design for speed.
- ♦ Trail from Goose to Interurban Road is too loose, has high accident potential. Prefer a hard rough surface (e.g. textured concrete)
- ♦ Rocks or bollards on trails are barrier if not widely spaced enough
- ♦ Note that pedestrians and cyclists have different needs at road crossings

## Saanich Community Association Network (SCAN)

*(Meeting held October 6, 2004)*

- ♦ Have some trails for walkers only (narrow, woodchip)
- ♦ Be careful of conflicts between different user types – resolve by trail design rather than enforcement
- ♦ Drainage will be an important issue, especially for wheelchairs, strollers
- ♦ Survey should look at where people live, what time of day they use trails
- ♦ Have side trails to get to beautiful spots (with signage)
- ♦ Think about short-distance trail users, and those who drive and then walk

## Cycling Groups

*(Meeting held October 27, 2004)*

*Likes*

Commuter cyclists:

- ♦ Galloping Goose and Lochside are good as they provide accessibility for a wide variety of cycling types (commuting, recreational and family cycling, sightseeing, access to amenities)
- ♦ GG good for commuting and utility trips



- ◆ Preference for smooth, paved sections
- ◆ Prefer harder, cleaner surfaces for transportation bike routes
- ◆ Connectivity to other trails/roads important: “quick route to work”
- ◆ Getting away from traffic is good for user safety
- ◆ Centre line on paved trails helps to reduce conflict (can we put one on gravel trails too?)

#### Mountain bikers

- ◆ Prefer single track trail on natural soil, lots of up and down (note that bikes and horses do cause erosion)
- ◆ Narrow trail with technical features helps to lower the speed

#### Beefs

- ◆ Sandy ‘equestrian’ trail on Lochside doesn’t work
- ◆ Dogs with ‘invisible’ leashes – problem for dog, owner and cyclist
- ◆ Gravel sections that are ‘loose’ – marbling effect is very slippery for bikes
- ◆ Bollards (removable posts) where the handle is perpendicular to the trail – potentially painful for cyclists
- ◆ ‘Camouflage’ bollards that blend with the trail colour
- ◆ Bollards too close to intersections – move them back 5 – 10 m so that you have room to turn
- ◆ Bollards too narrowly spaced – should be wide enough to allow trailers on bikes through, and allow tandem bikes to turn between
- ◆ Rattly and slippery bridge surfaces – suggestion for surfacing on the wooden deck. Need to identify potential icy areas.
- ◆ Too tight corners on trails (makes you slow down too much)
- ◆ Signs that are not at bike eye-level
- ◆ Surfacing on Goose onto Interurban (loose crushed gravel is hard to navigate, potential for erosion)
- ◆ Hogfuel – too spongy
- ◆ On gravel trails, the main bike route gets hard packed, but the outer areas are loose gravel, very hard on bike trailers
- ◆ Road crossings where it takes too long for signals to activate (encourages people to cross illegally)

#### Suggestions

- ◆ Some trails (e.g. GG) are major transportation corridors for commuters and cycling tourists – should be paved
- ◆ Other routes (e.g. Colquitz) are more local use so should not be paved
- ◆ Make trails wide enough to reduce conflicts: “commuting without being in other people’s faces
- ◆ “Comfortable” width will increase traffic
- ◆ Beware of width – cyclists will go faster on a wider trail
- ◆ Should be ‘sliding scale’ on width – 5m wide in urban areas, rural trail ‘connectors’ only 2m (less where there are physical or environmental constraints)
- ◆ 1 m is minimum comfortable width for cycling
- ◆ Curves are good for interest, but should be good sightlines

- ◆ Surfacing should cope with multi-use
- ◆ Asphalt blend surfaces are good for cyclists
- ◆ Use grade reversal to help drainage on slopes
- ◆ Think about crossings
- ◆ Put 'countdown timers' at signal road crossings
- ◆ Try a 'scramble signal' (red lights in all directions allowing pedestrians to cross any way at once), e.g. at Mackenzie and Borden
- ◆ The route with the most traffic should have right of way (i.e. if Goose gets more use than the side road, the cars on side road should have the stop signs, not the bikes)
- ◆ Signage is important
- ◆ Look at Burke-Gilman Trail in Seattle – paved with rougher section parallel for joggers
- ◆ Encourage cyclists to use voice or bell as they approach walkers
- ◆ Cyclists should be given a say before approving surfacing on new/upgraded trails
- ◆ Designate a trail for mountain bikers (for beginners/moderate, not the high-end technical trails like most in Hartland). Mount Doug Park has potential for this.
- ◆ Need for bike racks at the start of trails (some people like to ride their bikes to Mount Doug and then walk up)
- ◆ Improve the Colquitz River trail
- ◆ Don't forget rollerbladers
- ◆ Think about the purpose of trails – keeping current users happy versus encouraging new trail users
- ◆ Keep sides of trail cleared (better sightlines, increases effective width)
- ◆ Define the purpose of the design guidelines – is this to increase the number of trail users or the satisfaction of trail users. Each user type has its own preferences. Paving costs more so more paved trails would mean fewer new trails.

*Wish list:*

- ◆ Lighting on trails – good for night riders (avoids conflicts between walkers and cyclists on dark nights), especially on key transportation routes
- ◆ Washrooms
- ◆ Emergency phones
- ◆ Park benches and picnic tables
- ◆ Signs: maps (where are you and where are you going), distances to key destinations
- ◆ Signs on roads directing you to nearby trails
- ◆ Signs on trails directing you to points of interest

### **Accessibility Groups**

*(Meeting held October 28, 2004)*

*Physical disabilities:*

- ◆ There are a range of ability levels – e.g. some wheelchair users use a 'trail rider' (effectively, an all-terrain wheelbarrow) to go on very challenging trails
- ◆ Disabled cyclists may use a bike trailer or hand cycles (preference for long flat trails for these activities)

- ♦ If trail is accessible, facilities should be too (and vice versa) – e.g. fishing docks, washrooms
- ♦ Provide an edge on the trail, especially if there is a drop off (good for strollers and cane users as well as wheelchairs)
- ♦ Surface and grade are important
- ♦ Asphalt and concrete are ideal. Basalt good at first but then blows away. Hogfuel and pea gravel are bad. Crushed gravel okay, but can have lots of puddles in winter.
- ♦ Trail should be level (sideslope is bad)
- ♦ If there have to be steeper grades, keep them short
- ♦ At viewpoints, ensure fencing is low enough (in at least one place) to allow people in wheelchairs to get a view
- ♦ Provide pullouts for wheelchairs (so you can sit and rest), provide space for a wheelchair beside benches
- ♦ Provide picnic areas with accessible tables
- ♦ Provide benches at regular intervals
- ♦ Space between bollards should be wide enough for wheelchairs (but narrow enough to stop ATVs). Need for 1.75 m width for power scooters

*Visual disabilities:*

- ♦ Include people with sight as well as physical disabilities
- ♦ Make sure overhanging branches are pruned, as visually impaired people may not see them, also branches sticking out from the trail edges
- ♦ Those with macular degeneration lose central part of their vision – mark trail edges well, provide a colour strip along the edges of stairs
- ♦ Concrete pads for benches are often higher than the ground. Avoid this, or mark this by providing a change of texture or painting the edge of the pad
- ♦ If there is a safety rail, have a barrier at the trail edge too for cane users (otherwise cane goes underneath)
- ♦ Avoid hazards such as drinking fountains that project (with nothing for cane to bump into underneath)
- ♦ Provide ridges (or change of texture) on asphalt paths to warn of intersections
- ♦ At crossings, have a broad solid line to mark the edge of the roadway

*Signage/Maps*

- ♦ Provide information at the trailhead – is this trail wheelchair accessible throughout its length, are there steep sections or hazards that will have to be navigated (frustrating to get part way along a trail and then have to turn back)
- ♦ Trail maps (paper and at trailhead) – mark trails in different colours to show level of difficulty
- ♦ Design signage so that it can be read by visually impaired (good colour contrast, larger print, bold colours). This includes many seniors who can no longer ‘read the fine print’
- ♦ Consider Braille signage as well as large print

*Literature:*

- ♦ Clearing Our Path (CNIB publication)
- ♦ US Universal Trail Access Project (Web site – see <http://www.trailexplorer.org/>)
- ♦ CRD Parks publication
- ♦ Go for Green Web site (trail registry) <http://www.goforgreen.ca/>

## Seniors

*(Meeting held October 28, 2004)*

- ♦ Firm surface preferred – easier to walk on and to push a wheelchair
- ♦ Large signs (large enough for those with blurry vision)
- ♦ Range of abilities – some prefer gentler trails, others still active hikers

## Walking/Running Groups

*(Meeting held November 2, 2004)*

- ♦ Prefer woodchip trails for walking and running
- ♦ Pea gravel is okay but paved surfaces promote conflicting uses
- ♦ Like woodchips but realize they are expensive, and wash away in steep sections
- ♦ Need signage to indicate which users are/are not allowed, do dogs have to be leashed, etc.
- ♦ Like doggie bag stations!
- ♦ Like variety of different trails – some easy, some more challenging
- ♦ Ensure pedestrian linkages through new developments – mark cul-de-sacs as “no exit” for cars but let pedestrians and cyclists know that they can get through
- ♦ Provide stairs in steep sections (safer than clambering over wet boulders)
- ♦ Put wire on boardwalks and bridges (less slippery)
- ♦ Design trails for walkers – with curves and short sightlines that make them less attractive to cyclists
- ♦ Ensure some trails are accessible to all users
- ♦ Encourage cyclists to use bells when approaching pedestrians
- ♦ Some walkers keep to the right, others prefer to be on the left (facing bike traffic)
- ♦ Encourage consideration for all trail users (cyclists need to recognize that it’s not a highway)
- ♦ As trails get wider, they get busier
- ♦ Look at blocking road traffic (like Sunday morning closures of Mount Doug road)
- ♦ Wide baby carriages are a concern on narrow corners

## Youth

*(Meeting held November 2, 2004)*

- ♦ Trails can be unsafe places for youth at night (party places in bushy areas, use of alcohol and drugs, pimps recruiting)
- ♦ Need public water fountains for people and dogs
- ♦ Need more signage – maps of loops and linear trails, average time to get to key locations, locations of playgrounds and schools
- ♦ Lighting is both good and bad – better visibility but false sense of security?

- ◆ Have destinations for trails – e.g. tennis courts, skateboard parks
- ◆ Desire for a mountain bike trail in Saanich
- ◆ Suggestion for a fitness trail, also accessible for disabled
- ◆ Want playground equipment for teens!
- ◆ Want trail map geared to youth – more (youth) appealing design, add information on youth-oriented facilities, locations of bus stops
- ◆ Let PACs know of trail survey when available
- ◆ Trails within 1.5 km of schools used by youth and parents as route to school. These trails should have hard surface (crush gravel) for bikes and strollers, and wide enough for parent taking several kids
- ◆ Encourage youth to paint the trails (e.g. garbage cans) as graffiti prevention - trails as public art
- ◆ Kids like wider paths, they can spread and chat
- ◆ Vary trail widths to keep them interesting
- ◆ Encourage biking to middle schools, provide bike racks (covered, in full view to reduce theft)
- ◆ Don't like subdivisions that don't have access through (dead-end cul-de-sacs)
- ◆ Distinguish between different types of park (natural vs. playground style)
- ◆ Within parks, recognize different trail types – fire roads vs exploratory trails
- ◆ Trail alignment should defer to natural features – e.g. go round the tree rather than taking it down
- ◆ Some trails should allow people to walk and talk (two abreast), other trails better suited to single file

### **Environmental Groups**

*(Meeting held November 2, 2004)*

- ◆ Include a wide easement for trails – allows developers to incorporate this into plans rather than later adjusting to meet community demand.
- ◆ Trails in Mount Doug are categorised as 'corridor trails' or 'exploratory trails'. Corridor trails are wider and support various user groups. Exploratory trails provide access to the park interior, are narrower (1 m or less) and the intent is to maintain their wilderness character. Horse use should be confined to designated trails.
- ◆ Distinguish between different types of parks – recognize the need for trail diversity. Have a variety of trails rather than one size fits all.
- ◆ Within parks, there are different types of trails, e.g., fire roads versus exploratory.
- ◆ Trails should defer to natural features. Some trails may be unsuitable for two people walking abreast even if this is what they desire.
- ◆ Reduce impervious pavement, use permeable options (e.g., sidewalk on Wilkinson).
- ◆ Concern for slipperiness of trails with leaf/soil build up on asphalt trails.
- ◆ Retain natural surfaces in natural parks, except where dictated by high use of wet ground (e.g., Rithet's Bog).
- ◆ Create trails that blend into their surroundings. Create a trail 'experience' – views, wildlife viewing, meeting others – not just a sidewalk in a natural setting.
- ◆ Offer some challenging parts of trails as well as easy walking.
- ◆ Concern for off-trail impacts e.g., dogs in creeks.
- ◆ Create standards, e.g., for setbacks in riparian areas (buffer between stream and trail), perhaps with viewing platform.
- ◆ Don't blast rocks to create desirable grades. Create barriers to avoid shortcutting of trails.

- ◆ Provide provision for horses as well as cyclists and walkers.
- ◆ Balance the need for accessibility with diminishing the experience.
- ◆ Trails have value as a tourism draw, also for extension/education, healthy exercise. Provide information at trailheads.
- ◆ Existing trailhead signs are nicely unobtrusive.
- ◆ Manage pedestrian activity at trail junctions to avoid shortcutting and trail widening.
- ◆ Gravel trails overlaid with hogfuel are more durable yet provide pleasant experience of softer trail surface.
- ◆ Connectivity is a key principle for trails.
- ◆ Have main trails and arterials. Raise profile of trails, make them welcoming – this may mean making main trails wider.

### **Equestrian Groups**

*(Phone calls with local equestrians and review of written materials from local equestrians)*

- ◆ Equestrians are not all alike in their wants (e.g., trail riding versus ring riding).
- ◆ Trail riders – some prefer horseshoes, others prefer to go without horseshoes (therefore strongly desire hogfuel or natural soil surface)
- ◆ Some ‘no shoe’ riders have “Old Mac Boots” that cover unshod hooves and allow shoeless horses to go on harder surfaces for periods of time.
- ◆ Trails for horses based on three criteria: surface (hardness); slip (asphalt is slippery for horses); noise (gravel is good for shared trails as you can hear bikes coming, horses less likely to be startled).
- ◆ For gravel trails, use a rounded gravel as this avoids bruising of horse’s hoof/heel. (3/8” minus is best, preferably rounded. Could use smaller angular gravel.)
- ◆ Grade – depends on skid resistance. Short steep sections not usually an issue.
- ◆ Rural Saanich Local Area Plan has lots of good information on equestrian routes.
- ◆ Good trail is the one at the back of Camosun College down to the Hart Centre – one side is gravel, the other side is hogfuel over a gravel base (good to have gravel base as promotes drainage as well as firmness – also a popular choice with runners). Trails at Horticultural Centre for the Pacific also good.
- ◆ Height – should not have to duck under branches. Saanich is usually good at dealing with overhanging branches when reported.
- ◆ On a narrower trail, pull-outs are good (to let cyclists and horses pass each other). Frequency of pull-outs depends on use levels on trail.
- ◆ Multi- surface trails a good option. But – if there is no buffer between the gravel and hogfuel, the hogfuel will spread across the gravel (not good for gravel users or hogfuel users). A grass buffer in between is good idea.
- ◆ Standards should be based on utilization – heavy use trunk trails, lower use mixed user trails. Low use trails could have pull-outs rather than be 3 m everywhere (e.g., 1.5 m with 3 m widenings every 50 m or so). Will help avoid cutting trees to achieve trail width.
- ◆ Loop trails are good.
- ◆ Rural trails should be hogfuel or gravel, in keeping with the rural environment.
- ◆ Hard surface (asphalt) trails are hard on horses, causing shin splints, hoof wear and slipping. It also makes it hard to hear cyclists approaching from behind, which can cause horses to startle (a safety concern).



### **Cadboro Bay Residents Association**

- ♦ Interested in trail connections – should be walkable trails linking centres (perhaps also accessible by motorized scooters). Note that UVic wants to connect into other trail systems.
- ♦ Safety issues. Exposed roots are an issue for seniors. Should be railings where there are steep sections.
- ♦ Water runoff and erosion is concern for trail upkeep.
- ♦ Standards should vary across the municipality. In 10 Mile Point, it is mostly (local) older people walking around the neighbourhood.
- ♦ Trails should be relatively wide (3 m corridor with 2 m surfaced). Wide enough to walk two abreast and chat. Prefer hogfuel surface, some asphalt. Need mix of trails.
- ♦ Some trails are narrow because of trees and rocks – should allow these to be defined by local geography.
- ♦ Where machines doing trimming thrash the trails, they can destroy bird habitat – could be done by volunteers instead.
- ♦ Encourage ‘friends of’ groups to do the work, with standards set by Saanich.
- ♦ If trail in Haro Woods, would like hogfuel over gravel base (safer than gravel or asphalt, more durable than just hogfuel).
- ♦ Hogfuel alone can get muddy in wet season.
- ♦ If gravel trail, allow leaves to decompose on top, over time becomes like hogfuel.
- ♦ Section in report should address different trail sections and their pros and cons.
- ♦ Fire hazard – dry grasses on trail side usually removed during summer mowing. Have ‘don’t smoke on trails’ signs!
- ♦ Invasive species removal – need manual on effective invasive species removal.
- ♦ Have locking posts rather than gates at trail heads – more welcoming for users.

## Appendix D: Results of Saanich Telephone Questionnaire

The following is taken directly from the Executive Summary from the *Saanich Parks Trails and Walkways Survey* conducted by R.A. Malatest and Associates, April 2005. For a complete copy of the report, contact the Saanich Parks Department.

### EXECUTIVE SUMMARY

#### *Present Trail & Walkway Use Among Saanich Residents*

- ◆ The majority of Saanich residents indicated that they were somewhat (35.8%) or fairly (30.0%) familiar with the system of Saanich Trails & Walkways. Survey respondents aged 19 to 30 years were least familiar with the trail & walkway system.
- ◆ The three most frequently used trails were (in order) “Cedar Hill Park and Golf Course,” “South Lochside Trail,” and the “Christmas Hill and Swan Lake area trails.” None of these top three trails are located in large parks.
- ◆ The two trails most frequently cited as being a favourite trail were “Mount Douglas Park” and “South Lochside Trail.” The most frequently given reason for why a particular trail was a favourite was the trail’s proximity or convenience (cited by 35.1% of respondents).
- ◆ Other important reasons given included a specific characteristic of the trail (21.5%), the fact that the trail was scenic/beautiful (17.1%), and that the trail was suitable for the activity the respondent wished to undertake on it (15.0%).
- ◆ The activity most often undertaken on the trail system was “walking, hiking or jogging for recreational purposes. Trail usage was also examined among various respondent subgroups (e.g., those who own a bicycle or those who own a horse). The most striking finding was that almost all Saanich residents who own a dog, exercise their dog on the trails & walkways. Overall, the trails do not seem to be much used for commuting purposes (neither walking, cycling, nor in a wheelchair/scooter).

#### *Barriers to the Use of Trails & Walkways*

- ◆ For the most part, Saanich residents in general do not feel that there are any barriers to trail & walkway use (83.8% stated that there were no barriers). Among respondent subgroups, however, some perceived barriers did emerge. For example, 25.0% of horse owners felt that they could not ride horses on the trails and 14.3% of wheelchair/scooter owners felt that they could not use the trails for recreational purposes.
- ◆ Approximately two in ten respondents (21.6%) indicated that there was nothing keeping them from using the trails & walkways more often than they presently do. The most frequently cited barrier to increase trail use was personal time constraints (cited by 38.4% of respondents).

#### *Future Trail & Walkway Use*

- ◆ No single improvement or modification to the trail & walkway system that would be effective in increasing trail usage emerged from the research. There were three improvements/modifications for which the majority of respondents indicated that they would be effective or very effective in increasing their/their household’s use of the trails. These were the provision of more map information (60.3%), improved signage directing people to trails (59.1%), and building more restrooms (50.8%). In general, homeowners were slightly less likely to state that a modification would be effective or very effective in increasing their trail use. The data was also examined on the basis of age, animal ownership and equipment ownership. A number of differences emerged, with two age groups (31 to 40 years, and over 65 years), and owners of wheelchairs/scooters expressing opinions that differed most often from the general survey population.

### *Communicating with Saanich Residents*

- ♦ • Survey respondents indicated that the three most effective ways in which the municipality could communicate with them would be (in order) the Saanich News (66.8% effective or very effective), municipal programs (57.5%), and direct mail (55.6%). The three least effective communication vehicles cited by respondents were radio ads, TV ads and the Internet.

# Appendix E: Saanich Trail Survey



## Trail & Walkway Survey 2005

Thank you for taking the time to pick up a copy of our Trail & Walkway Survey. Our goal is to find out how you feel about trail & walkway safety, quality and use. The results from the survey will assist us with the development of trail and walkway design guidelines for new trails & walkways and for the future maintenance of existing trails.

Your time and opinions are truly appreciated.

The questions are simple and easy to answer. Just fill in the blanks, shade the circles or write a few words.

Please use a ball point pen and fill in the circles that indicate your response. Please provide only one answer per question unless otherwise indicated.

Consider your responses carefully to provide the best information possible and return it to us by mail or fax by **January 14<sup>th</sup> 2005**. Our fax number is 475-5525 or mail it to Saanich Parks Trail Survey, 1040 McKenzie Avenue, Victoria, BC, V8P 2L4 or simply drop it off where you picked it up.

### Trail & Walkway Use

- In general, what is your most common reason(s) for using trails & walkways? Check all that apply.
  - Exercise
  - Commuting (to work or school)
  - Recreation
  - Enjoy Nature
  - Walk Your Dog
  - Convenience
  - Other \_\_\_\_\_
- During which month or months do you use trails & walkways most often? Check all that apply.
  - January - March
  - April - June
  - July - September
  - October - December
  - Year Round

- Approximately how many times per week do you use trails & walkways?  
\_\_\_\_\_ times per week

- When using the trails, are you mostly...
  - Cycling for Recreation
  - Cycling for Commuting
  - Walking / Hiking for Recreation
  - Walking / hiking for Commuting
  - Wheelchair / Scooter
  - In-line Skating
  - Jogging
  - Horseback Riding
  - Other \_\_\_\_\_

### Trail & Walkway Regulations and Safety

- There are a number of regulations and trail etiquette suggestions to guide safe use of trails. How familiar are you with these?
  - Not familiar at all
  - Not very familiar
  - Somewhat familiar
  - Very familiar

- Which regulation / trail etiquette suggestions do you feel are important to follow when using the trail system.
  - Share the trail
  - Keep right except to pass
  - Keep dogs on leash
  - Stay on the trail / Respect private property
  - Cyclists yield to pedestrians
  - Cyclists to keep speed under control
  - Warn others when passing
  - At night, wear reflective clothing and carry a light
  - Respect wildlife and plantlife
  - Yield at intersections
  - Other (please specify) \_\_\_\_\_

- The following is a list of possible ways to educate and inform the public about new trails & walkways, improvements to trails & walkways, events and maintenance. How would you prefer to learn about this information? (check all that apply)
  - Brochure at bike shops or other sporting goods store
  - Newspaper
  - Municipal program
  - Internet / Email
  - Radio
  - TV
  - On pathway / map
  - Trail info booth / kiosk
  - Shopping centre display
  - Other (please specify) \_\_\_\_\_

- Please rate how safe you feel from accidents you feel when you are using the trail & walkway system for the following activities:

	Not Safe At All	Not Very Safe	Somewhat Safe	Very Safe	Do not do activity
a) Cycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Walking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Running/ Jogging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) In-line Skating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Horseback Riding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Other activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify other: \_\_\_\_\_

- How do you feel the safety of the trail system could be improved?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Trail & Walkway Quality and Value**

9. In general, how would you rate the quality of the trail system in Saanich?
- Poor
  - Fair
  - Good
  - Very Good
  - Excellent
- 10a. What qualities do you like most about the trail & walkway system? Check all that apply.
- Regional Connections
  - Neighbourhood Connections
  - Location
  - Accessible
  - Convenient / Close to Home
  - Well Maintained
  - Scenery
  - No Cars
  - Other (please specify) \_\_\_\_\_
- 10b. What is your favourite trail? \_\_\_\_\_
11. Are there any general trail & walkway improvements you would like to suggest? Check all that apply.
- Maintenance / Repairs (specify trail(s)) \_\_\_\_\_
  - Widen Trails
  - Accessible
  - More Trails
  - More Posted Signs
  - More Map Kiosks
  - More Interpretive Signs
  - More Benches
  - More Drinking Fountains
  - More Lighting
  - Other (please specify) \_\_\_\_\_
  - No Answer

12. What type of trail surface do you prefer?
- Concrete
  - Asphalt
  - Gravel
  - Hard Packed Gravel
  - Wood Fibre (Chip . Hogfuel)
  - Other (please specify) \_\_\_\_\_
13. For each of the following activities, indicate how you feel about the width of trails & walkways.
- |                     | Too Narrow            | Just Right            | Too Wide              | Do not do activity    |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Cycling          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) Walking          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) Running/ Jogging | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) In-line Skating  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) Other activity   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
- Please specify other \_\_\_\_\_

**Respondent Profile**

14. Do you live in Saanich?  Yes  No
15. What is your postal code? \_ \_ \_ \_ \_
16. In which neighbourhood do you live? \_\_\_\_\_
17. What year were you born? 19\_\_\_\_
18. Are you male or female?  M  F
19. Where did you pick up this copy of the survey?
- Saanich Commonwealth Place
  - Gordon Head Recreation Centre
  - Cedar Hill Recreation Centre
  - Pearkes Recreation Centre
  - Saanich Municipal Hall
  - Saanich Parks Offices
  - Saanich Website
  - Other

Thank you for your time and participation.



**Trail and Walkway Survey 2005**



## Appendix F: Results of Saanich Trail Survey

**Question 1: In general, what is your most common reason(s) for using trails & walkways? Check all that apply**

Exercise	Recreation	Enjoy nature	Commuting	Dog walk	Convenience
83%	74%	65%	30%	17%	16%

'Other' reasons listed included shopping, birdwatching and safety.

**Question 2: During which month or months do you use trails & walkways most often? Check all that apply.**

Jan-March	April-June	July-Sept	Oct-Dec	Year round
1%	11%	10%	7%	87%

**Question 3: Approximately how many times per week do you use trails & walkways? \_x times per week.**

1 -2 times	3 - 4 times	5 - 7 times	More than 7 times
26%	33%	30%	8%

**Question 4: When using the trails, are you mostly...**

Walking/hiking for recreation	Cycling for recreation	Cycling for commuting	Jogging	Walking/hiking for commuting	Inline skating	Horse riding	Wheelchair/scooter
65%	37%	25%	12%	11%	2%	1%	1%

**Question 5a: There are a number of regulations and trail etiquette suggestions to guide safe use of trails. How familiar are you with these?**

Not Familiar at All	Not Very Familiar	Somewhat Familiar	Very Familiar
4%	7%	42%	46%



**Question 5b: There are a number of regulations and trail etiquette suggestions to guide safe use of trails. How familiar are you with these?**

Share the Trail	86%
Warn Others when Passing	78%
Respect Wildlife and Plant life	74%
Keep Right Except to Pass	70%
Cyclists Keep Speed Under Control	67%
At Night, Wear Reflective Clothing and Carry a Light	66%
Stay on the Trail/ Respect Private Property	65%
Keep Dogs on a Leash	64%
Cyclists Yield to Pedestrians	64%
Yield at Intersections	62%
No Littering/ Pick up Dog Waste	8%
Stay Alert when using Cell Phone or Headset	2%
Keep Horses Off Cycling Trails	1%
Do Not Block the Trail	1%

**Question 6: The following is a list of possible ways to educate and inform the public about new trails & walkways, improvements to trails & walkways, events and maintenance. How would you prefer to learn about this information? (check all that apply)**

On pathway/map	59%
Newspaper	58%
Trail information booth/kiosk	52%
Brochure at bike or outdoor stores	36%
Internet/e-mail	32%
Radio	26%
TV	23%
Shopping centre display	22%
Municipal program	18%
Recreation centre display	6%
Water bill	1%
School program	1%
Active Living Guide	1%

**Question 7: Please rate how safe you feel from accidents when you are using the trail & walkway system for the following activities:**

Activity	Not Safe At All	Not Very Safe	Somewhat Safe	Very Safe	Do Not Do Activity
Cycling	1%	4%	22%	40%	22%
Walking	0%	0%	28%	60%	3%
Running/ Jogging	0%	0%	10%	23%	42%
In-line Skating	0%	0%	6%	2%	63%
Horseback Riding	0%	1%	1%	1%	67%
Other (Scooter)	0%	0%	0%	1%	n/a

**Question 8: How do you feel the safety of the trail system could be improved?**

Suggestions included:

- ♦ More Signs
- ♦ Bike Licence Plates
- ♦ Better Enforcement
- ♦ Flashing Lights at Crossings
- ♦ Education
- ♦ More Sidewalks
- ♦ Paid or Volunteer Patrol
- ♦ Community Groups Adopt a Trail
- ♦ Dogs on Leash
- ♦ Direct Phone to Police at Kiosks
- ♦ Control Cyclist Speed
- ♦ Lighting
- ♦ Have Pedestrians Walk Facing Traffic
- ♦ Remove Leaves
- ♦ Pave
- ♦ More Overpasses
- ♦ Improved Surfaces
- ♦ Centrelines
- ♦ People Should Remain Attentive/ Alert
- ♦ Increase Visibility at Intersections
- ♦ Clarify Who Has Right of Way
- ♦ Give Trail Users the Right of Way
- ♦ Keep Clean i.e. litter/ mud

**Question 9: In general, how would you rate the quality of the trail system in Saanich?**

Poor	Fair	Good	Very Good	Excellent
1%	8%	31%	46%	13%

**Question 10a: What qualities do you like most about the trail & walkway system? Check all that apply.**

No Cars	71%
Accessible	62%
Neighbourhood Connections	59%
Scenery	59%
Convenient/ Close to Home	56%
Well Maintained	51%
Regional Connections	50%
Location	45%
Other (Trestles)	1%

**Question 10b: What is your favourite trail?**

Lochside Regional Trail	33%
Galloping Goose Regional Trail	27%
Colquitz River Park	5%
Mount Douglas	9%
Rithet's Bog	6%
Cedar Hill Golf Course	7%
Broadmead trails	2%
Thetis Lake trails	2%
Mystic Vale trails	1%
Christmas Hill/Swan lake	4%
Mount Tolmie	1%
Knockan Hill	3%
Gorge Waterway	2%
Elk/Beaver Lake	7%
Ten Mile Point	2%
Konuckson Park	1%
Mount Work	1%
Interurban rail trail	1%

**Question 11: Are there any general trail & walkway improvements you would like to suggest? (check all that apply)**

More Trails	51%
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More Posted Signs	34%
More Map Kiosks	22%
More Lighting	21%
Widen Trails	19%
More Interpretive Signs	15%
Maintenance/ Repairs	13%
More Drinking Fountains	12%
More Benches	9%
Accessible	4%
<i>Other suggestions</i>	
More Washrooms	15%
Connections Between Trails	4%
More Litter Containers	2%
More Trees	2%
Identify Pedestrian Walkways at Dead End Streets	1%
Identify Stroller/ Wheelchair Friendly Trails	1%
Pave	1%
More Natural Trails	1%

**Question 12: What type of trail surface do you prefer?**

Asphalt	Hardpacked Gravel	Wood Fibre (Chip, Hogfuel)	Gravel	Concrete	Natural
45%	41%	41%	10%	7%	4%

**Question 13: For each of the following activities, indicate how you feel about the width of trails & walkways.**

Activity	Too Narrow	Just Right	Too Wide	Do Not Do Activity
Cycling	29%	18%	0%	21%
Walking	9%	52%	1%	0%
Running/ Jogging	3%	16%	1%	28%
In-line Skating	8%	3%	0%	39%
Other (Scooter)	0%	1%	0%	n/a
Other (Equestrian)	2%	0%	0%	n/a

**Question 14: Do you live in Saanich?**

Yes	No
81	18

**Question 17: Age**

75-84	65-74	55-64	45-54	35-44	25-34	15-24
4	20	32	12	17	11	1

**Question 18: Gender**

Male	Female
44%	54%

**Question 19: Where did you pick up this copy of the survey?**

Saanich Web site	38%
Saanich Commonwealth Place	21%
Cedar Hill Recreation Centre	13%
Gordon Head Recreation Centre	9%
Pearkes Recreation Centre	5%
Saanich Municipal Hall	5%
Saanich Parks Office	3%
Other	3%
No Answer	2%
<b>Total Respondents</b>	<b>99</b>

## Appendix G: Open House Comments

As part of the consultation process, an outline of proposed trail standards were posted on the Saanich Web site, and an open house/public meeting was held on May 18, 2005. People were encouraged to complete a response form, providing feedback on the proposed trail design guidelines.

### Open House

Some of the questions/comments raised at the open house were:

- ♦ Trail surveys should have been included at sporting goods stores/bike shops/ tack shops...
- ♦ We should have a look at the trail surfaces in Centennial Park in Central Saanich as a good example.
- ♦ Are horses prohibited on the Mann Trail?
- ♦ Why have horses been excluded from the Rustic Trail category?
- ♦ One equestrian rider spoke in favour of asphalt trails, many others disagreed with her.
- ♦ What about the environment? Environmental conditions and terrain will also dictate the standard. Something should be in the report about sensitive ecosystems.
- ♦ The group seemed more concerned about who will be restricted from using the trails rather than the guidelines themselves.
- ♦ Why not have split designation trails?
- ♦ There also needs to be an urban/rural split to the guidelines.
- ♦ More signs educating people about trail etiquette.
- ♦ Trail etiquette applies to the trail/environment as well (Stay on the Trail)
- ♦ Some consideration for ice. Shoulders could be a different surface to provide an escape to avoid icy conditions.
- ♦ What is the process to assign one of these categories to a new trail? Will there be criteria to assist in the evaluation before assigning a category to a trail?
- ♦ Restrictions may apply if safety is deemed paramount.
- ♦ Trail standards can be used to help protect the environment as well.

### Response Forms

Response forms were handed in at the open house, and also mailed and faxed to Saanich. In all, 72 response forms were received.

#### Question 1: Do you agree with the five proposed trail categories?

Yes	No	Maybe
76%	11%	3%



**Comments:**

Those who agreed with the categories commented that this was a reasonable framework. Dissenters felt that there were too many categories, that all trails should be multi-use, or had concerns about specific wording.

Suggestions included:

- ♦ Have different rural and urban guidelines
- ♦ Trails should be multi-use (inclusive)
- ♦ Keep trails accessible for current uses
- ♦ Regional and community trails are confusing
- ♦ 'Regional' trail confusing with CRD regional trails

**Question 2: Do you agree with the design guidelines for each of these trail types?**

	Yes	No	Maybe
Regional trail	53%	33%	6%
Community trail	53%	33%	6%
Neighbourhood trail	54%	29%	4%
Rustic trail	58%	25%	4%
Specialty trail	64%	19%	4%

**Comments included:**

*General:*

- ♦ Need for more input to ensure all user group concerns are met
- ♦ A matrix would be helpful
- ♦ Good starting point
- ♦ Design guidelines still very broad
- ♦ Develop a set of principles guiding trail design
- ♦ Integrate the trails with the transportation network

*Environment:*

- ♦ Environment should be first consideration
- ♦ Need liaison between Parks and Environmental Services
- ♦ Width of trails seems excessive for sensitive environments
- ♦ No trails in sensitive natural environments e.g., wetlands, areas with rare species
- ♦ Respect existing trees

*Surfacing:*

- ♦ All trails should be asphalt!
- ♦ No trails should be asphalt!
- ♦ Neighbourhood trails should be paved to accommodate wheelchairs
- ♦ Concrete is too abrasive for bike tires

- ♦ Paved surfaces encourage speed
- ♦ Use fine gravel where bikes/horses using trail
- ♦ All trails should accommodate horses – hard surfaces (including loose gravel) are unsafe for horses
- ♦ Consider dual surface trails
- ♦ Provide soft surfaces for joggers and equestrians
- ♦ Trail surface should be same throughout length of trail (e.g., not change from wood chips to gravel part way through)
- ♦ Changes should not reduce access for horses

*Design guidelines:*

- ♦ Consider duration of grade as well as maximum grade
- ♦ Ensure design includes for people with visual disabilities, walking with cane or stroller
- ♦ Make trails as wide as possible Regional trail should be at least 5 m, community at least 4 m
- ♦ Make trails narrower : regional trail too wide – like a freeway, neighbourhood trail can be less than 2 m wide; wider trails lead to higher speed, not necessarily safer
- ♦ Ensure good drainage
- ♦ Standards should not be rigid
- ♦ Define ‘terrain permitting’
- ♦ Confirm permitted uses: dogs, horses, etc.
- ♦ Design for all users – these guidelines do not work well for horse riders
- ♦ Have different guidelines for urban and rural areas

*Multiple use:*

- ♦ Some trails should be designated as single/limited use (e.g., pedestrian only, no horses, no dogs)
- ♦ Trails should remain open for all users
- ♦ Trail users need to learn how to share the trail better, need trail etiquette guidelines
- ♦ Horses destroy the trail surface, concerns over horse manure on trails
- ♦ Horses should be allowed on regional and community trails, but paving not acceptable surface

*Amenities:*

- ♦ More washrooms
- ♦ More parking
- ♦ Consider lighting for regional trails
- ♦ Have maps and signs showing permitted uses, length of trail,

**Question 3: Do you agree with the proposed names for each of these trail types?**

	Yes	No	Maybe
Regional trail	53%	33%	6%
Community trail	53%	33%	6%
Neighbourhood trail	54%	29%	4%
Rustic trail	58%	25%	4%
Specialty trail	64%	19%	4%

**Question 4: Other comments on trails and trail design in Saanich**

Respondents made numerous suggestions for the Trail Design Guidelines. These have been included under question 2 (above).

**Question 5: What types of activity do you use Saanich trails for?**

Hiking/walking	78%
Recreational cycling	54%
Nature viewing	46%
Commuter cycling	40%
Dog walking	39%
Horse riding	26%
Running/jogging	18%
Mountain biking	11%
In-line skating	10%
Use child stroller	8%
Use cane/walker	6%
Use wheelchair	3%
Skateboarding	1%
Use mobility scooter	0%

**Question 6: Where do you live?**

Saanich	64%
Victoria	11%
Central Saanich	7%
North Saanich/Sidney	6%
Other CRD	12%

# Appendix H: Trail Surfacing

## Selection of Trail Surface

The following is an extract taken from Alta Design and Planning<sup>8</sup>:

“In arriving at a recommended trail surface, several key criteria should be considered including:

**Initial Capital Cost** – Trail surface costs vary dramatically and dollars to build trails are scarce. Construction costs include excavation, subbase preparation, aggregate base placement, and application of the selected trail surface. Costs can vary from a low of around \$2.00/SF for a bark mulch trail, up to \$12-\$13/SF for a rubberized surface.

**Maintenance and Long Term Durability** – The anticipated life of a trail surface can vary from a single year (bark surface in a moist climate) to 25+ years (concrete). In addition, each trail surface has varying maintenance needs that will require regular to sporadic inspections and follow up depending on the material selected. Some surface repairs can be made with volunteer effort such as on a bark surface trail, while other such as a concrete surface will require skilled craftsmen to perform the repair.

**Existing Soil and Environmental Conditions** – Soil conditions are a given and play a critical role in surfacing selection. Rail-to-trail projects are often gifted with an excellent base to build a trail on. But a surface such as chip seal has a greater chance of developing a wash boarding effect over time due to “railroad tie memory.” In addition, when considering the use of a permeable concrete or asphalt surface, the success rate of these surfaces is directly correlated to the permeability of the soil and climatic conditions. The lower the permeability and moisture, the greater risk of failure.

**Availability of Materials** – A great trail surface in one area of the country may prove cost-prohibitive in another area due to availability of materials. Limestone-treated trail surfaces are common in the eastern US, but unheard of in the west due to a lack of limestone. There are also some environmentally sound ideas such as the use of recycled glass in asphalt (called “Glassphalt”), but because this is not done on a large scale basis, finding a source for the glass aggregate may prove difficult.

**Anticipate Use/Functionality** – Who are the anticipated users of the trail? Will the trail surface need to accommodate equestrians, wheelchairs, maintenance vehicles, bicycles, etc.? Multiple use trails attempt to meet the needs of all anticipated trail users. But this may not be feasible with a single trail surface. Consider the shoulder area as a usable surface, making it wide enough for use by those preferring a softer material. Each surface also has varying degrees of roughness and therefore accommodates varying users. In-line skates, for example, cannot be used on a chip seal surface or most permeable concrete surfaces due to the coarseness of the finished surface.

**Funding Source** – The funding source for the trail may dictate the trail surface characteristics. If the trail has federal funds and is being administered through a state DOT, the state DOT will need to review and approve the selected trail surface.

**Susceptibility to Vandalism** – Trail surfaces are not usually thought of as being susceptible to vandalism, but the characteristics of the varying surfaces do lend themselves to a variety of vandalism including movement of materials such as gravel or bark, graffiti on hard surfaces, arson (wood and rubber surfaces), and deformation.

**Aesthetics** – Each trail surface has varying aesthetic characteristics that should fit with the overall design concept desired for the project.”

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<sup>8</sup> Article by George Hudson, Alta Planning + Design. “What’s Under Foot? Multi-use Trail Surfacing Options.” [www.altaplanning.com](http://www.altaplanning.com)

## Durability and Cost

The following information is taken from the Pitkin County Open Space and Trails Program *Trails Design and Management Handbook* (1994):

- ♦ **Concrete** is more expensive to install than asphalt. However, properly laid, it can be virtually maintenance-free for decades. Subgrade preparation costs are also generally lower. Cracks should be joint sealed as soon as they appear, to prevent moisture from reaching the base course.
- ♦ The durability of **asphalt** depends on its subbase and subgrade. Asphalt is less expensive to install (depending on the subgrade costs). Its life span can be extended considerably by sealing it in its second year and every 3–5 years thereafter. Asphalt is softer for runners, and also smoother for wheeled traffic. It is also cheaper to replace (e.g., if a new pipe has to be laid across the path). Cracks should be sealed as soon as they appear to prevent moisture from reaching the base course.
- ♦ **Gravel** (crusher fines) trails are cheaper to install than asphalt, but require more frequent maintenance. However, maintenance is relatively inexpensive. Good drainage is very important to avoid washouts along the trail.

The City of Prince George estimates<sup>9</sup> the costs of different surfacing as:

- ♦ \$100/linear metre for asphalt;
- ♦ \$60/l.m for granular and
- ♦ \$25/l.m for unsurfaced trails.

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<sup>9</sup> From City of Prince George. 1998. Prince George City Wide Trail System Master Plan. Prepared by Carson/McCulloch & Associates for the Prince George Leisure Services Department – Parks Division, September 1998.