Electoral Area E -
Cowichan Station/Sahtlam/Glenora

COMMUNITY PARKS & TRAILS MASTER PLAN

Submitted to the Cowichan Valley Regional District
on April 19, 2018

LEES + ASSOCIATES

CVRD

ACKNOWLEDGEMENTS

LEES+Associates is pleased to submit the Electoral Area E Community Parks & Trails Master Plan for the Cowichan Valley Regional District. This plan was developed in close collaboration with Tanya Soroka (CVRD Parks & Trails Planner) and with input from other CVRD staff.

This Electoral Area E Community Parks & Trails Master Plan could not have been completed without the vision and input from the local Electoral Area E Parks Commission, which helped to form the basis of the plan.

Electoral Area E Parks Commission Members (2016): Howard Heyd, Patty John, Mike Lees, Frank McCorkell, Paul Slade, Larry Whetstone, Irene Evans, Gretchen Hartley, Gregg Shoop and Area Director Alison Nicholson.

Throughout the process, residents of Electoral Area E gave their time and perspectives by attending public workshops and events, and completing pubic questionnaires. Their passion, knowledge, and ideas for Electoral Area E parks and trails were invaluable to this project.

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EXECUTIVE SUMMARY

Bright Angel Park in Cowichan Station

This Community Parks & Trails Master Plan was prepared for the communities of Cowichan Station, Glenora, Eagle Heights/ Koksilah and Sahtlam to set direction and priorities for community parks and trails in Electoral Area E over the next ten to twenty years.

This Plan incorporates ideas that were gathered through public engagement which included open houses, public response forms, and stakeholder meetings with the Municipality of North Cowichan, City of Duncan, BC Parks, and Cowichan Tribes, as well as through input from the Electoral Area E Parks Commission.

The recommendations outline parkland acquisition priorities, park improvement projects, roadside pathway and off-road trail linkage opportunities, and general recommendations to guide progress toward achieving the vision that for community parks and trails that was developed collaboratively with residents of Electoral Area E.

The recommendations are listed below by each subcommunity and by priority. Priority 1 recommendations will be pursued over years 1-10, while Priority 2 recommendations will likely be pursued from years 11-20, unless additional resources or opportunities arise.

General recommendations are also included that are applicable across the community parks and trails system and address issues of policy, partnership, management, and maintenance. General recommendations are listed following the summary of recommendations by subcommunity.

SUMMARY OF RECOMMENDATIONS BY COMMUNITY

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
ALL		
Develop a Roadside Pathways Plan for roadside pathways in Electoral Area E and implement once funds are available.	Connectivity	1

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
COWICHAN STATION		
Consider future opportunities including disposal of Fairbridge Park.	Lands Surplus to the Guiding Principles	2
Ensure that land across from the HUB at Cowichan Station continues to serve the local community as an outdoor recreation area.	Social Connection/ Quality of Life	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
GLENORA		
Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.	Connectivity	1
Prepare a Park Management Plan for Glenora Trails Head Park to guide long term management and public use of the lands.	Social Connection/ Quality of Life	2
Ensure the Glenora Community continues to be served with access to an active outdoor recreation area (i.e. Walden Park).	Social Connection/ Quality of Life	2
Pursue acquisition of the vacant crown parcel adjacent to Glenora Trails Head Park that is bisected by Robertson Road. (See Appendix D, Map 2).	Accessibility	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
EAGLE HEIGHTS / KOKSILAH		
Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.	Connectivity	1
Work with Cowichan Tribes and the Ministry of Transportation and Infrastructure for a safe roadside pathway along Indian Road, a portion of Miller Road, and a portion of Allenby Road through Reserve lands to connect to adjacent trail and active transportation routes in Electoral Area E.	Connectivity	1
Restore, expand and integrate Maplewood Park and Busy Place Creek Park for riparian values including fish habitat, stormwater management and carbon sequestration, etc.	Environmental Protection	1
Consider future opportunities including disposal of portions of Eagle Heights Park and Keating Park.	Lands Surplus to the Guiding Principles	1
Undertake the phased development of the E&N “Rail with Trail” through Cowichan Station and the Koksilah Business Park to enhance connectivity within and beyond the community to link to the Cobble Hill Electoral Area, Cowichan Tribes land, and the City of Duncan.	Connectivity	2
Pursue acquisition of a new neighbourhood park in the Eagle Heights/Koksilah sub-area. Ensure the park meets the park land acquisition criteria outlined in Appendix F.	Social Connection/ Quality of Life	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
SAHTLAM		
Acquire additional lands around Wake Lake Nature Reserve for continued environmental preservation.	Environmental Protection	1
Prepare a phased construction plan for the completion of the Sahtlam Greenway Trail and include the designation of Lot 3, north of Sandy Pool Park, as parkland by the CVRD Board and implement the plan once funds are available.	Connectivity	1
Prepare a Park Management Plan for Currie Park to guide long term management and public use of the lands.	Social Connection/ Quality of Life	2
Identify potential opportunities for the future expansion of Currie Park.	Social Connection/ Quality of Life	2
Undertake an engineering study to determine if a suitable location can be identified to establish a pedestrian/ equestrian bridge crossing over the Cowichan River as part of the Sahtlam Greenway Trail.	Connectivity	2
Acquire and construct a trail linking Barnjum Road south to Sunrise Road.	Connectivity	2

GENERAL RECOMMENDATIONS

RECOMMENDATION	CATEGORY
Support the enhancement of partnerships for protection of key environmental areas in Electoral Area E.	Partnerships and Parkland Acquisition
Co-ordinate planning efforts for acquisition of lands of interest and connectivity where adjoining with other jurisdictions.	Partnerships and Parkland Acquisition
Continue to assess and justify the opportunity to acquire park land through the subdivision and development process under section 510 of the Local Government Act.	Partnerships and Parkland Acquisition
Set aside ten percent (16%) of the annual Electoral Area E Community Parks and Trails requisition for community parkland acquisition.	Partnerships and Parkland Acquisition
Develop a land use partnership strategy in order to ensure consistency among partnership agreements.	Partnerships and Parkland Acquisition
When opportunities arise to acquire land, develop partnerships or acquire permits with the Ministry of Transportation and Infrastructure that facilitates connections for existing or identified future trails, they should be considered a high priority.	Partnerships and Parkland Acquisition
Set aside 5% of the annual Electoral Area E Community Parks and Trails requisition for trail planning and development.	Partnerships and Parkland Acquisition
Assess high risk parks and prepare a tree replacement plan in response to tree mortality losses due to climate change.	Operations and Maintenance
Work on the eradication of invasive species and ecosystem management within the Electoral Area E community parks and trails system.	Operations and Maintenance
Develop a Parks and Trails Volunteer Program in the Cowichan Station/Sahtlam/Glenora communities.	Operations and Maintenance
Engage the CVRD's Land Use Services Department to work with other CVRD departments to educate residents about the reality that droughts and flooding are the "New Normal", invasive species management, and important environmental processes that occur in community parks.	Operations and Maintenance

1. INTRODUCTION

Parks and trails are key contributors to the quality of life and cultural fabric of the Cowichan Valley Regional District (CVRD). Recognizing this, the CVRD oversees the provision of regional and community parks and trails throughout the region. Regional parks and trails secure significant landscapes of ecological and passive recreational values that attract both visitors and local residents, while community parks and trails are geared first and foremost to the needs of local residents. This Plan specifically focuses on the community parks and trails that are funded by Electoral Area E property owners and managed by the CVRD.

Electoral Area E has approximately 114 hectares of Community Parks, 136 hectares of Regional Parks, and 10.7 kilometres of trails. Cowichan River Provincial Park (1,414 hectares) is also partly located within Electoral Area E. The community parks system provides opportunities for children to play, people to learn about and experience nature, friends and families to celebrate together, and for everyone to be active and recreate.

The trails system provides linkages through residential areas, safe roadside routes, and recreational trails within the parks. One of the highlights of the trails system is the Cowichan Valley Trail, which is a Regional Trail that travels through both the northern and southern portions of the Electoral Area and is part of the Trans Canada Trail, which connects from coast to coast to coast across Canada.

1.1 PURPOSE OF THE PLAN

The CVRD Parks & Trails Division and the Electoral Area E Parks Commission have been very active over the last decade with efforts to ensure that parklands are acquired and developed with amenities that meet the needs of Electoral Area E residents. Now, looking into the future, the purpose of this plan is to provide strategic planning direction for the parks and trails system over the next 10 to 20 years.

1.2 WHAT'S IN THE PLAN?

This Community Parks & Trails Master Plan provides the background and foundational elements, sets the context for Electoral Area E parks and trails, explores and describes the existing parks and trails system, outlines future trends, proposes a Community Vision, and outlines the key recommendations that have emerged through the planning process. Additional information and regional context is provided in the appendices.

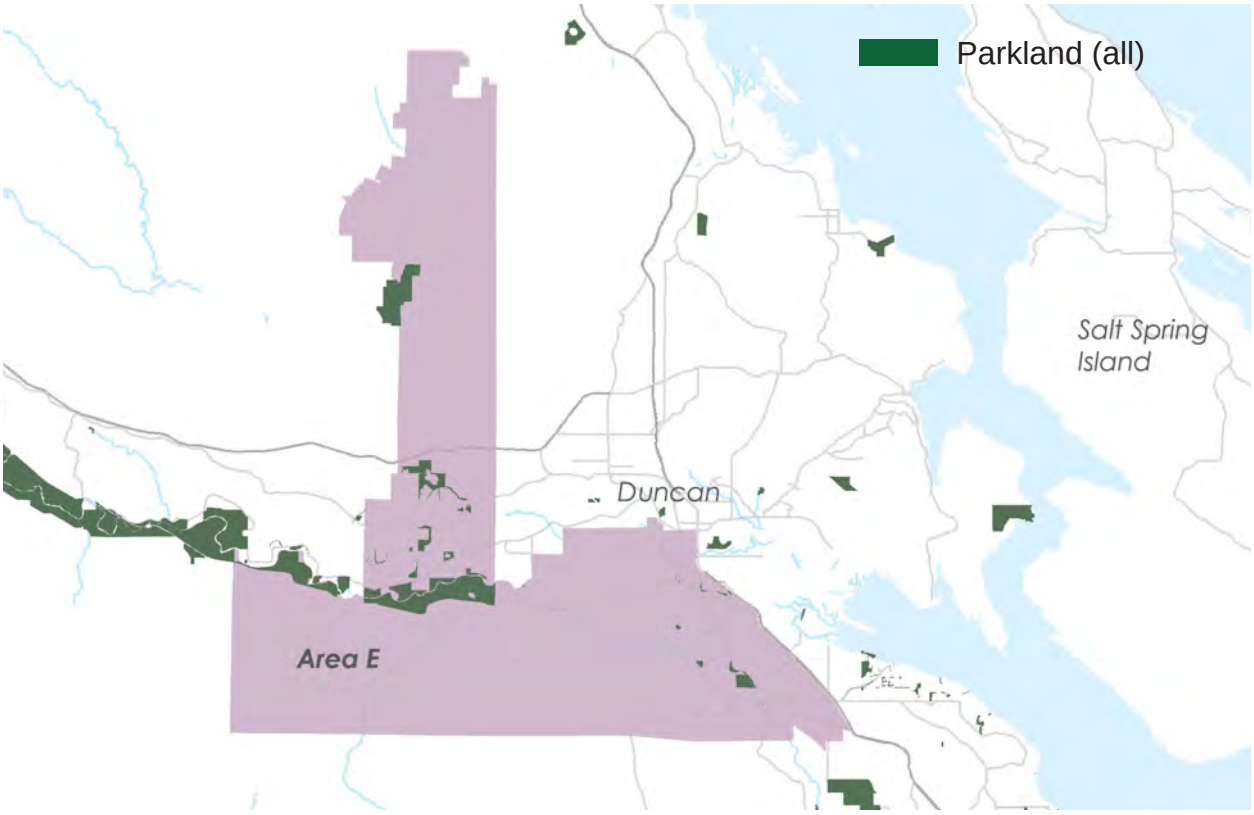
1.3 COMMUNITY CONTEXT

The CVRD is located on the southern part of Vancouver Island, accounting for 10.3% of Vancouver Island's land mass. The CVRD includes nine electoral areas, four member municipalities and 10 First Nations and is home to 83,739 people (Statistics Canada, 2016).

Electoral Area E - Cowichan Station/Sahtlam/Glenora is a primarily rural electoral area bordering the City of Duncan and the Municipality of North Cowichan and Cowichan Tribes. It extends northward to Copper Canyon and is bounded by Electoral Area B – Shawnigan Lake to the south and the Trans-Canada Highway to the east.

Electoral Area E is located entirely within Cowichan Tribes' traditional territory which has a long cultural history and tradition of resource harvesting and stewardship activities by the Cowichan people. Koksilah Ridge, located at the southern border of Electoral Area E, is an area of special significance as it is the location, according to the Cowichan creation story, where the first Cowichan person fell to the earth.

FIGURE 1: Electoral Area E - Cowichan Station/Sahtlam/Glenora Context



Early pioneers settled the area after the mid-1800's and engaged primarily in resource-based activities such as forestry, mining and agriculture. The area continues to be important to the forestry, mining and agricultural industries.

There are four main communities in Electoral Area E: Cowichan Station, Glenora, Eagle Heights/Koksilah and Sahtlam. Due to the road network, the rivers, and the settlement patterns, these communities are not well connected. This has led to each developing its own character, identity and sense of community pride. Sahtlam is located on the north side of the Cowichan River, while the other three are on the south side of the Cowichan River.

Cowichan Station is located in the southeast portion of Electoral Area E and includes a small pocket of residential development as well as surrounding farms and wineries. The heart of the community is where the former Cowichan Station School was located which has been converted to a community gathering place (operated by a non-profit society) called "The Hub" which hosts a variety of community programs and activities. Bright Angel Park, which is a sub-regional park and the Koksilah River are two highly valued open spaces in the community.

Glenora is located immediately south of the Cowichan River, with the Glenora Community Hall and Glenora store/gas station at the intersection of Glenora Road and Indian Road, anchoring the community. The Glenora Trails Head Park and the Cowichan Valley Trail are important features in Glenora that attract outdoor recreational users from across the region.

Eagle Heights/Koksilah is located at the eastern edge of the Glenora area, adjacent to the Trans-Canada Highway and Electoral Area D to the east, and includes Cowichan Tribes land. The upper slopes of the area are primarily residential, stretching along Miller Road and Glenora Road. The lower areas are within the Koksilah Business Park, primarily accessed from the Trans-Canada Highway via Boys Road, Allenby Road and Roberts Road. This area is the closest to the City of Duncan, has a concentrated population, and is much more highly developed than the other communities. There are three community parks in this area including Eagle Heights Park, Maplewood Park, and Busy Place Creek. Situated between the Cowichan and Koksilah Rivers, the Koksilah Business Park is susceptible to flooding and now has dike protection from the Cowichan River.

Sahtlam is located north of the Cowichan River and has more designated residential areas compared to the other communities. The heart of the community is where the Sahtlam fire hall is located across the street from Currie Park - a popular community park with a playground. The Sahtlam Greenway Trail is planned as a north/south trail connection from the Cowichan Valley Trail in the north to Sandy Pool Regional Park on the Cowichan River to the south.

1.4 TRANSPORTATION

The Trans-Canada Highway is the major vehicle transportation route through the CVRD and it forms part of the eastern boundary of the Electoral Area. The other boundaries are the City of Duncan, District of North Cowichan, Cowichan Tribes reserve lands and Electoral Areas B, F and G. A majority of the commercial retail areas in the community are along the Trans-Canada Highway corridor.

The other main routes through the community include Old Cowichan Lake Road, Gibbins Road and the Cowichan Valley Highway #18, which connect the community of Sahtlam to the District of North Cowichan; Indian Road, which connects the community of Glenora to downtown Duncan; Glenora Road that

connects Glenora to Eagle Heights; and Bench Road and Koksilah Road, which connect Eagle Heights to Cowichan Station and the Trans-Canada Highway.

RAILWAYS

The E&N Railway line runs north/south from Victoria to Courtenay. It is currently owned by the Island Corridor Foundation (ICF) and operated by Southern Railway of Vancouver Island (SVI). Within Electoral Area E, a majority of the rail alignment is along the east side of the Koksilah River, connecting into downtown Duncan. Rail service was stalled in the early 2010's due to the need for track repairs and upgrades and both passenger and freight trains had not resumed service at the time that this Plan was written.

If the railway remains as a potentially active route, a "Rail with Trail" model should be explored where a multi-use pathway is constructed parallel to the existing tracks. The ICF is supportive of this model, and it is currently being implemented along the E&N Railway in Chemainus and in Electoral Area G as part of the Cowichan Valley Trail. A phased rail with trail plan will need to be prepared.

Pursuing this option could improve opportunities for residents to use alternate modes of transportation and enhance the outdoor recreational tourism amenities in the Cowichan Valley.

ALTERNATIVE TRANSPORTATION AND CONNECTIVITY

A significant challenge in the community is the limited connections for pedestrian, equestrian, cycling, and vehicles between the four main communities. This has implications for providing equitable access to parks and trails. In addition, the low density form of development in the community and the relatively narrow country roads make it challenging to provide safe and convenient pedestrian, equestrian and cycling routes.

The Cowichan Communities Health Network completed a health profile for the CVRD in 2014 that highlighted "Hot Topic" areas where the CVRD has significant challenges. These topics were brought up through workshops and interviews and are linked to key health determinants. The following two "Hot Topics" relate directly to this Community Parks & Trails Master Plan:

- Promote increased physical activity for all populations and throughout the region by adopting a "walk first" approach to community design and transportation planning. Encourage

and facilitate a movement to get children to spend more time in nature.

- For a healthier natural environment, collaborate and prioritize improving air quality – especially particulate matter and water quality – both groundwater and surface water. Reduce greenhouse gas emissions by decreasing automobile dependence and increasing use of active forms of transportation. Also, reduce CO2 emissions by "walk first" policies.

Based on the Cowichan Communities Health Profile, a majority of residents in the CVRD who commute on a daily basis drive personal vehicles alone. Those who use transit note that it is not a convenient, fast option.

The Ministry of Transportation and Infrastructure's (MOT) mandate is to provide safe roads for vehicular traffic but is supportive of the development of roadside pathways. MOT will review proposals from the CVRD for permits to develop roadside pathways that include a survey of the proposed trail section, trail alignment and construction details. It is important to note that the responsibility for planning, construction, and ongoing maintenance of roadside pathways would fall entirely to the CVRD. There are currently two separated roadside pathways in Electoral Area E within a road right-of-way: the Belvedere Trail located in Sahtlam and a short roadside pathway segment along Koksilah Road adjacent to Fairfield Park in the Cowichan Station area. Through the public consultation process a number of priority roadside pathways were identified and are listed in Chapter 3, Table 20.

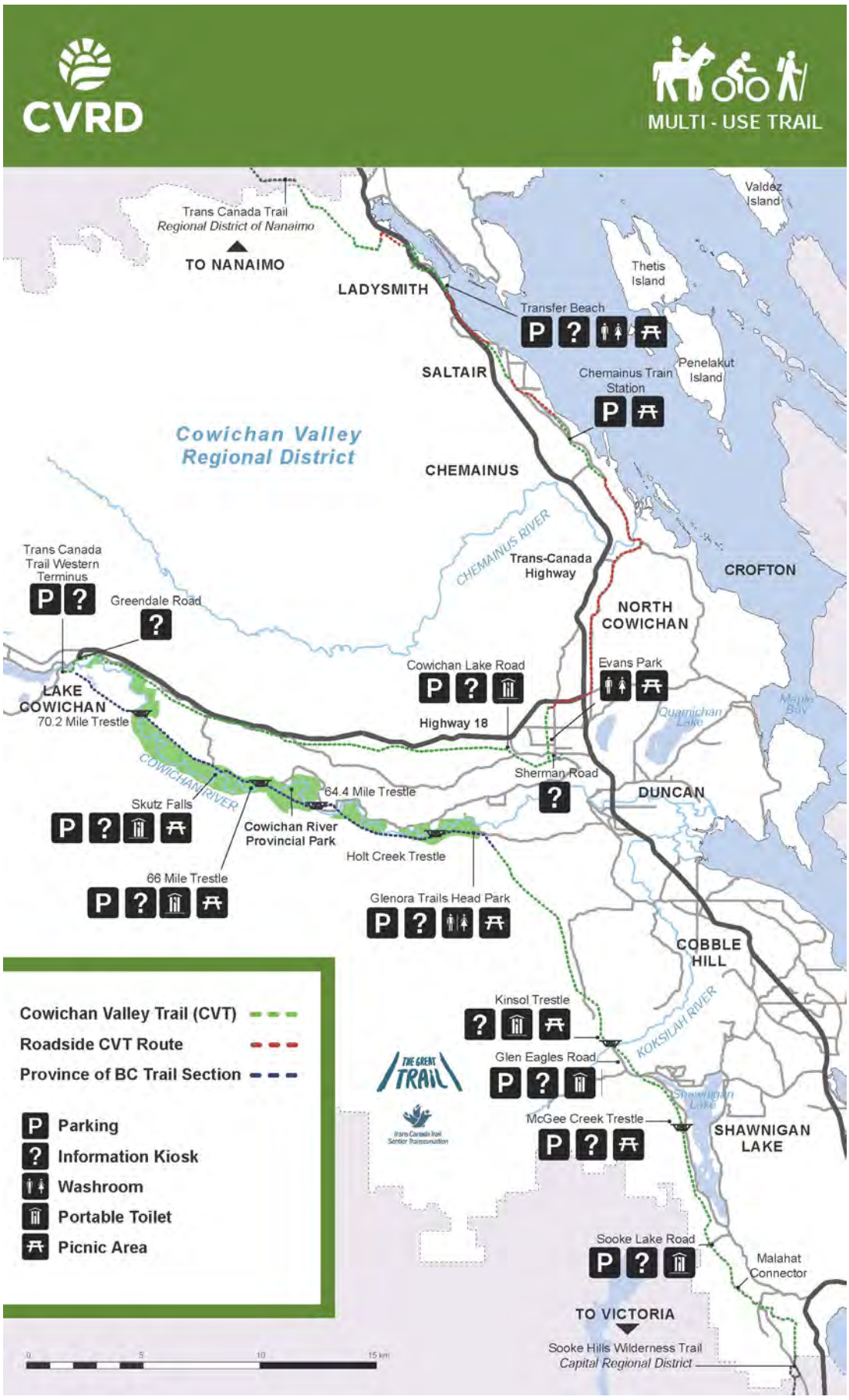
Roadside pathway along Aros Road in Cobble Hill.

Other jurisdictions have been successful at implementing roadside pathways with MOT approval. An example is Salt Spring Island where Island Pathways, a registered charity, has led the way for development of multi-use pathways separated from road traffic. Roadside pathways have also been successful in other CVRD Electoral Areas such as Aros Road in Cobble Hill (see photo, right).

COWICHAN VALLEY TRAIL / TRANS CANADA TRAIL

The Cowichan Valley Trail (part of the Trans Canada Trail) is a 120 kilometre multi-use trail (hiking/cycling/equestrian) that extends from the boundary of the Capital Regional District (CRD) boundary to the south end of Shawnigan Lake, north into Electoral Area E (Cowichan Station/Glenora), west along the Cowichan River to the Town of Lake Cowichan, and then back east, again

FIGURE 2: Cowichan Valley Trail Map



intersecting Electoral Area E (Sahtlam), before heading through north Cowichan toward Ladysmith and the Nanaimo Regional District. The Cowichan Valley Trail is entirely within the CVRD with approximately 10 kilometres within Electoral Area E. The Glenora Trails Head Park is one of the main staging areas for the trail. Due to its scenery, the historic railway trestles, and the wide, easy gravel surface, the Cowichan Valley Trail currently attracts a wide range of users internationally and regionally including hikers, cyclists, and equestrians. Figure 2 shows the entire Cowichan Valley Trail through the Regional District. The Cowichan Valley Trail now provides a continuous pedestrian, equestrian and cycling connection south to Victoria and is anticipated to trigger a significant increase in the use of the trail, as well as an increase in demand for staging, amenities, and services along the route.

1.5 ENVIRONMENTAL PROTECTION

Electoral Area E has three major rivers, numerous wetlands, two significant lakes, and sensitive environmental areas including riparian and upland forests and Garry oak rock outcrops. These areas provide habitat for a diversity of wildlife species, help protect the hydrologic system, provide carbon sequestration, and provide residents with opportunities to enjoy the beauty of the valley. The natural areas, along with the agricultural lands, provide considerable scenic value and contribute to the visual character of the electoral area. Currently, there are seven community parks classified as Nature Parks in Electoral Area E totaling 94.03 hectares of land.

To date, the CVRD's focus for environmental protection within Electoral Area E has been on the Cowichan River and Wake Lake. There is a continued desire to protect the Cowichan River, but also a recognition that all three major river systems (Cowichan, Chemainus, and Koksilah) are important in terms of ecological integrity for fish and wildlife populations, protection of the water resources in the community, and for passive outdoor recreation. There is also growing concern over the forest areas and the impact that climate change will have on the region.

The following section outlines key background information, issues and policies affecting environmental protection in Electoral Area E including the 1994 OCP environmental protection goals, descriptions and key issues in the three major watersheds, sensitive ecosystems, ecosystems and species at risk, invasive species and climate change.

1.5.1 UPDATED 2017 OCP- ENVIRONMENTAL INITIATIVES

Through the OCP community consultation to date, there has been strong support for the existing OCP objectives for the natural environment. Specific ideas relevant to Electoral Area E Parks and Trails included:

- Support for a comprehensive ecosystem planning;
- Support for maintaining biodiversity and preserving ecosystem functions;
- Increasing attention on the Koksilah watershed as an important area for conservation and fish habitat enhancement;
- Desire for more natural/forest/wilderness areas rather than developed parks;
- More environmental education initiatives; and
- Improved management of invasive species including bullfrogs, Japanese knotweed, and Scotch broom.

1.5.2 1994 OCP ENVIRONMENTAL PROTECTION GOALS

Due to a mild climate and long growing season, the Cowichan Valley Regional District is an ecologically unique region in Canada that supports many rare species of plants and animals. Approximately 10% of the land base in the Cowichan Region has sensitive ecosystems. Protection of these areas should be a priority in the Region and in Electoral Area E (Cowichan Valley Regional District, 2010).

The 1994 OCP outlines specific goals and objectives related to environmental protection, which are summarized below:

- Identify, protect and enhance watercourses, lakes, rivers, marshes, wetland and other environmentally sensitive areas;
- Prevent development in hazardous and environmentally sensitive areas;
- Support flood control and erosion abatement;

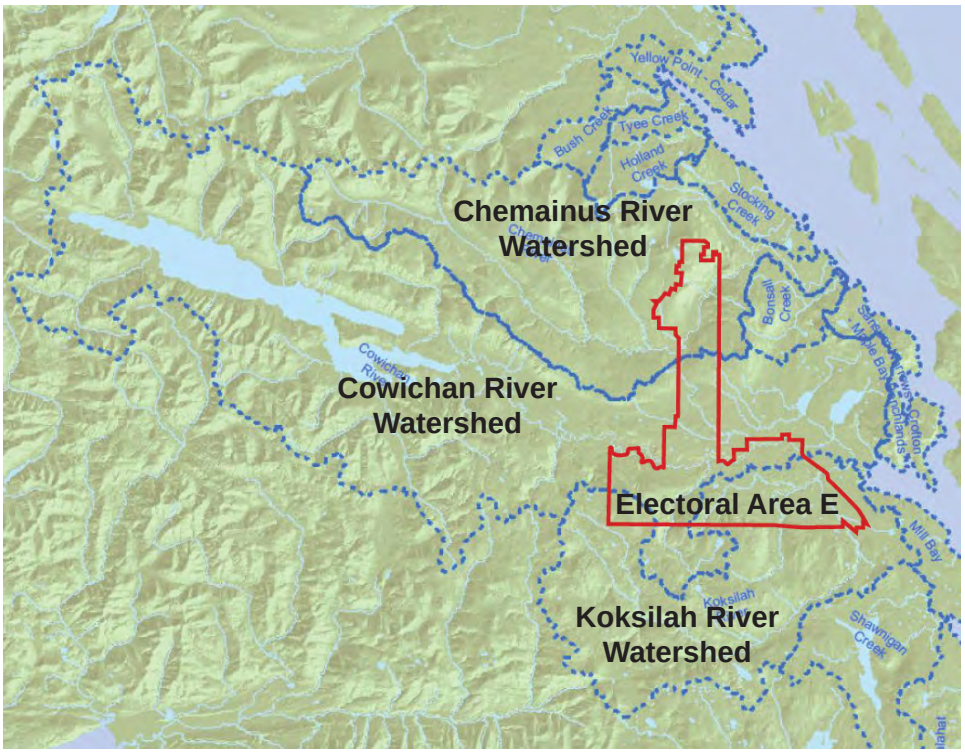
- Encourage rehabilitation of damaged natural aquatic spawning and rearing areas;
- Encourage reduction and mitigation of carbon emissions; and
- Encourage and support climate adaptation responses at a community level.
- Locations identified as environmentally sensitive and hazardous for development in the OCP are:
    - Rivers and streams;
    - Marshes and bogs;
    - Allenby Road hazardous slope area;
    - Wake Lake; and
    - Keating Lake.

The OCP also highlights the importance of forest lands as a recreational amenity and sets an objective to "encourage the area's forest lands be made available for recreational enjoyment and education and safeguard the area's recreational appeal."

1.5.3 WATERSHEDS

Electoral Area E includes portions of the following three watersheds: the Chemainus River, Cowichan River, and Koksilah River, as shown in Figure 3, below. All three flow generally from west to east, flowing into the Salish Sea. The CVRD is currently developing a watershed atlas that describes a number of different watershed features such as surface water and groundwater, aquifer vulnerability, forest classes, and species/ecosystems at risk. The following is a brief description of each watershed within the context of this Community Parks & Trails Master Plan.

FIGURE 3: Electoral Area E Watersheds



Chemainus River Watershed

The Chemainus River is located at the northern end of the Electoral Area and is primarily bordered by forest resource lands, rather than residential and agricultural areas. For the past 10 years, the CVRD has been operating Chemainus River Regional Park under a 5 year permit with BC Parks for the maintenance of the parkland. In 2016, the CVRD secured a 20 year permit with BC Parks to take over broader management of Chemainus River Regional Park (previously a Provincial Park). The CVRD Regional Parks and Trails Master Plan proposes expansion of this park along the river corridor to the estuary to ensure long-term protection of this hydrologic and ecological corridor.

Protection of the river corridor's ecological integrity is the top priority within the watershed, given its importance to salmon, downstream ecosystems, and First Nations. However, there are also untapped opportunities for carefully-managed, ecologically-sensitive outdoor recreation such as picnicking, hiking, swimming, wildlife viewing, kayaking, and mountain biking.

Cowichan River Watershed

The Cowichan River Watershed is the largest and most populated in the CVRD and it makes up a majority of the central portion of Electoral Area E. The Cowichan River is one of three designated National Heritage Rivers in British Columbia. The CVRD, Cowichan Tribes, Municipality of North Cowichan, Cowichan Watershed Board, the Cowichan Stewardship Roundtable, and BC Parks work together in partnership to manage the river system.

The river is known for spectacular viewpoints, unique geological features, outdoor recreational opportunities, and rich cultural history. The river and its watershed (including adjacent riparian areas, the system of streams and wetlands that feed into it, and the forest uplands) is an important ecological feature that supports abundant wildlife including many birds and mammals, as well as aquatic species including coho, chinook and chum salmon, steelhead, rainbow, brown and cutthroat trout, lamprey, and freshwater mussels.

Key issues in this watershed include flooding of the lower portions, particularly within the Koksilah Business Park. Dikes have been added, creating a comprehensive dike system to protect against future flooding. However, this creates a challenge of managing stormwater outside of the diking system.

Parks and protected areas within the Cowichan River watershed and Electoral Area E include the Cowichan River Provincial Park, Sandy Pool Regional Park, Wake Lake Nature Reserve, and several community parks. In Sahtlam to the North of Sandy Pool Regional Park is a steep escarpment area of approximately 9.0 hectares that has been zoned P1, as it is an area of protection that has been identified and is proposed to be donated to the CVRD as park at some point in the future. Consideration of areas to protect during future development need to take place.

Wake Lake

Wake Lake is one of the most well-known environmental features in the Cowichan River watershed and in Electoral Area E. Protection of lands around Wake Lake are a high priority. Its creation was likely caused by a large piece of ice which broke off the toe of the glacier as it receded. As the ice block melted, a depression formed called a kettle. Wake Lake developed as a kettle formation where water accumulated through mainly rainfall and small amounts of groundwater, that form due to poor or very slow drainage. Over time this closed wetland accumulated

organic debris and evolved to a fen and now is on its way towards a bog. Wake Lake is classified as an immature cranberry bog containing many plants that are adapted to wet, acidic, and nutrient-poor soils. The southeast edge of the lake has a floating mat of sphagnum moss and vegetation, which is characteristic of a bog wetland. Small herbaceous plants such as Chamisso's cotton-grass, white bog orchid, and bunchberry can be found growing throughout the sphagnum mat. Deeper areas support reeds, cattails, and yellow pond lily. The transition to the riparian area is marked by the occurrence of dense woody shrubs such as hard hack and Nootka rose. Large conifers such as Douglas-fir and western red cedar, and deciduous trees such as bigleaf maple and red alder comprise the forest around the lake. Wake Lake is the "largest breeding ground within the CVRD for the Western Toad, a species in need of conservation, and the Red Legged Frog, a blue-listed species. The migratory routes of both amphibian species extend beyond Wake Lake, to adjacent forests, wetlands and the Cowichan River corridor" (Cowichan Valley Regional District, 1994).

Koksilah River Watershed

The Koksilah River Watershed encompasses portions of the southern part of Electoral Area E, including Cowichan Station, Glenora, Eagle Heights and the Koksilah Business Park. Kelvin Creek flows east and joins the Koksilah River as it flows north and then east, connecting to the Cowichan River and Cowichan Bay Estuary. Although it is a smaller watershed than the Cowichan River, it is a vital part of the salmon habitat connected to the Cowichan Bay Estuary and supports biodiversity in the region. The Koksilah is one of the primary environmental features in the Cowichan Station community. The watershed is primarily agricultural and forestry lands, with some areas of residential and industrial development.

Flooding of the lower portions of this watershed are a concern, particularly with new dikes along the Cowichan River to the north of the Koksilah Business Park. Restoration of Shuhwuykwselu (Busy Place Creek) is a priority. Other areas for protection in the Koksilah Business Park include a large tract of forested land to the north of Boal Road and East of Koksilah Road. Most of the riparian areas along the Koksilah River and Kelvin Creek up to Keating Lake have been identified as sensitive ecosystems. Parks and protected areas along the Koksilah River and its tributaries include Bright Angel Park and Jack Fleetwood Memorial Park.

Sensitive Water Supply and Riparian Zones

Some of the key aquifers in the Cowichan Region are naturally vulnerable, and land over the aquifers are increasingly under development pressure. A large portion of Electoral Area E falls within moderate and high aquifer vulnerability. In addition, important salmon spawning and rearing habitat in the Chemainus and Cowichan River make the protection of the riparian corridor important not only for biodiversity preservation and water filtration but also for the economic viability of the region.

The CVRD is currently undertaking a wetland and groundwater recharge study, as well as watershed inventory and planning initiatives. These efforts will help clarify key areas where parks may contribute to the health and viability of the water supply or toward flood abatement.

1.5.4 SENSITIVE ECOSYSTEMS INVENTORY

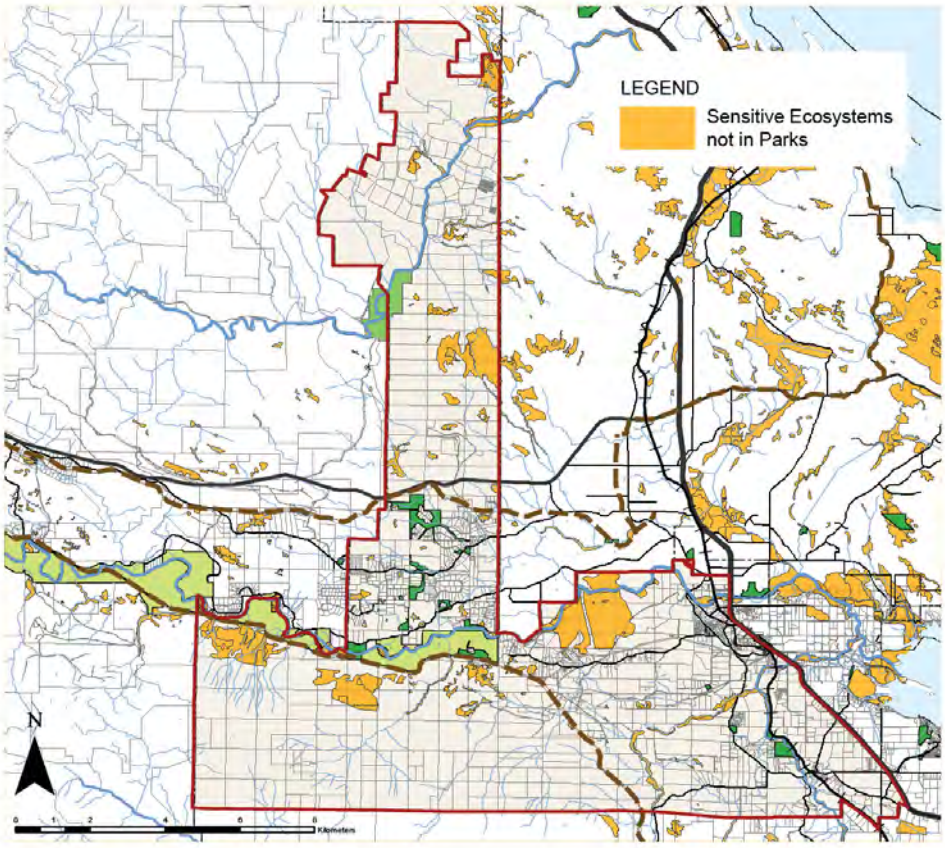
The Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993-1997 (McPhee, 2000) describes seven sensitive ecosystems found within Electoral Area E. The ecosystem types are described in Table 1 and those areas identified in the inventory that are not currently protected within the parks system are shown in Figure 4. Particular areas of interest include large forest stands on the south side of the Cowichan River, areas around Keating Lake and several other small wetlands; the riparian areas of Kelvin Creek, Koksilah River, Chemainus River, and Cowichan River; and forest stands including both old growth and second growth coniferous forests. More detailed maps identifying the different types of ecosystems for each polygon are also provided in Appendix E.

There was a loss of 205 hectares of sensitive ecosystems between 1992 and 2002, primarily due to clearing or logging of land (AXYS Environmental Consulting Ltd., 2005). The total amount of forested lands protected (<8%) within the CVRD is well below the historic forest cover (~50%) which is suggested as a benchmark for maintaining ecological values into the future (Cowichan Valley Regional District, 2010). In order to ensure healthy ecosystems in the CVRD, it is essential to protect environmentally significant land for future generations as well as take steps to ensure that low-density development and logging do not further fragment ecosystems and negatively impact watersheds.

TABLE 1: Sensitive and Important Ecosystem Types in Electoral Area E

Sensitive Ecosystem Type	Description
Terrestrial Herbaceous Areas	Mosaics of rare coastal grassland and/ or moss-covered rock outcrops; typically occur as openings in forested areas or adjacent to Garry oak woodlands. (Example: Upland areas along the Cowichan River in Cowichan Tribes Land)
Older Forests	Forests more than 100 years old; coniferous or mixed with broadleaf species. (Example: Bright Angel Park riparian area)
Riparian Ecosystems	All stages of floodplain vegetation including riparian ecosystems associated with lake shorelines and gullies. (Example: Sandy Pool Regional Park)
Wetlands	Wet soil and moisture-dependent plants; includes bogs, fens, marsh, swamps, shallow water and wet meadow. (Example: Wake Lake Nature Reserve and Dons Park)
Other Important Ecosystems (modified systems)	
Seasonally Flooded Agricultural Fields	Fields regularly flooded in winter months. (Example: ALR Lands in Cowichan Station)
Older Second Growth Forests	Larger stands of 60-100 year old forest; coniferous or mixed with broadleaf species. (Example: Sahtlam Greenway Park, Bright Angel Park)

FIGURE 4: Sensitive Ecosystems Not Currently Protected in Parks



Ecosystems and Species at Risk

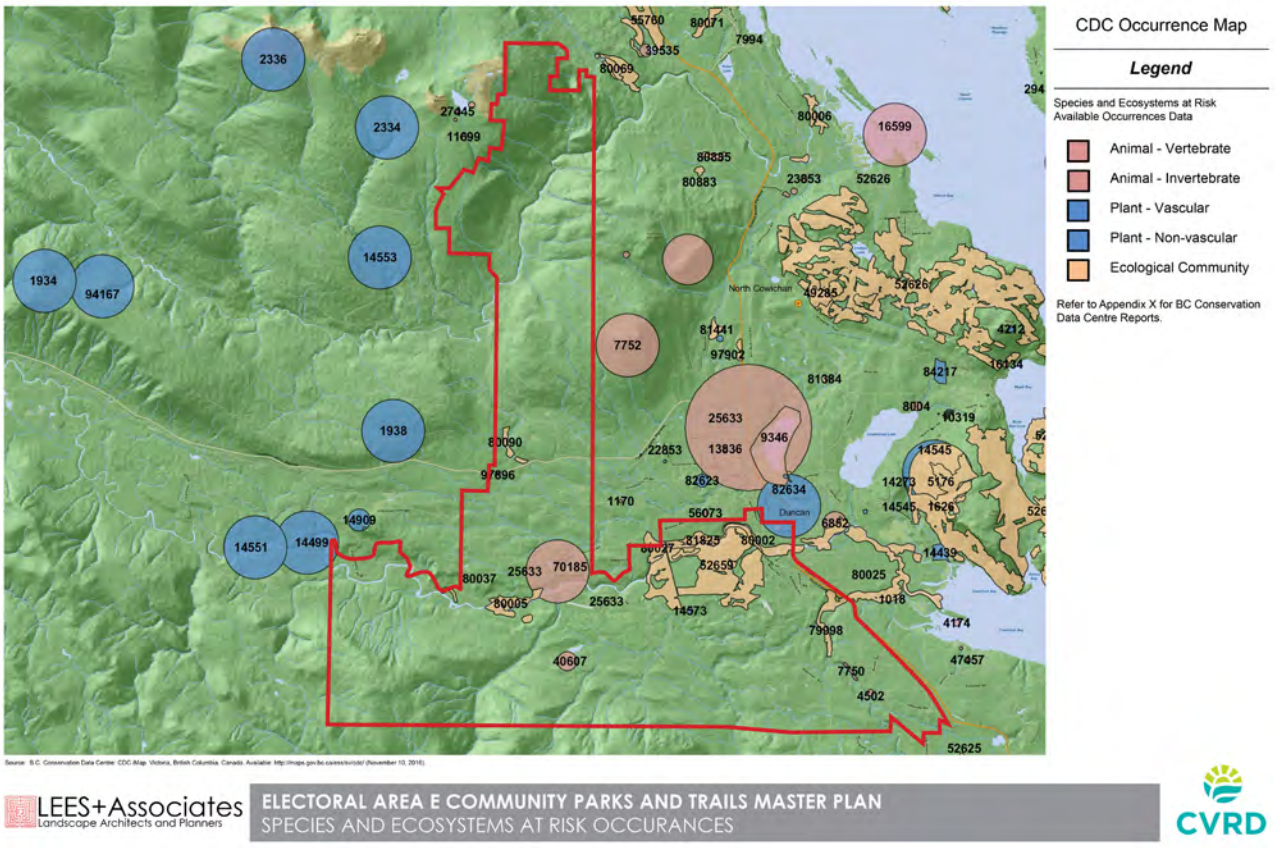
There are also several species and ecosystems at risk that are known to occur within or very nearby Electoral Area E[1] . A majority are found along watercourses and riparian corridors or in close proximity to wetlands, although there is a significant area of upland Douglas-fir / dull Oregon grape ecosystem as well. Table 2 and Figure 5 provide a summary of the available data. In addition to the known occurrences shown in Figure 5, there are other species at risk occurrences that are not made available to the public due to sensitivity of the occurrence. More detailed information is provided in Appendix E in the form of the BC Conservation Data Centre reports.

[1] BC Conservation Data Centre, accessed November 2016

TABLE 2: Species and Ecological Communities at Risk

Ecosystem	Group	BC List
Western Red Cedar / Common Snowberry	Ecological community	Red Listed
Labrador Tea / Western Bog Laurel / Peat Mosses	Ecological community	Blue Listed
Black Cottonwood – Red Alder / Salmonberry	Ecological community	Blue Listed (Threatened)
Red Alder / Slough Sedge [Black Cottonwood]	Ecological community	Red Listed
Douglas Fir / Dull Oregon Grape	Ecological community	Red Listed
California-Tea	Vascular plant	Blue Listed
Dun Skipper	Invertebrate animal	Red Listed
Warty Jumping Slug	Invertebrate animal	Red Listed
Dromedary Jumping Slug	Invertebrate animal	Red Listed
Common Ringlet	Invertebrate animal	Red Listed
Moss' Elfin	Invertebrate animal	Blue Listed
Olympic Onion	Vascular plant	Blue Listed
Northern Red-Legged Frog	Vertebrate animal	Blue Listed

FIGURE 5: BC Conservation Data Centre - Species at Risk Occurrences



1.5.5 PROTECTING SENSITIVE ECOSYSTEMS

The CVRD is currently developing a Sensitive Environmental Areas Strategy. While the inventory provided in the previous two sections is a starting point, this study will be an important resource for determining and prioritizing areas for conservation within Electoral Area E. As part of the Sensitive Environmental Areas Strategy, a set of criteria should be developed that outlines priorities for conservation, Electoral Area E targets/goals for conservation, and appropriate tools to achieve those targets and goals. Draft criteria for consideration include the following:

a) Prioritize Environmental Areas for Acquisition and Protection as dedicated Parkland

- Focus on sensitive environmental areas that are not likely to be protected through other means.

- Areas at the highest risk for loss and fragmentation due to forestry, agriculture, and development include upland areas not currently associated with a watercourse or wetland area.

b) Protect areas for elk and other wildlife habitat

- As the wildlife populations increase, so will impacts to the agricultural community. One strategy that could be explored is the potential to acquire and protect suitable habitats for elk and other wildlife. These areas would need to include foraging and grazing areas in particular and could focus on areas of high suitability for elk, as identified in the CVRD's Draft Watershed Atlas.

c) *Protect ecosystems and species at risk*

- The highest priority ecosystems in Electoral Area E that are not likely to be protected through regulatory means or through the development process.

d) Protect watercourses and their associated riparian areas

- The concept of creating a contiguous ecological corridor along the major waterways should be applied to the Chemainus, Cowichan and Koksilah Rivers. A narrow corridor along these rivers is likely to be protected through regulatory means, but the minimum requirements are not adequate to provide a robust ecological or wildlife corridor.

- The Chemainus River Corridor and Estuary were identified in the CVRD's Regional Parks and Trails Master Plan as a potential future focus for acquisition. The area identified extends from the upper portion of the Chemainus River to the estuary.

e) Expand Existing Protected Areas

- In planning future conservation areas, efforts should be made to create habitat connections to the Mount Prevost Municipal Forest Reserve in the Municipality of North Cowichan and other adjacent protected areas in order to build off these existing areas and extend a system of conservation corridors and patches into Electoral Area E. Large habitat patches are the most difficult to assemble, but provide the highest level of resiliency and support for biodiversity.

INCREASING WILDLIFE POPULATIONS

While sensitive ecosystems are being lost, there are also conservation efforts that have been successful. Due to these efforts, wildlife populations in the CVRD are growing, particularly elk and waterfowl. While this is a success story from a conservation standpoint, the agricultural community is seeing impacts to crops as elk come to hay fields for food. The wildlife populations are also being increasingly restricted by fencing and development, which has resulted in the population becoming increasingly concentrated within agricultural areas. There is a need for the CVRD to identify strategies on a regional level that can help address this issue.

INVASIVE SPECIES

The CVRD has a large and growing number of invasive plant and animal species whose negative impacts are particularly evident in Garry oak ecosystems, riparian areas and wetlands. The CVRD has been undergoing an invasive species inventory program specifically in CVRD community and regional parks throughout the Regional District. Area E was completed in 2015 and identifies the locations of specific invasive species within the Electoral Area E community parks system.

Twelve priority invasive plant species were found in nine Area E community parks. The Invasive Plant Inventory report prioritized both the plant species and the individual community parks for management actions. The CVRD is continuing to work toward management and eradication in community parks throughout

Electoral Area E. Invasive species and priority parks are listed in the following table.

TABLE 3: Priorities for Invasive Species Management

Priority Invasive Species in Electoral Area E Community Parks	Priority Electoral Area E Community Parks with Invasive Species
1. Daphne – spurge laurel	1. Busy Place Creek
2. Tansey ragwort	2. Creighton Road Park
3. Cut leaf blackberry	3. Currie Park
4. Canada thistle	4. Sahtlam Greenway Park
5. Common ragwort	5. Fairbridge Park
6. St. John's wort	6. Wake Lake Nature Reserve
7. English holly	7. Glenora Trails Head Park
8. Bull thistle	8. Inwood Creek Park
9. Himalayan blackberry	9. Belvedere Trail
10. Scotch broom	
11. Common burdock	
12. Oxeye daisy	

1.5.6 CLIMATE CHANGE

The effects of climate change are already being felt in the Regional District. The CVRD is currently working on a high level climate strategy which will help guide future recommendations for parks and trails in the Region.

Impacts and Challenges

Climate change projections predict that more extreme weather will continue to occur including an increase in severe drought conditions, wind and concentrated rainfall events. These changes are being felt within the parks system. Drought conditions are weakening tree roots causing an increase in disease, as well as an increase in blowdown during storm events. Between 2015 and 2016 there was an approximately 20% increase in tree mortality, and it is expected to increase again in 2017. The types of trees and plants that can survive under the new climate conditions are expected to shift over time. Climate change is also likely to make parks vulnerable to an increase in invasive species, potentially requiring additional resources.

The wildfire interface between residential and parkland is becoming increasingly important to manage as our forests continue to dry out in the summers. Increasing public awareness

is important to educate homeowners about fire smarting their properties especially when they are adjacent to parkland or crown forest lands.

Mitigation and Adaptation

While there are many potential impacts to the parks system, there are also ways that parks and trails can help the CVRD mitigate and adapt to climate change in Electoral Area E community parks. Forests within the parks system sequester carbon. Trails can encourage active transportation and reduce greenhouse gas (GHG) emissions. Parks can provide cooler, shaded areas during heat waves and can support biodiversity. In order to achieve these benefits, planning and management of the parks system will need to change in a few key ways:

- A tree replacement program should be incorporated into the annual parks budget to replant the trees that are being lost;

- Selection of native trees and shrubs within the parks system should take into consideration new climate conditions by selecting plants that are adapted to drought or flood conditions depending on their location;

- Sources for new trees and shrub should consider genetic diversity and seed sources (i.e. not use plants all from one source and avoid sources from the northern edges of a species range);

- Consideration should be given to maintaining a high proportion of the parks system's native ecosystems in order to continue to support biodiversity resilience;

- Parks and trails should incorporate, as much as possible, sustainable stormwater management features such as bioswales and raingardens to help protect vulnerable aquifers and watersheds.

- Criteria for green space acquisition should include protection of natural hydrologic functioning.

1.5.7 ARCHAEOLOGICAL SITES, HISTORIC AND CULTURAL AMENITIES

Given the rich history of the area from a First Nations perspective and from the perspective of the area's farming community, there are a wealth of interesting historical and cultural values inherent in the system. There are opportunities to enhance the parks and trails by adding interpretive signs and interactive features that tell the story of the community and the natural environment. There are also opportunities to create and enhance linkages between the parks and trails and the cultural features of Electoral Area E.

Historical Sites

A few of the key destinations identified through the public engagement process were Glenora Store, the HUB at Cowichan Station, and the Sahtlam Fire Hall. In addition to these, there are several heritage sites including the Carlton Stone House, the Fairbridge Farm Chapel, St. Andrews Church, wooden Koksilah Road bridge, stone railway trestle, Chinese cemetery, and the Koksilah Road House that are located in the communities but do not form part of the park system. The HUB at Cowichan Station and the Sahtlam Fire Hall are both key locations in their respective communities and have adjacent park lands that provide active and passive outdoor recreational opportunities for residents. There are no park lands adjacent to the Glenora Store, but there could be a future trail connection from the store to the Cowichan Valley Trail following the former CNR railway spurline.

Archaeological Sites

The Archaeology Branch of the BC Ministry of Forests, Lands and Natural Resources Operations was contacted to determine if there were any archaeological or other historic sites within the Electoral Area E parks system. While there were sites identified in Electoral Area E, there are no known sites located within the existing parks system. While there are no known sites, park development planning should include consultation with the Archaeology Branch to get updated information and to determine whether additional investigations are warranted. This is particularly important for locations along the Cowichan River corridor.

2. EXPLORING THE CURRENT PARKS AND TRAILS SYSTEM

2.1 EXISTING PARKS IN ELECTORAL AREA E

Electoral area community parks are defined as those that are financed and managed by the Cowichan Valley Regional District through the community parks budget for each electoral area. In Electoral Area E the CVRD is currently responsible for managing 18 electoral area community parks (114.41 ha). Through separate functions of the Regional District funding is also provided for one sub-regional park (23.8 ha) that is jointly funded with Electoral Areas A, B, C, D and E, and two regional parks (136.21 ha). The purpose of electoral area community parks and trails is to provide active and passive recreational opportunities, protect environmental areas, and contribute to the quality of life of the residents of the electoral area.

Other parklands in the area also contribute to meeting the needs of Electoral Area E residents. Non-CVRD managed parks that serve more localized populations include Walden Park in Glenora and the Cowichan Station Hub and associated lands. These two locations are administered by local nonprofit associations. At the regional and provincial level, Electoral Area E includes Sandy Pool Regional Park, Chemainus River Regional Park, and portions of Cowichan River Provincial Park.

Full size maps are provided in Appendix D.

ELECTORAL AREA PARKS COMMISSION

The Electoral Area E Parks Commission, which is an advisory body appointed by the CVRD Board, was established by Bylaw in 2000. The Parks Commission provides advice to the CVRD Board on park policy, park acquisition and projects in local electoral area community parks.

OUTDOOR RECREATION AMENITIES / GREENSPACES

Outdoor recreational amenities within the Electoral Area E community parks' system are primarily oriented toward passive outdoor recreation, environmental protection, greenspaces, and the enjoyment of nature. Park amenities range from picnic tables, benches and trails, to picnic shelters, playgrounds and equestrian facilities. Areas for protection include greenspaces, wetlands, and ecological preservation areas. Several parks provide access to the Cowichan, Chemainus, and Koksilah Rivers for swimming and walking trails. There are accessible washroom buildings and full caretaker facilities located at the Glenora Trails Head Park and at Bright Angel Park. Specific amenities found in each park are listed in the parks inventory Section 2.2.

ACTIVE VS PASSIVE PARKLAND

Electoral Area E parks accommodate both active and passive uses. In most Electoral Area E community parks, there are small areas of active use but most sites are focused on passive outdoor recreation. This aligns with the input from the public that showed that passive uses are most highly valued by the community.

FIGURE 6: Active vs. Passive Parkland

ACTIVE PARKS

Active uses are those that require built amenities, scheduling and programming, as well as a higher level of park maintenance and administration.

EXAMPLES:

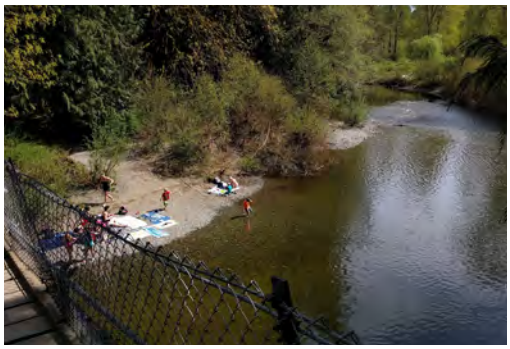
- community events
- organized sports
- playgrounds

PASSIVE PARKS

Passive uses are those that require minimal built amenities, are not scheduled, and generally require minimal site modifications.

EXAMPLES:

- picnics
- walking
- bird watching



2.2 PARKS INVENTORY AND CLASSIFICATION SYSTEM

An inventory of all electoral area E parks along with park classification and park features are identified in this section. There are 5 park classes within Electoral Area E - Cowichan Station/Sahtlam/Glenora (See Table 4). In addition to these park classes, other park lands including sub-regional parks, regional parks, Provincial parks and other greenspaces are listed. This classification system follows similar open space standards that are used across Canada.

TABLE 4: CVRD Park Classifications and Total Park Areas in Electoral Area E

Park Classification	Total Area (hectares)
Community Park	14.26
Neighbourhood Park	1.96
Nature Park	94.37
Special Purpose Park	2.89
Linear Park	0.58
Total Electoral Area E Parkland	**114.06**

Currie Park

COMMUNITY PARKS

PURPOSE

- Community Parks are intended to provide passive and/or active recreation for the entire community

LOCATION AND SIZE CRITERIA

- Generally over 10 hectares, but can be smaller if used by the broad community
- Generally at a central location in a community with good access from main roads.
- Location may be restricted by availability of land of suitable size and condition

PARK FEATURES

- Capable of both active and passive recreation
- May protect historical, archaeological or natural features
- Active recreational features may include: childrens playground, open play areas, sports fields, equestrian staging areas, space for community events
- Passive recreational features may include: picnic and BBQ areas, seating and refuge, internal and connecting trails
- Parking lot / Bike racks
- Outhouses/washroom facilities

TABLE 5: Existing Community Parks in Electoral Area E

Park Name	Community	Size (Ha)	Primary Use	Park Features
Currie Park	Sahtlam	1.21	Active	Playground, benches, picnic tables, outhouse, irrigation, parking lot
Glenora Trails Head Park	Glenora	13.05	Active	Playground, benches, picnic tables, picnic shelter and BBQ, washroom building, bike rack, parking, equestrian staging area, caretaker's residence, CVT trailhead, access to Cowichan River Provincial Park and the Cowichan River

NEIGHBOURHOOD PARKS

PURPOSE

- Neighbourhood parks respond to the open space and outdoor recreation needs of local residents at the neighbourhood level. They are usually the closest park or open space for residents to recreate in.

LOCATION AND SIZE CRITERIA

- Centralized and typically within walking distance of a majority of neighbourhood residents
- Typical size 0.5-6.0 hectares

PARK FEATURES

- Capable of both active and passive recreation
- Active recreational features may include: unprogrammed open space, playgrounds, lawn areas, sport courts (ex. basketball), and low impact recreation (horseshoes, bocce, etc.)
- Passive recreational features may include: picnic facilities, nature paths, benches
- Natural vegetation/greenspace

Maplewood Park

TABLE 6: Existing Neighbourhood Parks in Electoral Area E

Park Name	Community	Size (Ha)	Primary Use	Park Features
Keating Park	Eagle Heights/ Koksilah	1.07	Passive	Greenspace
Maplewood Park	Eagle Heights/ Koksilah	0.89	Active	Playground, basketball court, picnic tables, benches, paved trail
Jack Feetwood Memorial Park	Cowichan Station	0.18	Passive	Picnic table, bench, river access, greenspace

NATURE PARKS

PURPOSE

- Nature parks protect natural systems and preserve sensitive features such as watercourses, plant communities, ravines, habitat, significant flora or other unique natural elements.

LOCATION AND SIZE CRITERIA

- Individual park size depends on variety of factors including the attributes of the environmental feature being protected.

PARK FEATURES

- Recreational use of nature parks is passive and generally limited to pedestrian trails.
- Passive recreational features may include: viewing platform, walking trails, interpretive signage and kiosk, picnic areas, greenspace, wetland.
- Parking lot areas may be needed, but should be located outside of environmentally sensitive areas.

TABLE 7: Existing Nature Parks in Electoral Area E

Park Name	Community	Size (Ha)	Park Features
Busy Place Creek Park	Eagle Heights/Koksilah	0.96	Viewing platform, trail, interpretive signage, riparian, greenspace
Creighton Road Park	Sahtlam	2.34	Wetland, greenspace
Dons Park	Sahtlam	0.82	Wetland, greenspace
Glenora Riverside Park	Sahtlam/Glenora	9.75	Picnic table, viewing platform, trails, stairs, greenspace, riparian
Inwood Creek Park	Sahtlam	51.45	Greenspace, riparian, wetland
Wake Lake Nature Reserve	Sahtlam	4.15	Picnic table, interpretive kiosk, parking lot, wetland, greenspace
Sahtlam Greenway Park	Sahtlam	24.56	Wetland, greenspace riparian area

SPECIAL PURPOSE PARKS

PURPOSE

- Special purpose parks are developed to serve specific user groups or protect particular community resources

LOCATION AND SIZE CRITERIA

- No specific size
- May contain activities that do not fit a particular set of open space standards

PARK FEATURES

- Historical, cultural, and social attractions or specific outdoor recreational amenities or community features.
- Examples of existing special purpose park features include: trail connections, pull-off areas, picnic tables, area leased for hay production

Fairbridge Park

TABLE 8: Existing Special Purpose Parks in Electoral Area E

Park Name	Community	Size (Ha)	Primary Use	Park Features
Boys Road Pullout	Eagle Heights/ Koksilah	0.05	Passive	Bench and pedestrian trail connection, beautification
Fairbridge Park	Cowichan Station	2.57	Passive	Leased for hay production to local farmer.
Miller Road Rest Area	Eagle Heights/ Koksilah	0.27	Passive	Highway pull-off area, picnic tables
Granite Road Park	Glenora	0.16	Passive	Fenced area, picnic table, greenspace

LINEAR PARKS

PURPOSE

- Connecting open spaces between park and trail systems

LOCATION AND SIZE CRITERIA

- Varied depending on park and trail network

PARK FEATURES

- Provide key connective circulation routes
- Active and passive recreational features may include: picnic areas, walking, hiking, and cycling trails
- Pathways connect through neighbourhoods
- Does not always have a trail constructed within the park

Eagle Heights Park

TABLE 9: Existing Linear Parks in Electoral Area E

Park Name	Community	Size (Ha)	Primary Use	Park Features
Caromar Trail Corridor	Sahtlam	0.44	Passive	Corridor for future connection north
Eagle Heights Park	Eagle Heights/ Koksilah	0.14	Passive	Pathways connecting through the neighbourhood, greenspace

2.3 OTHER OPEN SPACES IN ELECTORAL AREA E

2.3.1 PRIVATELY OWNED SPACES IN ELECTORAL AREA E

Walden Park is Glenora's first community park, donated to the non-profit Glenora Community Association by Mary Waldon for that purpose. It includes two ball diamonds and a children's playground. Walden Park is managed by the Glenora Community Association and receives an annual grant from the CVRD to assist with operating costs for this park and local Community Hall.

The HUB at Cowichan Station includes a former elementary school that has been converted to a community centre, and there is a playground and adjacent fields and forest that are used by the public. The non-profit Cowichan Station Area Association signed a 40 year lease with the school district in 2011 for the school property and the community has developed it as an important role as a multifunctional community gathering place. The Cowichan Station Area Association receives an annual grant from the CVRD to assist with operating costs.

2.3.2 SUBREGIONAL PARKS

Sub-regional parks are managed by the CVRD and are financed through Electoral Areas A, B, C, D and E, with similar functions to a community park but providing benefits to a broader geographical range of CVRD residents than a community park.

Bright Angel Park is located on the Koksilah River in Cowichan Station. It is an important park that offers a variety of active and passive recreational opportunities including play spaces, picnic facilities, group camping area, washrooms, outdoor fitness circuit, amphitheatre, greenspace, and access to the Koksilah River.

TABLE 10: Existing Sub-Regional Parks in Electoral Area E

Park Name	Community	Size (Ha)	Park Features
Bright Angel Park	Cowichan Station	23.8	Natural playscape and traditional playground, picnic tables, group camping area with picnic shelter, washrooms, irrigation, suspension bridge, Koksilah River access, outdoor fitness circuit, caretaker's residence, amphitheatre, greenspace

Sub-regional park: Bright Angel Park amphitheatre and nature play features

2.3.3 REGIONAL PARKS

Regional Parks are also managed by the CVRD under the Regional Parks and Trails Program and provide additional outdoor recreation areas that contribute significantly to the overall parks and trails experience in the Electoral Area.

Sandy Pool Regional Park is located on the Cowichan River, is surrounded by the Cowichan River Provincial Park, and offers day use amenities and river access. Chemainus River Regional Park is located on the Chemainus River in the northern part of the electoral area and there are no developed amenities other than a parking lot. Although there is access, there are a lot of unauthorized uses occurring.

The regional parks program supports passive uses.

TABLE 11: Existing Regional Parks in Electoral Area E

Park Name	Community	Size (Ha)	Park Features
Chemainus River Regional Park	Sahtlam	119.62	Natural green space
Sandy Pool Regional Park	Sahtlam	16.59	Trails, outhouse, Cowichan River access with drift boat launch, interpretive signage, greenspace

Chemainus River - Copper Canyon

2.3.4 PROVINCIAL PARKS

Cowichan River Provincial Park (CRPP) is a highly valued open space under the jurisdiction of BC Parks. Its purpose is to first protect the natural values of the river, second to provide recreational opportunities, and third to protect significant cultural and historic values[1]. It provides access to the Cowichan River through trails, multiple day use areas, and overnight camping areas. A section of the Cowichan Valley Trail / Trans Canada Trail passes through the provincial park, and this trail section is not managed by the CVRD.

The Cowichan Valley Trail is managed through the CVRD's Regional Parks Program.

TABLE 12: Existing Provincial Parks in Electoral Area E

Park Name	Community	Size (Ha)	Park Features
Cowichan River Provincial Park	Sahtlam/Glenora	1,414	Campground, group camping, 4 day use areas, trails, Cowichan River access, boat launch, greenspace

1 *Cowichan River Provincial Park Purpose Statement and Zoning Plan 2003*

2.4 PARKLAND PROVISION AND SYSTEM-WIDE FINDINGS

Overall, Electoral Area E has a strong inventory of community parkland compared to other electoral areas in the CVRD. There is a total of 320,460 ha of land in the CVRD (excluding the four municipalities) and Electoral Area E represents 4.2% of the land base. The table below outlines the statistics for each electoral area in the CVRD. The average number of hectares of parkland per 1,000 residents is 47.9 ha in the CVRD and Electoral Area E has 27.9 ha per 1,000 residents. Electoral Area I does skew the average; excluding Area I, the average would be 12.5 ha per 1,000 residents, which puts Area E above the average.

TABLE 13: Community Parkland Quantity in Electoral Area E Compared to other Electoral Areas

Community	Population	Number of Parks	Hectares of Parkland	Hectares of Parkland per 1,000 Residents
Electoral Area E	3854	24	137.81	34.76
Electoral Area B	7562	33	123.18	16.29
Electoral Area A	4400	33	43.87	9.97
Electoral Area D	2790	21	23.66	7.95
Electoral Area C	4796	23	24.82	5.36

The community parkland in Electoral Area E is concentrated into 18 parks (115 ha) which represents 0.9% of the landbase. In addition to total parkland area and distribution, other considerations such as accessibility, active transportation needs, and protection of ecological functions will influence the ability of the parks system to serve residents' needs now and into the future.

2.5 PARKLAND BY COMMUNITY

Electoral Area E's four communities each have had different opportunities for parkland acquisition and development. The following is a snapshot of each community.

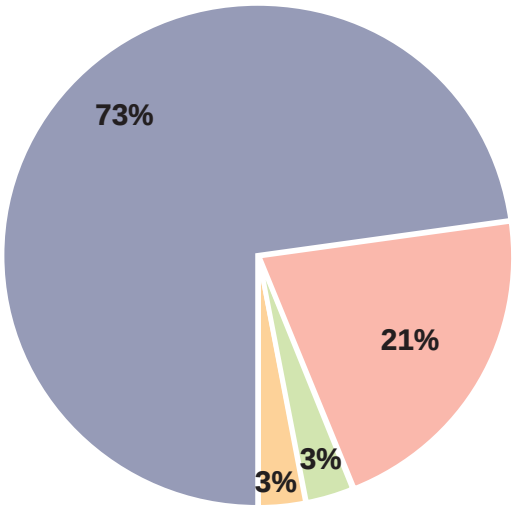
Sahtlam: The large proportion of parkland in Sahtlam reflects the greater opportunity for parkland dedication through the development process and the low proportion of land that is within the ALR. Inwood Creek Park, for example, is the largest park and was recently dedicated as part of a development.

Cowichan Station: The majority of parkland in Cowichan Station is within Bright Angel Park. There are also green spaces adjacent to the HUB at Cowichan Station that bolster the parkland inventory. However, investments through the Area E community parks service function in the Cowichan Station area has been limited.

Glenora: The Glenora community is located largely within the ALR and there are not many opportunities for parkland dedication through the development process. Glenora Trails Head Park is a well-used park with many diverse amenities that attracts people from the local community as well as from across the region. Walden Park, which is not a CVRD park, also bolsters the parkland inventory.

Eagle Height / Koksilah: The Eagle Heights/Koksilah community is the most densely developed of the four areas, and does not provide adequate greenspace. All the parks are relatively small and not able to support significant active park uses, including Keating Park which is not within walking distance of most residents.

FIGURE 7: Community Parkland by Community



BREAKDOWN OF PARKLAND BY COMMUNITY: 109.06 ha

GLENORA	22.96 ha
COWICHAN STATION	2.75 ha
EAGLE HEIGHTS / KOKSILAH	3.38 ha
SAHTLAM	79.97 ha

TABLE 14: Electoral Area Community Parks and Sizes by Community

SAHTLAM	79.97 ha
Currie Park	1.21 ha
Creighton Road Park	2.34 ha
Dons Park	0.82 ha
Inwood Creek Park	51.45 ha
Wake Lake Nature Reserve	4.15 ha
Sahtlam Greenway Park	19.56 ha
Caromar Trail Corridor	0.44 ha

COWICHAN STATION	2.75 ha
Jack Fleetwood Memorial Park	0.18 ha
Fairbridge Park	2.57 ha

GLENORA	22.96 ha
Glenora Trails Head Park	13.05 ha
Granite Road Park	0.16 ha
Glenora Riverside Park	9.75 ha

EAGLE HEIGHTS / KOKSILAH	3.38 ha
Keating Park	1.07 ha
Maplewood Park	0.89 ha
Busy Place Creek	0.96 ha
Boys Road Pullout	0.05 ha
Miller Road Rest Area	0.27 ha
Eagle Heights Park	0.14 ha

2.6 ELECTORAL AREA COMMUNITY PARKS KEY FINDINGS AND ISSUES

Lack of Neighbourhood Parks: There are very few neighbourhood parks. Neighbourhood parks are important to serve local pockets of residents to ensure equitable access and thereby supporting resident health and wellness. The current distribution of neighbourhood parks limits the ability of residents to visit a park within easy walking or cycling on a daily basis, particularly children, youth, and others who don't drive. Providing easily accessible parks is more challenging in low-density areas. The Eagle Heights community has been highlighted as an area in need of additional neighbourhood park space.

Park Development: Several parks currently do not have any park amenities. Electoral Area E has so far been concentrating most of the park infrastructure into two parks, recognizing that new amenities require ongoing dedication of maintenance resources. Glenora Trails Head Park, Currie Park, and Bright Angel Park (sub-regional) have been the main focus for the CVRD over the past 8 years. It will be important to continue to evaluate the long-term resource implications of park development.

Park Acquisition: The number of parks is likely to grow in Sahtlam as new park parcels are dedicated through the subdivision and development process. However, if numerous small parks are dedicated, this can create challenges for development and maintenance, therefore consideration should be taken to recieve cash in lieu in place of small parks. Cowichan Station and Glenora are mainly within the ALR, so new park acquisition will primarily be through donation or purchase.

Passive vs. Active Parkland: 85% of the total park land provides natural areas and opportunities for passive outdoor recreational uses which accurately reflects the values of the community as a whole.

Serving Populations Equitably: There are four distinct communities in the electoral area that have different character, quality, service levels, and demands for parks and trails. There is a need to establish a goal for providing a basic park service level within all four communities while recognizing that there will be variation between the communities based on unique features and different opportunities. The parks system must also serve the needs of all ages and abilities to the greatest extent possible.

Serving Future Populations: Park lands will need to accommodate small amounts of growth within the Electoral Area. Population growth in the Region will likely stress the regional and provincial parks; and will most likely affect the most developed community parks in the area: Currie Park, Glenora Trails Head Park, and Bright Angel Park.

Managing Expectations: The annual budget devoted to Electoral Area E parks and trails is limited and is unlikely to increase significantly in the near future. While there are many opportunities for expansion, a realistic appraisal of the management and maintenance needs of new amenities is necessary.

Being Visionary: The counterpoint to managing expectations is the need to create a high-level, long-term vision that galvanizes the community and creates buy-in across the electoral area, between levels of government, and between potential partners. The vision will not be achieved overnight, but rather will be achieved by consistently making progress on incremental goals.

Protecting Environmental Areas: There are many areas with sensitive ecosystems and species at risk that are under threat by development, agricultural land clearing, and forestry. It is not feasible to protect all of these areas as parkland, so it is important to prioritize and strategically acquire and protect the most critical areas. Working with partners and multiple levels of government will also be essential to achieving the environmental goals of the community. More information on protecting areas in Electoral Area E is found in Section 1.5. There are other forms of protecting environmental areas (Development Permit Areas, conservation covenants) that can work in conjunction with parkland dedication. Currently approximately 0.9% of the Electoral Area E landuse is set aside as park, while the Canadian target is 17% for protected areas. In order to achieve 17% in Area E, it would entail protection of 2,292 ha.

2.7 EXISTING COMMUNITY TRAILS KEY FINDINGS AND ISSUES

Most trails under the jurisdiction of the CVRD are located within existing community parks. Additionally, road shoulders throughout the community are used by pedestrians and cyclists but are not designed for this use and have safety and accessibility challenges. The longest and most significant trail, the Cowichan Valley Trail (CVT) is managed by the CVRD under the Regional

Parks and Trails Program. The CVT is part of the Trans Canada Trail and is a multi-use pathway that connects Shawnigan Lake to the Town of Lake Cowichan on the south side of Cowichan River and back to the District of North Cowichan on the north side of the Cowichan River which is the portion that is within the Electoral Area E (see Figure 2 for a map of the entire CVT).

KEY TRAIL ISSUES

Lack of frequent transit service: The Cowichan Community Health Survey indicated that only 27% of CVRD residents consider themselves to have access to convenient transit services (Golder Associates Ltd., 2014). While transit service does exist in some areas of Electoral Area E, it does not provide a good alternative to private vehicles because of inconveniences such as distance to transit stops, infrequent service, lack of bus shelters and limited local routes. Safe pathways to transit stops would help alleviate some of these issues.

Lack of safe pedestrian access along roadways: Roadways in Electoral Area E are under the jurisdiction of the Ministry of Transportation and Infrastructure whose primary mandate is to facilitate vehicular transportation. The existing road corridors are typically narrow and without sidewalks or bike lanes to support active transportation options (cycling, walking) by community residents. There are few places where people can walk or cycle safely along roads to common destinations. Some of these key priority roadside pathway locations were identified by the community through the public consultation process and are listed in Table 20.

Lack of pedestrian / cycling connectivity: Due to the bisection of Electoral Area E by the Cowichan River, the community is not well connected. Most residents are not able to safely travel from their homes to key destinations, and amenities serve limited use to those residents on the opposite side of the river due to travel times.

2.8 TRAIL INVENTORY AND CLASSIFICATION SYSTEM

The following trail classifications are outlined in the CVRD's adopted Trails Standards and Guidelines (2014).

TYPE 1 - MULTI-USE REGIONAL PATHWAY

PURPOSE

To provide long distance connections between urban and rural communities suitable for all skill levels.

PRIMARY USE

- Walking
- Strollers
- Cycling
- Equestrian

CONSTRUCTION CRITERIA

- Trail surface- up to 3.0 m
- Trailway corridor - up to 4.0m
- Maximum grade - 12%

REPRESENTATIVE SITES

Cowichan Valley Trail

LOCATION CRITERIA

- Railway beds
- Servicing corridors

Cowichan Valley Trail

ACQUISITION CRITERIA

- Fee simple properties owned by the R.D;
- Lease agreements with other landowners;
- SRW agreements

TABLE 15: Type 1 Multi-Use Regional Pathways in Electoral Area E

Trail Name	Community	Trail Type	Trail Length (m)
Cowichan Valley Trail	Glenora and Sahtlam	1	18,000

TYPE 2 - COMMUNITY PATHWAY

Busy Place Creek Community Pathway

PURPOSE

To connect communities and subdivisions through connector trails.

CONSTRUCTION CRITERIA

- Trail surface - 1.5-2.0m;
- Trailway corridor - 2.0-2.5m;
- Maximum grade - 12%

PRIMARY USE

- Walking
- Running
- Cycling

ACQUISITION CRITERIA

Fee simple properties owned by the Regional District or pathways through Crown parks and leased properties.

LOCATION CRITERIA

Community pathways are local connections between subdivisions, between roads, and along neighbourhood roads.

TABLE 16: Type 2 Community Pathways in Electoral Area E

Trail/Park Name	Community	Trail Type	Trail Length (m)
PATHS IN PARKLAND			
Busy Place Creek	Eagle Heights / Koksilah	2	300
Currie Park	Sahtlam	2	75
Glenora Riverside Park	Glenora/ Sahtlam	2	2096
Glenora Trails Head Park	Glenora	2	100
Jack Fleetwood Memorial Park	Cowichan Station	2	10
Keating Park	Eagle Heights / Koksilah	2	80
Maplewood Park	Eagle Heights / Koksilah	2	100
Bright Angel Park	Cowichan Station	2	1950
LOCAL CONNECTIONS			
Caromar Trail Corridor	Sahtlam	2	364
Eagle Heights Park	Eagle Heights / Koksilah	2	320

TYPE 3 - SINGLETRACK TRAIL

Trail at Sandy Pool Regional Park

PURPOSE

Trails within parks for hiking, mountain biking and riding horses.

CONSTRUCTION CRITERIA

- Trail surface - up to 1.0m with low use trails tending to be narrower and high use trails tending to be wider;
- Trailway corridor - 1.0m;
- Maximum grade - 15%

PRIMARY USE

- Walking
- Mountain biking
- Equestrian

ACQUISITION CRITERIA

Trails located on fee simple properties owned by Regional District.

REPRESENTATIVE SITES

Trails within Glenora Trails Head Park, Bright Angel Park, Sandy Pool Regional Park

LOCATION CRITERIA

Singletrack trails are constructed by clearing and grading the existing native soils and are usually located within an existing park.

TABLE 17: Type 3 Singletrack Trails in Electoral Area E

Trail/Park Name	Community	Trail Type	Trail Length (m)
Glenora Trails Head Park	Glenora	3	1000
Bright Angel Park	Cowichan Station	3	1700
Sandy Pool Park	Sahtlam	3	1300

TYPE 4 - ROADSIDE PATHWAY

PURPOSE

For safe pedestrian and cycling travel along roadways and as an active transportation corridor for commuting between communities.

Newly Constructed Belvedere Roadside Pathway

CONSTRUCTION CRITERIA

- Trail surface up to 2.0m;
- Singletrack pathways in some locations
- Trail way corridor up to 3.0m;
- Maximum grade 10%.

PRIMARY USE

- Walking,
- Cycliing,
- Equestrian,
- strollers, and wheelchair use

ACQUISITION CRITERIA

"Permit to construct" with the MoT to construct and maintain a trail within their road right of way.

LOCATION CRITERIA

Roadside pathways can be a widened road shoulder or a paved or gravel trail separated from the roadside and located within the Ministry of Transportation and Infrastructure (MoT) road right of way.

REPRESENTATIVE SITES

Belvedere Trail, Fairbridge Trail, and Boys Road Trail.

TABLE 18: Type 4 Roadside Pathways in Electoral Area E

Pathway Name	Community	Trail Type	Trail Length (m)
Belvedere Trail	Sahtlam	4	1100
Fairbridge Trail	Cowichan Station	4	190
Boys Road Trail	Eagle Heights	4	50

Trail at Maplewood Park

2.9 TRAILS IN ADJACENT JURISDICTIONS

TRAILS WITHIN BC PARKS

Other trails within Electoral Area E that are managed by others include the Cowichan River Footpath and the section of the Cowichan Valley Trail located through Cowichan River Provincial Park. The Cowichan River Footpath was built by Cowichan Fish and Game Club volunteers, but has not been formally designated as a route by BC Parks. The Cowichan Valley Trail that transects the Cowichan River Provincial Park is under the jurisdiction of the Ministry of Transportation and Infrastructure.

MUNICIPALITY OF NORTH COWICHAN PARKS + TRAILS MASTER PLAN

The Municipality of North Cowichan's Parks and Trails Master Plan identified the Cowichan Valley Trail (CVT) as a key connection to Electoral Area E with the intention to create shorter, multi-modal community trails linking areas of North Cowichan to the CVT system. The CVT currently extends north toward Chemainus with an interim route along existing roadways. However, there is a significant segment that still needs to be developed within the Municipality of North Cowichan.

DUNCAN AREA ACTIVE TRANSPORTATION PLAN

The Duncan Area Active Transportation Plan was a joint planning effort between Cowichan Tribes, the City of Duncan, and the Municipality of North Cowichan (Alta Planning + Design, 2014). Through public input and analysis of existing infrastructure, Allenby and Miller Roads were cited as being in poor condition with sporadic shoulders and poor pedestrian lighting. It was also noted that there are limited crossings of the Trans-Canada Highway, reducing connectivity for pedestrians and cyclists. A main recommendation from the plan was to coordinate trail development with the CVRD, adjacent jurisdictions and the Ministry of Transportation and Infrastructure to improve connectivity in the regional system.

TRANS-CANADA HIGHWAY CORRIDOR MANAGEMENT PLAN

The Municipality of North Cowichan, in coordination with the City of Duncan and the Ministry of Transportation and Infrastructure, adopted the Trans Canada Highway – Corridor Management Plan: Boys Road to Beverly Street on March 4, 2015 (Stantec, 2014).

A shared pedestrian/bike path on east side of the Trans-Canada Highway between Boys Road and Beverly Street was identified as an option for improving connectivity and safety for active transportation. This would be a key connection to the Rail with Trail pathway proposed along the railway adjacent to the Trans-Canada. Highway that connects to Boys Road. This also highlights the necessity for dialog with the Ministry of Transportation and Infrastructure around improving the safety and connectivity along portions of the Trans-Canada Highway corridor within the CVRD.

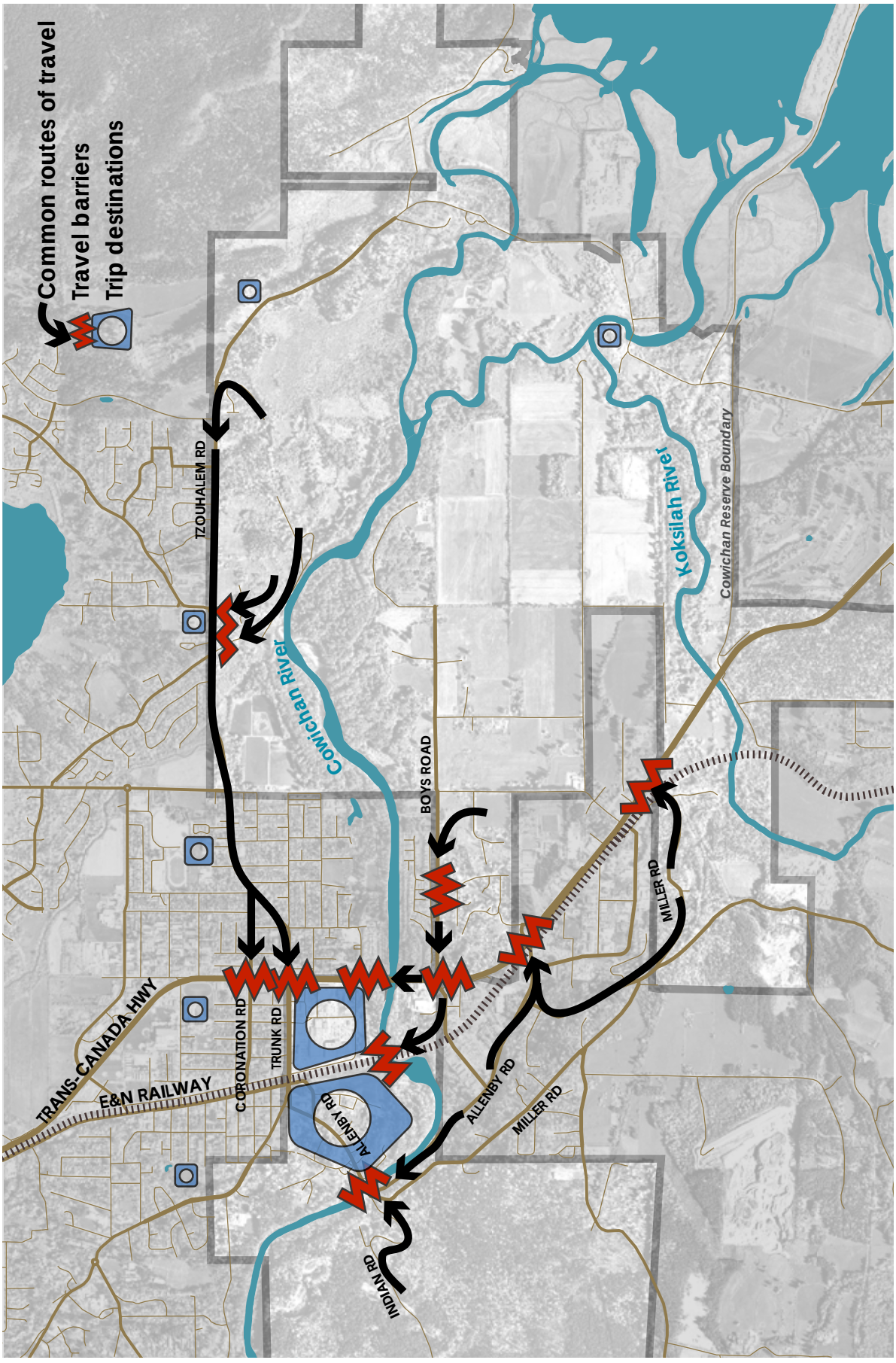
COWICHAN TRIBES TRANSPORTATION AND MOBILITY PLAN

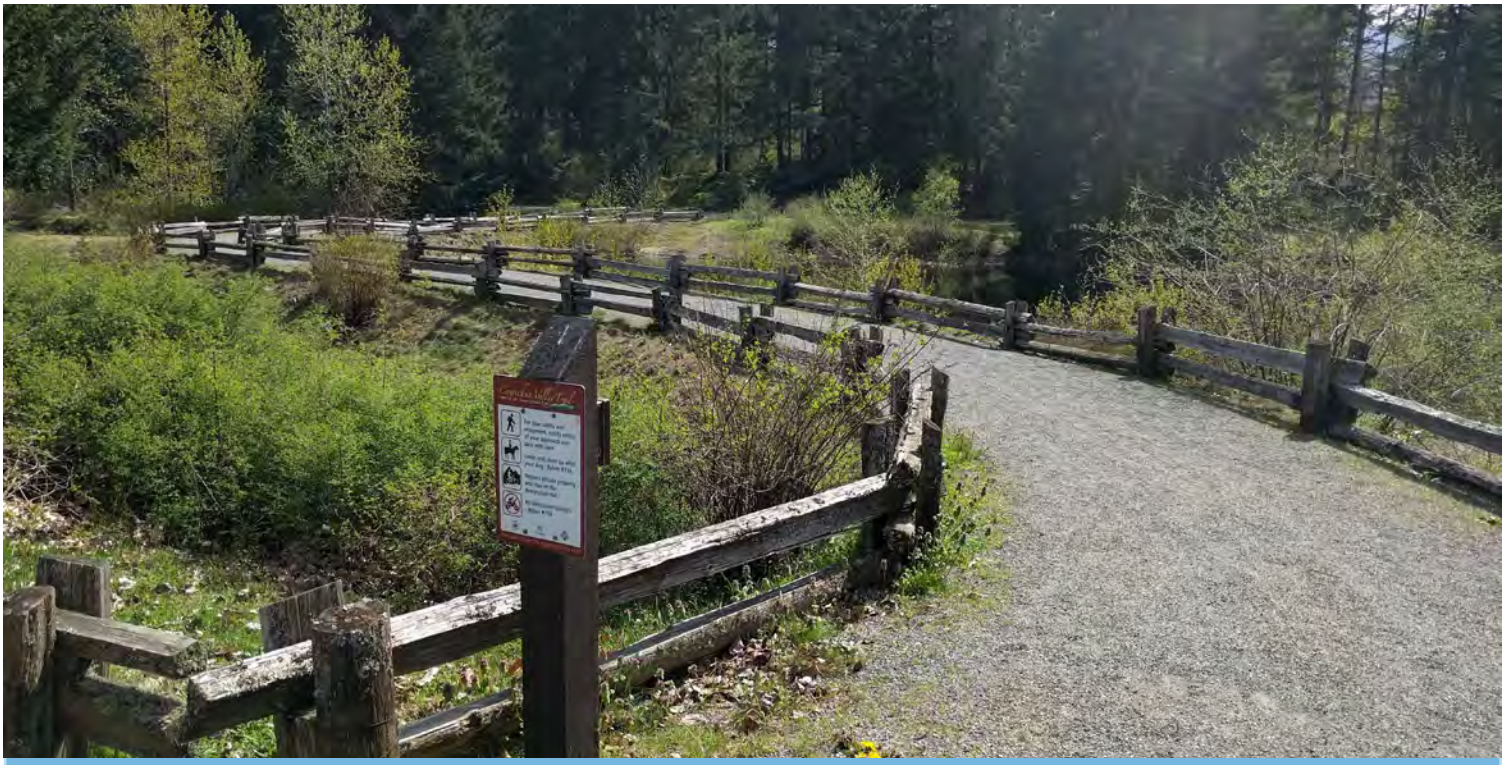
Cowichan Tribes completed a Transportation and Mobility Plan in 2015 that outlines objectives, strategies and specific actions in two key areas: road network improvements and programs/servicing. The approach outlined in the Plan centres around identifying low-cost, high-impact improvements in lighting, signage and road paint. The plan also outlines more complex and longer term actions such as conducting detailed corridor studies for all main transportation routes within Cowichan Tribes lands.

The most critical roads that affect Cowichan Tribe members as well as Electoral Area E residents include Boys Road, Allenby Road, Miller Road, and Indian Road. Considerations for improvements along these routes have been incorporated into the recommendations for roadside pathways in this Community Parks and Trails Master Plan for Electoral Area E.

The following Figure 8 is a map from the Cowichan Tribes Transportation and Mobility Plan illustrating key travel barriers and destinations. Many barriers are also likely to pose challenges for residents of Electoral Area E who use Miller Road, Allenby Road, Indian Road and the Trans-Canada Highway.

FIGURE 8: Key Barriers Diagram: Cowichan Tribes Transportation and Mobility Plan





3. PUBLIC AND STAKEHOLDER ENGAGEMENT

The public and stakeholder engagement process for this Plan included three rounds of events to gather input from Electoral Area E residents. The goal of the first phase of engagement was to identify opportunities and constraints while ensuring the focus of the plan reflected the vision and values of the community.

The second round of engagement provided the public and stakeholders with the chance to review the vision, key findings and opportunities and to provide feedback through an open house and online survey. Round two also helped answer questions around what types of trails should be prioritized.

3.1 PUBLIC ENGAGEMENT ROUND ONE

PUBLIC WORKSHOPS KEY FINDINGS (JUNE 15, 2016)

To kick off the community consultation process, two stakeholder sessions were held on June 15th, 2016 at the Eagle Hall and Sahtlam Fire Hall to get input directly from community members. The consulting team and CVRD Parks & Trails staff provided a project overview and led the attendees through a discussion. There was extensive detailed feedback provided, as noted below.

Highlights:

- Activities that the community values included passive, nature-oriented activities such as hiking, bird-watching, river kayaking and horseback riding, as well as more fitness-oriented activities such as jogging.
- Some new park amenities that were suggested in Currie Park included an outdoor fitness circuit, new picnic and BBQ facilities, and play spaces for a wider range of ages.
- The community also wishes for more accessible nature trails, nature/culture interpretive signage, and more activities/community events in the parks.
- Potential roadside pathway connections were highlighted on a map and the community identified which were priorities. Table 19 identified this list.
- There was a desire to improve environmental protection, provide more opportunities for people to connect to nature, and to ensure public access to the Cowichan River.

Key Challenges:

- Undesireable/inappropriate use of parks due to remote locations and lack of on-site staff,
- Liability issues preventing more volunteer involvement in community parks,
- the need to balance park development with the ability to maintain and manage those amenities.
- The importance of improving existing trails and for construction of roadside connections, better signage and maps, and more connections between key destinations.
- It was also suggested that the Cowichan Valley Trail could be enhanced to better highlight key features in the community.

Opportunities Maps

Participants in the public stakeholder workshops also used a map of the Electoral Area to provide comments on the most important locations for parks and associated trails amenities, and to share their ideas for new parks and/or trails. In addition, the consulting team conducted selected site visits and an overview tour of the parks and trails system. Maps identifying outdoor opportunities

for each community were developed and were used to determine the recommendations for future parks and trails.

TABLE 19: Roadside Pathways Identified Through Public Engagement

COMMUNITY	PRIORITY	DESCRIPTION
Cowichan Station	1	Koksilah Road (Trans-Canada Highway to The Hub)
Sahtlam	1	Old Cowichan Lake Road (Creighton Road to Electoral Area F boundary)
Cowichan Station	1	Koksilah Road (The Hub to Tigwell Road and to Bright Angel Park)
Eagle Heights/Koksilah	1	Miller Road / Koksilah Road to Cowichan Tribes Land
Sahtlam	2	Barnjum Road (Sunrise Road to Riverbottom Road)
Sahtlam	2	Appaloosa Way (Jordon Lane to Riverbottom Road)
Sahtlam	2	Local connections to Sahtlam Greenway Trail
Eagle Heights/Koksilah	2	Koksilah Road (Miller Road to Allenby Road)
Eagle Heights/Koksilah	2	Glenora Road (Miller Road to Koksilah Road)
Cowichan Station	2	Koksilah Road (Tigwell Road to Fairbridge Park)
Eagle Heights/Koksilah	2	Glenora Road (Miller Road to the CNR rail corridor)
Eagle Heights/Koksilah	2	Allenby Road (Trans-Canada Highway to Cowichan Tribes Land)
Glenora	2	Vaux and Robertson Road (Indian Road to Glenora Trails Head Park)

ELECTORAL AREA E PARKS COMMISSION MEETING KEY FINDINGS (JUNE 16, 2016)

The Electoral Area E Parks Commission, Area Director and CVRD Parks & Trails staff met with the consulting team on June 16th, 2016 to discuss the results of the two stakeholder workshops held on June 15th, 2016 and to provide input and direction for the plan. The consulting team provided a project overview and a summary of the key feedback that was gathered through the stakeholder workshops. The parks commission reviewed the feedback, provided clarification and additional information, and helped to further refine the "key words" that will feed into a vision for the Community Parks & Trails Master Plan.

The commission provided suggestions regarding opportunities for new or expanded parks in Electoral Area E. Suggestions for park amenities and activities included a bike skills area, mountain biking opportunities, fitness circuits, nature trails, more community events, greater variety of play equipment, and improved river/ riparian access and protection.

The commission also identified the following "measures of success" for the master plan:

- A plan that is understandable by future commissions and the community;
- A plan that supports the completion of current projects;
- A plan that supports reasonably distributed investments across the electoral areas;
- An increase in walking and cycling;
- An increase in the number of wilderness trails to key destinations;
- An increase in the number of protected wilderness areas;
- Implementation of successful species preservation programs (flora/fauna);
- An increase in the number of park volunteers and the number of donations to the park system;
- A plan that balances competing needs (i.e. park amenities vs environmental preservation); and
- A plan that clearly defines the types and purposes of the various community, sub-regional and regional parks.

3.2 PUBLIC ENGAGEMENT ROUND TWO

PUBLIC OPEN HOUSES/POP-UP EVENTS (SEPTEMBER/ OCTOBER 2016)

CVRD Parks & Trails staff and the consulting team attended the annual community BBQ event at Glenora Trails Head Park in September 2016 to present the work completed to date including key findings and highlights of the opportunities identified through previous consultation events. Display boards with information and maps outlining the key trail connections and proposed park projects were provided. Attendees were able to have discussions with CVRD staff and the consultants, and hard copies of the community survey were available for written comments.

A second public open house was held at the Cowichan Station HUB in October 2016 with a discussion facilitated by CVRD Parks & Trails staff. Attendees highlighted the importance of trails and safe walking routes, including along Koksilah Road in particular.

COMMUNITY SURVEY

A community survey was developed to get feedback from the public on the draft vision statement and to gather more detailed information on the types of amenities and trails most desired by the community. The survey was handed out during the open houses, was available online, and was emailed to individuals who signed up for updates on the planning process. A total of 78 surveys were completed of which 56 were residents of Electoral Area E (73%). This represents approximately 1.5% of the population of Electoral Area E. The key findings from the community survey are summarized below with complete survey results provided in Appendix G. Due to the low response rate of the survey, the key findings are used as general comments.

<u>Overall:</u>

- Most respondents agreed with the Draft Vision statement.
- Respondents were appreciative and supportive of the parks and trails investments.
- Maintaining and improving existing parks and trails was identified as the highest priority followed by acquiring and developing roadside pathways, off road trails, and acquiring and developing more parks.

Trails:

- An overwhelming majority of respondents would like to see more trails developed in Electoral Area E.
- Hiking, walking, bicycling and swimming were the most enjoyed activities.
- Both roadside pathways and off-road trails were equally desireable.
- Many resident respondents felt that the focus should be on recreational trails over commuting trails.

Glenora Trails Head Park:

- More than half of the respondents felt that no additional improvements were needed in Glenora Trails Head Park. A few voiced concerns over the noise levels coming from the Cowichan Fish & Game Club.

Many good suggestions were made and have been considered and incorporated into this Community Parks & Trails Master Plan for Electoral Area E, where possible.

OTHER GOVERNMENT INTERVIEWS

Interviews with representatives from BC Parks, the City of Duncan, the Municipality of North Cowichan, and Cowichan Tribes were held to identify synergies and opportunities for partnership. The following are highlights from those meetings.

BC Parks:

- BC Parks' mandate is to create continuity along the Cowichan River, so they are an important partner in terms of land acquisition.
- BC Parks is a key partner in determining the potential for additional pedestrian crossings of the Cowichan River within the Cowichan River Provincial Park.
- The CVRD needs to collaborate with BC Parks regarding integration and connectivity of Glenora Trails Head Park to BC Parks.

Municipality of North Cowichan and City of Duncan:

- Safe walking and cycling connections to the Municipality of North Cowichan (North Cowichan) and the City of Duncan (Duncan) are important for

Electoral Area E residents. Continued coordination between jurisdictions is needed.

Cowichan Tribes:

- Trails / roadside pathway connectivity is important to ensure safe pedestrian and cycling opportunities for all community residents. Create partnerships between Cowichan Tribes and CVRD to meet these needs.

4. VISION AND RECOMMENDATIONS

4.1 VISION FOR THE FUTURE

Through the background review, site visits, stakeholder interviews, and the public engagement process the following Vision statement was developed for the Electoral Area E Community Parks and Trails:

> *"The residents of Electoral Area E seek to build on the existing community parks and trails system to create a connected network of ecosystems, community parks and trails that provide access to nature, diverse opportunities for social connection and outdoor recreation, while enhancing the quality of life and health of all members of the community."*

This vision will help guide the future direction of Community Parks and Trails in Electoral Area E and will provide a touchstone to inform decision-making over the next 20 years.

4.2 GUIDING PRINCIPLES

Four overarching principles are embedded in the vision statement, and are as follows:

CONNECTIVITY

Create a connected network of parks, trails and ecosystems which will function best if they are considered as a system. Parks and their amenities should complement each other. Trails and ecosystems need to be well-connected to improve movement of people and wildlife.

ENVIRONMENTAL PROTECTION

Importance of greenspace to help maintain ecological services, protecting special habitats, protecting ecological areas, limiting isolation and fragmentation of habitats and keeping the broader regional context in view, will improve ecological integrity in Electoral Area E.

ACCESSIBILITY

Provide access to nature and outdoor recreation by providing opportunities for nature appreciation and outdoor recreation to remain a fundamental purpose of the community parks system. With a primarily rural and geographically dispersed population, ensuring that all residents have good access to diverse opportunities is an essential principle. Recognizing that not all sub-communities are the same, the unique character, features and needs should be embedded into the community parks and trails system.

SOCIAL CONNECTION / QUALITY OF LIFE

Provide diverse opportunities for social connection while enhancing the quality of life and health of the community. Community parks and trails are important places that bring people together socially by providing space for community celebrations, family gatherings, meeting places for community organizations and clubs, and casual interactions with neighbours. Parks and trails can also provide a variety of learning opportunities for school-age children and youth. Community parks and trails are meant to improve the lives of people who live there. They can contribute to improved health of people of all ages by encouraging physical activity and healthy

lifestyle choices. Community partnerships provide opportunities for individuals to care, connect and support community parks and trails through volunteer activities and park stewardship.

LANDS SURPLUS TO THE GUIDING PRINCIPLES

Some parks do not fall into any of the four guiding principles. Disposal of park lands should only be considered where there is little or no benefit to the residents or for ecological conservation values and where continued management and maintenance requires resources that could be put to better use elsewhere. Disposition should proceed with caution, as it is generally difficult to reverse and as land is developed it becomes increasingly expensive.

4.3 PRIORITY RECOMMENDATIONS

The recommendations incorporate ideas that were gathered through public engagement which included open houses, public response forms, and meetings with the Municipality of North Cowichan, City of Duncan, BC Parks, and Cowichan Tribes, as well as through input from the Electoral Area E Parks Commission.

The recommendations outline parkland acquisition priorities, park improvement projects, roadside pathway and off-road trail linkage opportunities, and general recommendations to guide progress toward achieving the vision for community parks and trails that was developed collaboratively with residents of Electoral Area E.

Each recommendation has been categorized as either Priority 1 or 2, defined below.

PRIORITY 1	**PRIORITY 2**
PROJECTS TO BE PURSUED OVER THE NEXT 10 YEARS	BEYOND THE 10 YEAR TIMEFRAME

The priority recommendations are broken down by the guiding principles and the specific sub-community. There are also summary tables found at the end of this section that provide the recommendations organized by each sub-community.

A. CONNECTIVITY

PRIORITY 1

RECOMMENDATION

Work with Cowichan Tribes and the Ministry of Transportation and Infrastructure for a safe roadside pathway along Indian Road, a portion of Miller Road, and a portion of Allenby Road through Reserve lands to connect to adjacent trail and active transportation routes in Electoral Area E.

Rationale: The Cowichan Tribes' Transportation and Mobility Plan outlined key routes and barriers to pedestrians and cyclists in their community. Several of those routes are also important for connecting Electoral Area E residents in Eagle Heights/Koksilah and Glenora. Further discussions with Cowichan Tribes as well as coordination with MOT will help move these initiatives forward.

RECOMMENDATION

Develop a Roadside Pathway Plan for roadside pathways in Electoral Area E and implement once funds are available.

Rationale: The CVRD will need to coordinate with the Ministry of Transportation and Infrastructure to construct a roadside pathway/ walkway along the public roadways. These roadside pathways would be suitable for providing safe pedestrian and cycling routes. Coordination with Cowichan Tribes, adjacent electoral areas and bordering municipalities needs to take place to ensure connectivity to their trail and active transportation network. Refer to Table 19: Roadside Pathways Identified Through Public Engagement in Chapter 3 of this plan.

RECOMMENDATION

Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.

Rationale: The former Canadian National Railway (CNR) corridor which is now owned by the MOT, runs from Deerholm Wye,

located on the far western boundary of the Glenora area that links to the Cowichan Valley Trail, and runs east to the Trans-Canada Highway. This corridor runs contiguously west-east across the landscape inclusive through portions of Cowichan Tribes' lands. Consultation will be important and pursuing partnership opportunities is critical.

To convert this old CNR corridor into a multi-use pathway would be extremely beneficial to the community for pedestrian, cycling and equestrian use to provide a continuous off road trail through the community. In the Cowichan Bay Community Parks & Trails Master Plan there is a proposed multi-use trail running on the old CNR line as well that ends at the Trans-Canada Highway directly across from this section through Electoral Area E.

RECOMMENDATION

Prepare a phased construction plan for the completion of the Sahtlam Greenway Trail including the designation of Lot 3, north of Sandy Pool Regional Park, as parkland by the CVRD Board and implement the plan once funds are available.

Rationale: Planning for the Sahtlam Greenway initiative began in 2010 with the rezoning of lands around Inwood Creek. The Sahtlam Greenway will provide a multi-use trail system that runs north/south to link both sections of the Cowichan Valley Trail (part of the Trans Canada Trail). Acquisition of various parcels of land for park has taken place over the past 6 years in order to complete the connection route. Two sections still need to be either acquired or have some form of tenure obtained and once secured construction can begin.

The Sahtlam Greenway is well-supported by the residents of Electoral Area E and will contribute to the ability of the growing population to use active transportation as a means of getting around.

PRIORITY 2

RECOMMENDATION

Undertake an engineering study to determine if a suitable location can be identified to establish a pedestrian/ equestrian bridge crossing over the Cowichan River as part of the Sahtlam Greenway Trail.

Rationale: The Sahtlam Greenway will link the Cowichan Valley Trail, south of Highway 18, to the Cowichan Valley Trail on the south side of the Cowichan River with connections to Glenora. Acquisition of the greenway corridor is almost complete but a suitable location to cross over the river is the missing link. There are two possible locations noted at this time: one is at Sandy Pool Regional Park and the other is at the end of Sunrise Road and Glenora Riverside Park.

RECOMMENDATION

Undertake the phased development of the E&N "Rail with Trail" through Cowichan Station and the Koksilah Business Park to enhance connectivity within and beyond the community to link to the Cobble Hill Electoral Area, Cowichan Tribes land, and the City of Duncan.

Rationale: The E&N railway runs between Victoria and Courtenay on Vancouver Island and is owned by the Island Corridor Foundation (ICF). The ICF supports the development of a rail with trail within the rail corridor. If opportunities exist in the future to convert the rail corridor completely to a multi-use pathway then this would be a preference.

Sections of the E&N Rail corridor, which are typically 30 metres in width, are suitable for trail development parallel to and at a safe distance away from the tracks. Use of this corridor for trail development provides the opportunity to allow trail linkages across Electoral Area E and to adjoining Electoral Areas B and C, Cowichan Tribes and the City of Duncan.

RECOMMENDATION

Acquire and construct a trail linking Barnjum Road south to Sunrise Road.

Rationale: The community has identified the need for a hiking/ equestrian trail connection from Barnjum Road, near Wake Lake, to Sunrise Road.

B. ENVIRONMENTAL PROTECTION

PRIORITY 1

RECOMMENDATION

Acquire additional lands around Wake Lake Nature Reserve for continued environmental preservation.

Rationale: Wake Lake Nature Reserve has a number of blue and red listed species. Studies have revealed that seven of the nine native amphibian species found on Vancouver Island use the habitat in and around Wake Lake to meet some of their life history needs. Protection of as much land as possible from future development is critical to the survival of these species.

RECOMMENDATION

Restore, expand and integrate Maplewood Park and Busy Place Creek Park for riparian values including fish habitat, stormwater management and carbon sequestration, etc.

Busy place creek is a fish bearing stream that is actively managed by the Busy Place Creek stream keepers group with the goals of promoting better fish habitat. This recommendation is to daylight a creek running through Maplewood Park that currently flows through a small pipe by removing the pipe and opening the creek up to incorporate stormwater management by creating a naturalized open area in Maplewood park.

Existing off-road trail at Busy Place Creek Park

C. ACCESSIBILITY

PRIORITY 2

RECOMMENDATION

Pursue acquisition of the vacant crown parcel adjacent to Glenora Trails Head Park that is bisected by Robertson Road. (See Appendix D, Map 2).

Rationale: This vacant crown parcel is an important boundary parcel for completion of Glenora Trails Head Park. The parcel is currently surrounded by CVRD parkland and BC Parks.

D. SOCIAL CONNECTION/ QUALITY OF LIFE

PRIORITY 2

RECOMMENDATION

Pursue acquisition of a new neighbourhood park in the Eagle Heights/Koksilah sub-area. Ensure the park meets the park land acquisition criteria outlined in Appendix F.

Rationale: From a parkland distribution and function standpoint, Eagle Heights has the greatest challenges. Eagle Heights does not have a significant sized park and the three small parks in Eagle Heights all have challenges due to their small size and/ or shape. The population of Eagle Heights is the most dense in Electoral Area E, and it would be a significant benefit to the community to have a new neighbourhood park that has space for picnicking, playing, socializing, and passive recreation.

Glenora Trails Head Park Playground

RECOMMENDATION

Prepare Park Management Plans for Glenora Trails Head Park (Glenora) and Currie Park (Sahtlam) to guide long term management and public use of the lands.

Rationale: Park Management Plans will help guide the ongoing management and maintenance at these community parks in Electoral Area E. A parks management plan should cover:

- Park vision and purpose;
- Brief history, context and summary of the park features;
- Key management areas/themes; and
- Implementation, phasing and budget.

RECOMMENDATION

Identify potential opportunities for the future expansion of Currie Park.

Rationale: Currie Park is the only park classified as a "Community Park" in the Sahtlam community. The park is also part of the larger precinct that includes the Sahtlam Fire Hall and Creighton Park (Nature Park). It currently serves the needs of the community well, but has limited capacity to meet increasing demands in the long term due to its current size (1.21 ha). Community Parks are generally recommended to be 10 hectares in size so that a variety of activities can be accommodated. In comparison, Glenora Trails Head Park, the only other community park in Electoral Area E, is 13.05 hectares, while Bright Angel Park, a sub-regional park, is 23.8 hectares. Both Glenora Trails Head Park and Bright

Angel Park are on the south side of the Cowichan River and are a considerable distance from Sahtlam (i.e. ~25 minute drive).

RECOMMENDATION

Ensure the Glenora Community continues to be served with access to an active outdoor recreation area.

Rationale: The Glenora Community Association owns and manages Waldon Park for active outdoor recreation. This park serves the community as a neighbourhood park. If in the future the association wishes to have discussions with the CVRD about management of the park, the community should be engaged to explore partnership opportunities to ensure the Walden Park continues to serve the needs of the local community.

RECOMMENDATION

Ensure that land across from the HUB at Cowichan Station continues to serve the local community as an outdoor recreation area.

Rationale: The Cowichan Station Area Association currently manages the lands across the street from the HUB at Cowichan Station, which is under a lease from School District 79. If in the future the association wishes to have discussions with the CVRD about management of the park, the community should be engaged to explore partnership opportunities to ensure the open space continues to serve the needs of the local community.

Property across from the HUB at Cowichan Station

E. LANDS SURPLUS TO THE GUIDING PRINCIPLES

PRIORITY 1

RECOMMENDATION

Consider future opportunities including disposal of Fairbridge Park (in Cowichan Station), Eagle Heights Park and Keating Park (in Eagle Heights).

Rationale: These parks are not currently providing any significant benefit to Electoral Area E residents. Given the community priorities and limited resources, disposing of these three parks is recommended so that other opportunities can be pursued.

Fairbridge Park is currently leased to a local farmer for hay production. There is one subdivision to the north, but no additional development in the vicinity is expected. The property could be evaluated regarding the potential to develop a park for elk habitat or for supporting local food security and access to land for new farmers. If this is not feasible, then disposal of the parcel is recommended.

Keating Park is a small, forested park. The playground was removed in 2016, as the lifespan of the equipment had expired and there are very few residents in the area that use the park. The surrounding lands are primarily industrial. As part of the process we struggled to try to fit this park into the four guiding principles therefore disposal is the result of the process.

Eagle Heights Park is a greenspace located behind numerous residential homes and has a short trail connection linking two streets. The trail is a useful amenity for the community but the remaining lands are not serving the community well. The park currently is an entrapment area as it is fully surrounded by houses. Alternative uses of the area, such as a small tot lot park or community gardens, should be explored.

4.4 PRIORITY RECOMMENDATIONS BY COMMUNITY

The tables on the following pages outline the priority recommendations, described in detail in the preceding Section 4.3, for each community.

TABLE 20: Summary of Recommendations by Community

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
ALL		
Develop a Roadside Pathways Plan for roadside pathways in Electoral Area E and implement once funds are available.	Connectivity	1

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
COWICHAN STATION		
Consider future opportunities including disposal of Fairbridge Park.	Lands Surplus to the Guiding Principles	2
Ensure that land across from the HUB at Cowichan Station continues to serve the local community as an outdoor recreation area.	Social Connection/ Quality of Life	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
GLENORA		
Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.	Connectivity	1
Prepare a Park Management Plan for Glenora Trails Head Park to guide long term management and public use of the lands.	Social Connection/ Quality of Life	2
Ensure the Glenora Community continues to be served with access to an active outdoor recreation area (i.e. Walden Park).	Social Connection/ Quality of Life	2
Pursue acquisition of the vacant crown parcel adjacent to Glenora Trails Head Park that is bisected by Robertson Road. (See Appendix D, Map 2).	Accessibility	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
EAGLE HEIGHTS / KOKSILAH		
Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.	Connectivity	1
Work with Cowichan Tribes and the Ministry of Transportation and Infrastructure for a safe roadside pathway along Indian Road, a portion of Miller Road, and a portion of Allenby Road through Reserve lands to connect to adjacent trail and active transportation routes in Electoral Area E.	Connectivity	1
Restore, expand and integrate Maplewood Park and Busy Place Creek Park for riparian values including fish habitat, stormwater management and carbon sequestration, etc.	Environmental Protection	1
Consider future opportunities including disposal of portions of Eagle Heights Park and Keating Park.	Lands Surplus to the Guiding Principles	1
Undertake the phased development of the E&N “Rail with Trail” through Cowichan Station and the Koksilah Business Park to enhance connectivity within and beyond the community to link to the Cobble Hill Electoral Area, Cowichan Tribes land, and the City of Duncan.	Connectivity	2
Pursue acquisition of a new neighbourhood park in the Eagle Heights/Koksilah sub-area. Ensure the park meets the park land acquisition criteria outlined in Appendix F.	Social Connection/ Quality of Life	2

RECOMMENDATION	GUIDING PRINCIPLES	PRIORITY
SAHTLAM		
Acquire additional lands around Wake Lake Nature Reserve for continued environmental preservation.	Environmental Protection	1
Prepare a phased construction plan for the completion of the Sahtlam Greenway Trail and include the designation of Lot 3, north of Sandy Pool Park, as parkland by the CVRD Board and implement the plan once funds are available.	Connectivity	1
Prepare a Park Management Plan for Currie Park to guide long term management and public use of the lands.	Social Connection/ Quality of Life	2
Identify potential opportunities for the future expansion of Currie Park.	Social Connection/ Quality of Life	2
Undertake an engineering study to determine if a suitable location can be identified to establish a pedestrian/ equestrian bridge crossing over the Cowichan River as part of the Sahtlam Greenway Trail.	Connectivity	2
Acquire and construct a trail linking Barnjum Road south to Sunrise Road.	Connectivity	2

4.5 GENERAL RECOMMENDATIONS

This section presents system wide recommendations for planning and operational policies that support the community parks and trails system as a whole in Electoral Area E. These are ongoing opportunities.

This section consists of:

1. Partnerships and Parkland Acquisition;

2. Park Operations and Maintenance.

4.3.1 PARTNERSHIPS AND PARKLAND ACQUISITION

The Cowichan Station/Sahtlam/Glenora Community Parks & Trails Master Plan encourages the development of strong partnerships with Cowichan Tribes, the Federal and Provincial governments, and agencies such as the Habitat Acquisition Trust, the Nature Trust and Ducks Unlimited, among others that are noted as key in moving the plan's objectives forward.

In addition to partnerships, other land use arrangements can be considered. For example, due to the lack of sidewalks in the CVRD's Electoral Areas, and with the increased demand for active transportation in the community, consideration should be given to forming an arrangement with the BC Ministry of Transportation and Infrastructure to establish safe, active transportation corridors within the road right of ways in Electoral Area E. A similar arrangement could be established throughout all the unincorporated Electoral Areas in the Cowichan Valley Regional District.

RECOMMENDATION

Support the enhancement of partnerships for protection of key environmental areas in Electoral Area E.

Rationale: There are substantial areas of sensitive ecosystems currently on private lands, and acquisition of all areas as Electoral Area E park land is not financially feasible. Through partnerships with organizations, additional resources, expertise, and funding, opportunities can be leveraged. There may also be opportunities to work together to develop a coordinated approach to protect areas that cross jurisdictional boundaries, such as the Koksilah River watershed.

RECOMMENDATION

Co-ordinate planning efforts for acquisition of lands of interest and connectivity where adjoining with other jurisdictions.

Rationale: Acquisition of parcels of land for environmental protection that border adjacent jurisdictions should be coordinated for similar acquisition on adjacent lands.

RECOMMENDATION

Continue to assess and justify the opportunity to acquire park land through the subdivision and development process under section 510 of the Local Government Act.

Rationale: As neighbourhoods develop, it is important that appropriate land be dedicated to serve local residents as well as for ecological protection and enhancement. Ensure the park land meets the vision and principles outlined in this plan and the land acquisition criteria outlined in Appendix F. Not all subdivisions have land areas of interest that meet the objectives of this Plan. Where opportunities for park dedication during subdivision do not coincide with the objectives and recommendations of the Electoral Area E Community Parks & Trails Master Plan, the CVRD should require cash-in-lieu with funds deposited into the Electoral Area E Community Parkland Acquisition Reserve Fund.

RECOMMENDATION

Set aside sixteen percent (16%) of the annual Electoral Area E Community Parks and Trails requisition for community parkland acquisition.

Rationale: As a means of deriving funds for future park land purchases, annual commitments of requisition funds provide a means of building up such funds over time. This Plan identifies future land for park therefore additional funds will be required.

RECOMMENDATION

Develop a land use partnership strategy in order to ensure consistency among partnership agreements.

Rationale: It is beneficial for the community if the CVRD enters into partnerships with local clubs, resident groups or senior governments including local First Nation groups. A partnership strategy would help maintain consistency between the various partnership agreements within all the Electoral Areas.

RECOMMENDATION

When opportunities arise to acquire land, develop partnerships or acquire permits with the Ministry of Transportation and Infrastructure that facilitates connections for existing or identified future trails, they should be considered a high priority.

Rationale: Improved connectivity in the Cowichan Station/ Sahtlam/Glenora community for pedestrians and cyclists has been identified as a high priority. There are several routes identified in the Plan that are not along roads and therefore would require acquisition, a right-of-way or another form of tenure in order to construct a trail. As part of new developments, the CVRD should actively work with land developers to facilitate establishment of trails that achieve the Plan's objectives. Improving pedestrian, cycling and equestrian connections, both roadside and off-road for Electoral Area E was identified as a high priority. Proposed trail connections are shown on the maps in Appendix D.

RECOMMENDATION

Set aside 5% of the annual Electoral Area E Community Parks and Trails requisition for trail planning and development.

Rationale: Trails are a high priority for Electoral Area E residents and will require a considerable amount of planning and investment over the next 10-20 years to achieve desired future connections identified by the community and shown on Maps 3-5 in Appendix D.

4.3.2 PARK OPERATIONS AND MAINTENANCE

RECOMMENDATION

Assess high risk parks and prepare a tree replacement plan in response to tree mortality losses due to climate change.

Rationale: Extended drought and extreme weather are causing increased rates of tree mortality in community parks. A robust plan is needed to identify key areas with tree loss (existing and anticipated), identify tree species that are likely to be well-adapted to climate change, and outline a program of planting and maintenance.

RECOMMENDATION

Work on the eradication of invasive species and ecosystem management within the Electoral Area E community parks and trails system.

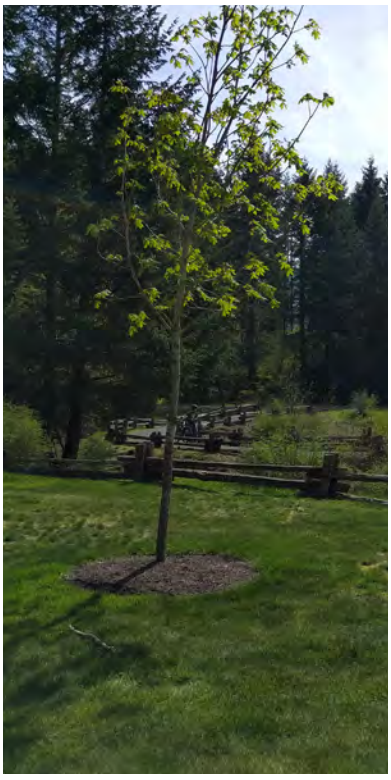
Rationale: The 2015 Invasive Plant Inventory Report identified nine (9) community parks that need to be managed for invasive species within Electoral Area E.

RECOMMENDATION

Develop a Parks and Trails Volunteer Program in the Cowichan Station/Sahtlam/Glenora communities.

Rationale: Communities throughout BC have seen tremendous volunteer support for parks and trails, with volunteers providing passive park walks, park and trail enhancement, park hosting/ interpretive programs and other in-park activities. Volunteers enrich the quality and delivery of parks and trails programs through their dedication, experience and willingness to get involved at little or no cost to the community. Where these programs have been most successful, there has been recognition of the need to provide staff resources to support volunteer efforts. CVRD resource support may include:

- logistical – arranging for hand tools or litter removal after a park clean-up; or
- organizational – providing a centralized resource area for volunteer opportunities or advertising and correspondence on behalf of the community.
- incentives – often snacks and drinks are provided to volunteers as a thank you for their time.



New tree at Glenora Trails Head Park

RECOMMENDATION

Engage the CVRD's Land Use Services Department to work with other CVRD departments to educate residents about the reality that droughts and flooding are the "New Normal", invasive species management, and important environmental processes that occur in community parks.

Rationale: Educational programs can develop community awareness of not only how environmental sustainability can be achieved within community parks but throughout the entire community (i.e. residential, institutional, and commercial lands). Opportunities to distribute information include the CVRD website and thorough interpretive signage.

5. STRATEGIC GOALS AND IMPLEMENTATION PLAN

The focus of this Plan is to provide strategic direction for community parks and trails through land acquisition, development and planning in Cowichan Station/Sahtlam/Glenora, as well as setting priorities for implementation actions over the next 10-20 years.

The Plan is intended to be a 'living' document; it provides direction for a 20 year period but may be adapted and amended, as priorities and recommendations in the Plan are regularly reviewed through the term of the Plan. It is anticipated that, in addition to assessing annual priorities and projects for the yearly budgeting process that the recommendations established in this Plan should be reviewed with the community every 10 years.

5.1 FUNDING STRATEGIES

Funding for planning, designing, developing and maintaining parks and trails must often be acquired from a variety of sources that are relevant to community parks and trails acquisition and development. This section outlines some of the primary strategies used to fund acquisition, development and maintenance of the Electoral Area E community parks and trails system.

REQUISITIONS

The authority to tax for and provide community parks and trails services in Electoral Areas is through the Cowichan Valley Regional District, which under Provincial legislation is the local government authority for unincorporated Electoral Areas within the region. Establishment of the community parks and trails services in Cowichan Station/Sahtlam/ Glenora (Electoral Area E) dates back to 1976 when the local community formally supported creating such a service based on taxation. This authority for taxation is currently provided through "Cowichan Valley Regional District Bylaw No. 2673 – Electoral Area E Community Parks Service Establishment Bylaw, 2005". Under this bylaw, the community parks and trails service provides for the acquisition, development, operation and maintenance of community parks within Electoral Area E, through annual requisition.

PROVINCIAL AND FEDERAL GRANTS

Funding grants come up quite regularly from higher up government agencies that can assist in the acquisition of park land or other amenity contributions.

DEVELOPMENT COST CHARGE (DCC)

Development Cost Charge (DCC) – A DCC is a one-time charge levied against new residential, commercial, industrial and institutional developments that impose a capital cost on local government services such as community parks. They are paid at the time of subdivision, at the building permit stage, or according to a schedule set out in the DCC bylaw. They do not replace the Local Government Act requirement for 5% parkland dedication, but can supplement dedications by establishing a charge for specific facilities or acquisition of land for park. A park DCC bylaw can specify that charges will be used generally for park improvements within the electoral area, or for a specific facility or purpose, such as establishing a reserve for parks and trails land purchases or for specific improvements to parks and trails. Currently there are no DCC bylaws established in the Cowichan Valley Regional Districts Electoral Areas.

AMENITY CONTRIBUTIONS: FINANCIAL

A cash amenity contribution is generally provided during a rezoning application by a land developer towards a public amenity within the proposed development or to the community as a whole. Amenity contributions must be established in OCP policies and through an enabling zoning bylaw, before they can be applied to land development proposals. Amenity amounts can be a set value per lot or can be expressed as a percentage of the land value subsequent to subdivision. An example was created in the Shawnigan Lake Electoral Area B zoning bylaw for RR-2 Rural Residential Zones.

DISPOSAL OF SURPLUS PUBLIC LANDS

Funds from the sale of public parkland acquired through Section 510 of the Local Government Act can be used towards the acquisition of another piece of property within the same electoral area. Money received from the sale of surplus park land that was not acquired through Section 510 of the Local Government Act is an asset that can be 'converted' to cash and is not restricted to the purchase of lands for park, but can also be used to fund new park development.

5.2 OTHER AMENITY CONTRIBUTION STRATEGIES

PARK ACQUISITION THROUGH SUBDIVISION

Section 510 of the Local Government Act – The provision of parkland as either 5% land dedication or 5% cash-in-lieu is a legal requirement under Section 510 of the Province of BC's Local Government Act and is applied at the time of legal subdivision of a parcel of land into 3 or more lots. If cash-in-lieu is accepted, the funds must be deposited into a Parkland Acquisition Reserve Fund and can only be expended on the purchase of lands for park purposes in that electoral area.

AMENITY CONTRIBUTIONS: NON-FINANCIAL

An amenity contribution is generally provided during a rezoning application by a land developer towards a public amenity within the proposed development or to the community as a whole. Amenity contributions must be established in OCP policies and through an enabling zoning bylaw, before they can be applied to land development proposals. Examples of non-financial amenity contributions are:

- Parkland dedication in excess of the 5% required under the Local Government Act;
- Provision of open space and improvements for the benefit of the public;
- Dedication of environmentally sensitive areas;
- New recreational facilities or improvements to existing recreational facilities;
- Sidewalks or trail improvements; and
- Other amenity contributions approved by the Regional Board.

INFRASTRUCTURE REPLACEMENT AND ASSET MANAGEMENT PROGRAM

In 2013, the Cowichan Valley Regional District implemented the development of an Infrastructure Replacement Program for community park facilities and amenities within the nine electoral areas. This program has been expanded as part of a corporate-wide initiative to establish an Asset Management Program. This expanded program establishes timeframes for replacement of each park amenity as it reaches its lifespan, which allows for projecting such costs into the yearly budget for operating and maintaining local community parks and trails in each electoral area. The program assists with keeping track of the capital program for the Parks & Trails Division so that it is possible to plan ahead for budgeting capital costs.

NATURAL AREAS AS AN ASSET

In some jurisdictions, natural areas are being classified as an asset and are being managed as such. This may include managing for water/ wetlands, protected species and for carbon sequestration. Integration of these natural areas into the next management program is critical and may involve tree planting, erosion control, and invasive species eradication.

5.4 IMPLEMENTATION

This section outlines the implementation plan for Priority 1 recommendations that are anticipated to be undertaken over the next ten years, within the constraints of the annual budget for Electoral Area E community parks and trails. Table 21 summarizes the recommendations and is organized by guiding principle. Table 22 outlines the estimated unit costs used for capital projects budget planning purposes.

The 2018 community parks budget for Electoral Area E is summarized as outlined in Table 23. This approved budget provides the basis for assessing the current capacity of funding for parks and trails, with respect to projecting a proposed taxpayer funded parks and trails program for Cowichan Station/Sahtlam/Glenora for the next ten years.

Priorities are defined for the capital projects to be implemented in the first ten years of the Plan (see Table 24a). Table 24b summarizes the total estimates for the Priority 1 (Year 1-10) recommended projects.

The CVRD Board will therefore need to give careful consideration to the financial impacts to the Electoral Area E taxpayer with respect to an increase to the annual Electoral Area E community parks requisition in order to achieve the park and trail development objectives of the plan for the next ten years, unless other sources of funds or resources can be secured to otherwise complete these priority projects.

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Priorities are defined for the capital projects to be implemented in the first ten years of the Plan (see Table 24a). Table 24b summarizes the total estimates for the Priority 1 (Year 1-10) recommended projects.

As is evidenced by the proposed annual priority improvements in Table 24a, the 2018 budget approval of $313,000 does not have the financial capacity to support annual capital expenditures of $45,250 per year from 2019 to 2027, as proposed in the Plan. The CVRD Board will therefore need to give careful consideration to the financial impacts to the Electoral Area E taxpayer with respect to an increase to the annual Electoral Area E community parks requisition in order to achieve the park and trail development objectives of the plan for the next ten years, unless other sources of funds or resources can be secured to otherwise complete these priority projects.

TABLE 21: Priority 1 Recommendations (Year 1-10)

GUIDING PRINCIPLE	RECOMMENDATION	COMMUNITY	PROJECT TYPE
Connectivity	Work with Cowichan Tribes and the Ministry of Transportation and Infrastructure for a safe roadside pathway along Indian Road, a portion of Miller Road, and a portion of Allenby Road through Reserve lands to connect to adjacent trail and active transportation routes in Electoral Area E.	Eagle Heights/ Koksilah	Planning
Connectivity	Develop a Roadside Pathway Plan for roadside pathways in Electoral Area E and implement once funds are available.	All	Planning
Connectivity	Apply for a permit to construct with the Ministry of Transportation and Infrastructure to begin phased construction of a multi-use pathway on the old Canadian National Railway (CNR) corridor from the Cowichan Valley Trail at Deerholm Wye/Marshall Road to the Trans-Canada Highway.	Glenora	Planning
Connectivity	Prepare a phased construction plan for the completion of the Sahtlam Greenway Trail including the designation of Lot 3, north of Sandy Pool Regional Park, as parkland by the CVRD Board and implement the plan once funds are available.	Sahtlam	Planning
Environmental Protection	Acquire additional lands around Wake Lake Nature Reserve for continued environmental preservation.	Sahtlam	Acquisition
Environmental Protection	Restore, expand and integrate Maplewood Park and Busy Place Creek Park for riparian values including fish habitat, stormwater management and carbon sequestration, etc.	Eagle Heights / Koksilah	Acquisition
Lands Surplus to the Guiding Principles	Consider future opportunities including disposal of Fairbridge Park and Keating Park (in Cowichan Station) and Eagle Heights Park (in Eagle Heights).	Eagle Heights/ Koksilah and Cowichan Station	Disposal

TABLE 22: Estimated Unit Costs Used for Budgeting Purposes

Trail Costs		
Multi-use paved trail (4 m asphalt)	l.m.	$500.00
Multi-use gravel trail (3 m)	l.m.	$250.00
Roadside walkway (paved)	l.m.	$163.00
Community pathway (1.5 m gravel surface)	l.m.	$65.00
Nature trail (1.5 m natural surface)	l.m.	$25.00
Concrete stair or wheelchair accessible ramp (2 m wide with metal handrail)	riser	$750.00
Wood stair (1.2 m wide with handrail)	riser	$500.00
Boardwalk / pedestrian bridge (2 m with handrail)	l.m.	$3,825.00
Trail overpass (4 m wide with metal handrail)	l.m.	$8,284.00
Park infrastructure		
Playground (new)	each	$75,000.00
Playground renovation	each	$50,000.00
Washroom building (small)	each	$40,000.00
Portable toilet and surround	each	$30,000.00
Small picnic shelter	each	$25,000.00
Group picnic shelter with cooking area	each	$60,000.00
Park Acquisition and Development		
Park plan	hectare	$20,000.00
Park development	hectare	$650,000.00

TABLE 23: 2018 Electoral Area E Community Parks Budget (Approved)

Budget Funding Sources (2018)	
2018 Tax Requisition for Area E Community Parks	$ 240,000
2017 Unspent Surplus Carry forward	$ 38,000
Transfer from Area E Community Parks Reserves	$ 25,000
2018 Rental Revenues	$ 10,000
Available Funding Sources for 2018	$ 313,000
Planned Budget Expenditures (2018)	
Parks Operations and Maintenance	$ 166,581
Transfer to Capital Reserves	$ 57,919
Minor Capital Projects	$ 15,000
Potential Land Purchase	$ 3,000
Major Capital Projects	$ 70,500
Planned Expenditures Total 2018	$ 313,300

TABLE 24a: Summary Proposed Budget for Plan Implementation Years 1-10 (2018-2027)

	Approved Budget	Proposed Budget									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total Revenues over 10 years
Electoral Area E Annual Parks budget	1	2	3	4	5	6	7	8	9	10	
Operating budget (operations/ maintenance/core expenditures)	$184,581.00	$185,000.00	$185,000.00	$185,000.00	$195,000.00	$195,000.00	$195,000.00	$195,000.00	$200,000.00	$200,000.00	$1,919,581.00
Priority 1 plan recommendations - invasive species removal and ecosystem restoration/management ($10,000 annually)	funds included above	funds included above	funds included above	funds included above	funds included above	funds included above	funds included above	funds included above	funds included above	funds included above	
Priority 1 plan recommendations - Transfer to reserves - Set aside 21% of the parks and trails requisition for community parkland acquisition and capital projects	$57,919.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$507,919.00
Capital budget (Requisition)	$7,500.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$45,250.00	$414,750.00
Priority 1 plan recommendations - new washroom at Currie Park	$40,000.00										$40,000.00
Priority 1 plan recommendations - Develop a Roadside Pathway Plan and proceed with phases	$5,250.00	$45,250.00	$45,250.00	$45,250.00	$36,750.00			$17,150.00	$45,250.00	$10,250.00	$250,400.00
Priority 1 plan recommendations - Prepare a phased construction plan for the completion of the Sahtlam Greenway Trail and implement when funds become available					$8,500.00	$45,250.00	$45,250.00	$28,100.00			$127,100.00
Priority 1 plan recommendations - Proceed with phased construction of CNR from the CVT (Deerholm Wye) to the TCH										$35,000.00	$35,000.00
Priority 1 plan recommendations - Acquire additional Lands around Wake Lake Nature Reserve for continued environmental protection	$265,000.00										$265,000.00
2018 Capital budget (other funds ie grants)	$38,000.00										$38,000.00
2018 Transfer from capital reserves	$25,000.00										$25,000.00
Total Annual Parks Budget	$623,250.00	$280,250.00	$280,250.00	$280,250.00	$290,250.00	$290,250.00	$290,250.00	$290,250.00	$295,250.00	$295,250.00	$2,842,250.00
SOURCE OF FUNDS											
Annual TAX requisition to fund budget	$240,000.00	$280,250.00	$280,250.00	$280,250.00	$290,250.00	$290,250.00	$290,250.00	$290,250.00	$295,250.00	$295,250.00	$2,832,250.00
Other funds (i.e. grants, rentals, short term borrowing) to support proposed and/or expanded annual capital projects	$383,250.00	$-	$-	$-	$-	$-	$-	$-	$-	$-	$383,250.00
Total funding to support annual parks budget	$623,250.00	$280,250.00	$280,250.00	$280,250.00	$290,250.00	$290,250.00	$290,250.00	$290,250.00	$295,250.00	$295,250.00	$3,215,500.00

TABLE 24b: Summary Costs by Project for Priority 1 Recommendations (Years 1-10)

Capital Budget Item	Estimated Project Cost	Roadside walkway (paved)	Community pathway (1.5 m gravel surface)	Washroom building (small)	Park acquisition	
		l.m.	l.m.	each	each	
Project		$163	$65	$40,000	varies	TOTAL
Acquire additional lands around Wake Lake Nature Reserve for continued environmental preservation.	$275,000.00				$275,000.00	$275,000.00
Develop a Roadside Pathway Plan and implement when funds become available	Ongoing	$240,150.00				$240,150.00
Apply for a permit to construct with the MoT - Phased construction or CNR from CVT to the TCH	$422,500.00		$35,000.00			$35,000.00
Work with Cowichan Tribes and the MoT for roadside pathway along Indian Rd, Miller Rd, and Allenby Re through reserve lands.	$1,038,473.00	$10,250.00				$10,250.00
Capital budget for new washroom at Currie Park	$40,000.00			$40,000.00		$40,000.00
Continue working on the eradication and management of invasive species within the Electoral Area E parks system.	Ongoing ($10,000/year)					$100,000.00
Sahtlam Greenway - Construction of the multi -use trail (6105 metres long for first phase)	$396,825.00		$127,075.00			$127,075.00

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APPENDICES

APPENDICES

APPENDIX A

RELEVANT DOCUMENTS AND INITIATIVES

2017 OFFICIAL COMMUNITY PLAN FOR COWICHAN-KOKSILAH (UPDATE)

Updates to the Official Community Plan for the Cowichan-Koksilah should be complete by mid 2018. The consultants and CVRD staff have worked together to coordinate the development of both plans concurrently.

1994 OFFICIAL COMMUNITY PLAN FOR COWICHAN-KOKSILAH

The Regional Board adopted the 1994 Official Community Plan (OCP) for Cowichan-Koksilah (Electoral Areas E & a portion of Area F) by Bylaw No. 1490. The current OCP outlines broad objectives and policies to ensure proper use of land and water resources, to improve the well-being of the community, and to maximize opportunities for Electoral Area E and some Area F residents. The OCP includes the following objectives and policies related to parks within the Cowichan-Koksilah area:

- Ensure that parks and recreation uses form an integral part of the community infrastructure by developing a parks acquisition strategy that identifies the priorities, location, and type of future park requirements.

- Improve public beach access, recreational trails, and open space opportunities on the Cowichan, Koksilah and Chemainus Rivers, as well as other waterfront areas.

- The Regional District shall strongly encourage B.C. Parks to designate existing Crown Lands within the River Corridor designation as a “Provincial Park”.

- The Regional District shall strive to obtain parkland for community recreation, nature preservation and shoreline recreation in the following priority locations:

- Nature preservation parks at Wake Lake[1] ; and

- Nature preservation parks and community recreational trails

on the Cowichan, Koksilah, and Chemainus Rivers.

- The Regional District shall encourage and support volunteer assistance in the development and management of community parks and trails.

- The Regional District recognizes that public involvement in the planning, acquisition, and development of the community parks network by parks and recreation commissions, volunteer groups, or service organizations is essential for the success of the parks system.

- A walkway/bikeway/bridle path network should be considered to connect parkland to residential neighbourhoods and commercial areas. To support the regions greenhouse gas reductions targets, linear park connections should also take into consideration the increasing need for alternative transportation modes for commuting purposes.

- Linear network connections of habitat protection should be encouraged and, where compatible, include recreational uses.

[1] Wake Lake is now designated as a community park in Electoral Area E, but continues to be expanded.

CVRD 2014-2018 STRATEGIC PLAN

The CVRD's Strategic Plan is a short-term planning document that identifies the top strategic priorities for improving the social, economic, and environment health of the region. Within the Strategic Plan, the following is identified as one of the five strategic focus areas for the CVRD applicable to community parks and trails:

Goal	Improve pedestrian/cyclist safety on rural roads by developing a network of on-roadway and off-roadway pedestrian pathways and trail linkages.
Action 5.1	Develop inventory of critical pedestrian pathway requirements.
Measure	Identify key roadside pathway community connections between Electoral Areas, member municipalities and adjacent regions.

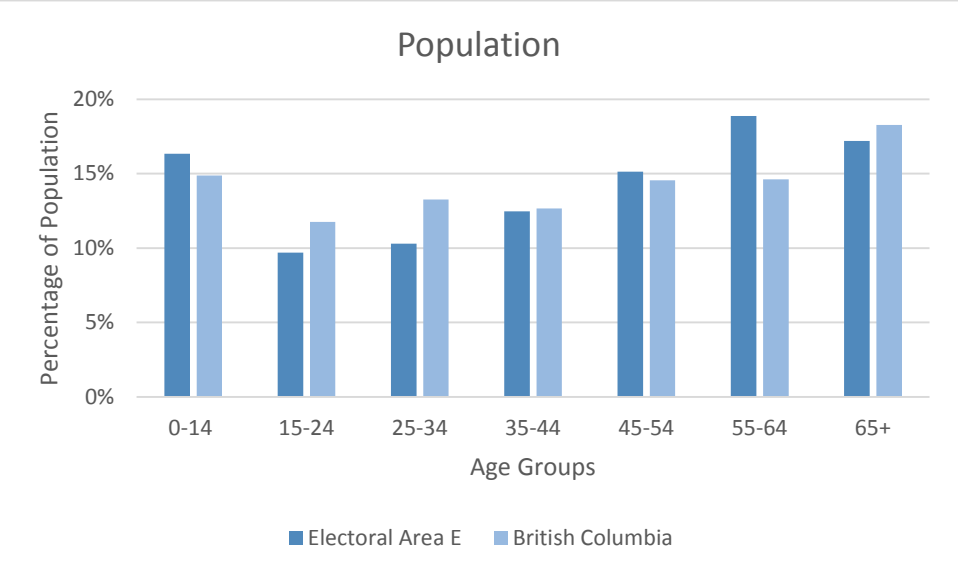
APPENDIX B

DEMOGRAPHICS

STABLE AND GROWING POPULATION

With an area of 13,483 hectares, Electoral Area E accounts for 3.88% of the total land area of the CVRD and around 4.90% of the population. There were 3,854 people living in Electoral Area E in 2011 (Statistics Canada, 2011). This number is projected to slightly increase in the upcoming years despite the broad national trend toward rural population decline and rural to urban migration. Electoral Area E is unlikely to grow at the same rate as the region's urban areas, but it is projected to increase by approximately 44 people to 3,898 by 2036 based on the 15-year trend.

The stable population supports the continuing need to maintain parks and trails for the community.



AGING POPULATION

Another North American trend present in Electoral Area E is the gradual shift towards an aging population. Between 2001 and 2011, the 45-64 age group increased by 32%. A slightly lower, yet still significant, increase could be seen in the 65+ age group. In contrast, during the same time period, the 0-14 age group decreased by 21%, the 15-24 age group decreased by 6% and the 25-44 age group decreased by 17%.

Accessibility and maintenance of parks and trails is an increasingly important issue. To respond to this trend, the Regional District should consider the incorporation of senior oriented programming and outdoor recreation in parks as the population continues to age.

YOUTH AND FUTURE YOUNG ADULTS

Despite the aging population, it is also important not to overlook that, compared to the rest of the Province, Electoral Area E has a proportionally larger number of children between the ages of 0-14. This may suggest a greater demand for outdoor recreation opportunities aimed at children now, and a need to plan for teen/youth interests for this segment of population as it matures.

LAND USE

Based on the 1994 OCP, the main land use designations are forestry (60%), agriculture (23%), residential (9%), and First Nations (7%). The reminder of the land use designations are each less than 1%, including industrial, commercial, parks, rural resource, and comprehensive development (Cowichan Valley Regional District, 1994).

While these numbers give a broad understanding of the general land use in the area, the designations and their mapping in the OCP is inconsistent with the BC Assessment Authority property classifications and the actual land use. For example, large areas of park land are classified under the residential designation. The reason is that parks can be located in any area designation. It would be recommended that during the OCP process that some parkland be designated as Park. For park properties that are identified for disposal/sale, these should not be designated.

FORESTRY LANDS

Within Electoral Area E, 60% of the land base is designated as forestry land through the OCP. These forestry lands are some of the most productive in North America. The following OCP policies relate to forestry lands in terms of their use by the public for recreation:

- Encourage the area's forest lands to be made available for recreational enjoyment and education and safeguard the area's recreational appeal.

The OCP also notes that public access should be permitted in forest areas for hiking, camping and other outdoor recreational endeavours. Managing the urban wildfire interface is also an issue that has been identified as related to biodiversity and public safety.

DEVELOPMENT

While the population in Electoral Area E is expected to remain fairly stable over the next 20 years (Statistics Canada, 2011), the CVRD as a whole will continue to see steady growth. Overall, the Cowichan Valley Regional District is expected to grow by around 30% by 2031, an increase of 24,463 people from 2011 (BC Stats, Population Projections P.E.O.P.L.E. 31).

There is some residential development expected in Electoral Area E, but most of the growth is expected regionally. In 2016 there were 4 subdivision referrals, 16 development permit applications and 19 new housing starts that came to the CVRD Planning and Development Department. There are a few specific areas of anticipated residential development in Electoral Area E, which are mainly in the Sahtlam area along Barnjum Road, Inwood Creek Estates, along Appaloosa Way and south of Belvedere Crescent. Some of these areas have been rezoned to incorporate higher density. Other areas in Electoral Area E are predominantly in the Agricultural Land Reserve (ALR) and therefore have no growth potential.

In 2015, a Regional Integrated Planning Strategy was conducted by the CVRD that provided population projections for the Region. Electoral Area E was included as part of the “Central Region” which includes North Cowichan. The central region is projected to see steady growth similar to the regional average, although the growth in Electoral Area E would be skewed by the North Cowichan growth rate, which would be considerably more.

Protection of Significant and Sensitive Land in Anticipation of Increasing Development Pressures

This period of rapid growth in the Region will bring with it new housing development pressures that make the strategic protection and acquisition of land necessary throughout the Region as well as in Electoral Area E, especially for environmentally sensitive or significant areas.

Acquisition and Management of Privately-Owned but Publicly Used Land for Outdoor Recreation

Many informal sites valued by the public for outdoor recreation are located on privately owned lands. With the projected residential development pressures, the monetary incentives for land use change will create uncertainty over continued access to these private lands. Electoral Area E needs a strategy for the acquisition and management of the lands deemed significant to outdoor recreation use by the public.

APPENDIX C

TRENDS AND CHALLENGES

PROVINCIAL AND NATIONAL TRENDS

In May 2015, the British Columbia Recreation and Parks Association endorsed A Framework for Recreation in Canada 2015: Pathways to Wellbeing, a joint initiative of the Interprovincial Sport and Recreation Council and the Canadian Parks and Recreation Association.

The Framework aims to reaffirm the value of parks and recreation while recognizing the needs arising from rapid technological, economic, environmental, demographic and social changes. Building on past research and agency collaboration, the Framework highlights a number of interrelated challenges and current trends for consideration across Canadian communities, as shown below.

Spending on recreation creates jobs, fosters tourism, and makes communities more attractive places in which to live, learn, work, play and visit. "Upstream" investments in recreation can lead to improvements in individual and community wellbeing, which helps to reduce costs in health care, social services and justice.

DEMOGRAPHIC CHANGES

Canadian communities are faced with an increase in the number of older adults and a decline in children. This demographic change, the increase in cultural diversity, decreased access to nature, and the loss of unique community features due to rapid urbanization have all impacted the face of recreation. Rural communities are facing increasing pressure due to limited funds and infrastructure, threats to the environment and traditional ways of life, limited numbers of volunteers to lead, and challenges in transportation and distance.

CHALLENGES TO HEALTH

Increased sedentary living and risk factors for chronic disease, as well as increased mental health concerns, are impacting communities.

ECONOMIC INEQUITIES

After-tax family income inequality rose by 41% between 1995 and 2011, with economic gains going primarily to higher income families. Those with lower incomes have fewer opportunities for recreation.

SOCIAL CHALLENGES

Changes associated with increasing inequities, unemployment, use of social media instead of face-to-face interaction, and loss of traditional supports have compounded feelings of isolation for many, and has negatively impacted civic involvement, social connectedness, and social cohesion.

INFRASTRUCTURE DEFICIT

Most communities in Canada face infrastructure deficits which include the need for additional walking and cycling routes as well as more green space. Maintenance is an ongoing concern. Strengthening this infrastructure is key to enhancing community health, vitality, and the economies of local communities.

THREATS TO THE NATURAL ENVIRONMENT

Growing threats, including extreme weather, decreasing biodiversity, and invasive species such as Scotch broom have made the role of environmental stewardship increasingly important to the recreation field.

The Framework sets five priority goals, reflecting these national trends and challenges. In addition to other input, the recommendations developed through this Electoral Area E Community Parks & Trails Master Plan process will respond to these high level goals and priorities.

Figure 10: Goals and Priorities for Canadian Recreation [2]

LOCAL TRENDS AND CHALLENGES

The following trends in Electoral Area E is expected to have an effect on demand and needs related to parks and trails over the next 10 years.

DEMOGRAPHIC TRENDS

- Electoral Area E is considered stable, which is in contrast to the overall nationwide trend toward declining rural populations. This supports, at a minimum, maintaining the quantity and quality of parks and trails over the next 10 years.

- The overall population is aging, with significant increases in residents age 65 and older. Electoral Area E will need to consider incorporating park amenities that will support older residents to encourage them to get outdoors, be active, and avoid isolation.

- Despite the aging population, there are more children between 0 - 14 years of age in Electoral Area E compared with the Province. This suggests a need to focus on planning for outdoor recreation opportunities for teens and young adults. Attracting and retaining families to the area is also an important reason to continue to maintain and expand play and recreation opportunities for all ages.

- The surrounding region is projected to grow by 30%. Urban areas tend to focus on providing parks for active recreation (i.e. sports fields, plazas, playgrounds, open lawns, etc.), whereas rural areas have a higher demand for outdoor recreation in natural areas such as the Cowichan River corridor which will impact Electoral Area E.

LAND USE AND DEVELOPMENT TRENDS

- There are pockets of residential development occurring in Electoral Area E that will create additional demand for parks and trails.

- Providing river access is a high priority and was identified by the community as high in value. It will continue to be challenging to acquire riverfront property due to the limited quantity of riverfront land and the higher property values.

ENVIRONMENTAL TRENDS

- There is a very low proportion of forest lands currently protected in Electoral Area E with forestry activities and low-density residential development continuing to impact watersheds and fragment ecosystems.

- Protecting the river systems in Electoral Area E is being pursued on an incremental basis when opportunities arise. Challenges will likely emerge in balancing protection of ecosystems with access for outdoor recreation.

TRAILS AND ACTIVE TRANSPORTATION TRENDS

- Trails for both outdoor recreation and commuting have emerged in recent years as a top priority for many communities. Electoral Area E residents have a strong desire for a network of connector trails to provide outdoor recreational opportunities, but also to connect key destinations. Challenges for the construction of roadside pathways include:

    - Varying widths of Ministry of Transportation and Infrastructure road right of ways for inclusion of roadside pathways/trail; and

    - the extensive length of trail that is needed to fully connect this predominantly rural community.

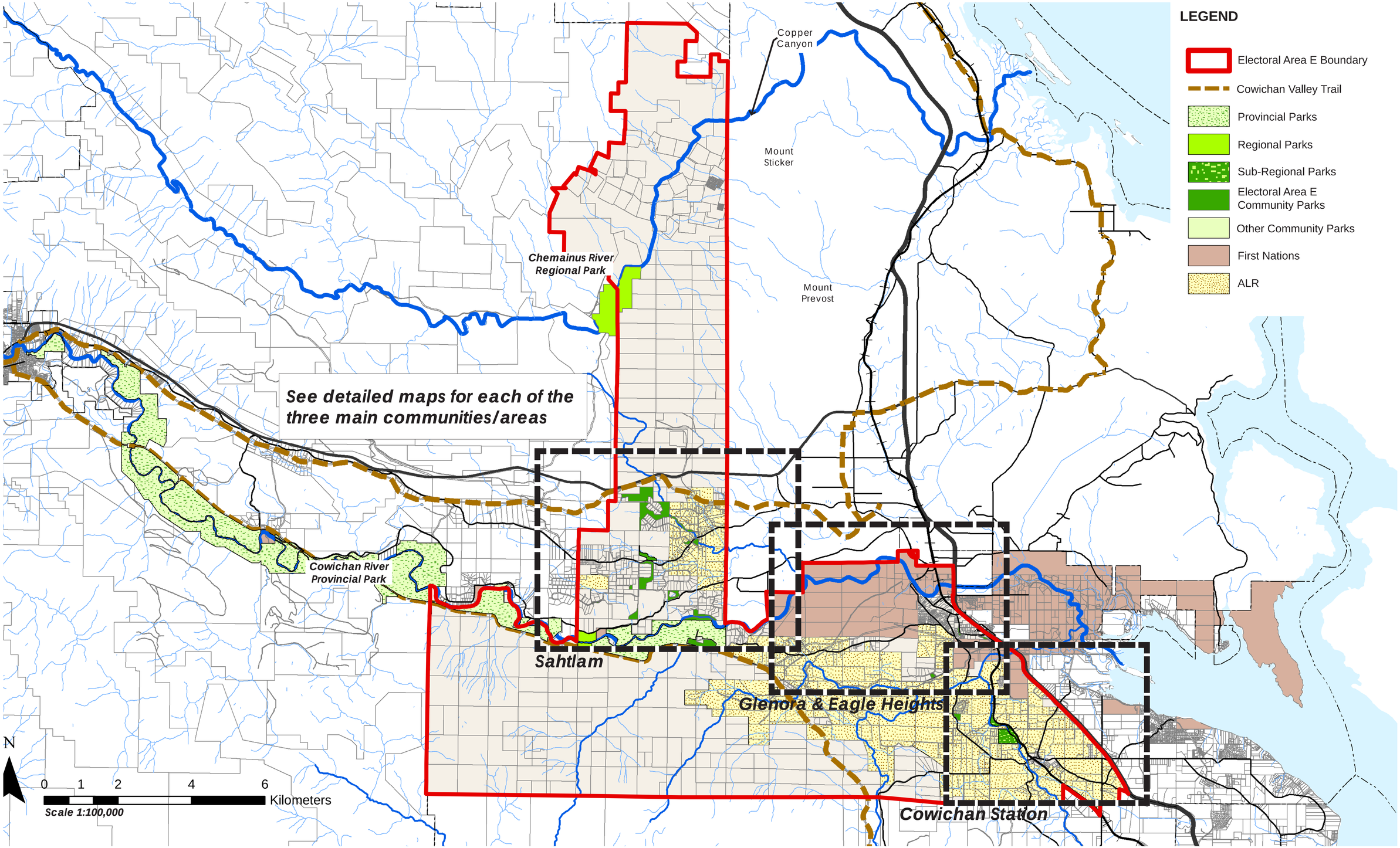
- As has been done with the Cowichan Valley Trail, there are opportunities for the “Rail-with-Trail” model, which could be pursued along active railway lines.

MANAGEMENT AND MAINTENANCE

- The community parks and trails system in Electoral Area E is limited by the capacity to maintain the existing areas of parkland, the capacity of community volunteers who champion the parks and trails system improvements, and budgetary constraints.

[2]A Framework for Recreation in Canada 2015: Pathways to Wellbeing, a joint initiative of the Inter provincial Sport and Recreation Council and the Canadian Parks and Recreation Association

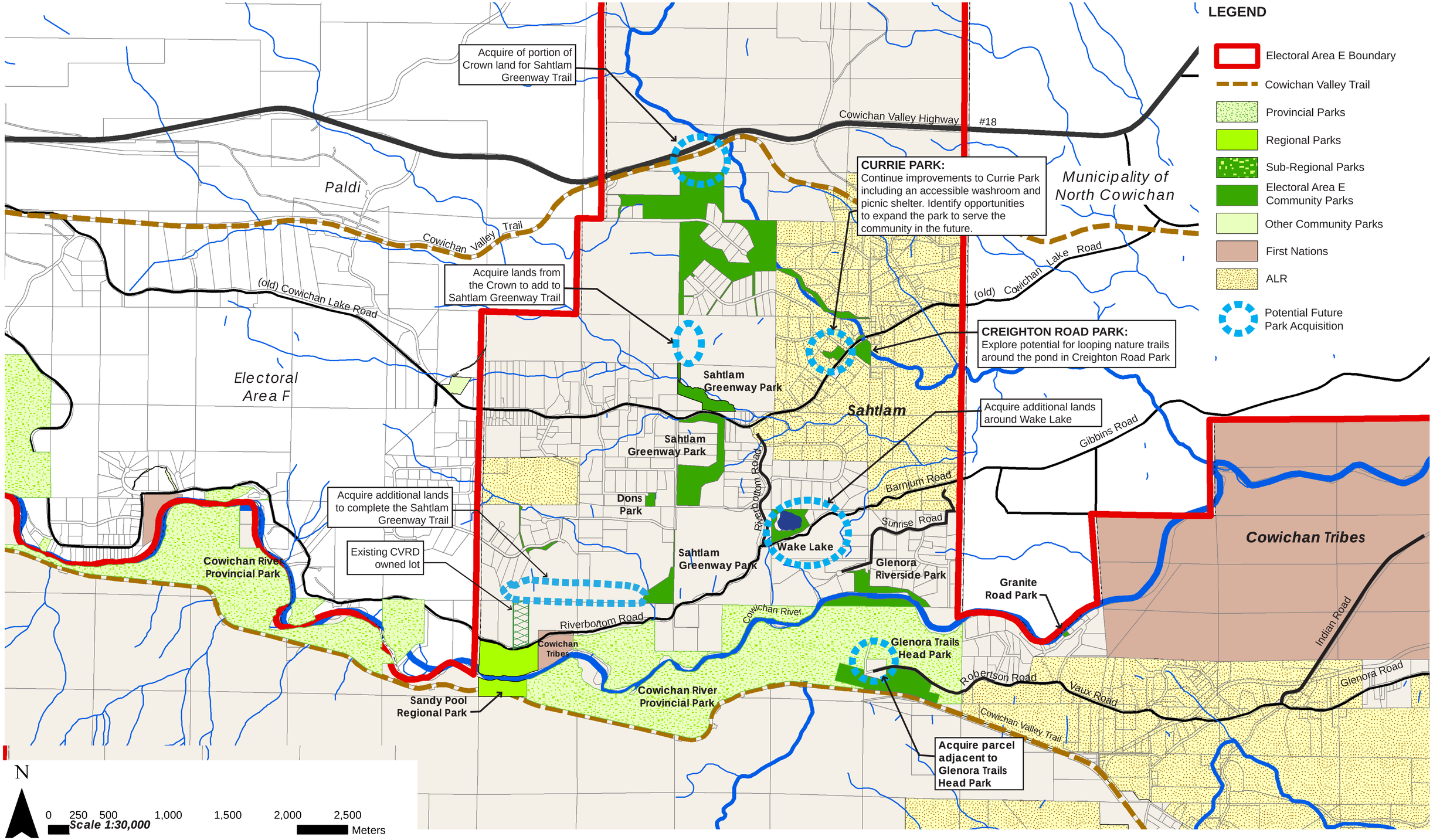
APPENDIX D



LEES + ASSOCIATES

MAP 1 ELECTORAL AREA E: KEY MAP

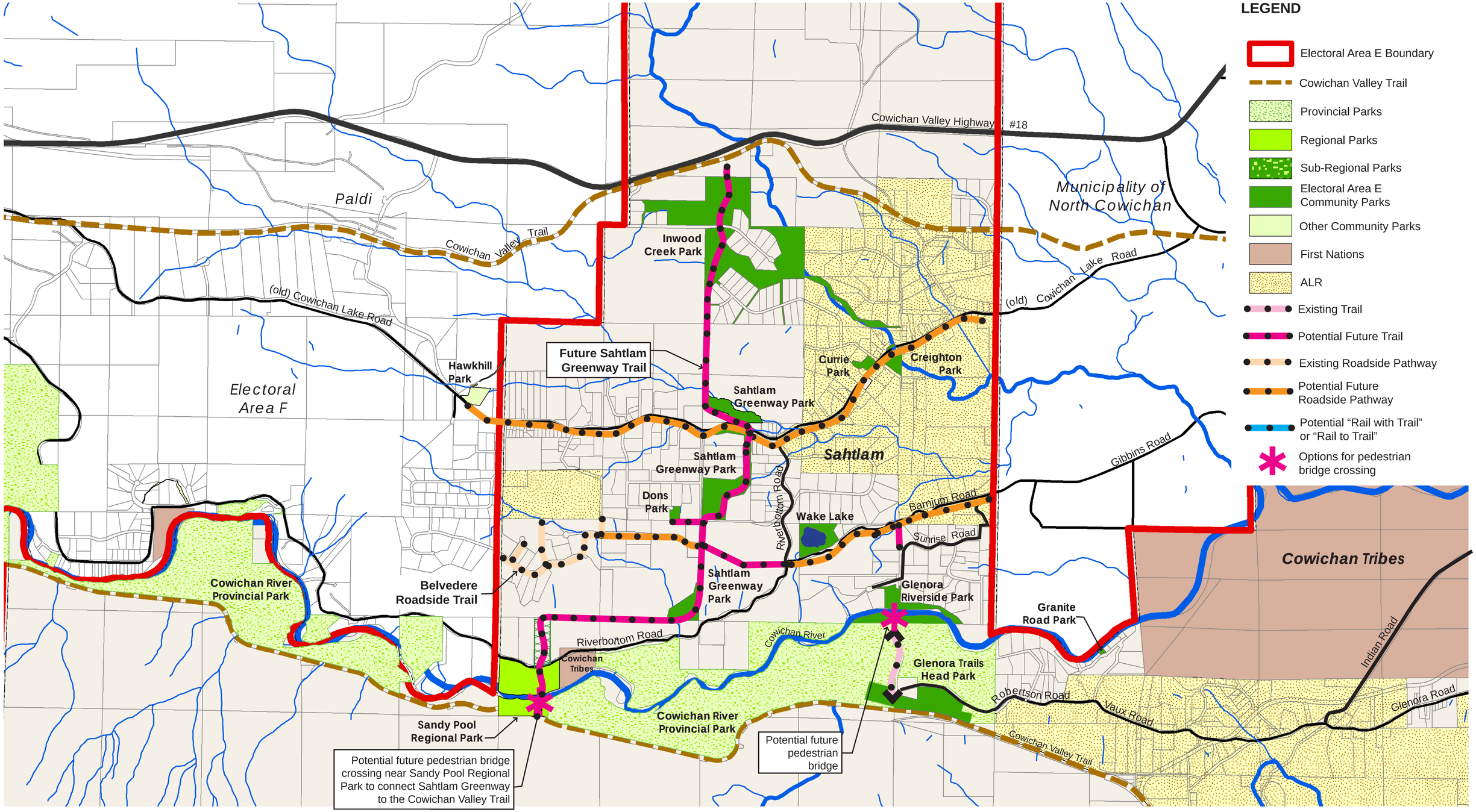
CVRD



LEES + ASSOCIATES

MAP 2 SAHTLAM COMMUNITY: EXISTING AND PROPOSED PARKS

CVRD



LEGEND

- Electoral Area E Boundary
- Cowichan Valley Trail
- Provincial Parks
- Regional Parks
- Sub-Regional Parks
- Electoral Area E Community Parks
- Other Community Parks
- First Nations
- ALR
- Existing Trail
- Potential Future Trail
- Existing Roadside Pathway
- Potential Future Roadside Pathway
- Potential "Rail with Trail" or "Rail to Trail"
- Options for pedestrian bridge crossing

N

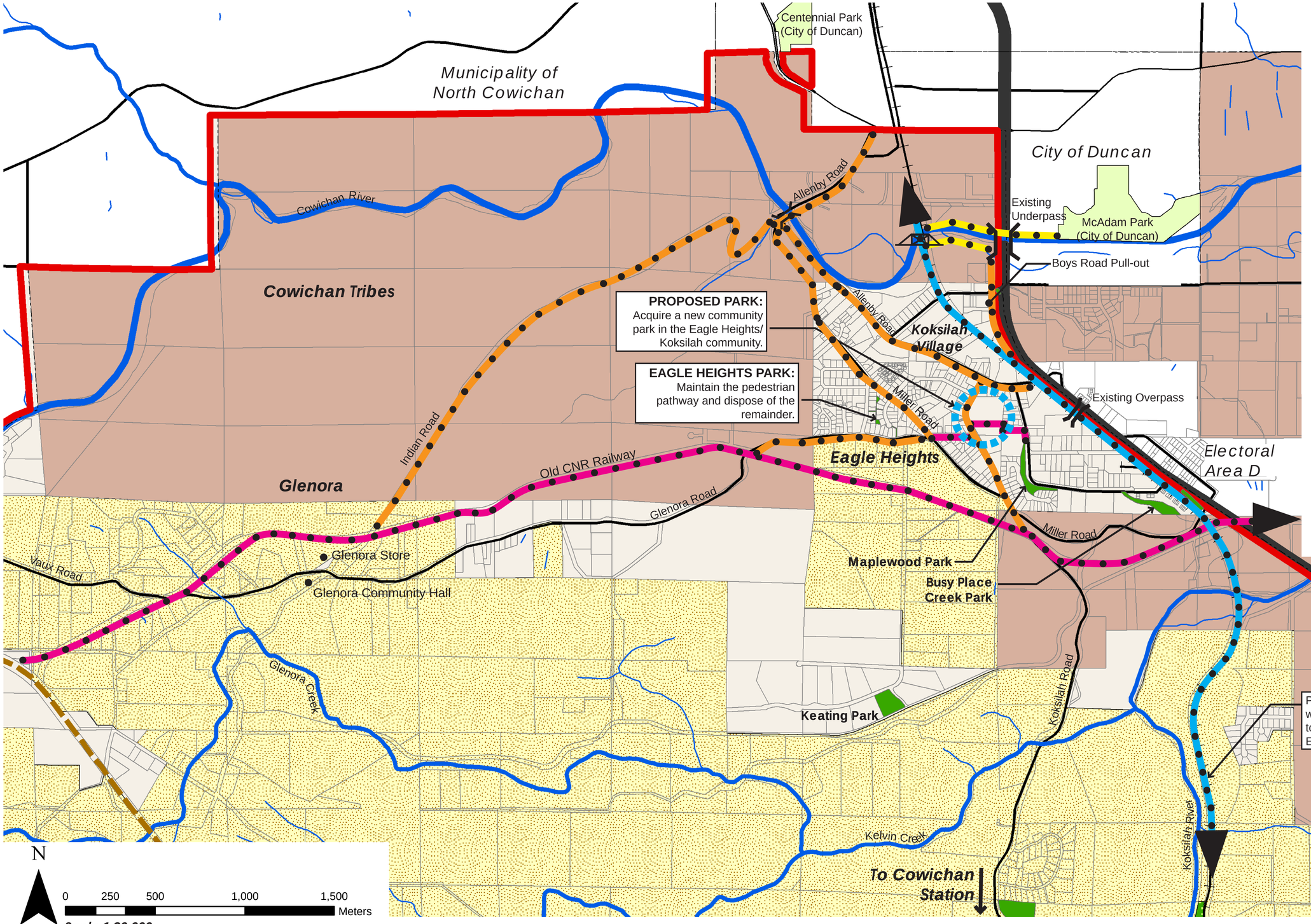
0 250 500 1,000 1,500 2,000 2,500 Meters

Scale 1:30,000

LEES + ASSOCIATES

MAP 3 SAHTLAM COMMUNITY: EXISTING AND PROPOSED TRAILS AND ROADSIDE PATHWAYS

CVRD



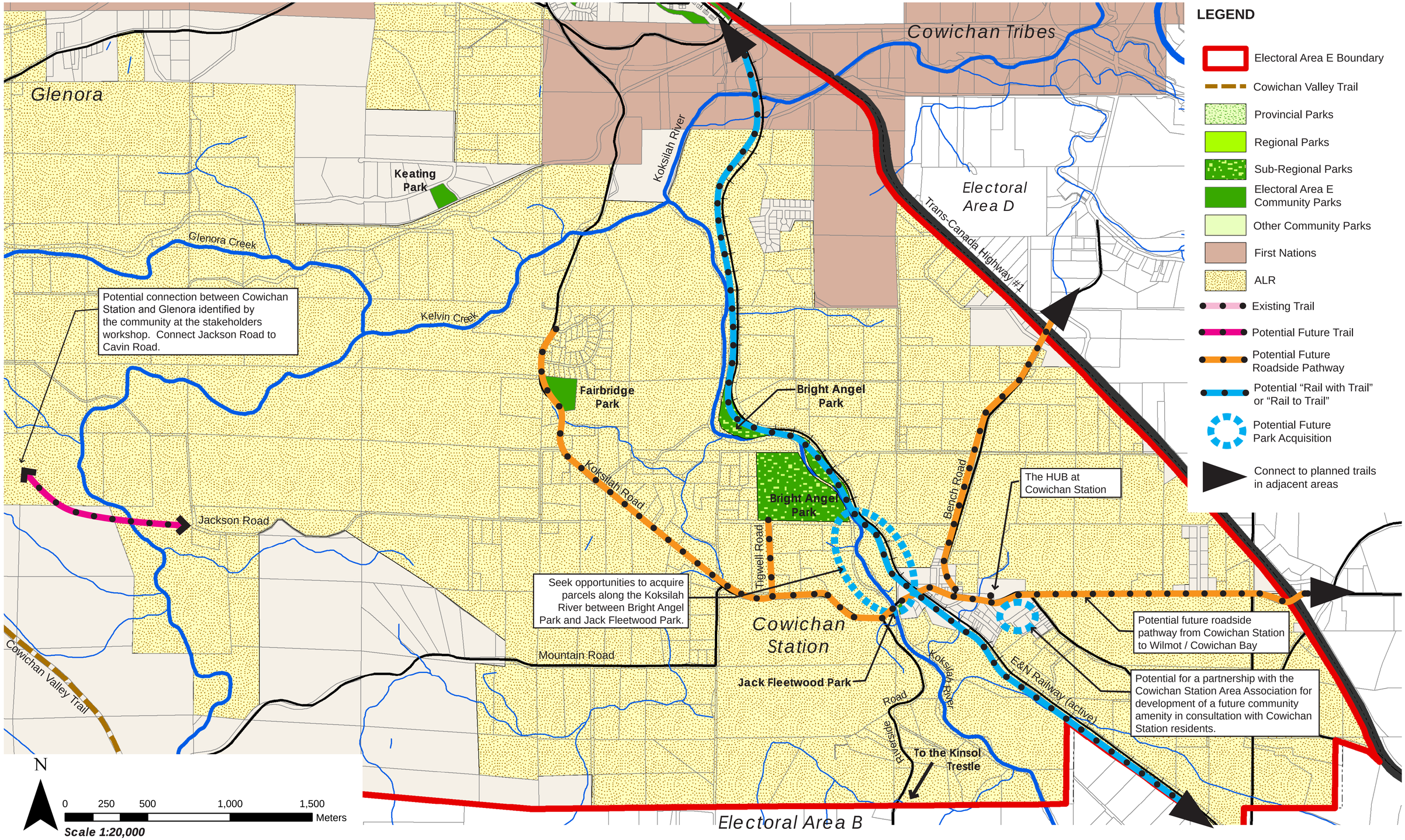
LEGEND

- Electoral Area E Boundary
- Cowichan Valley Trail
- Provincial Parks
- Regional Parks
- Sub-Regional Parks
- Electoral Area E Community Parks
- Other Community Parks
- First Nations
- ALR
- Existing Trail
- Existing Dyke Trail
- Potential Future Trail
- Potential Future Roadside Pathway
- Potential "Rail with Trail" or "Rail to Trail"
- Potential Future Park Acquisition
- Connect to planned trails in adjacent areas

LEES + ASSOCIATES

MAP 4 GLENORA & EAGLE HEIGHTS COMMUNITY: EXISTING AND PROPOSED PARKS, TRAILS AND ROADSIDE PATHWAYS

CVRD



LEES + ASSOCIATES

MAP 5 COWICHAN STATION COMMUNITY: EXISTING AND PROPOSED PARKS, TRAILS AND ROADSIDE PATHWAYS

CVRD

APPENDIX E

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 70185

Scientific Name: *Rhododendron groenlandicum / Kalmia microphylla / Sphagnum* spp.

English Name: Labrador-tea / western bog-laurel / peat-mosses

Identifiers

Occurrence ID: 9649

Shape ID: 70185

Element Group: Ecological Community

Status

Provincial Rank: S3

BC List: Blue

Global Rank: G4

Locators

Survey Site: CURRIE CREEK, AT COWICHAN RIVER

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1980 **Last Observation Date:** 2005-07-17

Occurrence Data:

This shrub bog community is taken from Terrestrial Ecosystem Mapping of the Coastal Douglas-fir zone, and has not been ground-truthed. Approximately 58% (3.51 ha) of the area shown is mapped as Ledum groenlandicum / Kalmia microphylla / Sphagnum spp. Outflow from the bog does not appear to be affected by disturbance.

General Description:

This shrub-dominated bog occurrence is located 6.3 km west of Duncan, and 300m north of the Cowichan River. It occurs in a slight depression on what is a relatively level plain on this part of Vancouver Island where agricultural development is high. Young forests surround the wetland for the most part, although these are fragmented by roads and rural housing. The outflow of the wetland is from the north end into Currie Creek, which joins Inwood Creek and eventually Cowichan River.

Environmental Summary:

The bog occurs on poorly drained, deep organic materials.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

3.51 ha

Landscape Context:

Version

Version Date: 6/1/2012 12:00:00 AM

Version Author: Schaefer, C. and C.Cadrin

Mapping Information

Estimated Representation Accuracy: Medium

Estimated Representation Accuracy Comments: The ecological community occupies 58.14% (3.51 ha) of the mapped occurrence.

Confident that full extent is represented by Occurrence: ?

Confidence extent Definition: Uncertain whether full extent of EO is known

Additional Inventory Needed: Y

Inventory Comments: This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 70185, Labrador-tea / western bog-laurel / peat-mosses. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 79998

Scientific Name: *Populus trichocarpa - Alnus rubra / Rubus spectabilis*

English Name: black cottonwood - red alder / salmonberry

Identifiers

Occurrence ID: 10767

Shape ID: 79998

Element Group: Ecological Community

Status

Provincial Rank: S3

BC List: Blue

Global Rank: GNR

Locators

Survey Site: KOKSILAH RIVER, UPSTREAM OF ISLAND HIGHWAY

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1992 **Last Observation Date:** 2004

Occurrence Data:

This middle bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM). It is mapped as young deciduous forest. This ecological community occupies approximately 11.9 ha or 47.3 % of the area shown.

General Description:

This occurrence is located on the floodplain of Koksilah River upstream of the Island Highway. Much of the surrounding area has rural residential development with some areas of forest and forest harvesting.

Environmental Summary:

The occurrence is mapped on an active, moderately well drained, fluvial plain.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

11.89 ha

Landscape Context:

Version

Version Date: 1/24/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 47.26% (11.89 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2013a. Element occurrence and element occurrence rank specifications for riparian deciduous forests and shrublands of coastal British Columbia. Unpublished document. Version January, 2013. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 79998, black cottonwood - red alder / salmonberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80002

Scientific Name: *Populus trichocarpa - Alnus rubra / Rubus spectabilis*

English Name: black cottonwood - red alder / salmonberry

Identifiers

Occurrence ID: 10769

Shape ID: 80002

Element Group: Ecological Community

Status

Provincial Rank: S3

BC List: Blue

Global Rank: GNR

Locators

Survey Site: COWICHAN RIVER, FROM MOUTH TO 8.5 KM UPSTREAM

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1992 **Last Observation Date:** 2004

Occurrence Data:

This middle bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM). It is mapped as shrubby and young deciduous forest. This ecological community occupies approximately 63.5 ha or 40.2% of the area shown.

General Description:

This occurrence is located on the floodplain of Cowichan River at Duncan. Much of the surrounding area has urban and rural residential development with some areas of forest and forest harvesting.

Environmental Summary:

The occurrence is mapped on an active fluvial plain that is moderately-well to imperfectly drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

63.51 ha

Landscape Context:

Version

Version Date: 1/29/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 40.19% (63.51 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2013a. Element occurrence and element occurrence rank specifications for riparian deciduous forests and shrublands of coastal British Columbia. Unpublished document. Version January, 2013. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80002, black cottonwood - red alder / salmonberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80005

Scientific Name: *Populus trichocarpa - Alnus rubra / Rubus spectabilis*

English Name: black cottonwood - red alder / salmonberry

Identifiers

Occurrence ID: 10771

Shape ID: 80005

Element Group: Ecological Community

Status

Provincial Rank: S3

BC List: Blue

Global Rank: GNR

Locators

Survey Site: COWICHAN RIVER, NEAR SAHTLAM

Directions:

Biogeoclimatic Unit: CDF mm;CWH xm 1

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2004

Occurrence Data:

This middle bench floodplain forest occurrence is based primarily on Terrestrial Ecosystem Mapping (TEM). It is mapped as shrubby and young deciduous forest. This ecological community occupies approximately 25.9 ha or 40.9 % of the area shown.

General Description:

This occurrence is located on the floodplain of the Cowichan River upstream of Duncan. Much of the surrounding area has rural residential development with some areas of forest and forest harvesting.

Environmental Summary:

The occurrence is mapped on an active fluvial plain that is well to imperfectly drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

25.91 ha

Landscape Context:

Version

Version Date: 1/24/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 40.9% (25.91 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Canadian Wildlife Service, Ministry of Environment, Lands and Parks Vancouver Island Region, and B.C. Conservation Data Centre. 1997. Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands. Clover Point Cartographics Ltd., Victoria.

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Sensitive Ecosystems Inventory [SEI] of East Vancouver Island and Gulf Islands: Sensitive Ecosystems Mapping, Disturbance Mapping and Re-evaluation of Major Riparian Corridors. 2004. Prepared by Axys Environ. Consulting Ltd. for Environ. Can., Can. Wildl. Serv., B.C. Minist. Sustainable Resour. Manage., and B.C. Minist. Water, Land and Air Prot., and the Habitat Conserv. Trust Fund. 66 mapsheets, 1:20 000 scale.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2013a. Element occurrence and element occurrence rank specifications for riparian deciduous forests and shrublands of coastal British Columbia. Unpublished document. Version January, 2013. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80005, black cottonwood - red alder / salmonberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 52659

Scientific Name: *Pseudotsuga menziesii / Mahonia nervosa*

English Name: Douglas-fir / dull Oregon-grape

Identifiers

Occurrence ID: 8408

Shape ID: 52659

Element Group: Ecological Community

Status

Provincial Rank: S2

BC List: Red

Global Rank: G2

Locators

Survey Site: COWICHAN RIVER, 1 KM WEST OF DUNCAN

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2002

Occurrence Data:

This occurrence (based on Terrestrial Ecosystem Mapping) is comprised of young (88%) and mature (12%) Douglas-fir dominated stands.

General Description:

This occurrence is located immediately west of the city of Duncan, mostly south of the Cowichan River but a small portion north of the river. The terrain is generally fairly level, but is incised near the river.

Environmental Summary:

The terrain is covered in glaciomarine blankets and veneers, morainal blankets and fluvial terraces. Soils are mostly well drained with some moderately well-drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: C : Fair estimated viability

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date: 13-01-18

Rank Comments:

The Ecological Integrity of this occurrence is calculated as Fair due to all factors ranked as fair.

Condition of Occurrence:

This occurrence is dominated by young (88%) and mature (12%) stands, which indicates that vertical stand structure may not be well developed throughout. May be less than 25% fragmentation due to transmission corridor and roads with a few rural properties, and also the Cowichan River separates some of the forest patches. Several pockets have been recently harvested (Google 2005). Condition is assessed as Fair due to extent of young forest and recent harvesting.

Size of Occurrence:

The size of this occurrence is considered average within this fragmented landscape (310.55 ha).

Landscape Context:

Although there is greater than 25% natural vegetation remaining in this area, the landscape is fragmented into many smaller parcels by roads, forest harvesting, and agriculture, and from urban, suburban, rural residential developments to the east. There is poor connectivity to other occurrences in this region, although connectivity to other natural vegetation is greater to the northwest, west and southwest.

Version

Version Date: 1/18/2013 12:00:00 AM

Version Author: de Groot, A. and C.M. Cadrin

Mapping Information

Estimated Representation Accuracy: Medium

Estimated Representation Accuracy Comments: The ecological community occupies 57.48% (310.55 ha) of the mapped occurrence.

Confident that full extent is represented by Occurrence: ?

Confidence extent Definition: Uncertain whether full extent of EO is known

Additional Inventory Needed: Y

Inventory Comments: This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Cadrin, C., H. Reid and A. de Groot. 2013. Element occurrence and element occurrence rank specifications for Pseudotsuga menziesii / Mahonia nervosa ecological community of British Columbia. Unpublished document. Version 4, January 18, 2013. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 13 pp.

Canadian Wildlife Service, Ministry of Environment, Lands and Parks Vancouver Island Region, and B.C. Conservation Data Centre. 1993-1996. Sensitive Ecosystems Inventory groundtruthing forms. Unpub. field forms.

Canadian Wildlife Service, Ministry of Environment, Lands and Parks Vancouver Island Region, and B.C. Conservation Data Centre. 1993-1996. Sensitive Ecosystems Inventory site photographs. Unpub. slides and prints.

Canadian Wildlife Service, Ministry of Environment, Lands and Parks Vancouver Island Region, and B.C. Conservation Data Centre. 1997. Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands. Clover Point Cartographics Ltd., Victoria.

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Sensitive Ecosystems Inventory [SEI] of East Vancouver Island and Gulf Islands: Sensitive Ecosystems Mapping, Disturbance Mapping and Re-evaluation of Major Riparian Corridors. 2004. Prepared by Axys Environ. Consulting Ltd. for Environ. Can., Can. Wildl. Serv., B.C. Minist. Sustainable Resour. Manage., and B.C. Minist. Water, Land and Air Prot., and the Habitat Conserv. Trust Fund. 66 mapsheets, 1:20 000 scale.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 52659, Douglas-fir / dull Oregon-grape. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80090

Scientific Name: *Thuja plicata / Symphoricarpos albus*

English Name: western redcedar / common snowberry

Identifiers

Occurrence ID: 10820

Shape ID: 80090

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: GNR

Locators

Survey Site: INWOOD CREEK, UPSTREAM OF COWICHAN VALLEY HIGHWAY

Directions:

Biogeoclimatic Unit: CDF mm;CWH xm 1

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2012

Occurrence Data:

This high bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM) and is confirmed by one ecosystem plot. It is comprised of mature red alder and black cottonwood forest with and understory of salmonberry. This ecological community occupies approximately 6.05 ha or 30.0% of the area shown.

General Description:

This occurrence is located on the floodplain of Inwood Creek upstream of the Cowichan Valley Highway. Much of the surrounding area has been fragmented by forest harvesting with rural residential development 1.5 km to the south. A major powerline splits the occurrence into two parts.

Environmental Summary:

The terrrain is an active fluvial plain with moderately-well drained soils.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

6.05 ha

Landscape Context:

Version

Version Date: 1/30/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 30.03% (6.05 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012b. Element occurrence and element occurrence rank specifications for coniferous floodplain forests of coastal British Columbia. Unpublished document. Version October, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80090, western redcedar / common snowberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80025

Scientific Name: *Thuja plicata / Symphoricarpos albus*

English Name: western redcedar / common snowberry

Identifiers

Occurrence ID: 10786

Shape ID: 80025

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: GNR

Locators

Survey Site: COWICHAN RIVER/KOKSILAH RIVER

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1992 **Last Observation Date:** 2012

Occurrence Data:

This high bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM). It is comprised of shrubby, pole-sapling, young and mature western redcedar forest. This ecological community occupies approximately 71.4 ha or 36.9% of the area shown.

General Description:

This occurrence is located on the floodplain of the Cowichan River and Koksilah River at their confluence. Much of the surrounding area has agricultural and rural residential development with urban development nearby in the town of Duncan.

Environmental Summary:

The terrrain is an active fluvial plain that is moderately-well to imperfectly drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

71.43 ha

Landscape Context:

Version

Version Date: 1/29/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 36.94% (71.43 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012b. Element occurrence and element occurrence rank specifications for coniferous floodplain forests of coastal British Columbia. Unpublished document. Version October, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80025, western redcedar / common snowberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 81827

Scientific Name: *Alnus rubra* / *Carex obnupta* [*Populus trichocarpa*]

English Name: red alder / slough sedge [black cottonwood]

Identifiers

Occurrence ID: 11088

Shape ID: 81827

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: G1

Locators

Survey Site: EAGLE HEIGHTS, NEAR COWICHAN RIVER, 0.6 KILOMETRES WEST OF

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2012-09-03

Occurrence Data:

This element occurrence is based on ecosystem mapping and 53.6% (2.46 ha) of the element occurrence is mapped as Alnus rubra / Carex obnupta [Populus balsamifera ssp. trichocarpa]. The element occurrence is mapped as a young mixed forest. It occurs in a forested area on an imperfectly drained glaciomarine blanket above the Cowichan River.

General Description:

This occurrence is located in a forested area above the Cowichan River 0.5 km southwest of Duncan. It occurs in an area that has significant current and historic logging and numerous roads.

Environmental Summary:

This occurrence is located on a glaciomarine blanket with imperfectly drained soils.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

2.46 ha

Landscape Context:

Version

Version Date: 2/22/2013 12:00:00 AM

Version Author: Durand, R.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 53.63% (2.46 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012c. Element occurrence and element occurrence rank specifications for small patch, wet (fluctuating water table) forests of coastal British Columbia. Unpublished document. Version September, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 4 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 81827, red alder / slough sedge [black cottonwood]. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80027

Scientific Name: *Thuja plicata / Symphoricarpos albus*

English Name: western redcedar / common snowberry

Identifiers

Occurrence ID: 10787

Shape ID: 80027

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: GNR

Locators

Survey Site: COWICHAN RIVER, IMMEDIATELY WEST OF DUNCAN

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 1992 **Last Observation Date:** 2012

Occurrence Data:

This high bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM). It is mostly comprised of young forest, with some area of mature forest. This ecological community occupies approximately 21.3 ha or 30.7% of the area shown.

General Description:

This occurrence is located on the floodplain of Cowichan River upstream of Duncan. Much of the surrounding area has rural residential development with some areas of forest and forest harvesting.

Environmental Summary:

The terrrain is mostly fluvial terraces, with some area of active fluvial plain. The soils are well to moderately-well drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

21.32 ha

Landscape Context:

Version

Version Date: 1/29/2013 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 30.71% (21.32 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012b. Element occurrence and element occurrence rank specifications for coniferous floodplain forests of coastal British Columbia. Unpublished document. Version October, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80027, western redcedar / common snowberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 81829

Scientific Name: *Alnus rubra* / *Carex obnupta* [*Populus trichocarpa*]

English Name: red alder / slough sedge [black cottonwood]

Identifiers

Occurrence ID: 11089

Shape ID: 81829

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: G1

Locators

Survey Site: ISLAND CREEK, NEAR COWICHAN RIVER, 1.0 KILOMETRES SOUTHWEST OF

Directions:

Biogeoclimatic Unit: CWH xm 1

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2012-09-03

Occurrence Data:

This element occurrence is based on ecosystem mapping and 66.4% (4.3 ha) of the element occurrence is mapped as Alnus rubra / Carex obnupta [Populus balsamifera ssp. trichocarpa]. The element occurrence is mapped as a young mixed forest. It occurs in a forested area on an imperfectly drained fluvial plain.

General Description:

This occurrence is located in a forested area on the southern back of the Cowichan River 7 km southwest of Duncan. It is located adjacent to extensive clearcuts and roaded areas, but within a linear band of relatively intact forest.

Environmental Summary:

This occurrence is located on a fluvial plain with imperfectly drained soils.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

4.3 ha

Landscape Context:

Version

Version Date: 2/22/2013 12:00:00 AM

Version Author: Durand, R.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 64.86% (4.3 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012c. Element occurrence and element occurrence rank specifications for small patch, wet (fluctuating water table) forests of coastal British Columbia. Unpublished document. Version September, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 4 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 81829, red alder / slough sedge [black cottonwood]. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 80037

Scientific Name: *Thuja plicata / Symphoricarpos albus*

English Name: western redcedar / common snowberry

Identifiers

Occurrence ID: 10790

Shape ID: 80037

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: GNR

Locators

Survey Site: COWICHAN RIVER, NEAR SAHTLAM

Directions:

Biogeoclimatic Unit: CDF mm;CWH xm 1

Ecosection: NAL

Occurrence Information

First Observation Date: 1998 **Last Observation Date:** 2012

Occurrence Data:

This high bench floodplain forest occurrence is based on Terrestrial Ecosystem Mapping (TEM). It is comprised of mature forest. This ecological community occupies approximately 3.92 ha or 9.0% of the area shown.

General Description:

This occurrence is located on the floodplain of the Cowichan River upstream of Duncan. Much of the surrounding area has rural residential development with some areas of forest and forest harvesting.

Environmental Summary:

The terrrain is an fluvial terraces and plains that is moderately-well to imperfectly drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

3.92 ha

Landscape Context:

Version

Version Date: 3/16/2016 12:00:00 AM

Version Author: de Groot, A.

Mapping Information

Estimated Representation Accuracy: Low

Estimated Representation Accuracy Comments: The ecological community occupies 9.0% (3.92 ha) of the mapped occurrence.

Confident that full extent is represented by Occurrence: ?

Confidence extent Definition: Uncertain whether full extent of EO is known

Additional Inventory Needed: Y

Inventory Comments: This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012b. Element occurrence and element occurrence rank specifications for coniferous floodplain forests of coastal British Columbia. Unpublished document. Version October, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 5 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 80037, western redcedar / common snowberry. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Ecosystem Occurrence Report
Shape ID: 81825

Scientific Name: *Alnus rubra* / *Carex obnupta* [*Populus trichocarpa*]

English Name: red alder / slough sedge [black cottonwood]

Identifiers

Occurrence ID: 11087

Shape ID: 81825

Element Group: Ecological Community

Status

Provincial Rank: S1

BC List: Red

Global Rank: G1

Locators

Survey Site: INWOOD CREEK / COWICHAN RIVER, 600 METRES SOUTH OF

Directions:

Biogeoclimatic Unit: CDF mm

Ecosection: NAL

Occurrence Information

First Observation Date: 2008 **Last Observation Date:** 2012-09-03

Occurrence Data:

This element occurrence is based on ecosystem mapping and 37.0% (4.30 ha) of the element occurrence is mapped as Alnus rubra / Carex obnupta [Populus balsamifera ssp. trichocarpa]. The element occurrence is mapped as a mix of shrubby swamp and a young broadleaf forest. It occurs in a forested area above the Cowichan River on a fluvial terrace.

General Description:

This element occurrence occurs in a large forested area above the Cowichan River, about 3.5 km west of Duncan. A right of way and road is located roughly 150m to the west. The remaining immediate landscape does not have recent disturbances.

Environmental Summary:

This occurrence is located on a fluvial terrace with a small component of organic veneer. It is imperfectly to moderately well drained.

Occurrence Rank and Occurrence Rank Factors

Rank*: E : Verified extant (viability not assessed)

Note: in the case of Ecological Communities, "viability" should read as "ecological integrity".

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

4.30 ha

Landscape Context:

Version

Version Date: 2/22/2013 12:00:00 AM

Version Author: Durand, R.

Mapping Information

Estimated Representation Accuracy:	Medium
Estimated Representation Accuracy Comments:	The ecological community occupies 36.97% (4.3 ha) of the mapped occurrence.
Confident that full extent is represented by Occurrence:	?
Confidence extent Definition:	Uncertain whether full extent of EO is known
Additional Inventory Needed:	Y
Inventory Comments:	This element occurrence is based on available ecosystem mapping. Many factors influence the reliability of an ecosystem map. Depending on the scale of aerial images used to capture the ecosystems, very small ecosystems and some types of disturbance may not be visible and will not be mapped. If the air photos are not current, new disturbance may have occurred since the time of mapping and the inventory may not accurately represent the current state of the landscape. Other factors, such as the skill and experience of the mapper within the study area, and the field survey intensity level will also influence the reliability of the map.

Documentation

References:

Madrone Environmental Services Ltd. 2008. Terrestrial Ecosystem Mapping of the Coastal Douglas-Fir Biogeoclimatic Zone. Unpublished report prepared for Integrated Land Management Bureau (ILMB), Duncan, B.C. 123pp.

Terrestrial Ecosystem Mapping [TEM] of the Coastal Douglas-fir Biogeoclimatic Zone. 2008. Prepared for B. Zinovich, Integrated Land Management Bureau, B.C. Minist. of Agric. and Lands, Nanaimo B.C. by Madrone Environmental Services, Duncan B.C. 1:20,000 spatial data.

de Groot, A., and C.M. Cadrin. 2012c. Element occurrence and element occurrence rank specifications for small patch, wet (fluctuating water table) forests of coastal British Columbia. Unpublished document. Version September, 2012. B.C. Minist. Environ., Conservation Data Centre, Victoria, B.C. 4 pp.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 81825, red alder / slough sedge [black cottonwood]. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 4502

Scientific Name: Euphyes vestris
English Name: Dun Skipper

Identifiers

Occurrence ID: 5190
Shape ID: 4502
Taxonomic Class: insects
Element Group: Invertebrate Animal

Status

Provincial Rank: S2
BC List: Red
Global Rank: G5
COSEWIC: T (APR 2013)
SARA Schedule: 1

Locators

Survey Site: COWICHAN STATION
Directions: At station along railway tracks.
Biogeoclimatic Zone:
Ecosection: NAL

Occurrence Information

First Observation Date: 1996-07-15
Last Observation Date: 1996-07-15

Occurrence Data:

1996: One seen.

Area Description

General Description:

Alongside railway.

Vegetation Zone:

Min. Elevation (m): 12
Max. Elevation (m):

Habitat: TERRESTRIAL: Grassland/Herbaceous; Suburban/Orchard

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 1996-07-15

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

Landscape Context:

Version

Version Date: 9/19/2007 12:00:00 AM

Version Author: Westereng, L.K.

Mapping Information

Estimated Representation Accuracy:

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence:

Confidence Extent Definition:

Additional Inventory Needed: N

Inventory Comments:

Documentation

References:

Marven, D. Personal communication.

Specimen: Marven, D. 1996. Obs.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 4502, Dun Skipper. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report

Shape ID: 8870

Scientific Name: Allium crenulatum

English Name: Olympic onion

Identifiers

Occurrence ID: 5092

Shape ID: 8870

Taxonomic Class: monocots

Element Group: Vascular Plant

Status

Provincial Rank: S3

BC List: Blue

Global Rank: G4

COSEWIC:

SARA Schedule:

Locators

Survey Site: WATERLOO MOUNTAIN, COWICHAN VALLEY

Directions:

Biogeoclimatic Zone:

Ecosection: LIM

Occurrence Information

First Observation Date: 1983-06-04 **Last Observation Date:** 1983-06-04

Occurrence Data:

Several hundred plants over 200 sq. m, abundant, on rock outcrops with Lewisia columbiana ssp rupicola, shallow soils (Royal British Columbia Museum herbarium).

Area Description

General Description:

Vegetation Zone: Montane

Min. Elevation (m): **Max. Elevation (m):**

Habitat: TERRESTRIAL: Rock Outcrop

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 1983-06-04

Rank Comments:

Condition of Occurrence:

[No data provided.]

Size of Occurrence:

Several hundred plants over 200 sq. m (Royal British Columbia Museum herbarium)..

Landscape Context:

[No data provided.]

Version

Version Date: 2/26/2009 12:00:00 AM

Version Author: Donovan, M.

Mapping Information

Estimated Representation Accuracy: Medium

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments: To determine precise location, full extent and viability of population.

Documentation

References:

Royal British Columbia Museum. 675 Belleville Street, Victoria, BC. V8V 1X4.

Specimen: Ceska, A. 1983. V.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 8870, Olympic onion. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 14573

Scientific Name: Rupertia physodes
English Name: California-tea

Identifiers

Occurrence ID: 1061
Shape ID: 14573
Taxonomic Class: dicots
Element Group: Vascular Plant

Status

Provincial Rank: S3
BC List: Blue
Global Rank: G4
COSEWIC:
SARA Schedule:

Locators

Survey Site: DUNCAN
Directions: 3610 Glenora Road.
Biogeoclimatic Zone:
Ecosection: NAL

Occurrence Information

First Observation Date: 1998-05-03 **Last Observation Date:** 1998-05-03

Occurrence Data:

1998-05-03: ca. 100 plants in a 70 metre x 2 metre strip along a path in second-growth Pseudotsuga menziesii with Symphoricarpos mollis and Rubus leucodermis; aspect west; slope 10%.

Area Description

General Description:

Vegetation Zone: Lowland
Min. Elevation (m): 24 **Max. Elevation (m):**
Habitat: TERRESTRIAL; FOREST NEEDLELEAF

Occurrence Rank and Occurrence Rank Factors

Rank: A : Excellent estimated viability

Rank Date: 1998-05-03

Rank Comments:

Large population on private property.

Condition of Occurrence:

Size of Occurrence:

Landscape Context:

Version

Version Date: 1/30/1999 12:00:00 AM

Version Author: DOUGLAS, G.W.

Mapping Information

Estimated Representation Accuracy:

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence:

Confidence Extent Definition:

Additional Inventory Needed: N

Inventory Comments:

Documentation

References:

Ceska, A. Personal communication. Geobotanical Consulting.

Specimen: COLLECTOR: CESKA, A.,(OBSERVATION), 1998.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 14573, California-tea. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report

Shape ID: 33080

Scientific Name: Rana aurora

English Name: Northern Red-legged Frog

Identifiers

Occurrence ID: 7163

Shape ID: 33080

Taxonomic Class: amphibians

Element Group: Vertebrate Animal

Status

Provincial Rank: S3S4

BC List: Blue

Global Rank: G4

COSEWIC: SC (MAY 2015)

SARA Schedule: 1

Locators

Survey Site: WATERLOO MOUNTAIN, WEST OF

Directions: 3.7km west of Waterloo Mountain, near San Juan River.

Biogeoclimatic Zone:

Ecosection: LIM

Occurrence Information

First Observation Date: 2002-07-05 **Last Observation Date:** 2002-07-05

Occurrence Data:

2002: Adult Red-legged Frogs present in wetland with current water depth of 60cm in a forested stand 120+ years old. Long-toed Salamander larvae also present (Wind 2003).

Area Description

General Description:

Several shallow wetlands less than a hectare in size in forested areas.

Vegetation Zone:

Min. Elevation (m): **Max. Elevation (m):**

Habitat: TERRESTRIAL: Forest Needleleaf, Swamp: RIVERINE: Riparian, Creek

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 2002-06-13

Rank Comments:

Adult frogs were present in area.

Condition of Occurrence:

Multiple shallow wetlands less than a hectare in size in forested area.

Size of Occurrence:

Landscape Context:

Forested area with variable retention harvesting taking place.

Version

Version Date: 1/5/2007 12:00:00 AM

Version Author: Westereng, L.

Mapping Information

Estimated Representation Accuracy: High

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Wind, E. 2003. Aquatic-breeding amphibian monitoring program: Analysis of small wetland habitats on Vancouver Island. Annual Progress Report 2002. Unpublished report prepared for Weyerhaeuser Company, Nanaimo, BC.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 33080, Northern Red-legged Frog. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report

Shape ID: 36697

Scientific Name: Hemphillia dromedarius

English Name: Dromedary Jumping-slug

Identifiers

Occurrence ID: 7374

Shape ID: 36697

Taxonomic Class: gastropods

Element Group: Invertebrate Animal

Status

Provincial Rank: S2

BC List: Red

Global Rank: G3G4

COSEWIC: T (MAY 2014)

SARA Schedule: 1

Locators

Survey Site: SHAWNIGAN LAKE; EAGLE HEIGHTS

Directions: Eagle Heights Hill is north of the junction of Wild Deer Creek and Koksilah River, just northwest of Shawnigan Lake.

Biogeoclimatic Zone:

Ecosection: LIM

Occurrence Information

First Observation Date: 1999-10

Last Observation Date: 1999-10

Occurrence Data:

1 Dromedary jumping slug collected in a remnant high elevation coniferous forest (Ovaska and Sopuck 2007).

Area Description

General Description:

Remnant high elevation coniferous forest (Ovaska and Sopuck 2007).

Vegetation Zone:

Min. Elevation (m): 700

Max. Elevation (m):

Habitat: TERRESTRIAL: Forest Needleleaf

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 1999-10

Rank Comments:

Condition of Occurrence:

Remnant high elevation coniferous forest (Ovaska and Sopuck 2007).

Size of Occurrence:

Landscape Context:

Version

Version Date: 7/20/2007 12:00:00 AM

Version Author: Westereng, L.K.

Mapping Information

Estimated Representation Accuracy: Low

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Ovaska, K. and L. Sopuck. 2007b. Surveys for terrestrial gastropods at risk in Pacific Rim National Park Reserve, 2006.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 36697, Dromedary Jumping-slug. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 40607

Scientific Name: Hemphillia glandulosa
English Name: Warty Jumping-slug

Identifiers

Occurrence ID: 7618
Shape ID: 40607
Taxonomic Class: gastropods
Element Group: Invertebrate Animal

Status

Provincial Rank: S2?
BC List: Red
Global Rank: G3G4
COSEWIC: SC (APR 2013)
SARA Schedule: 1

Locators

Survey Site: KEATING LAKE
Directions: Keating Lake, Shawnigan District, Vancouver Island (Ovaska and Sopuck 2000).
Biogeoclimatic Zone:
Ecosection: NAL

Occurrence Information

First Observation Date: 1999-11-08 **Last Observation Date:** 1999-11-26

Occurrence Data:

1999: 2 slugs observed (1 within humus; 1 under artificial cover object) (Ovaska and Sopuck 2000).

Area Description

General Description:

Recently logged area and older second-growth mixed-wood forest. Bigleaf maple present and and understory of swordfern (Ovaska and Sopuck 2000).

Vegetation Zone:

Min. Elevation (m): 150 **Max. Elevation (m):** 180

Habitat: TERRESTRIAL: Forest Mixed

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 1999-11-26

Rank Comments:

Condition of Occurrence:

Recently logged (Ovaska and Sopuck 2000).

Size of Occurrence:

Landscape Context:

Version

Version Date: 5/22/2008 12:00:00 AM

Version Author: Gelling, L.

Mapping Information

Estimated Representation Accuracy: Medium

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Ovaska, K. and L. Sopuck. 2000. Evaluation of the potential of terrestrial (slugs and snails) for monitoring ecological effects of logging practices on forest-floor conditions on Vancouver Island, British Columbia. A pilot study, October - November 1999. Report prepared by Biolinx Environmental Research for Weyerhaeuser Company Ltd. Nanaimo BC.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 40607, Warty Jumping-slug. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report

Shape ID: 7750

Scientific Name: Callophrys mossii mossii

English Name: Moss' Elfin, mossii subspecies

Identifiers

Occurrence ID: 2041

Shape ID: 7750

Taxonomic Class: insects

Element Group: Invertebrate Animal

Status

Provincial Rank: S2S3

BC List: Blue

Global Rank: G4T4

COSEWIC:

SARA Schedule:

Locators

Survey Site: FAIRBRIDGE

Directions: Railway by Bright Angel Provincial Park.

Biogeoclimatic Zone:

Ecosection: NAL

Occurrence Information

First Observation Date: 1994-04-17

Last Observation Date: 1994-04-17

Occurrence Data:

1994: 1 observed (S. Ansell, pers. comm.).

Area Description

General Description:

Vegetation Zone:

Min. Elevation (m): 6

Max. Elevation (m):

Habitat: TERRESTRIAL

Occurrence Rank and Occurrence Rank Factors

Rank:

Rank Date:

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

Landscape Context:

Version

Version Date: 2/1/1996 12:00:00 AM

Version Author: RAMSAY, L.

Mapping Information

Estimated Representation Accuracy:

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence:

Confidence Extent Definition:

Additional Inventory Needed: N

Inventory Comments:

Documentation

References:

Ansell, S. Personal communication.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 7750, Moss' Elfin, mossii subspecies. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 25633

Scientific Name: Euphyes vestris
English Name: Dun Skipper

Identifiers

Occurrence ID: 6636
Shape ID: 25633
Taxonomic Class: insects
Element Group: Invertebrate Animal

Status

Provincial Rank: S2
BC List: Red
Global Rank: G5
COSEWIC: T (APR 2013)
SARA Schedule: 1

Locators

Survey Site: BIG SICKER MOUNTAIN; LITTLE SICKER MOUNTAIN; MOUNT PREVOST; SOMENOS
Directions: Big Sicker Mountain, Little Sicker Mountain and Mount Prevost are approx. 7-9 km northwest of Duncan; access is via Mount Prevost Road (approx. 2km west of Highway 99). The Somenos location is on the east side of Highway 99, approx. 2.5 km north of Duncan.
Biogeoclimatic Zone:
Ecosection: NAL

Occurrence Information

First Observation Date: 1932-07-07 **Last Observation Date:** 2003-07-18

Occurrence Data:

2003: One Euphyes vestris was observed at Big Sicker Mountain (Miskelly 2003); a total of 13 E. vestris were collected between 1932 and 1978 (Shepard 2000). These were collected from Mount Prevost, Little Sicker Mountain, Somenos, and Sahtlam, all within about a 6 km radius of each other.

Area Description

General Description:

The EO is within the Very Dry Maritime Coastal Western Hemlock biogeoclimatic zone.

Vegetation Zone:

Min. Elevation (m): **Max. Elevation (m):** 740

Habitat: TERRESTRIAL: Roadside, Forest Needleleaf; PALUSTRINE

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 2003-07-18

Rank Comments:

Condition of Occurrence:

Size of Occurrence:

The EO is comprised of 5 observation/collection sites between 1932 and 2003.

Landscape Context:

Version

Version Date: 2/21/2013 12:00:00 AM

Version Author: Davis, H.

Mapping Information

Estimated Representation Accuracy: Low

Estimated Representation Accuracy Comments: The Somenos RA is low.

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Miskelly, J. 2003. Electronic database containing J. Miskelly's 2003 data for Euphyes vestris, Speyeria zerene bremmneri and Cercyonis pegala incana.

Shepard, J.H. 2000. Status of Five Butterflies and Skippers in British Columbia. B.C. Minist. Environ., Lands and Parks, Wildl. Branch. Working Rep. WR-101. 27pp.

Specimen: Guppy, R. 1954. AMNH; Guppy, R. 1963. AMNH; Guppy, R. 1976. N. Kondla collection; Guppy, R. 1977. N. Kondla collection; Guppy, R. 1978. N. Kondla collection; Hardy, G.A. 1956. PMV; Jones, J.R.L. 1932. UBC.

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 25633, Dun Skipper. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 97896

Scientific Name: Coenonympha tullia insulana
English Name: Common Ringlet, insulana subspecies

Identifiers

Occurrence ID: 12332
Shape ID: 97896
Taxonomic Class: insects
Element Group: Invertebrate Animal

Status

Provincial Rank: S1
BC List: Red
Global Rank: G5T3T4
COSEWIC:
SARA Schedule:

Locators

Survey Site: HILLCREST, TWO KILOMETRES WEST OF
Directions: Two kilometres west of Hillcrest, along Highway 18, at a power line crossing (Lilley et al. 2009).
Biogeoclimatic Zone:
Ecosection: NAL

Occurrence Information

First Observation Date: 2009-05-29 **Last Observation Date:** 2010-06-14

Occurrence Data:

Common Ringlets, Insulana subspecies, were seen along Highway 18 at a power line crossing in 2009 and again in 2010 (Lilley et al. 2009; 2010b).

Area Description

General Description:

Wet meadow in utility right-of-way (Lilley et al. 2010b).

Vegetation Zone:

Min. Elevation (m): **Max. Elevation (m):**

Habitat: TERRESTRIAL: Roadside, Grassland/Herbaceous

Occurrence Rank and Occurrence Rank Factors

Rank: B : Good estimated viability

Rank Date: 2010-06-14

Rank Comments:

Condition of Occurrence:

This occurrence is along Highway 18 in a utility right-of-way (Lilley et al. 2009).

Size of Occurrence:

20 ringlets seen on a single date in 2010 (Lilley et al. 2010b). 14 were seen over two days in 2009 (Lilley et al. 2009).

Landscape Context:

This occurrences is bordered by Highway 18 to the south. The area includes a cleared power line right-of-way and other clearcut areas, further surrounded by forested habitat.

Version

Version Date: 12/1/2014 12:00:00 AM

Version Author: Marks, D.J.

Mapping Information

Estimated Representation Accuracy: High

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: ?

Confidence Extent Definition: Uncertain whether full extent of EO is known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Lilley, P., N. Page and J. Heron. 2009. Surveys for Taylor's Checkerspot and other butterfly species at risk on southern Vancouver Island (2009). Report prepared for B.C. Ministry of Environment by Raincoast Applied Ecology. 16 pp. + appendices.

Lilley, P., N. Page and J. Heron. 2010b. Surveys for Butterfly Species at Risk on Private and Municipal Lands on Southeastern Vancouver Island and the Gulf Islands, British Columbia (2010). B.C. Ministry of Environment, Terrestrial Conservation Science Section, Vancouver, B.C.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 97896, Common Ringlet, insulana subspecies. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

BC Conservation Data Centre: Species Occurrence Report
Shape ID: 33075

Scientific Name: Rana aurora
English Name: Northern Red-legged Frog

Identifiers

Occurrence ID: 7161
Shape ID: 33075
Taxonomic Class: amphibians
Element Group: Vertebrate Animal

Status

Provincial Rank: S3S4
BC List: Blue
Global Rank: G4
COSEWIC: SC (MAY 2015)
SARA Schedule: 1

Locators

Survey Site: KOKSILAH RIVER
Directions: East of Koksilah River, north and south of Takjiss Lake.
Biogeoclimatic Zone:
Ecosection: LIM

Occurrence Information

First Observation Date: 2002-06-06 **Last Observation Date:** 2002-06-13

Occurrence Data:

2002: 8 shallow wetlands with standing water surveyed all containing adult Red-legged Frogs. One location also had Roughskin Newt adults present (Wind 2003).

Area Description

General Description:

Several shallow wetlands less than a hectare in size in forested areas. Some areas have been harvested with variable buffers left around the wetlands.

Vegetation Zone:

Min. Elevation (m): **Max. Elevation (m):**

Habitat: TERRESTRIAL: Forest Needleleaf, Swamp: RIVERINE: Riparian, Creek

Occurrence Rank and Occurrence Rank Factors

Rank: E : Verified extant (viability not assessed)

Rank Date: 2002-06-13

Rank Comments:

Adult frogs were present in area.

Condition of Occurrence:

Several shallow wetlands less than a hectare in size in forested areas. Some areas have been harvested with variable buffers left around the wetlands.

Size of Occurrence:

Landscape Context:

Forested area with variable retention harvesting taking place.

Version

Version Date: 1/5/2007 12:00:00 AM

Version Author: Westereng, L.

Mapping Information

Estimated Representation Accuracy: High

Estimated Representation Accuracy Comments:

Confident that full extent is represented by Occurrence: N

Confidence Extent Definition: Confident full extent of EO is NOT known

Additional Inventory Needed: Y

Inventory Comments:

Documentation

References:

Wind, E. 2003. Aquatic-breeding amphibian monitoring program: Analysis of small wetland habitats on Vancouver Island. Annual Progress Report 2002. Unpublished report prepared for Weyerhaeuser Company, Nanaimo, BC.

Specimen:

Please visit the website http://www.env.gov.bc.ca/cdc/gis/eo_data_fields_06.htm for definitions of the data fields used in this occurrence report.

Suggested Citation:

B.C. Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 33075, Northern Red-legged Frog. B.C. Ministry of Environment. Available: http://delivery.maps.gov.bc.ca/ess/sv/cdc, (accessed Nov 22, 2016).

CDC Occurrence Map

Legend

Species and Ecosystems at Risk
Available Occurrences Data

- Animal - Vertebrate
- Animal - Invertebrate
- Plant - Vascular
- Plant - Non-vascular
- Ecological Community

Refer to Appendix X for BC Conservation Data Centre Reports.

Source: B.C. Conservation Data Centre: CDC iMap. Victoria, British Columbia, Canada. Available: http://maps.gov.bc.ca/ess/sv/cdc/ (November 10, 2016).

LEES+Associates
Landscape Architects and Planners

BC CONSERVATION DATA CENTRE: SPECIES AND ECOSYSTEMS AT RISK OCCURANCES

CVRD

Sensitive Ecosystems

CB Coastal Bluff Ecosystems

CB: Coastal Bluff Ecosystems consist of low-lying, wind-swept rocky shorelines, rocky islets and steep coastal cliffs that are influenced by proximity to the ocean. Shallow soils are often present as soil pockets in rock cracks or crevices, or are absent altogether. Vegetation consists of salt-tolerant communities of mosses and lichens, grasses and herbs and sometimes low shrubs. Specialized habitats within these sites, including vernal pools, crevices, and seepage areas, support numerous rare plant and animal species.

Subclasses

CB:ct coastal cliffs

SV Sparsely Vegetated Ecosystems

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HT Terrestrial Herbaceous Ecosystems

HT: These are non-forested ecosystems with less than 10% tree cover, generally with shallow soils and often with bedrock outcroppings. They typically occur as openings in forested areas and are vegetated with grasses and herbs and sometimes low shrubs; moss and lichen communities occur on rock outcrops. These grassy hilltops and wildflower meadows provide spectacular spring time scenes; they also provide specialized habitats, such as vernal pools and seepage zones for several rare and endangered species.

Subclasses

HT:ro: bedrock outcrops; **HT:sh:** >20% shrub cover

OF Older Forest Ecosystems

OF: Older Forest ecosystems are usually conifer-dominated, occasionally deciduous, dry to moist forest types. They are generally more than 100 years, have a multi-species canopy, large woody debris - both standing and fallen - and have trees of every age. The diverse habitats found in older forests support a rich community of plant and animal species. High levels of biodiversity result from the extraordinary abundance and variety of fungi, canopy insects, soil invertebrates and lichens (many still unknown to science), all critically important parts of the forest ecosystem.

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Other Important Ecosystems

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FS: Many of these agricultural lands that flood during the winter months were once wetlands. They continue to provide critically important winter habitat for waterfowl as well as for shorebirds and birds of prey during specific times of the year, particularly as the number of natural wetlands has diminished.

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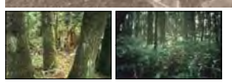

SG: These forested ecosystems have a dominant age class of 60 - 100 years. While not as biologically rich as Older Forests, they can serve as important buffers around sensitive ecosystems and vital links between habitat patches. They often provide critical habitat for species that require both open and forested areas during their life-cycle. The biological diversity of forests generally increases with age. Where older forests are rare or absent, older second growth forests become more important as they gradually develop old forest characteristics.

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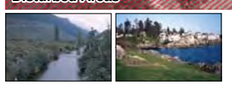
Disturbed SEI Ecosystems

Disturbed Areas



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SENSITIVE ECOSYSTEMS INVENTORY (SEI): EAST VANCOUVER ISLAND AND THE GULF ISLANDS

CVRD

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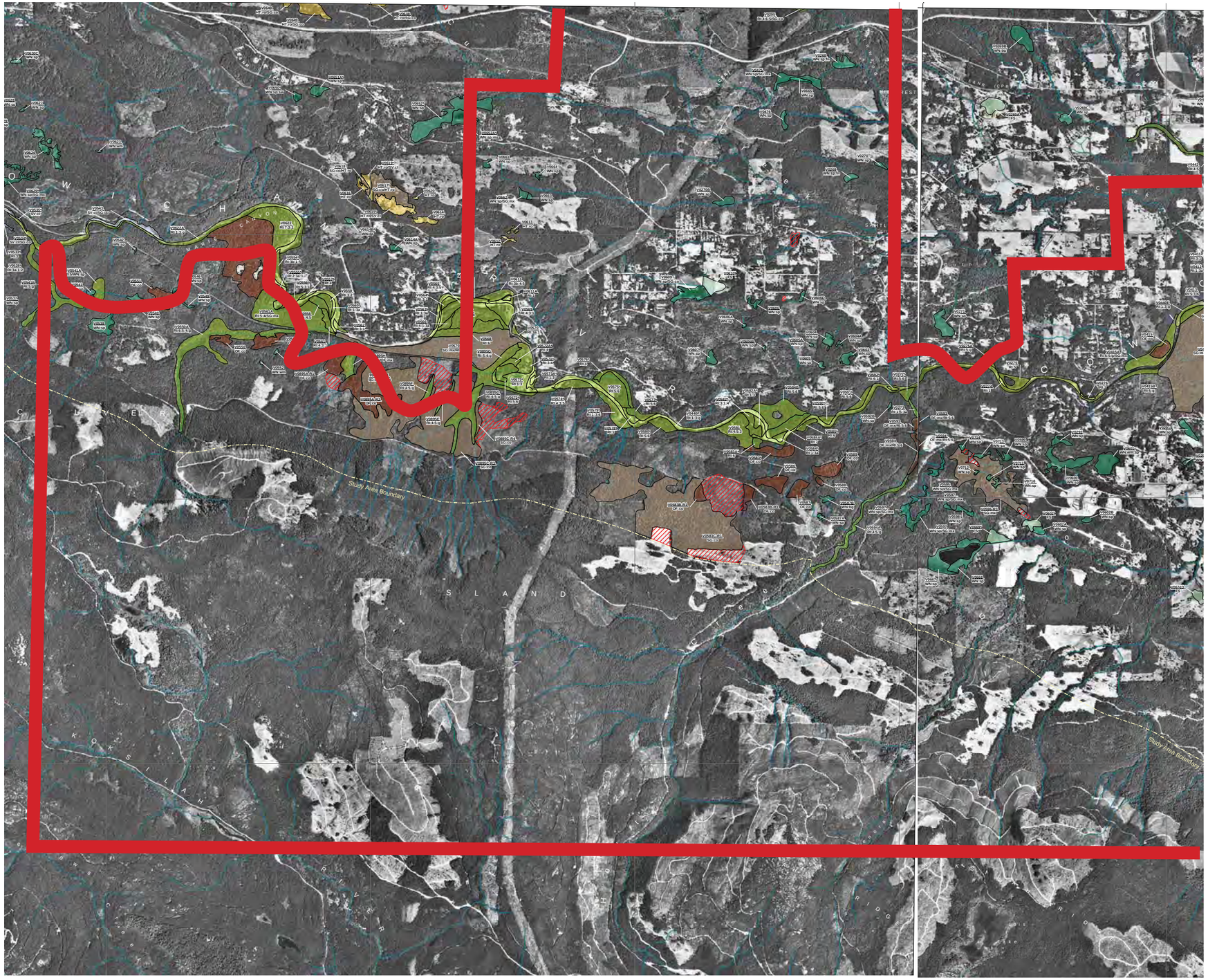

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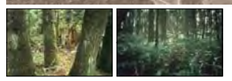

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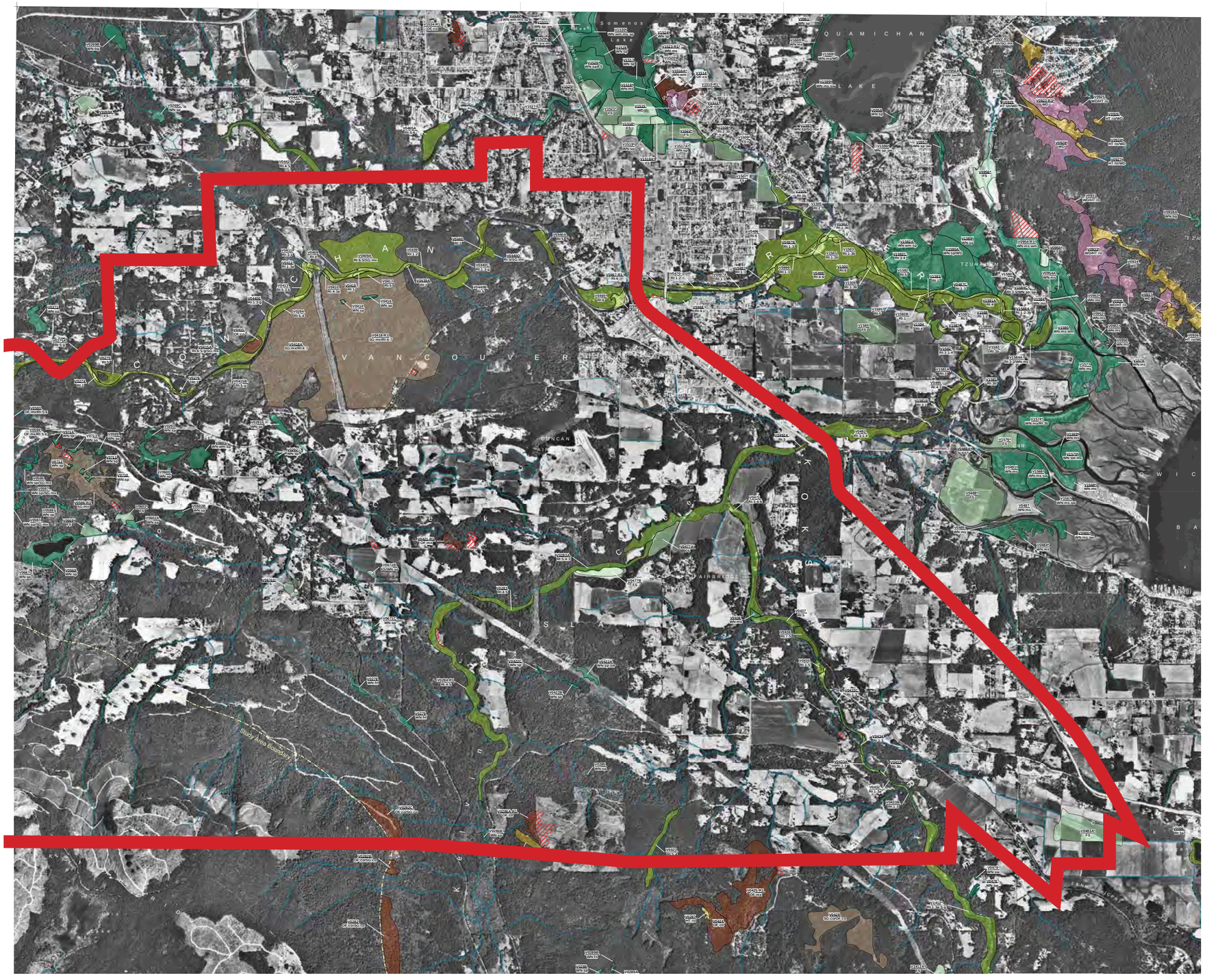

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APPENDIX F

PARK ACQUISITION GUIDELINES

1. *Topography and natural features suited to the intended uses*
    - Where feasible, a desirable park gradient will be in the range of 0-5% for the majority of the site. Lands up to a 10% slope may be considered only if they can be graded to 5% to accommodate park uses. Consideration must be made on a park by park basis of natural geographic features (such as small hills, knolls) which may act as features of a park, but the majority of a park should be capable of accommodating a range of recreational activities.
    - Parkland should be considered where it protects ecosystems not otherwise represented in the system.
    - Parkland should be considered where significant natural features are located.

2. *Be convenient to the population it serves*
    - Parks should be provided such that the communities of Sahtlam, Glenora, Eagle Heights, and Cowichan Station each have at least one main community park that can provide amenities for a wide range of ages and interests. Neighbourhood parks should be provided within a 10 minute walk of residents, with the exception of areas within the ALR.

3. *Be compatible with adjoining land uses*
    - Situate parks adjacent to larger natural features or linear green connectors. Examples of this are locating neighbourhood parks adjacent to trails.
    - Create parks, where possible, adjacent to school sites or community halls.

4. *Be safe and accessible*
    - Parks should be located close to public streets, transit, bicycle paths and pedestrian routes.
    - Parks should have as much frontage on streets as possible.
    - Universal accessibility should be provided to and in parks where reasonably feasible and where doing so will not damage cultural or environmental integrity.

5. *Provide varied programming*
    - Sites should be as flexible as possible in their programming, incorporating opportunities for a variety of activities such as active structured play, un-programmed lawn areas, pathways, trails, lookouts and quiet areas.
    - Sites should incorporate desired park facilities for the specific neighbourhood requirements and demographics. Since this will change over time, it is critical that the space be of a size, shape and contour that park elements can change over time.
    - In general, a park smaller than 0.3ha should not be accepted, and preferably not smaller than 0.5ha. Cash-in-Lieu contributions should be accumulated to enable acquisition of community parks of 10 ha for each community (Sahtlam, Glenora, Eagle Heights, and Cowichan Station).

6. *Be sensitive to the environment*
    - Parks should conserve, enhance and restore the natural physical character of the site.

7. *Limited non-park infrastructure*
    - Detention ponds typically preclude public use. These are not recommended as park space.
    - Large constructed wetlands and other stormwater management features with multiple habitat and recreation benefits should be considered and should be designed through integration of both parks and engineering criteria.

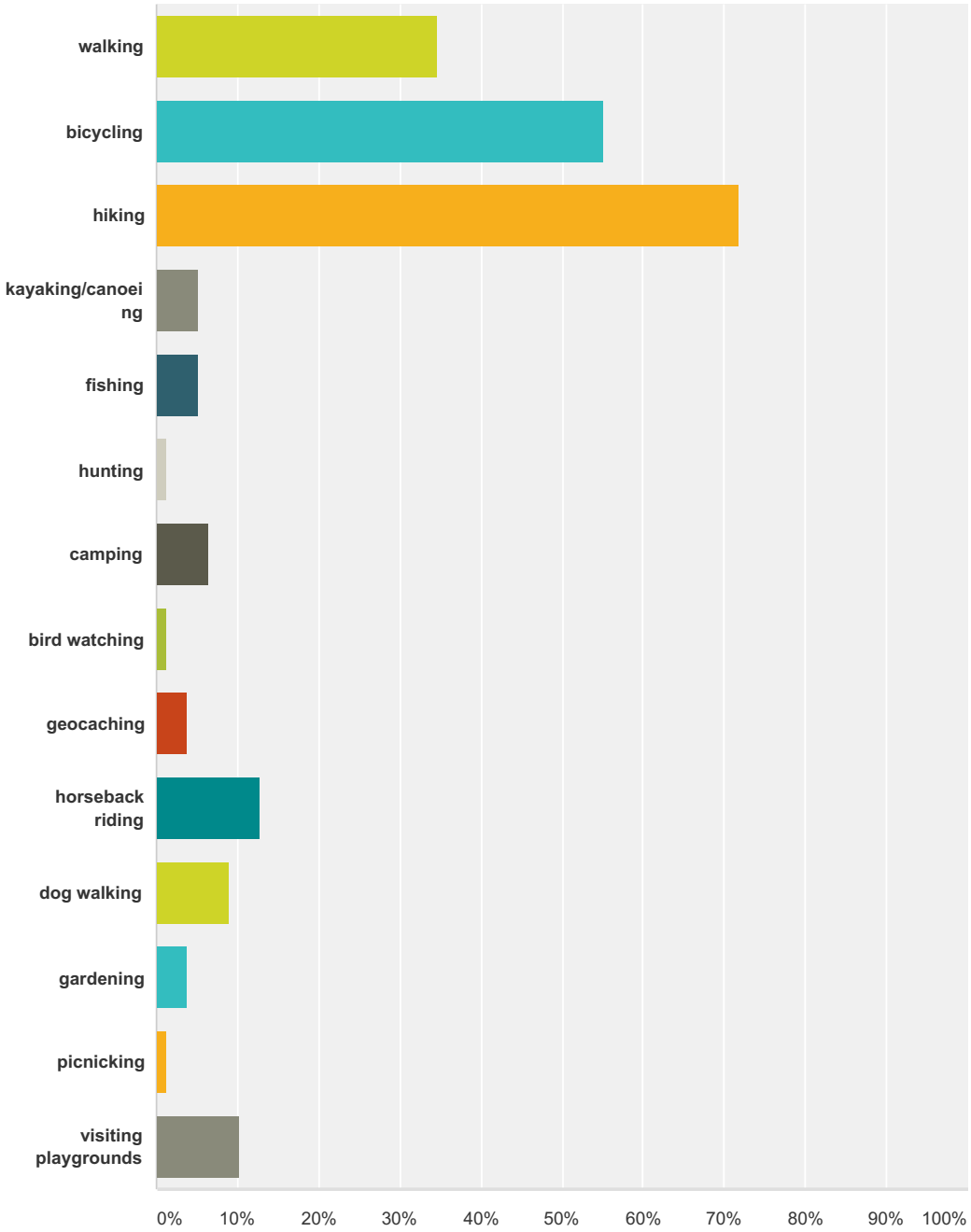
8. *Consider opportunities for optimal parkland as they arise*
    - Where school sites are closed, existing playfields and amenities such as playgrounds should be considered for acquisition as parkland.
    - Initiate parkland identification and boundary determination at, or prior to, road layouts and preceding any lot layouts in new development areas.

9. *Create connections*
    - Parkland is preferred where it contributes directly to the community-wide system of roadside and off-road trails, but also where indirect benefits can be provided such as access points and trailheads with amenities.

APPENDIX G

Q1 Please select the top 3 outdoor activities that you enjoy at Electoral Area E Community Parks.

Answered: 78 Skipped: 0



Answer Choices	Responses	
walking	**34.62%**	27
bicycling	**55.13%**	43
hiking	**71.79%**	56

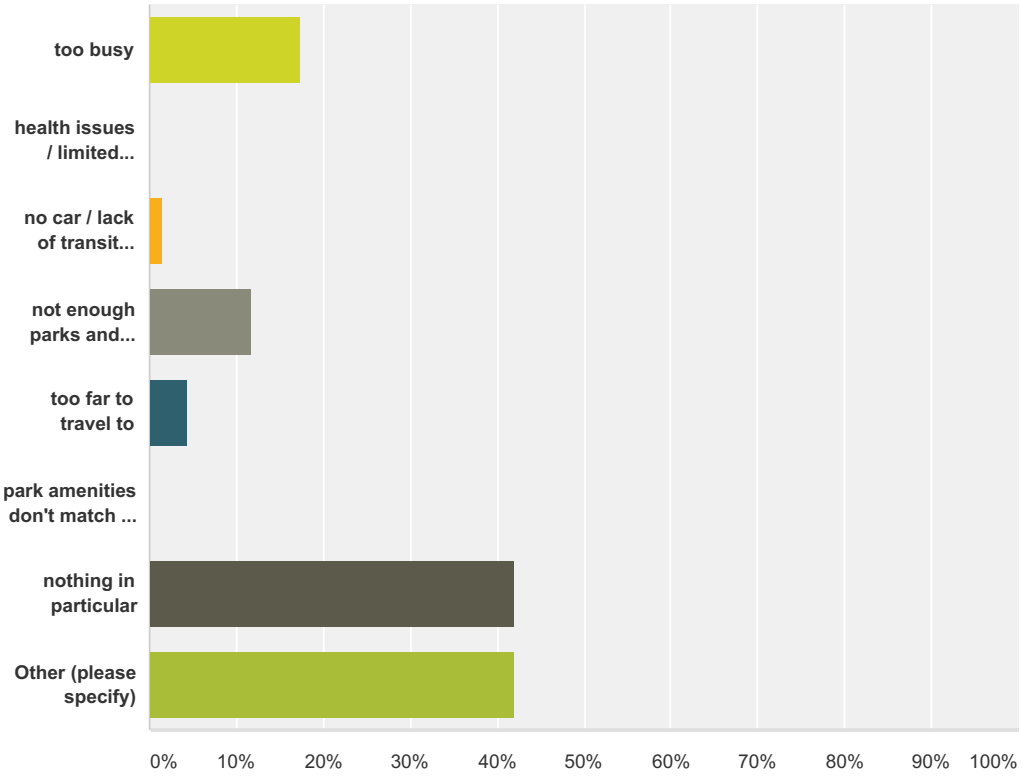
kayaking/canoeing	**5.13%**	4
fishing	**5.13%**	4
hunting	**1.28%**	1
camping	**6.41%**	5
bird watching	**1.28%**	1
geocaching	**3.85%**	3
horseback riding	**12.82%**	10
dog walking	**8.97%**	7
gardening	**3.85%**	3
picnicking	**1.28%**	1
visiting playgrounds	**10.26%**	8
Total Respondents: 78		

#	Other (please specify)	Date
1	River	11/11/2016 3:14 PM
2	swimming	11/11/2016 3:11 PM
3	swimming, playing	11/11/2016 3:08 PM
4	dirt biking, parks for children	11/11/2016 2:46 PM
5	swimming	11/11/2016 2:36 PM
6	dirt biking, swimming	11/11/2016 2:21 PM
7	swimming	11/11/2016 2:19 PM
8	swimming	11/11/2016 2:18 PM
9	swim	11/11/2016 2:13 PM
10	swimming	11/11/2016 2:08 PM
11	swimming	11/11/2016 2:05 PM
12	visting farmgate/ bakery/ cafes, kid friendly beach/ park visits	11/11/2016 2:01 PM
13	running, swimming	11/11/2016 1:51 PM
14	riding, exploring	11/11/2016 1:50 PM
15	swimming, horse/ carriage driving	11/11/2016 1:47 PM
16	Carriage driving	11/11/2016 1:44 PM
17	Equestrian- carriage driving and riding	11/4/2016 11:59 AM
18	Exploring, Outdoor photography	11/4/2016 11:57 AM
19	swimming	11/4/2016 11:54 AM
20	running	11/4/2016 11:48 AM
21	swimming	11/4/2016 11:43 AM
22	Enjoying nature, Enjoying hiking with grandchildren, Sam enjoys hiking and camping	11/4/2016 11:40 AM
23	swimming	11/4/2016 11:36 AM
24	swimming (river), running trails	11/4/2016 11:31 AM
25	swimming (river), kayaking (west coast/ cow bay), hiking (local trails)	11/4/2016 11:27 AM

26	gardening	10/27/2016 5:03 PM
27	golf	10/27/2016 5:01 PM
28	Trail riding, Driving (equestrian)	10/27/2016 4:59 PM
29	Carriage driving, gardening	10/27/2016 4:51 PM
30	gardening	10/27/2016 4:46 PM
31	Nature activities	10/27/2016 4:38 PM
32	swimming	10/27/2016 4:34 PM
33	swimming	10/27/2016 4:30 PM
34	gardening	10/27/2016 4:28 PM
35	gardening	10/27/2016 4:25 PM
36	swimming	10/27/2016 4:06 PM
37	Wildflower exploring	10/27/2016 4:03 PM
38	swimming	10/2/2016 8:01 PM
39	swimming	10/2/2016 4:38 PM
40	swimming at the river	10/1/2016 11:14 AM
41	being in nature, swimming, learning about plants and animals (interpretative signage)	9/27/2016 3:24 PM
42	carriage driving (horse)	9/22/2016 1:01 PM
43	carriage driving	9/22/2016 11:41 AM

Q2 What, if anything, prevents you from using the parks and trails in Electoral Area E more often?

Answered: 69 Skipped: 9



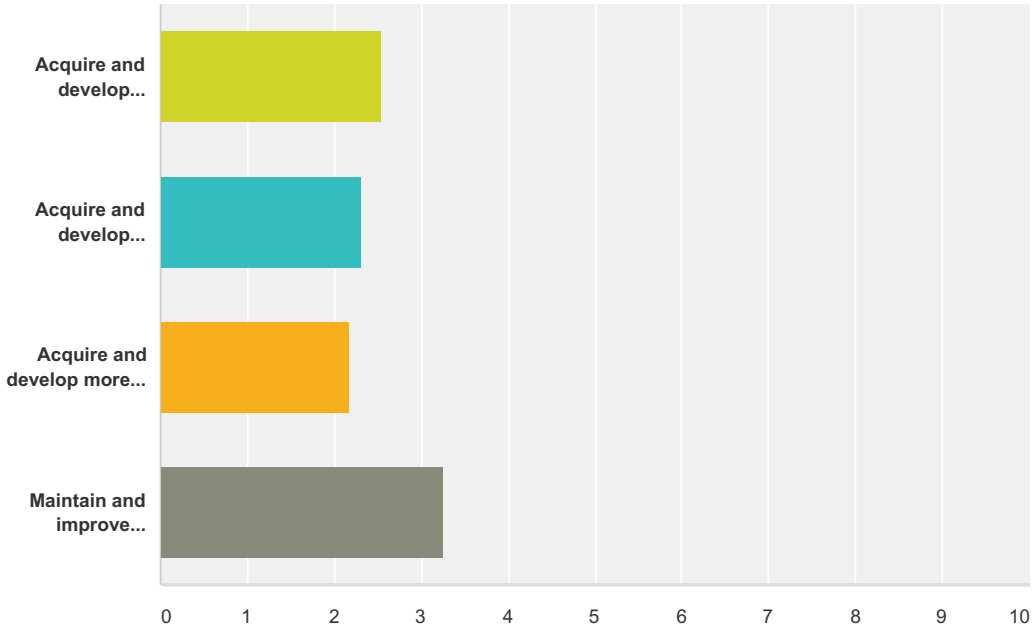
Answer Choices	Responses	
too busy	**17.39%**	12
health issues / limited mobility	**0.00%**	0
no car / lack of transit services	**1.45%**	1
not enough parks and trails	**11.59%**	8
too far to travel to	**4.35%**	3
park amenities don't match my interests	**0.00%**	0
nothing in particular	**42.03%**	29
Other (please specify)	**42.03%**	29
Total Respondents: 69		

#	Other (please specify)	Date
1	more	11/11/2016 3:14 PM
2	Pedestrian/ bike friendly connections from Eagle Heights. Have to drive to parks and trails.	11/11/2016 3:11 PM
3	I use them	11/11/2016 3:04 PM

4	I would like to see horse riders subject to stop and scoop rule like dog owners. We often are subjected to manure laden dust on Rowe Rd to trailhead park, P. Mendenhall.	11/11/2016 2:44 PM
5	We use them regularly to bike and hike/ swim in river; love the natural environment, the quiet, camaraderie with friends and family. Cowichan Fish and Game Club does impact 'quiet enjoyment' of park use and property adjacent to park.	11/11/2016 2:36 PM
6	We have to drive to start a walk, ride or swim. Would love to be able to access trails/ park without 10 min car ride as roads unsafe for family	11/11/2016 2:13 PM
7	connecting trails missing	11/11/2016 2:10 PM
8	no stairs from John's Road to River, can't access	11/11/2016 2:08 PM
9	use it all the time	11/11/2016 2:05 PM
10	My home is at Koksilah and Allenby, so there is only one small park within walking distance, and no trails without contending with road traffic on route.	11/11/2016 2:01 PM
11	People park cars in horse trailer spots, not allowing enough room to park rigs. Barriers horse and carriage can't fit through.	11/11/2016 1:50 PM
12	I've been using the trail regularly, weekly or twice weekly since 2004. I've been riding my horse and driving my horse and carriage until the gates were blocked this summer by new rocks. We need a straight line to pass through the 63" gaps.	11/11/2016 1:44 PM
13	No access for carriages. Gates on the TCT blocked with rocks in several places.	11/4/2016 11:59 AM
14	We use them	11/4/2016 11:54 AM
15	Footbridge between Sunrise and Glenora Park	11/4/2016 11:48 AM
16	I use them often. Forestry company is very restrictive now, blocking off historically rich trail system.	11/4/2016 11:43 AM
17	I come here as much as I can be!	11/4/2016 11:31 AM
18	nothing prevents me- I use them a lot	10/27/2016 5:03 PM
19	Use trails everyday for horseback riding	10/27/2016 4:56 PM
20	Access	10/27/2016 4:51 PM
21	use a lot	10/27/2016 4:34 PM
22	Would love more safe (off hwy) bike/ walk trails around Duncan	10/27/2016 4:30 PM
23	Nothing. I love this park and so do my children and grandchildren.	10/27/2016 4:28 PM
24	I live in Eagle heights. I would love good bike access to Glenora Trailhead park.	10/27/2016 3:53 PM
25	Would use the playground at Bright Angel more if it had more shade	10/4/2016 11:38 AM
26	No bathroom	10/2/2016 9:19 PM
27	nothing prevents me	10/2/2016 5:46 PM
28	safety - loose dogs(not on leash),	9/22/2016 1:01 PM
29	access to the Trans Canada Trail has been blocked for carriages	9/22/2016 11:41 AM

Q3 What should be the priority for the future of community parks and trails in Sahtlam, Glenora, and Cowichan Station? Please rank the following options from 1 to 4, with 1 being the highest priority.

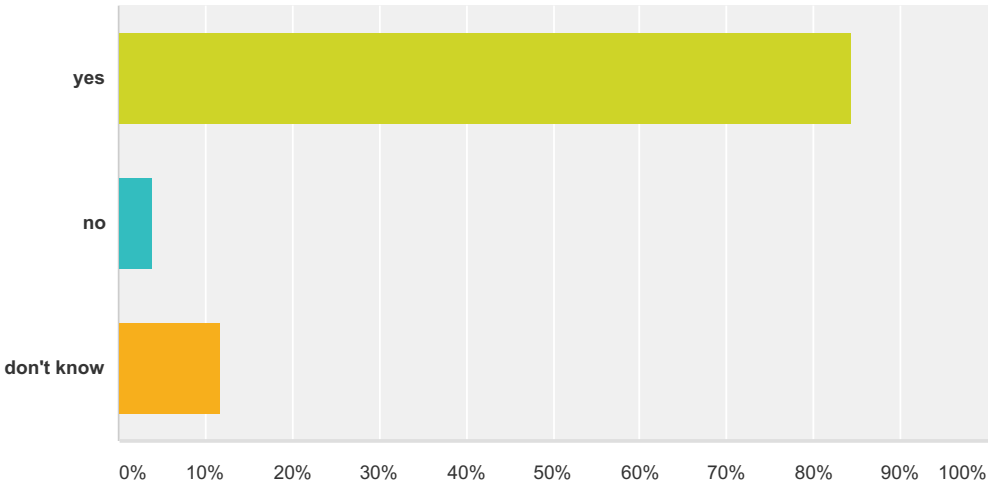
Answered: 76 Skipped: 2



	1	2	3	4	Total	Score
Acquire and develop roadside trails	**14.93%** 10	**46.27%** 31	**16.42%** 11	**22.39%** 15	67	2.54
Acquire and develop off-road trails	**15.38%** 10	**30.77%** 20	**24.62%** 16	**29.23%** 19	65	2.32
Acquire and develop more parks	**16.18%** 11	**16.18%** 11	**36.76%** 25	**30.88%** 21	68	2.18
Maintain and improve existing parks	**62.86%** 44	**10.00%** 7	**17.14%** 12	**10.00%** 7	70	3.26

Q4 Should more trails be developed in Electoral Area E?

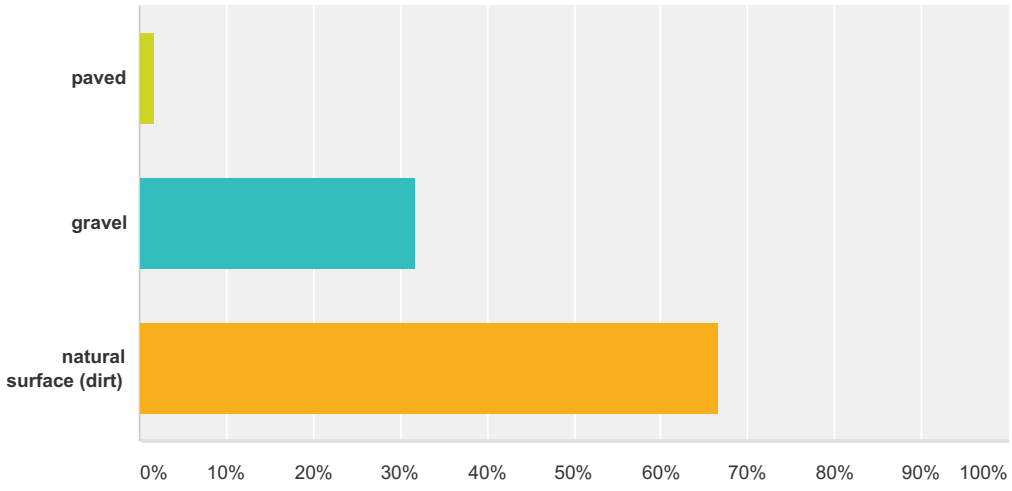
Answered: 77 Skipped: 1



Answer Choices	Responses	
yes	**84.42%**	65
no	**3.90%**	3
don't know	**11.69%**	9
Total		**77**

Q5 Which of these types of trails should be the priority?

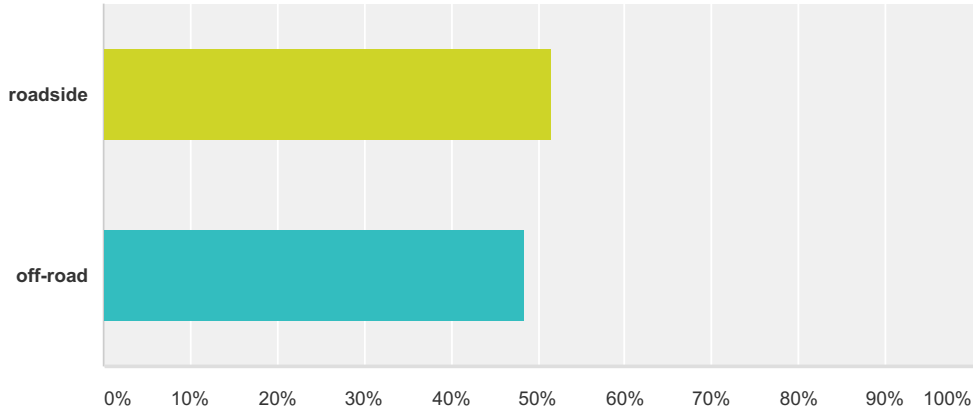
Answered: 63 Skipped: 15



Answer Choices	Responses	
paved	**1.59%**	1
gravel	**31.75%**	20
natural surface (dirt)	**66.67%**	42
Total		**63**

Q6 Which of these types of trails should be the priority?

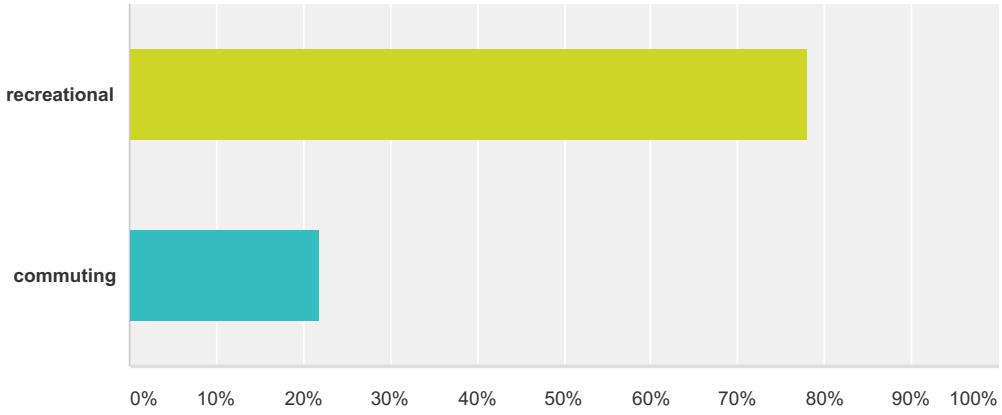
Answered: 64 Skipped: 14



Answer Choices	Responses	
roadside	**51.56%**	33
off-road	**48.44%**	31
Total		**64**

Q7 Which of these trail types should be the priority?

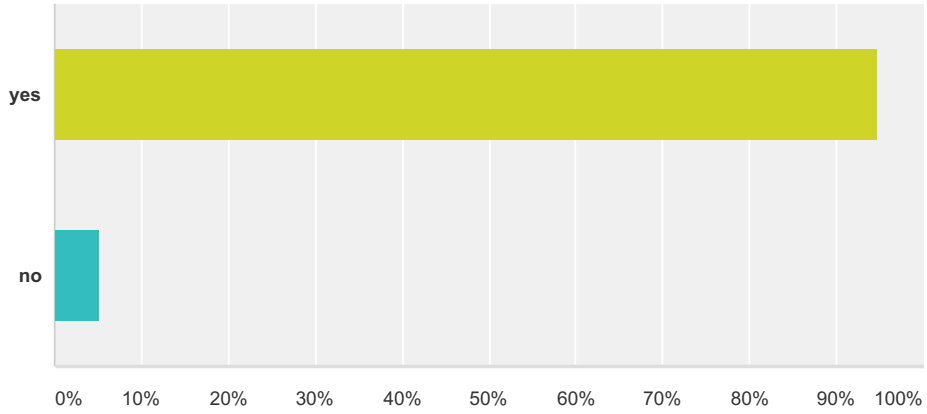
Answered: 64 Skipped: 14



Answer Choices	Responses	
recreational	**78.13%**	50
commuting	**21.88%**	14
Total		**64**

Q8 Do you agree with this vision statement?

Answered: 77 Skipped: 1



Answer Choices	Responses	
yes	**94.81%**	73
no	**5.19%**	4
Total		**77**

#	If not, please tell us how we can improve it:	Date
1	very "motherhood"	11/11/2016 3:01 PM
2	Wilderness based environmental preservation orientated	11/11/2016 2:37 PM
3	Why not add access to downtown Duncan for business, tourism ("in your own town"), shopping and commuting opportunities?	11/11/2016 2:02 PM
4	Please put a mission and value statement in here as well?	11/11/2016 1:57 PM
5	Preservation of natural ecosystems, also needs to be included	11/11/2016 1:52 PM
6	More trails and parks are needed	11/4/2016 11:53 AM
7	"quiet"? "non motorized"	11/4/2016 11:44 AM
8	Remove "connected" and "while enhancing." Perhaps there could could be less focus and funds on parks and/or trails and more funding on the infrastructure (lack of stewardship for water).	10/27/2016 4:11 PM
9	Pathways to allow people to safely walk, run and ride along routes that connect communities and urban places where we work and shop	10/9/2016 2:04 PM
10	I'd like to make it easier for people to get from area e to town or a bus without driving	10/2/2016 9:20 PM
11	This is all about parks to serve human uses. At least 50% of parks should have natural areas protection as a priority. We all benefit from that, at least indirectly. Some parks for our recreation, but some "wild" parks that we should be restricted from accessing.	9/27/2016 3:29 PM
12	that provide for complementary and shared use of parks and trails by different users	9/22/2016 1:04 PM

Q9 What parks and trails amenities are missing, lacking or need improvement in Electoral Area E (Sahtlam, Glenora and Cowichan Station)?

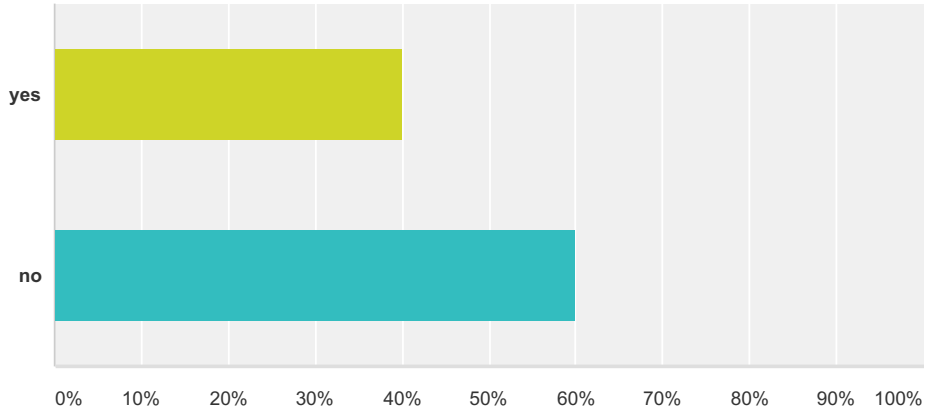
Answered: 51 Skipped: 27

#	Responses	Date
1	communting trails	11/11/2016 3:15 PM
2	Connection to existing trails and areas, roads are not walkable- even where there is a shoulder, not maintained by MOTI	11/11/2016 3:13 PM
3	Stairs required for river access on Johns Road to Vimy.	11/11/2016 3:09 PM
4	Camping overnight	11/11/2016 3:07 PM
5	None at the moment	11/11/2016 3:02 PM
6	The Trans Canada trail has blast rock in areas it would be nice to cart path instead as the blast rock hurts horses feet and makes holes in your bike tires.	11/11/2016 2:49 PM
7	None, we love them but would like more trails/ parks in Glenora	11/11/2016 2:47 PM
8	Foot bridge to connect Glenora Trailhead with Sahtlam eg. sunrise drive	11/11/2016 2:39 PM
9	Off road atv/ dirt bike areas are lacking	11/11/2016 2:21 PM
10	Gravel in muddy spots on TC trail	11/11/2016 2:18 PM
11	More bathrooms	11/11/2016 2:16 PM
12	connecting trails for easier use	11/11/2016 2:14 PM
13	Roadside connecting trails- for walking, biking, and horseback riding	11/11/2016 2:12 PM
14	no access to river from Glenora	11/11/2016 2:09 PM
15	Glenora- more shade trees in play area	11/11/2016 2:06 PM
16	A safe (ie. shielded from traffic, whether nearby or not) connection from Glenora/ and HWY 1 area into Eagle Heights Downtown Duncan.	11/11/2016 2:04 PM
17	Commuting trails, connection to First Nations Community	11/11/2016 1:58 PM
18	connection from HUB to Cow Bay trails	11/11/2016 1:54 PM
19	Improve access for equestrian users, Enforce rules re. motorized vehicles (trail bikes/ atvs) etc.	11/11/2016 1:48 PM
20	more parking at Mountain Road/ Hawthorne Road/ Waters Road to access trail	11/11/2016 1:45 PM
21	Glenora TCT/ CVT gateways to be reopened to carriages	11/4/2016 12:01 PM
22	None. We have a wealth. Cowichan River trail could have the nettles pruned back.	11/4/2016 11:56 AM
23	See my comment in # 2 (foot bridge between Sunrise and Glenora Park)	11/4/2016 11:49 AM
24	Cooperation by forestry companies to welcome trail users. Remove blasted, jagged rock and gravel hard on bike tires and horses	11/4/2016 11:46 AM
25	Roadside trails for pedestrians and bikes	11/4/2016 11:38 AM
26	Disc golf course	11/4/2016 11:32 AM
27	More connective routes and trails to provide more options to visit and use communities and other amenities	11/4/2016 11:29 AM
28	Consistent surface suitable for all users (horses, walkers/ hikers, cyclists)	11/4/2016 11:22 AM
29	I'm impressed with the existing parks and trails	10/27/2016 5:10 PM
30	Is there any hope of improving the road from Cowichan Station to the Kirsal trest 6	10/27/2016 5:09 PM

31	water park, outdoor pools	10/27/2016 5:02 PM
32	More trails	10/27/2016 4:57 PM
33	More trails like TCC	10/27/2016 4:52 PM
34	KIP- Busy Place Creek- fish friendly drainage for fish/ businesses	10/27/2016 4:41 PM
35	Toilets	10/27/2016 4:34 PM
36	A safe off road/ roadside trail connecting TCT, CVT from Mill Bay to Chemainus and safe biking thru Ducncan proper	10/27/2016 4:33 PM
37	There are plenty parks and trails. There is little "advertising" of the existing parks and/or trails. If people know where more maps like the one provided today the parks are they may go to use them.	10/27/2016 4:20 PM
38	Trail maintenance on a regular basis	10/27/2016 4:04 PM
39	Trails connecting Glenora, Eagle Heights and Cowichan Station	10/27/2016 3:59 PM
40	It would be great to have a circle route connecting the Cowichan Valley trail towards Lake Cowichan with a return option along Cowichan Lake Road (old highway). The old highway is narrow and hazardous for walking or riding along. It is very scenic and offers a connection to down town through Menzies and Gibbons that might make an expanded trail option.	10/23/2016 9:31 PM
41	Roadside safety to walkers runners and riders	10/9/2016 2:05 PM
42	Shade/shelter at the playground at Bright Angel	10/4/2016 11:40 AM
43	?	10/3/2016 4:47 PM
44	Roadside trail from TCH west to Cowichan Station that would link with the esisting trail east of TCH alimony Wilmot	10/3/2016 3:55 PM
45	roadside trails	10/2/2016 8:04 PM
46	roadside trails, more park land, connecting trails	10/2/2016 4:41 PM
47	Linking trail between Sahtlam trails/park and Cowichan river	10/2/2016 3:35 PM
48	I would like to see a bike trail along Koksilah Rd.	9/30/2016 4:29 PM
49	In Cowichan Station, kids and seniors walking Koksilah Rd should have wider shoulder, particularly from Lakeside to hub.	9/27/2016 3:30 PM
50	educational posts for users - some "enforcement", even if seasonal or implement park and trail ambassadors like they do at the CRD	9/22/2016 1:06 PM
51	The TCT needs more maintenance west of the Holt Creek Trestle	9/22/2016 11:43 AM

Q10 Would you like to see further improvements in Glenora Trails Head Park?

Answered: 65 Skipped: 13



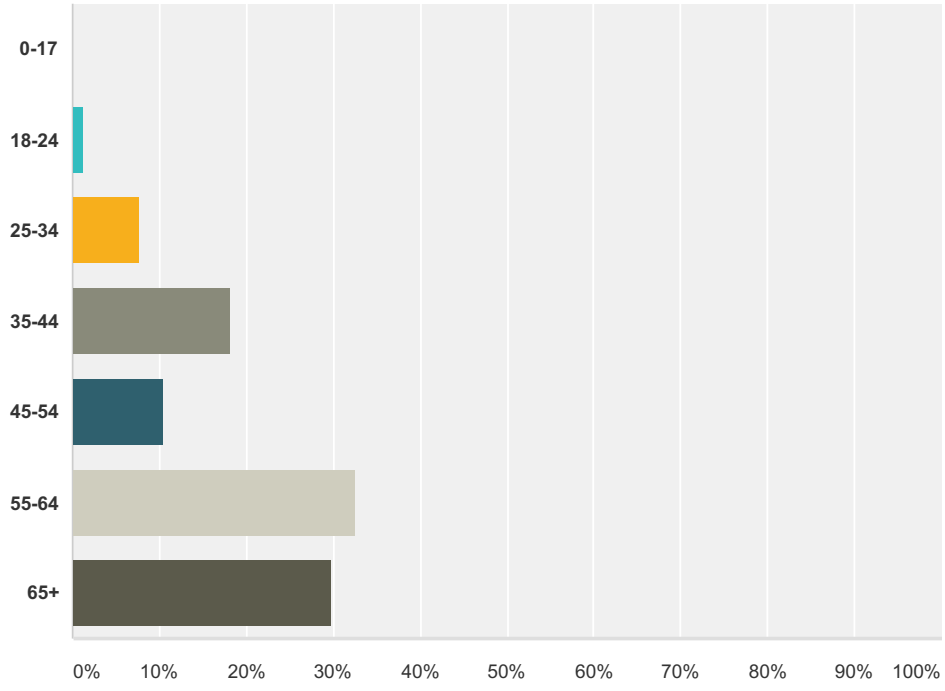
Answer Choices	Responses	
yes	**40.00%**	26
no	**60.00%**	39
Total		**65**

#	If yes, what do you suggest?	Date
1	Pedestrian crossing on river	11/11/2016 3:13 PM
2	Eliminate noise from gun club!	11/11/2016 3:06 PM
3	No more shooting! The noise!	11/11/2016 3:04 PM
4	1) Aquire the crown parcel that is not now included in the Provincial Park. 2) Enforce CVRD noise by law at property line by shooting ranges	11/11/2016 3:02 PM
5	Horse friendly trails	11/11/2016 2:49 PM
6	More tables/ shelters and maintaining trails	11/11/2016 2:47 PM
7	Mitigating noise from the Cowichan Fish & Game Club and reduction of shooting hours. ex. no shooting Sundays and stats	11/11/2016 2:39 PM
8	Keep it clean of trees and wasp 'nest'	11/11/2016 2:16 PM
9	more shade trees for play park area	11/11/2016 2:12 PM
10	The park is gorgeous as is. Well done! I always bring out of town visitors here.	11/11/2016 2:04 PM
11	Facilities are excellent. Focus needs to remain on trailhead function, rather that becoming a destination in itself	11/11/2016 1:54 PM
12	It's lovely!	11/11/2016 1:50 PM
13	signage for designated horse trails parking	11/11/2016 1:45 PM
14	Get rid of free doggie bags- people scoop the poop or leave the bags on the trails and in the woods	11/4/2016 11:56 AM
15	more horse friendly trails	11/4/2016 11:46 AM
16	not sure- good job now- surprise us	11/4/2016 11:41 AM
17	It's such a fantastic park! We love the changes that have happened over the last 5 years.	11/4/2016 11:38 AM
18	It seems perfect here!	11/4/2016 11:32 AM

19	It's perfect	11/4/2016 11:24 AM
20	seem perfect to me	10/27/2016 5:10 PM
21	the above	10/27/2016 5:02 PM
22	More trails	10/27/2016 4:57 PM
23	It is beautiful	10/27/2016 4:50 PM
24	No gun club in Glenora Trail Head Park- it's a park! Or Indoor range ONLY!	10/27/2016 4:41 PM
25	Have done a great job.	10/27/2016 4:34 PM
26	I don't know	10/27/2016 4:04 PM
27	Drinking water	10/4/2016 11:40 AM
28	?	10/3/2016 4:47 PM
29	no shooting	10/2/2016 5:49 PM
30	Its great already!	9/27/2016 3:30 PM
31	A group campsite	9/22/2016 11:43 AM

Q11 What is your age group?

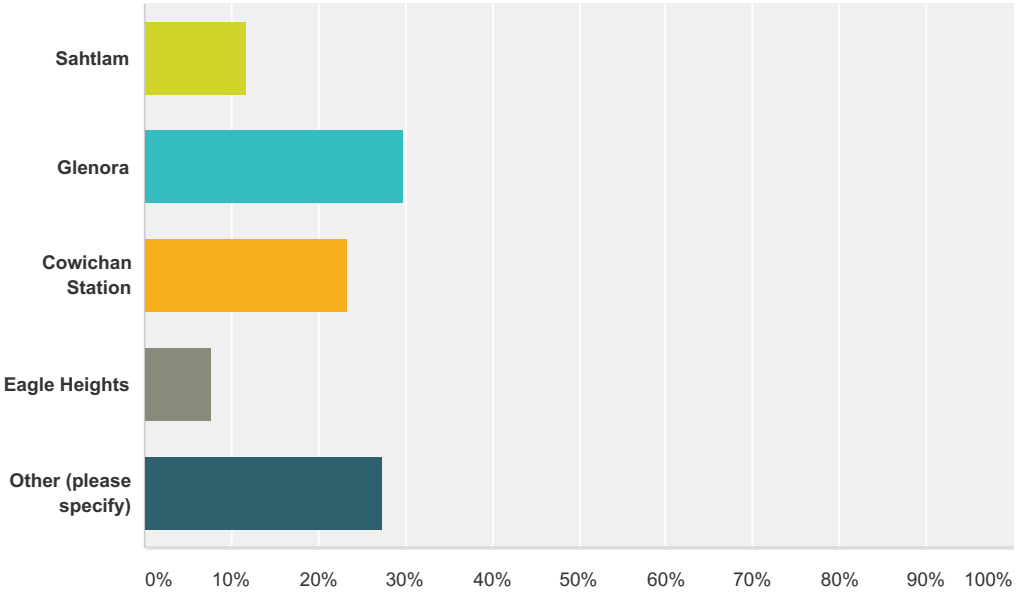
Answered: 77 Skipped: 1



Answer Choices	Responses	
0-17	**0.00%**	0
18-24	**1.30%**	1
25-34	**7.79%**	6
35-44	**18.18%**	14
45-54	**10.39%**	8
55-64	**32.47%**	25
65+	**29.87%**	23
Total		**77**

Q12 I am a resident of

Answered: 77 Skipped: 1



Answer Choices	Responses	
Sahtlam	**11.69%**	9
Glenora	**29.87%**	23
Cowichan Station	**23.38%**	18
Eagle Heights	**7.79%**	6
Other (please specify)	**27.27%**	21
Total		**77**

#	Other (please specify)	Date
1	Shawnigan Lake	11/11/2016 3:04 PM
2	In N. Cowichan, 200m from CVRD BDY	11/11/2016 3:02 PM
3	Duncan	11/11/2016 2:16 PM
4	Mill Bay	11/4/2016 12:01 PM
5	North Cowichan	11/4/2016 11:53 AM
6	North Cowichan	11/4/2016 11:51 AM
7	North Cowichan (Duncan)	11/4/2016 11:24 AM
8	North Cowichan	10/27/2016 5:09 PM
9	North Cowichan	10/27/2016 5:02 PM
10	Cobble Hill	10/27/2016 5:00 PM
11	Shawnigan Lake	10/27/2016 4:57 PM
12	Duncan (City)	10/27/2016 4:50 PM
13	Shawnigan Lake	10/27/2016 4:38 PM

14	Chemainus, Duncan, Mill Bay, Cobble Hill	10/27/2016 4:35 PM
15	Duncan	10/27/2016 4:33 PM
16	North Cowichan	10/27/2016 4:29 PM
17	Maple Bay	10/27/2016 4:26 PM
18	Cowichan Valley	10/27/2016 4:25 PM
19	Mill Bay	10/27/2016 4:05 PM
20	North Cowichan	10/3/2016 4:47 PM
21	North Cowichan	9/22/2016 1:07 PM

Q13 Do you have any other comments about community parks and trails in Electoral Area E?

Answered: 48 Skipped: 30

#	Responses	Date
1	Keep moving forward for future use preserving the outdoors and river	11/11/2016 3:16 PM
2	Existing parks are beautiful and wonderful.	11/11/2016 3:13 PM
3	Stairs required for river access on Johns Road to Vimy	11/11/2016 3:10 PM
4	More off leash parks	11/11/2016 3:07 PM
5	keep them quiet, so we can enjoy nature.	11/11/2016 3:05 PM
6	CVRD should collaborate with BC Parks where it makes sense. Example- tell BC Parks to BEGIN a management plan process for Cowichan River Provincial Park	11/11/2016 3:03 PM
7	Very happy with the overall parks and trails in our area. Hopefully our next generation will be as responsible as this one.	11/11/2016 2:50 PM
8	I would like to offer my small tractor and brush cutter to mow trailside between Rowe Rd and Trailhead Park. - P. Mendenhall 3790 Glenora Rd. am.pm@shaw.ca	11/11/2016 2:45 PM
9	I would like to have further conversations in our Electoral Area (E) re. the importance of protecting and preserving our BC and Regional Parks in this area. Thank you.	11/11/2016 2:40 PM
10	Too bad the "dog on leash" law cannot be enforced better.	11/11/2016 2:19 PM
11	Would like to see and keep up the walking trails and would like to see the bike trails go to "Duncan."	11/11/2016 2:17 PM
12	keep up the good work!	11/11/2016 2:14 PM
13	Good start- need more connecting trails	11/11/2016 2:12 PM
14	on hot days 50-60 people a day have to climb down roots (dangerous) with babys, dogs, drinks etc. - build stairs.	11/11/2016 2:10 PM
15	There are two parks on John's Rd in Glenora. Neither has river access and many of us are unable to climb across the roots. Would be lovely to have a stair case from the picnic table park. Thank you.	11/11/2016 2:07 PM
16	I have found the stroller friendly trail surfaces (tight packed gravel) indispensable as a parenting and wellness aid!	11/11/2016 2:05 PM
17	a vision, mission and value that is inclusive of all community members	11/11/2016 1:59 PM
18	What a beautiful place we live! Preservation and acquisition of large nature areas will help us keep it that way as our pop. grows.	11/11/2016 1:55 PM
19	Great trails! We love them! Keep access open for horse and carriage (63" gap)	11/11/2016 1:46 PM
20	See # 7. Perhaps sign(s) to ask horse owners to push poop off to the sides of the trail	11/4/2016 11:56 AM
21	What has been done so far is fabulous. Thanks. Would like the continued focus on "vision statement" to enhance off road trails.	11/4/2016 11:46 AM
22	I have the volunteers and donations to help build a disc golf course in our community. Call me if you see the potential in a local park. Dwight 748-7430 dwightmilford@gmail.com	11/4/2016 11:35 AM
23	Good display and dialouge. (From previous question- Electoral Area E should blend gravel and natural surface trails so that horse/ bike/ walking compatible ex. cartpath)	11/4/2016 11:30 AM
24	Complaint- leaf blowing removes gravel in fall	11/4/2016 11:25 AM
25	no	11/4/2016 11:22 AM
26	Being from Ontario, we have been very impressed with the trails, the cleanliness, the cost to enter - $0 and the beauty of the trails- well done.	10/27/2016 5:11 PM
27	Well done	10/27/2016 5:09 PM

28	none	10/27/2016 5:02 PM
29	Glenora and Trans Can is my primary riding area!	10/27/2016 5:00 PM
30	More trails	10/27/2016 4:57 PM
31	Re-elect Lorne Duncan	10/27/2016 4:54 PM
32	More enforcement to keep off motorized vehicles. Trans Canada trail a wonderful asset.	10/27/2016 4:47 PM
33	Thank you for your volunteer and CVRD work on parks. They are invaluable to everyone- every age. They are a world attraction.	10/27/2016 4:42 PM
34	very good job, lots of choices	10/27/2016 4:35 PM
35	Doing great job. Thank you.	10/27/2016 4:33 PM
36	Nope. Doing a great job!	10/27/2016 4:25 PM
37	Cowichan Station. Bright Angel Park?? What, if anything, is planned or proposed in the Cowichan Station area? How can I find out?	10/27/2016 4:21 PM
38	nope	10/27/2016 4:05 PM
39	I love Glenora Trail head and Bright Angel Parks. I would love to see a bridge across the Cowichan River somewhere along the Cowichan River footpath.	10/27/2016 4:01 PM
40	the Cowichan Valley Trail to Lake Cowichan is well used by a variety of walkers, bicyclists, horseback riders, and runners. It is especially busy on the weekends.	10/23/2016 9:31 PM
41	I would like to see immediate action on roadside safety for people to commute with in neighborhoods and to access town. Consideration for wildlife corridors. Natural park play structures, aka no plastics and more trees	10/9/2016 2:09 PM
42	More connections to parks and trails are needed. Both roadside and off road trails would make the community more walkable/bikeable.	10/4/2016 11:41 AM
43	consider using model developed by Coastal Douglas-fir Conservation Partnership as a tool in selection of ecologically sensitive areas and try and incorporate CDF values and management into the parks and trails plan. Also, consider fuel management (wildlfire prevention) risks and hazards in the planning process. And, protect private landowners from trespass, garbage dumping, etc. and consider provision of insurance coverage if parks and trails impact (or would lead to impacts) on private lands.	10/3/2016 4:51 PM
44	Thank you for your initiative, including seeking this feedback.	10/3/2016 3:56 PM
45	Safer walking and biking on Koksilah, and a bus all the way along, would be life changing	10/2/2016 9:21 PM
46	our roads are getting very busy and it would be good to have more environmetal commuter options ie/ roadside trails	10/2/2016 8:05 PM
47	Bike trail along Koksilah Rd!	9/30/2016 4:31 PM
48	Give money to the hub to fix up their basketball court, or installl outdoor (concrete) ping-pong tables there instead. Great community facility - support the volunteers to enhance it more.	9/27/2016 3:35 PM