REGIONAL DISTRICT OF NANAIMO

REGIONAL PARKS AND TRAILS SELECT COMMITTEE
REGULAR MEETING
TUESDAY, JUNE 7, 2016
12:00PM

(RDN Committee Room, 6300 Hammond Bay Road, Nanaimo)

A G E N D A

PAGES

CALL TO ORDER

DELEGATIONS

Motion to receive late delegation.

MINUTES

3-5 Minutes of the Regular Regional Parks and Trails Advisory Committee meeting held February 16, 2016

Motion to approve Minutes.

BUSINESS ARISING FROM THE MINUTES

COMMUNICATIONS/CORRESPONDENCE

6 **B. Veehof, RDN to Environment & Climate Change Canada**, RE: Request for Legislative Amendments–CulledMigratory Birds

7 **S. Poulin, Environment Canada to B. Veehof, RDN,** RE: Correspondence Recieved

8 **T. Osborne, RDN to G. Adrienne, NALT** RE: Memorandum of Understanding – Conclusion Of Contribution Agreement

9-14 **HR MacMillan/Grant Ainscough Arboretum Society,** RE: Expanding the Boundaries of the Aboretum

15-16 **B. Rogers, RDN to D. Lott, Moorecroft Stewardship Committee,** RE: Fundraising

17-18 **N. Doe, Gabriola Resident to T. Osborne, RDN,** RE: Gabriola Marsh Trail Proposal

19 **W. Marshall, RDN to N.Doe, Gabriola Resident, RE:** Trail Development –Coats Marsh

20 **A. Landry, GaLTT to W. Marshall, RDN,** RE: Trail Building in Coats Marsh Regional Park

Motion to receive Communications/Correspondence

UNFINISHED BUSINESS

REPORTS

Presentation – Regional Parks Overview (handout)

21-41 Monthly Update of Community and Regional Parks and Trails Projects –Feb – Apr 2016

42-142 Regional Park Management Plan for Fairwinds Lakes District –Enos Lake Protection & Monitoring Program

143- 147 Morden Colliery Regional Trail – Nanaimo River Bridge Update

148-180 Moorecroft Regional Park Buildings Report

Motion to receive Reports.

BUSINESS ARISING FROM DELEGATIONS OR COMMUNICATIONS

NEW BUSINESS

182-196 Parcel Taxes Services Agreements (background information)

IN CAMERA

That pursuant to Section 90(1) (e) of the Community Charter the Committee proceed to an In Camera Committee meeting to consider items related to land and legal issues.

ADJOURNMENT

Motion to adjourn.

NEXT MEETING

April 5th, 2016
RDN Committee Room

Distribution: C. Haime (Chair), A. McPherson, M. Young, J. Fell, B. Rogers, M. Lefebvre, I. Thorpe, T. Westbroek , B. Veenof, B. Yochim, H. Houle, J. Hong, J. Stanhope, W.Pratt, D. Trudeau, T. Osborne, W. Marshall, L. Fesiak, E. McCulloch

REGIONAL DISTRICT OF NANAIMO

MINUTES OF THE
REGIONAL PARKS AND TRAILS SELECT COMMITTEE MEETING
HELD ON TUESDAY FEBRUARY 16, 2016 AT 12:00 PM
IN THE RDN COMMITTEE ROOM

Attendance:	Director Colin Haime, Chair, District of Lantzville Director Maureen Young, Electoral Area 'C' Director Alec McPherson, Electoral Area 'A' Director Bob Rogers, Electoral Area 'E' Director Ian Thorpe, City of Nanaimo Director Teunis Westbroek, Town of Qualicum Beach Director Marc Lefebvre, City of Parksville Alternate Director Jack McLean
Staff:	Tom Osborne, General Manager of Recreation and Parks Dennis Trudeau, Interm Chief Administrative Officer Wendy Idema, Director of Finance Wendy Marshall, Manager of Park Services Ann-Marie Harvey, Recording Secretary
Also in Attendance:	Director Bill Veenhof, RDN Board Chairperson Director Houle, Electoral Area 'B'
Regrets:	Director Julian Fell, Electoral Area 'F'

CALL TO ORDER

Chair Haime called the meeting to order at 12:00pm.

MINUTES

MOVED Director Westbroek, SECONDED Director Lefebvre that the Minutes of the Regular Regional Parks and Trails Select Committee meeting held October 20th, 2015 be adopted.

CARRIED

BUSINESS ARISING FROM THE MINUTES

COMMUNICATIONS/CORRESPONDENCE

MOVED Director Thorpe, SECONDED Director Westbroek that the following Communication/ Correspondence be received:

T. Osborne, RDN to Department of Fisheries and Oceans – Licensing, **RE: Oyster Harvesting Concerns**

K. Fulton, NCC to T. Osborne, RDN, **RE: Conservation Covenant Agreement with NCC**

CARRIED

REPORTS

Monthly Update of Community and Regional Parks and Trails Projects –Nov 2015 – Jan 2016

Ms. Marshall answered questions from the directors regarding items in the report.

MOVED Director McPherson, SECONDED Director Lefebvre that the Monthly Update of Community and Regional Parks and Trails Projects –Nov 2015 – Jan 2016 be received.

CARRIED

Nanaimo River Bridge Equestrian Accessibility Report

MOVED Director McPherson, SECONDED Director Young that the design and development of the multi-use bridge crossing over the Nanaimo River, within the Morden Colliery Regional Trail, incorporate equestrian accessibility (in addition to pedestrian, cyclist and wheelchair accessibility) in response to current community recreational needs and public support.

CARRIED

Event Permit Framework for Mount Benson Regional Park Report

MOVED Director Westbroek, SECONDED Director Thorpe that the 2016-2021 Event Permit Framework for Mount Benson Regional Park be approved.

CARRIED

MOVED Director Westbroek, SECONDED Director Rogers that staff advance the dialogue with running race event user groups in 2016 to expedite the race route timeline in the Event Permit Framework for Mount Benson Regional Park.

CARRIED

BUSINESS ARISING FROM THE COMMUNICATIONS/CORRESPONDENCE/DELEGATONS

NONE

NEW BUSINESS

Road Access to Mount Benson Summit

MOVED Director Rogers, SECONDED Director Young that staff examine enhanced access to Mt. Benson to allow for more community members to reach the summit.

DEFEATED

MOVED Director Westbroek SECONDED Director Lefebvre that the information be received.

CARRIED

Regional Parks and Trails 2016 Budget and 5 year Financial Plan.

That the Kennedy Hall repair and upgrade at Moorecroft Regional Park be removed from the Five Year Financial Plan, the Moorcroft Regional Park Information Kiosk be funded by donations and the potential acquisition cost for the Option to Purchase Lands on Notch Hill be moved to 2021.

CARRIED

Coombs to Parksville Rail Trail Project Update

MOVED Lefebvre, SECONDED Director McLean that staff proceed to tender for the Station Rd. to Church Rd. phase of the Coombs to Parksville Rail Trail with a tender upgrade for the Church Rd to City of Parksville phase.

CARRIED

IN CAMERA

MOVED Director Lefebvre, SECONDED Director Rogers that pursuant to Section 90(1) (e) of the Community Charter the Committee proceed to an In Camera Committee meeting to consider items related to land and legal issues.

Time: 1:50pm

CARRIED

RISE AND REPORT

Regional Parks Parcel Tax Acquisition and Capital Development

MOVED Director McPherson, SECONDED Director Young that the Regional Parks Service Bylaw 1231 be amended to increase the parcel tax for regional parks acquisitions and capital development by one dollar per year for the next seven years commencing in 2016.

CARRIED

ADJOURNMENT

MOVED Director Lefebvre, SECONDED Director Rogers that the meeting be adjourned at 2:21pm.

CARRIED

_____
Chairperson

REGIONAL DISTRICT OF NANAIMO

March 3, 2016

Environment and Climate Change Canada
Public Inquiries Centre
7th floor, Fontaine Building
200 Sacré-Coeur Boulevard
Gatineau, QC K1A 0H3

Attention: Catherine McKenna,
Minister of Environment and Climate Change

Dear Honourable Catherine McKenna;

Re: Request for Legislative Amendments – Culled Migratory Birds

Currently the Regional District of Nanaimo (RDN) is supporting the City of Parksville in the implementation of a population control plan for Canadian Geese in order to prevent further ecological degradation of river estuaries in the region caused by the overabundance of Canadian Geese on Vancouver Island.

This letter is to advise that at the January 26, 2016, regular meeting of the RDN Board, a resolution was passed to request legislative amendments through the federal Minister of Environment and Climate Change to allow the use of culled migratory birds for human or animal consumption. Unfortunately at this time, federal regulations prohibit the use of migratory birds destroyed under permit to be used for human or animal consumption.

The Federation of Canadian Municipalities has also been requested for their support of this initiative.

Thank you for your consideration.

Regards,

William Veenhof, Chairperson
Regional District of Nanaimo

cc: Federation of Canadian Municipalities
City of Parksville, Mayor and Council
RDN Regional Parks and Trail Select Committee

6300 Hammond Bay Rd.
Nanaimo, B.C.
V9T 6N2

Ph: (250)390-4111
Toll Free: 1-877-607-4111
Fax: (250)390-4163

RDN Website: www.rdn.bc.ca

MAR 23 2016

Mr. William Veenhof
Chairperson
Regional District of Nanaimo
6300 Hammond Bay Road
Nanaimo BC V9T 6N2

Dear Mr. Veenhof:

On behalf of the Honourable Catherine McKenna, Minister of Environment and Climate Change, I am responding to your letter of March 3, 2016, concerning the passing of a resolution requesting legislative amendments with regard to culled migratory birds.

Please be assured that your comments have been reviewed.

Thank you for taking the time to write.

Sincerely,

Sylvie Poulin
Editor in Chief
Departmental Correspondence Unit

REGIONAL DISTRICT OF NANAIMO

April 5, 2016

Nanaimo and Area Land Trust Society
#8 – 140 Wallace Street
Nanaimo, BC
V9R 5B1

Attention: Gail Adrienne

Dear Ms. Adrienne:

Re: Memorandum of Understanding – Conclusion of Contribution Agreement

At the January 26, 2016 Regional District of Nanaimo Board Meeting the Board received a staff report on the registration of a Conservation Covenant for Mount Benson Regional Park and the following two resolutions were approved:

1. *That the Section 219 Conservation Covenant in favour of the Nanaimo and Area Land Trust Society and the Cowichan Community Land Trust Society be approved and registered on title for Mount Benson Regional Park*

2. *That the 2006 Regional District of Nanaimo - Nanaimo and Area Land Trust Society Contribution Agreement for Mount Benson Regional Park be terminated.*

On March 31, 2016 the Section 219 Conservation Covenant was successfully registered at BC Land Titles. With the covenant in place, a Memorandum of Understating (MoU) has been developed that recognizes the role of the covenant and that both parties wish to formally end the 2006 Contribution Agreement as there is no outstanding work to be accomplished to meet the terms of this agreement.

Please find attached two copies of the MoU for NALT's signatures. Please sign and return to our office both copies, once signed by the RDN we will provide an executed original for your records.

On behalf of the Regional District of Nanaimo, I would like to thank you, the NALT Board, volunteers and staff for working with the RDN over the past decade in securing, planning, developing, maintaining, and stewarding Mount Benson Regional Park.

Sincerely,

Tom Osborne
General Manager of Recreation and Parks

cc: W. Marshall, Manager Parks Services
J. Michel, RDN Parks and Trails Coordinator
Regional Parks and Trails Select Committee

RECREATION AND PARKS DEPARTMENT

HEAD OFFICE:
Oceanside Place
830 West Island Highway
Parksville, BC
V9P 2X4
Tel: (250) 248-3252
Fax: (250) 248-3159
Toll Free: 1-888-828-2069

Ravensong Aquatic Centre
737 Jones Street
Qualicum Beach, BC
V9K 1S4
Tel: (250)752-5014
Fax: (250)752-5019

RDN Website: www.rdn.bc.ca

HR MACMILLAN / GRANT AINSCOUGH ARBORETUM

The Arboretum is located approximately twelve kilometres south of Nanaimo adjacent to the Harmac Pulp Mill. Part of the arboretum was an old farm now planted with exotic and native species, and part is natural forest dominated by Douglas fir with some Garry Oak, Big-leaf maple and Grand fir. The total area is about 2.6 hectares (6.5 acres).

HISTORY

The Arboretum was established by MacMillan Bloedel Ltd at the request of HR MacMillan, the founder and president of the company, in 1956.
The objectives were as follows;

1. Determine what exotic species would be of value for commercial timber production in this region. The value would be measured by growth rate, resistance to insects, disease, etc.
2. Illustrate the behaviour and growth of local and exotic species to the general public. (In the forester's vocabulary, "exotic "trees are those that do not grow naturally in the area.

The trees were originally planted in blocks of 25 trees where possible, but smaller groups of trees were planted in some cases.
One of the objectives in later years was to establish all of the Canadian tree species. At one time there were over 150 different tree species in the arboretum, more than at any other location on Vancouver Island, and in British Columbia at that time.
After the Tree Improvement Centre was established adjacent to the Arboretum in 1971, a number of improvements occurred; picnic tables were installed, new plantings were irrigated, improved identification signs were added, the grass was mowed regularly, and trees were thinned when some blocks became too dense.
Educational tours for groups were often. In addition to the general public, students from Malaspina College, The University of Victoria, BCIT, The University of British Columbia, Simon Fraser University, and many of the schools in the Nanaimo Regional District, visited the Arboretum.

CURRENT STATUS

After ten years of neglect, the property was fortunately purchased by the Regional District of Nanaimo in 2005. A group of former MacMillan Bloedel employees, and local concerned citizens has banded together in an informal society to restore the Arboretum to its former glory. For the past eleven years they have had work parties to clean up, fence, prune, thin, and soon plant new species, and install new individual tree species signs. Many students from VIU have also assisted. The society members work in concert with the RDN staff. A contractor mows the grass regularly.
The hope is to expand the boundaries of the Arboretum to finally include all of the Canadian tree species.

H.R. MacMillan –Grant Ainscough Arboretum Society

Mission Statement: *The HR MacMillan-Grant Ainscough Arboretum Society promotes, protects and enhances the Arboretum for current and future generations by strengthening and building a diverse and engaged community of donors, volunteers and advocates.*

Vision Statement: *The Arboretum is a highly treasured, historic, widely used community asset and a horticultural, environmental, recreational and cultural resource for the region.*

Arboretum Society Members
April 09/16

1	Cai Hermansen (Steering Committee)	250-245-4226
2	Bernie Waatainen (Steering Committee)	250-758-9428
3	Don Pigott (Steering Committee)	250-245-7941
4	Bill Beese	250-753-3245
5	Doug Bell	250-246-5388
6	Liane Bowman	250-667-0949
7	Mike Fall	250-245-3429
8	Gerhard Gerke	250-390-4950
9	Lance Goldy	250-722-3849
10	Bob Gillrie	250-245-9143
11	Michael Girard	250-755-6525
12	Tom Hedekar	250-390-2388
13	John Hermansen	250-923-2333
14	Mike Hooper	250-245-2157
15	Tibor Jando	250-716-0906
16	Grant Keefer (and family)	250-619-8954
17	Lloyd Hiebert	250-722-2619
18	Allidar Lunn	250-722-3403
19	Bonnie McNab	250-245-5305
20	Jessie McNab	250-245-3874
21	Murray McNab	250-739-2063
22	Susan Robinson	250-743-7754
23	Jussi Rullo	250-245-7355
24	Lisa Rullo	250-245-8143
25	Jeff Sanford	250-758-0286
26	Bill Shemming	250-755-2073
27	Ian Turner	250-245-4090

28	Michel Vallee	250-751-9884
29	Cees Van Oosten	250-758-4789
30	Barb and Rob Waters	250-245-0225
31	George Von Westarp	250-247-8868
32	Stan Wheat	250-768-4880
33	Jim Wilkinson	250-245-0039
34	Ken Williams	250-741-0739
35	Ian and Isabelle Wyndlow (and family)	250-245-5204
36	Gordon Wyndlow	250-245-2926

Corporate and Private Donors and Sponsors.

Radec Backhoe
George Bowater
Timberwest Forest
Nanaimo Airport
Bedrock Concrete
McNab Farms
McNab Enterprises
Barry Place
Harmac Pacific
Yellow Point Cranberries
Vancouver Island University- Faculty of Forestry
Vancouver Island University- Horticulture Program
Hillcroft Forestry
Bernie Waatainen
Yellow Point Propagation Ltd

VANCOUVER ISLAND
UNIVERSITY

Trades & Applied Technology
900 Fifth Street, Nanaimo
British Columbia, Canada V9R 5S5
Tel (250) 740-6149 • Fax (250) 740-6612

www.viu.ca/abt

April 22, 2016

To whom ever it may concern,

I am writing to voice my support for the HR MacMillan/ Grant Ainscough Aboretum Society and their involvment in mainting that collection of trees.

Our program wholeheartlly endorses the socities vision statement that "the Arboretum is a highly treasured and widely used community assest" The curriculum for our one year horticulture program requires our students to learn a wide variety of native trees. The Arboretum provides us with a convenient opportunity to to view the diverse variety of native tree species located there. The arboretums close proximity to central Nanaimo makes it an easily accessible location for us to travel to. The maturity of the trees is also what makes this collection such a valuable community assest.

Many of our students go on to become members of the International Society of Aborists (ISA). Certification for the socienty requires them to become knowledgable in the identification of a wide variety of Canadian trees species. The aboretum collection provides a convenient and diversee reference collection for them to study from.

I would encourge the RDNs continued support of this valuable community asset. Our program would also be very much favour of seeing the Arboretum expanded to include more examples of Canadian trees.

Sincerely,

Michael Girard
Vancouver Island University
Horticulture Technician Foundation Program Chair.

VANCOUVER ISLAND UNIVERSITY
SCIENCE & TECHNOLOGY
FORESTRY

Forestry Department
900 Fifth Street
Nanaimo, BC V9R 5S5

April 23rd 2016

To whom it may concern:

On behalf of Vancouver Island University's (VIU) Forestry and Biology departments I strongly recommend that the H.R. MacMillan – Grant Ainscough Arboretum be preserved and expanded to the recommendation of its Society in order to maintain the intended and intrinsic values of the property.
VIU feels that the Arboretum Society offers the community an irreplaceable service by maintaining the Arboretum for its intended use for the benefit of all. The arboretum has been used by the VIU community as a teaching tool for years and hopes that is will be able to continue using it for educational purpose; the site has an extensive collection of native and exotic species of trees and shrubs and serves as an exception natural laboratory for classes in tree identification, botany, and natural relationships among native and introduced species. Also, the Society intends on expanding the Arboretum to include species from across Canada which would provide additional value to the study of Canadian flora.
Although the Arboretum was established with industrial intent, it soon became a living laboratory that enhanced our knowledge of local and introduced tree species in the management of our forest ecosystems. As such, the Arboretum serves as a historical monument to our forestry past, the vision of H.R. MacMillan to enhance our knowledge of forest management, and as a vital resource in meeting our desire to seek a deeper understanding of our forests environment.

Sincerely

Michel Vallee, R.P.F.
Professor - Forestry department

Nanaimo Airport
P.O. Box 149 3350 Spitfire Rd
Cassidy, BC Canada V0R 1H0
Ph (250) 245-2157 Fax (250) 245-4308

April 22, 2016

Re: H.R. MacMillan – Grant Ainscough Arboretum, Phoenix Way

To Whom it May Concern,

During the past several years the Nanaimo Airport has actively reached out to the community to support local projects. As a long term and ongoing member of the region we are hoping to increase our support for neighborhood initiatives in the future.

Several years ago we worked with the Arboretum Society to replace and install new "tree species signs". This work was completed by members of the community on a volunteer basis. In fact, during the past 10 years local residents have worked at the site to ensure maintenance of the grounds and survival of the numerous trees & shrubs that have been established from across Vancouver Island and British Columbia.

With over 150 different species that were planted from 1956 through to the 1970's, the Arboretum is truly a unique property hosting examples of mature trees for educational purposes. Members of the Arboretum Society have also installed and maintained picnic tables, to ensure the grounds can host family and community events while functioning as an excellent greenspace for the region.

We look forward to continuing our support for the Arboretum Society, and hope to see the property officially dedicated as a park in the future.

Sincerely,

Michael Hooper,
President, CEO
Nanaimo Airport Commission

From: Osborne, Tom
To: Harvey, Ann-Marie
Cc: Marshall, Wendy; Idema, Wendy; Trudeau, Dennis
Subject: FW: Moorecroft Stewardship Committee/fundraising
Date: Thursday, March 31, 2016 7:41:14 AM

Please add to the next RPTSC Agenda – correspondence.

Tom Osborne
General Manager of Recreation and Parks Services

Regional District of Nanaimo Recreation and Parks Dept.

From: Bob Rogers [mailto:bobrogers4areae@telus.net]
Sent: Wednesday, March 30, 2016 8:20 PM
To: 'Deirdre Lott'; 'Diana Young'
Cc: 'vicki Knight'; 'Jo Graham'; 'Vivian Haist'; Osborne, Tom; colinhaime@shaw.ca; Bill Veenhof
Subject: RE: Moorecroft Stewardship Committee/fundraising

Deirde,

Thanks for the note and thank you for all the effort your group has put towards supporting Moorecroft Regional Park and the funds you have raised. I look forward to seeing this progress as it receives consideration by the RDN's Regional Parks and Trails Committee including input from RDN Parks and Recreation staff and the Nanoose First Nation. I appreciate the contribution to the park's proposed kiosk project and I am sure the RDN Directors on the Regional Parks and Trails Committee will appreciate the donation contribution as well as we try to keep the costs of acquiring and developing our regional parks and trails under control.

Regards,

Bob

Bob Rogers
RDN Director
Area E, Nanoose Bay

Telephone: 250-468-9986

From: Deirdre Lott [mailto:deirdre_lott@hotmail.com]
Sent: March 24, 2016 11:13 AM
To: Diana Young <beachdrift@shaw.ca>; bobrogers4areaE@telus.net
Cc: vicki Knight <vlknight@telus.net>; Jo Graham <jograham5@gmail.com>; Vivian Haist <haistv@shaw.ca>

Subject: Moorecroft Stewardship Committee/fundraising

Hello Diana and Bob

Yestereday, Jo Graham chaired a meeting at which a decision was made to allocate the donated funds held in trust for Moorecroft Regional Park. Approximately $20,000.00 has accumulated in trust accounts with the RDN, and NALT.

After considerable consultation with RDN staff and NALT Board, the funds will be added to RDN budgeted monies for an enhanced entrance kiosk. The basic kiosk/information panel budgeted by RDN for installation in 2017 carries a $25,000.00 cost. This basic kiosk can be enhanced with donated funds, to provide shelter and seating for groups. RDN kiosk construction specifications will allow for an enlarged shelter and seating according to the final donated amount. The intention is that sufficient shelter for a school class will be provided. Donations continue to trickle in, so the size of the shelter will be finalized at the time of final design and construction. The intention of the MSC, is to wrap up current fundraising on completion of this kiosk/shelter.

The RDN plans to include a donor acknowledgement panel printed on durable aluminum, which may or may not incur costs against the donated funds at this time. The MSC intends to mail acknowledgements to major donors when negotiations with RDN are finalized and the kiosk/shelter can be illustrated.

The MSC members wanted to notify you both, as RDN Advisory Committee Co-chairs, of this decision prior to any more public announcement to Moorecroft Regional Park supporters.

Thank you for all you have done to ensure the MRP can continue in public use as a conservation treasure.

Yours, Deirdre Lott,

for Vicki Knight, Jo Graham and Vivian Haist

-------- Forwarded Message --------
Subject: Gabriola Coats Marsh trail proposal
Date: Sun, 17 Apr 2016 22:44:15 -0700
From: nick doe <nickdoe@island.net>
To: tosborne@rdn.bc.ca
CC: wmarshall@rdn.bc.ca, galtt <info@galtt.ca>, streamkeepers org <streamkeepers-org@npogroups.org>

hi Tom

As you may or may not know I have been doing a fair bit of monitoring of Coats Marsh, Coats Marsh Creek, East Path Creek, and the NW Arm including its hydrology, water levels (beaver dam and flood control at the weir), water quality, and rainfall

A lot of this work has involved regular access (more than once a week for almost a year now) to the marsh including to the east shore of the marsh, which is outside the park boundaries and doing this required permission from the landowner. The details of this ongoing research is posted at:

http://www.nickdoe.ca/pdfs/Webp673.pdf
http://www.nickdoe.ca/pdfs/Webp673d.pdf 2015 field notes
http://www.nickdoe.ca/pdfs/Webp673e.pdf 2016 field notes

The reason for my writing is that I was concerned to read that the RDN is planning to construct a trail in the marsh which I gather would extend from the causeway at the west end of the marsh, to the main entrance on Stanley Road.

If this surmise is correct, I would be very strongly against any such trail building.

In the course of many hours spent at the marsh, I have met only a few visitors; nearly everyone of the relatively few people I do meet are locals and almost all, perhaps not quite all but close, have been walking their dogs. Given that the number of people so doing is small, that the dogs are well controlled, and that many are walking the trails outside the park boundary on the east side which are for the most part setback from the shores of the marsh, I have never seen a problem.

However, if a trail is built along the south shore, the chances are that there will be a significant increase in foot traffic and that people using this new trail will be as they have in the past be walking their dogs. This has the potential of severely reducing the area of the marsh that is available for the ducks, particularly the mallards and resident buffleheads, and other wildlife that inhabit it and that require peace and quiet. The ducks particularly are extremely sensitive to the presence of people, a result no doubt of their being of interest to hunters. It is impossible to walk the proposed trail route without disturbing them -- I have tried it -- particularly when moving toward the lake now and then to obtain a view as most walkers will want to do.

There is also abundant evidence in the park that trails encourage the spread of invasive species and weeds.

This marsh is a beautiful property and a delightful combination of nature reserve and recreational area for naturalists and nature lovers.

In my view, any funds that the RDN has available would be far better spent on helping the community to acquire all of the eastern shore of the marsh, which is an integral part of the marsh's ecology. In contrast, opening the marsh up to more human and canine interference would be a regrettable step backwards and not at all in keeping with the objective of keeping this area primarily as a nature reserve.

Any hope that walking dogs be avoided by posting signs forbidding it is quite unrealistic. That's not how it works on Gabriola.

Sincerely
--
Nick Doe
1787 El Verano Drive
Gabriola, BC Canada
V0R 1X6

Phone: 250-247-7858
E-mail: nickdoe@island.net
Internet: http://www.nickdoe.ca

--
Nick Doe
1787 El Verano Drive
Gabriola, BC Canada
V0R 1X6

Phone: 250-247-7858
E-mail: nickdoe@island.net
Internet: http://www.nickdoe.ca

REGIONAL DISTRICT OF NANAIMO

RECREATION AND PARKS DEPARTMENT

HEAD OFFICE:
Oceanside Place
830 West Island Highway
Parksville, BC
V9P 2X4
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Fax: (250)248-3159
Toll Free: 1-888-828-2069

Ravensong Aquatic Centre
737 Jones Street
Qualicum Beach, BC
V9K 1S4
(250)752-5014
Fax: (250)752-5019

RDN Website: www.rdn.bc.ca

April 27, 2016

Nick Doe
Sent via email to: nickdoe@island.net

Dear Mr. Doe:

Re: Trail Development – Coats Marsh Regional Park

Thank you for your email letter of April 17, 2016, which outlines your concerns regarding the proposed trail development in Coats Marsh Regional Park that will connect the existing trail over the berm at the north-western end of wetland to the Stanley Rd park entrance. The proposed trail route is located in the forest approximately 15-30 meters back from the high water mark of the wetland and follows along the south-western edge of the wetland. The proposed trail alignment was reviewed and supported by the ecological assessment of the property completed for the management plan (Ecological Features and Management Recommendations for Coats Marsh Regional Park, 30 December 2010), is supported by The Nature Trust, and has been approved by Environment Canada's Ecological Gift Program (EGC). Please find enclosed a copy of the proposed trail route as approved by The Nature Trust and the EGC.

The above-noted trail connection is proposed in Section 3.3.4 of the *Coats Marsh Regional Park Management Plan.* The Plan reflects the community's desire to connect the north and south ends of the park by means of a trail along the south-western side of the wetland. Your concern that the addition of this trail would increase pedestrian and canine presence near the wetland thereby negatively impacting wildlife, particularly the resident duck populations, and potentially transmitting invasive species into the Park is understood. This potential impact has been considered and in an effort to reduce habitat disturbance, the trail has been routed away from the shoreline, except where it crosses the berm at the far western edge of the wetland. As per the recommendations in the Plan, signage will be installed identifying that no dogs be allowed in this sensitive area of the park. The Plan also recommends a viewing platform be developed on the southern end of the wetland near the Stanley Rd park entrance to provide controlled access to the edge of the wetland area for educational purposes.

Your advice regarding the specific trail route location and/or any mitigation measures would be greatly appreciated. If you are interested, please contact Elaine McCulloch, RDN Parks Planner at 250-248-4744 (ex. 656) or emcculloch@rdn.bc.ca.

Sincerely,

Wendy Marshall
Parks Manager

AH

CC: T. Osborne, General Manager of Recreation and Parks, RDN
E. McCulloch, Park Planner, RDN
J. Lobb, Parks Operations Coordinator, RDN
T. Reid, Manager, Vancouver Island Conservation Land Management Program

Gabriola Land and Trails Trust
PO Box 56
Gabriola BC V0R 1X0

May 22th 2016.

Ms. Wendy Marshall, Manager of Parks Services, Regional District of Nanaimo

Mr. Tom Reid, Vancouver Island Conservation Land Manager, The Nature Trust of BC

Dear Ms. Marshall and Mr. Reid,

Subject: Trail Building in the Coats Marsh Regional Park, Gabriola Island, BC

An issue of concern was recently brought to the attention of the Board of the Gabriola Land and Trails Trust (GaLTT) by our affiliated Streamkeepers group on Gabriola. We understand that trail building is about to get underway in Coats Marsh Regional Park on the south and west side of the marsh pond, as part of the management plan for the Park.

Trail development is supported in the management plan, however we are concerned that a trail in this location will disturb and may negatively impact nesting waterfowl using the marsh.

While trail connectivity is an important goal of GaLTT, we also understand that application has been made for a density transfer that, if successful, will secure additional donor land as park to the north and east of the Regional Park. There are existing trails on the donor land that will improve access to the marsh and connectivity without the need to build a new trail to the south.

The construction of a waterfowl viewing blind near the existing park entrance would be supported by GaLTT, however we feel it is premature to disturb the marsh further with a new trail when it may not be necessary.

GaLTT respectfully requests that the RDN delay the new trail development until the outcome of the density transfer application is known, at which time additional options for trails and trail development on the already disturbed northern side of the marsh may exist.

Thank you for your consideration.

Sincerely,

Anne Landry

Anne Landry, Vice President Gabriola Land and Trails Trust

On behalf of Norm Harburn, President Gabriola Land and Trails Trust

Cc: Howard Houle. Regional Director

REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Tom Osborne General Manager of Recreation & Parks	**DATE:**	March 16, 2016
		MEETING:	D69 Recreation Commission –May 31,2016
FROM:	Wendy Marshall Manager of Park Services		All POSAC's, RPTSC
		FILE:	

SUBJECT: Monthly Update of Community Parks & Regional Parks and Trails Projects- February 2016

RECOMMENDATION

That the Parks Update Report for February 2016 be received as information.

Regional and Community Parks and Trails

During February staff have been involved with the following projects and issues.

Electoral Area Community Parks

Area A

Park staff continued design revision work for the future kiosk structure at Cedar Plaza scheduled for installation in Summer 2016.

Staff prepared and distributed the February 17th Electoral Area A Parks, Recreation and Culture Commission meeting agenda package, attended the meeting and prepared meeting minutes.

Hazard tree management investigation continued for Ivor Road Community.

At the Cedar Skatepark staff removed dumped garbage and completed a park inspection. Staff are currently investigating a drainage issue around the toilet.

Area B

Staff provided information to the Gabriola Lions Club to support their Coop Community Spaces Grant application for the construction of a playground at Huxley Park.

Staff prepared a report to POSAC to provide information with respect to the consideration of a 5% park land dedication or cash-in-lieu contribution as part of a subdivision application proposing to create 7 fee simple parcels at 1520 McCollum Rd.

At Rollo McClay Community Park staff and the RCMP are involved in the investigation and repair of ongoing vandalism and graffiti issues. Following receipt of cost estimate information, chain link fence improvement (raising) work for the lower field is planned for the spring. Ongoing maintenance work and chlorine monitoring of the water system was carried out.

Staff met with community volunteers (Gabriola Land and Trails Trust (GaLTT)) regarding trail maintenance, drainage and signage work for Cox Community Park. This work is expected to commence in the spring.

Staff have contracted the removal of three hazard trees at Decourcy Drive Community Park. This work will be completed in March.

Staff received a price estimate for pressure washing of the tennis courts, ball hockey court and skateboarding area at Huxley Community Park. This work is scheduled for early March.

Area C – Extension

Park staff completed revision work for a memorial sign in Extension Miners Community Park which will be installed in the spring of 2016.

At Extension Miners Community Park staff made improvements to drainage around the new stairs and bridge.

Area C – East Wellington / Pleasant Valley

At Creekside community park staff removed garbage from the parking lot.

Staff reviewed conceptual drawings for a future picnic shelter in Meadow Drive Community Park and met with the project contractor on site.

Staff prepared and distributed the February 29th East Wellington / Pleasant Valley POSAC meeting agenda package, attended the meeting and reviewed the meeting minutes.

Area E

Staff prepared and distributed the February 10th Electoral Area E POSAC meeting agenda package, attended the meeting and reviewed the meeting minutes.

A biologist was contracted to carry out an ecological inventory and assessment of the future community park on Oakleaf Drive. Assessment work will begin in March.

Staff provided parks feedback regarding two rezoning referrals received from the RDN Planning Department.

At Brickyard the bollard was painted safety yellow.

Parks staff investigated a tree removal issue in a community park and are following up with the Bylaw Department.

Area F

Additional gravel and grading work was ordered and completed at Errington Community Park, making further improvements to the recently developed roadside parking area. Staff also liaised with a park neighbour regarding planned survey work and trail access.

Area G

Staff prepared and distributed the March 7th Area G POSAC meeting agenda package.

Staff reviewed parkland dedication proposals related to Area G subdivision and rezoning applications.

Area H
At Thompson Clarke Trail park staff removed moss from the stairs.

At Henry Morgan the paths were weeded and the wheel stops were leveled.

At the Deep Bay beach access boards were replaced on the bench.

At Leon Marshall trail staff met with Branching out Urban Forestry to do a tree assessment along the trail.

At the Buccaneer beach access staff repaired the bench and cleaned garbage.

At the Big Qualicum River Hatchery directional signs are being installed on federal land.

Staff prepared and distributed the February 25th Electoral Area H POSAC meeting agenda package, attended the meeting and prepared meeting minutes.

Staff prepared the Dunsmuir Community Park Open House Community Consultation Summary.

Community Works Fund Projects

Area B
Staff researched examples of sidewalk projects completed elsewhere on Vancouver and Gulf Islands.

Area E
Claudet
At Claudet Road community park staff are continuing to make drainage improvements along the trails. Trails and parking area were grass seeded. Rebar was removed from the old foundation for safety purposes.

Regional Significant Gas Tax Project

E&N Rail Trail
Working with project engineer, staff concluded the final revisions to the Island Corridor Foundation (ICF) and Southern Vancouver Island Rail (SVI) submissions. Gravel specifications were review by an ex-Ministry of Transportation and Infrastructure (MOTI) road builder and these were forwarded and accepted by the ICF review engineer. Staff researched hydro-seeding specifications and the handling of merchantable timber and obtained an updated RDN Insurance Certificate to cover the Coldwater Rd strata Statutory Right of Way (SRW). Tender documents were updated, reviewed and revised and 'issue for tender' drawings prepared. The invitation to tender was sent to five pre-qualified firms with tenders due March 17th. Staff liaised and attended a site meeting with ICF and the Alberni Pacific Railway group concerning safety protocols along the Alberni Line during trail construction, and the Coombs-end start of the Regional Rail Trail.

Regional Parks and Trails

Arboretum
Staff cleared illegally dumped garbage around the entrance gate and fence at this site.

Beachcomber Regional Park
Park staff conducted park inspections and trail maintenance. Park staff removed a rope swing from a tree.

Benson Creek Falls Regional Park
Security patrols took place on Feb 6 and 7 enforcing parking at the Creekside parking lot. No issues were reported.

Coats Marsh Regional Park
Trail development work at this park continues to be on hold due to weather conditions.

Descanso Bay Regional Park
The Parks Operator Contract was awarded to Jim Demler who has held the contract since 2004 when the property became an RDN Regional Park. Staff introduced the Park Operator to the Greater Nanaimo Cycling Coalition in regard to developing alternate transportation, i.e., come by cycle or kayak, camping event at the Park in the fall. Staff liaised with the Park Operator concerning a planned SHAW video interview involving GaLTT and concerning trails at the Park and in Cox Community Park.

Staff submitted advertisement copy to be featured in the “Great Stays” section of the Snowbirds and RV Travelers magazine.

A change room has been constructed at the park. This added amenity will provide for an improved visitor experience for the day use area.

Englishman River Regional Park
Park Staff carried out routine inspections of Englishman River Regional Park and Top Bridge Park. Staff responded to maintenance issues identified by the Volunteer Park Warden including garbage issues, ATV trespass, vandalism, graffiti and suspect hazardous trees. Staff repaired footbridge and relocated due to high water flooding.

Staff requested MoTI look into the installation of 'no camping' signs at the end of Allsbrook Rd, further to complaints from park neighbours.

Staff worked with GIS Mapping on the clarification of park boundaries and definition of the Parksville Qualicum Beach Wildlife Management Area (PQBWMA).

Horne Lake Regional Park
Park staff conducted park inspections. Staff demoed the old gazebo in north park. The area was leveled and grass seeded. A hazard tree assessment was completed with RLC Parks Services, the park operator, for the park. Staff marked future campsites with RLC. The forest fire centre visited the site. Trees that have to be removed for the future campsites will be removed by them giving them a training opportunity for firefighting. The majority of trees that will be removed are dead or immature, minimal removal was the primary consideration.

Staff submitted advertisement copy to be featured in the “Great Stays” section of the Snowbirds and RV Travelers magazine.

Lighthouse Country Regional Trail
Park staff conducted trail inspections and trail maintenance. Staff spread grass seed along the fence and bank at Lioness parking area. Staff also removed moss from the guide rail.

Little Qualicum River Regional Park
Vandalism and vehicle access continues to be an issue at this park. Additional barricade work is scheduled for mid-March. Staff continued with park inspections in the course of monitoring vehicle access, and removed illegally dumped garbage from the gate area. Staff issued access keys to Fisheries and Oceans Canada to allow for policing of fishing and/or poaching activities at the site. This increased monitoring will commence in late spring and continue through the summer.

Staff also met with park neighbours, investigating a trespass issue.

Moorecroft Regional Park
Park staff conducted park inspections and trail maintenance. Staff boarded up Mrs. Moore's Cabin windows due to vandalism. The entrance gate was seriously damaged by criminals during a nighttime police chase. The gate was repaired in short order.

Staff met with members of the Moorecroft Stewards to discuss future Moorecroft projects and allocation of donated funds.

Staff met with the Nanoose Bay Elementary School Principal and Outdoor Classroom Teacher to review the first semester's use of this Regional Park as an outdoor classroom (every Monday). Overall, it is working well. A number of items were identified for both parties to work on.

Morden Colliery Regional Trail
Staff are still awaiting cost estimates for upcoming trail development work along the parking lot to Thatcher Creek section of the trail. Staff also conducted trail clearing and maintenance work along the trail.

A vandalized lexan cover was replaced on the interpretive nature sign/kiosk on the trail.

Mount Benson Regional Park
Park staff cleaned off graffiti from the Park Identification sign at the Witchcraft parking area. A post and trail sign were also cleared of graffiti.

Staff developed a framework for the permitting of running events at Mount Benson Regional Park for discussion at the Regional Parks and Trails Select Committee and Board.

Staff processed the park covenant for execution by all signatories.

Parksville Qualicum Beach Links
A missing PQB Links sign at the corner of Lee and Barclay was reported to MoTI; they will replace it.

Miscellaneous
Staff continued to work on the development of the Parks Division SharePoint set-up. All Parks staff participated in half-day training session hosted by the Information Technology department.

Staff received and reviewed the 2016 Wildfire Response Agreement from the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO). Edits were provided and the final document processed for signature. There was a slight increase to the fee from $800 to $1,000.

Staff assisted the Tourism Vancouver Island consultant with preparation for a March Hiking Trails workshop.

Staff concluded work on Parks' component of Spring/Summer Active Living Guide.

Staff continued to provide support regarding two potential regional park property donations.

Park Use Permits and Events

Area A
Staff concluded work on Vancouver Island University's (VIU) 2015 permit to propagate and replant Nanaimo River Regional Park Wild Ginger. Following consultation, staff identified a good place to replant the 25 plants returning to the RDN: along the Morden Colliery Regional Trail. The balance will be planted at VIU's Milner Gardens and Woodland.

Area B
Staff worked with the Gabriola Soccer Association on a park use permit to use the concession at Rollo McClay Community Park, as part of the U-11 Boys Soccer Jamboree. Staff liaised with Gabriola Recreation Society and the Vancouver Island Health Authority. Permit approved.

Initiated work on a permit for the Backcountry Horsemen of BC, Central Vancouver Island Chapter on a fundraiser at the 707 Community Park, and the 4-H Club for Rollo McClay concession use during softball season.

Area E
Initiated work on a permit for a summer wedding at Moorecroft Regional Park.

Area F
Initiated work on a permit with Arrowsmith Community Recreation Association (ACRA) for the 2016 Coombs Family Picnic to be held again at the French Creek School Open Space.

Area G
Initiated work with Department of Fisheries and Ocean (DFO) at Englishman River Regional Park on a permit for the installation of an electronic fish counter at the existing weir near the outtake of the CW Young fish channel.

Wendy Marshall
_____
Manager of Parks Services

_____
General Manager Concurrence

REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Tom Osborne General Manager of Recreation & Parks	**DATE:**	April 14, 2016
		MEETING:	D69 Recreation Commission –May 21,2015 All POSAC's, RPTSC
FROM:	Wendy Marshall Manager of Park Services	**FILE:**	

SUBJECT: Monthly Update of Community Parks and Regional Parks and Trails Projects- March 2016

RECOMMENDATION

That the Parks Update Report for March 2016 be received as information.

Regional and Community Parks and Trails

During March staff have been involved with the following projects and issues.

Electoral Area Community Parks

Area A

Staff worked with project engineers to complete a second round of design revisions for the future kiosk structure at Cedar Plaza scheduled for installation in Summer 2016.

Hazard tree management investigation continued for Ivor Road Community.

Drainage and water infiltration continues to be monitored at the Cedar Skatepark, where staff also repaired a vandalized electrical junction box, removed graffiti, and conducted a park clean up.

Staff removed a large log jam from the Nelson Road boat launch, which was deposited during a storm event.

Area B

VIHA's 2016 permit to the RDN to operate a water supply at Rollo McClay Community Park was received and posted at the park.

Staff prepared and distributed the March 1st Electoral Area B Parks and Open Space Advisory Committee meeting agenda package, attended the meeting and reviewed the meeting minutes.

Staff worked with community volunteers in the planning of pitching machine at Rollo McClay Community Park. Trail repair and drainage improvements were made. Graffiti was painted over on the Gabriola

Recreation Society building and the concession washroom doors. Water and chlorine level monitoring was carried out.

Following an arborist assessment, several hazard trees were removed from Decourcy Drive Community Park.

Pressure washing work was completed at Huxley Community Park. This included the tennis courts, ball hockey court and skateboarding area.

A damaged signpost was replaced at the Jeannette Road entrance to the 707 Community Park.

Area C – Extension
Staff coordinated site work completed by a landscape contractor in preparation for hydroseeding in April.

Staff completed draft designs for plaques acknowledging donated funds and labour for the covered footbridge in Extension Miners Park. The plaques will be manufactured in April.

At Nanaimo River Canyon Community Park staff removed a large volume of illegally dumped garbage.

Area C – East Wellington / Pleasant Valley
Staff completed a toilet installation plan for Meadow Drive Community Park. Park staff installed a bench and a contractor made the concrete pad.

At Benson Meadows path park staff replaced boulders on the trail which continuously are being removed by dirt bikers. Staff are looking into other solutions.

At Creekside community park staff removed garbage from the parking lot.

Area E
Staff attended a meeting with a biologist at the site of the future Oakleaf Community Park in preparation for biological inventory and environmental assessment work.

At Schooner Ridge Trail staff removed Euphorbia from trail and disposed at Regional transfer station, and installed three new regulation signs/post.

At Blueback CP staff repaired damaged silt fence due to storm event.

At Brickyard CP staff removed garbage and cleared trails of debris.

At Ainsley Stairs staff inspected stairs and cleared debris.

At Stone Lake CP park staff talked to some kids who were reported to be cutting down trees to make forts.

At Carmichael CP trees were removed from the park without formal approval. Bylaw has sent a letter to those responsible.

Area F

Staff prepared and distributed the March 9th Electoral Area F Parks and Open Space Advisory Committee meeting agenda package, attended the meeting and reviewed the meeting minutes.

Staff reviewed the November 26th, 2015 Arrowsmith Community Trails (ACT) Sup Group meeting minutes and updated the ACT map to reflect the proposed trail development priorities.

Staff provided support to the volunteer group regarding the Errington School Community Trail Interpretive Forest Trail entrance signage. The group will provide the signage for RDN staff to install and donate funds towards the installation of a bear-proof garbage can at the school trailhead.

Staff worked with Planning staff to provide comment regarding the rezoning application on Springhill Road.

At the recently developed Cranswick Road trail, staff met with a park neighbour, responding to a complaint of a fallen tree on their fence. Staff removed the tree and repaired the fence.

At Meadowood Community Park staff responded to a vandalism complaint. Staff noted some minor damage to grass area, and conducted a park clean-up. Staff also met on site with the fire chief and applicants of a Park Use Permit for an upcoming Bluegrass Festival. Logistics, health and safety, vehicle access and control, and parking area development were addressed, and will be dealt with this spring during the lead-up to the event.

Area G

Staff prepared and distributed the March 7th Electoral Area G POSAC meeting agenda package, attended the meeting and reviewed the meeting minutes.

Staff completed a site assessment of an undeveloped road right-of-way that extends west of Stanhope Road in preparation for future community trail planning.

At Neden CP staff removed cedar split rail for MOTI road upgrades from Wembley Road access.

At Lee Road CP staff responded to complaint regarding a tree fallen across river, staff spoke to the Ministry of Forest Lands and Natural Resources seeking advice and was advised to leave the tree.

At Boultbee CP staff picked up and installed two yards of gravel to alleviate a tripping hazard complaint from park user.

At Riley Road Staff responded to complaint regarding trees on the trail and removed the tree.

Area H

The Crown Licence of Occupation renewal paperwork for Oakdowne Community Park was processed for signature and fee payment further to February Board approval to proceed. A Board report was prepared for Crown Licence of Occupation renewal for Oakdowne Community Park Adjunct II (trails on parcels adjacent to the main park).

Staff provided support to the volunteers working on the Bowser Cultural Learning Space project.

At Sunnybeach staff replaced old boards on a bench.

Directional signage was installed by a contractor and RDN staff at the Big Qualicum River Hatchery.

Community Works Projects

Claudet
At Claudet Road CP staff inspected park drainage and parking area.

Regional Significant Gas Tax Project

E&N Rail Trail
An appeal of the Agricultural Land Commission's requirement to install over 1.5 km of fencing along the boundary of the Island Corridor Foundation (ICF) was successful. Project approval was received from Southern Vancouver Island Railway (SVI) for two proposed pedestrian rail crossings, and from the ICF's consulting engineer for the overall Coombs to Parksville rail trail proposal. Staff worked with ICF and RDN lawyers to refine the proposed Alberni Line compliance Memorandum of Understanding. Tender addenda were provided to the five pre-qualified firms bidding for the construction of the rail trail. Five tenders were publicly opened and later reviewed for completeness and compliance. A report to the April Board was prepared to provide tender results and a recommendation to advance to construction.

Regional Parks and Trails

Beachcomber Regional Park
Staff disassembled park entrance sign re-stained/painted and replaced.

Coats Marsh Regional Park
Staff monitored the marsh level and the operation of the Clemson Pond Leveler at the beaver dam location.

Descanso Bay Regional Park
Staff met on site with the campground operator to assess numerous maintenance issues including hazard trees, campsites, beach access and road conditions. Road grading work is planned for the spring. New park signage and several padlocks were delivered to the park.

SHAW video shoot held at the Park as part of story on GaLLT.

Englishman River Regional Park
Further to the RDN's request and complaints received from residential neighbours, MoTI has installed 'No Camping' signage at the end of paved Allsbrook Rd.

Park Staff carried out routine inspections of Englishman River Regional Park and Top Bridge Park. Staff responded to maintenance issues identified by the Volunteer Park Warden including; garbage issues, ATV trespass, vandalism, graffiti and suspect hazardous trees.

Horne Lake Regional Park
Forest fire centre crews cut trees in the new campsites. Picnic tables were delivered to Horne Lake.

Little Qualicum River Regional Park
Vandalism and vehicle access continues to be an issue at this park. A culvert was replaced and another one was added due to pressure and road damage from beaver damming activity and seasonal high water. ATV and 4x4 vehicle barricades were added and some others improved following ongoing penetration by ATV users. The park identification sign was power washed.

Moorecroft Regional Park
Staff provided the Moorecroft Stewards with design information and confirmation of donated funds in consideration of a proposed entrance kiosk structure.

Park staff conducted park inspections and trail maintenance. Storm damage repair occurred in the park.

Morden Colliery Regional Trail
Staff coordinated garden maintenance work along a section of the MCRT east of Cedar Plaza which included pruning, tree staking, weeding, planting and soil work in preparation for hydroseeding in April.

Staff have now received final cost estimates for upcoming trail development work along the parking lot to Thatcher Creek section of the trail. These trail improvements are scheduled for the spring.

A large volume of donated Wild Ginger was planted along the Morden Colliery Trail in the vicinity of Thatcher Creek. Sign maintenance and pressure washing work was also carried out.

Mount Arrowsmith Massif Regional Park
Following a report from trail users, staff investigated and assessed an eroded section of trail close to the McBey Creek bridge. Signage work to redirect users to an improved trail and brushing was carried out to remedy the problem.

Mount Benson Regional Park
The conservation covenant and associated statutory right of way all in favour of the Nanaimo & Area Land Trust and the Cowichan Community Land Trust was submitted to Land Titles is now registered on the titles of the four park parcels. A draft memorandum of understanding to terminate the 2006 RDN-NALT Contribution Agreement was prepared.

Nanaimo Area Land Trust (NALT) installed new signs at the trail heads. The signs were designed by RDN staff and NALT. NALT, Search and Rescue and RDN met to go over the most resent rescue effort.

Nanaimo River Regional Park
The kiosks, garbage can, and identification signs were power washed. Thin ice/season safety signage was taken down.

Parksville Qualicum Beach Links
MoTI agreed to replace the missing PQBL way-finding sign at the corner of Lee and Barclay.

Trans Canada Trail
The temporary closure of the Extension Ridge Trail section of the TCT was ended by landowner Island Timberlands; notice was posted on the RDN web site. Staff liaised with MFLNRO(Ministry of Forests, Lands and Natural Resource Operations) Enforcement and the Conservation Officer about use of firearms on Crown lands west of the Spruston Rd trailhead area. The activity is not prohibited.

The kiosks at Spruston and Harewood Mines were power washed. The trail closure signage at Extension Ridge was taken down. Staff installed new sign posts at Extension Ridge.

Miscellaneous
Staff executed the copy of the 2016 Wildfire Response Agreement with the MFLNRO covering park and trail situated outside of local fire protection areas submitted to the Province.

Staff met with representatives of the Greater Nanaimo Cycling Coalition to review cycling infrastructure development efforts.

Staff participated in Tourism Vancouver Island's Hiking Strategy Workshop as part of consultant Stantec's work on developing a Sunshine Coast/VI hiking experience plan.

Staff provided a letter of support to the Nanaimo Mountain Bike Club in regard to their grant application to MEC.

Staff continued to assist the Capital Regional District with the use of the Haslam Creek Suspension Bridge engineered plans for a CRD bridge over the Goldstream River, and provided advice on suspension bridge development and maintenance.

Work continued on creating a Parks Sharepoint area and moving existing files into the system. Detailed instructions for inclusion in Parks Division policy were created.

An order for new copies of the Regional Parks and Trails Guide has been placed.

Staff continued to work on two potential regional park property donations.

Material Safety Data Sheet information was updated for the Operations shop.

The mowing and park maintenance contract for several community parks was completed and sent out to the contractor.

Staff developed a draft design for new Community Park entrance signs.

Park Use Permits and Events

Area A
Over 60 young wild ginger plants were put in the ground around the Thatcher Creek Bridge along the Morden Colliery Regional Trail. These plants were propagated under permit to the VIU Horticulture Centre from stock at Nanaimo River Regional Park.

Area B
Issued a park use permit to the 4H Club to operate the Rollo McClay Community Park concession during ball season; VIHA copied. Reviewed Tourism Nanaimo's proposed InstaMeet photography event on Gabriola, so far not involving RDN park properties.

Area C
Began work with Tourism Nanaimo on a permit for an InstaMeet photography event along the Ammonite Falls Regional Trail and into Benson Creek Falls Regional Park mid-May. Addressed parking issues and assisted them with effort to plant in the woodlot or undertake broombusting activities.

Area E
Worked with a groom on a wedding permit application for mid-July at Moorecroft Regional Park.

Area F
Began work with the Bluegrass Society on a festival permit for use of Meadowood Community Park. The festival had been held under permit at Lions Community Park in Area H these last five years. Liaised with Dashwood Fire Chief and event organizers. Site visit scheduled for April 1st.

Area G
Met with the Mid-Vancouver Island Habitat Enhancement Society organizers of the River Run, held annually these last five years at Englishman River Regional Park, to review what learned, issues, and where want to go with the event.

Issued a park use permit to DFO regarding installation of an electronic fish counter at the metal weir over the C.W. Young Fish Channel at Englishman River Regional Park.

Area H
Worked with the Silver Spur Riding Club on planning a competitive ride in Bowser, with overnight camping proposed for the MFLNRO compound beside Wildwood Community Park. Will not likely involve any RDN park or trail.

Wendy Marshall
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Manager of Parks Services

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General Manager Concurrence

REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Tom Osborne General Manager of Recreation & Parks	**DATE:**	May 6, 2016
		MEETING:	D69 Recreation Commission All POSAC's, RPTSC
FROM:	Wendy Marshall Manager of Park Services	**FILE:**	

SUBJECT: Monthly Update of Community Parks and Regional Parks and Trails Projects- April 2016

RECOMMENDATION

That the Parks Update Report for April 2016 be received as information.

Regional and Community Parks and Trails

During April staff have been involved with the following projects and issues.

Electoral Area Community Parks

Area A

Staff provided the Electoral Area Director with development costs for a selection of regional and community trail projects.

A picnic table was ordered for the Cedar Skate Park. Funds for the table were donated by the Cedar Skate Park Association. Also at the Cedar Skate Park staff cleaned up garbage, and repaired electrical lock box due to vandalism. Drainage and water infiltration continues to be monitored at the Park.

Final design revisions for the future kiosk structure at Cedar Plaza were submitted by staff to project engineers. Engineered drawings for building permit application are anticipated in May 2016.

Hazard tree management investigation continued for Ivor Road Community.

Area B

Staff completed a Board report regarding the Islands Trust proposed park land dedication subdivision application referral for 1520 McCollum Rd.

Staff received notification that the Gabriola Lions Club was unsuccessful in their Co-op Community Spaces grant application for playground construction at Huxley Community Park.

Staff met with an arborist and tree faller and subsequently had a large maple in Hummingbird Community Park pruned. Staff inspected the trails along Whalebone for any trespass issues. A patch of

Japanese Knotweed was cut down along Whalebone Drive within the road right-of-way outside of the Whalebone Parks. Several hazard trees were felled and chipped off of Queequeg in the Whalebone area trail system.

Field aeration and seeding, and the addition of sand and fertilizer were conducted at Rollo McClay Community Park. The fields are in great condition this season and receiving compliments from the Gabriola Softball Association. Ongoing monitoring of graffiti and vandalism was kept up at Rollo McClay Community Park, where water and chlorine level monitoring has also continued for the 2016 season. Remediation and repair work was carried out at the concession building following a small fire in the Coaches Storage area.

Area C – Extension

Staff contacted the Extension Recreation Commission to request a post-construction clean-up of the playground installed on the MOTI ROW next to the Recreation Commission property. Volunteers will be working on this in the upcoming month.

At Extension Miners Community Park staff approved final proofs for plaques acknowledging donated funds and labour for the covered footbridge in Extension Miners Park. The plaques will be ready for installation in June. Staff coordinated the hydro seeding of the picnic area in the park. Staff installed a new culvert at the park.

Staff provided comments on a planning referral regarding a proposed subdivision in Extension Village.

Area C – East Wellington / Pleasant Valley

At Benson Meadows path park staff replaced boulders on the trail which were removed by dirt bikers.

At Creekside community park staff graded the parking lot and installed a bear proof garbage can.

Staff coordinated and attended a community meeting at Creekside Place on April 21 with residents and the area Director to discuss issues related to the Creekside parking lot, unauthorized street parking and access to Benson Creek Falls Regional Park.

Area E

At Stone Lake Community Park staff repaired the concrete head wall for a culvert in one of the retention ponds.

At Blueback CP staff repaired the walkway and met with an arborist to look at the health of the trees in the park. The remainder of the drainage system was installed and rough grading completed.

Staff communicated with a number of interested local Dive Outfitters regarding the upcoming Director's Forum at which the management of Nanoose Public Water Accesses will be discussed.

Staff met with the Superintendent of the Fairwinds Golf Club to discuss the replacement of trees and shrubs that were removed without permission from an RDN-owned Community Park. Planting will be completed by Fairwinds in the fall of 2016 in accordance with a restoration plan prepared by park staff.

Area F

At the Cranswick Rd Trail, burning of small slash piles from trail construction was completed by the contractor. Staff also repaired a fence delineating the trail from a neighbouring private property due to tree damage and installed approximately 50 ft. of galvanized fence and five posts to support the existing fence. The remainder of the trail work is scheduled to be completed in May.

Staff reviewed the Little Qualicum River Estates subdivision application referral and provided parks comments.

Staff and the Dashwood Fire Department Chief met on site at Meadowood Community Park to with applicants for a Park Use Permit for the upcoming Bluegrass Festival, to discuss logistics and safety issues surrounding the event. Staff conducted a park clean-up at the site.

Staff liaised with the Friends of French Creek Society regarding Giant Hogweed removal at French Creek School Community Park. At the same site staff also removed garbage and debris from the playground area.

A price quote was received for fence repair work at Errington Community Park. The field mowing has begun for the season and the Errington Farmers Market had the season opening event on Saturday, May 30th. Staff also inspected the trails.

Area G

At Miller Road CP staff removed giant hogweed.

At Riley Road CP staff responded to neighbor complaint regarding trees down on the trail. Staff removed low limbs and trees blocking trail.

At Columbia Drive CP staff removed garbage from trails and garbage can.

At Lee Road CP staff inspected /assessed tree down across river.

At Dashwood CP staff installed four yards of pea-gravel in playground to increase surface level of fall material.

Staff reviewed a parkland dedication proposal related to an Area G subdivision application. A POSAC site tour of the proposal site was arranged for May 9.

Area H

MOTI (Beach Accesses)-Staff have been building and/or repairing all of the beach access benches. At Sunnybeach Water Access, staff graded the parking lot and realigned the wheel stops. At Shoreline Drive Water Access, staff improved applied two yards of crush gravel to the stairs to improve access to beach.

Staff participated in the planning of the OCP Public Outreach Open House scheduled for May 3rd, 2016.

Community Works Projects

Area A – Morden Colliery
Staff toured undeveloped sections of the MCRT with members of the Agricultural Land Commission as part of the application process for future trail development in the ALR, which includes the planned construction of two steel-truss multi-use bridges over the Nanaimo River.

Staff met with Herold Engineering to discuss budget and tasks related to detailed design work for the planned multi-use bridges over the Nanaimo River within the MCRT.

Area B -Village Way
Additional information provided to the Ministry of Community, Sport and Cultural Development in regard to the Area B Community Park bylaw update that if approved, will permit the development of sidewalks through the Community Park function.

Regional Significant Gas Tax Project

Coombs to Parksville Rail Trail
A Memorandum of Understanding with the Island Corridor Foundation (ICF) that permits the RDN to defer compliance with respect to federal road-rail crossing requirements until such time as the Alberni Line of the E&N becomes active was concluded. Final approval of the Coombs to Parksville Rail Trail project was received from ICF as well as the RDN Board. A Notice of Award was issued to David Stalker Excavating Ltd. to construct the trail for a tendered price of $2.7M. Notice of project advancement was communicated to all neighbours of the project. The project page on RDN web site was updated.

Regional Parks and Trails

Arboretum
Parks staff met with Solid Waste staff and park stewards to discuss property management, maintenance and development issues and options. Staff also removed garbage from the entrance area, inspected the park and surrounding Solid Waste areas.

Big Qualicum Regional Trail
Staff re-installed posts/signs due to incorrect placement.

Coats Marsh Regional Park
Staff responded to a letter from a concerned park user regarding the planned trail development along the western side of Coats Marsh. The trail connection, identified in the Park Management Plan, will link the Stanley Pl. park entrance to the existing berm and trails on the western side of the Marsh. Staff reviewed the proposed route and modified it slightly back from the marsh edge. The new route has been approved by The Nature Trust, co-owners of the Park.

Staff monitored the marsh level and the operation of the Clemson Pond Leveler at the beaver dam location.

Descanso Bay Regional Park
Staff met on site with the campground operator to discuss park maintenance and operation issues for the coming camping season.

Englishman River Regional Park
Park Staff carried out routine inspections of Englishman River Regional Park and Top Bridge Park. Staff responded to maintenance issues identified by the Volunteer Park Warden including; garbage issues, ATV trespass, vandalism, graffiti and suspect hazardous trees.

Park staff trimmed the grass around the picnic tables and bridges.

Horne Lake Regional Park
Staff disassembled, cleaned, sanded and re-finished park entrance sign then re-installed.

The Park Operator reported a higher than usual call volume on their first day open for reservations. Parks staff posted a notice on the Horne Lake Regional Park webpage noting this temporary inconvenience.

Lighthouse Country Regional Trail
Staff installed a culvert on the trailhead of the north loop to alleviate seasonal flooding issues.

The new Lighthouse community sign at Lions Way and Hwy 19A was installed by local community members. The sign includes direction to the Regional Trail as well as Lions Community Park.

Little Qualicum River Regional Park
Staff inspected several incidents of gate breaches, discovered flooding issues at the newly installed culverts due to beaver activity, and continue to relieve culverts of branch debris. Ongoing monitoring of beaver activity will continue at the park until transfer of ownership to the Regional District of Nanaimo occurs. At this point a Clemson Pond Leveler will likely be installed in order to reduce maintenance visits and costs.

Moorecroft Regional Park
Park staff conducted park inspections and trail maintenance. Storm damage repair and drainage installation was done within the park. Additional picnic tables were ordered for Moorecroft.

Staff met with the Parksville Museum to discuss issues related to the possible restoration and management of Miss Moore's Cabin.

Mount Benson Regional Park
The park covenant was accepted by Land Titles and is now registered on the four park parcels. Executed copies of the covenant provided to covenant holders NALT and CCLT. Memorandum of Understanding between the RDN and NALT concerning the termination of the 2006 Contribution Agreement, all work having been accomplished, was issued and executed.

Morden Colliery Regional Trail
Park Operations and Planning staff met on site at the park to install new locks on bollards, and allow for contractor access for upcoming hydro-seeding. Staff also pruned blackberry, grass and brush and did fence repair work along the trail off of Hemer Road.

A significant trail surfacing and drainage maintenance project was conducted on the trail on the portion from the parking lot to Thatcher Creek. The parking lot was also graded and enlarged, providing parking for an additional five vehicles.

Nanaimo River Regional Park
Staff removed seasonal high water signage from the park and conducted a park inspection.

Parksville Qualicum Beach Links
As requested, MoTI has installed the missing way-finding sign at the corner of Barclay Crescent and Lee Road.

Top Bridge Regional Trail
Park staff cut the grass and blackberry around the park identification sign and along the trail.

Trans Canada Trail
Staff provided a letter of support to the Backcountry Horsemen of BC Central Vancouver Island Chapter in regard to the proposed development of their recreation site at the end of Spruston Road. It will provide camping opportunity for all users of the trail.

Further to the re-opening of the Extension Ridge Trail after the landowner's logging operations, a post-logging assessment of the trail condition was made. Trails BC and TCT National were updated.

Miscellaneous
Staff were involved in an asset management working group to review and rate Asset Risk for parks and trails infrastructure.

Staff attended Tourism Vancouver Island's workshop to review the consultant's draft hiking experience plan for the Island and Sunshine Coast.

Staff assisted the Comox Valley and Cowichan Valley RDs with rail trail agreement work and continued to assist the Capital Regional District with suspension bridge development plans.

Staff arranged for minor edits to the 2016 reprint of the Regional Parks and Trails Guide, ordered up and received 7,000 copies. Liaised with information centres and local government offices across region and including Ladysmith, and arranged for shipment out of over 5000 guides.

Staff attended a Municipal Insurance Association risk management conference.

Staff assisted the Finance Department with the identification of parks not actively managed.

Staff reviewed and revised the 2016 work plan for an upcoming Strategic Planning Session to be held in May.

Staff continued to work on three In Camera acquisitions.

Mowing and park maintenance contract work for several community parks continued for the season.

The Recreation and Parks Department boat trailer was picked up from Gabriola and returned to the compound at the Operations office.

A new metal detector/survey pin finder was purchased and received.

Park Use Permits and Events

Area A

- Assisted RDN WaterSmart with planned guided walks at Nanaimo River Regional Park for SD68 Gr 4/5 kids.

Area B

- Liaised with the Gabriola Recreation Society and 4-H concession permit holder about the poor condition of the concession after a soccer tournament and the need to follow-through on agreed-to inspection procedures.
- Worked with the Nanaimo Economic Development Corp. on a park use permit for an instameet photo event at Malaspina Galleries Community Park.

Area C

- Worked the Nanaimo Economic Development Corp. on a park use permit for an instameet photo event at Ammonite Falls in Benson Creek Falls Regional Park. Permit approved with conditions concerning restricted parking.

Area E

- Initiated work with Quality Foods regarding permit for the annual Teddy Bear Picnic held at Jack Bagley Field.
- Approved a park use permit application for a wedding at Moorecroft Regional Point in early August.
- Worked with the North Island Film Commission and Chesapeake Shores on a permit to use the parking area and access road at Moorecroft Regional Park for film project parking (20 days between mid-May and the end of July). Liaised with other park special event organizers who will be affected should the film go forward.

Area F

- Meetings held with Bluegrass Festival organizers and the Dashwood VFD Chief concerning the 2016 festival. If all permits are approved for the festival, camping associated with the five day event is to take place at Meadowood Community Park, with the music component to be held on the Meadowood Store property. Dashwood Volunteer Fire Department conditions for the event communicated to the organizers as part of permit process.
- Ozero were advised that any further hauling through Meadowood Community Park will require a park use permit.
- Worked with ACRA on permitting of the 26th annual Coombs Family Picnic, to be held again at French Creek School Community Park.

Area G

- Nanoose Heart and Stroke initiated a permit application for a walk at Englishman River Regional Park that includes vehicle access.

- Department of Fisheries and Ocean (DFO) submitted an eight-year review of Englishman River Regional Park side channel water quality monitoring carried out in association with Vancouver Island University. Overall, results are quite positive.
- DFO encountered troubles with the installation of its electronic smolt counter and will wait until June until trying again.
- Assisted RDN WaterSmart with planned guided walks at Englishman River Regional Park for SD69 Gr 4/5 kids.

Wendy Marshall

Manager of Parks Services

Tom Osborne

General Manager Concurrence

REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Wendy Marshall Manager of Parks Services	**DATE:**	May 27, 2016
		MEETING:	RPTSC – June 7, 2016
FROM:	Lesya Fesiak Parks Planner	**FILE:**	

SUBJECT: Regional Park Management Plan for the Fairwinds Lakes District - Enos Lake Protection & Monitoring Program

RECOMMENDATION

That the Board approve the Regional Park Management Plan for the Fairwinds Lakes District with the submission of the Enos Lake Protection & Monitoring Program.

PURPOSE

To report on the completion of the Enos Lake Protection & Monitoring Program as an outstanding item for final Board approval of the Regional Park Management Plan for the Fairwinds Lakes District.

BACKGROUND

On June 23, 2015 the RDN Board approved the Management Plan for the Fairwinds Lakes District Regional Park (the Park Management Plan) in principal pending submission of the final Enos Lake Protection & Monitoring Program (ELPMP) by the developer, as required by the Phased Development Agreement (PDA). At that time, a draft of the ELPMP was undergoing revision following direction from the BC Ministry of Environment (MoE) and RDN Water and Utility Services. On April 8, 2016, the final draft of the ELPMP was completed by PGL Environmental Consultants on behalf of Seacliff Properties (the current owners of the Fairwinds Lakes District area) to the satisfaction of both the RDN and MoE. The completed ELPMP is attached to this report as Appendix I. The Management Plan for the Fairwinds Lakes District is attached as Appendix II.

The ELPMP was developed in accordance with the PDA and per the Integrated Stormwater Management Plan (ISMP) for the Fairwinds Lakes District. While the ISMP proposes mitigation of possible effects of future development on Enos Lake (a centrally located lake within the Lakes District area and the future Regional Park), the ELPMP provides a long-term monitoring framework for those potential effects. It includes: baseline water quality monitoring and assessment; support in the development of site specific Water Quality objectives based on Ministry of Environment protocols; and guidelines for invasive species management practices.

An overview of the ELPMP is provided in the Regional Park Management Plan under Section 4.3.3 with a recommendation for the RDN to work collaboratively with the developer of the Lakes District at the time of subdivision and development to support the management of Enos Lake according to the ELPMP (which is to be attached to the Park Management Plan as Appendix E upon completion). Enos Lake monitoring and invasive species management is to be completed by a Qualified Environmental Professional (QEP) on behalf of the developer during phased development (over six phases and approximately 20 years) and one year post development. Annual monitoring results are to be provided to the RDN and all relevant stakeholders.

ALTERNATIVES

1. That the Board approve the Regional Park Management Plan for the Fairwinds Lakes District with the submission of the Enos Lake Protection & Monitoring Program.

2. That the Board not approved the Regional Park Management Plan for the Fairwinds Lakes District with the submission of the Enos Lake Protection & Monitoring Program and that alternate direction be provided.

FINANCIAL IMPLICATIONS

The responsibility and cost for the monitoring and management of Enos Lake per the ELPMP will be borne by the developer during subdivision and neighbourhood build-out and one-year post construction (a period of roughly 20 years). There are, therefore, no imminent financial implications associated with Enos Lake protection and monitoring for the RDN. Future, long-term management of Enos Lake will be a collaborative effort between RDN Parks, RDN Water and Utility Services, Fairwinds (which will retain a Provincial license for water withdrawal from Enos Lake for golf course irrigation), and the Province. Any future costs assumed by RDN Parks will be funded through the Regional Parks operating budget.

STRATEGIC PLAN IMPLICATIONS

The Regional Park Management Plan for the Fairwinds Lakes District highlights the importance of continued regional collaboration for the successful development and stewardship of sensitive environments in the future Regional Park, including Enos Lake. The Enos Lake Protection & Monitoring Program (ELPMP) is an integral component of the Regional Park Management Plan, providing a long-term, collaborative monitoring framework for potential effects of future development on Enos Lake.

SUMMARY/CONCLUSIONS

On June 23, 2015 the Management Plan for the Fairwinds Lakes District Regional Park was approved in principal pending submission of the final Enos Lake Protection & Monitoring Program (ELPMP) by the developer. On April 8, 2016, the ELPMP was completed by the developer to the satisfaction of RDN staff and the Ministry of Environment. Staff request that the Regional Park Management Plan for the Fairwinds Lakes District receive final approval from the Board with the submission of the completed ELPMP.

Report Writer	Manager Concurrence
G.M. Concurrence	C.A.O. Concurrence

Appendix I – Enos Lake Protection & Monitoring Program

Fairwinds: Lake District
Nanoose Bay, BC

Enos Lake Protection & Monitoring Program

PREPARED FOR:
FW Enterprises Ltd. c/o Seacliff Properties
305 – 1788 W 5th Ave
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PREPARED BY:
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PGL File: 4675-01.01

PGL ENVIRONMENTAL CONSULTANTS

solve and simplify

Version History:

February 2015 – Draft issued for client and agency review
April 2015 – Final Copy – revised based on regulatory input
March 2016 – Revised Final Copy – additional regulatory input (summer 2016) and transfer to new client

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Table of Contents

1.0 Introduction 1

1.1 Enos Lake Overview 1

1.2 Background of the Enos Lake Protection and Monitoring Plan 2

1.2.1 Relationship between ELPMP and ISMP 2

1.3 Program Objectives 3

1.4 Document Structure 3

1.5 Effects Pathways 4

1.6 Parameters of Interest 5

2.0 Monitoring History 6

2.1 Mixed Conditions - Overview 10

2.1.1 *In Situ* Parameters 10

2.1.2 Laboratory Parameters 11

2.2 Stratified Conditions - Overview 11

2.3 Baseline Conditions by Parameter 12

2.3.1 Turbidity 12

2.3.2 Dissolved Oxygen 13

2.3.3 Conductivity 13

2.3.4 Metals 13

2.3.5 Phosphorus 14

2.3.6 Nitrogen 15

2.3.7 Chlorophyll *a* 15

2.3.8 Total Organic Carbon 16

3.0 Water Quality Monitoring Program 17

3.1 Sampling Procedures 17

3.1.1 Preparation 17

3.1.2 Documentation 18

3.1.3 Sample Collection 18

3.1.4 Submission 20

3.2 Data Storage 20

3.3 Parameters and Sampling Program 21

4.0 Water Quantity 24

5.0 Invasive Species Management Practices 24

6.0 Program Management and Deliverables 25

6.1 Program Leadership 25
6.2 Data Collection and Management 25
6.3 Reporting 26
6.4 Informing Management Decisions 26
6.5 Summary: Deliverables and Schedule 27
7.0 Conclusion 29
8.0 References 30

LIST OF TABLES

Table 1-1. Overview of Effect Pathways Linking Community Development and Water Quality. 4
Table 2-1. Summary of Water Quality Sampling at Enos Lake Since 2006 Source: AquaTerra (2006–2014), MacDonald Environmental Services Ltd. [MESL] (2013), and Raw Data Provided by MOE and Friends of Enos Lake. Sites are mapped on Figure 1 7
Table 2-2. Thermal difference between surface sample (0.5m) and deep sample (~11m), at the deep portion of Enos Lake: 2006 – 2013. [Based on data from AquaTerra (2006) through AquaTerra (2013), and raw data provided by MOE] 10
Table 2-3. Summary of baseline turbidity data for surface samples at Enos Lake. Based on data from AquaTerra, 2014. 12
Table 2-4. Metals Baseline Results for Enos Lake Monitoring 14
Table 2-5. Summary of baseline Phosphorus concentrations (surface water samples; based on data from AquaTerra, 2014) 15
Table 2-6. Baseline data for Chlorophyll a (surface samples only; based on data from AquaTerra, 2014 and MOE raw data) 16
Table 3-1. Summary of Water Quality Monitoring Program for Enos Lake 23
Table 6-1. Summary of actions and deliverables for ELPMP implementation 28

LIST OF FIGURES

Figure 1 Enos Lake Monitoring Locations

LIST OF APPENDICES

Appendix 1 Proposed ELPMP Monitoring Schedule by Year and by Parameter

List of Acronyms

COSEWIC	-	Committee on the Status of Endangered Wildlife in Canada
EIA	-	Environmental Impact Assessment (PGL, 2010)
ELPMP	-	Enos Lake Protection and Monitoring Program
ISMP	-	Integrated Stormwater Management Plan (KWL, 2013)
MOE	-	BC Ministry of Environment
MESL	-	MacDonald Environmental Services Ltd.
MWLAP	-	BC Ministry of Water, Land, and Air Protection
O&G	-	Oil & grease
PAH	-	Polycyclic aromatic hydrocarbons
PDA	-	Phased Development Agreement
PGL	-	PGL Environmental Consultants
QEP	-	Qualified Environmental Professional
RISC	-	Resource Inventory Standards Council
RDN	-	Regional District of Nanaimo
TOC	-	Total Organic Carbon
ToR	-	Terms of Reference
TSS	-	Total suspended solids

1.0 INTRODUCTION

Enos Lake is a small lake in a mostly undeveloped area of the Fairwinds Community located in Nanoose Bay, BC. The Enos Lake Protection and Monitoring Plan (ELPMP) outlines the tasks to monitor and inform the efforts to protect the ecology of the lake during future phases of development.

PGL Environmental Consultants (PGL) initially prepared this ELPMP on behalf of Fairwinds Community & Resort, and subsequently for FW Enterprises Ltd. (Fairwinds, or "the developer"). It is to be submitted to the Regional District of Nanaimo (RDN) as part of the developer's obligations under the Phased Development Agreement (PDA).

Earlier versions of this document were circulated for comment by the RDN and the BC Ministry of Environment (MOE) in February 2015 and April 2015. This iteration of the report has been updated and substantially revised, based on input from those parties. Of particular note, the monitoring program has been redesigned to meet the recommendations provided by RDN[1] in a letter dated July 7, 2015. As recommended by RDN, numerous parameters have been removed from the previous proposal, and the number of monitoring sites decreased. Conversely, the sampling frequency and intensity has been increased for the remaining parameters.

1.1 Enos Lake Overview

Enos Lake has a surface area of 18ha, with a watershed area of approximately 235ha. Within the watershed, 12ha has been previously developed with predominantly low-density residential housing. As part of the ongoing build-out of the Fairwinds community, another 86ha are scheduled for future development as the "Lakes District". This development is expected to occur over 10 to 20 years. Almost half of the watershed is designated for conservation and passive recreational uses, and will remain undeveloped as a public park.

Streams draining to the lake are minor: most are seasonal drainages that run dry in the summer. The lake discharges through its outlet at the north end to Enos Creek. The outlet has a weir structure to maintain water levels. The weir was installed in 1956, after which the lake was used as a community water source for a period. The weir and original dam were upgraded in 1994. The lake also has water licences for storage and irrigation that are in place for use by the Fairwinds golf course. The lake has thus been subject to water withdrawals since 1956, though from 1987 onwards this has been strictly seasonal use for golf course irrigation. The lake is no longer used for drinking water.

As is typical for lakes in BC, Enos Lake is monomictic, meaning that it is thermally stratified in the summer (cooler water with increasing depth) and is otherwise well mixed[2].

Enos Lake was home to an endangered stickleback species pair: the Enos Lake Benthic and Limnetic Threespine Stickleback pair (Committee on the Status of Endangered Wildlife in Canada [COSEWIC], 2012). Previously two distinct species, this pair now exists as an inter-breeding

[1] Letter from Randy Alexander, RDN, to Russel Tibbles, Fairwinds, Re: Enos Lake Monitoring Protection and Monitoring Program (sic)
[2] During very cold years when lake water temperatures fall below 4°C, thermal stratification may occur in winter, which would render Enos Lake "dimictic"

hybrid population. Recovery of two distinct populations does not appear possible and there are no habitat protection provisions in the most recent COSEWIC report (COSEWIC, 2012)[3]. The species pair previously had scientific value but was not commercially or culturally significant.

Aside from the stickleback pair, there are no other fish species confirmed to be present in Enos Lake[4].

1.2 Background of the Enos Lake Protection and Monitoring Plan

As part of the RDN approvals process, the Lakes District Neighbourhood Plan was subject to an Environmental Impact Assessment (EIA) (PGL, 2010). The EIA identified a number of potential effects from the development on the ecological integrity of Enos Lake. In addition to several mitigation measures to protect the lake, the EIA recommended that monitoring of the lake be conducted, as directed by the ELPMP. The need for an ELPMP was subsequently recognized in the Lakes District Neighbourhood Plan.

The Terms of Reference (ToR) for the ELPMP are set out in Schedule "BB" to the Phased Development Agreement between the RDN and the developer for the Lakes District and Schooner Cove neighbourhoods. The ToR was developed as part of an extensive public consultation process which also included input from the RDN and BC MOE.

Baseline water-quality data have been collected over several years, as described in Section 2.0. These data provide the foundation for ongoing monitoring of the lake

1.2.1 Relationship between ELPMP and ISMP

The management of stormwater from the development is a specific area of focus for environmental mitigation, as recommended in the EIA. Management of potential effects due to stormwater runoff (drainage patterns and contaminants) will be managed as per the Integrated Stormwater Management Plan (ISMP) (KWL, 2013). The ISMP includes a host of monitoring activities to ensure the plan is effective in its objectives. More generally, other potential pathways for development to impact Enos Lake require a monitoring program to achieve the general environmental protection objectives, hence the ELPMP.

Thus, the ELPMP and the ISMP are separate programs, but are related in that they both function to monitor aquatic health of the Enos Lake watershed. The ELPMP is primarily focused on water *quality* of the lake, whereas the ISMP is primarily focused on water *quantity* (both in the lake in runoff to the lake), although considerations for turbidity in stormwater runoff will also require consideration in the ISMP.

---

[3] The genetic introgression of the two individual species into a hybrid population led some preliminary conclusions that these two species are extinct (Rosenfeld, 2008). The most recent COSEWIC assessment ultimately determined that it is possible some genetically pure individuals may still exist, hence the "endangered" categorization, but the same document concludes that "morphological and genetic evidence strongly indicates that Enos Lake sticklebacks now occur as a single hybrid swarm, and no longer satisfy the definition of a distinct species". Re-establishment of the two individual species does not appear possible (COSEWIC, 2012).

[4] The lake was stocked with trout in 1948, and in theory this species may still persist. Anecdotally, our understanding is this species has not been observed in recent times. Given the extensive recent sampling work for stickleback, it stands to reason that trout would have been captured in this work, if the species is present. There is virtually no spawning habitat for trout in this watershed and many past stocking programs in BC failed to create self-sustaining populations.

Ultimately, the ELPMP is also an effectiveness-monitoring tool for the ISMP (see Section 1.3), and it may provide feedback for stormwater management or monitoring. For instance, a number of water-quality parameters in the lake may be affected by changes to stormwater. If changes to water quality are noted through the ELPMP, the overseeing Qualified Environmental Professional(s) (QEP) may need to investigate if the changes could be linked to stormwater management. If the change can be attributed to stormwater-management practices (e.g., ineffective retention of hydrocarbons or suspended sediment), then adapted management practices may be recommended within the ISMP. Or, if the ISMP at that time is not currently providing the appropriate data to perform that investigation, then recommendations may be made to adapt the monitoring practices of the ISMP.

1.3 Program Objectives

The **primary objectives** of the ELPMP are as follows, based on the ToR (PGL, 2013; Schedule BB of the Phased Development Agreement):

a) Monitor the effectiveness of the ISMP relative to significant changes to the water quality and/or quantity in Enos Lake; and

b) Inform decisions regarding water management, as required.

The general management objective for Enos Lake is to maintain current (pre-development) water quality and to avoid eutrophication. Thus the ELPMP focuses primarily on potential eutrophication with periodic assessments of contaminants such as metals and hydrocarbons.

1.4 Document Structure

As outlined in the ToR, development of the ELPMP has involved (a) compilation and review of past historical environmental monitoring data for Enos Lake, and (b) detailed design of a sampling program, including selection of key monitoring parameters and targets. These are defined as follows:

- **Parameter**: a measurable property of the water, which can be used as an indicator for water quality (for example: Nitrogen concentration, temperature, pH, etc.); and
- **Target**: The specific value of a given parameter that will trigger a follow-up response, if applicable. Water quality targets were determined based on review of the baseline data, and in consideration of biological setting and overall management objectives for the lake. Actions to be taken in the event that a measured parameter exceeds the target will be determined and proposed by the QEP overseeing the monitoring program.

Due to database size, the full set of raw historical baseline data is not provided in this document. However, baseline data were screened for completeness and analyzed to compare to regulatory water-quality guidelines, as summarized herein. Analysis and presentation of baseline data will continue to be used as point of reference once operational monitoring begins.

This document provides the framework of the ELPMP, specifically including the following:

- Introduction and parameters of interest (Section 1);
- Monitoring history and existing data (Section 2);

- Water Quality (Section 3):
  - What parameters will be monitored and how;
  - Where and when sampling will be conducted; and
  - When and how data will be reviewed, stored, and analyzed.
- Water Quantity (Section 4):
  - Monitoring for changes to timing and magnitude of flow events through stormwater management.
- Biological Parameters (Section 5):
  - Avoidance and detection measures for invasive species.
- Program Management and Deliverables (Section 6)
  - Who will be responsible for what, and during various phases;
  - How results will be communicated to stakeholders; and
  - How results will be used for management decisions.

1.5 Effects Pathways

The general context of the ELPMP is to detect changes in water quality/lake ecology as a result of land development and expanded activity in the watershed. To that end, it is important to review the potential effects pathways that could lead to environmental change.

Residential land development and related recreational land use create relatively well understood and manageable effects pathways. The EIA (PGL, 2010) suggests parameters of interest, and these are included in the commonly accepted pathways for interaction summarized in Table 1-1. Each of these can also act in synergy with each other, and/or have chain-reaction consequences on lake ecology. Note that these are potential interaction pathways, and avoidance or mitigation measures are designed to reduce the magnitude and/or likelihood of actual effect pathways. The ISMP, for instance, estimates pollutant removal efficiencies from a rain garden of 15 to 95% (KWL, 2013).

Table 1-1. Overview of Effect Pathways Linking Community Development and Water Quality.

Activity	Parameters Potentially Affected
Residential pesticide or herbicide use, and resulting runoff	Highly dependent on pesticides used
Land clearing and landscaping, general construction, and stormwater runoff	Light penetration, organic or chemical inputs, and total suspended solids (TSS). Loss of riparian vegetation shading may lead to water temperature changes
Wastewater and fertilizer	Phosphorus, nitrogen
Industrial water use	Water levels, and related physical parameters (e.g., temperature, clarity)
Recreational use in and around the Lake	Hydrocarbons[a], invasive species introductions
Stormwater planning and runoff controls	Quantity and timing of runoff; pollutants in runoff from land-based activities.
Road construction and use	Salt content, TSS, organic nutrients, light penetration, hydrocarbons

[a]Upland activities only. No motorized boats are allowed on Enos Lake.

1.6 Parameters of Interest

The EIA and subsequent ToR identified that some common effects pathways in Table 1-1 provide obvious candidate parameters of concern that are most likely to be influenced by anthropogenic activity, and/or can be biological indicators of adverse change. However not all parameters are easily monitored, and in some cases it can be preferable to monitor an indirect indicator (e.g., turbidity field measurements in lieu of TSS laboratory measurements). Furthermore, unnecessary redundancy may be reduced if accepted proxies are available to represent multiple effect pathways.

The MOE provides direct guidance on developing a list of monitoring parameters, in "*Guidelines for Designing and Implementing a Water Quality Monitoring Program in British Columbia*" (Resource Inventory Standards Council [RISC], 1998). The rationale for the recommendations follow the same logical flow as the EIA effect-pathway summary from Table 1-1, and is reflected in Section 2 of the ToR.

RISC (1998) suggests the following parameters as a starting point for a monitoring program where road building and urban development[5] are involved:

- Turbidity;
- Suspended sediments;
- Dissolved oxygen;
- Conductivity;
- Oil & grease [O&G] (mineral[6]);
- Polycyclic aromatic hydrocarbons (PAHs);
- Metals;
- Coliform bacteria;
- Phosphorus;
- Nitrogen;
- Invertebrates; and
- Chlorophyll *a*.

This parameter list, either directly or indirectly, covers many but not all of the potential effects pathways identified for the Fairwinds development. For instance, the lake is subject to changes in water levels due to the exercise of water licences currently in place, and water levels in the lake are directly tied to the quantity and quality of aquatic habitat. The ISMP (Table 15 of KWL, 2013) identifies this concern and proposes collection of automated daily water level data. Thus, a list of additional candidate focal points and a brief rationale includes:

- Total organic carbon (TOC). This includes carbon sources from natural processes (e.g., decaying organic matter, metabolic activity) but also synthetic sources such as fertilizers or detergents. Community development has the potential to influence TOC.
- Hydrology: quantity and timing of water movement. Lake level management for regulated water licences, as well as stormwater management in developed areas, has the potential to alter the amount of water and the timing of water entering or exiting Enos Lake. Parameters

[5] Sewage treatment and effluent discharge into Enos Lake is not a component of the Fairwinds residential development. Sewage from the proposed community would discharge into a sewage treatment plant and subsequently to the ocean.
[6] The mineral distinction removes natural oils and greases (e.g. vegetable oils, animal fats) from the analysis.

falling under this category include water level in the lake, and an array of summary flow statistics to convey inflow and outflow from the numerous small streams in the watershed.

- Temperature. Water levels or changes in shading can have temperature effects on the lake, which can then have cascading effects on the ecosystem. Temperature at time of sampling is also necessary to interpret a number of the other monitoring parameters.
- Invasive plant and animal species. Development tends to increase the likelihood of invasive species establishment. "Hitchhikers" on boats or waders, escapes due to aquarium or ornamental pond species, and/or intentional releases of non-native plant or animal species are common pathways. In this case "parameters" for potential monitoring are actually species.

2.0 MONITORING HISTORY

Enos Lake has been studied and monitored for decades by various parties and under various approaches, with the primary focus having been an endangered species-pair of sticklebacks. Structured water quality monitoring with specific consideration for future residential build-out began in earnest in 2006. Work has primarily been carried out by QEPs on behalf of Fairwinds, with additional data collected by the MOE and "Friends of Enos Lake", a volunteer group. All data through 2014 have now been centralized[7] and are summarized in Table 2-1. All site locations are shown in Figure 1.

[7] Similar data were collected in spring and autumn 2015.

Table 2-1. Summary of Water Quality Sampling at Enos Lake Since 2006 Source: AquaTerra (2006–2014), MacDonald Environmental Services Ltd. [MESL] (2013), and Raw Data Provided by MOE and Friends of Enos Lake. Sites are mapped on Figure 1.

Site	UTM (10U, NAD83)[a]		Description	Parameters and Dates	Depth[b]
	Easting	Northing			
SWMP-01	416252	5458943	Southern portion of Enos Lake. Inlet.	• 2006–2014: Metals, nutrients, physical parameters. • Mixed conditions: November 13, 2007, October 20, 2008, November 13, 2009, December 20, 2010, November 14, 2011, March 1, 2013, and December 3, 2013. • Stratified conditions: September 15, 2006, April 13, 2007, April 24, 2008, April 20, 2009, May 3, 2010, May 9, 2011, and August 27, 2012.	• 2006–2012: Profiles for field parameters, surface for laboratory parameters. • 2013 - 2014: Surface water and deep water for laboratory parameters, and ongoing profiles for field parameters.
SWMP-02	415993	5459113	40m southwest of the raised marsh (island), mid-lake. Deep area.	• 2006–2008: Metals, nutrients, physical parameters. September 15, 2006, April 13, 2007, November 13, 2007, April 24, 2008, and October 20, 2008. • 2009–2014: Temperature, pH, conductivity, ORP, dissolved oxygen. April 20, 2009, November 13, 2009, November 13, 2009, May 3, 2010, December 20, 2010, May 9, 2011, November 14, 2011, August 27, 2012, March 1, 2013, and December 3, 2013.	• Profiles for field parameters, surface only for laboratory parameters.
SWMP-03	415803	5459374	300m north of the raised marsh (island) near deepest part of lake. Deep area.	• 2006–2014: Metals, nutrients, physical parameters. • Mixed conditions: November 13, 2007, October 20, 2008, November 13, 2009, December 20, 2010, November 14, 2011, March 1, 2013, and December 3, 2013. • Stratified conditions: September 15, 2006, April 13, 2007, April 24, 2008, April 20, 2009, May 3, 2010, May 9, 2011, and August 27, 2012	• 2006–2012: Profiles for field parameters, surface for laboratory parameters. • 2013 - 2014: Surface water and deep water for laboratory parameters, and ongoing profiles for field parameters.
SWMP-04	415497	5459797	North edge of Enos Lake, near the dam. Outlet.	• 2006–2014: Metals, nutrients, physical parameters. • Mixed conditions: November 13, 2007, October 20, 2008, November 13, 2009, December 20, 2010, November 14, 2011, March 1, 2013, December 3, 2013. • Stratified conditions: September 15, 2006, April 13, 2007, April 24, 2008, April 20, 2009, May 3, 2010, May 9, 2011, August 27, 2012	• 2006–2012: Profiles for field parameters, surface for laboratory parameters. • 2013 - 2014: Surface water and deep water for laboratory parameters, and ongoing profiles for field parameters.

Site	UTM (10U, NAD83)[a]		Description	Parameters and Dates	Depth[b]
SWMP-05	415628	5459598	Southeast edge of the deep portion of Enos Lake. Deep portion.	• 2006–2007: Spring and autumn samples for temperature, dissolved oxygen. September 15, 2006, April 13, 2007, and November 13, 2008. • 2008–2014: Added pH, conductivity, ORP. April 24, 2008, October 20, 2008, April 20, 2009, November 13, 2009, May 3, 2010, December 20, 2010, May 9, 2011, November 14, 2011, August 27, 2012, March 1, 2013, December 3, 2013.	• Profiles.
SWMP-06	416425	5458804	Southern tip of the lake where wetland drains to lake. Inlet.	• 2007–2008: Turbidity and TSS (laboratory). November 13, 2007, April 24, 2008. • 2008–2014: Added field measurement of temperature, pH, conductivity, ORP, dissolved oxygen. October 20, 2008, April 20, 2009, November 13, 2009, May 3, 2010, December 20, 2010, May 9, 2011, November 14, 2011, August 27, 2012, and March 1, 2013.	• Surface only.
WET-1	416692	5458607	Wetland area southeast of Enos Lake	• 2007–2014: Turbidity and TSS. • As strictly surface samples, stratification is irrelevant; sampling was conducted: 13 November 13, 2007, 14 April 14, 2008, 20 October 20, 2008, 20 April 20, 2009, 13 November 13, 2009, May 3, 2010, December 20, 2010, May 9, 2011, November 14, 2011, August 27, 2012, March 1, 2013, and December 3, 2013.	• Surface.
EL-01	415946	5569266	150m north of the raised marsh (island), near the lake nadir. Deep portion.	• 2011: Weekly temperature and Secchi depth, August and September. • 2012: Weekly temperature and Secchi depth through summer (early June through to mid-September). • 2013: Weekly temperature, Secchi depth, dissolved oxygen and conductivity, June 13 through September 25.	• Profiles.

Site	UTM (10U, NAD83)[a]		Description	Parameters and Dates	Depth[b]
EL-02[c]	415764	5459411	350m north of the raised marsh (island), over the nadir. Deep portion.	• Early March 2009, and mid-February 2011 and 2012: Samples for metals, nutrients, temperature, colour, dissolved oxygen, ORP, conductivity, pH (MOE sampling). • 2011: Weekly temperature and Secchi depth, August and September; • 2012: surface samples for phytoplankton and zooplankton (mid-February) • 2012: Weekly temperature and Secchi depth through summer (early June to mid-September). • 2013: Weekly temperature, Secchi depth, dissolved oxygen and conductivity (mid-June to late-September).	• March 2009 and February 2011 and 2012: One deep/one shallow for laboratory parameters, profiles for field parameters. • 2011–2013 weekly sampling: Profiles. • Phytoplankton and zooplankton, Feb 2012: surface only (0.5m).
EL-03	415648	5459557	150m southeast of the lake outlet/dam. Deep portion.	• 2011: Weekly temperature and Secchi depth, August and September. • 2012: Weekly temperature and Secchi depth through summer (early June to mid-September). • 2013: weekly temperature, Secchi depth, dissolved oxygen and conductivity (mid-June to late September).	• Profiles.
E272798	415856	5459313	Northwest half of the lake, approximately 200m northwest of the raised marsh (island). Deep portion.	• August 2008: One-time sample for alkalinity, nutrients.	• Surface only.

[a]Actual sample locations may vary +/- 10m from year to year.
[b]Surface only, combination of deep/shallow water, or full depth profiles at approx. 1m intervals.
[c]This site also includes the MOE site EL275383, as the locations overlap.

With the exception of extremely cold winters, Enos Lake is monomictic, meaning that from autumn through to early spring the water is generally fully mixed, but from mid-spring through summer there is temperature-driven stratification of the lake into an epilimnion (well-mixed upper layer) and hypolimnion (well-mixed lower layer), separated by a thermocline (narrow mixing zone of rapid temperature change). Lake mixing is integral to the limnology and drives seasonal changes in water quality parameters. Water quality monitoring must therefore differentiate between mixed and stratified conditions.

Sampling has shown that the thermal gradient at the deep part of the lake is typically less than 1°C from October through to early March, whereas surface-vs-bottom temperatures vary by anywhere from 3.4 to 12.5°C from April through September (Table 2-2).

Table 2-2. Thermal difference between surface sample (0.5m) and deep sample (~11m), at the deep portion of Enos Lake: 2006 – 2013. [Based on data from AquaTerra (2006) through AquaTerra (2013), and raw data provided by MOE]

Stratified Conditions		Mixed Conditions	
Date	**Thermal Difference**	**Date**	**Thermal Difference**
September 15, 2006	7.1 °C[a]	October 20, 2008	0.75°C[a]
April 13, 2007	3.4 °C[a]	November 13, 2009	0.06°C[a]
April 24, 2008	3.9 °C[a]	March 11, 2009	0.35°C[b]
April 20, 2009	5.2 °C[a]	December 20, 2010	0.38°C[a]
May 3, 2010	5.2 °C[a]	February 16, 2011	0.0°C[b]
May 9, 2011	7.2 °C[a]	November 14, 2011	0.03°C[a]
August 27, 2012	12.5 °C[a]	March 1, 2013	0.11°C[a]
		December 3, 2013	0.05°C[a]

[a] *data from AquaTerra*
[b] *data from BC Ministry of Environment*

2.1 Mixed Conditions - Overview

Further to the summary in Table 2-1, an overview of data collected under mixed conditions is provided below.

2.1.1 *In Situ* Parameters

Water quality profile data[8] under mixed lake conditions is comprehensive, with annual sampling generally from 2006 through 2013. The data include shallow points at both ends of the lake and the deep spot in the middle of the lake. The variability of timing among years gives very good coverage of typical mixed conditions over the course of the year.

[8] E.g., physical *in situ* parameters: turbidity, temperature, clarity, pH, dissolved oxygen, etc.

2.1.2 Laboratory Parameters

Laboratory data[9] for surface water also has good coverage through the mixed period, with annual sampling all years from 2006–2014 (Table 2-1). Sampling sites cover the outlet/inlet sides of the lake and deepest part of the lake (Table 2-1). Deep water laboratory samples were not collected in 2006 or 2007, and thus there is reasonably good baseline data but not for the same period of record as the surface water samples. However, as this sampling is under mixed conditions, the inclusion of deep water samples serves primarily to confirm uniformity of sampling parameters at shallow or deep water under fully mixed conditions[10]. Baseline monitoring revealed all parameters to be typical for the habitat, to be within relevant guidelines for aquatic life (where guidelines exist), and to portray annual variability but no obviously discernible trends (AquaTerra, 2014).

2.2 Stratified Conditions - Overview

Thermal stratification can start to occur as early as March, and continues through the end of summer (Table 2-2). Baseline data collection under stratified conditions includes:

- A monitoring program in 2013 included weekly sampling events from mid-June through late September (17 weeks total). Each sampling event included three locations within the elongated "bowl" that forms the deep part of the lake. Parameters collected in this field program include depth profiles of temperature, dissolved oxygen, specific conductivity, and water clarity.
- Weekly measurements in 2012 from early June through mid-September, covering temperature and clarity (Secchi depth), at three stations (the same ones used for 2013, the bullet point above).
- A detailed field and laboratory assessment paralleling the annual work undertaken for mixed conditions, performed in 2006 (September), 2007 (April), 2008 (April), 2009 (April), 2010 (May), 2011 (May) and 2012 (August).

Higher solar radiation in summer leads to thermal stratification, with warmer and relatively well mixed water in the upper layer (epilimnion). In Enos Lake, the epilimnion has been observed to extend from approximately 3.5m to 6m depth, in early and late summer, respectively (MESL, 2014). Conversely the depth of the cooler, mixed layer (hypolimion) has been shown to be relatively constant (MESL, 2014), meaning that as the epilimnion deepens, it is the thermocline layer that narrows, as opposed to compaction of the hypolimnion. All of which is to say, Enos Lake portrays a typical summer thermal regime for a monomictic lake in a temperate climate.

Enos Lake baseline data for stratified conditions provides a strong understanding of thermal mixing in the spring and summer, and a point of comparison for key field and laboratory parameters against the longer-term mixed-conditions dataset. Summer 2012 was particularly warm and dry (AquaTerra, 2012) and the results from the weekly Level 1 program, combined with late-August laboratory sampling, provide a sense of higher-than-normal stress level for thermally-driven processes.

[9] pH, hardness, anions, nutrients, metals, colour.

[10] Review of data from AquaTerra (2013) showed that all lab parameters between the shallow and deep samples under mixed conditions are essentially equal, with differences falling within normal sample variance. The one exception is chlorophyll *a*, for which the deep water sample was roughly twice the surface water sample in early March 2013. This may be attributed to downward drift of plant cells during the dormant season (AquaTerra, 2013).

Of particular relevance, dissolved oxygen in summer – particularly late summer – is frequently below 5.0mg/L at depths below 5.5m, and can be as low as 1.0mg/L at depths below 6m. Concentrations in the epilimnion show relatively little variance and ranged from 7.90–9.61mg/L in 2012 (MESL, 2014). It can be generalized that the hypolimnion is presently subjected to hypoxia in the summer, whereas the epilimnion maintains oxygen levels well above the BC guidelines for aquatic life (5.0mg/L).

Conductivity and clarity profiles reveal nothing unusual about Enos Lake. Although conductivity showed some coupling with thermal stratification (MESL, 2014), all summer measurements were within the range also measured over the longer spring and autumn time series.

2.3 Baseline Conditions by Parameter

The following discussion provides a general summary of baseline results by parameter, as measured at Enos Lake between 2006 and 2014.

2.3.1 Turbidity

Turbidity can be affected by residential development if land clearing during construction is poorly managed, or if road runoff over the long term is not well managed by the stormwater detention facilities.

Sediment loading in Enos Lake is typically low. The highest value recorded in open water sampling, covering 10 events from 2008 through 2013, is 2.38NTU (Table 3-1). Monitoring has covered all seasons and weather conditions, and thus Enos Lake can be characterized with high confidence as generally clear regardless of season.

Table 2-3. Summary of baseline turbidity data for surface samples at Enos Lake. Based on data from AquaTerra, 2014.

Date	Turbidity (NTU)		
	SWMP-04	SWMP-03	SWMP-01
17-Nov	NM	NM	NM
24-Apr-08	NM	1.2	1.2
10-Oct-08	1.3	1.4	1.3
20-Apr-09	1.5	1.5	1.5
11-Nov-09	1.2	0.84	0.81
03-May-10	2.2	2.1	2.1
20-Dec-10	2.38	2.32	2.06
09-May-11	2.13	2.09	2.19
14-Nov-11	1.73	1.78	1.75
27-Aug-12	0.76	0.79	1
01-Mar-13	2.09	2.09	2.01
03-Dec-13	1.33	1.21	1.35
Mean value	***1.66***	***1.57***	***1.57***
Standard deviation	***0.53***	***0.54***	***0.48***

2.3.2 Dissolved Oxygen

Residential development or ancillary activities may affect nutrient loading or cycling in the lake, which can in turn cause algal blooms that could reduce oxygen concentration. Temperature increases or salt-loading may also decrease oxygen solubility in water, leading to decreased concentrations.

Baseline sampling for dissolved oxygen in Enos Lake is extensive, with *in situ* profiles taken over multiple years, all seasons, and at a variety of locations in the lake. Sampling has shown that under mixed conditions in autumn through late winter, dissolved oxygen is typically in the 9–12mg/L range. In stratified conditions during the summer, the epilimnion (from 0 to 4.5–5.5m deep) concentrations have typically been 7–10mg/L. The highest concentration in the summer has been in the upper thermocline, likely attributable to mixing with an oxygenated surface layer but with cooler water temperatures and thus higher solubility, and also lower biological oxygen demand as the thermocline is below the euphotic zone. Summer dissolved oxygen concentration in the hypolimnion has frequently been shown to be below the 5.0mg/L guideline for BC aquatic life, and often below 1.0mg/L (MESL, 2014). This is a natural existing condition and the Enos Lake ecosystem is habituated to such occurrences – hence the monitoring focus on the epilimnion where hypoxia would represent an adverse change to the local ecosystem.

2.3.3 Conductivity

Specific conductivity (hereafter, simply "conductivity") provides a measurement of water's ability to transmit an electrical current. Conductivity is thus a measure of salt content, and therefore also an indicator of total dissolved solids. Conductivity can also be an early indicator of hydrocarbon, nitrate, chloride, or phosphate pollution. Thus, it provides an easily measured multiple-lines-of-evidence parameter for water quality monitoring programs.

Conductivity has been extensively sampled in Enos Lake, with bi-annual profiles taken from 2007-2013 at multiple locations on the lake, and weekly profiles taken at three deep locations in 2013. Values have ranged from approximately 80µS/cm to 180µS/cm (AquaTerra, 2014; MESL, 2014; MOE, 2009, 2011 and 2012). The highest values were recorded in 2008 and 2009, when deep water sampling and shallow water sampling each had higher mean conductivity (166µS/cm and 120µS/cm, respectively; n=4) compared with the years that followed (121µS/cm and 105µS/cm, respectively; n=7).

2.3.4 Metals

Metals contamination is a potential concern from multiple sources of industrial or residential land use. While the "metals package" laboratory analysis will return an entire suite of parameter values, a sub-set are commonly focused on.

Metals have been sampled from surface locations under mixed and stratified conditions over multiple years in Enos Lake (AquaTerra, 2014). This includes deep and shallow water samples, at locations at the inlet, outlet, and mid-lake. Additionally, MOE provided raw data output for metals sampled near SWMP-03 in 2009 and 2011. A review of all dissolved metals samples collected to date was completed, and showed that all values were below the approved BC Water Quality Guidelines for aquatic life (maximum instantaneous guideline) (Table 3-2). The AquaTerra data is limited to dissolved metals, whereas the MOE values represent total metals. The concentrations reported by both sources are extremely similar, confirming that dissolved metals constitute the dominant fraction in Enos Lake.

Table 2-4. Metals Baseline Results for Enos Lake Monitoring.

Metal	BC Water Quality Guideline (Aquatic Life - Maximum)	Baseline Maximum Value (2006 – 2013)[e]
Aluminum	0.1[a]mg/L	0.04mg/L (MOE, 2011)
Arsenic	5.0µg/L	0.2µg/L (AquaTerra, 2010)
Boron	1.2mg/L	<0.1mg/L (AquaTerra, all years)
Cobalt	110µg/L	<0.5µg/L (AquaTerra, all years)
Copper	[0.094(hardness)+2][b]µg/L	<0.1µg/L (AquaTerra, all years)
Iron	0.35 mg/L	<0.05mg/L (AquaTerra, all years)
Lead	3µg/L[c]	<0.5µg/L (AquaTerra, all years)
Manganese	1.6[d]mg/L	0.051mg/L (AquaTerra, 2009)
Molybdenum	2mg/L	0.00014mg/L (MOE, 2011)
Selenium	2µg/L	0.07µg/L (MOE, 2011)
Silver	0.1[d]µg/L	<0.0002µg/L (AquaTerra, all years)
Zinc	33[d]µg/L	1.5µg/L (MOE, 2009)

[a]Presumes pH > 6.5, which has always been the case for Enos Lake.
[b]Hardness as mg/L $CaCO_3$. Given typical values of hardness for Enos Lake (~55mg/L), this threshold is approximately 5 µg/L.
[c]Presumes hardness as mg/L $CaCO_3$ greater than 8mg/L. Baseline hardness data for Enos Lake are extensive and very consistently were measured at approximately 55 mg/L.
[d]Values are highly dependent on hardness. Criteria reported here is based on the background values reported to date.
[e]Baseline values are presented mostly for dissolved metals, with the exception of the MOE data which were total metals.

2.3.5 Phosphorus

Phosphorus, along with nitrogen, is one of two limiting nutrients for aquatic productivity. The effect of excessive phosphorus can be eutrophication of a lake. In extreme circumstances, eutrophication involves rapid and massive blooms of algae, causing in turn unsustainable biological oxygen demand and decreased light penetration. The end result tends to be a collapse of the trophic web, as anoxic water chokes out other life and decreased euphotic depth causes a collapse of primary productivity below the surface. Fertilizer-laden runoff, sewage effluent, and detergents in stormwater discharge have been implicated in anthropogenic eutrophication for decades.

Phosphorus has been part of the laboratory analyses for the bi-annual sampling program since it was initiated in 2006. Detection limits for laboratory analysis have changed over the course of the program, and the sites that have been monitored have expanded somewhat over time, but in general there is good coverage across the lake surface and at shallow/deep locations, for both mixed and stratified conditions. Data from sites SWMP-04, SWMP-03, and SWMP-01 are summarized in Table 3-3 , though only from 2010 onwards when a lower detection limit was applied to the analyses.

Table 2-5. Summary of baseline Phosphorus concentrations (surface water samples; based on data from AquaTerra, 2014)

Date	Phosphorus Concentration (µg/L)		
	SWMP-04	SWMP-03	SWMP-01
03-May-10	8	8	9
20-Dec-10	12.2	12.1	13.3
09-May-11	10.8	10.6	11.6
14-Nov-11	10.2	12.2	11.7
27-Aug-12	6.5	6.6	8.2
01-Mar-13	12.8	11.7	12.7
03-Dec-13	11.7	14.1	12
Mean value	***10.31***	***10.76***	***11.21***
Standard deviation	***2.30***	***2.61***	***1.90***

Phosphorus levels in Enos Lake have ranged from a low of 8µg/L to a high of 14.1µg/L (AquaTerra, 2014), although until 2009 the detection limit was 20µg/L, and results were simply reported as less than the detection limit. Independent sampling by the MOE in 2009 and 2011 reported similar values, approximately 10–11µg/L. Phosphorus has thus been fairly consistent across years, seasons, depths, and sampling teams at Enos Lake, but also falls somewhat near to the guidelines on occasion.

2.3.6 Nitrogen

Nitrogen, along with phosphorus, is one of two limiting nutrients for aquatic productivity. As with phosphorus, the effect of excessive nitrogen in the water can be the undesirable eutrophication of a lake.

Nitrogen (in the form of Ammonia Nitrogen, Nitrate and Nitrite, and total Kjeldahl Nitrogen) was analyzed in the bi-annual sampling since 2007[11]. Values have shown variability that is typical to freshwater systems, but always well below the BC water quality guidelines. The maximum value of Nitrate + Nitrite (combined; "N&N") has been approximately 0.11mg/L, and values more typically have been less than 0.05mg/L. Ammonia has also been typically less than 0.05mg/L, and in some cases an order of magnitude less (AquaTerra, 2014). Independent sampling by the MOE in 2009 and 2011 (winter) reported approximately 0.1mg/L of N&N.

2.3.7 Chlorophyll *a*

Chlorophyll *a* is a plant pigment, and is very commonly used as a laboratory-measured indicator of water quality. Nutrient loading of watercourses can led to planktonic blooms, which would be detectable in higher levels of chlorophyll *a*. This parameter therefore is consistent with the multiple-lines-of-evidence approach embedded in this monitoring program, as eutrophication of the lake should be identifiable with an evident increase in at least two of chlorophyll *a*, dissolved oxygen, nitrogen, and/or phosphorous.

The two mid-February samples from MOE (2011, 2012) resulted in values of 9.5 and 7.03µg/L, respectively.

[11] Ammonia Nitrogen was included since September 2006 program initiation; the remaining forms were added in November 2007.

Chlorophyll *a* was added to the bi-annual sampling program at Enos Lake in 2009, and thereafter was measured at SWMP-01, SWMP-03, and SWMP-04, representing locations near the lake inlet/outlet, and mid-point over the deep spot (Table 3-4).

Table 2-6. Baseline data for Chlorophyll a (surface samples only; based on data from AquaTerra, 2014 and MOE raw data)

Date	Chlorophyll a concentration (µg/L)		
	SWMP-04	SWMP-03[a]	SWMP-01
11-Mar-09	NM	11.3	NM
04-Apr-09	18.5	18.1	19.8
11-Nov-09	0.1	0.17	0.17
03-May-10	8.5	5.5	7
20-Dec-10	1.44	7.14	5.42
16-Feb-11	NM	9.5	NM
09-May-11	4.21	5.36	2.05
14-Nov-11	7.75	10.2	10
15-Feb-12	NM	7.03	NM
27-Aug-12	1.83	1.08	0.468
01-Mar-13	10.2	4.25	10.8
03-Dec-13	1.67	5.02	3.27

[a]Also includes samples from MOE taken in 2009, 2011, and 2012, in a very nearby location.

Sampling was initially limited to surface samples only, but a deep sample was added to SWMP-03 in 2012. Based on the data collection from 2009 through 2013, chlorophyll *a* has been highly variable, ranging from 0.17µg/L to 19.8µg/L (Table 3-4). Values have typically been in the range of 4–5µg/L, but there is no consistent seasonality to the few cases where values have exceeded 10µg/L – having been measured as such in November, March, and April. However, that the highest overall values obtained (average 19µg/L across three locations) happened to occur in late April 2009 may be indicative of an algal bloom at that time. Nitrogen and phosphorus levels were coincidently low at that event, which suggest the monitoring may have been timed shortly after nutrient uptake by growing phytoplankton.

2.3.8 Total Organic Carbon

TOC is a very common water quality indicator, with the primary pollution concern being hydrocarbon contribution to this parameter. Point-source or surface runoff of hydrocarbons from road development and use and general industrial activity can contribute to elevated TOC levels.

TOC has been part of the bi-annual laboratory monitoring at sites SWMP-01, SWMP-03, and SWMP-04 since 2008. Deep water sampling was added to SWMP-03 in 2013. Values have typically ranged from 4.5–6.5mg/L, with some minor exceptions. TOC has been relatively consistent and sampling has been evenly dispersed, as evidenced by the nearly-equivalent mean versus median values (5.9mg/L vs. 6.1mg/L, respectively).

3.0 WATER QUALITY MONITORING PROGRAM

This section presents the water quality monitoring program. It includes sampling protocols, a list of parameters to be sampled, and relevant thresholds against which the results can be compared.

3.1 Sampling Procedures

Guidelines for collection of water quality samples are provided in the *Ambient Freshwater and Effluent Sampling Manual* (BC Ministry of Water, Land, and Air Protection [MWLAP], 2003). The sampling for the ELPMP will adopt the following approach, which is based on those guidelines. Note that sampling instructions must also be provided by the laboratory chosen for the analysis, when the containers are provided. Sampling requirements stipulated by the laboratory (e.g., holding times, sample preservation, etc.) will supersede the general requirements outlined here, and should be considered the most up to date with current technical standards.

Note this procedure outline also includes *in situ* data that will be read and recorded directly in the field.

Where possible, field personnel should include appropriately qualified professionals with accreditation (R.P.Bio. or other similar). Recognizing that this program may be undertaken with support from volunteer organizations, professional credentials are not a strict requirement. However, any field personnel should at the very least have received training and instruction from a qualified professional.

3.1.1 Preparation

A general target is to have samples provided to the laboratory within 24 hours of sampling, and this requires proper communication and preparation. It is recommended that an accredited analytical laboratory be contacted at least two weeks ahead of the work, to arrange for shipping of sampling containers, preservative, and instructions. Schedule the actual fieldwork in consultation with the laboratory to avoid holding time conflicts with laboratory analysis. For instance, many laboratories may have little to no service on Saturdays or Sunday, and so fieldwork should avoid sampling on a Friday or a Saturday.

- Be familiar with sample locations ahead of time, and have coordinates pre-entered to a hand-held GPS.
- Sample containers are to be pre-labeled while they are dry, before going into the field.
- Sampling at Enos Lake will require use of a boat, and access to private land. Ensure the relevant land owner(s) have been contacted and have provided consent, prior to conducting the work. Contact info, as of March 2016, is as follows:
  - Fairwinds: info@fairwinds.ca; 250-468-5303.
- Safety considerations are always paramount, particularly when a boat is involved. A site-specific health and safety plan is recommended for any field trip, and life jackets should always be worn. Be particularly careful when doing winter sampling. Ice cover of Enos Lake is very rare but may occur, and hypothermia is a serious risk during any winter work.
- Prepare a checklist of necessary field equipment ahead of time. Mobilizing to the site without necessary equipment or preparation can undermine the sampling program. This may include, at minimum:
  - Sampling jars, pre-labeled;
  - Sample preservatives;

- Print-out of any sampling instructions from the laboratory. This should be laminated or placed in a Ziploc bag;
- Ice packs and coolers;
- Chain-of-custody forms, partially filled out ahead of time;
- Field meters and spare batteries;
- Notebook, pencil; and
- Emergency contact information and protective gear, such as cell phone (in Ziploc bag), first aid kit, sufficient fuel (if necessary), oars, PFDs, personal clothing suitable for a variety of field conditions, etc.

3.1.2 Documentation

Detailed notes must be kept – on waterproof paper – for all field trips. Standard information to be kept for all trips includes:

- Date and time of sampling;
- Current weather, and general summary of weather in the days leading up to the work;
- All field staff involved in the work;
- Method of accessing the sites;
- Sampling coordinates (presumes use of hand-held GPS unit);
- Any unusual conditions noted (e.g. hydrocarbon sheen, odour, new construction [docks, moorings], very high or very low water levels, etc.);
- Samples intended for analysis;
- At each site, record:
  - Time of access, and time of samples;
  - *In situ* profile data, and methods for measurement, if relevant; and
  - Any challenges noted that required deviation from the monitoring program.
  - Any observation of new invasive species introductions to Enos Lake (refer to Section 5.0).

Field notes should be scanned and saved to a secure server with appropriate back up.

3.1.3 Sample Collection

Collect samples from a boat or dock at all times. Wading into the water can contaminate the sample due to sediment entrainment. Sampling will be somewhat different for surface water vs. deep water vs. profile (*in situ*) data.

Quality Assurance/Quality Control

Quality Assurance/Quality Control measures are necessary during field sampling to detect whether the sampling methodology is influencing the results. All field sampling procedures shall include the following quality control measures:

- Sample containers will be used only in accordance with instruction by the laboratory. Different parameters require different container materials or colours or preservatives, and the laboratory will provide the necessary instruction. These requirements can vary over time as analytical methods change, so do not presume that an older set of instructions are valid for the next sampling event.

  - Furthermore, the MOE website should be consulted well ahead of the field trip to check if any standard water sampling protocols have been updated. Any protocols dated 2016 or later should be reviewed against this document, with field methods updated as necessary.
- The inner surface of the sampling container (including the cap) should not be touched with anything other than sample water.
- Dirty hands can contaminate samples. This most commonly occurs due to handling food, tobacco products, or petroleum products. Samplers must be aware of this risk and take precautions accordingly.
- Collect samples at the bow of the boat, and keep the bow pointed into the wind. This will reduce the likelihood of the boat contaminating the samples.
- A note regarding filtration: a number of parameters (chlorophyll *a*, metals, and low-level nutrients) must be filtered before analysis. While MWLAP (2003) recommends filtering immediately after collection, filtration can also be done by the analysing laboratory. The general guidance for this program is to minimize sample handling in the less-controlled field situation, and to request lab filtration. Discuss with the laboratory ahead of time.
- Field meters should be calibrated as per the manufacturer's guidelines. Documentation on calibration should be kept as part of the QA/QC program.
- Replicate sampling. At a minimum of one sampling site, a complete duplicate will be collected. A replicate sample tests for the precision of the entire sampling process (collection, handling, and analysis).

Surface Water Samples

Once at sample site, remove cap from sample container. Do not touch the inside of the cap, and in general be cautious about any source of contamination.

Plunge the bottle into the water, targeting depth of approximately 0.5m (1.5ft). If there is any current, face the mouth of the bottle into the current and move it slowly upstream. Recap the bottle and immediately place it in a cooler, where it can be kept dark and cool. Proceed to collect all samples in as short a period as safely practical.

Deep Water Samples

Deep water sampling requires use of a Van Dorn sampler or a Kemmerer sampler. It is presumed that whomever is contracted to carry out the sampling has access to a sampler and is familiar with its use. If unfamiliar with use protocols, refer to MWLAP (2003) for further instructions.

Care should be taken to avoid dropping the sampler all the way to the lake bottom, as this will entrain sediment and potentially bias samples. Deep water sampling (at SWMP-03/EL-02, for instance) should target approximately 10.5–11m to avoid hitting the bottom at the deepest part of the lake (~12m).

Use the drain valve of the sampler to fill sample containers. Take precautions against sample contamination, and allow a small amount of water to flush the valve before collecting in a sampling bottle. The most common areas of contamination are via handling the inside of the bottle cap, or by contacting the drain valve.

In Situ (Field) Samples

A number of parameters will be sampled, measured, and recorded directly in the field. It is possible to measure all of these parameters with a multi-parameter sonde (a.k.a. YSI). A sonde with depth-marked cabling allows multiple parameters to be simultaneously measured at repeated depths.

Alternatively, and less preferred, values may be recorded with a variety of hand-held devices such as a pH pen, turbidity meter, conductivity probe, dissolved oxygen meter, etc. In this case, the Van Dorn sampler will be required to bring samples from desired depth, where they can be measured after discharging water to a (clean) 1L sampling jar.

Chemical titration methods are available for a number of field parameters, and MWLAP (2003) provides the protocol details. However, given the frequency of sampling and the anticipated number of individuals that could be involved in this program, field titration should be avoided.

Regardless of whether sampling occurs with a multi-parameter sonde, a variety of hand-held devices, or a combination thereof, ensure that all instruments are cleaned and calibrated according to the manufacturer's instructions, prior to use.

Where a sonde is available, field parameters should be measured as profiles, at 1m increments. Either attach a flexible tape measure to the sonde cable, or use a tape ahead of time to mark 1m increments on the cable itself. Maximum sampling depth for Enos Lake is expected to be 11m, so the cable must be capable of reaching at least 11m.

3.1.4 Submission

Samples shall be immediately transferred to a cooler, with either ice or ice packs to keep samples cool. Fill out the chain-of-custody form, insert it in a plastic bag, and attach it to the outside of the cooler. Secure the cooler with tape, and avoid opening unless absolutely necessary to minimize exposure to light or ambient air temperature.

The cooler(s) should be submitted to the laboratory as soon as possible, either via direct drop off or courier. A number of commercial laboratories have offices on Vancouver Island, or drop-off depots for free transfer to mainland laboratories. ALS Global Inc. has been used for the majority of the baseline data collection used in this program.

Analytical methods must be capable of detection limits below the water quality guidelines stated in Section 3.3. Analytical techniques and possible detection limits evolve over time. Discuss the desired detection limits with the laboratory at the time of or prior to sample submission.

3.2 Data Storage

It is anticipated that leadership of this monitoring program may involve multiple parties. It will be necessary to maintain a central and well documented database in case of handover between program managers. The BC MOE maintains a central database (EMS) for water quality data, and has offered to incorporate the data from this program into the EMS to ensure access to all parties indefinitely. The logistics of data sharing should be discussed with MOE as the program proceeds.

In general, data should be entered into a central database and reviewed by the QEP as results are returned by the lab. There may be time-sensitive follow-up work recommended by the overseeing QEP, and thus it is preferable that data not be archived strictly for annual review.

Summary analysis of the program as a whole will be part of the annual reporting framework outlined in Section 6.0.

3.3 Parameters and Sampling Program

Where relevant, the BC Water Quality Guidelines (BC, 2015) are being used as target values for parameters.

These values have been chosen on the following grounds:

- They are based on accepted, peer-reviewed scientific literature for protection of aquatic health, and are endorsed by the province; and
- The extensive baseline water quality monitoring for Enos Lake shows that all parameters have consistently fallen below these guideline values, where present.

These guidelines tend to be updated periodically and care should be taken to refer to the most up-to-date guidelines as monitoring progresses.

The program is generally structured for quarterly monitoring at a single location (site SWMP-03, the deep spot of the lake) for most parameters, with additional sampling on five-year increments for a smaller number of parameters. This represents a large change to the initial proposal (e.g. past drafts of this document), and adopts all of the feedback provided by RND in July of 2015.

Candidate water quality parameters for sampling were outlined in Section 1.0. From this candidate list, multiple parameters were removed (and some added), through discussion with MOE and RDN. The suite of parameters below are considered the most likely to see changes from regional development. The list of monitoring parameters is as follows:

- Dissolved oxygen;
- Temperature;
- pH
- Conductivity;
- Redox potential;
- Hardness;
- Secchi depth;
- PAHs;
- Metals;
- Coliform bacteria;
- Phosphorous;
- Nitrogen; and
- Chlorophyll *a*.

The monitoring approach and water quality target (if applicable) for each parameter is outlined in Table 3-5. A sampling calendar for each parameter is provided in Appendix 1. Note, this calendar suggests the onset of a regular operational monitoring schedule in 2017, as it is PGL's understanding that no significant development will occur in the Enos Lake watershed until at least the end of 2017. If construction within the Enos Lake watershed is delayed, it may be sensible to augment monitoring after 2017 to be every two or three years until construction begins, at which point annual monitoring would recommence.

For all parameters, an exceedence of the target should not be construed as a project-related serious effect on the environment. It should be treated as a warning signal requiring further investigation, the extent of which will depend on the nature of the results obtained. This program intentionally lacks the prescriptive follow-up triggers that may be required under, for instance, a mining program with oversight under the Metals Mining Effluent Regulations portion of the *Fisheries Act*. This allows the program to remain flexible for multiple, and uncertain, managing partners and funding sources in the years to come.

Table 3-1. Summary of Water Quality Monitoring Program for Enos Lake

Parameter (units)		Water Quality Target	Future Monitoring[a]
Field Parameters (profiles at 1m increments)	Secchi Depth (m)	None – supporting context only	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
	Dissolved Oxygen (mg/L and % saturation)	• ≥5 mg/L epilimnion • ≥2 mg/L hypolimnion	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
	Conductivity (µS/cm)	None – supporting context only	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
	Temperature (°C)	None – supporting context only	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
	pH	None – supporting context only	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
	Redox (mV)	None – supporting context only	Quarterly sampling[b] at site SWMP-03, starting in 2017 and repeated annually
Laboratory Parameters	*E. coli* (# per mL)	BC Water Quality Guidelines (recreation – secondary contact)[c]	August 2017: 5 times in 30 days. Surface sample from SWMP-03 and any two shoreline locations. Repeat on 5 year increment.
	PAHs (µg/mg)	BC Water Quality Guidelines (freshwater sediments)	August 2017: surface sediment from three locations: SWMP-06, SWMP-04 and SWMP-03.
	Metals (various)	BC Water Quality Guidelines (total metals, freshwater aquatic life). Both average and short-term maximum guidelines apply, where applicable.	February 2017 and August 2017: five samples in a 30 day period. Each sample to occur at three depths from SWMP-03. Sampling to be repeated on five year increments.
	Chlorophyll *a* (µg/L)	Avoid any increase	Quarterly sampling at site SWMP-03, starting in 2017, and repeated annually. Samples to be taken from three depths (surface, mid, deep water)
	Hardness (as $CaCO_3$)	None – required to interpret metals data	February 2017 and August 2017: five samples in a 30 day period. Each sample to occur at three depths from SWMP-03. Sampling to be repeated on five year increments. Data required to interpret metals concentrations.
	Phosphorous (mg/L)	12 µg/L	Quarterly sampling at site SWMP-03, starting in 2017. Samples to be taken from three depths (surface, mid, deep water)

[a]Future monitoring is limited to the scope being taken on by the Developer and will continue until at least one year post build-out within the Enos Lake watershed. It is anticipated that some form of longer term monitoring will be undertaken by RDN in support of long term operation of stormwater infrastructure.
[b]Quarterly sampling is defined as February, May, August, and November.
[c]It is assumed that swimming will not be a recreational use of Enos Lake. If that assumption is incorrect, primary contact guidelines should apply

4.0 WATER QUANTITY

Hydrology parameters require monitoring in tandem with the water quality monitoring outlined in Section 3.0. Changes to runoff parameters or lake water levels will yield clues to causation, if any of the water quality parameters deviate substantially from the baseline values.

Monitoring of flow regime is already a recommended component in the Fairwinds ISMP; (KWL, 2013). The precise structure, timing, extent, and duration of monitoring for ISMP hydrologic effectiveness remains to be finalized. Key parameters in the ISMP include minimum summer water level, 200-year high water level, and the actual (as opposed to allowable) water withdraws from Enos Lake. More generally, it is important to note that MOE already requires monthly lake level monitoring, as per the long-standing Water Licences held by other parties (see Section 1.0).

This monitoring will be designed and undertaken by the ISMP leads, and the results thereof are to be communicated to the manager of this more general ELPMP for incorporation in the data interpretation. Similarly, and as outlined in Section 1.2.1, the ELPMP results will be highly relied upon for ongoing adaptive management of the ISMP.

5.0 INVASIVE SPECIES MANAGEMENT PRACTICES

Aquatic invasive species can be culturally, environmentally, and economically devastating. For example, invasive crayfish are largely blamed for the demise of the Enos Lake Stickelback pair as individual benthic and limnetic species. Eradication of established species can be impossible for all practical intents and purposes, and early detection or avoidance altogether are the most effective means to keep invasive species out of natural ecosystems.

Residential development can exacerbate the so-called "propagule pressure"[12] and create new vectors where none previously existed. Boat fouling, foot traffic, contaminated personal gear (waders, boots, etc.), aquarium abandonment, and cultural practices are all relevant vectors for consideration. Awareness is the best protective measure.

The ToR for the ELPMP included a focal element on invasive species. Recognizing the inherent difficulties in a comprehensive plan for an issue of this scope, the following general recommendations are provided:

- During any onsite work for water quality monitoring, the overseeing QEP will monitor for any incidental observation of invasive species.
- Include prevention practices in Homeowner's Manual. A QEP should be contracted for the input to the manual, as best management practices and focal species have been evolving fairly rapidly over the past 15 years and may continue to do so prior to full build-out of the community.

[12] The likelihood of an invasion occurring is correlated the number of opportunities potential species are given to establish themselves. The higher the vector traffic, the higher the number of "propagules" that are likely to be released, and ultimately this leads to a higher overall probability of establishment.

- Public signage along trails and viewpoints should include prevention practices and also "species to watch for", with visual aids. At time of writing this report, common target freshwater invasive species in BC (as per BC Invasive Species Council) are:
  - Eurasian milfoil;
  - Parrotfeather;
  - Didymo;
  - Zebra mussel;
  - Quagga mussels;
  - Common carp;
  - Smallmouth bass; and
  - Largemouth bass.

In addition to the list above, trout species (usually rainbow) have historically been introduced in many BC lakes for recreational angling. Particular effort should be taken to dissuade people from introducing any species for angling purposes.

Note, this section does not imply these are the only species of concern. Signage should encourage the public to report any species if they suspect it is not native. Species lists should also be updated on five-year increments to screen for newly problematic species.

The BC Invasive Species Council (http://bcinvasives.ca) should be contacted in the event of any positive or suspected identification, whether as a part of structured monitoring or not. Their contact information should be included on any public signage.

6.0 PROGRAM MANAGEMENT AND DELIVERABLES

This section addresses the role of various parties in implementing and interpreting the ELPMP throughout its duration.

6.1 Program Leadership

Implementation and oversight of the ELPMP will initially be the responsibility of the developer. Day-to-day management of program logistics and technical interpretation will fall to the QEP working on behalf of the developer. It is intended that community volunteers and other interested stakeholders will be engaged to assist with data collection.

The developer ultimately will be responsible for ensuring relevant stakeholders are brought into decision making as necessary. This responsibility will remain with the developer from formal commencement of the ELPMP, which will begin with quarterly monitoring in 2017, through to one year after completion of build out. For the purpose of the ELPMP, "build out" refers to all residential construction phases that lie within the Enos Lake Watershed.

Post-build out, leadership of the ELPMP will revert to the RDN, or the RDN's designate.

6.2 Data Collection and Management

So long as the ELPMP remains under the direction of the developer, all field data shall be provided directly to the developer as soon as possible after data collection. Field notes should be scanned or mailed, and laboratory results copied directly to the developer.

As stated in Section 3.2, a shared centralized EMS database through MOE will be explored, but until and unless this database is established, the developer will retain overall responsibility to see that data are managed responsibly.

6.3 Reporting

Data should be reviewed against targets as soon as possible after each sampling event; however, formal reporting is only required once per year. From the onset of construction through to one year beyond build-out, analysis and reporting will be led by the developer's QEP. If monitoring continues beyond that temporal scope, reporting requirements will be at the discretion of the RDN or whoever assumes responsibility for the monitoring.

Annual reports will be submitted by December 31 for each calendar year in which work was performed. Reports will include, at minimum:

- A summary of work performed, including dates, individuals, weather conditions, methods, QA/QC protocols, and any challenges encountered during the work.
- A presentation of the water quality results, including but not limited to data summaries (graphical or tabular) compared against the targets listed in this document (where relevant).
- Any anecdotal observations related to Enos Lake ecology, including but not limited to aquatic invasive species.
- A summary of preventative actions taken with respect to aquatic invasive species undertaken in the past year (e.g. signage, educational materials for residents or visitors, etc.)
- A discussion interpreting the results of the program for the past year, including but not limited to input provided for stormwater management practices or new phases of construction.
- Recommendations for augmentation to the program, if relevant.
- Laboratory certificates and raw data for the year, as appendices.

6.4 Informing Management Decisions

The ELPMP is a monitoring program, not a management plan. As such, it provides technical details on what information will be collected, when, where, and by whom. The rationale behind the ELPMP is to provide decision makers with information to support future actions. Results of the ELPMP may feedback into construction practices or monitoring approaches. This "plan / act / learn" loop is the foundation of a contemporary adaptive management strategy (Diagram 1)

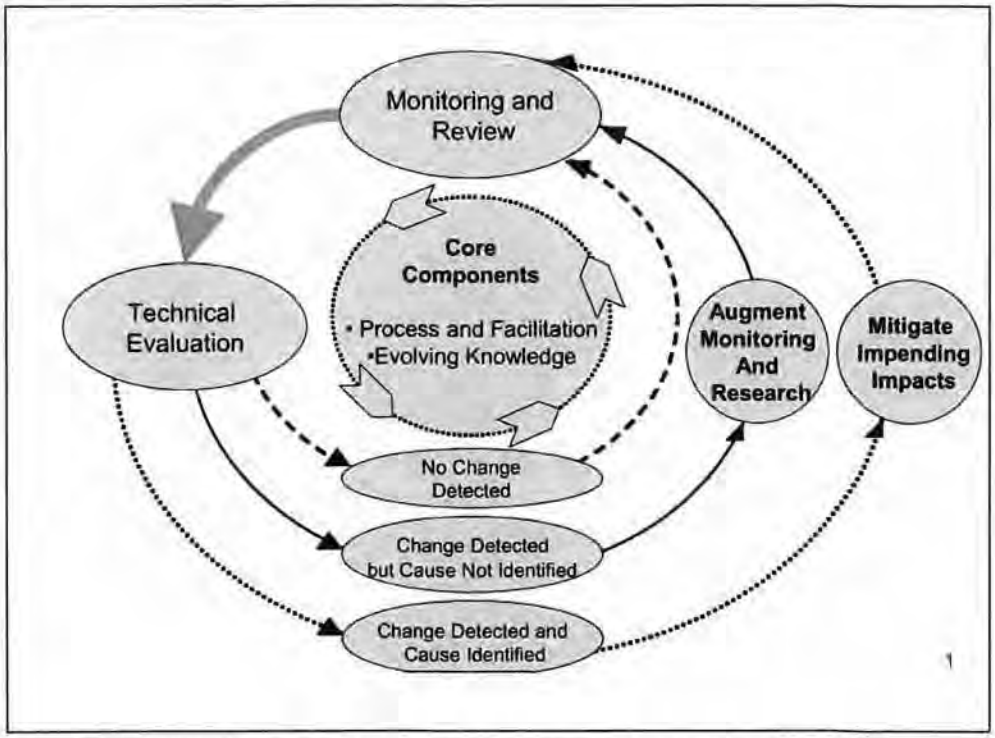

Diagram 1. Illustration of feedback loop for an adaptive management process. (From Elner, 2005).

There are no prescriptive triggers for action in this program, in the event that a water quality parameter exceeds a defined target. Should this occur, the follow-up actions will be determined by the circumstances surrounding that particular result. However, despite this discretionary approach, some formality is required as part of the RDN's subdivision approval. To this end, each subdivision application for new residential phases will include in the submission, a letter from the engineer stating how the ISMP has been interpreted based on the latest ELPMP Annual Report, and applied to the stormwater infrastructure design and planned construction practices.

6.5 Summary: Deliverables and Schedule

A number of actions and deliverables are detailed in this document. These have been summarized below (Table 6-1).

Table 6-1. Summary of actions and deliverables for ELPMP implementation

Deliverable/Action	Timing	Responsible Party	Recipient	Comment
Implementation / planning meeting	Q1-Q4, 2016 (flexible)	Developer and RDN (required); MOE and BC LSS representatives (optional)	N/A	To determine short term roles and responsibilities, and identify partnerships for data collection / entry.
Initiate regular monitoring schedule, per Table 3-1	February 2017	Developer – either via volunteer group or QEP	All parties (part of overall database)	All data to be submitted to developer as first point of contact.
Enter all water quality data (2006 – present) into a centralized database	Q2-Q4, 2016 (flexible)	Developer	All parties	Requires further discussion between Developer's QEP and MOE (per Row 1 of this table)
Interim review of sampling results for monitoring program	Following immediately after each sampling event.	Developer	Depends on outcome of review.	In the event of an exceedance of target, QEP to recommend next steps – whether additional data collection or change to ISMP (in consultation with design team).
Develop invasive species awareness materials (signage, Homeowner's Manual, etc.)	Prior to start of construction in Fairwinds District	Developer	Homeowners, local residents	Described in Section 5.
Annual ELPMP Progress Report, as outlined in Section 6.2	December 31 of each year in water sampling was conducted.	Developer	Developer and design team	Report is intended as an input mechanism into ISMP adaptive management, and is to be formally recognized during subsequent subdivision applications, within the ISMP (per ISMP s. 4.3) and Construction Environmental Management Plan, per PDA s. 44(d)(x). Report will also be provided to the RDN.
Ongoing post-build out water quality monitoring, as per Table 3-1.	Beginning one year after completion of build-out	RDN or designate.	Discretion of RDN	Longer term monitoring to be scoped based on results through build out and management objectives at that time. It is anticipated that long term operation of stormwater service area will benefit from this monitoring or an augmented version of it.

7.0 CONCLUSION

This document presents the Enos Lake Protection and Monitoring Program, as per the October 2013 ToR. The ELPMP is largely based on provincial guidelines for developing and implementing a water quality monitoring program, with site-specific considerations for hydrology and invasive species concerns.

The ultimate duration of the monitoring program is open-ended. This document commits to extending at least one year beyond full build-out within the Enos Lake catchment area. However, consideration of monitoring results, available resources, and management objectives at that time may determine that additional monitoring is required. Re-evaluation of the monitoring program after the build-out is complete is recommended.

8.0 REFERENCES

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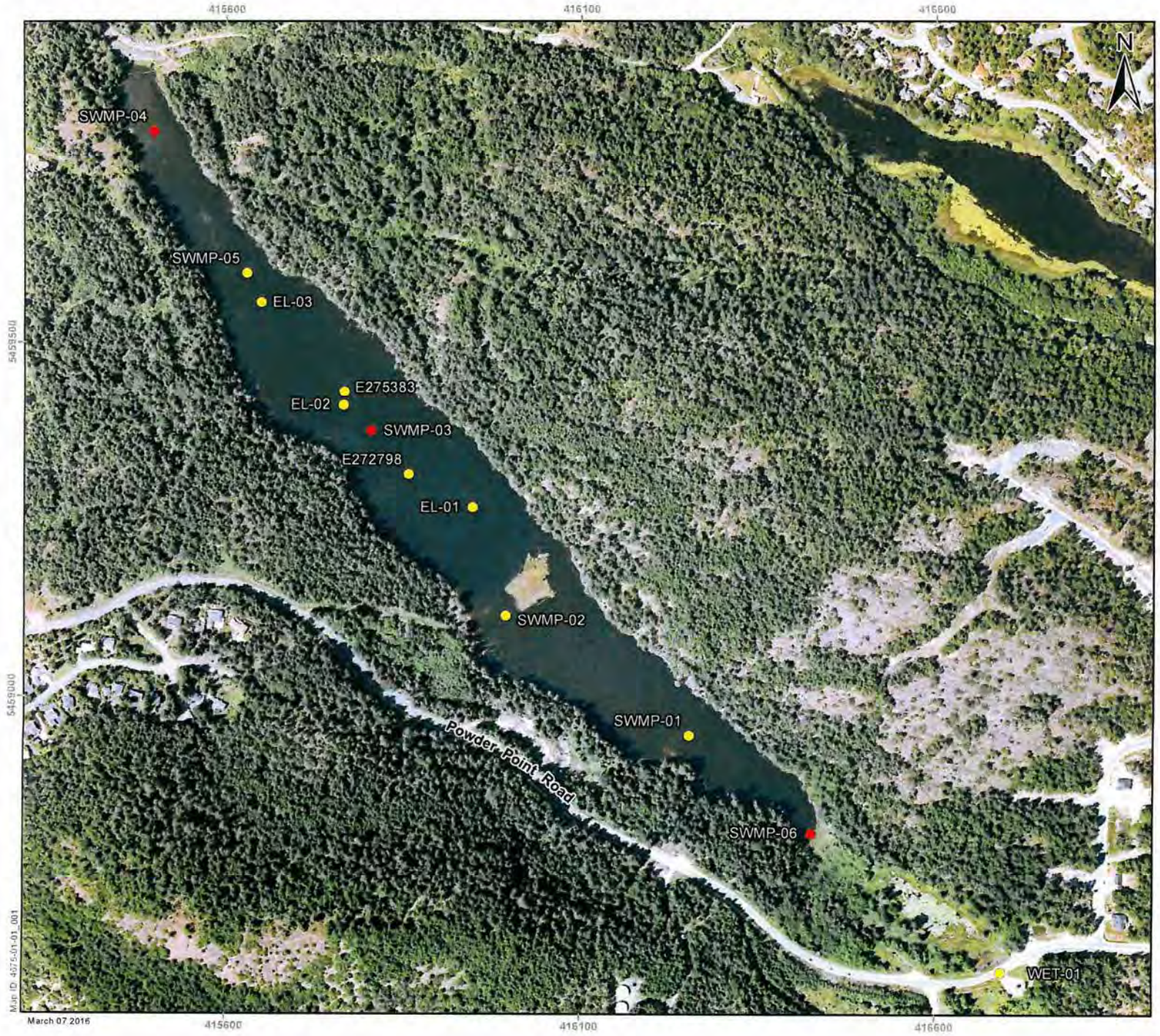
Figure



Enos Lake Monitoring Locations 2006 – present

- Monitoring sites used, 2006-2014
- Monitoring sites for future use

1:7,500

0 100 200

Metres

Coordinate System: NAD 1983 UTM Zone 10N

PGL ENVIRONMENTAL CONSULTANTS

Figure 1

Appendix 1

Proposed ELPMP Monitoring Schedule by Year and by Parameter

PGL ENVIRONMENTAL CONSULTANTS

Appendix 1
Proposed ELPMP Monitoring Schedule by Year and by Parameter
Fairwinds: Lake District, PGL File: 4675-01.01

2017												
Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli								E				
Metals		M						M				
Hardness		M						M				
PAH								P				

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

2018												
Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli												
Metals												
Hardness												
PAH												

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

PGL
ENVIRONMENTAL CONSULTANTS

Appendix 1
Proposed ELPMP Monitoring Schedule by Year and by Parameter
Fairwinds: Lake District, PGL File: 4675-01.01

2019												
Parameter	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli												
Metals												
Hardness												
PAH												

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

2020												
Parameter	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli												
Metals												
Hardness												
PAH												

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

PGL ENVIRONMENTAL CONSULTANTS

Appendix 1
Proposed ELPMP Monitoring Schedule by Year and by Parameter
Fairwinds: Lake District, PGL File: 4675-01.01

2021												
Parameter	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli												
Metals												
Hardness												
PAH												

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

2022												
Parameter	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Dissolved Oxygen		F			F			F			F	
Temperature		F			F			F			F	
Redox potential		F			F			F			F	
pH		F			F			F			F	
Secchi Depth		F			F			F			F	
Chlorophyl *a*		L			L			L			L	
Phosphorhus		L			L			L			L	
E Coli								E				
Metals		M						M				
Hardness		M						M				
PAH								P				

Legend
L = Water sample from three depths at SWMP-03
F = 1m in situ profiles from SWMP-03
E = Five samples in 30 days, from SWMP-03 and any two shoreline locations.
M = Five samples in 30 days, from SWMP-03
P = Surface sediment from SWMP-03, SWMP-06 and SWMP-04

Appendix II – Regional Park Management Plan for the Fairwinds Lakes District

REGIONAL DISTRICT OF NANAIMO
RECREATION AND PARKS

Regional Park Management Plan for the Fairwinds Lakes District 2015 - 2025

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Director Bob Rogers, RDN Director, Electoral Area E (2015)

Community Appreciation

We would like to thank the community members who attended the open houses and who provided responses to the questionnaires. This plan is based on your valuable insights and preferences.

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Contents

Executive Summary i

1.0 Project Overview 1

1.1 Project Context 1

1.2 Management Plan Purpose 4

1.3 Project Process 5

1.4 Public and Stakeholder Consultation 6

1.5 Vision and Objectives 8

2.0 Site Overview 9

2.1 Site History 9

2.2 Site Description 10

2.3 Site Inventory 12

3.0 Park Development 13

3.1 Lakes District Neighbourhood Plan 13

3.2 Regional Park Masterplan and Development Guidelines 14

3.3 Comprehensive Zoning Amendment 17

3.4 Phased Development Agreement 17

4.0 Park Management 23

4.1 Management Overview 24

4.2 Infrastructure and Encumbrances 26

4.3 Ecological Protection 28

4.4 Low-impact Recreation 31

4.5 Collaborative Stewardship 35

4.0 Summary of Recommendations. 39

Appendix A: Summary of Public Engagement

Appendix B: Summary of Environmental Assessments

Appendix C: Phased Development Agreement Summary Chart

Appendix D: Park Masterplan and Development Guidelines

Appendix E: Enos Lake Protection and Monitoring Program

Appendix F: Garry Oak Meadows Management Plan

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View to the Strait of Georgia

Executive Summary

The Fairwinds Lakes District Neighbourhood Plan area is located on Nanoose Bay Peninsula, on the east coast of central Vancouver Island, within the Regional District of Nanaimo (RDN), Electoral Area 'E'. The area encompasses roughly 287 hectares (ha) of undeveloped and privately-owned land within the Fairwinds Resort Community, which will be subdivided and developed within six separate phases over an anticipated period of 20 years.

Approximately 100 ha of regional parkland, including over 16 km of trails, will be dedicated to the RDN over the course of subdivision and neighbourhood build-out. Park dedication is determined by zoning amendments and the Phased Development Agreement (PDA), which were formally adopted in 2014. The PDA is a legally binding agreement between the RDN and the developer that outlines in detail the development phasing and provision of community amenities.

Wetland

This document represents the first management plan for the future Regional Park within the Fairwinds Lakes District Neighbourhood Plan area. The main purpose of the management plan is twofold:

1. To provide a summary of the Phased Development Agreement (PDA)—including all relevant documents incorporated within the PDA—as it pertains to Regional Park dedication and development.

2. To provide an overview of anticipated management issues, costs and strategies as they pertain to the future Regional Park following amenity construction and land transfer.

Arbutus Forest

The preparation of this management plan was accomplished through a comprehensive design and public engagement process that involved public open houses, stakeholder interviews, and staff and advisory committee reviews. Public input helped to establish an understanding of current and desired park uses, and provided feedback on the vision, objectives, management issues and naming of the regional park.

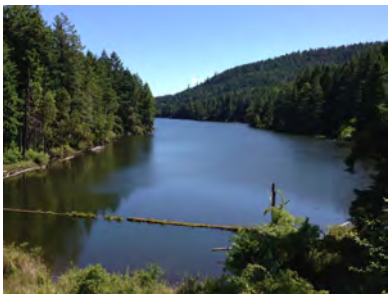
The vision statement establishes the overall direction for planning, design and management of the Regional Park:

This Regional Park protects the functional integrity of regionally significant ecosystems and prominent natural features that define the landscape character of the Nanoose Bay Peninsula. It is the "green heart" of the Nanoose Bay Peninsula with interconnected open spaces and corridors that provide links for wildlife and access to nature for humans. The park provides recreational opportunities that are enjoyed by Regional District residents and visitors. It is a place where the cultural heritage and spiritual values of the land to First Nations are recognized, celebrated and protected.

Garry Oak Meadow

The following objectives guide management recommendations and actions:

- Protect and enhance areas with high habitat and ecosystem values.
- Encourage and support environmental appreciation, education, interpretation and stewardship.
- Acquire and provide information about the history and culture of the region to park visitors.
- Support low-impact outdoor recreation.
- Plan the park to maximize safety, security, accessibility and ease of navigation.
- Encourage visitors to be responsible and respectful while enjoying the park.
- Construct and maintain park amenities per regional standards.



Enos Lake

- Manage commercial activities in the park to respect the environmental and cultural resources.
- Work with partners, volunteers, First Nations and visitors on park stewardship.

Management of the future Regional Park will follow standard park guidelines and practices as outlined in the RDN Park Use Bylaw 1399 (2004), the RDN Parks and Trails Guidelines (2013), and the RDN Regional Parks and Trails Plan (2005-2015). This includes general maintenance procedures (garbage collection, inspections, repairs, etc.), safety measures (hazard tree removal, fencing, public notices, etc.), and provisions for accessible amenities. This management plan only addresses management issues, policies and actions that are unique to the future Regional Park. The recommendations for park management are summarized in the tables below:

PARK DEVELOPMENT					
Plan Section	**Issue**		**Recommendation**	**Who**	**When**
3.2	Amenity Implementation	a	Determine final park boundaries through survey work and staking.	Developer; RDN Parks; RDN Planning	Subdivision; Development
		b	Design and site all amenities in accordance with the Park Masterplan guidelines, the PDA and RDN Parks standards.	Developer; RDN Parks	Subdivision; Development
		c	Ensure that quantities, materials and designs are adequate and sustainable in terms of site and visitor requirements and long-term staff and budget constraints.	Developer; RDN Parks	Subdivision; Development
3.4.2	'Notch Summit' Dedication and Access	a	Continue stat right-of-way to ensure trail and service vehicle access to the 'Notch Summit' if completion of Sub-Phase 4C does not occur pursuant to the 20-year term of the PDA.	Developer; RDN Planning; RDN Parks	At PDA expiry (2034)
3.4.3	Option to Purchase Lands	a	Commit the estimated $1.1 million total for both Option to Purchase Lands within the Five-year Financial Plan for Regional Parks.	RDN Parks	2015-2020
		b	Pursue acquisition of the Notch Option to Purchase Lands within five years of first subdivision registration, subject to Board approval.	RDN Parks	Within 5 years of Phase 1A subdivision
		c	Pursue acquisition of the Lookout Option to Purchase Lands within three years of Phase 1E subdivision, subject to Board approval.	RDN Parks	Within 3 years of Phase 1E subdivision
3.4.4	Parkland Dedication Amendment	a	Implement any parkland dedication amendments—including reduced park size and altered boundaries—in accordance with conservation objectives as per Lakes District Neighbourhood Plan, PDA, and all associated documents.	Developer; RDN Planning; RDN Parks; MOTI	Subdivision

PARK MANAGEMENT: INFRASTRUCTURE AND ENCUMBRANCES					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.2.1	Joint Sanitary Sewer Right-of-Way and Trail	a	Coordinate service schedules and protocols for joint use of SRW as infrastructure and trail.	RDN Parks; RDN Wastewater Services	Phase 2A subdivision
4.2.2	Stormwater Mitigation	a	Coordinate maintenance and monitoring responsibilities for stormwater mitigation features between RDN Parks and RDN Water & Utility Services.	RDN Parks; RDN Water & Utility Services	Phase 1B subdivision
		b	Support Watershed Performance Indicator reviews every five years, as directed by the ISMP.	RDN Parks; RDN Water & Utility Services	Every 5 years after Phase 1B
4.2.3	Easement for Golf Course Irrigation	a	Manage general park operations and public use in and around Enos Lake in accordance with the terms of the water withdrawal license and the irrigation easement, both held by the Developer.	RDN Parks; Developer	Ongoing after Phase 2C
		b	Support water level monitoring in Enos Lake by the Developer, as per the Integrated Stormwater Management Plan.	RDN Parks; Developer; RDN Water & Utility Services	Ongoing after Phase 2C
4.2.4	Lake House Dock License	a	Manage general park operations and public use of the Lake House Dock on Enos Lake in accordance with the License for Commercial Dock (PDA Schedule O).	Developer; RDN Parks	Ongoing after Phase 2C

PARK MANAGEMENT: ECOLOGICAL PROTECTION					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.3.1	General Conservation Management	a	Complete environmental assessments for each separate section or phase of Regional Park, following land transfer and amenity construction, to establish updated conditions and management procedures.	RDN Parks; Consultant	After each phase of development
		b	Review the developer's Home Owner's Manual (PDA Section D.3) following each phase of development for possible updates to environmental education initiatives.	Developer; RDN Parks	After each phase of development
4.3.2	Forest Carbon Sequestration	a	Prepare a forest carbon management plan that will quantify the carbon stored in the Regional Park and provide recommendations on appropriate forest management.	RDN Parks; RDN Sustainability	Following Phase 1A development
4.3.3	Enos Lake Protection and Monitoring	a	Support the management and monitoring of Enos Lake by the Developer according to the Enos Lake Protection and Monitoring Program.	Developer; RDN Parks; RDN Water & Utility Services	Ongoing after Phase 2C
4.3.4	Garry Oak Meadows Management	a	Support the management of the Garry Oak ecosystem within the future Regional Park by the Developer and stewardship groups according to the Garry Oak Meadows Management Plan.	Developer; RDN Parks; Stewardship groups	Ongoing after Phase 1A

PARK MANAGEMENT: LOW-IMPACT RECREATION					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.4.1	Equestrian Use	a	Prohibit equestrian use within the future Regional Park	RDN Parks	Ongoing after Phase 1A
4.4.2	Cycling	a	Permit cycling / mountain biking in the future Regional Park on Multi-Use Trail (Trail Type I).	RDN Parks	Ongoing after Phase 1A
4.4.3	Dog-walking	a	Permit controlled dog-use (either on-leash or off-leash), on all park trails without posted restrictions.	RDN Parks	After each phase of development
		b	Complete environmental assessments for each separate section or phase of Regional Park (as in Section 4.3.1) to assess the need for restricted dog use in sensitive areas.	RDN Parks; Consultant	Ongoing after Phase 1A
4.4.4	Enos Lake Use	a	Permit swimming and non-motorized boating in all unrestricted areas of Enos Lake, unless otherwise posted.	RDN Parks	Ongoing after Phase 2C
		b	Prohibit swimming and non-motorized boating within 5m of "Irrigation Works", as described in the Easement for Golf Course Irrigation (PDA Schedule N).	RDN Parks	Ongoing after Phase 2C
		c	Manage public water access from the Lake House Dock so as not to interfere with private dock use, as described in the Lake House Dock License (PDA Schedule O).	RDN Parks	Ongoing after Phase 2C
4.4.5	Fire Management	a	Prepare a wildfire management plan that addresses fuel management and service access routes and provides strategies that are compatible with conservation management objectives.	RDN Parks; Fire Department	Phase 1A development

PARK MANAGEMENT: COLLABORATIVE STEWARDSHIP					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.5.1	First Nations Partnership	a	Collaborate with Snaw-naw-as to determine the need for protection of cultural areas during Regional park development.	RDN Parks; Snaw-naw-as; Developer	Development
		b	Provide opportunities for amenity design or artwork by Snaw-naw-as community members during Regional Park development.	RDN Parks; Snaw-naw-as; Developer	Development
		c	Collaborate with Snaw-naw-as on the production of educational park signage pertaining to Snaw-naw-as history and culture.	RDN Parks; Snaw-naw-as; Developer	Development
		d	Support ongoing Snaw-naw-as participation in ecological stewardship and cultural programing in the future park.	RDN Parks; Snaw-naw-as	Ongoing after Phase 1A
4.5.2	Volunteers	a	Implement a Volunteer Park Warden program for general monitoring of park and trail conditions, as needed.	RDN Parks; Volunteers	Ongoing after Phase 1A
4.5.2	Stewardship Groups	a	Solicit help from local stewardship groups for invasive weed management and restoration work in Gary Oak Meadows.	Developer; RDN Parks; Steward groups	Ongoing after Phase 1A

The annual park maintenance cost for the future Regional Park, which is based on per hectare maintenance costs for all existing Regional Parks and includes items such as incidental repairs, vegetation management and contract services, is estimated at $4,500 to $7,500 for each of the six main development phases (or $27,000 to $45,000 after full build-out).

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Terrace Wetland

1.0 Project Overview

1.1 Project Context

The Fairwinds Lakes District Neighbourhood Plan area is located on Nanoose Bay Peninsula, on the east coast of central Vancouver Island, within the Regional District of Nanaimo (RDN), Electoral Area 'E'. It is framed by the existing Dolphin Beach neighbourhood to the north, the existing Fairwinds neighbourhood to the east, the Department of National Defence to the south, and by rural crown lands to the west (Figure 1.1).

The area encompasses roughly 287 hectares (ha) of undeveloped and privately-owned land within the Fairwinds Resort Community, which will be subdivided and developed within six separate phases over an anticipated period of 20 years. Approximately 100 ha of regional parkland, including over 16 km of trails, will be dedicated to the RDN over the course of subdivision and neighbourhood build-out (Figure 1.2) Regional park dedication will help to protect the site's natural features while providing opportunities for diverse outdoor recreation activities.

Figure 1.1: Lakes District Air Photo, 2014 (Lakes District outlined in red)

The rezoning of the Lakes District was completed in July 2014 with the formal adoption of the zoning bylaws and the Phased Development Agreement (PDA). The PDA is a legally binding agreement between the RDN and the developer that outlines in detail the development phasing and provision of community amenities as envisioned in the Lakes District Neighbourhood Plan (LDNP) of 2011. Planning for the LDNP began in 2008 and involved extensive environmental assessment and community consultation with the goal of creating a sustainable neighbourhood plan predicated on ecological protection and sensitive development.

Figure 1.2: Regional Park Dedication (over a 20-year period and 6 development phases)

1.2 Management Plan Purpose

North End of Enos Lake

This document represents the first management plan for the future Regional Park within the Fairwinds Lakes District Neighbourhood Plan area. The plan is to be reviewed in five years (2020) and updated formally in ten-year intervals.

The Regional Park will be dedicated in six development phases, over approximately 20 years. The private developer is responsible for constructing all future park amenities during phased subdivision and build-out, as outlined in the PDA and associated documents. Once the development and construction of parkland amenities is complete, the land will be transferred to the RDN. The RDN will then assume the responsibility for the long-term operations and maintenance of the Regional Park.

The main purpose of the management plan is twofold:

1. To provide a summary of the Phased Development Agreement (PDA)—including all relevant documents incorporated within the PDA—as it pertains to Regional Park dedication and development.

Existing Path

2. To provide an overview of anticipated management issues, costs and strategies as they pertain to the future Regional Park following amenity construction and land transfer.

1.3 Management Plan Organization

The plan is organized into the following five sections:

1. Project Overview: project background, purpose and process

2. Site Overview: site description, site inventory and history

3. Park Development: a summary of planning processes, reference documents, and obligations of the developer and the RDN as they pertain to parkland dedication and development

4. Park Management: a summary of park management issues with discussion and recommendations based on ecological assessments, public, staff and stakeholder consultation

5. Summary of Recommendations: recommended actions for park development and management

1.4 Project Process

The preparation of this management plan was accomplished through a comprehensive design and public engagement process that involved the following steps:

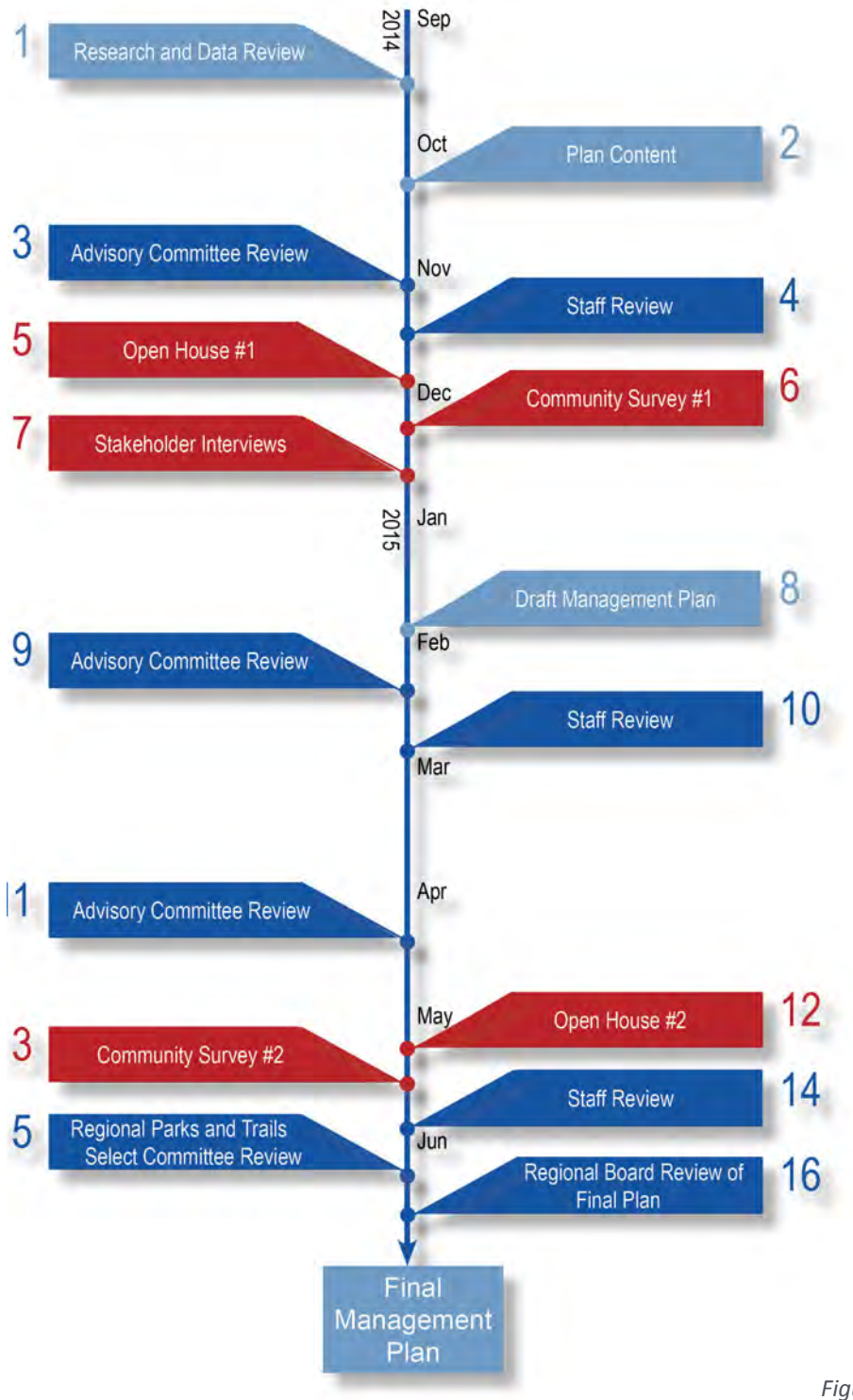


Figure 1.3: Project Process

1.5 Public and Stakeholder Consultation

Open House

Management Recommendations Panels

The public consultation process for the Regional Park Management Plan involved two Open House events and two on-line surveys held in November 2014 and May 2015 respectively. Public consultation findings are summarized below and provided in detail as **Appendix A**.

Key stakeholders, including neighbouring First Nations, the Province, Nanaimo and Area Land Trust (NALT), and the Nanoose Volunteer Fire Department, were contacted following both Open House events. Feedback received is referenced throughout this document. Collaboration with project partners, including Fairwinds and Snaw-naw-as First Nation, was continuous throughout plan development.

First Open House and Survey

The first Open house was held on November 18, 2014 to share information and answer questions about future Regional Park dedication, development and management. A survey was available in hard-copy at the open house and online at the project website from November to December 2014. With over 120 survey responses, the engagement helped to establish the key management preferences of RDN residents, which include the following:

- Provide education on the nature and history of the park area
- Include programing that does not negatively affect the park's ecosystem
- Promote and plan for responsible dog management
- Limit cycling access
- Establish barriers to protect ecologically sensitive areas
- Allow low-impact recreation on Enos Lake

Second Open House and Survey

The second Open House was held on May 13, 2015 to receive public feedback on the draft Management Plan. Draft plans were posted on the project website from May 1, 2015 to May 22, 2015 along with the second survey. A total of 25 survey responses were received both online and in hard-copy at the Open House. Survey respondents were asked to identify their level of support for the draft plan on a 5-point rating scale with "1" denoting strong opposition and "5" denoting strong support. Responses are summarized in the table on the following page.

Level of Support (1-5)	Percentage of Total Responses	Number of Responses
1 - strongly opposed	0%	0
2	29%	6
3	24%	5
4	14%	3
5 - strongly support	33%	7

Fifteen respondents also provided comments to elaborate on their level of support or opposition. The comments were varied but mainly supportive. Opposition to the plan was based largely on issues of environmental protection and stewardship related to neighbourhood development in general. A few respondents expressed individual concerns for future park uses (dog walking, cycling, swimming, park amenity design and quantities).

Park Naming

Suggested names for the future Regional Park were solicited from participants of the first Public Open House and Survey. A total of 35 names were received. Although the suggestions varied, nearly half the respondents suggested including "Nanoose" in the name, with several respondents suggesting reference to First Nations or naming by First Nations. All nominations are included in Appendix A. The following top five nominations, in order of popularity, were made by multiple respondents:

- Nanoose Regional Park
- Nanoose Bay Regional Park
- Nanoose Peninsula Regional Park
- Qwiyulass Regional Park
- Snaw-naw-as Regional Park

The RDN Parks Naming Bylaw C1.3 states that in general Regional Parks should be named after any significant and defining geographical features, followed by the words "Regional Park". Examples include Benson Creek Falls Regional Park, Mount Benson Regional Park, Descanso Bay Regional Park, and Englishman River Regional Park.

The name for the future Regional Park will be determined following the second public Open House through consultation with First Nations and the Advisory Committee, and approval by the Regional Board.

1.6 Vision and Objectives

The vision and objectives for the Regional Park were interpreted from visioning exercises and public input during the planning process for the Lakes District Neighbourhood Plan and confirmed through the public consultation process for the Regional Park management plan.

Vision

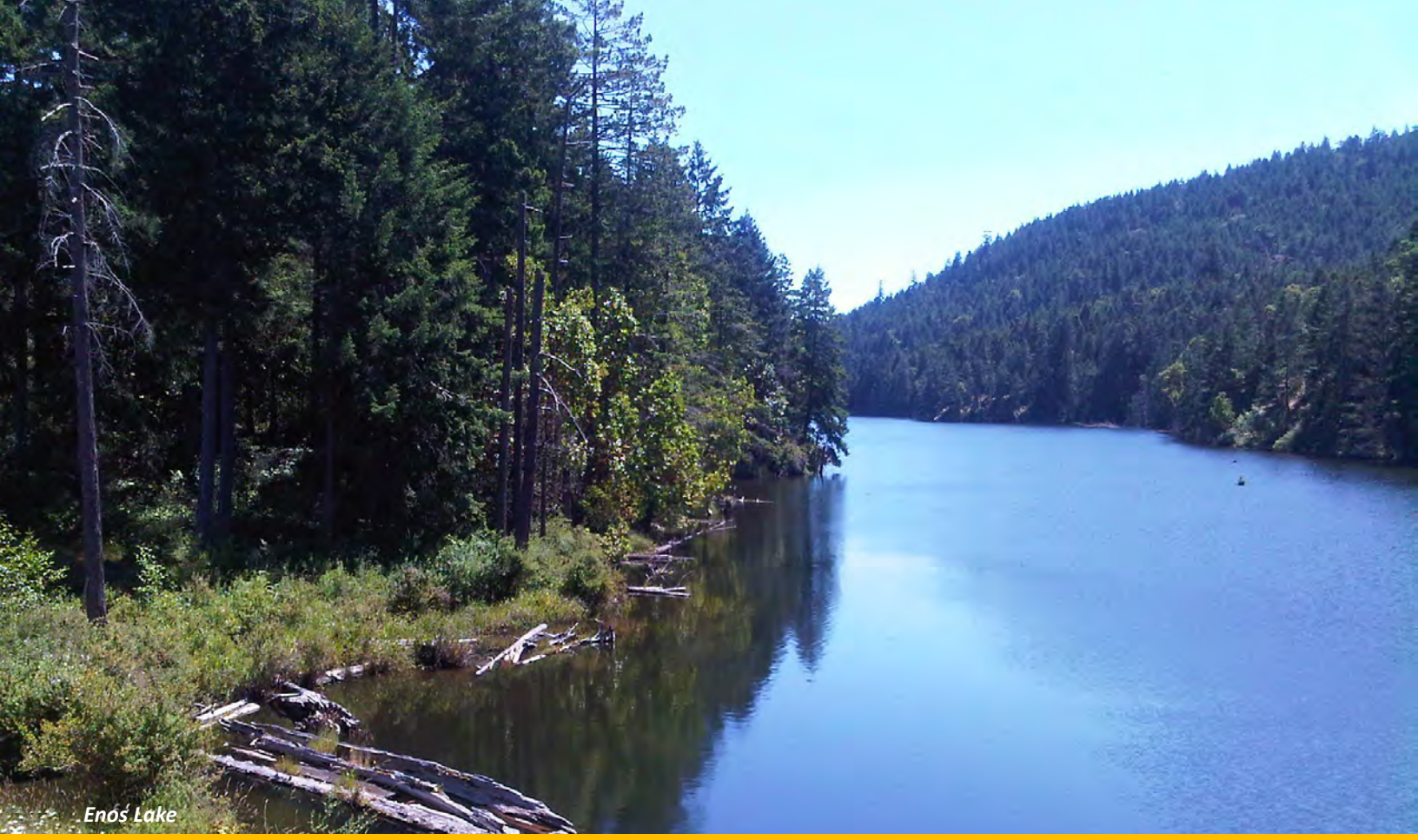
The following vision statement establishes the overall direction for planning, design and management of the Regional Park:

This Regional Park protects the functional integrity of regionally significant ecosystems and prominent natural features that define the landscape character of the Nanoose Bay Peninsula. It is the "green heart" of the Nanoose Bay Peninsula with interconnected open spaces and corridors that provide links for wildlife and access to nature for humans. The park provides recreational opportunities that are enjoyed by Regional District residents and visitors. It is a place where the cultural heritage and spiritual values of the land to First Nations are recognized, celebrated and protected.

Objectives

The following objectives, based on the vision, guide management recommendation and actions:

- Protect and enhance areas with high habitat and ecosystem values.
- Encourage and support environmental appreciation, education, interpretation and stewardship.
- Acquire and provide information about the history and culture of the region to park visitors.
- Support low-impact outdoor recreation.
- Plan the park to maximize safety, security, accessibility and ease of navigation.
- Encourage visitors to be responsible and respectful while enjoying the park.
- Construct and maintain park amenities per regional standards.
- Manage commercial activities in the park to respect the environmental and cultural resources.
- Work with partners, stakeholders, volunteers, First Nations and visitors on park stewardship.



Enos Lake

2.0 Site Overview

2.1 Site History

The Nanoose Peninsula has a long history of settlement, beginning with the Snaw-Naw-As First Nation (see Section 4.5). Europeans brought changes in land use and resource development and by the early 1900s the area featured manufacturing facilities for cordite and various types of dynamite, a brick plant, and the Esquimalt & Nanaimo Railway.

In the 1980s, planning began for a 548 ha community known as Fairwinds Community and Resort. Today the community includes more than 700 homes, an 18-hole golf course, clubhouse, and neighbourhood recreation facility (Fairwinds Centre). The Lakes District Neighbourhood Plan was adopted in 2011 as a means to update the 1983 community master plan for the remaining undeveloped Fairwinds lands in a manner more consistent with present values and standards of conservation and efficient land use.

The rezoning of the Lakes District was completed in July 2014. Subdivision and full neighbourhood build-out are anticipated in six development phases over the next 20 years.

2.2 Site Description

The Notch / Qwiyulass

Enos Lake

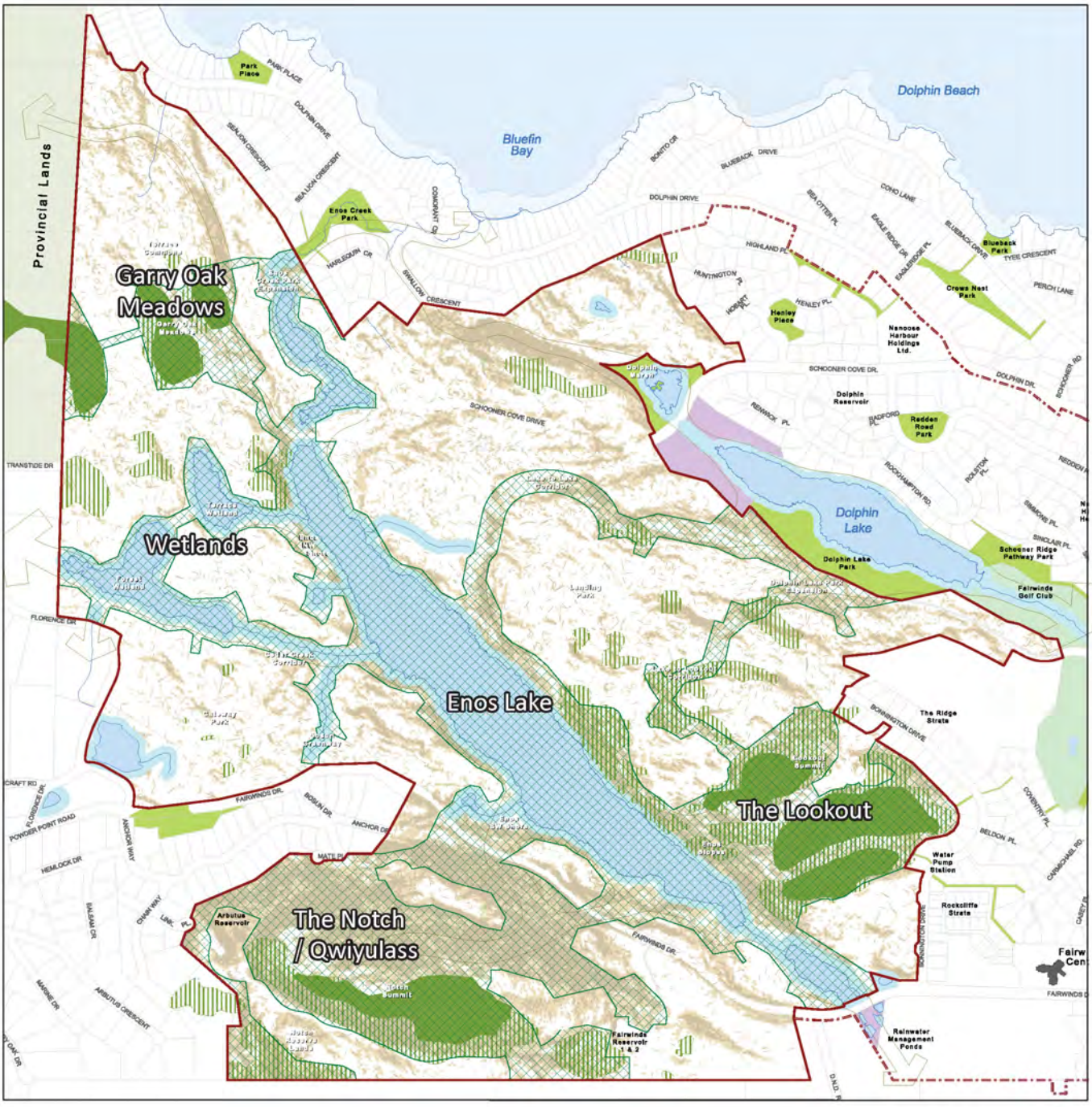
The terrain of the Lakes District is characterized by two defining hilltops: The Notch (traditionally referred to as "Qwiyulass" by Snaw-naw-as but known colloquially as "the Notch" due to an indentation at the summit) and the Lookout. The Notch/Qwiyulass rises more than 250 m above sea level and is a regionally recognizable feature that forms the north shore ridgeline of Nanoose Bay. The Lookout is the pinnacle of the central ridge of the Lakes District.

Enos Lake, located between the Notch/Qwiyulass and the Lookout, is the site's central feature. Its drainage basin is characterized by steep forested slopes, and an interconnected system of wetlands and streams. Dolphin Lake, which lies just outside of the Lakes District area, is an integral feature in terms of wildlife habitat and site drainage.

The Regional Park

Over 40% of the Lakes District will be designated and protected as Regional Park. The park will encompass the Notch/Qwiyulass, the Lookout and Enos Lake, along with significant wildlife corridors (between Enos and Dolphin Lakes), sensitive slopes, rocky outcrops, and Garry Oak and wetland ecosystems that constitute the complex and diverse ecological make-up of the area.

Land use designation in the Lakes District is based on a central framework of conservation. A Conservation Map (**Figure 2.1**), produced during the Lakes District neighbourhood planning process as a culmination of extensive ecological inventories, mapping, and community consultation, outlines the significant ecological features captured within Regional Park dedication.



Legend

- Lakes District Boundary
- Conservation Framework
- Garry oak Eccosystem
- Environmentally Sensitive Areas
- Extreme Slopes (+40%)
- Steep Slopes (30 - 40%)

Figure 2.1: Conservation Plan

2.3 Site Inventory

Open Water Wetland

Wetland

Garry Oak Meadow

The following studies, completed during the planning process for the Lakes District Neighbourhood Plan, informed the conservation framework that guided land use designation, housing type, circulation and parkland dedication in the Lakes District, as outlined in the Phased Development Agreement:

- **Archaeological Overview Assessment; Lakes District and Schooner Cove Neighbourhood Plan Areas, Nanoose Bay, BC** (I.R. Wilson Consultants Ltd., 2008)
- **Preliminary Geotechnical Terrain Assessment for Proposed Subdivision Fairwinds Neighbourhood 2 Nanoose Bay, BC** (Trow Associates Inc., 2008)
- **Lakes District Study Area; Fairwinds Development Detailed Biophysical Assessment** (Cascadia Biological Services, 2009)
- **Environmental Impact Assessment; Fairwinds' The Lakes District and Schooner Cove Neighbourhood Plans** (Pottinger Gaherty Environmental Consultants Ltd., 2010)
- **The Lakes District and Schooner Cove Integrated Stormwater Management Plan** (Kerr Wood Leidal Consulting Engineers, 2013)

These studies also provide support for future management recommendations outlined in Section 4 of this report. The full reports are posted on the RDN Parks website at www.rdn.bc.ca/Fairwinds; a summary of each report is included in **Appendix B**.

The following environmental management plans provide detailed recommendation on conservation management for two significant ecosystems within the future Regional Park:

- **Enos Lake Protection & Monitoring Plan - Draft** (Pottinger Gaherty Environmental Consultants,2015)
- **Garry Oak Meadows Management Plan** (Pottinger Gaherty Environmental Consultants, 2015)

An overview of monitoring and management recommendations from each plan is provided in Section 4 of this report. The Garry Oak Meadows Management Plan is included as **Appendix F**. The Enos Lake Protection & Monitoring Plan will be included as **Appendix E** upon completion.

Terrace Wetland

3.0 Park Development

This section summarizes planning processes, reference documents, obligations of the developer, and recommendations for the RDN pertaining to parkland dedication and development.

3.1 Lakes District Neighbourhood Plan (2011)

The planning process for regional parkland designation began in 2008 with the preparation of the Lakes District Neighbourhood Plan. The process involved an in-depth review of regional planning directives, detailed analysis of the land's biophysical constraints and opportunities, and identification of best management practices (BMPs) for environmental management and sustainable community planning and design. Community values were considered through an extensive public engagement process that included open houses and design workshops, advisory group meetings, a Public Hearing, and reviews with Regional District departments, Snaw-Naw-As First Nation and external agencies.

The Neighbourhood Plan provides for the phased development of a sustainable neighbourhood containing a diversity of housing forms integrated within a network of regionally significant park and trails. It was adopted in 2011 as OCP Amendment Bylaw No.1400.03.

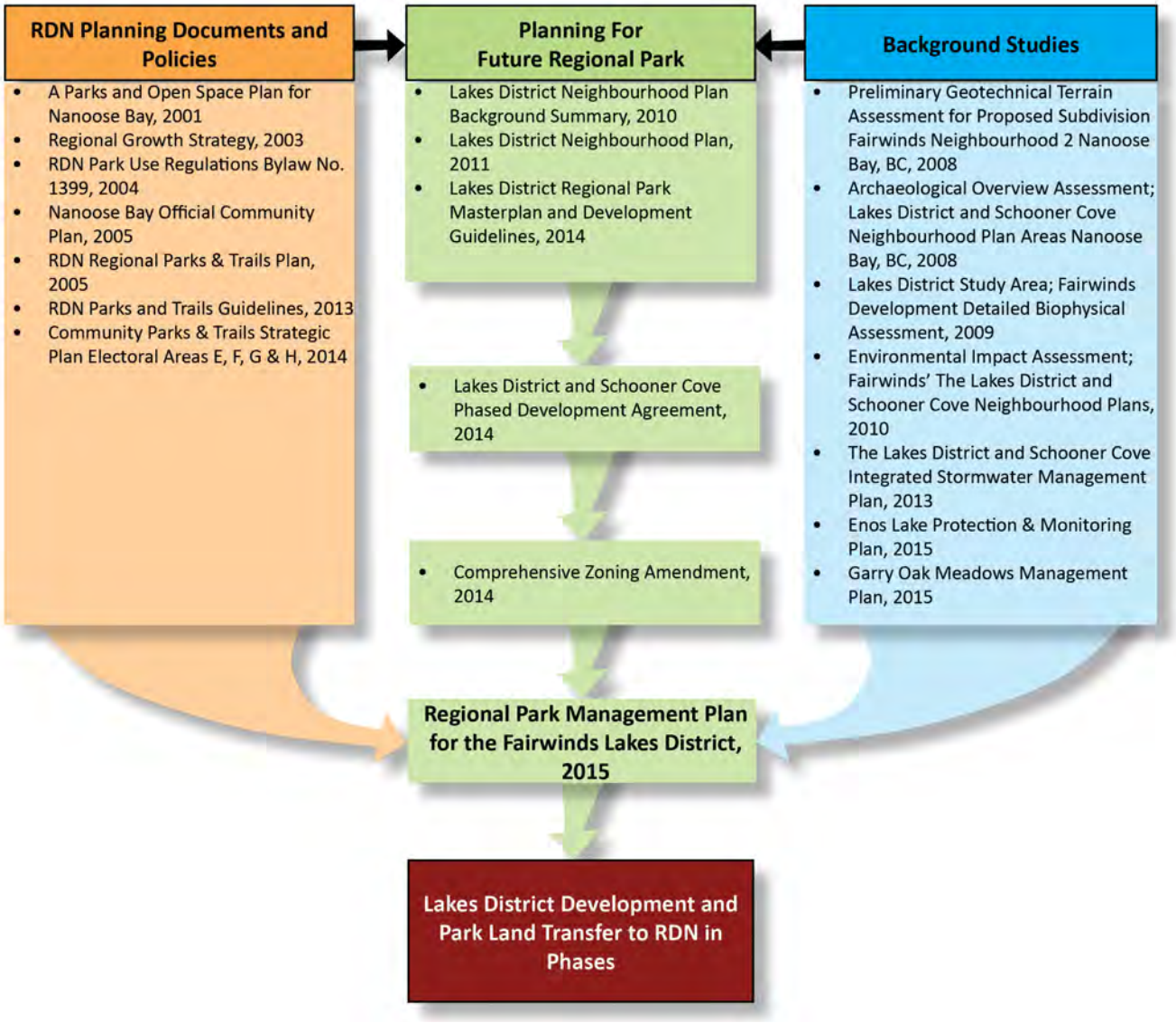


Figure 3.1: Planning Process and Document Summary

3.2 The Lakes District Regional Park Masterplan and Development Guidelines (2014)

The Lakes District Regional Park Masterplan and Development Guidelines (The Park Masterplan) provides a framework for implementing the park vision adopted in the Lakes District Neighbourhood Plan. It outlines objectives for environmental conservation and passive recreation, and includes a site plan showing the regional parkland and trail network (Figure 3.1), as well as guidelines for park amenities, trail classifications with cross-sectional drawings, and construction standards.

The Park Masterplan was submitted as part of the Zoning Amendment Application, which was approved in 2014. It is incorporated within the Phased Development Agreement as Schedule F, attached to this report as **Appendix D,** and summarized on Page 16.

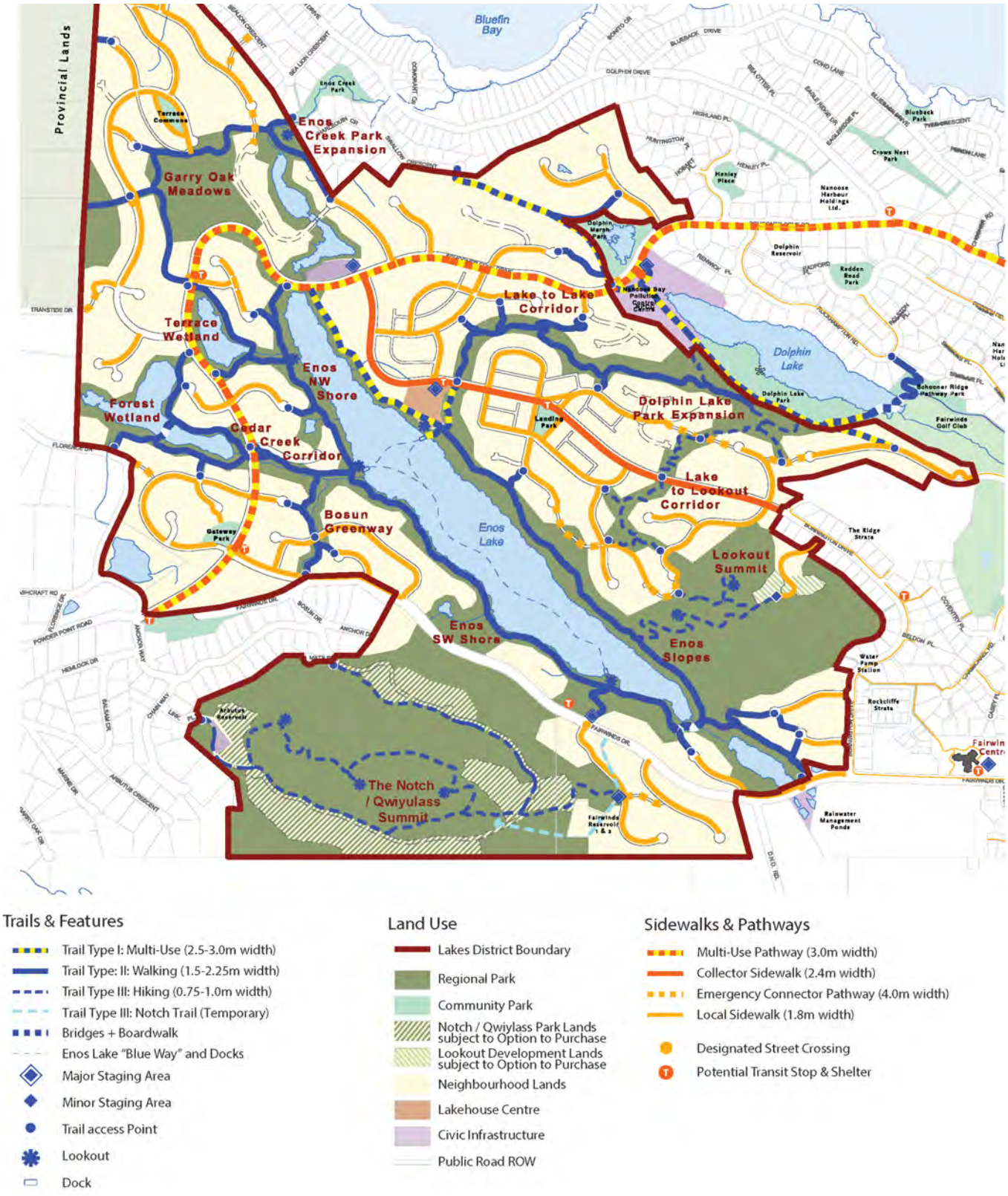
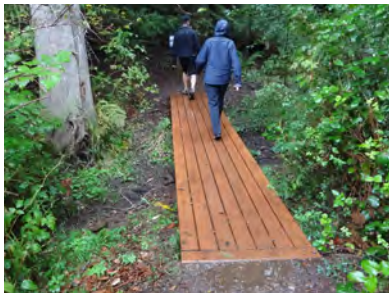


Figure 3.2: Site Plan from The Lakes District Regional Park Masterplan and Development Guidelines (2014)

Park Amenities



Bridges

Parking

Signage

Retaining Wall

In addition to providing a conceptual layout for the regional park network (which constitutes approximately 40% of the Lakes District, or 100 ha), the Park Masterplan enumerates the future park amenities and works that will be completed by the developer prior to parkland transfer to the RDN.

The following is a list of park amenities (quantities provided in the Park Masterplan are included):

- Multi-use trails for walking and cycling (2.5-3m wide) – 2.17km total
- Walking trails (1.5-2.25m wide) – 8.9 km total
- Hiking trails (1m wide) – 5.10 km total
- Boardwalk and Bridges for wetland and riparian crossings – 0.24 km total
- Minor Docks for the Enos Lake "Blue Way" – 2 total
- Lake House Dock (4mx7m), on Enos Lake at Lake House Community Centre– 1 total
- Stairs for steep sections of trail
- Structures, such as picnic shelters, where deemed appropriate
- Benches at rest areas and lookouts
- Trail Signage for way finding and education
- Entrance Signage at all trail access points – 45 total
- Major Staging Areas (including parking for 10-15 vehicles, park sign or kiosk, vehicle barriers, bike racks, garbage receptacles; possibly picnic facilities and washrooms) – 4 total
- Minor Staging Areas (include parking for 4-6 vehicles, park sign, and vehicle barriers; possibly bike racks and garbage receptacles) – 1 total
- Access barriers, including bollards and gates to restrict vehicle and pedestrian access
- Fences for park delineation and to protect sensitive vegetation and habitat
- Retaining Walls to prevent soil erosion as required
- Safety treatments for street crossings between park entrances – 15 crossings total
- Native planting for buffers and restoration work as required
- Drainage culverts as required
- Rainwater Creeks to convey stormwater to appropriate retention areas – 14 total
- Regional Rain Gardens to store and filter run-off water – 4 total
- Sanitary Sewer Right-of-Way along portion of trail east side of Enos Lake – 1 km total

Design and Construction Standards

The Masterplan provides conceptual plans for park boundaries, trails, boardwalks, bridges, docks and stairs, as well as general guidelines for construction and siting to minimize impact on the environment and maximize visitor safety, accessibility and enjoyment. Design, quantities and siting will therefore need to be finalized for each amenity during implementation.

Recommendations for Park and Amenity Implementation

Because the Park Masterplan is largely conceptual, the RDN and the developer will work collaboratively at the time of subdivision and during park development to:

- Determine final park boundaries through survey work and staking.
- Design and site all amenities in accordance with the Park Masterplan guidelines and RDN Parks standards.
- Ensure that quantities, materials and designs are adequate and sustainable in terms of site and visitor requirements and long-term staffing and budgetary constraints.

3.3 Comprehensive Zoning Amendment (2014)

Following adoption of the Lakes District Neighbourhood Plan, a Comprehensive Zoning Amendment Application was submitted to the RDN by the developer in July 2013. The Phased Development Agreement was submitted in conjunction with the application as a legal mechanism to support the commitments and terms of the zoning amendment, including park phasing, land dedication and park improvements.

Further public engagement was conducted as part of the zoning amendment process, including extensive consultation with RDN staff and the Fairwinds Community Association, a community Public Open House, a Public Information Meeting and a Public Hearing. The Comprehensive Zoning Amendment (Bylaw 500.384) and the Phased Development Agreement (Bylaw 1692) were reviewed and adopted in tandem in July 2014.

3.4 Phased Development Agreement (2014)

The Phased Development Agreement (PDA) is a legally binding, 20-year agreement between the RDN and the developer that outlines in detail the land uses, development phasing and provision of community amenities as envisioned in both the Lakes District Neighbourhood Plan and the Schooner Cove Neighborhood Plan. The agreement outlines 82 items, organized into roughly 20 sections, addressing both neighbourhoods.

Boardwalk Detail from Masterplan

Thirty documents are annexed to the agreements as schedules. They include the following schedules that pertain to Regional Park dedication and development in the Lakes District:

Schedule D:	Park Phasing Plan
Schedule E:	Park Improvement Phasing Plan
Schedule F:	Regional Park Masterplan and Development Guidelines
Schedule L:	Statutory Right of Way for Public Access (to Notch/ Qwiyulass Summit)
Schedule N:	Easement for Golf Course Irrigation (Enos Lake)
Schedule O:	Licence for Commercial Dock (on Enos Lake)
Schedule P:	Notch Option to Purchase
Schedule Q:	Lookout Option to Purchase
Schedule R:	Section 219 Covenant over Option to Purchase Lands (for Notch and Lookout)
Schedule S:	Construction Covenant
Schedule Z:	Regional Park Management Plan –Terms of Reference
Schedule AA:	Garry Oaks Meadows Management Plan – Terms of Reference
Schedule BB:	Enos Lake Protection and Monitoring Program – Terms of Reference

The full PDA (including all schedules) is posted on the RDN website under the Current Planning section at www.rdn.bc.ca. Items that pertain to the future Regional Park are discussed below and summarized in **Appendix C**.

3.4.1 Phasing Overview (PDA Sections B.1 and C.2 + Schedules E and F)

In accordance with the PDA, the future Regional Park will be transferred to the RDN in sections, and in conjunction with the subdivision of six major development phases: Phases 1 through 4 (which are to proceed consecutively), and Independent Phases I and II (which may proceed in either order, and at any time, irrespective of Phases 1 to 4). Each of the phases is further divided into sub-phases, which may proceed concurrently and in any order within a given phase. Development of all sub-phases must be completed—or security must be provided—before the next major phase can begin.

Regional Park land will be transferred to the RDN at the time of subdivision registration for each sub-phase. The developer must construct the park amenities within one year of the transfer of the parkland in accordance with PDA commitments and RDN Parks standards.

The Park Land Phasing Plan from PDA Schedule D (**Figure 3.4**) illustrates phased parkland dedication by area while the chart below (**Figure 3.3**) depicts the sequence of phased dedication and associated implementation requirements.

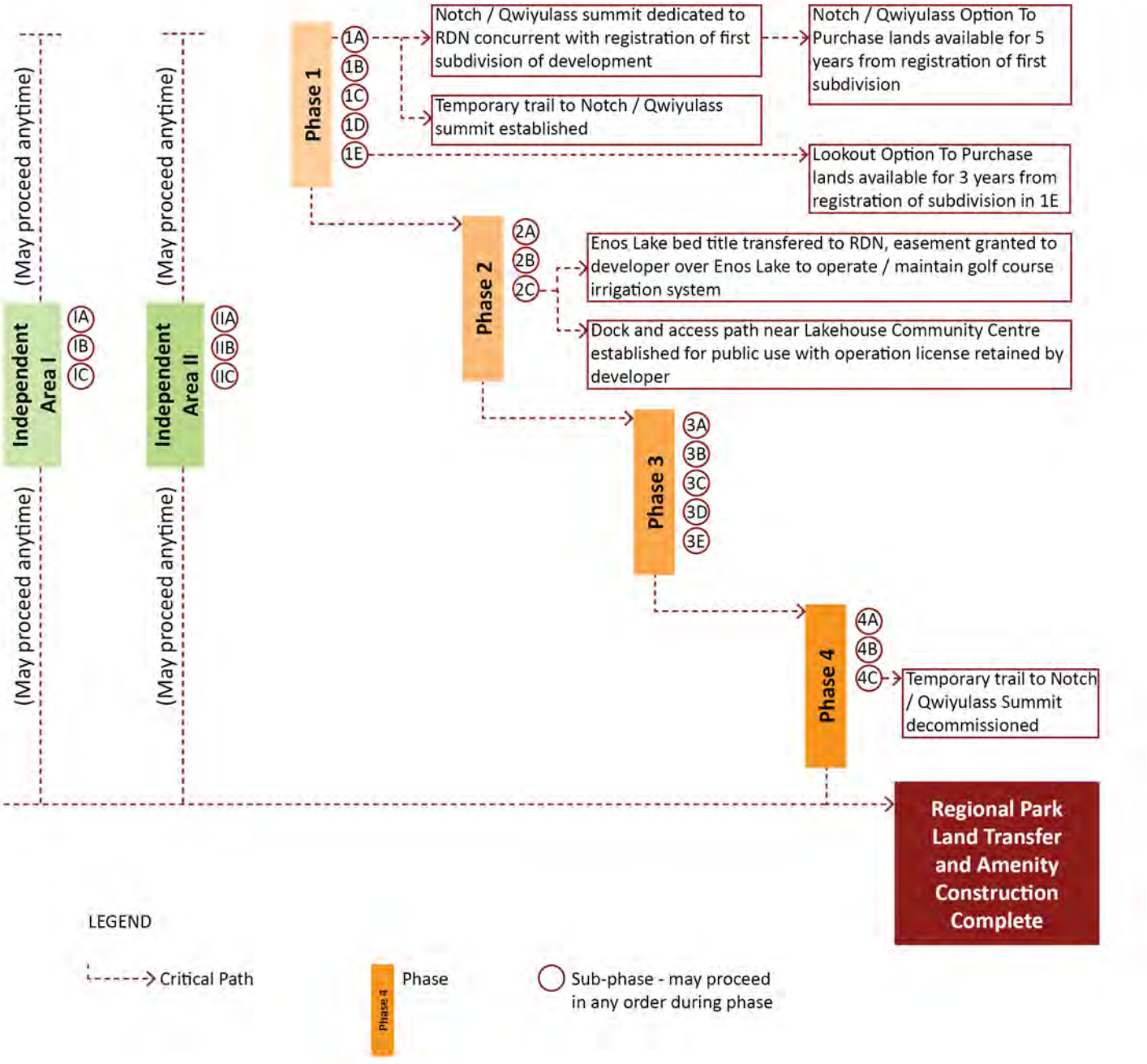


Figure 3.3: Park Land Phasing Sequence

Figure 3.4: Park Land Phasing Plan

3.4.2 Notch Summit / Qwiyulass (PDA Sections C.1 and C.2 + Schedule L)

The lands on the Notch/Qwiyulass identified in the PDA as 'Notch Summit' will be transferred to the RDN with registration of the first subdivision of the Lakes District land (Phase 1A). A temporary statutory right-of-way for trail access to the summit will be provided by the developer until the permanent trail is completed in Sub-Phase 4C.

Although the PDA commits approximately 40% of the lands within the Lakes District for Regional Park use, parkland dedication requirements for subdivision are fulfilled in the first phase of development by transfer of the 'Notch Summit' (Phase 1A), which is 20 ha in size and roughly 5% of Lakes District Neighbourhood Plan Area. Because Regional Park dedication and amenity implementation is driven by the development approval process, it is possible that only a portion of the Regional Park will be dedicated and transferred to the RDN before the PDA expires in 20 years.

Recommendation for 'Notch Summit' Dedication and Access

Continue statutory right-of-way to ensure trail and service vehicle access to the 'Notch Summit ' if completion of Sub-Phase 4C does not occur pursuant to the 20-year term of the PDA.

The Notch / Qwiyulass Trail

3.4.3 Option to Purchase Lands (PDA Section C.4 + Schedules D,P,Q and R)

Two parcels of developable land—located on the Notch/Qwiyulass and the Lookout—are designated in the PDA as "Option to Purchase Lands." The RDN has the option to purchase these lands from the developer for Regional Park use at the time of subdivision.

The Notch Park Lands Subject to Option to Purchase, as identified in the Parks Phasing Map (PDA Schedule D), will be available for purchase by the RDN for five years from the date of registration of the first subdivision in Phase 1A. The subject land, which is roughly 10 ha (25 acres) in size, or 1/3 of the total area of the Notch/Qwiyulass, is zoned as Regional Park (PR1), and is also protected from development in perpetuity by a No Build Covenant (CA3917284) between the owner and the RDN. The zoning and covenant do not, however, ensure public access or management of the Option to Purchase lands for Regional Park use.

The Lookout Development Lands Subject to Option to Purchase will be available for purchase by the RDN for three years from the date of the registration of subdivision in Phase 1E. The land—which is approximately 0.8 ha (2 acres) in size and part of the main access route to the Lookout Summit from Bonnington Drive— is zoned for Multiple Dwelling Residential (RMD), and is subject to development if not purchased by the RDN by the end of the three-year term.

A legal survey and appraisal will need to be completed at the first phase of subdivision to determine accurate boundaries, size and value for the Option to Purchase Lands. However, an estimated value of $1 million for the Notch/ Qwiyulass and $100,000 for the Lookout has been provided by the developer for budgeting purposes.

The Notch / Qwiyulass Trail

Recommendation for Option to Purchase Lands:

In order to ensure public access, uniform management and ecological stewardship of the Notch lands, as well as preservation of the forested slope and trail access to the Lookout, the RDN will:

- Commit the estimated $1.1 million total for both Option to Purchase Lands within the Five Year Financial Plan for Regional Parks.
- Pursue acquisition of the Notch Option to Purchase Lands within five years of first subdivision registration, subject to Board approval.
- Pursue acquisition of the Lookout Option to Purchase Lands within three years of Phase 1E subdivision, subject to Board approval.

3.4.4 Parkland Dedication Amendment (PDA Section D.1 and Schedule T)

Section D.1.48 of the PDA states that the dedication or transfer of parkland in the Lakes District is calculated on the basis of the assumed road right-of-way areas within each sub-phase (as set out in PDA Schedule T). If road right-of-way dedication increases at the time of subdivision registration for any given sub-phase, as per BC Ministry of Transportation and Infrastructure (MOTI) requirements, the park area transfer or dedication within that given sub-phase may be reduced by the amount of road right-of-way increase, up to a maximum reduction of 5%.

Recommendation for Parkland Dedication Amendment

If, during the subdivision registration of any given sub-phase, the parkland dedication will be reduced due to an increase in road right-of-way area as required by MOTI, the RDN and the developer will work in partnership to:

- Implement any parkland dedication amendments—including reduced park size and altered boundaries—in accordance with conservation objectives envisioned in the Lakes District Neighbourhood Plan and set out in the Phased Development Agreement and all associated documents and studies.

View to Nanoose Bay

4.0 Park Management

This section outlines park management issues, recommended strategies and estimated costs as they pertain to the future Regional Park, following land transfer and amenity construction. Discussion and recommendations are based on ecological assessments and public and stakeholder consultation completed during the planning processes for the Lakes District Neighbourhood Plan, the Comprehensive Zoning Amendment, and this Management Plan.

4.1 Management Overview

The Regional District of Nanaimo (RDN) manages approximately 2,026 ha of regional park, trail and conservation lands along with another 584 ha of neighbourhood and community parks and trails.

All regional parkland is managed for both environmental protection and low-impact human use. The RDN Parks Department strives to maintain this balance through regular ecological monitoring and restoration work, partnerships with First Nations and community stewardship groups, and general public communication through park signage, guidebooks and recreation programming. These practices are consistent with the management objectives set out for the future Regional Park in the Lakes District Neighbourhood Plan (see Section 1.6).

Management of the future Regional Park will, in general, follow standard park guidelines and practices as outlined in the RDN Park Use Bylaw 1399 (2004), the RDN Parks and Trails Guidelines (2013), and the RDN Regional Parks and Trails Plan (2005-2015). This includes general maintenance procedures (garbage collection, inspections, repairs, etc.), safety measures (hazard tree removal, fencing, public notices, etc.), and provisions for accessible amenities.

The following sections of this report (Sections 4.2-4.5) will only address management issues, policies and actions that are unique to the future Regional Park.

4.1.1 Estimated Costs

The annual park maintenance cost for the future Regional Park—which is based on per hectare maintenance costs for all existing Regional Parks and includes items such as incidental repairs, vegetation management and contract services—is estimated at $4,500 to $7,500 for each of the six main development phases (or $27,000 to $45,000 after full build-out).

Estimated replacement and repair costs for all future park amenities based on typical 2015 construction costs—are outlined in the following schedule (**Figure 4.1)**.

Amenity	Unit	Independent Area I	Independent Area II	Phase 1	Phase 2	Phase 3	Phase 4	TOTAL	Major Repair or Replacement	Replacement Unit Cost (2015)	TOTAL COST
Trail Type I: Multi-use Trail (2.5-3.0m)	lin m	0	0	1099	575	0	0	1674	Resurfacing every 20 years	$ 30	$ 50,220
Trail Type II: Walking Trail (1.5-2.25m)	lin m	1231	90	1482	1407	2562	1715	8487	Resurfacing every 20 years	$ 20	$ 169,740
Trail Type III: Hiking Trail (0.75-1.0m)	lin m	173	0	4323	61	0	540	5097	Resurfacing every 20 years	$ 10	$ 50,970
Trail Type III: Notch Trail (Temporary)	lin m	281	0	0	0	0	0	281	Resurfacing every 20 years	$ 20	$ 5,620
Boardwalk/ bridges	lin m	78	0	99	21	25	49	272	Decking replaced after 20 years	$ 1,000	$ 272,000
Lookouts	ea.	1	0	5	2	2	0	10	Decking replaced after 20 years	$ 2,000	$ 20,000
Major Staging Areas	ea.	2	0	0	2	0	0	4	Resurface every 5-7 years	$ 5,000	$ 20,000
Minor Staging Areas	ea.	1	0	0	0	0	0	1	Resurface every 5-7 years	$ 2,000	$ 2,000
Trail Access Points	ea.	4	2	13	3	10	8	40	N/A	$ -	$ -
Docks	ea.	0	0	0	2	0	0	2	Decking replaced after 10 years	$ 20,000	$ 40,000
Stairs*	lin m	25	0	50	100	25	0	200	Replacement after 30 years	$ 500	$ 100,000
Retaining Walls*	lin m	100	0	0	500	50	350	1000	Replacement after 50 years	$ 100	$ 100,000
Culverts*	ea.	1	0	0	1	1	1	4	Replace after 50 years	$ 2,000	$ 8,000
Rainwater Creeks*	ea.	1	0	1	0	2	2	6	N/A	$ -	$ -
Small Entrance Signs*	ea.	4	2	13	3	10	8	40	Replace after 10 years	$ 300	$ 12,000
Large Entrance Signs*	ea.	3	0	0	2	0	0	5	Replace after 20 years	$ 2,500	$ 12,500
Interpretive/ wayfinding signs*	ea.	10	0	15	10	20	10	65	Replace after 10 years	$ 1,000	$ 65,000
Maps*	ea.	4	2	13	3	10	8	40	Replace after 10 years	$ 1,000	$ 40,000
Kiosks*	ea.	3	0	0	2	0	0	5	Replace after 50 years	$ 18,000	$ 90,000
Bike racks*	ea.	3	0	0	2	0	0	5	Replace after 20 years	$ 600	$ 3,000
Garbage receptacles*	ea.	3	0	0	2	0	0	5	Replace after 20 years	$ 600	$ 3,000
Fencing*	lin m	50	0	450	40	1020	450	2010	Replace after 10 years	$ 80	$ 160,800
Safety railings*	lin m	150	0	0	350	200	0	700	Replace after 10 years	$ 100	$ 70,000
Bollards*	ea.	7	2	13	5	10	8	45	Replace after 30 years	$ 400	$ 18,000
Benches*	ea.	4	0	19	6	7	5	41	Replace after 20 years	$ 2,500	$ 102,695
Picnic Tables*	ea.	2	0	0	2	0	0	4	Replace after 20 years	$ 2,500	$ 10,000
Washrooms (Porta potty with surround)*	ea.	2	0	0	2	0	0	4	Replace after 30 years	$ 4,000	$ 16,000

*Quantities estimated based on descriptions in Park Masterplan

Figure 4.1: Amenity Replacement Schedule and Costs

4.2 Infrastructure and Encumbrances

The Phased Development Agreement identifies several easements and licences that allow for public infrastructure and private uses within the future Regional Park. Associated long-term implications for park management and operations are discussed below.

4.2.1 Sanitary Sewer Right-of-Way (SRW)

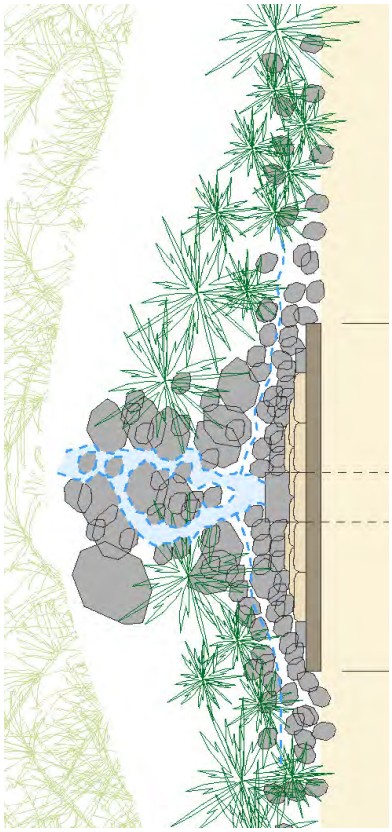
To maximize efficiency in the sanitary sewer system and to minimize long-term infrastructure maintenance costs, a sanitary trunk main is proposed within the Regional Park for a 1 km stretch along the east side of Enos Lake.

The Sanitary Sewer Right-of-Way (SRW) is planned to be paired with a portion of the Multi-use Trail (2.5-3.0 m wide) for a distance of 450 m between Schooner Cove Drive and the proposed Lake House Community Centre. Southeast from the Lake House, the SRW continues along a portion of Walking Trail (1.5-2.25 m wide) for a distance of 650 m. The SRW is illustrated in the Park Master Plan (PDA Schedule F) and the Infrastructure Phasing Plan (PDA Schedule G).

Management Recommendation:

RDN Parks will work collaboratively with RDN Wastewater Services to:

- Coordinate service schedules and protocols for joint use of the SRW as park trail and infrastructure.



Rainwater Creek Detail from Masterplan

4.2.2 Stormwater Mitigation

As a Best Management Practice in stormwater management, 12 to 14 **rainwater creeks** and two to four **regional rain gardens** will be constructed within the Regional Park to convey and filter stormwater run-off from development areas into Enos Lake, as directed by the Integrated Stormwater Management Plan or ISMP (PDA Schedule DD). The proposed location of these stormwater mitigation features is illustrated in the Infrastructure Phasing Plan (PDA Schedule G).

The rainwater creeks, built of rocks and gravel, will follow natural contours with pools and cascading sections to aerate run-off water. The vegetated rain gardens will be engineered to filter and mitigate run-off. Over time, with proper monitoring and maintenance, these engineered features will naturalize and provide habitat value for the Regional Park.

Management Recommendations:

RDN Parks will work collaboratively with RDN Water & Utility Services in order to:

- Coordinate maintenance and monitoring responsibilities for stormwater mitigation features within the Regional Park.
- Support Watershed Performance Indicator reviews every five years, as directed by the ISMP.

4.2.3 Easement for Golf Course Irrigation (Enos Lake)

An existing water license on Enos Lake allows for the withdrawal of up to 173,000 cubic metres of water by the owners of Fairwinds for irrigation of the Fairwinds Golf Course. According to the Integrated Stormwater Management Plan (PDA Schedule DD), current withdrawals are approximately 56% of the amount allowed by the active water license.

Water is currently withdrawn from Enos Lake from a submerged intake and overland pipe (which will be buried during development) to Dolphin Lake. The "Irrigation Works" (as described in PDA Schedule N) include a pump house on the west side of Enos Lake, as well as a dam, outlet and weir. The ISMP recommends long-term water level and water quality monitoring, which are addressed in part by the Enos Lake Monitoring and Protection Program (attached to this report as **Appendix E** and discussed in Section 4.3).

The RDN will grant the Fairwinds owner an easement (PDA Section C.1.9 and Schedule N) to operate, maintain, upgrade and replace the irrigation system for the Fairwinds Golf Course at the time of transfer of the Enos Lake bed title to the RDN (Phase 2C). The RDN may call upon the Fairwinds owner to provide a release of the easement in the event the water license for golf course irrigation is canceled.

Management Recommendations:

Following easement registration (and easement area designation) at the time of the title transfer of the Enos Lake bed, the RDN Parks will work in collaboration with RDN Water & Utility Services to:

- Manage general park operations and public use in and around Enos Lake in accordance with the terms of the water withdrawal license and the irrigation easement, both held by the developer.
- Support water level monitoring in Enos Lake by the developer, as per the Integrated Stormwater Management Plan.

Enos Lake

4.2.4 Lake House Dock License

The developer will build a 4 m by 7 m dock for boat access on Enos Lake, as well as a 1.75 m wide access trail, in the vicinity of the proposed Lake House Community Centre within one year of Phase 2C subdivision (PDA Sections C.1 and C.5). The RDN will grant a license to the developer—concurrent with the transfer of the Enos Lake Bed title to the RDN—to maintain, upgrade and replace the dock and access path (as necessary and at the developer's expense) and to utilize up to one-half of the dock for rental and storage of kayaks, canoes and other non-motorized watercraft. Public access to the dock is to be ensured at all times. Long-term public and private access and use of the dock is outlined in detail in the License for Commercial Dock (PDA Schedule O).

Management Recommendation:

Following construction of the Lake House Dock on Enos Lake, transfer of the Enos Lake bed title to the RDN and issuing of the Lake House Dock license to the developer, the RDN Parks department will:

- Manage general park operations and public use of the Lake House Dock on Enos Lake in accordance with the License for Commercial Dock (PDA Schedule O).

4.3 Ecological Protection

Land use and park dedication in the Lakes District Neighbourhood area is based on a framework of environmental conservation. Approximately 40% of the land in the Lakes District will be protected through Regional Park designation. The future park includes key landscape features such as the Notch/Qwiyulass, the Lookout and Enos Lake, and is intended to protect the site's vulnerable ecosystems such as Garry Oak Meadows, wetlands and steep forested slopes (see **Figure 4.2**).

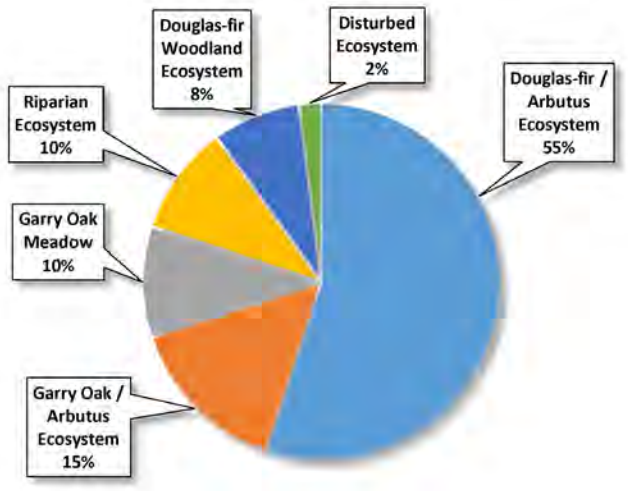


Figure 4.2 Ecosystem Distribution in the Future Regional Park

4.3.1 General Conservation Management

The RDN Parks department will endeavour to protect, restore and enhance the natural environment within the future Regional Park, in accordance with established RDN conservation practices, as well as the vision and objectives established through the Lakes District Neighbourhood Plan (Section 1.6) and subsequent public and stakeholder consultation (Section 1.5).

Garry Oak Meadow

Park operations procedures for all RDN Regional Parks include conservation efforts such as invasive species monitoring and removal, ecological restoration using native plants and materials, protection of plant communities and habitat through fencing, trail siting and education, and minimal use of amenities (that are built from natural materials when possible).

Wetlands

The future Regional Park is, however, conceptual, and the completion of a Park Management Plan prior to park dedication (as required by the PDA) is unprecedented for the RDN. Although the PDA commits a generous portion of undeveloped land for Regional Park dedication, that land will be affected in the future by adjacent development and increased human use, both inside and outside the Regional Park boundary.

Because management recommendations in this report are based largely on current environmental conditions (and conceptual projections), the RDN Parks Department will need to reassess each portion of the future Regional Park as it becomes developed and transferred in phases.

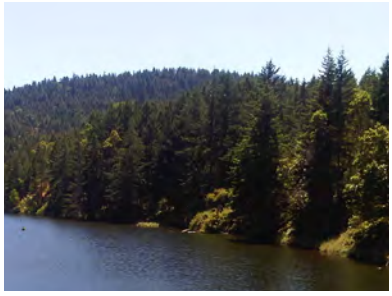
Arbutus Forest

Management Recommendations:

Following phased subdivision, development and parkland transfer, and in accordance with established management objectives for ecological protection and enhancement of the future Regional Park, the RDN Parks department will:

- Complete environmental assessments for each separate section or phase of Regional Park to establish updated conditions and management procedures.
- Review the developer's Home Owner's Manual (PDA Section D.3) following each phase of development for possible updates to environmental education initiatives.
- Collaborate with the developer, First Nations, stewardship groups, volunteers and other RDN departments to implement ongoing monitoring and management directives as outlined in the PDA and any subsequent assessments and studies.

4.3.2 Forest Carbon Sequestration



Forest Around Enos Lake

The RDN has committed to making progress towards carbon-neutral operations by investing in local projects to the greatest extent possible. Because the PDA protects forested lands previously slated for development (i.e., prior to the Lakes District Neighbourhood Plan), the future Regional Park provides an opportunity for the RDN to quantify and manage stored carbon as a means of mitigating greenhouse gas emissions.

Management Recommendation:

Following the first phase of subdivision, development and land transfer, the RDN Parks Department will work collaboratively with the RDN Sustainability Department to:

- Prepare a forest carbon management plan that will quantify the carbon sequestered in the Regional Park and provide recommendations on appropriate forest management practices.

4.3.3 Enos Lake Protection and Monitoring Program (ELPMP)

Enos Lake is a small lake (18 ha) in a mostly undeveloped area of the Fairwinds Community within a watershed area of 235 ha. Approximately 86 ha of the watershed will be developed in phases per the Phased Development Agreement. The Enos Lake Protection and Monitoring Program (ELPMP) was developed in accordance with the PDA (Schedule BB) and per the Integrated Stormwater Management Plan or ISMP (PDA Schedule DD).

Whereas the ISMP proposes mitigation of possible effects of future development on Enos Lake through stormwater management design, the ELPMP provides a long-term monitoring framework for those potential effects. It includes: baseline water quality monitoring and assessment; support in the development of site specific Water Quality objectives based on Ministry of Environment (MoE) protocols; and guidelines for invasive species management practices.

Enos Lake monitoring and invasive species management is to be completed by a Qualified Environmental Professional (QEP) on behalf of the developer during phased development and one year post development (within the 20-year term of the Phased Development Agreement). Monitoring results will be provided to the RDN and all relevant stakeholders annually; an engineer's report on ISMP performance based on ELPMP results will be submitted to the RDN by the developer for each subdivision application. Should ELPMP data indicate that water quality objectives are not being met, a third-party assessment by a QEP will be completed to identify actions that could be applicable to future development phases.

The ELPMP is attached to this report as **Appendix E**.

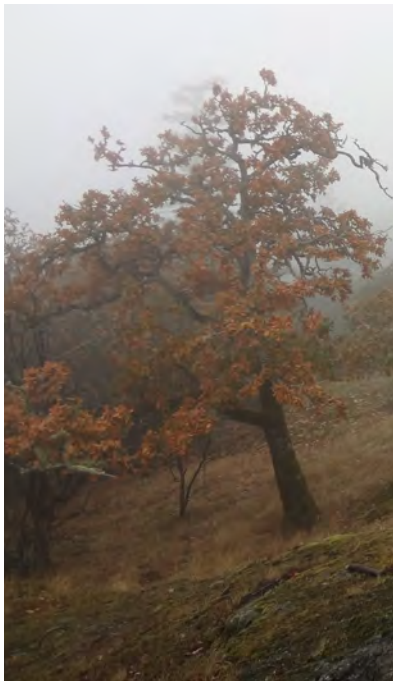
Management Recommendation:

The RDN will work collaboratively with the developer at the time of subdivision and development to:

- Support the management of Enos Lake according to the Enos Lake Protection & Monitoring Plan.

4.3.4 Garry Oak Meadows Management Plan (GOMMP)

The future Regional Park has seven Garry oak ecosystem areas, with a total extent of approximately 15 ha. Within the local context of Nanaimo/ Nanoose, this area represents approximately 5% of the remaining coverage of this ecosystem type. The future Regional Park lies within the northernmost tip of the native Garry oak range. This sensitive habitat hosts a mix of vegetation consisting primarily of Garry oak, Arbutus, Ocean-spray, Common camas, mosses and lichens.



Garry Oak Meadow

The need for a Garry Oak Meadows Management Plan (GOMMP) was identified in a 2010 Environmental Impact Assessment completed for the Lakes District Neighbourhood Plan. The GOMMP was completed in May 2015 in accordance with the PDA (Schedule AA) and includes invasive species management practices and a monitoring program linked to an adaptive management decision framework.

Garry oak meadows monitoring and invasive species management in the future Regional Park is to be completed by a Qualified Environmental Professional (QEP) on behalf of the developer during phased development and up to three years post development (within the 20-year term of the Phased Development Agreement). Seasonal monitoring reports will be submitted to the RDN for review.

The GOMMP is attached to this report as **Appendix F**.

Management Recommendation:

The RDN will work collaboratively with the developer at the time of subdivision and development to:

- Support the management of the Garry oak ecosystem within the future Regional Park according to the Garry Oak Meadows Management Plan.

4.4 Low-impact Recreation

Recreational uses within the future Regional Park are, for the most part, directed by conservation initiatives outlined in the PDA, as well as trail classification and amenity design in the Park Masterplan (PDA Schedule F). The RDN Parks Department will manage the future Regional Park in accordance with PDA requirements and RDN Park Use Bylaw 1399 regulations.

Sensitive ecosystems in the park will be protected through fencing and appropriate trail siting at the time of park development. Park amenities—which include multi-use and hiking trails, benches, picnic tables, information kiosks and docks—will accommodate low-impact activities such as hiking, cycling on multi-use trails, swimming nature appreciation and education. These uses are generally consistent with public desires for the future Regional Park, per the input from the first Open House and Public Survey completed for this Management Plan (Section 1.5 and **Appendix A**).

Several suggested park uses—based on Open House and Survey feedback—were either contentious among RDN residents, incompatible with conservation objectives and amenities set out in the PDA, or unaddressed by the PDA. These include equestrian use, mountain biking, dog walking, swimming and watercraft use in Enos Lake, and ATV use. Whereas the use of motorized vehicles, including motorbikes and ATVs, is prohibited in all RDN Parks (Bylaw 1399), the other listed uses are permissible but regulated by separate park management directives for each park.

4.4.1 Equestrian Use

Although horse-back riding has not been observed nor reported as a current recreation activity within the Lakes District Neighbourhood Plan area, approximately 10% of the Public Survey respondents (14 out of 126) listed “equestrian use” as a desirable recreation activity in the future Regional Park. RDN Park Use Bylaw 1399 does permit horses on designated trails, but generally prohibits any equestrian use that may damage natural site features or amenities.

Trails within the future Regional Park are not intended for equestrian use. The 2km stretch of Multi-use trail (Trail Type 1), which connects two major roadways along a narrow corridor on the east side of Enos Lake, is designated for walking, cycling and wheel-chair access only. Other trails in the future Regional Park (Types II and III) are narrow trails through natural areas that are intended for walking and hiking.

Management Recommendation:

Following phased subdivision, development and parkland transfer, the RDN Parks department will:

- Prohibit equestrian use within the future Regional Park.

4.4.2 Mountain Biking / Cycling

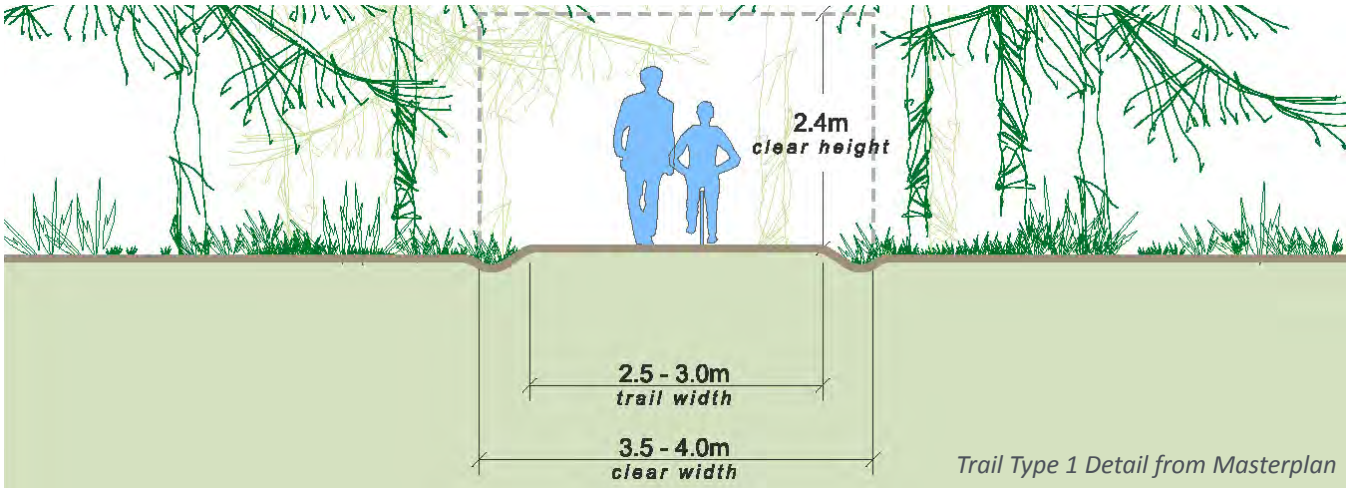
Mountain biking currently takes place in the Lakes District area, including the summit of the Notch/Qwiyulass where damage from bike use is evident. Approximately 30% of Public Survey participants (42 out of 126) also listed "mountain biking" as a desirable recreation activity in the future Regional Park. RDN Parks Bylaw 1399, however, prohibits any biking activity that may damage natural site features, and permits cycling / mountain biking on designated trails only.

Due to the sensitive nature of the ecosystems found throughout the future Regional Park—particularly the Garry oak meadows and steep rocky slopes at Enos Lake—mountain biking, and cycling in general, will be permitted on the Multi-Use Trail (Trail Type I), located along the east shore of Enos Lake. Other trails will be evaluated for biking suitability at the time of Regional Park development.

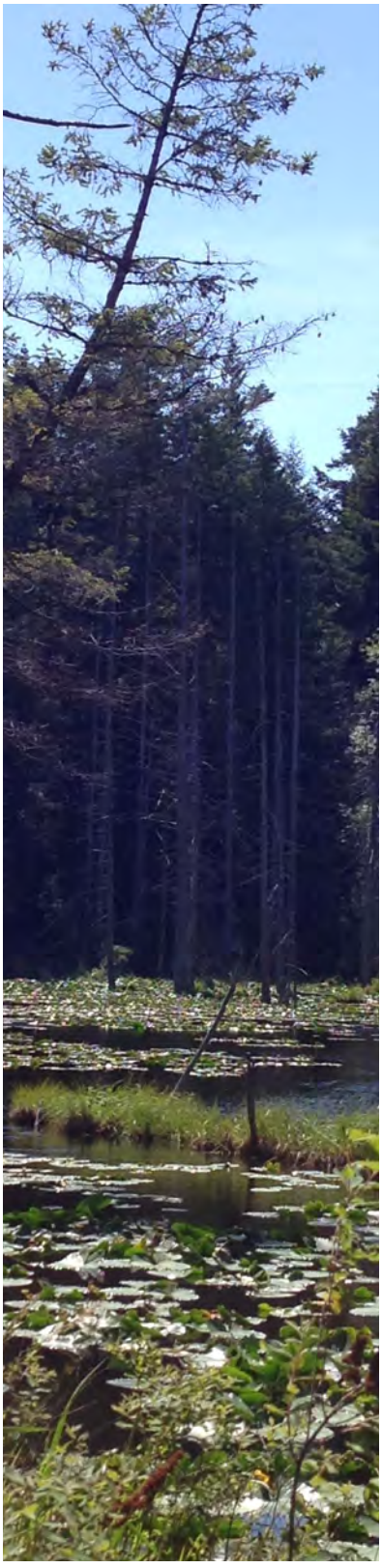
Management Recommendation:

Following phased subdivision, development and parkland transfer, the RDN Parks department will:

- Permit cycling / mountain biking in the future Regional Park on Multi-Use Trail (Trail Type I).



Trail Type 1 Detail from Masterplan



Wetland

4.4.3 Dog Management

Based on feedback from the first Open House and Public Survey, dog-walking is one of the most contentious topics for recreation management in the future Regional Park: 38% of survey respondents requested on-leash dog walking; 26% requested off-leash dog walking; and another 6% requested that dogs be prohibited from the park.

RDN Park Use Bylaw 1399 generally allows for off-leash dog-walking as long as the dog is effectively controlled and not allowed to run or roam at large, cause annoyance or injury to wild animals or park visitors, or damage natural park features and common facilities. A leash must be used if the dog cannot be effectively controlled along designated trails.

The Park Use Bylaw also allows for special restrictions on dog use as regulated by posted signage. This is typically employed in conservation areas with sensitive habitat, as directed by ecological assessments. Areas within the future Regional Park that may require such restrictions include Garry oak meadows, wetlands, the Notch / Qwiyulass summit and the Lookout summit. Until further detailed assessment is completed following development and land transfer, the RDN will permit controlled dog-walking, either on-leash or off-leash, on park trails only.

Management Recommendations:

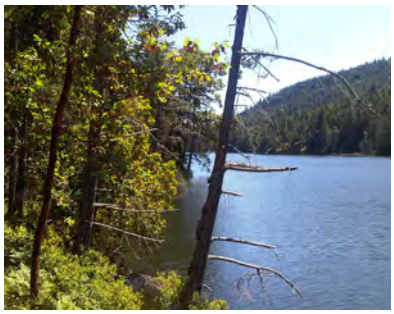
Following phased subdivision, development and parkland transfer, the RDN Parks Department will:

- Permit controlled dog use (either on-leash or off-leash), on all park trails without posted restrictions, as outlined in Section 5.9 of RDN Park Use Bylaw 1399.
- Complete environmental assessments for each separate portion of Regional Park to assess the need to restrict dog use on trails within sensitive areas.

4.4.4 Enos Lake Use

More than half the Public Survey respondents listed swimming and non-motorized boating as a desired recreation activities in the future Regional Park. Swimming and non-motorized boating are generally permitted in all Regional Parks, unless otherwise posted. The RDN parks department does not, however, provide lifeguard supervision so park visitors must assume their own risk.

The same general policy will apply for Enos Lake after the title of the lake shore and lake bed are transferred to the RDN over four development phases. Areas off limits to swimming and boating will include a 5 m buffer around existing "Irrigation Works" (pump house, dam, weir and outlet) on the west and north sides of the lake, as per the irrigation easement (PDA Schedule N). Public access restrictions will also apply to the portion of the future Lake House Dock designated for private use, as per the Lake House Dock license (PDA Schedule O).



Enos Lake

Although the water quality in Enos Lake is currently suitable for swimming, future restrictions or warnings may be issued based on water quality testing, as directed by the Enos Lake Protection and Monitoring Program (**Appendix E**).

Management Recommendations:

Following phased subdivision, development and parkland transfer, the RDN Parks department will:

- Permit swimming and non-motorized boating in all unrestricted areas of Enos Lake, without lifeguard supervision, and unless otherwise posted.
- Prohibit swimming and non-motorized boating within 5m of "Irrigation Works", as described in the Easement for Golf Course Irrigation.
- Manage public water access from the Lake House Dock so as not to interfere with private dock use, as described in the Lake House Dock License.

Wildflowers near Enos Lake

Forest on the Notch / Qwiyulass

4.4.5 Fire Risk Management and Services

Campfires will be prohibited at the future Regional Park in accordance with Park Use Bylaw 1399. Wildfire risks in the future Regional Park will, however, increase with neighbourhood development, increased human activity, and climate change. The Nanoose Volunteer Fire Department (NVFD) anticipates the need for future fire protection services in the Lakes District—as outlined in the NVFD Fire Protection Services Study (PDA Section C.3.34)—and is eager to work with the RDN Parks Department on a fire management and services strategy for the future Regional Park.

Management Recommendation:

Following the first phase of subdivision registration and parkland dedication, the RDN Parks Department will work in partnership with the Nanoose Volunteer Fire Department to:

- Prepare a wildfire management plan that addresses fuel management and service access routes and provides strategies that are compatible with conservation management objectives.

4.5 Collaborative Stewardship

Public and stakeholder consultation processes for the Lakes District Neighbourhood Plan and this management plan have shown that Nanoose residents and the larger RDN community care deeply about protecting the natural environmental in the Lakes District. Their commitment and determination have shaped land use designations for the Lakes District and they will continue to play an important role in the stewardship of the future Regional Park.

4.5.1 First Nations Partnership

The Lakes District Neighbourhood Plan area is located within the traditional territory of the Snaw-naw-as First Nation. Before European settlement, the area was used by Snaw-naw-as for hunting, plant gathering, and watching for approaching enemies—Qwiyulass (the Snaw-naw-as name for the Notch) is a hul'qumi'num term that means "the watch."

The land within the future Regional Park, especially the Notch/Qwiyulass, has significant cultural meaning for the Snaw-naw-as community. It is a sacred area where traditional teachings and rituals continue to be practiced, and it will be protected accordingly through the ongoing partnership between Snaw-naw-as and the RDN.

During the planning processes for the Lakes District Neighbourhood Plan and the Zoning Amendment Application, the Snaw-naw-as First Nation played

a pivotal role in the protection of the Notch/Qwiyulass summit within the future Regional Park through zoning and a No Build Covenant (CA3917284). Chief David Bob and Elders Anne and Jim Bob also provided valuable input during the preparation of this management plan. The RDN will continue to work collaboratively with Snaw-naw-as on future park initiatives including historical recognition, cultural protection and ecological stewardship.

Management Recommendations:

During subdivision, development, land transfer and long-term Regional Park management, the RDN will:

- Collaborate with Snaw-naw-as to determine the need for protection of cultural areas during Regional Park development.
- Provide opportunities for amenity design or artwork by Snaw-naw-as community members during Regional Park development.
- Collaborate with Snaw-naw-as on the production of interpretive park signage pertaining to Snaw-naw-as history and culture.
- Support ongoing Snaw-naw-as participation in ecological stewardship and cultural programing in the future Regional Park.

4.5.2 Stewardship Groups and Volunteers

Due to limited staff resources, the RDN Parks Department relies on support from individual volunteers and stewardship groups for general park monitoring and ecological initiatives. Examples include wildlife monitoring by Ducks Unlimited at the Little Qualicum River Estuary Regional Conservation Area, and native plant restoration work by the Nanaimo and Area Land Trust at Mount Benson Regional Park. A Volunteer Park Warden Program for Regional Parks was initiated in 2011 with volunteer wardens currently stationed at Englishman River Regional Park and the Arrowsmith CPR Regional Trail. Park warden tasks include monitoring trail conditions and light litter removal.

Existing Path

Approximately half of the open house and public survey participants (Section 1.5) expressed an interest in helping with park stewardship. Because of the size and complex layout of the future Regional Park in the Lakes District, the RDN Parks Department will consider extending the Volunteer Park Warden program into this Regional Park for monitoring of park and trail conditions. There is also a significant need for involvement from local stewardship groups for the rehabilitation work in conjunction with the management of Garry Oak meadows.

Management Recommendations:

Following phased development and parkland transfer, the RDN Parks department will:

- Solicit help from local stewardship groups for invasive weed management and restoration work in Garry Oak Meadows, as directed by the Gary Oak Meadows Management Plan (**Appendix E**).
- Implement a Volunteer Parks Warden program for general monitoring and reporting of park and trail conditions, as needed.

Existing Trail to the Notch / Qwiyulass

5.0 Summary of Recommendations

This section summarizes all recommended actions and policies for park development and management, discussed in previous sections of this plan (Sections 3 and 4), in the following five tables:

PARK DEVELOPMENT					
Plan Section	**Issue**		**Recommendation**	**Who**	**When**
3.2	Amenity Implementation	a	Determine final park boundaries through survey work and staking.	Developer; RDN Parks; RDN Planning	Subdivision; Development
		b	Design and site all amenities in accordance with the Park Masterplan guidelines, the PDA and RDN Parks standards.	Developer; RDN Parks	Subdivision; Development
		c	Ensure that quantities, materials and designs are adequate and sustainable in terms of site and visitor requirements and long-term staff and budget constraints.	Developer; RDN Parks	Subdivision; Development
3.4.2	'Notch Summit' Dedication and Access	a	Continue stat right-of-way to ensure trail and service vehicle access to the 'Notch Summit' if completion of Sub-Phase 4C does not occur pursuant to the 20-year term of the PDA.	Developer; RDN Planning; RDN Parks	At PDA expiry (2034)
3.4.3	Option to Purchase Lands	a	Commit the estimated $1.1 million total for both Option to Purchase Lands within the Five-year Financial Plan for Regional Parks.	RDN Parks	2015-2020
		b	Pursue acquisition of the Notch Option to Purchase Lands within five years of first subdivision registration, subject to Board approval.	RDN Parks	Within 5 years of Phase 1A subdivision
		c	Pursue acquisition of the Lookout Option to Purchase Lands within three years of Phase 1E subdivision, subject to Board approval.	RDN Parks	Within 3 years of Phase 1E subdivision
3.4.4	Parkland Dedication Amendment	a	Implement any parkland dedication amendments—including reduced park size and altered boundaries—in accordance with conservation objectives as per Lakes District Neighbourhood Plan, PDA, and all associated documents.	Developer; RDN Planning; RDN Parks; MOTI	Subdivision

PARK MANAGEMENT: INFRASTRUCTURE AND ENCUMBRANCES					
Plan Section	Issue	Recommendation		Who	When
4.2.1	Joint Sanitary Sewer Right-of-Way and Trail	a	Coordinate service schedules and protocols for joint use of SRW as infrastructure and trail.	RDN Parks; RDN Wastewater Services	Phase 2A subdivision
4.2.2	Stormwater Mitigation	a	Coordinate maintenance and monitoring responsibilities for stormwater mitigation features between RDN Parks and RDN Water & Utility Services.	RDN Parks; RDN Water & Utility Services	Phase 1B subdivision
		b	Support Watershed Performance Indicator reviews every five years, as directed by the ISMP.	RDN Parks; RDN Water & Utility Services	Every 5 years after Phase 1B
4.2.3	Easement for Golf Course Irrigation	a	Manage general park operations and public use in and around Enos Lake in accordance with the terms of the water withdrawal license and the irrigation easement, both held by the Developer.	RDN Parks; Developer	Ongoing after Phase 2C
		b	Support water level monitoring in Enos Lake by the Developer, as per the Integrated Stormwater Management Plan.	RDN Parks; Developer; RDN Water & Utility Services	Ongoing after Phase 2C
4.2.4	Lake House Dock License	a	Manage general park operations and public use of the Lake House Dock on Enos Lake in accordance with the License for Commercial Dock (PDA Schedule O).	Developer; RDN Parks	Ongoing after Phase 2C

PARK MANAGEMENT: ECOLOGICAL PROTECTION					
Plan Section	Issue	Recommendation		Who	When
4.3.1	General Conservation Management	a	Complete environmental assessments for each separate section or phase of Regional Park, following land transfer and amenity construction, to establish updated conditions and management procedures.	RDN Parks; Consultant	After each phase of development
		b	Review the developer's Home Owner's Manual (PDA Section D.3) following each phase of development for possible updates to environmental education initiatives.	Developer; RDN Parks	After each phase of development
4.3.2	Forest Carbon Sequestration	a	Prepare a forest carbon management plan that will quantify the carbon stored in the Regional Park and provide recommendations on appropriate forest management.	RDN Parks; RDN Sustainability	Following Phase 1A development
4.3.3	Enos Lake Protection and Monitoring	a	Support the management and monitoring of Enos Lake by the Developer according to the Enos Lake Protection and Monitoring Program.	Developer; RDN Parks; RDN Water & Utility Services	Ongoing after Phase 2C
4.3.4	Garry Oak Meadows Management	a	Support the management of the Garry Oak ecosystem within the future Regional Park by the Developer and stewardship groups according to the Garry Oak Meadows Management Plan.	Developer; RDN Parks; Stewardship groups	Ongoing after Phase 1A

PARK MANAGEMENT: LOW-IMPACT RECREATION					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.4.1	Equestrian Use	a	Prohibit equestrian use within the future Regional Park	RDN Parks	Ongoing after Phase 1A
4.4.2	Cycling	a	Permit cycling / mountain biking in the future Regional Park on Multi-Use Trail (Trail Type I).	RDN Parks	Ongoing after Phase 1A
4.4.3	Dog-walking	a	Permit controlled dog-use (either on-leash or off-leash), on all park trails without posted restrictions.	RDN Parks	After each phase of development
		b	Complete environmental assessments for each separate section or phase of Regional Park (as in Section 4.3.1) to assess the need for restricted dog use in sensitive areas.	RDN Parks; Consultant	Ongoing after Phase 1A
4.4.4	Enos Lake Use	a	Permit swimming and non-motorized boating in all unrestricted areas of Enos Lake, unless otherwise posted.	RDN Parks	Ongoing after Phase 2C
		b	Prohibit swimming and non-motorized boating within 5m of "Irrigation Works", as described in the Easement for Golf Course Irrigation (PDA Schedule N).	RDN Parks	Ongoing after Phase 2C
		c	Manage public water access from the Lake House Dock so as not to interfere with private dock use, as described in the Lake House Dock License (PDA Schedule O).	RDN Parks	Ongoing after Phase 2C
4.4.5	Fire Management	a	Prepare a wildfire management plan that addresses fuel management and service access routes and provides strategies that are compatible with conservation management objectives.	RDN Parks; Fire Department	Phase 1A development

PARK MANAGEMENT: COLLABORATIVE STEWARDSHIP					
Plan Section	**Issue**	**Recommendation**		**Who**	**When**
4.5.1	First Nations Partnership	a	Collaborate with Snaw-naw-as to determine the need for protection of cultural areas during Regional park development.	RDN Parks; Snaw-naw-as; Developer	Development
		b	Provide opportunities for amenity design or artwork by Snaw-naw-as community members during Regional Park development.	RDN Parks; Snaw-naw-as; Developer	Development
		c	Collaborate with Snaw-naw-as on the production of educational park signage pertaining to Snaw-naw-as history and culture.	RDN Parks; Snaw-naw-as; Developer	Development
		d	Support ongoing Snaw-naw-as participation in ecological stewardship and cultural programing in the future park.	RDN Parks; Snaw-naw-as	Ongoing after Phase 1A
4.5.2	Volunteers	a	Implement a Volunteer Park Warden program for general monitoring of park and trail conditions, as needed.	RDN Parks; Volunteers	Ongoing after Phase 1A
4.5.2	Stewardship Groups	a	Solicit help from local stewardship groups for invasive weed management and restoration work in Gary Oak Meadows.	Developer; RDN Parks; Steward groups	Ongoing after Phase 1A

REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO: Wendy Marshall
Manager of Parks Services

DATE: May 27, 2016

MEETING: RPTSC – June 7, 2016

FROM: Lesya Fesiak
Parks Planner

FILE:

SUBJECT: **Morden Colliery Regional Trail - Nanaimo River Bridge Project Update**

RECOMMENDATIONS

1. That the Board receive the update report on trail and bridge planning initiatives for the Morden Colliery Regional Trail (MCRT).
2. That Board allocate $55,000 of Electoral Area 'A' Community Works funds to bridge development for the Morden Colliery Regional Trail so that a prerequisite hydro technical drilling assessment can be completed in the summer of 2016.

PURPOSE

To provide an update and recommendations on planning initiatives related to trail and bridge design and development within the Morden Colliery Regional Trail (MCRT).

BACKGROUND

On October 28, 2014, the Regional Board approved an updated Feasibility Study for a proposed multi-use steel-truss bridge crossing over the Nanaimo River within the Morden Colliery Regional Trail (See Appendix I - Project Location). The approved study provided the RDN with an assessment of an older feasibility study (completed in 1999 by Greame and Murray Engineering) as well as an updated bridge design (Appendix II – Bridge Conceptual Design), accessibility options, information on required bridge spans and current cost estimates for bridge and trail construction.

Community consultation regarding an equestrian-accessible bridge option was carried out from December 2015 to February 1, 2016 following direction from the Board. On February 23, 2016, the Board approved the equestrian-accessible bridge option (which includes pedestrian, cyclist and wheelchair accessibility) in response to public support and current recreational needs.

In April of 2016, staff met with project engineers (Herold Engineering) to discuss the next stages of project development. A hydro-technical assessment involving site drilling is required prior to detailed design and engineering in order to assess key components such as channel reach stability, localized bank stability and scour risk, construction levels above the design flood and abutment locations. The work is typically carried out in the summer months when river water levels are lowest.

It is recommended that geo-technical drilling and assessment work proceed in the summer of 2016 so that detailed design and engineering work can progress as planned; however, the estimated cost of $55,000, which was listed in the Feasibility Study under construction costs (and not design costs), has been set aside in the Capital Budget for 2017. Alternative funding currently available through the Electoral Area 'A' Community Works Fund reserve could be allocated to bridge development for the MCRT so that hydro-technical assessment work can be completed this year. The latter funding approach has been discussed with the Director of Electoral Area 'A' who is supportive of the use of Community Works Funds in order to advance the project further in 2016.

Trail Planning and Development

Trail construction within an undeveloped section of the MCRT (a 1km stretch from the Nanaimo River to Cedar Road) is planned to be completed in conjunction with bridge development. Because the future trail expansion is located with the Agricultural Land Reserve, the RDN must consult with and receive approval from the Agricultural Land Commission (ALC) prior to construction.

On April 20, 2016, RDN Park staff toured the proposed trail and bridge site with the members of the ALC. Although formal direction has not yet been received from the ALC, discussions during the site tour suggest the possible need to relocate the planned trail expansion so as not to bisect an active crop field. Trail rerouting would not impact the location of the planned multi-use bridge crossing over the Nanaimo River.

In addition to the current ALC application, an application to the Ministry of Forest, Lands and Natural Resource Operations is currently in progress for a 30-year Lease of the seven Crown parcels that constitute the (MCRT). The RDN has held a non-exclusive License of Occupation from the Province for management of the MCRT since 1995. An exclusive License, which is anticipated in late 2016 or 2017, must be secured before bridge and trail construction can begin.

ALTERNATIVES

1. That the Board receive the update report on trail and bridge planning initiatives for the Morden Colliery Regional Trail (MCRT) and allocate $55,000 of Electoral Area 'A' Community Works funds to bridge development for the Morden Colliery Regional Trail so that a prerequisite hydro technical drilling assessment can be completed in the summer of 2016.

2. That the Board receive the update report on trail and bridge planning initiatives for the Morden Colliery Regional Trail (MCRT) and Electoral Area 'A' Community Work Funds not be used for hydro technical drilling with drilling and subsequent design work proceeding in 2017 per the 2015-2020 Financial Plan.

FINANCIAL IMPLICATIONS

The cost of bridge construction for two steel-truss, multi-use bridges is estimated at $1,623,000 (including a 30% contingency). Associated trail construction along a 1km-long, undeveloped section of MCRT (from the Nanaimo River to Cedar Road) is estimated at $250,000.

Project development (including future operational costs) will be funded through the Regional Parks and Trails Function. The preliminary 2015-2020 Financial Plan has $1,975,000 allocated within the Regional Parks and Trails Capital Budget for bridge and trail construction. It is anticipated that $1,675,000 will

come from Regional Parks reserves and the remaining $300,000 will need to be secured through applicable grant funding. If Area 'A' Community works Funds are allocated in 2016 to bridge development for the MCRT, the estimated cost of $55,000 for hydro-technical assessment work will be deducted from that remaining 2017 construction budget.

STRATEGIC PLAN IMPLICATIONS

A multi-use bridge crossing over the Nanaimo River within the MCRT has been noted as a priority item for regional and community trail development in several RDN planning documents, including the Electoral Area 'A' Community Trails Study (2001), the Regional Parks and Trails Plan (2005), and the Electoral Area 'A' Active Transportation Plan (2009). With the completion of a bridge crossing over the Nanaimo River and a trail connection between the communities of South Wellington and Cedar, the Morden Colliery Regional Trail would function as a true green highway, helping to reduce greenhouse gas emissions from automobile use while promoting active transportation in the local community for pedestrians, cyclists, wheelchair users, and equestrians.

SUMMARY/CONCLUSIONS

Planning initiatives for a future multi-use bridge crossing and trail expansion over the Nanaimo River within the Morden Colliery Regional Trail have been underway since October 2014 following Board approval of an updated Bridge Feasibility Study (Herold Engineering, September 2014).

An application was submitted to the Province in June 2015 for a 30-year Lease of the MCRT and is currently in progress. In December 2015, an application was submitted to the Agricultural Land Commission (ALC) in order to obtain direction and approval on trail development within the ALR. The first site tour with the ALC was completed on April 30, 2016. Formal directives have not yet been provided by the ALC but rerouting of a section of the MCRT may be required.

In April 2016, following Board approval of an equestrian-accessible bridge option, project engineers (Herold Engineering) requested permission to proceed with a hydro-technical assessment (required prior to detailed design and engineering) in the summer of 2016; however, the estimated cost of $55,000 has been budgeted for 2017 along with other construction costs. It is therefore recommended that available Electoral Area 'A' Community Work Funds be allocated to the MCRT hydro-technical assessment so that detailed bridge design can proceed in 2016.

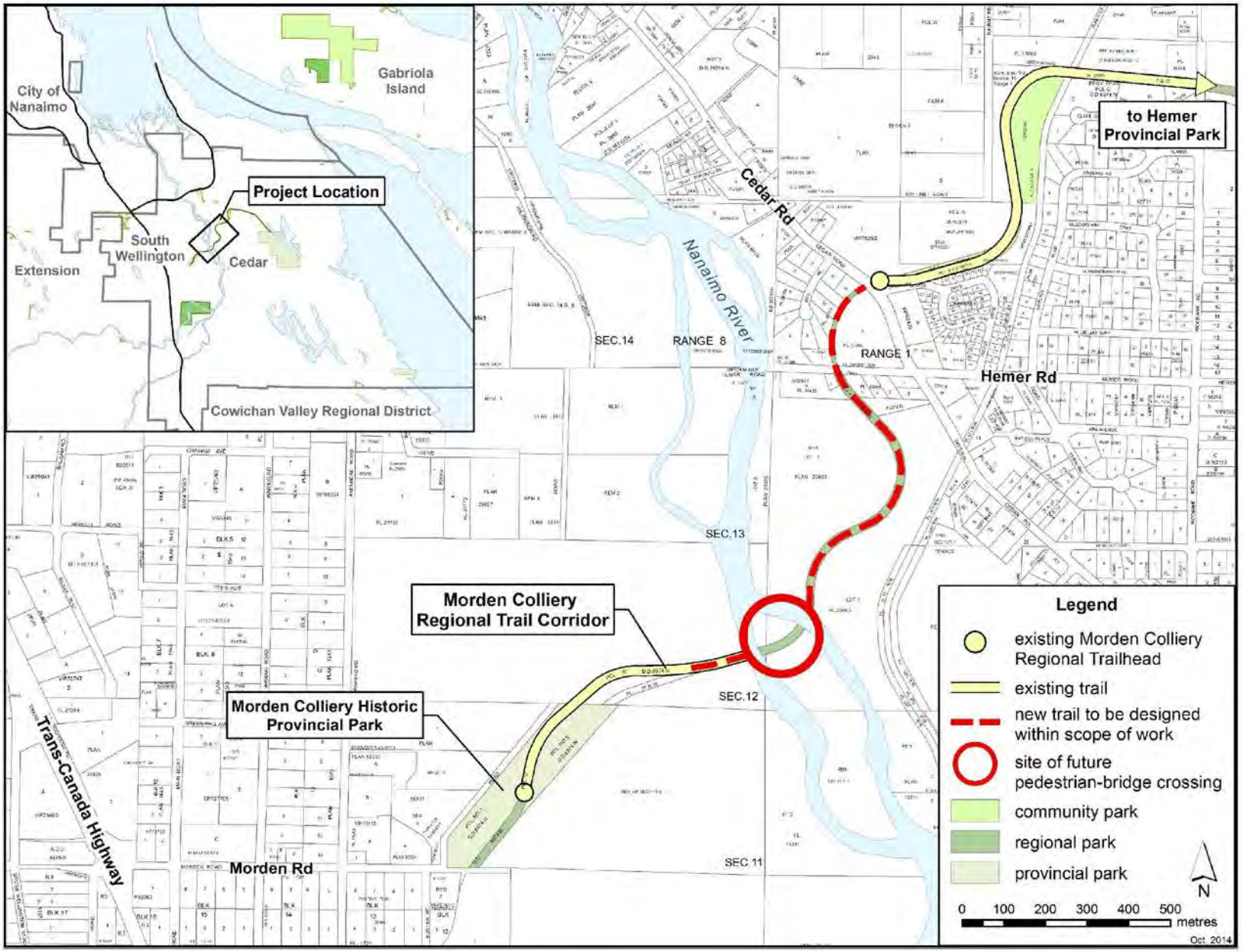
Report Writer

Manager Concurrence

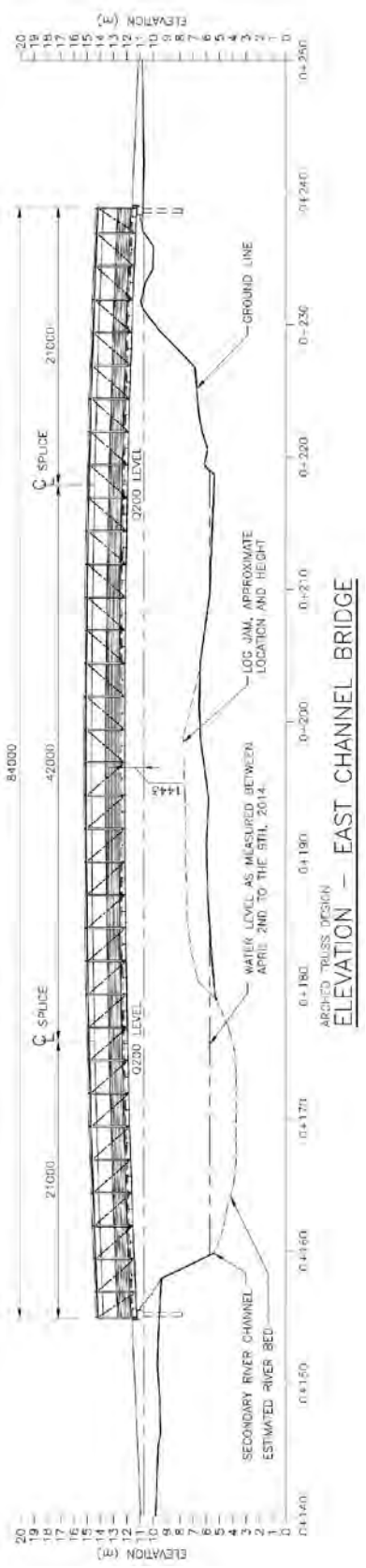
G.M. Concurrence

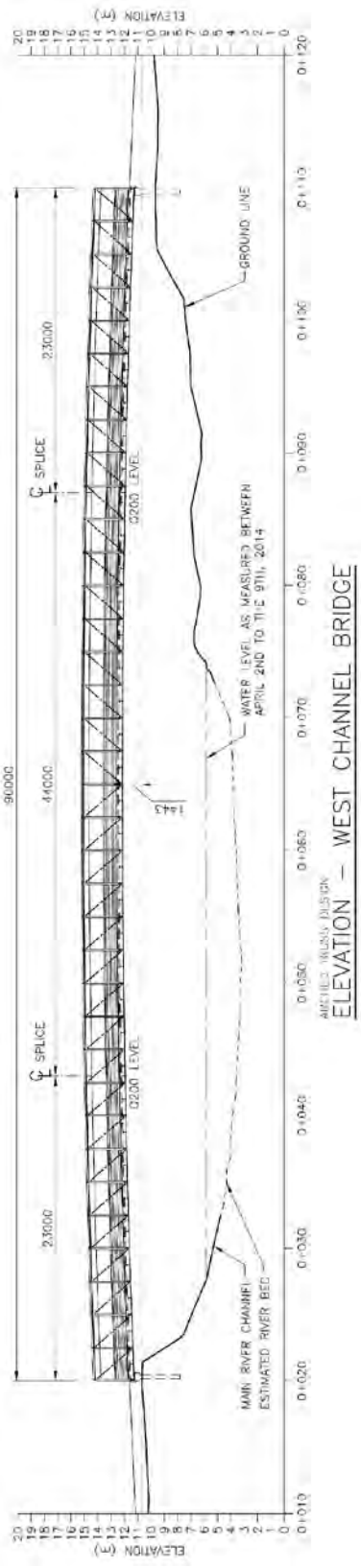
C.A.O. Concurrence

Appendix I – Project Location Map



Appendix II – Bridge Conceptual Design





REGIONAL DISTRICT OF NANAIMO

STAFF REPORT

TO:	Tom Osborne General Manager of Recreation & Parks	**DATE:**	May 30, 2016
		MEETING:	RPTSC – June 7, 2016
FROM:	Wendy Marshall Manager of Park Services	**FILE:**	

SUBJECT: **Moorecroft Regional Park Buildings**

RECOMMENDATIONS

1. That the Board direct staff to remove Kennedy Hall and the Caretaker's Residence from Moorecroft Regional Park and that the Caretaker role be eliminated.

2. That funding be allocated in the 2017 Regional Parks Budget for a picnic shelter and two vault toilets at Moorecroft Regional Park.

PURPOSE

To provide an update and recommendations on the future of buildings within Moorecroft Regional Park.

BACKGROUND

When the RDN purchased Moorecroft Regional Park in 2011, the property had several building on site including the camp cabins, a Caretakers Residence, a boat house, Stringer Hall, splash houses, Ms. Moore's Cabin and Kennedy Hall. In the first year, staff did initial assessments of the buildings, removed a few that were beyond repair and made the rest safe until the completion of a park management plan. Due to the large number of buildings on site, a park caretaker was selected to live in the Caretaker's Residence in exchange for providing security and other duties.

In 2012 the Moorecroft Regional Park Management Plan (MRPMP) was completed and based on the plan recommendations, many of the buildings were removed. Those remaining included the Caretaker's Residence, Kennedy Hall, Miss Moore's Cabin and the boat house. Since 2012, the remaining buildings have received some upgrades but none are open for public use.

One of the goals of the MRPMP is to provide outdoor education and to that end summer and spring camps for children are held in the park. School District 69 (SD 69) also uses the park once a week for their outdoor education program and the park is a popular site for school field trips. The park is also very popular with local residents and visitors alike.

Caretaker's Residence

The building was originally built in Port Alberni and moved to the current location during the years the site was operated as a church camp. A small addition for the laundry and part of the bedroom has been added since. The wood frame building is approximately 500 sq. feet on the main floor and 250 sq. feet in the attic with an unfinished basement.

The Caretakers have lived on site since 2011 receiving free rent in exchange for their services. Duties of the caretaker include patrolling the park, providing information to visitors, locking and unlocking the gate and picking up garbage. While to date the caretakers have provided their services for the exchange of rent, recently the caretakers have been asking to receive more compensation for their duties at the park. The caretaker's contract expired on March 31, 2016.

Park staff have carried out several repairs to the house including renovating the bathroom, fixing the electrical and installing a new hot water tank for a total cost of $25,000. Before any further upgrades are carried out, staff hired an architect to conduct a review of the building structure and to provide an estimated cost to completely upgrade the structure. Based on this review, there are several options available for the building. (see Appendix I)

1. Full Upgrade

A full upgrade to the house including insulation, siding, roofing, building supports, drain systems and heating is estimated at $100,000. However, this cost could increase to $150,000 depending on what is found when the walls and roof are opened up. These renovations would provide a fully updated and energy efficient building. The upgrades could be done in phases over a couple of years to lessen the budget impact. There would also be ongoing costs for utilities and for general repairs and maintenance.

2. Demolish

To save on renovation and ongoing maintenance costs, another option is to demolish the building and to cease having a caretaker at the park. The estimated demolition cost based on a recent house removal is estimated at $30,000. A Hazmat survey completed in 2011 showed no hazardous materials.

While the caretakers have provided excellent service, the original intent of the caretaker role was to provide a presence due to the large number of buildings on the site. Now that most of the buildings have been removed, the need for a caretaker has been reduced.

Keeping the caretakers on site also depends on Kennedy Hall. If the Hall is upgraded and opened for public use, then the caretakers could provide onsite service for opening the building, cleaning and setting up the space for rentals. The caretakers could also open and clean a new washroom building if one is constructed.

The caretaker services could be covered in other ways including using a security company to open and close the gates and using park wardens. The caretakers have done a good job at keeping dogs under control and watching all activities in the park. There could be more incidents of vandalism without the caretakers on site.

Kennedy Hall

Kennedy Hall is a one story wood framed building on concrete pier foundations. The 114 square meter (1,223 sq. foot) structure is comprised of one main hall and one utility room. The building is serviced with community water and one of several septic fields. Under the BC Building Code the Hall can accommodate between 60 and 144 people.

Kennedy Hall was constructed or located on the site in the 1940's with an addition added in the 1950's. A fireplace was constructed in the mid 1990's. Since the RDN took over in 2011, the old utility room was removed and replaced and a new furnace installed. A new metal roof, some plywood subflooring and OSB floor joist reinforcement have also been carried out for a total cost of $21,000.

During the management plan process, Kennedy Hall was identified as a building to keep and renovate so it could be used for educational courses and other gatherings. The plan assumed a $60,000 cost to upgrade the building. However in 2014, a review by an architect and a meeting with RDN Building Inspectors revealed that several upgrades were needed so that the building would conform to BC Building Code for a public gathering space. The upgrades included replacing the siding, upgrading the insulation, replacing the windows and doors, upgrading interior finishes, structural repairs and a new washroom building. The estimated cost was $242,200 including a washroom building.

In order for the Hall to meet building code, a washroom is needed. Because of the Hall's location in an archeological significant area, the building envelope can't be expanded. The architect suggested building a separate washroom structure close to Kennedy Hall but in an area where excavation can take place. The two buildings would be connected by a path. Also, to provide accessibility, a parking space and some grading is required close to the Hall.

To date, there have been no requests from the community to use the hall for events or gatherings. Some items are being stored in the building for the schools and summer/spring RDN camps. If the building is to be restored, booking of the facility would be handled by RDN staff.

The MRPMP also discusses working with Snaw-naw-as First Nations on a Long House to be located south of Kennedy Hall towards the parking lot. Only very brief discussions have taken place regarding the Long House with Snaw-naw-as First Nations since adoption of the Management Plan therefore a timeline for construction is not known. Staff will be engaging further with Snaw-naw-as on this initiative and if the facility is developed there may be space available for education relating to First Nations use of the park and for other rental space.

In late 2015, parks staff hired an architect to complete the upgrade designs for Kennedy Hall and to provide an update cost estimate. Based on this work there are four options as shown below and detailed in Appendix II.

1. Upgrade

The building could be fully upgraded as outlined in the report so that it is fully functional as a public gathering space. The washroom building and connecting trail would have to be constructed to meet BC Building Code. The total cost would be $190,000 plus the addition of the washroom building estimated at $60,000.

Other items to be considered include heating and electricity costs and ongoing repairs and maintenance. Staff time would be required to book the hall and collect fees. The caretaker would be available to open, close and set up the hall. While at this point no rental fees have been established, it is not expected to generate large returns. Little Qualicum Hall in Electoral Area G generates approximately $2,000 a year. It is difficult to estimate how much use the use the hall would receive, especially since there has been no demand to use the hall at this time. There are other halls to rent in Nanoose and there is the possibility that if a Long House is built, rental space could be provided by Snaw-naw-as First Nations, although this is not yet confirmed.

2. Partial Upgrade

A partial upgrade of the building could be done for $95,000; however, the building would not meet BC Building Code and therefore would not be rentable as a public space.

3. Demolish

The hall could be demolished and a picnic shelter built in the park. The MRPMP does call for a picnic shelter to be built at the Meadow. A picnic shelter could be used for an outdoor class room, social gatherings and picnics. The cost to build a shelter would be between $40,000 and $80,000 depending on the size. The upkeep would be much less than operating a hall.

A Hazmat survey completed in 2011 showed no hazardous materials in Kennedy Hall. Based on a recent removal the demolition is estimated to cost between $15,000 and $20,000.

4. Leave As Is

The hall could be left to sit as is until a future time when funds are available or when community demand has increased or when there is more clarity around the timing and use of the Long House. The costs to leave the structure are minimal as there are no utility costs. However, over time the structure will begin to deteriorate and maintenance will be required.

Washroom Facility

If Kennedy Hall is to be renovated and opened for public use, then a washroom is required and needs to be located within a short distance of the hall. If Kennedy Hall is not going to be upgraded now or in the near future, then a washroom could be located elsewhere in the park to better service the camps, school groups and visitors. The estimated cost of a washroom is $55,500 (Appendix III) but this does not include services to the building, septic systems or archaeological and civil engineering fees. These additional fees could bring the total cost to $60,000 or more. Auto locking doors could be installed to facilitate opening and closing but the building would need to be cleaned regularly, which would be an added cost.

Currently the park is serviced by one porta-potty during the winter and two during the summer located next to the parking lot although this has not been an ideal option for the large groups of school children. The current cost of porta-potties is $125 per month per unit with a total cost of $2,250 per year.

With the high daily use of the park and summer camps and SD 69 programs, two year-round units placed in different locations would be more appropriate. If porta-potties are to remain, then a wood surround and concrete base could be built at a cost of $7,000 per unit. A better option is to install vault toilets at a cost of $10,000 to $12,000 each. Vault toilets with cement cladding are more vandal proof and the structures themselves are more ascetically pleasing than porta-potties. The two toilets could be situated to better serve visitors with one potentially located in the meadow and the other by the parking lot. The road to the meadow would need some upgrading to withstand use by the cleaning truck. Servicing of the vault toilets is the same cost as for porta-potties.

Boathouse and Miss Moore's Cabin

Miss Moore's Cabin sits empty and has been secured to keep the public out. The building is in rough shape. The MRPMP called for staff to assess the community interest in keeping the building. Staff have had discussions with the Parkville Museum and they are currently discussing options for use of the site. Once the Parksville Museum presents RDN staff with a plan for use of the site, a staff report will be prepared for the Regional Board's review.

Currently, the boat house is being used for storage. This building could be used for programming needs in the future and for storing items currently housed in Kennedy Hall.

ALTERNATIVES

1. That the Board direct staff to allocate funds in the 2017 budget to renovate Kennedy Hall and the Caretaker's Residence at Moorecroft Regional Park and that a new washroom facility be constructed in 2016.

2. That the Board direct staff to remove Kennedy Hall and the Caretaker's Residence from Moorecroft Regional Park, that the Caretaker role be eliminated, and funding be allocated in the 2017 Regional Parks Budget for a picnic shelter and a new washroom facility at Moorecroft Regional Park.

3. That the Board direct staff to remove Kennedy Hall and the Caretaker's Residence from Moorecroft Regional Park, that the Caretaker role be eliminated, and funding be allocated in the 2017 Regional Parks Budget for a picnic shelter and two vault toilets at Moorecroft Regional Park.

4. That the Board receive this report for information and that alternative direction be provided to staff.

FINANCIAL IMPLICATIONS

Option 1 – Upgrade Caretaker's Residence and Kennedy Hall and Construct a Washroom

To date, $21,000 has been spent on Kennedy Hall. To upgrade the Hall including the construction of a washroom the total costs would be $250,000. Keeping the Hall also requires staff resources to book the hall and park caretakers to provide service to both the hall and the washroom building. It is anticipated that the rental revenue would be minimal. Current utility costs for the park are $521 a year for water and $2,732 for electricity. To keep the Caretaker role, the Caretaker residence also needs to be upgraded.

The total capital cost for this option is as follows:

Washroom Building	$ 60,000
Kennedy Hall Upgrade	$190,000
Caretaker House Upgrade	$150,000
Total	$400,000

In the 2016 Regional Parks Capital Budget, there is $60,000 budgeted for the construction of a washroom facility. All the buildings will require ongoing repair and maintenance which would be funded out of the Regional Parks Operations Budget.

Option 2 – Demolish Caretakers and Kennedy Hall and a construct washroom facility and picnic shelter

The estimated demolition costs are $20,000 for Kennedy Hall and $30,000 for the Caretakers House. The cost to construct the washroom is $60,000 with ongoing funding needed to clean the facility. Another $8,000 a year would be needed in the operations budget for a security company to lock the park gate. The $60,000 set aside for a washroom in the 2016 Parks Capital Budget could be used for the demolitions.

The total capital cost is outlined below.

Demolition of Kennedy Hall	$20,000
Demolition of the Caretaker's Residence	$30,000
Washroom Construction	$60,000
Picnic Shelter	$80,000
Total Cost	$190,000

Option 3 – Demolish Caretakers and Kennedy Hall and install vault toilets and a picnic shelter.

The cost to install vault toilets is between $10,000 and $12,000 depending on the site. The cost to service the units is $3,000 a year and is already provided for in the Regional Park Operations Budget. The cost for a picnic shelter is between $40,000 and $80,000 depending on the size.

The cost for this option would include the $50,000 to remove the two buildings. The $60,000 set aside for a washroom in the 2016 Parks Capital Budget could be used for the demolitions. Funds could be added to the 2017 budget for the vault toilets and the picnic shelter. The operations budget would need to be increased by $8,000 to hire a security company.

The total capital cost for this option is as follows:

Demolition of Kennedy Hall	$20,000
Demolition of the Caretaker's Residence	$30,000
2 Vault Toilets	$24,000
Picnic Shelter	$80,000
Total Cost	$154,000

STRATEGIC PLAN IMPLICATIONS

The question of the future of the buildings at Moorecroft Regional Park falls under the *Focus on Service and Organizational Excellence* Strategic Priority. The actual question is, "What are the costs of maintaining the buildings at site in comparison to the benefit provided to the community?" Keeping the Hall and Residence and the addition of a washroom building will use a considerable amount of funds to provide services, i.e. building rental space, which to date have not been provided or requested. Removing the structures will save both capital and ongoing operational funds. The provision of vault toilets and a picnic shelter will provide needed services to support activities already taking place at the park in a more cost effective way.

SUMMARY/CONCLUSIONS

In 2012 most of the buildings that were at Moorecroft Regional Park were removed in accordance with the Moorecroft Regional Park Management Plan objectives. Two of the buildings that remained, Kennedy Hall and the Caretaker's Residence, have received upgrades during that time but the future of these buildings was not determined. The MRPMP supported keeping Kennedy Hall as a rental and educational space; however, in order to meet BC Building Code up to $190,000 in funds are required to upgrade the building. Plus, a washroom facility will need to be constructed. A more cost effective solution is to remove Kennedy Hall and to provide a picnic shelter at a different location.

Caretakers were hired in 2011 to oversee the park's large number of buildings when the site was first purchased. The Caretakers have lived in the Caretaker's Residence but the building is in need of several more upgrades at a cost of up to $150,000. With the removal of Kennedy Hall, there is no further need for an onsite caretaker and there are other options to provide security. With no need for caretakers, the Residence can be removed and the caretaker role eliminated.

The popularity of this park and the increasing use for youth education through RDN camps and School District 69 programs requires washroom facilities. Porta-potties have been used to date, however, upgrading to vault toilets and locating two units in different areas will provide a better and ascetically more pleasing experience for park visitors. A picnic shelter can be used for families visiting the park and school groups and the addition of picnic shelters is supported in the MRPMP.

The total estimated cost to remove the two structures is $50,000. In the 2016 Regional Capital budget there is $60,000 for a washroom which could be re-allocated for the demolition. The estimated cost for a picnic shelter is between $40,000 and $80,000 depending on the size. The cost for vault toilets is $12,000 each. Funds for both the picnic shelter and the vault toilets can be allocated in the 2017 Regional Parks Budget.

Wendy Mansfield

Manager of Parks Services

General Manager Concurrence

A/C.A.O. Concurrence

Appendix I

Moorecroft Regional Park
Caretakers Residence Architectural Review

Moorecroft Regional Park
Caretaker's Residence
Architectural Review

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April 2016
Project Number 15062

BUILDING REVIEW

INTRODUCTION

Project: Moorecroft Regional Park – Caretaker's Residence

Location: 1563 Stewart Rd. Nanoose Bay, B.C.

Date: April 2016

Introduction:

Finlayson Bonet Architecture conducted a site review of the existing caretaker's residence at Moorecroft Park to provide a building review and cost estimate for its upgrades. The reports from the team of consultants will form the basis for an evaluation towards the advantages and disadvantages towards keeping the building and upgrading it against deconstruction and new build.

The building was originally built in Port Alberni and moved to the current location before the site became the property of the Regional District of Nanaimo. A small addition for the laundry and part of the bedroom has been added since. The building construction is wood frame and due to its age we anticipate that the walls are 2x4 with no insulation. The main floor area is approximately 500 sq.ft with an attic of approximately 250 sq.ft and an unfinished basement.

Occupancy: the building was originally constructed for single family residential use and it remains as such.

Physical Condition:

A visual building review was conducted in December 2015 and this report will highlight the items that need to be addressed to ensure Building Code compliance, better energy performance and building longevity are achieved.

While the exterior of the building shows clear signs of distress the interior is in fairly good condition due to some upgrades that have taken place in the past and the general care of the building.

The structural review of the basement by Skyline Engineering points out to concrete cracks and there is no evidence of damage on the walls above. There is additional consideration and recommendation in the Structural report by Skyline Engineering.

The old HVAC system has not been in operation for some time and the old oil tank has been removed. The ducting is still present and could be re-used after cleaning it and extending it to the new rooms: laundry and the attic space. The report by Avalon Mechanical Consultants makes recommendations regarding the heating and ventilation system. Please refer to Mechanical Report.
There is no insulation in the floor cavity and we anticipate the exterior walls and the roof are not properly insulated. The lack of insulation is a contributing factor to the poor building envelope performance. Due to the building age we don't anticipate that a vapour barrier or rain screen have been part of the construction.

Envelope:
A new building envelope will provide a better energy performance and consequently reduce the demand on a new heating system. The current estimated heat load for the building is approximately 8.5 KW and with upgrading the building envelope with insulation, air and vapour barrier the new heat load could be reduced to 4.2 KW.

The current wood shingle cladding, trim boards and fascia are showing signs of deterioration and are suggested to be replaced. The plexi glass skylights need to be removed and we do not recommend replacement.

The shingle roof is covered in moss, it does not have gutters, and it's structure is assumed to be built with 2x6 rafters. The Structural Report indicates potential roof structure upgrades once the roof is removed and the structure is exposed.

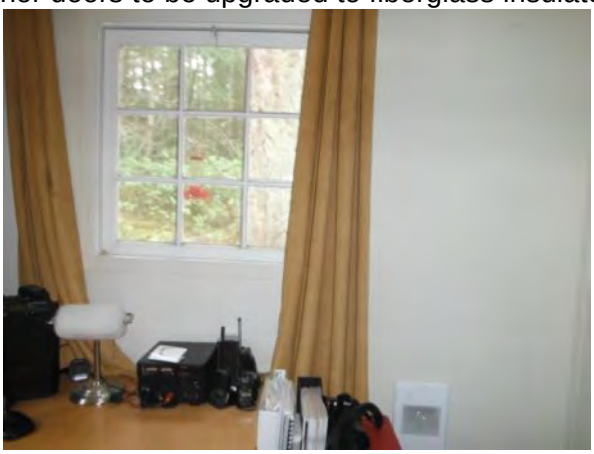
The basement has partial insulation in the walls and should be removed and replaced covering all walls to be a continuous insulated barrier.
Adding insulation to the floor will improve the energy performance of the building.

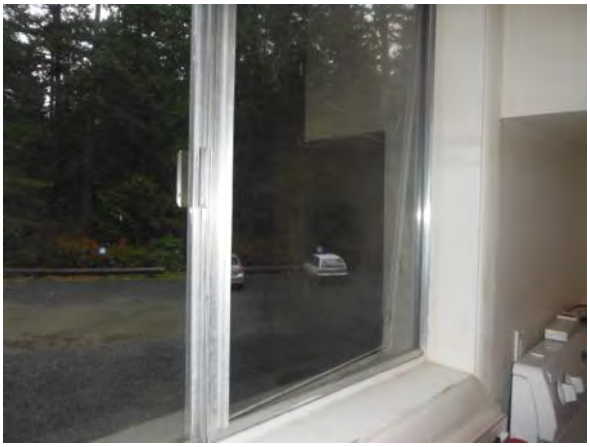
Perimeter Drains:

When the building was moved to the current location they did not build a perimeter drains, currently there is a gentle slope on the site that is directing the water towards the house, it is recommended that new perimeter drains in a two pipe system are to be installed, a 4" perforated pipe and a 3" solid pipe attached to the new rain water leaders.

Doors and Windows:

The existing windows are a mix of wood windows, aluminum and new vinyl windows. Wood and aluminum windows should be replaced with new vinyl or fiberglass double pane windows and the exterior doors to be upgraded to fiberglass insulated exterior doors.

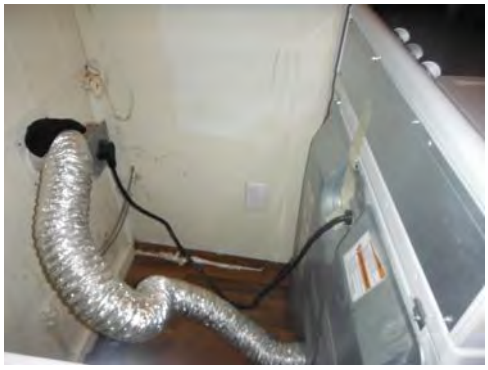




Interior:

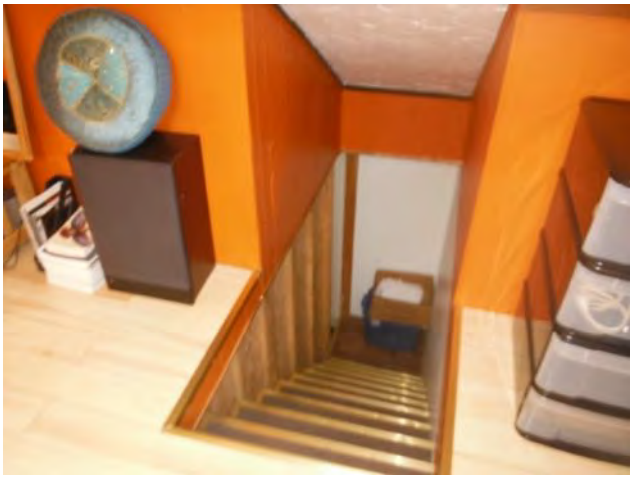
Kitchen: there is no range hood therefore it does not comply with the British Columbia Building Code. A new direct vent should be installed above the range.
The kitchen sink could be replaced and considerations could be given to replacing the cabinets.

Laundry



Dryer vent connection to be repaired.

The attic has been finished as a living space with a window at each gable end. The existing plexi-glass skylights have to be removed. We suspect that as in the rest of the house there is no insulation in the roof cavity.



Recommendations:

The reports from Electrical, Mechanical and Structural Consultant highlight the areas that require attention to improve the life and safety of the building and this report has to be read in conjunction with their reports.

Building Envelope

The current energy performance of the building is a direct result from the lack of insulation. The construction of the wall is assumed to be 2x4 with no vapor or air barrier, no insulation and no rain screen. The current wall depth is not enough to provide the effective R-15.8 (R-24) value required by the building code. Given the current condition of the house the addition of any insulation will benefit the performance. The building code makes previsions regarding the upgrades to existing buildings where it is not feasible to achieve full code compliance stating that the level of performance on existing buildings being renovated cannot be decreased below the level that already exists.

The inclusion of wall insulation could be achieved by using either of these methods:

1. Blown-in insulation from the interior of the space by making orifices between each stud at the top of the wall. The blown-in insulation can over time lose its R-value due to setting and moisture absorption. The installation of this type of insulation has to be done by certified installers using the proper equipment. This type of insulation will not provide a code complaint R-value but will improve the energy performance. This method is a cost effective way of introducing insulation into the building, however this will not be a longtime solution.

2. Remove exterior cladding and add blown-in insulation, from the top of the wall into the stud's cavity. By removing the cladding it is possible to add an air barrier and the rain screen and we recommend to use a combination of Typar House Wrap (or similar) with 11.7 U.S perms and a vapor barrier interior paint. The removal of the cladding also offers the opportunity to add 2" of rigid insulation (expanded polystyrene) as the exterior insulation. The exterior cladding is deteriorated and this could be an opportunity for replacement.

3. Through orifices at the top of the wall, between studs add spray insulation to seal the cavity and consequently avoid the requirement for venting and vapor barrier because it is intrinsic to spray foam. For a 2 x 4 wall the addition of 3.5" of spray insulation will equate to an R-value of 6.5 x 3.5"= R 22.75. With this method the cladding could remain in place only replacing rotten pieces of wood.

4. This option implies the rebuild of the wall from the outside by removing the exterior cladding and sheathing it will be possible to install batt insulation within the wall cavities. The thickness of the wall will only allow for R12 and additional insulation can be added in the form of rigid insulation taped. The wall assembly will then be the interior drywall painted with vapor barrier paint, existing studs with R12 batt insulation, ½" plywood sheathing, Typar House Wrap (or similar) with 11.7 U.S perms and 2" of rigid insulation, strapping and new cladding. This option will be more costly but will comply with the code and provide better energy performance.

Cladding:

The existing cladding shows signs of deterioration it could be totally replaced using fibre-cement cladding with horizontal lap or a more economical option is the use of vinyl siding that does not require rain-screen or paint.

Roof:

There is moss present on the roof and the level of deterioration indicates replacement. The removal of the roofing will permit the addition of insulation to the existing structure. At the present time it is difficult to comment on the existing structure as the ceiling finishes block the view.

Venting: there are no vents present at the roof and a new living space has been created in the attic space. The addition of insulation to the roof will improve the R- value and consideration will be given to the type of venting required.

We recommend the use of sprayed insulation into the rafter cavity and consequently eliminating the need for venting and vapor barrier.

Roof gutters: gutters are not part of the building.

Building Information

Building area:	936.00 sq.ft
Attic area:	appx. 250.00 sq.ft
Building Perimeter:	127.95 sq.ft
Porch:	51.00 sq.ft

The following is a list of the items to upgrade that are cost effective and will improve the longevity of the building but does not include the full extent of the upgrades:

Roof:

- Replace existing fibre-glass shingles for standing seam metal roof or new SBS modified laminate shingles.
- New roofing membrane
- Consider the change of roof sheathing based on the condition of the current sheathing
- Structural upgrades
- Incorporate sprayed insulation.
- Add gutters and down spouts. The alternative is to leave the roof without gutters and add new flashings with a drip edge. If this is chosen the perimeter drain will not require the 3” diameter solid pipe

Walls:

- Add insulation to all exterior walls
- Addition of seismic connections between foundation walls and bottom plates.

Perimeter Drain:

- Add new perimeter drains in a two pipe system: a 4” perforated pipe and a 3” solid pipe attached to the new rain water leaders. If the gutters are not installed the 3” solid pipe would be eliminated.

Windows:

- Replace all single pane windows

Other upgrades:

- Cleaning the existing ducting and extension of the ducts to un-serviced rooms if the heating system is a heat pump.
- New fascia board, trims around windows and corners
- Adding a kitchen range hood fan.
- Replace of kitchen sink
- Consideration to the replacement or refurbishment of the kitchen cabinets.

ANTICIPATED BUDGET

The full building upgrade is indicated in the table below. There is an option regarding the insulation of the exterior walls. Option 1 were the addition of blown-in cellulose fibre insulation is more economical due to its reduced cost and reduced disruption to the existing building but it will not maintain the R-value over time. The addition of sprayed polyurethane foam will provide and maintain a 17 R-value over the lifetime of the building.
The new cladding is optional if there is a decision to keep the exterior walls as they are today and limit the upgrade to exterior paint and replace the boards that are showing signs of deterioration.

The following is a list of all the upgrades necessary to upgrade the energy performance of the building, improve the seismic restraint capacity, and improve mechanical systems:

Batt insulation on framed basement walls	$ 470.00
Rigid insulation onto concrete walls	$ 520.00
Batt insulation onto floor between basement and main floor	$ 860.00
Addition of bearing walls in the basement	$ 2,500.00
Cellulose blown-in insulation on all wood framed exterior walls- $3.00 x 2080 sq.ft	$ 6,240.00
Sprayed insulation on exterior walls 3.5” - $6.5/sq.ft x 2080sq.ft (option)	$ 13,520.00
Gutters and down spouts	$ 4,500.00
Option – Vinyl Siding $10.50/sq.ft (demo, removal, does not require rain screen or painting)	$ 21,080.00
Fiber Cement Cladding - $16.00/sq.ft x 2080 sq.ft (demo, removal, rain screen & cladding)	$ 33,280.00
Roofing – Option: standing seam with new 5/8 layer of plywood ($9.00x1285 sq.ft)	$ 11,565.00
Roofing – fibre-glass shingles with new 5/8 layer of plywood ($6.00x1285 sq.ft)	$ 7,710.00
Sprayed insulation on the roof cavity - 5.5” thick - $11.00/sq.ft	$ 14,135.00
Flashings	$ 1,000.00
Windows replacement – 12 units x $650.00	$ 7,800.00
Ext. paint	$ 10,500.00
Interior repairs (drywall patching, etc)	$ 2,600.00
Int. Paint – on exterior walls with v.b. paint	$ 3,000.00

Miscellaneous	$ 10,000.00
Perimeter drain	$ 6,000.00
Heat pump	$ 10,000.00
Demolition, removal and disposal	$ 3,000.00
TOTAL (with no sprayed insulation in the wall cavity, vinyl siding, fiberglass shingle roof)	**$ 101,435.00**
Contingency 20%	$ 20,287.00

The price for the vinyl siding is from a company in Victoria and this price does not include room and board for the installers.

Conclusion:

The overall upgrades can vary from 100,000 to 150,000.00 depending on the condition of the building once it is exposed. The interior condition of the building is in good shape being the biggest problem the lack of insulation. The change of the roof is necessary to extend the life of the building and to ensure that no structural damage is produced due to roof degradation, currently there is no signs of water ingress. Depending upon the budget it is possible to reduce the upgrades to changing the windows, roof, adding the kitchen range hood and basic repairs to the cladding. An option to reduce the heating cost is to install a pellet stove that will improve the interior living conditions at low cost.
We recommend that careful consideration is given to the cost of the upgrades as indicated in each Consultant's report against a new build, the cost of new construction can vary from $175.00/sq.ft to $200.00sq.ft. A new building of 1,000.00 sq.ft could be $175,000 to $200,000. The building upgrades with the exception of the roof don't have to be immediate and it can continue functioning in its present condition until there is a clear direction on how the park and the buildings at the park will operate.

The building condition requires upgrades to improve the overall life of the building and to provide better energy performance, the life and safety of the occupants is not compromised by its current condition. When the existing building condition is determined and direction of restoration method is decided we will be able to perform a detailed life cycle cost analysis to determine the benefits and disadvantages for material selection for each option.

End of report

Appendix II

Moorecroft Regional Park
Kennedy Building Architectural Review

Moorecroft Regional Park
Kennedy Building
Architectural Review

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May 2016
Project Number 15062

BUILDING REVIEW

INTRODUCTION

Project: Moorecroft Regional Park – Kennedy Building

Location: 1563 Stewart Rd. Nanoose Bay, B.C.

Date: May 2016

Introduction:

Finlayson Bonet Architecture conducted a site review of the existing Kennedy Building at Moorecroft Park to provide a building review and cost estimate for its upgrades. The reports from the team of consultants will form the basis for an evaluation towards the advantages and disadvantages towards keeping the building and upgrading it against deconstruction and new build.

This report is based on the visual review conducted by the team from Finlayson Bonet Architecture in December 2015 and a review of the "Building Condition Assessment Kennedy Building" prepared by Raymond de Beeld Architect Inc. and the consultants Robin Chapman, Bayview Engineering Ltd; Steve Frazer, Designed Air Systems Inc.; David Moss and Craig Reitmeier, RB Engineering Inc. in September 2014.

The purpose of this report is to analyze the different options regarding the building upgrades and a class B cost estimate for the improvements.

Project Description:
The building is a one storey wood construction on concrete piers and it comprises of a large hall and a mechanical room.
The building area is approximately 1,223 sq.ft (114 m2).
The Kennedy Hall was built or located at the current site approximately in 1940 and has not been in use since the Regional District of Nanaimo purchased the park in 2011. First Nations originally occupied the site and the archaeological report by Baseline Archaeological Services Ltd. identifies a section under the building and around it with potential archaeological interest.
The building has had a few upgrades such a new metal roof, mechanical room, and furnace. The joists supporting the hall's floor have been "sandwiched" between two layers of OSB; unfortunately this addition does not add any structural strength to the floor and further consideration should be given to the structural strength.

Occupancy:

This hall is classified by the BCBC (Building Code of British Columbia) as an Assembly, Group 2.

- Non fixed seats and tables, 0.95 m2/person = 114 persons
- Non fixed seats (0.75 m2/person) = 144 persons
- School (1.85 m2/person) = 58 persons

Identified in Raymond de Beeld Architect Inc. Report.

The building has not been in use and the future use is presently unknown but if programs were developed they could be directed to educational programs for students of all ages not to exceed 50 people to justify a max. of 2 unisex washrooms as proposed by FBA Architecture Ltd.. The space has

not been promoted due to the lack of washroom facilities and overall condition. Consideration should be given to the advantages of bringing the building up to code against the potential use.

Noted Deficiencies

Envelope:
Raymond de Beeld's report details the condition of the envelope and makes recommendations on what should be achieved to comply with part 3 of the BCBC.
The report, dated 2014, indicates that there were no signs of water ingress in the walls and given the un-tightness of the wall construction any water penetration would have dried. We conducted our review in December of 2015 and there was no evidence of water penetration.

The following is a list of the items that should be changed, upgraded or incorporated if RDN decides to keep the building:

- Cladding: remove existing cladding and add a rain-screen, replace cladding with cedar siding or board and batten. A more economical option is the use of fibre cement siding, the durable and non combustible quality of this material makes it ideal for the location. The disadvantage of this type of cladding is the lack of the historical reference to heritage buildings. Another more economical option is the use of vinyl siding that lacks the fire resistance quality but offers the benefit of low to no maintenance, does not require a rain screen or exterior paint and it is suitable to this location. There is vinyl siding with a variety of designs that could address the heritage component.
- Air Barrier: there is no air barrier present. The air barrier is integral to the performance and it should be added if the cladding is removed. Typar Commercial grade or 2 layers of 30lbs building paper.
- Vapour barrier: there is no vapour barrier and the interior side of the wall is sheathed with painted OSB.
- Insulation: this is a building code requirement to comply to ASHRAE 90.1 or with the National Energy Code of Canada.
  Attic: existing 3" fiberglass batt insulation between the lower chord of the roof trusses.
  Exterior walls in the main hall: existing 2" R 7.5 of batt insulation. The removal of the interior OSB will expose the wall cavity and allow for the installation of batt insulation and vapour barrier.

  Crawlspace: none
  "R. de Beeld Architect's recommendation: Attic insulation to be upgraded to R40 with fibre glass insulation over existing. Wall insulation to be upgraded to R14 and the option could be to replace fiberglass with medium density spray foam between studs for R 16-20 depending if batt insulation remains. Crawlspace wood floor upgraded to R14 with medium density spray foam".

  The crawlspace depth varies according to the irregular terrain and the access to the entirety of the floor is severely compromised by the lack of sufficient depth to work. Spray insulation is difficult to install from the underside of the joists as there is not enough space for the spray foam installer to properly control when spraying the thin layers of foam. An option is to install a soffit to the underside of the joists and apply blown in insulation from the top of the floor or sprayed insulation. The use of OSB for the underside of the joists is discouraged due to the exposure to moisture and being exposed to the outside with no protection layer, OSB will deteriorate over time and will require replacement. We recommend the use of an inert material that can stand the exposure to moisture, such as Dens Glass or a more economical option, fibre cement boards that will have to be screwed to the joists. Any soffit material will present an installation challenge that will result in added cost. The purpose of adding the soffit is to hold the insulation in place. The insulation will improve the living conditions of the hall but considering that this is

not a space with permanent use it may be prudent to leave the floor with no insulation until such a time when there is a clear indication of the time of the year and number of hours when the space will be used.
The wall insulation options described in the Caretaker's Building Report by FBA Architecture Ltd. could be applied to the Kennedy Building.

Windows
All the current windows are single pane and require replacement. The new windows should be a combination of fixed multi panel glass and opening windows possible awning style. A more economical option is to replace them for picture and opening windows with no multi panel glass. The current window installation is lacking proper flashings and air tightness. The replacement of the exterior wall system should include the change of the windows to conform to current standards of weather resistance, tightness, and energy performance ensuring proper drainage planes. The new windows could be vinyl windows suitable to the extreme weather conditions and require low maintenance.

Flashings:
Existing flashings have to be replaced due to poor conditions or wrong slope.

Finished Grade /Damproofing
Backfill high or drainage poor at West elevation.

Clearance to Finished Grade:
The existing cladding does not have the minimum 8" clearance required from natural grade to avoid moisture damage. This condition is present at the South wall and requires fixing.

Interior Finishes:

The overall interior could be left as it is repairing the sections of plywood or OSB that are damaged. New paint will refresh the place at low cost. If desired a new layer of ½" gwb could be added to the walls. The existing plywood floor could be painted or covered with underlayment and vinyl sheet good.

Health Requirements:

A building of this type is required to provide washroom facilities and there is no plumbing in the hall. The addition of washrooms is challenged by the presence of a midden in the site. Refer to Washroom Report by FBA Architecture Ltd.

Exits:
There are two exits in the building and it complies with the exit requirements by the BCBC. The North exit and stairs requires the addition of a hand rail and rebuild the steps to comply with BCBC.

Accessibility:
Currently there is no accessibility to the building and it is necessary to provide universal access to a facility that intends to reach a large demographic and its occupancy by BCBC is classified as Assembly

Group 2. It is recommended to build a sloped walkway to the entrance and a HC parking stall in the proximity.

Options:

Kennedy Hall is a space suitable for diverse gatherings throughout the year. The lack of a good energy performance makes this building unsuitable during the winter months. An evaluation of the benefits, programs and activities that can be developed in the space will assist in the decision towards a full or partial upgrade or decommissioning the structure.

The options for this building can be summarized in three scenarios:

1. Full building upgrade as described by de Beeld's budget.
2. Partial building upgrade (see table below)
3. Full decommission of the building – deconstruction and possible rebuild farther away from the archaeological sensitive area.

1. The building upgrade as identified by de Beeld's report indicates a total of $ 242,207.00 including $ 56,250 for the new washrooms. A separate report by FBA Architecture Ltd. includes the new washrooms and estimated cost.

2. Partial building upgrade
The building condition requires upgrades to improve the overall life of the building and to provide better energy performance, the floor structure has to be repair to assure that the life and safety of the occupants is not compromised by its current condition.

Partial building upgrade estimated cost:

Replace cladding with horizontal cedar siding	$19,000.00	
Option:		
Replace cladding with fibre cement siding		$ 17,600.00
Replace cladding with vinyl siding		$11,550.00
(no rain screen or paint required)		
Replace flashings	$ 2,000.00	
Rain screen	$ 2,400.00	
Exterior Paint	$ 4,950.00	
Add blown in cellulose insulation in walls	$ 3,300.00	
Option Batt insulation		$1,800.00
Vapour barrier		$ 750.00
Replace OSB panels with ½" GWB		$ 7,500.00
Add blown in insulation to the attic	$ 4,600.00	
Replace wood windows with vinyl double glazed	$ 4,500.00	
New insulated fiberglass exterior doors	$ 750.00	
Replace/add door hardware (int.ext)	$ 1,000.00	
Interior repairs to OSB and ceiling	$ 1,400.00	
Interior paint	$ 7,000.00	
Upgrade existing stairs North exit (handrail,guards, tactile)	$ 2,000.00	
Exterior demolition and disposal bins	$ 1,440.00	
Structural upgrades	$ 15,000.00	
Civil- ramp and HC parking	$ 1,500.00	

General conditions (this number will vary according to what is built)	$ 8,000.00
Sub total	$ 78,840.00
Contingency 20%	$ 15,768.00
Total	$ 94,608.00

Electrical and Mechanical refer to original reports.

3. Deconstruction of the building: the current structure is sitting on a sensitive archaeological site, the current foundations are inadequate for the building and it is challenging to excavate to provide a proper footing. The repairs to the floor joists are also difficult due to the shallowness of the crawlspace. A full building upgrade implies gutting the structure to expose all framing members and even though the reports recommend adding insulation to the existing walls this will not reach the required R 22 therefore it would be advisable to strap the walls to increase the 2x4 thickness to 2x6. Additional deficiencies could be exposed once all exterior or interior cladding is removed. The use of the space is not yet fully determined. It is foreseeable that a new build of smaller size could accomplish educational programs with an energy efficient envelope, fully code compliant, design to be seismically resistant and provide a secure and safe environment. A new purposely designed space would include the washrooms and could be located closer to the caretaker suite or in some of the areas where other building were sited.

Conclusion:

The overall upgrades can vary from 90,000 to 250,000.00 depending on the decision made regarding full or partial upgrade. The term “full upgrade” should be loosely interpreted as a public building would require to be 100% code compliant A major upgrade will improve the building conditions but not be 100% code compliant. The building wasn’t properly built and even though there is a sentimental attachment to it an analysis of the cost of the renovations and the potential benefits will determine the best outcome.








Kennedy Building Photo Review

Appendix III

Moorecroft Regional Park
Washroom Facilities Architectural Review

Moorecroft Regional Park
Washroom Facilities
Architectural Review

Silvia Bonet Architect, AIBC, MRAIC
Finlayson Bonet Architecture Ltd.
#4-7855 East Saanich Road
Saanichton, BC
V8M 2B4

May 2016
Project Number 15062

1563 Stewart Rd. Nanoose Bay, B.C.

New Accessible Washrooms

The construction of two new accessible washrooms is necessary to comply with the building code health requirements and it will improve the park usage offering a service that it is present today only in the form of a portable toilet not accessible to those in wheel chairs or walkers. The addition of the new washrooms will eliminate the need for the periodical tracking in and out of the portable facility.

The proposed location is in the proximity of the Kennedy Building and opposite to the archaeological sensitive area (figure 1) as assessed by the letter from Baseline Archaeological Services Ltd. which identifies the park as located within the consultative boundaries of the Snaw-Naw-As and Snuneymuxw First Nations. The letter by Baseline also mentions "some archaeological potential within the area where the craft hut was removed but that it also suggests low archaeological potential" (Baseline Letter to Nanaimo regional Park March 25, 2011). The letter also indicates that at the time of any future development to be aware of potential undiscovered archaeological remains on any surveyed or un-surveyed areas. We recommend to engage the services of Baseline before starting any excavation on the site.

The construction for the new building is proposed of non combustible materials with low maintenance requirements that can stand the demands imposed by the exposure to the ocean and elements as well as to the demands of a high traffic area.
The proposed materials are concrete block walls, on a slab on grade, truss roof and metal roofing for the two side by side washrooms.
It is necessary to conduct a full review of the septic system to confirm the proposed location for the washrooms as well as the necessary upgrades to the system. We recommend to consult with a local company that is familiar with the area and will have the resources to repair, install or upgrade the system but also ensure the regular maintenance.

Number of washrooms required:

The Kennedy Building does not have any washrooms and the implications of the archaeological site make it challenging to add plumbing facilities to the building. The Kennedy Building is classified by the building code as an Assembly occupancy and will house the gathering of groups of people that should have access to a close by plumbing facility that is also available to all park visitors.

According to the Building Code of BC, the Kennedy Building occupant load calculation equals 110 people. A realistic prediction of the usage indicates that it will hold a maximum between 30 to 40 people at any given time. The occupant load as defined by the Building Code informs various code issues such as the number of washrooms required. Table 3.7.2.2.A outlines the number of water closets required for an Assembly Occupancy.
The building code also makes provisions for an exemption to this requirement if it can be demonstrated a lower occupant load. At the present time there is no clear indication on how the Kennedy Building will be used but the intent is that school children will gather in this space for nature talks and presentations. This type of event will be addressed to a single primary classroom number of children.

Table 3.7.2.2.A Water Closets for an Assembly Occupancy		
Number of Persons of Each Sex	Minimum Number of Water Closets	
	Male	Female
1 - 25	1	1
26 - 50	1	2
51 - 75	2	3

Construction Cost Estimate for 2 Accessible Washrooms :

The cost analysis is based on the preliminary architectural drawings here attached and developed by FBA Architecture Ltd.

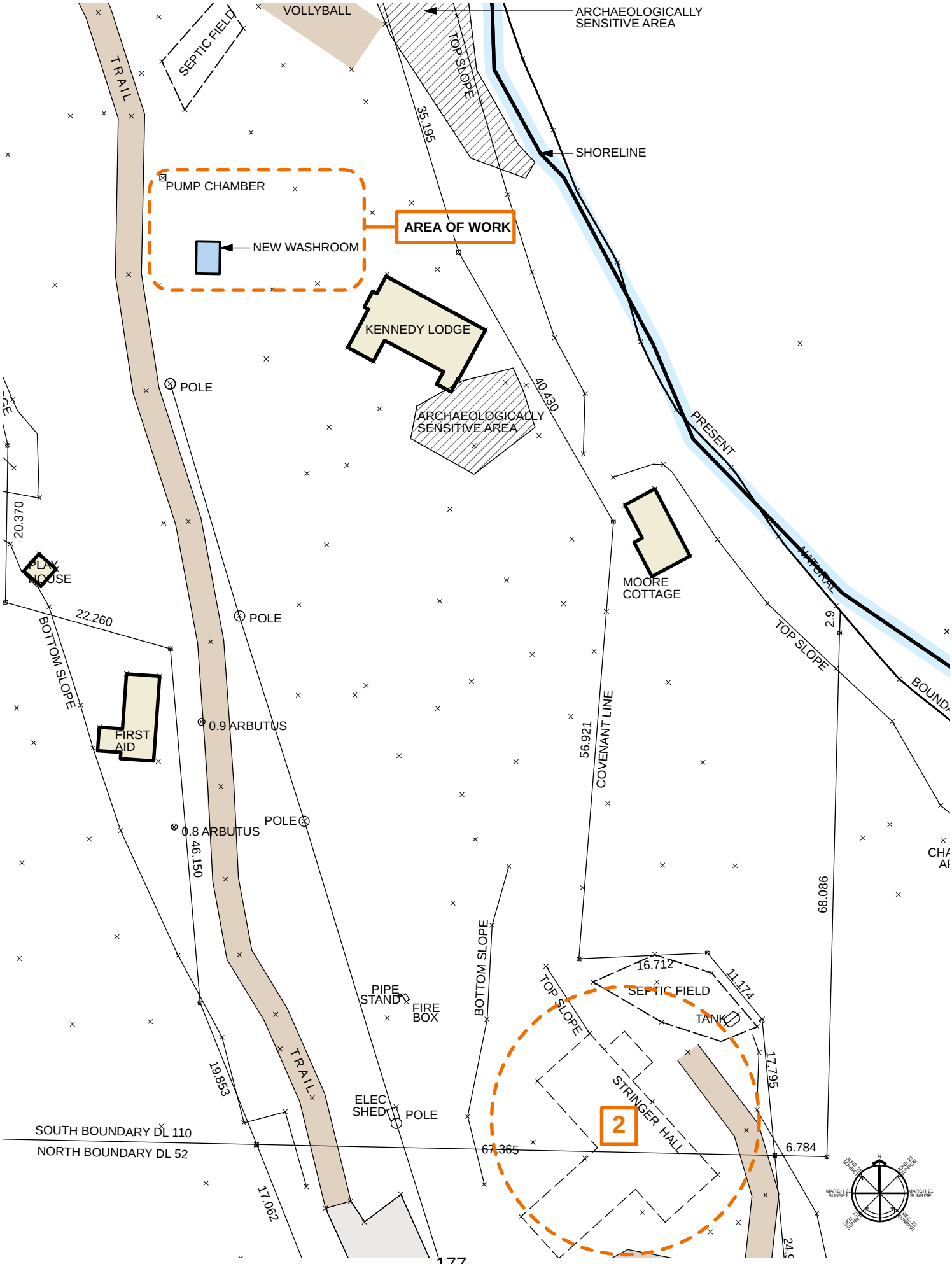
Labour	$	10,800.00
Excavation	$	2,500.00
Foundation	$	5,500.00
Brick work	$	9,000.00
Plumbing	$	2,725.00
Electrical	$	2,500.00
Paint	$	1,000.00
Materials	$	4,000.00
Doors and windows	$	1,500.00
Gutters	$	950.00
Trusses	$	1,200.00
Grab rails	$	750.00
Debris bins	$	950.00
Accessories	$	1,500.00
Contingency 10%	$	4,500.00
Construction fees 15%	$	6,056.25
Total		**55,431.25.00**

Not included in this estimate:

Services up to the building
Permits
Consultant's fees (already in the contract with RDN – Moorecroft Park Improvements.
Septic system
Other consulting fees such as archaeological or civil engineering
Landscaping

Appendix A shows the proposed location for the new washrooms close to the existing Kennedy Hall. If a decision is made to decommission Kennedy Hall and build a new facility that includes the washrooms we suggest to locate to Area 2 or where the Stringer Hall used to be.
Appendix B includes the preliminary plans for the new washroom facility.

End of Report
Silvia Bonet Architect, AIBC, MRAIC


VOLLYBALL
ARCHAEOLOGICALLY SENSITIVE AREA
SEPTIC FIELD
TRAIL
TOP SLOPE
35.195
SHORELINE
PUMP CHAMBER
AREA OF WORK
NEW WASHROOM
KENNEDY LODGE
POLE
ARCHAEOLOGICALLY SENSITIVE AREA
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PRESENT
HIGH WATER MARK
MOORE COTTAGE
20.370
PLAY HOUSE
22.260
BOTTOM SLOPE
POLE
TOP SLOPE
2.9
BOUNDARY
56.921
COVENANT LINE
FIRST AID
0.9 ARBUTUS
POLE
0.8 ARBUTUS
46.150
68.086
16.712
11.174
SEPTIC FIELD
TANK
PIPE STAND
FIRE BOX
BOTTOM SLOPE
TOP SLOPE
17.795
STRINGER HALL
2
19.853
TRAIL
ELEC SHED
POLE
SOUTH BOUNDARY DL 110
NORTH BOUNDARY DL 52
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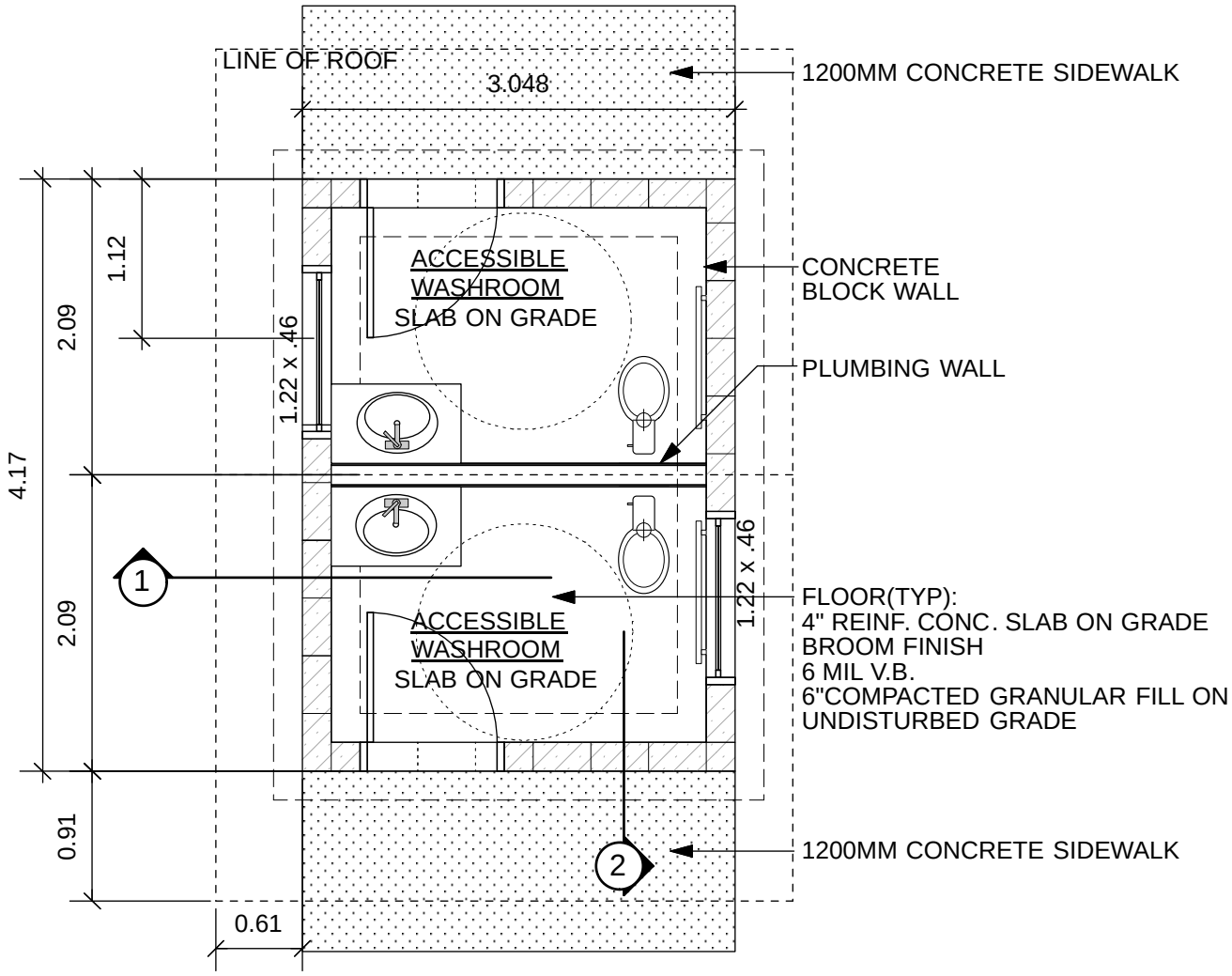
6.784
17.062
MARCH 21 SUNSET
MARCH 21 SUNRISE
DEC 21 SUNSET
DEC 21 SUNRISE

APPENDIX A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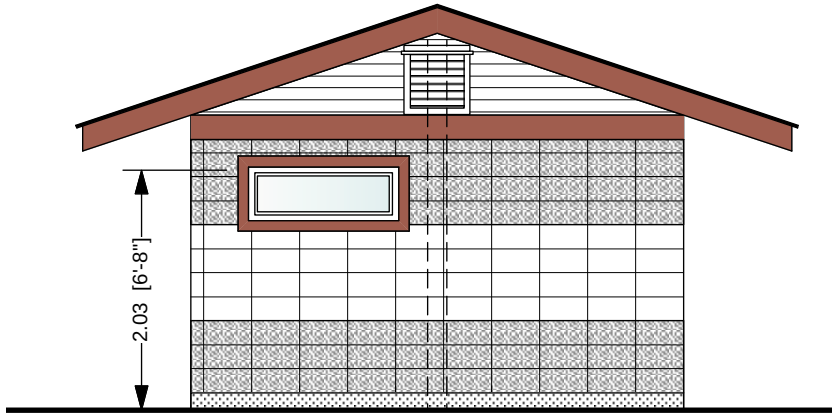
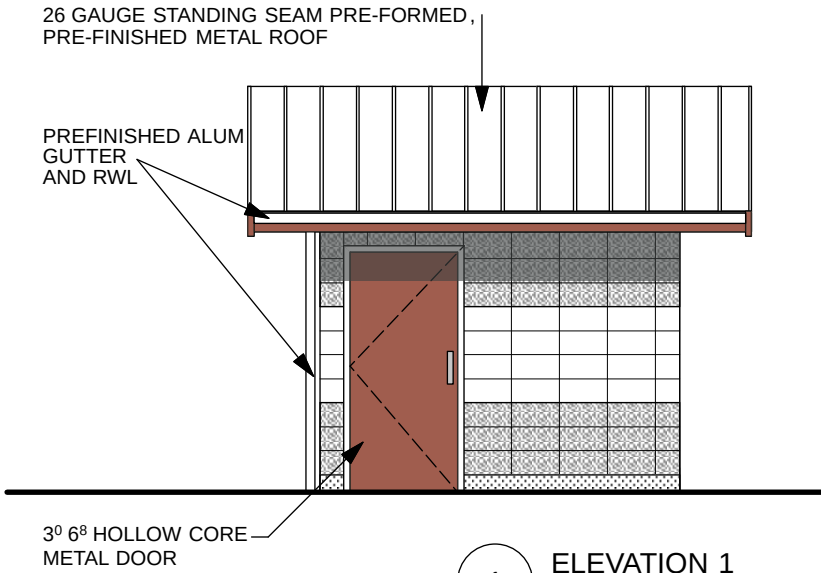
3.048
1200MM CONCRETE SIDEWALK
1.12
2.09
4.17
2.09
0.91
0.61
1.22 x .46
ACCESSIBLE
WASHROOM
SLAB ON GRADE
CONCRETE
BLOCK WALL
PLUMBING WALL
1.22 x .46
1
2
FLOOR(TYP):
4" REINF. CONC. SLAB ON GRADE
BROOM FINISH
6 MIL V.B.
6"COMPACTED GRANULAR FILL ON
UNDISTURBED GRADE
1200MM CONCRETE SIDEWALK

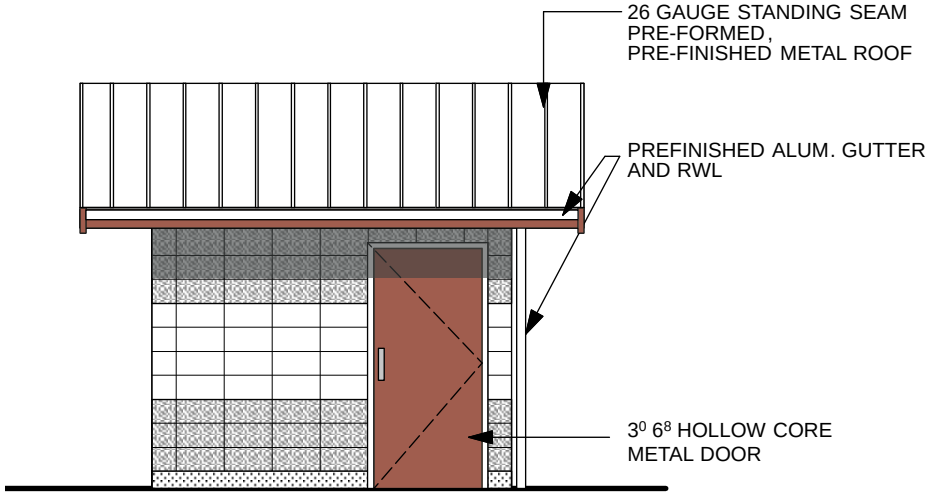
1 FLOOR PLAN



2 ELEVATION 2



1 ELEVATION 1



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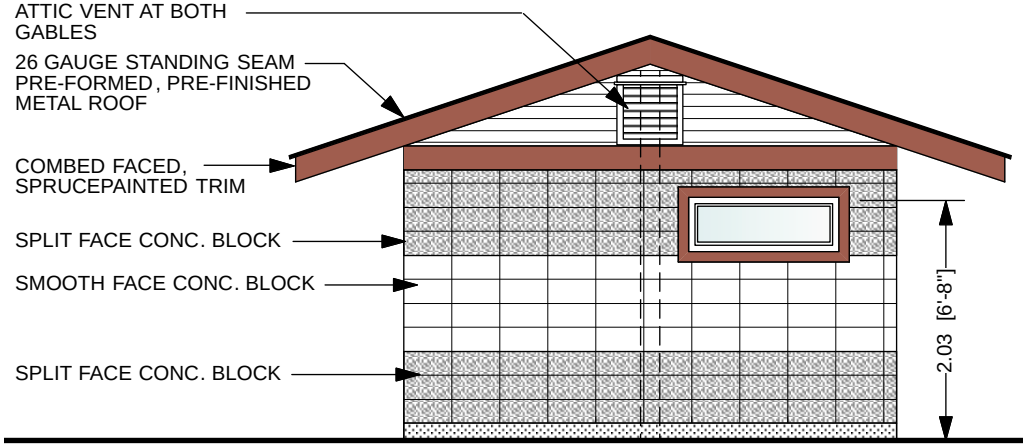
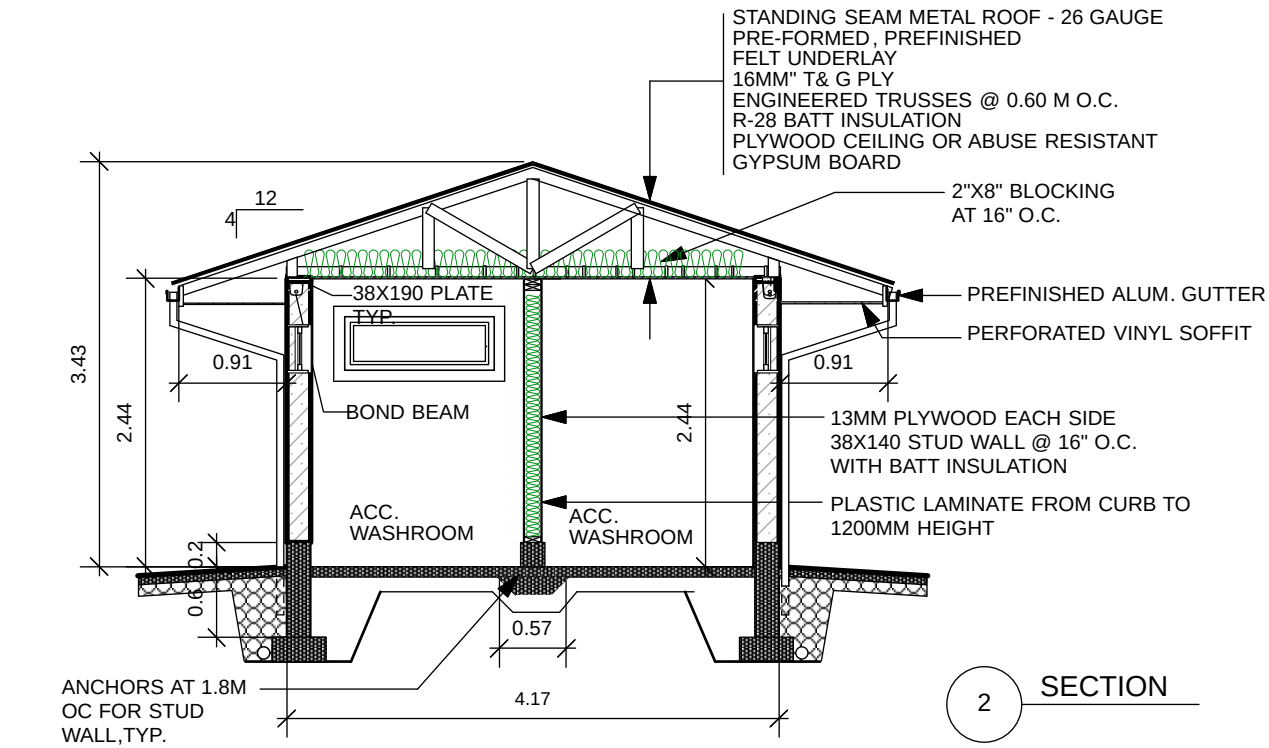
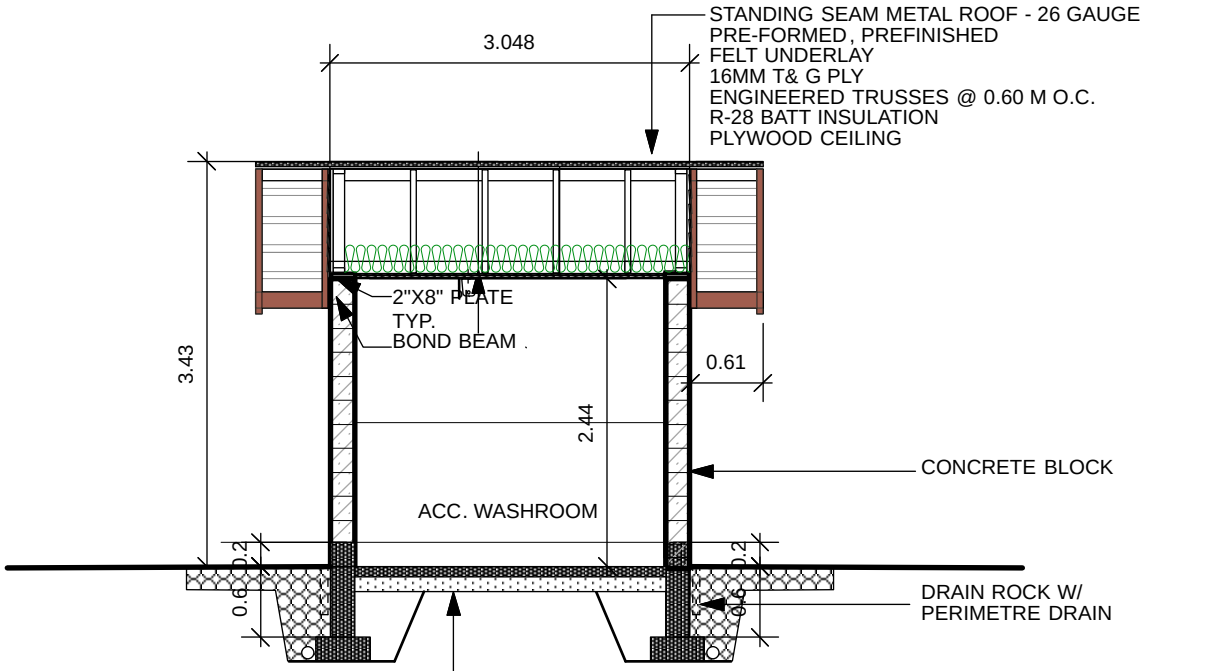


3 ELEVATION 3



2 SECTION



1 SECTION

Parcel Tax/Service Agreements Background Information

REGIONAL DISTRICT OF NANAIMO

MEMORANDUM

TO:	Neil Connelly General Manager of Community Services	**DATE:**	September 16, 2005
FROM:	Tom Osborne Manager of Recreation and Parks	**FILE:**	6150 00 REPA

SUBJECT: Amendment of the Regional Parks Function to Include Municipalities

PURPOSE

To review approaches for a revised participation and funding structure for the Regional Parks Function and to provide for approval of an amendment to the Regional Parks Bylaw.

BACKGROUND

In 1995 the Regional Parks Function was established with the Electoral Areas only as participants. In 1999 the tax requisition for Regional Parks was increased from $200,000 to $400,000 with the intent of allocating $200,000 annually for an acquisition fund. This requisition level was sustained for 1999 and 2000.

In 1999 a Regional Services Review was initiated and in December 2000 the Regional District and its member municipalities entered into a Regional Parks Services Agreement. The agreement provided for a municipal contribution to the operation and maintenance of Regional Parks allocated on a per capita basis. With participation of the municipalities in place, the costs allocated to the Electoral Areas for operations and maintenance was subsequently reduced.

At the conclusion of the Regional Services review and in order to accommodate the phasing in of some of the changes arising from the review, the Board passed a resolution to reduce the Regional Parks requisition from $400,000 to $300,000 for 2001 and to restore it to $400,000 in 2002. The Regional Services Review document also made reference to a commitment to raise Regional Parks' contributions over the next three years. The total Regional Parks tax requisition subsequently increased to $400,000 in 2003 rather than in 2002 and has since increased to $560,000 in 2005.

Between 2002 and 2004 the cost of operations and maintenance comprised an increasingly larger proportion of the total budget. As a consequence, the amount allocated to acquisitions and capital development, which was funded by the Electoral Areas only, remained below the 1999/2000 $200,000 level until 2005 when it increased to $208,000 ($153,000 plus $55,000 for the local share of the Top Bridge project).

Regional Park acquisitions between 2000 and 2005 have included the Nanaimo River, Descanso Bay, Little Qualicum River, Little Qualicum River Estuary, Englishman River and Horne Lake Regional Parks. The acquisition of these parks and the construction of the Barclay Crescent Millennium Bridge, the McBey Creek Bridge on the Arrowsmith Trail, and the Haslam Creek Suspension bridge were achieved through a combination of partnerships, funding from the acquisitions portion of the Regional Parks service and planning and rezoning approvals in the Electoral Areas.

In June 2003, the District of Lantzville was incorporated and removed from Electoral Area ‘D’. The Supplementary Letters Patent (SLP) for the District of Lantzville provides for them to be participants in

the Regional Parks function. However, as a municipality, staff treated the District in the same manner as the non-participating municipalities and in 2004 and 2005 the District participated in funding for operations and maintenance only. Recent advice on this approach suggests that legally, the District should have continued to be included as a full participant for both operations and capital. The amount related to 2004 and 2005 for acquisitions and capital is $31,806.

The Regional Services Review also resulted in new sports field and recreation facilities cost sharing agreements to include Electoral Area funding for certain municipally provided services. It is important to note that the agreements for Regional Parks and the cost sharing of recreation facilities and sports fields were approved as a package in 2000. It is recommended that these agreements be reviewed with the intent of extending the length of the terms should there be full municipal participation in the Regional Parks Function.

Table 1 summarizes the net change for municipal and electoral areas as a result of the cost sharing agreements for regional parks, sportsfields, and recreation facilities that were implemented in 2000.

Table 1

	2000	2001	2002	2003	2004	2005
Regional Parks- Operations Requisition	**200,000**	**131,250**	**200,000**	**250,000**	**316,000**	**352,000**
New Municipal allocation		93,041	141,777	177,635	233,335	259,920
Electoral Area allocation	200,000	38,209	58,223	72,365	82,665	92,080
Regional Parks – Acquisitions (Electoral Areas only)	200,000	168,750	100,000	150,000	150,000	208,000
New D69 Sports fields		**101,333**	**167,310**	**168,730**	**198,490**	**203,035**
New D68 Facilities & Sports fields	305,400	**515,396**	**611,874**	**642,955**	**645,750**	**643,940**
Total funding	705,400	**916,729**	**1,079,184**	**1,211,685**	**1,310,240**	**1,406,975**
Net new Municipal	-	**93,041**	**141,777**	**177,635**	**233,335**	**259,920**
Net new Electoral Area	-	**118,288**	**232,007**	**328,650**	**371,505**	**441,655**

In 2005, the Regional Board adopted the Regional Parks and Trails Plan (2005 – 2015). Based on community input from RDN residents and an analysis of the current inventory, the following lands were identified as acquisition priorities:

Nanaimo Fire Suppression Camp (A)
Mount Benson / Westwood Ridges (C)
Little Mountain / Morison Creek (F)
The Notch (E)
Gainsburg Swamp (H)
Hamilton Marsh (F/G)
French Creek Corridor (G)
Mount Arrowsmith (C)
Horne Lake DFO parcel (H)

In addition to land acquisition, significant bridge crossings were also identified as priorities as follows:

Nanaimo River on Trans Canada Trail	Nanaimo River on Morden Colliery Trail
Benson Creek	Top Bridge
Nile Creek	E&N Route/ Island Rail Corridor Crossings

Consideration of municipal cost sharing in Regional Parks was deferred, as recommended at the conclusion of the Regional Service Review Phase II, to the end of the term of the current agreement (December 2005). At the Board's Ideas and Updates Meeting held on August 30, 2005, members were provided an overview of new approaches to fund the Regional Parks service, primarily focusing on increasing funds available for future Regional Park acquisitions. At a seminar held on September 13, 2005 that was hosted by the Regional Board, Board members and city councilors discussed potential funding approaches and then directed RDN staff and the four municipal administrators to meet and report back to the September 20, 2005 Board meeting with a recommendation to include all the municipalities and Electoral Areas as participants in the Regional Parks Function.

Requirements to Amend Regional Parks Function Bylaw

The establishing bylaw can be amended by consent of two thirds of the current participants (Electoral Areas and District of Lantzville). Municipal members would ratify their entry by giving Council consent on behalf of their electors. Approval of the Amendment Bylaw will provide voting, operational and budgeting authorities to all participants for the Regional Parks service.

ALTERNATIVES

1. Amend the service to add the three remaining municipalities of Nanaimo, Parksville and Qualicum Beach and apportion costs using the existing 50/50 assessment – population formula for acquisitions and per capita for operations.

2. Amend the service to add the three remaining municipalities of Nanaimo, Parksville and Qualicum Beach. Change the acquisitions funding approach from property taxes to a $10.00 parcel / folio tax. Operations and maintenance cost sharing would be unchanged at a per capita basis and would continue to be collected as a property tax.

3. Amend the service as outlined in Alternative 2 above to include Nanaimo at a $10.00 parcel / folio tax for capital acquisitions and allow for a four year phase in of the parcel / folio tax for the municipalities of Lantzville, Parksville and Qualicum Beach starting in 2007. This alternative would also provide for the $31,806 catch up payment from Lantzville to be collected over a two year period beginning in 2007.

DISCUSSION AND FINANCIAL IMPLICATIONS

Any alternative which results in municipal participation for capital acquisitions means that parcels identified in the Regional Parks and Trails Plan can be purchased sooner rather than later. Without municipal contributions the earliest year the Board could consider acquiring new Regional Parks using uncommitted cash resources would be in 2008.

Other acquisition funding options outlined in the Regional Parks and Trail Plan 2005-2015 include the potential establishment of Regional Park and Trail development cost charges, a donation program and a special acquisition fund. It is recommended that the implementation of development costs charges be reviewed by staff as part of the 2006 work plan for the Board's consideration.

Requisition Rate

The requisition rate in the Regional Parks service establishing bylaw is set as a maximum of $0.122 per thousand dollars of assessment. If the municipalities were participants in the Regional Parks service the rate of $0.122 would generate $1,700,000 (at 2005 assessment values). Staff, therefore, concludes that there is no need at this time to change the requisition amounts specified in the bylaw.

Other comments

All of the alternatives below assume that from 2006 onwards, the District of Lantzville will be treated as a full participant under the existing formulas. The District of Lantzville would however be assessed a separate amount of $31,806 related to their proportion of the actual 2004 and 2005 requisitions for Regional Park capital and acquisitions.

It is also proposed that regardless of the final participant option chosen, that a one time assessment of $200,000 be raised from the current participants to top up capital/acquisition funding levels intended from 2002 ($100,000 / 2002, $50,000 / 2003, $50,000 / 2004). The catch up amount would be raised by a parcel tax of approximately $9.11 per parcel. This amount coincidentally would pay off the encumbrances remaining on Descanso Bay Regional Park ($160,000) and Little Qualicum River Estuary ($40,000). Under normal circumstances the final payments for these two parks would occur in 2007.

Alternative 1 - Full Municipal Participation Using Current Funding Formula

Table 2 below shows the funding increase that can be achieved by including municipal jurisdictions as full participants at the same proportionate level as the current participants (that is by applying the current 50 / 50 assessment – population formula to the new members). New funding of about $456,600 is generated or a new total of about $665,000 per year. The overall requisition of approximately $1,017,001 is less than the maximum level of $1.7 million noted above.

Table 2

Potential requisition – full municipal participation with no decrease in EA/Lantzville support			
Participant	***Operations**	**Acquisition**	**Total**
A	18,385	29,865	48,250
B	9,741	23,920	33,661
C	3,234	12,230	15,464
D	3,672	6,489	10,161
E	13,358	34,008	47,366
F	15,370	27,789	43,159
G	19,513	35,793	55,306
H	8,810	19,823	28,633
Lantzville	9,805	18,484	28,289
Total Current Participants	**$101,888**	**$208,401**	**$310,289**

Nanaimo	202,304	357,761	560,065
Parksville	28,608	55,663	84,271
Qualicum Beach	19,200	43,176	62,376
Other Municipalities	**$250,112**	**$456,600**	**$706,712**
Overall Total	**$352,000**	**$665,001**	**$1,017,001**

* Note: This column is based on 2005 operational costs.

Alternative 2 – Full Municipal Participation using $10.00 per Folio for Acquisition and Capital

Presently all of the funding for Regional Parks is raised from property taxes (the cost allocation formulas simply determine how much is raised from an individual jurisdiction.) Under Alternative 2, a parcel tax of $10.00 would be levied for funding acquisitions/capital development rather than using assessment based taxes. Moving to a flat rate per parcel reduces property taxes for high value properties and may slightly increase property taxes for lower value properties, however, staff calculates that at a value of $250,000 there is little or no difference between the assessment approach and a $10.00 per folio charge. Table 3 below shows the change to each jurisdiction by moving to a "parcel" tax approach for Regional Parks acquisition/capital development. This alternative raises about $35,000 less than the existing formula result shown in Table 2 (parcel taxes = $629,970, formula = $665,001). Operational and maintenance costs would be continued to be raised by property taxes and be apportioned on a per capita basis (column 1, Table 2).

Table 3

50/50 formula versus "parcel" tax approach for Acquisition and Capital			
Participant	**50/50**	**$10.00 per parcel**	**Change**
A	29,865	31,000	1,165
B	23,920	37,810	13,890
C	12,230	8,420	3,810
D	6,489	4,990	(1,499)
E	34,008	32,580	(1,428)
F	27,789	32,210	4,421
G	35,793	34,560	(1,233)
H	19,823	23,970	4,147
Lantzville	18,484	13,890	4,594
Total Current Participants	**208,401**	**219,430**	**11,029**
Nanaimo	357,761	309,050	(48,711)
Parksville	55,663	57,280	1,617
Qualicum Beach	43,176	44,210	1,034
Other Municipalities	**456,600**	**410,540**	**(46,060)**
Overall Total	**665,001**	**629,970**	**(35,031)**

Table 4 below shows, for each participant, the total 2006 requisition for acquisition/capital that would result combining the $200,000 one time top up for previous years (raised as a parcel tax of $9.11 per folio) and applying a new $10.00 parcel tax to all jurisdictions.

Table 4

Parcel Tax Approach Acquisition and Capital		
Participant	**2006 One time $200,000 plus new parcel tax at $10.00 (total $19.11)**	**2007 - $10.00**
A	58,373	31,000
B	71,196	37,810
C	15,855	8,420
D	9,396	4,990
E	61,348	32,580
F	60,651	32,210
G	65,076	34,560
H	45,136	23,970
Lantzville	*57,955	13,890
Total Current Participants	**444,986**	**219,430**
Nanaimo	309,050	309,050
Parksville	57,280	57,280
Qualicum Beach	44,210	44,210
Total Municipalities	**410,540**	**410,540**
Overall Total	**$855,526**	**$629,970**

* Lantzville amount includes $31,806 for 2004 / 2005 catch up funding

Alternative 3 – Phased in Parcel Tax Approach for Acquisition and Capital

A further alternative to achieving full municipal participation would be to phase in the municipal contributions over a period of time. This particular alternative is shown on **Appendix 'A'** attached to this report and contains the following assumptions:

- Electoral Areas and Lantzville contribute one time amount (catch up) in 2006 of $200,000 by way of a parcel tax (approximately $9.11)
- Lantzville contributes $15,900 in 2007 and 2008 totaling $31,800 for 2004 / 2005 capital / acquisition funds.

- Electoral Areas raise current capital funds by applying a parcel tax of $10.00 commencing in 2006
- City of Nanaimo raises current capital funds by applying a parcel tax of $10.00 commencing in 2006
- District of Lantzville, City of Parksville and Town of Qualicum Beach phase in participation beginning in 2007 with a parcel tax of $2.50 rising to $10.00 by 2010. Should one of these municipalities decide to phase in to the $10.00 rate over a shorter period of time, the Regional Parks Bylaw would be amended accordingly.

Should this phased in approach be selected, it is recommended that in 2007 the Regional Board commit to revisiting, updating and reprioritizing the Regional Parks Acquisition Plan. The updated plan would also take into account outcomes from the Regional Park Development Cost Charge Review that will have been completed in 2006. Prior to this time, lands already listed as priorities in the 2005 – 2015 Regional Parks and Trail Plan remain as priority acquisition areas.

SUMMARY/CONCLUSIONS

Three approaches to a revised structure for the Regional Parks Function have been outlined for consideration. Based on feedback received from the seminars hosted by the Regional Board on August 30 and September 13, 2005 with fellow board members and municipal councilors, it is proposed that Alternative 3 be selected as the preferred option. This option will bring all parties into the service as full participants, address previous years' intentions for funding and move to the use of a parcel tax of $10.00 per folio for future years' requisitions. The $10.00 parcel tax would be implemented in 2006 for all the Electoral Areas and the City of Nanaimo. The District of Lantzville, City of Parksville and the Town of Qualicum Beach would implement the parcel tax over a four year period starting in 2007. Should the District of Lantzville, City of Parksville, and the Town of Qualicum Beach decide to phase in to the $10.00 rate over a shorter period of time, the Regional Parks Bylaw would be amended accordingly. Capital funding will increase from a level of $200,000 to about $637,920 per year by 2010. Funding for operational costs would continue to be cost shared using the current per capita formula.

RECOMMENDATIONS

1. That the current participants in the Regional Parks service requisition a one time sum of $200,000 in 2006 to pay in full the remaining $200,000 owed for the acquisition of Descanso Bay and Little Qualicum River Estuary Regional Parks. This amount will be assessed as a parcel tax charge estimated at approximately $9.11 per parcel.

2. That the District of Lantzville contribute $31,800 with respect to 2004 and 2005 capital acquisitions funds that are due, to be paid in 2007 and 2008 in the amount of $15,900 for each year.

3. That the Regional Parks service be amended to include the three municipalities of Nanaimo, Parksville, and Qualicum Beach.

4. That the apportionment formula for acquisitions/capital in the Regional Parks Bylaw be deleted and that funding for acquisitions/capital development be obtained through parcel taxes.

5. That the parcel tax rate for Electoral Areas A, B, C, D, E, F, G, H, and the City of Nanaimo be set at $10.00 commencing in 2006.

6. That the parcel tax rates for the District of Lantzville, City of Parksville and the Town of Qualicum Beach be set at $2.50, $5.00, $7.50 and $10.00 in the years 2007, 2008, 2009 and 2010 respectively.

7. That the implementation of Regional Parks Development Costs Charges be reviewed as part of the 2006 work plan for the Board's consideration.

8. That the Regional Parks Acquisition Plan be revisited, updated and reprioritized in 2007 upon completion of the Regional Parks Development Cost Charges review. Prior to this time, lands already listed as priorities in the 2005 – 2015 Regional Parks and Trail Plan remain as priority acquisition areas.

9. That the sports field and recreation facilities cost sharing agreements for District 68 and 69 be reviewed in 2006 with the intent of providing longer term agreements.

10. That the Regional Parks Amendment Bylaw No. 1231.01 be given three readings and be forwarded to the municipalities of Nanaimo, Parksville and Qualicum Beach for consent and to the Inspector of Municipalities for approval.

Report Writer

General Manager Concurrence

COMMENTS:

Appendix 'A'

Pro- Forma Requisitions for Participants of the Regional Parks Acquisition and Capital

	2006						
	One Time $200,000 by parcel tax	**Ongoing parcel tax (convert formula to parcel tax)**	**Total for 2006**	**2007**	**2008**	**2009**	**2010**
	$ 9.11	**$ 10.00**		**$ 10.00**	**$ 10.00**	**$ 10.00**	**$ 10.00**
A	28,241	31,000	59,241	31,000	31,000	31,000	31,000
B	34,445	37,810	72,255	37,810	37,810	37,810	37,810
C	7,671	8,420	16,091	8,420	8,420	8,420	8,420
D	4,546	4,990	9,536	4,990	4,990	4,990	4,990
E	29,680	32,580	62,260	32,580	32,580	32,580	32,580
F	29,343	32,210	61,553	32,210	32,210	32,210	32,210
G	31,484	34,560	66,044	34,560	34,560	34,560	34,560
H	21,837	23,970	45,807	23,970	23,970	23,970	23,970
Lantzville	12,654		12,654	-	-	-	-
				2007	**2008**	**2009**	**2010**
Lantzville catch up				15,900	15,900	-	-
	199,901	**205,540**	**405,441**	**221,440**	**221,440**	**205,540**	**205,540**
			$ 10.00	**$ 10.00**	**$ 10.00**	**$ 10.00**	**$ 10.00**
Nanaimo		309,050	309,050	309,050	309,050	309,050	309,050
				$ 2.50	**$ 5.00**	**$ 7.50**	**$ 10.00**
Parksville			-	14,320	28,640	42,960	57,280
Qualicum Beach			-	11,053	22,105	33,158	44,210
Lantzville			-	3,473	6,945	10,418	13,890
New funds	**-**	**309,050**	**309,050**	**337,895**	**366,740**	**395,585**	**424,430**
Total funding	**199,901**	**514,590**	**714,491**	**559,335**	**588,180**	**601,125**	**629,970**

* Lantzville catch up totals $31,800

* Electoral Areas C and D will be amalgamated after the 2005 Local Government Elections

REGIONAL DISTRICT OF NANAIMO

BYLAW NO. 1231

(Consolidated for convenience only to include up to 1231.04)

A BYLAW TO CONVERT THE FUNCTION OF DIVISION XXVI – REGIONAL PARKS TO A SERVICE

WHEREAS the Board of the Regional District of Nanaimo, by way of Supplementary Letters Patent dated the 28th day of July, 1989, was granted the authority of Division XXVI – Regional Parks;

AND WHEREAS the Board of the Regional District of Nanaimo has undertaken a review (Regional Services Review 2000) of the provision of service established under Supplementary Letters Patent;

AND WHEREAS the Board of the Regional District of Nanaimo wishes, under Section 774.2(3) of the *Local Government Act*, to convert the service to one exercised under the authority of a bylaw, establish the service and by the same bylaw, amend the power to the extent it could if the power were exercised under the authority of a bylaw establishing the service;

AND WHEREAS the Board of the Regional District of Nanaimo wishes to recover a portion of the costs of operation, maintenance and development from the participating areas and the balance by way of agreement (an "Agreement"), from the City of Nanaimo, City of Parksville and Town of Qualicum Beach, and to apportion the costs of acquisition and major capital among the participating areas;

AND WHEREAS the Board of the Regional District of Nanaimo has obtained the consent of two thirds of the participants under Section 802(1)(b) of the *Local Government Act* of 2/3 of the participants;

NOW THEREFORE the Board of the Regional District of Nanaimo, in open meeting assembled, enacts as follows:

1. **Service**

   (a) A service including the function Division XXVI – Regional Parks, as conveyed by Supplementary Letters Patent dated July 28, 1989, is hereby established for the purpose of acquiring, developing and operating regional parks and regional trails and for the purpose of acquiring, developing and operating regional conservation areas;

   (b) Reference in the bylaw to the "service" or to the "service of regional parks and trails" shall be deemed to be a reference to the service established under subsection 1(a).

2. **Boundaries**

   The boundaries of the service area shall be coterminous with the boundaries of the City of Nanaimo, the City of Parksville, the Town of Qualicum Beach, the District of Lantzville and Electoral Areas 'A', 'B', 'C', 'D', 'E', 'F', 'G' and 'H'.

3. **Participating Areas**

   The City of Nanaimo, the City of Parksville, the Town of Qualicum Beach, the District of Lantzville and Electoral Areas 'A', 'B', 'C', 'D', 'E', 'F', 'G' and 'H' shall be participating areas.

4. **Cost Recovery**

The annual costs for this service may be recovered by one or more of the following:

(a) for operations and maintenance, by way of the requisition of money under Section 803(1)(a) of the *Local Government Act* to be collected by a property value tax levied and collected under Section 806.1(1)(a).
(b) the imposition of fees and other charges under Section 797.2 of the *Local Government Act*.
(c) revenues raised by other means authorized by the *Local Government Act*, or another Act.
(d) revenues received by way of agreement, enterprise, gift, grant or otherwise; as provided by Section 803(1)(e) of the *Local Government Act*.
(e) for capital acquisitions and development by way of the requisition of money under Section 803(1)(b) of the *Local Government Act* to be collected by a parcel tax imposed in accordance with Division 4.3 of Part 24 of the *Local Government Act*.

5. **Requisition**

(1) In accordance with Section 800.1(1)(e) of the Local Government Act, the maximum amount that may be requisitioned under Section 803(1)(a) for this service shall be the greater of:

(a) the sum of four hundred thousand dollars ($400,000); or
(b) the product obtained by multiplying the net taxable value of land and improvements within the service area by a property value tax rate of $0.122 cents per thousand dollars of assessment.

(2) Despite Subsection (1), the Regional District may requisition amounts by way of a parcel tax as set out in Section 4(e).

6. **Apportionment**

The annual costs of the service shall be apportioned among the participating areas as follows:

(a) The annual costs for operations and maintenance shall be apportioned among the participating areas on the basis of the proportionate share of the population of each of the participating areas to the total population of all of the participating areas. Population shall be as reported through the most recent census conducted by Statistics Canada (or any agency or Ministry that replaces Statistics Canada in the function of the collection of population statistics in Canada).
(b) The annual costs for acquisitions and capital development shall be apportioned on the basis of the number of taxable parcels within a participating area.

7. Pursuant to Section 800.2(1)(e) of the *Act* the following additional conditions with respect to amounts to be requisitioned for capital acquisitions and development under Section 4(e) are established:

(a) Commencing in 2006, within Electoral Areas 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H' and the City of Nanaimo, the amount to be requisitioned under Section 4(e) shall be at a rate of $10.00 per taxable parcel.

(b) In addition to any amount requisitioned under 7(a), there shall be raised by a parcel tax on taxable parcels, within Electoral Areas 'A', 'B', 'C', 'D', 'E', 'F', 'G' and 'H' and the District of Lantzville collectively, the following amounts:

2007	$50,000
2008	$50,000
2009	$50,000
2010	$50,000

(c) In addition to any amount requisitioned from the District of Lantzville under Subsection 7(b) the District of Lantzville, for each of the years 2007 and 2008 shall raise the amount of $15,900.

(d) Within the City of Parksville, the Town of Qualicum Beach and the District of Lantzville the amount to be requisitioned under Section 4(e) shall be at the following rates:

2006	Nil
2007	$2.50 per taxable parcel
2008	$5.00 per taxable parcel
2009	$7.50 per taxable parcel
2010	$10.00 per taxable parcel

(e) The amount to be requisitioned commencing in 2013 under Subsection 4(e) shall be a rate of $13.00.

8. This bylaw may be cited as "Regional District of Nanaimo Regional Parks and Trails Service Area Conversion Bylaw No. 1231, 2001".

Introduced and read three times this 9th day of January, 2001.

Received the approval of the Inspector of Municipalities this 12th day of March, 2001.

Adopted this 13th day of March, 2001.

CHAIRPERSON

GENERAL MANAGER, CORPORATE SERVICES

REGIONAL DISTRICT OF NANAIMO

Regional Parks Capital

10 Year Capital Plan

	2016 Capital	2017 Capital	2018 Capital	2019 Capital	2020 Capital	Total	2021 Capital	2022 Capital	2023 Capital	2024 Capital	2025 Capital	Total
MJ-2703 MAJOR CAP - REGIONAL PARKS CAPITAL												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Fletcher Creek Lighthouse					85,000	**85,000**						**85,000**
Total **2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT**					85,000	**85,000**						**85,000**
2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES												
Horne Lake campsite redevelopment			50,000		50,000	**100,000**						**100,000**
Moorecroft Kiosks funded by donation per B Rogers 2016	25,000					**25,000**						**25,000**
ERRP Hatchery Bridget		60,000				**60,000**						**60,000**
Total **2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES**	25,000	60,000	50,000		50,000	**185,000**						**185,000**
2-2703-9612-000 CAPITAL - BUILDINGS												
Washroom building Moorecroft	60,000					**60,000**						**60,000**
Total **2-2703-9612-000 CAPITAL - BUILDINGS**	60,000					**60,000**						**60,000**
Total **MJ-2703 MAJOR CAP - REGIONAL PARKS CAPITAL**	85,000	60,000	50,000		135,000	**330,000**						**330,000**
PR-0003 E&N TRAIL												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
E&N Trail Fr Crk/Pville/Coombs funded by RSP Gas Tax $	2,399,576					**2,399,576**						**2,399,576**
portion funded by Reg Park Capital Reserve fund	671,717					**671,717**						**671,717**
Portion funded by CWF EA F & G	525,000					**525,000**						**525,000**
Total **2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT**	3,596,293					**3,596,293**						**3,596,293**
Total **PR-0003 E&N TRAIL**	3,596,293					**3,596,293**						**3,596,293**
PR-0010 NANAIMO RIV BRIDGE-MORDEN COLLIERY TRAIL												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Nanaimo River Bridge-Morden Collier Trail (funded from Community Works or other grants)		775,000				**775,000**						**775,000**
bridge for equestrain option add			150,000			**150,000**						**150,000**
trail to bridge			300,000			**300,000**						**300,000**
bridge general		200,000	500,000			**700,000**						**700,000**
update projections to actuals Jan 25/16	50,000					**50,000**						**50,000**
Total **2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT**	50,000	975,000	950,000			**1,975,000**						**1,975,000**
Total **PR-0010 NANAIMO RIV BRIDGE-MORDEN COLLIERY TRAIL**	50,000	975,000	950,000			**1,975,000**						**1,975,000**
PR-0011 MT BENSON ADDITION												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Mt Benson addition - $1.2M - part fr fundraising part fr reserves								1,050,000	150,000			**1,200,000**
Total **2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT**								1,050,000	150,000			**1,200,000**
Total **PR-0011 MT BENSON ADDITION**								1,050,000	150,000			**1,200,000**
PR-0012 MOORECROFT LONGHOUSE												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Moorecroft Longhouse - Nanoose First Nation contribution							300,000					**300,000**
Reserve funded							125,000					**125,000**

REGIONAL DISTRICT OF NANAIMO

Regional Parks Capital

10 Year Capital Plan

	2016 Capital	2017 Capital	2018 Capital	2019 Capital	2020 Capital	Total	2021 Capital	2022 Capital	2023 Capital	2024 Capital	2025 Capital	Total
Total 2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT							425,000					425,000
Total PR-0012 MOORECROFT LONGHOUSE							425,000					425,000
PR-0013 NOTCH, EA E												
2-2703-9616-000 CAPITAL - LAND												
Notch, EA E - through Reg Park Parcel tax Reserves							471,680					471,680
Notch EA E from EA E Cmmty Parks cash in lieu							50,000					50,000
Notch EA E - from donations or other source (insufficient reserves)							478,320					478,320
Total 2-2703-9616-000 CAPITAL - LAND							1,000,000					1,000,000
Total PR-0013 NOTCH, EA E							1,000,000					1,000,000
PR-0014 NANAIMO RIVER CANYON												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Nanimo River Canyon - NALT fundraising		1,000,000				1,000,000						1,000,000
Total 2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT		1,000,000				1,000,000						1,000,000
Total PR-0014 NANAIMO RIVER CANYON		1,000,000				1,000,000						1,000,000
PR-0015 BENSON CREEK LOWER (BCFRP)												
2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES												
Benson Creek Lower (BCFRP)				215,000	345,000	560,000						560,000
Total 2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES				215,000	345,000	560,000						560,000
Total PR-0015 BENSON CREEK LOWER (BCFRP)				215,000	345,000	560,000						560,000
PR-0016 LIGHTHOUSE CRT - NILE CREEK												
2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES												
Lighthouse CRT - Nile Creek								250,000				250,000
Total 2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES								250,000				250,000
Total PR-0016 LIGHTHOUSE CRT - NILE CREEK								250,000				250,000
PR-0017 HAMILTON MARSH												
2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES												
Hamilton Marsh							250,000					250,000
Total 2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES							250,000					250,000
Total PR-0017 HAMILTON MARSH							250,000					250,000
PR-0018 BENSON CREEK FALLS STAIRS												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
Benson Creek Falls stairs		375,000				375,000						375,000
Total 2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT		375,000				375,000						375,000
2-2703-9620-000 CAPITAL - PROFESSIONAL FEES												
geo tec studies for Benson Creek Falls	25,000					25,000						25,000
stair design for BCF	30,000					30,000						30,000
Total 2-2703-9620-000 CAPITAL - PROFESSIONAL FEES	55,000					55,000						55,000
Total PR-0018 BENSON CREEK FALLS STAIRS	55,000	375,000				430,000						430,000
PR-0019 THE LOOKOUT - EA E												

REGIONAL DISTRICT OF NANAIMO

Regional Parks Capital

10 Year Capital Plan

	2016 Capital	2017 Capital	2018 Capital	2019 Capital	2020 Capital	**Total**	2021 Capital	2022 Capital	2023 Capital	2024 Capital	2025 Capital	**Total**
2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES												
The Lookout EA E							100,000					**100,000**
Total **2-2703-9610-000 CAPITAL - ENGINEERING STRUCTURES**							100,000					**100,000**
Total **PR-0019 THE LOOKOUT - EA E**							100,000					**100,000**
PR-0023 LITTLE QUALICUM BRIDGE EA F												
2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT												
construction estimate	150,000					**150,000**						**150,000**
Total **2-2703-9410-000 CAPITAL RES/DCC/BORROW - ENG STRUCT**	150,000					**150,000**						**150,000**
2-2703-9620-000 CAPITAL - PROFESSIONAL FEES												
	10,000					**10,000**						**10,000**
Total **2-2703-9620-000 CAPITAL - PROFESSIONAL FEES**	10,000					**10,000**						**10,000**
Total **PR-0023 LITTLE QUALICUM BRIDGE EA F**	160,000					**160,000**						**160,000**
Total **Regional Parks Capital**	3,946,293	2,410,000	1,000,000	215,000	480,000	**8,051,293**	1,775,000	1,300,000	150,000			**11,276,293**