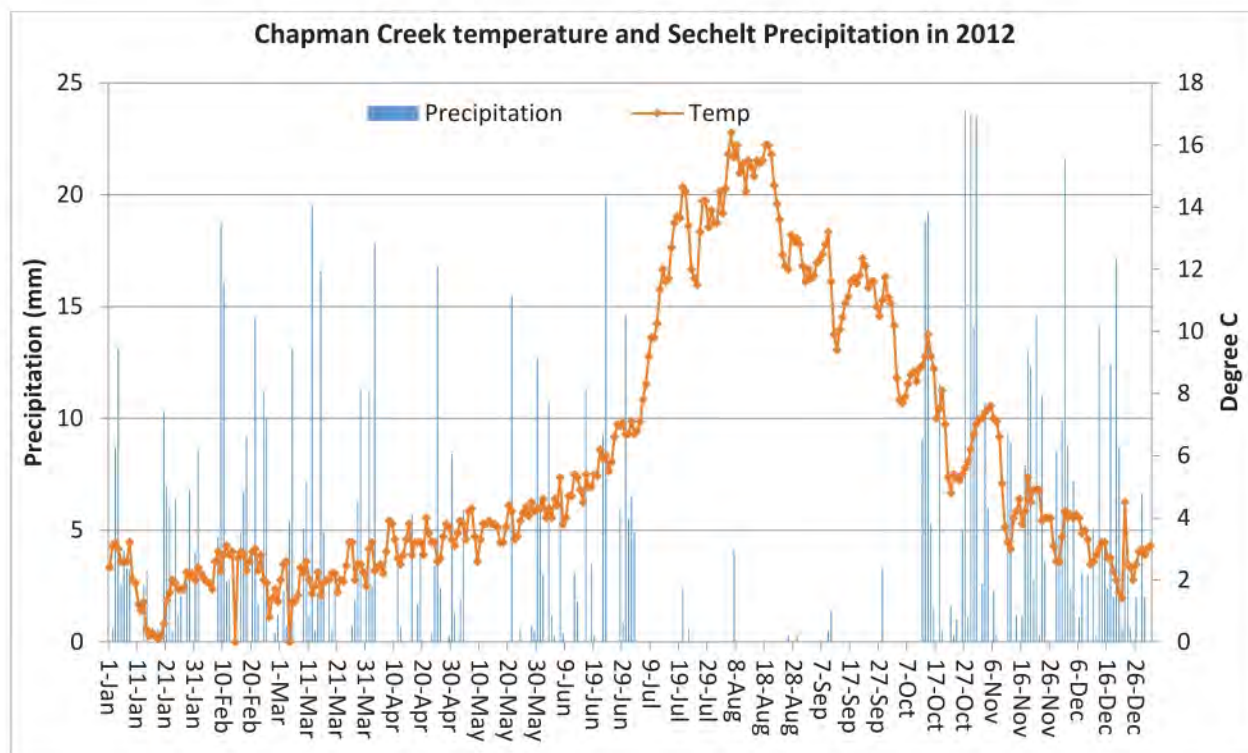
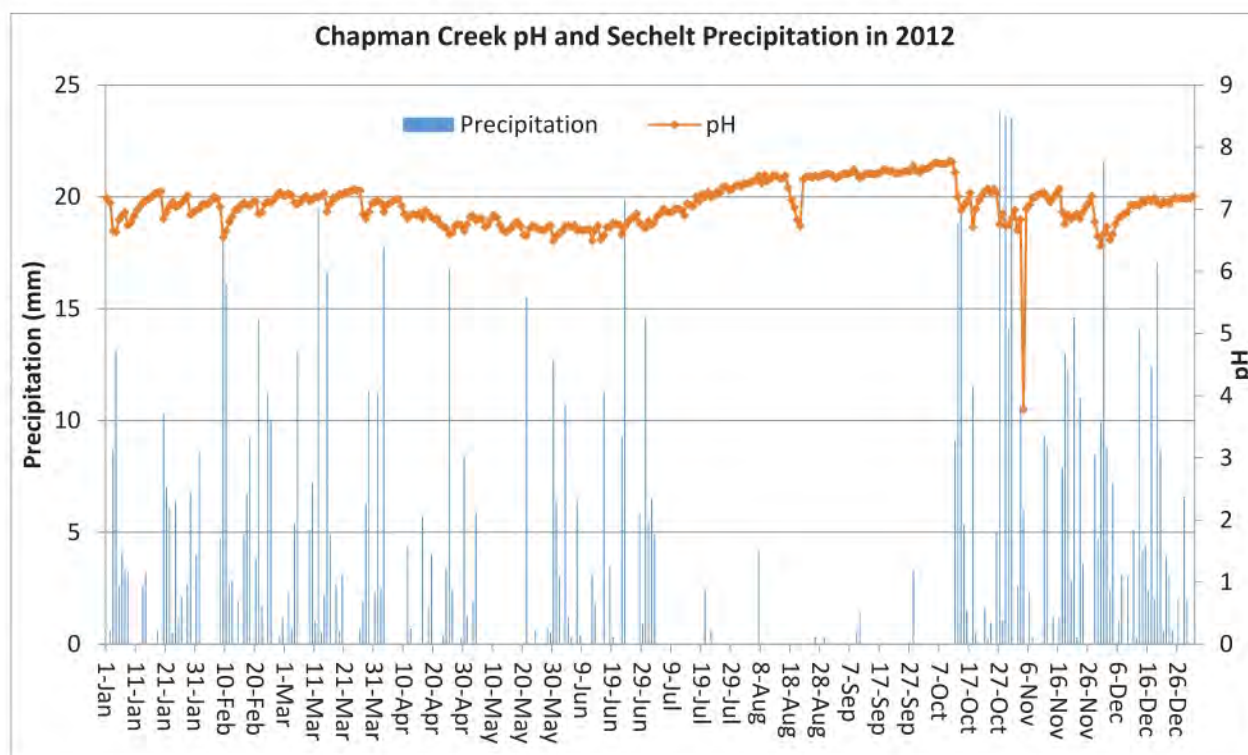
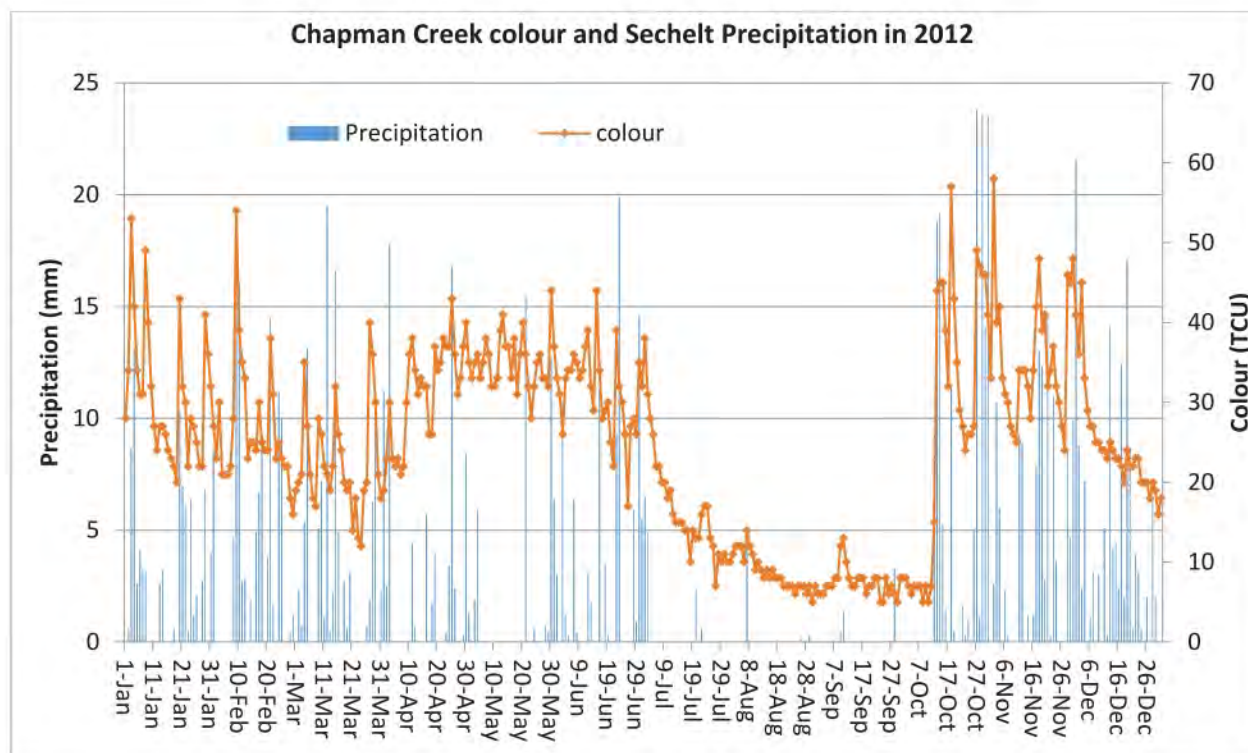




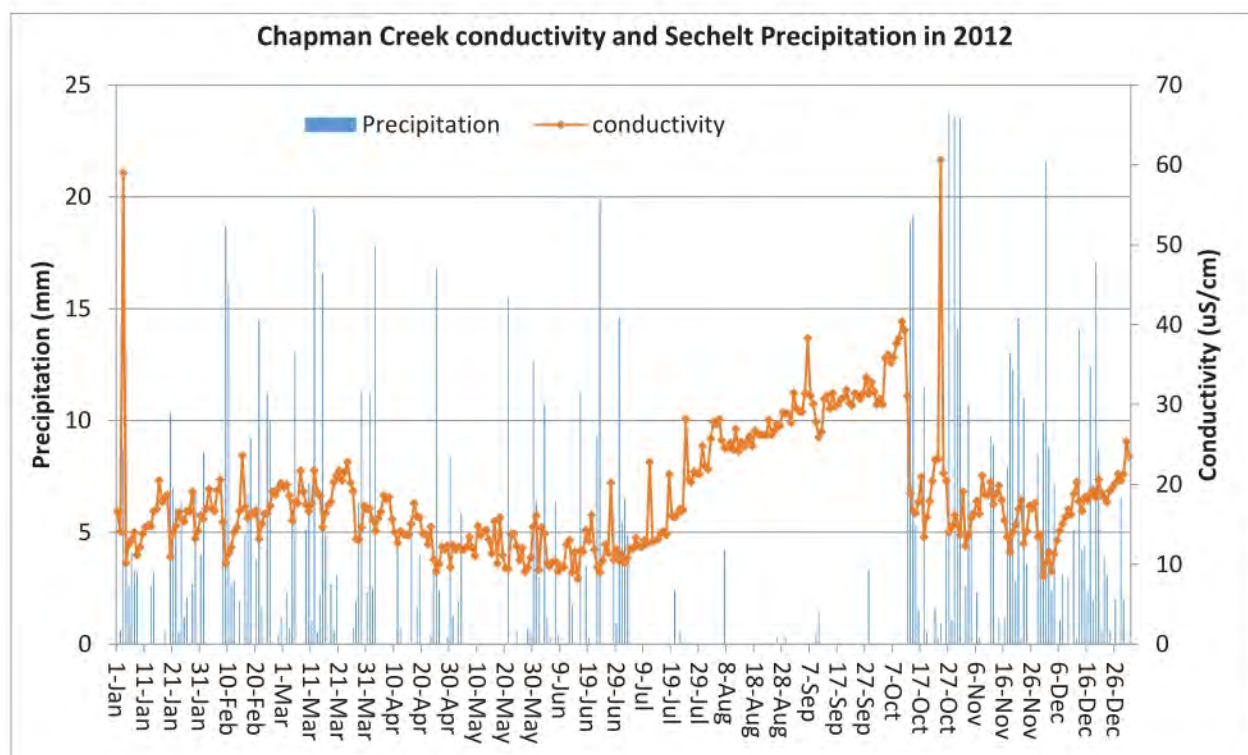
pH



Colour



Conductivity



Instream flow requirements

For most of the year (typically October to June) instream flows in Chapman Creek occur under natural conditions. During the summer months (typically July to September), instream flows in Chapman Creek are regulated through impoundment structures on Chapman and Edwards Lakes. During this period when flows are regulated, the SCRD has targeted instream flows of 200 to 220 L/S.

Fish values

Chapman Creek is a salmon bearing creek with populations of Coho, Chum, and Pink salmon. Populations of rainbow and cutthroat trout and steelhead are also present in Chapman Creek. A salmon hatchery also exists on the creek where populations of Coho salmon are raised.

For most years, the timing of instream flow requirements to support Coho and Chum salmon coincide with the fall rains as salmon runs for both of these salmon species peak in October and November. Pink salmon tend to start their run in August and September. In years where water supplies are limited and at risk of becoming fully depleted, such as this year, the minimum instream flows are targeted in order to prolong the available water supply for as long as possible.

Recreation Use

Recreational fishing and hiking occurs on Chapman Creek during all periods of the year.

Cultural Use

The Sechelt Indian Band (SIB) has designated the Chapman Creek watershed as a *Conservation Area* in their Strategic Land Use Plan (SLUP), 2007. The management direction for conservation areas outlined in the SIB's SLUP includes:

- Maintaining and where necessary restoring the area to largely natural or wilderness condition for the enjoyment of present and future generations.
- Providing for the continuation of *shishálh* culture, subsistence and renewable resource harvesting activities
- Enabling non-industrial, sustainable economic development activity compatible with the *shishálh* Nation social, cultural, and ceremonial uses and where appropriate to the zoning and management directions for each of the *shishálh lil xemit tems swiya* areas.

Affected Water Users

Other water users that may be affected by this proposal include the Chapman Creek Fish Hatchery (Sunshine Coast Salmonid Enhancement Society). This hatchery relies on flows in Chapman Creek in order to operate their hatchery and raise their salmon stocks. With the installation of the proposed siphon, current target flows instream Chapman will remain if the period of drought continues.

Construction Activities

The SCRD is working on completing the installation of the proposed siphon system within the first week of September under the following schedule.

- Week of August 17 – Starting to Procuring the materials and arranging for equipment

- Week of August 24 – Receiving materials and equipment and preparing the material for transport at a staging area near the helicopter hanger (e.g. at a chosen area when the pipes can be fused together and then easily transported to an area where the helicopter can pick them up and deliver them to Chapman Lake).
- Week of August 31 – Transport the materials and equipment to Chapman Lake by helicopter and begin installing the infrastructure
- Week of September 7 – Commission the Siphon system as a trial to ensure it's fully operational when it's needed.

Safety Aspects

This proposal poses no risk to any flooding in the lake as the sole purpose is to increase drawdown. There is also no risk to any flooding in the creek. The maximum flow rate from the proposed siphon system is 500 L/S and the creek is capable of withstanding flows higher than 10,000 L/S.

Future Monitoring

The SCRD will continue to record and monitor streamflows and all water quality parameters at the SCRD's water treatment plant (e.g. turbidity, temperature, pH, conductivity, and colour).

S.16

Environmental Monitoring

An environmental monitoring program will be designed to ensure that environmental impacts are mitigated. This program will be designed and implemented under the direction of a fisheries biologist (Dave Bates) and with support from qualified SCRD staff. Under this EM program, water quality will be recorded on a daily basis at either the SCRD's water treatment plant and/or at specific locations in Chapman Creek and Chapman Lake. A qualified EM will visit the lake at least once week and will proceed to the lake immediately if there are any unforeseen concerns with environmental values.

An emergency response plan will be designed to prevent and mitigate impacts from hydrocarbons (e.g. fuel from the jet pump for priming siphons). This will include designating a zone for use of the pump with containment requirements for equipment and spill kits on site.

Remaining Environmental Concerns

The impacts to wildlife will be mitigated whenever possible. This will include implementing a strict waste management plan, whereby no food waste or any other waste that may attract wildlife will be minimized and contained wherever possible.

Summary and Conclusions

The lake storage reservoirs for the Chapman Creek water system, which supplies approximately 90% of the population within the Regional Water System on the Sunshine Coast (23,000 people), are at risk of

becoming fully depleted as a result of the prolonged hot and dry weather experienced so far this year (2015). Maintaining water to area residents will require accessing more water than is currently available under the existing infrastructure at Chapman Lake. The SCR D is proposing to install a siphon into Chapman Lake to access 1,000,000 m³ (5 m of additional drawdown) to increase water supply for at least another 45 days.

s.16

The SCR D is also in consultation with BC Parks because the proposed siphon will be installed within the Tetrahedron Provincial Park boundary.

Ideally, the siphon system will be installed and commissioned by the first week of September, 2015. Once in operation, ongoing environmental monitoring and archeological assessments will be underway.

The infrastructure will remain in place for a period of 24 months, as per Section 8 of the *Water Act*.

Environmental Monitoring Plan

Siphon System at Chapman Lake

Introduction

Chapman Creek is the main water supply for the Sunshine Coast as it supplies water to approximately 90% of the area residents (23,000 people). During the summer months, instream flows in Chapman Creek are regulated through impoundment structures on Chapman and Edwards Lakes, which are the main water storage reservoirs for the water system and both are situated within the Tetrahedron Provincial Park. The total available water storage capacity for withdrawal is 1.7 million m³.

Currently, the available water supply is at risk of becoming fully depleted as a result of the prolonged period of drought that has been experienced this summer (2015). In order to ensure the ongoing delivery of potable water to area residents and fresh water for environmental values, the Sunshine Coast Regional District is deploying a siphon system in Chapman Lake to access an additional 1,000,000 m³ of water (5 m of additional storage – 8 m in total). This environmental monitoring plan will outline the steps and procedures for mitigating environmental impacts from the work.

Purpose

The purpose of this Environmental Monitoring (EM) plan is to ensure that the activities undertaken for installing and operating a siphon system at Chapman Lake will not result in any environmental impacts to water quality and fish and wildlife. The role of the environmental monitor is to observe, record and report.

Proposed design

The siphon will involve three 200mm HDPE pipes that are 250 m in length. The siphon will run over the existing dam structure from the Chapman Lake into Chapman Creek. The inlet will be installed at an elevation of 963 m, which is approximately 7 m below the current lake level (August 19, 2015) and will reach into the lake approximately 200 m from the existing dam. The inlet will be secured into place using a lock block and buoy. The outlet of the pipe will be located approximately 50m downstream of the existing dam at an approximate elevation of 965 m and will be secured using tie off ropes.

Proposed construction method

The installation of the siphon will involve fusing four or five pipe lengths will be fused together (60 to 75 m) for the inlet and the outlet. Due to the existing ground conditions in the wetted area of the lake (inlet) and the creek bed downstream of the dam (outlet), four or five pipe lengths will be fused together (60 to 75 m) on the exposed area of the lake bed directly adjacent to the dam and moved into place using the helicopter. For the outlet section, the helicopter will lift the discharge end of the pipe and drag it over the dam and place it in the creek at marked location. For the inlet section, the helicopter will lift the inlet end of pipe and place in a marked location. Once the inlet and outlet are in place the middle section will be fused together to connect the two ends.

Key personnel

Lead Environmental Monitor – FSCI Biological Consultants – Senior Biologist- Dave Bates, RPBio

Environmental Monitor – SCRD – Environmental Technician – Monte Staats, MLWS

Key areas of concern and mitigation strategy

Areas of Concern	Mitigation Strategy
Erosion and Sediment laden run-off	The risk of erosion and sedimentation is highest during periods of intense rainfall within active areas (e.g. construction areas). In order to mitigate sedimentation and subsequent turbidity, silt fencing and silt curtains will be on stand-by and ready to be deployed to prevent sediment from entering the lake and/or to contain sediment within the lake. Silt fencing, which requires disturbance to install, may be installed above the existing lake level along the exposed channel, however, this will be determined following a rain event if the sediment curtain proves not effective at meeting the objective of containing water with high levels of turbidity.
Fuel spill	To mitigate the impacts from a fuel spill, all machinery with hydraulics will use vegetable oil wherever possible. A spill kit will be on stand-by to contain any spills should they occur and the proper training will be provided to operators and staff. While fueling equipment, containment will be maintained by using soaker cloth under the area of where the filling is occurring. The pumps used for priming the siphons will be housed in containment boxes lined with plastic.
Human waste products	A portable toilet will be available and all human waste will be collected in the toilet.
Vegetation disturbance	The amount of vegetation disturbance will be limited to areas required for accommodation (either a trailer or a tent cabin and will be the same area that was used in the 1990's when the dam was constructed), the staging area for equipment and materials (approximately 100 m ² of area adjacent to the lake), the construction area (area on the exposed lake bed above the existing channel to the outlet), and the walking paths between all of the active areas. All personnel who will be working on site will be informed of the areas that are off limits during an orientation in order to concentrate all of the activity and foot traffic to select areas only.
Disturbing fish and wildlife	All wildlife encounters will be recorded. This will include any instances where wildlife activity is disturbed from personnel working at the site. All impacts to fish and fish habitat within the Chapman lake and in Chapman Creek will be mitigated through erosion and sediment control.
Lake bed disturbance	The exposed lake bed area on the south side of the outlet channel will be the area where most of the fusing and moving of the pipe will occur. The exposed lake bed area nearest to the high water mark consists of areas with a shallow layer of sandy loam above glacial till and bedrock. Construction activity will occur in these areas wherever possible as disturbance in these 'harder areas' will be minimal. In areas that are further from the high water mark, and typically contain aquatic grasses and softer ground conditions, 2 layers of ¾" plywood will be placed to spread out the surface area for the machine weight and to reduce track compaction.

On site presence from an environmental monitor

A qualified environmental monitor will be onsite at least every two days and will maintain communication with the project foreman on a daily basis. The lead EM will be onsite at least once a week to examine the environmental conditions. In the event that a significant environmental disturbance occurs (e.g. landslide, major sluffing along the lake bed, major fuel spill, or uncontained water with extreme levels of turbidity etc.), the lead EM will be on site as soon as possible and all works within the areas of disturbance will be stopped immediately.

Reporting

An EM report will be produced for every visit that occurs. The EM report will address the following:

- Date
- Time
- Weather
- Name of EM
- Construction activities for that day
- Environmental concerns
- Environmental impacts summary (Description of observed impacts)
- Environmental action list (description of the actions to address any impacts)
- Water quality data (turbidity and pH readings at locations above and below the work area)

Reporting structure – emergency contacts (for fuel spill, wildlife)

In the event that a significant environmental impacts occurs e.g. landslide, major sluffing along the lake bed, dam failure, major fuel spill, or uncontained water with extreme levels of turbidity etc.) BC Parks and the SCRCD will be notified immediately.

Key contacts for any impact:

Dave Bates – FSCI Biological consultants (Lead EM) – 604 740 2637

Rod Dalziel – BC Parks – Area Supervisor - 604 885 6755

Shane Walkey – SCRCD – Utilities Supervisor – 604 740 5301

Monte Staats – SCRCD – Environmental Technician – 604 741 3496 or 604 741 2649

Depending on the environmental impact, the following agencies will be contacted

Environmental Impact	Agency to contact	Phone Number
Contaminated Site	Ministry of Environment	1 800 663 7867
Dam failure	Emergency Management BC	604 586 4390
	Bill Elsner	604 885 6887 or 1-800-222-2222
Water quality impacts	SCRCD water treatment plant	604 885 6890



Ministry of
Environment

PARK USE PERMIT

LAND USE / OCCUPANCY

This Park Use Permit No. **102714** (the "Permit") is issued under the authority of the *Park Act*

(the "Park")

See "**Management Plan Schedule, Permit Area Description**" for a complete list of Parks and Protected Areas

FROM:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by the Minister responsible for the *Park Act* (the "Province") at the following address:

**Ministry of Environment
BC Parks
South Coast Region
200 - 10470 - 152nd Street
Surrey BC V3R 0Y3**

TO:

Sunshine Coast Regional District

(the "Permittee") at the following address:

**1975 Field RD
Sechelt, BC V0N 3A1**

THE PROVINCE AND THE PERMITTEE AGREE AS FOLLOWS:

ARTICLE I - GRANT OF PERMIT

- 1.01 The Province, on the terms and conditions of this Permit, grants to the Permittee permission to enter upon and use that part of the Park (the "Permit Area") described, and for the purposes described, in the Management Plan Schedule.

ARTICLE II - TERM

- 2.01 The duration of this Permit is for a term of **10 years** commencing on **February 1, 2014** (the "Commencement Date") and ending on **January 31, 2024** (the "Expiration Date"), unless cancelled, terminated or renewed in accordance with the terms and conditions of this Permit.

ARTICLE III - FEES

- 3.01 The Permittee must pay to the Province a minimum fee (the "Permit Fee") of **\$500.00 (plus applicable taxes)** prior to Commencement date and on each anniversary of the commencement date during the term of this Permit.
- 3.02 The Province may, by notice to the Permittee not less than 30 days prior to each anniversary of the Commencement Date, increase the Permit Fee to an amount solely determined by the Province at its discretion, and the Permittee must pay the increased amount.
- 3.03 The Permittee must pay interest to the Province on money payable by the Permittee and owing to the Province under this Permit, at the rate of interest prescribed by the *Financial Administration Act* in respect of money owing to the Province, which interest will be calculated from the date that the money becomes payable to the Province.

ARTICLE IV - INDEMNITY

- 4.01 The Permittee will indemnify and save harmless the Province, its servants, employees and agents against all losses, claims, damages, actions, costs and expenses that the Province, its servants, employees and agents may sustain, incur, suffer or be put to at any time arising, directly or indirectly, from any act or omission of the Permittee, its employees, agents, contractors and licensees under this Permit, except for any liability arising from any independent, negligent act of the Province.

ARTICLE V – SECURITY AND INSURANCE

- 5.01 On the Commencement Date, you will deliver to us Security in the amount of **\$0.00** which will:
- (a) guarantee the performance of your obligations under this Permit;
 - (b) be in the form required by us; and
 - (c) remain in effect until we certify, in writing, that you have fully performed your obligations under this Permit.
- 5.02 Despite section 5.01, your obligations under that section are suspended for so long as you maintain in good standing other security acceptable to us to guarantee the performance of your obligations under this Permit and all other Dispositions held by you.
- 5.03 We may use the Security for the payment of any costs and expenses incurred by us to perform any of your obligations under this Permit that are not performed by you and, if such event occurs, you will, within 30 days of that event, deliver further Security to us in an amount equal to the amount drawn down by us.
- 5.04 After we certify, in writing, that you have fully performed your obligations under this Permit, we will return to you the Security maintained under section 5.01, less all amounts drawn down by us under section 5.03.
- 5.05 You acknowledge that we may, from time to time, notify you to
- (a) change the form or amount of the Security; and
 - (b) provide and maintain another form of Security in replacement of or in addition to the Security posted by you under this Permit;
- and you will, within 60 days of receiving such notice, deliver to us written confirmation that the change has been made or the replacement or additional form of Security has been provided by you.
- 5.06 You must
- (a) without limiting your obligations or liabilities under this Permit, at your expense, effect and keep in force during the Term the following insurance with insurers licensed to do business in Canada:
 - (i) **Commercial General Liability** insurance in an amount of not less than two million dollars **\$2,000,000.00 inclusive per occurrence** insuring against liability for personal injury, bodily injury (including death) and property damage, including coverage for all accidents or occurrences on the Permit Area or any improvements. Such policy will include cross liability, liability assumed under contract, provision to provide 30 days advance notice to us of material change or cancellation, and include us as an additional insured; **See Attached Schedule**
 - (b) ensure that all insurance required to be maintained by you under this Permit is primary and does not require the sharing of any loss by any of our insurers;
 - (c) within 10 working days of the Commencement Date of this Permit, provide to us evidence of all required insurance in the form of a completed "Province of British Columbia Certificate of Insurance";
 - (d) if the required insurance policy or policies expire or are cancelled before the end of the Term of this Permit, provide within 10 working days of the cancellation or expiration, evidence of new or renewal policy or policies of all required insurance in the form of a completed "Province of British Columbia Certificate of Insurance";

- (e) notwithstanding subsections (c) or (d) above, if requested by us, provide to us certified copies of the required insurance policies to be maintained by you under this Permit.

5.07 We may, acting reasonably, from time to time, require you to

- (a) change the amount of insurance set out in subsection 5.06(a); and
- (b) provide and maintain another type or types of insurance in replacement of or in addition to the insurance previously required to be maintained by you under this Permit;

and you will, within 60 days of receiving such notice, cause the amounts and types to be changed and deliver to us a completed "Province of British Columbia Certificate of Insurance" for all insurance then required to be maintained by you under this Permit.

5.08 You shall provide, maintain, and pay for any additional insurance which you are required by law to carry, or which you consider necessary to insure risks not otherwise covered by the insurance specified in this Permit in your sole discretion.

5.09 You waive all rights of recourse against us with regard to damage to your own property.

ARTICLE VI - COVENANTS OF THE PERMITTEE

6.01 The Permittee must:

- (a) pay the Permit Fee and other money payable under this Permit when due at the address of the Province first written above or at such place as the Province may specify from time to time;
- (b) pay when due all taxes, levies, charges and assessments that relate to operations of the Permittee under this Permit;
- (c) comply with all laws, bylaws, orders, directions, ordinances and regulations of any competent governmental authority in any way affecting the Permit Area, the Park, its use and occupation or the Permittee's operations under this Permit;
- (d) advise its employees, contractors, licensees, and agents of the laws and regulations respecting provincial parks and recreation areas and the conditions of this Permit respecting conduct in the permit Area;
- (e) keep the Permit Area in a safe, clean and sanitary condition to the satisfaction of the Province and make safe, clean and sanitary any portion of the Permit Area that the Province may direct by notice in writing to the Permittee;
- (f) remove from the Permit Area and the Park all garbage, debris and effluent resulting from its use of the Park and Permit Area under this Permit, except as otherwise permitted in the Management Plan Schedule;
- (g) comply with all orders and directions made, verbally or in writing, by a park officer (as defined in the *Park Act*) relating to the Park, this Permit or the Permit Area;
- (h) not construct, erect, place, repair, maintain or alter any building, fixture, equipment, structure or improvement in the Permit Area except as may be permitted by this Permit or with the prior written consent of the Province;
- (i) take all reasonable precautions to prevent and suppress fires in the Permit Area;
- (j) not interfere with free public access through, across and upon the Permit Area, unless otherwise specified in the Management Plan Schedule;
- (k) not interfere with or disrupt the activities and operations of other Permittee's or users in the Park;
- (l) use and occupy the Permit Area only in accordance with the provisions of this Permit;
- (m) not remove, destroy, damage, disturb or exploit any natural resource (as that term is defined in the *Park Act*) or any archaeological or cultural artefact found in or on the Permit Area except as may be permitted by this Permit, and only then in accordance with the *Park Act* and all other applicable laws;
- (n) not commit or allow any wilful or voluntary waste, damage or destruction in or upon the Permit Area;

- (o) pay for or repair, as determined by the Province, any damage caused to the property of the Province by the Permittee, its employees, agents, contractors, or licensees;
- (p) upon the expiration, cancellation or termination of this Permit:
 - (i) peaceably quit and deliver up possession of the Permit Area to the Province,
 - (ii) remove all chattels and improvements of the Permittee from the Permit Area within 30 days of the expiration, cancellation or sooner termination of this Permit, unless otherwise advised in writing, by the Province,
 - (iii) deliver to the Province possession of all equipment, furnishings, fixtures, chattels and improvements owned by the Province in a state of good repair and working order, and
 - (iv) restore the Permit Area to the satisfaction of the Province;
 - (v) and to the extent necessary, this covenant will survive the expiration, cancellation or termination of this Permit; and
- (q) comply with all provisions of the schedules to this Permit.

ARTICLE VII - RIGHTS OF THE PROVINCE

- 7.01 The Province retains all rights in respect of the Park and Permit Area which are not expressly granted to the Permittee under this permit, including, without limitation:
- (a) the right at all times for the Province, its authorized representatives, employees, and agents to have unimpeded access over and along all portions of the Permit Area and to inspect any portions of the Permit Area;
 - (b) the right at all times to construct, repair, alter and maintain buildings, equipment, structures and improvements upon the Permit Area; and
 - (c) the right to grant further rights in respect of the Park and Permit Area, provided that such rights do not unreasonably impede, obstruct or compete with the rights of the Permittee under this Permit.

ARTICLE VIII - NOTICE

- 8.01 Any notice required to be given by either party to the other will be deemed to be given if it is in writing and is delivered by hand or prepaid registered mail to the address first written above or any other address that may be specified in writing by a party and a notice will be deemed to be delivered, if mailed, eight days after the time of mailing except, in the case of a postal interruption, actual receipt is required.
- 8.02 Notwithstanding section 8.01, any written notice to be given by the Province to the Permittee under this Permit will be effectively given if it is posted in a conspicuous place on the Permit Area.

ARTICLE IX - RENEWAL

- 9.01 Not later than 140 days prior to the Expiration Date, the Permittee may, by notice in writing delivered to the Province, apply to the Province for a renewal of this Permit.
- 9.02 Provided that the Permittee is not in default under this Permit and subject to the terms of the *Park Act*, the Province may renew this Permit upon the terms and conditions determined by the Province.
- 9.03 The Permittee acknowledges that nothing in this Permit obligates the Province to renew this Permit and the Province's decision in that respect is entirely within its discretion

ARTICLE X - TRANSFER

- 10.01 The Permittee must not assign, transfer, sublicense or grant any of the rights or privileges granted by this Permit without the prior written consent of, and on the terms and conditions determined by, the Province.
- 10.02 If the Permittee is a corporation then a change in the control (as that term is defined in subsection 2(3) of the *Business Corporations Act*) of the Permittee without the prior written consent of the Province is deemed to be a breach of section 10.01.

ARTICLE XI - CANCELLATION

- 11.01 In the event that
- (a) the Permittee defaults in the payment of the Permit Fee or other money payable under this Permit, and the default continues for 7 days after the giving of written notice of the default by the Province to the Permittee;
 - (b) the Permittee fails to perform or observe any of the terms or conditions of this Permit, other than the payment of money, and the failure is not remedied within a period specified by the Province;
 - (c) the Permittee has wilfully misrepresented information:
 - (i) on the application form which led to the granting of this Permit, or
 - (ii) required to be provided under the terms and conditions of this Permit;
 - (d) the Permit Area is damaged or destroyed by any cause whatsoever;
 - (e) the Park is closed by the Province;
 - (f) the Permittee files a petition in bankruptcy, is adjudged bankrupt, is petitioned into bankruptcy, makes an assignment for the benefit of its creditors, becomes insolvent or takes the benefit or protection of any statute for bankrupt or insolvent debtors;
 - (g) any of the Permittee's assets is seized in execution from the Permit Area;
 - (h) the Permittee, its employees, agents, contractors or licensees performs any act which in the opinion of the Province, affects the good standing or reputation of the Park, or adversely affects any other permit holder or park user within the Park;
- the Province may cancel this Permit immediately by written notice to the Permittee.
- 11.02 In the event that the Permittee and the Province mutually agree in writing to terminate this Permit, the parties will be released and discharged from their obligations under this Permit, except as otherwise provided in this Permit.
- 11.03 The obligation of the Permittee
- (a) to pay the Permit Fee and other money payable under this Permit; and
 - (b) to comply with Sections 4.01, 6.01(e), 6.01(o) and 6.01(p);
- will survive the expiration, cancellation or termination of this Permit.
- 11.04 The Permittee will not be entitled to any compensation from the Province, in damages or otherwise, in respect of a cancellation or termination of this Permit.

ARTICLE XII - MISCELLANEOUS

- 12.01 This Permit may be inspected by the public at such times and at such places as the Province may determine.
- 12.02 Time is of the essence in this Permit.
- 12.03 Nothing in this Permit will be considered to have been waived by the Province unless such waiver is in writing.
- 12.04 During the term of this Permit, the Permittee will be an independent contractor and not the agent, employee or partner of the Province.

- 12.05 The Province will not be liable for any loss, damage, cost or expense resulting from the destruction of or damage to the Permittee's property or a disruption of the Permittee's operations under this Permit which result from strikes, flooding or other acts of God, vandalism, or any other interference to the Permittee's operation or property.

ARTICLE XIII- INTERPRETATION

- 13.01 In this Permit, unless the context otherwise requires, the singular includes the plural and the masculine includes the feminine, a corporation and body politic.
- 13.02 The captions and headings contained in the Permit are for convenience only and are not to be construed as defining or in any way limiting the scope or intent of the provisions of this Permit.
- 13.03 In this Permit, a reference to an enactment of the Province of British Columbia or of Canada includes a reference to any subsequent enactment of like effect, and unless the context otherwise requires, all statutes referred to in this Permit are enactments of the Province of British Columbia.
- 13.04 If any part of this Permit is found to be illegal or unenforceable, that part will be considered separate and severable and the remaining parts will be enforceable to the fullest extent permitted by law.
- 13.05 If all or part of the Permit Area is in a recreation area established or continued under the *Park Act*, this Permit is deemed to be a resource use permit as that term is defined in the *Park Act*.
- 13.06 All schedules to this Permit form an integral part of this Permit.
-

IN WITNESS WHEREOF the parties have duly executed this Permit.

SIGNED and DELIVERED on behalf of the **Province** by a duly authorized representative of the Province.

[Sign]image:WordInterfaceSignatureImgObjId

Duly Authorized Representative

Jennie Aikman

Print Name

Regional Director

Print Title

[Sign]WordInterfaceCurrentDate

Date

MANAGEMENT PLAN SCHEDULE

PERMIT AREA DESCRIPTION

The Permittee is authorized to enter the Permit Area described below and outlined on the attached maps.

Permit Area Overview Map

- Tetrahedron Park
- Area adjacent to the outlet of Chapman Lake
- Area adjacent to the outlet of Edwards Lake

Copyright



Chapman Lake Permit Area

Copyright

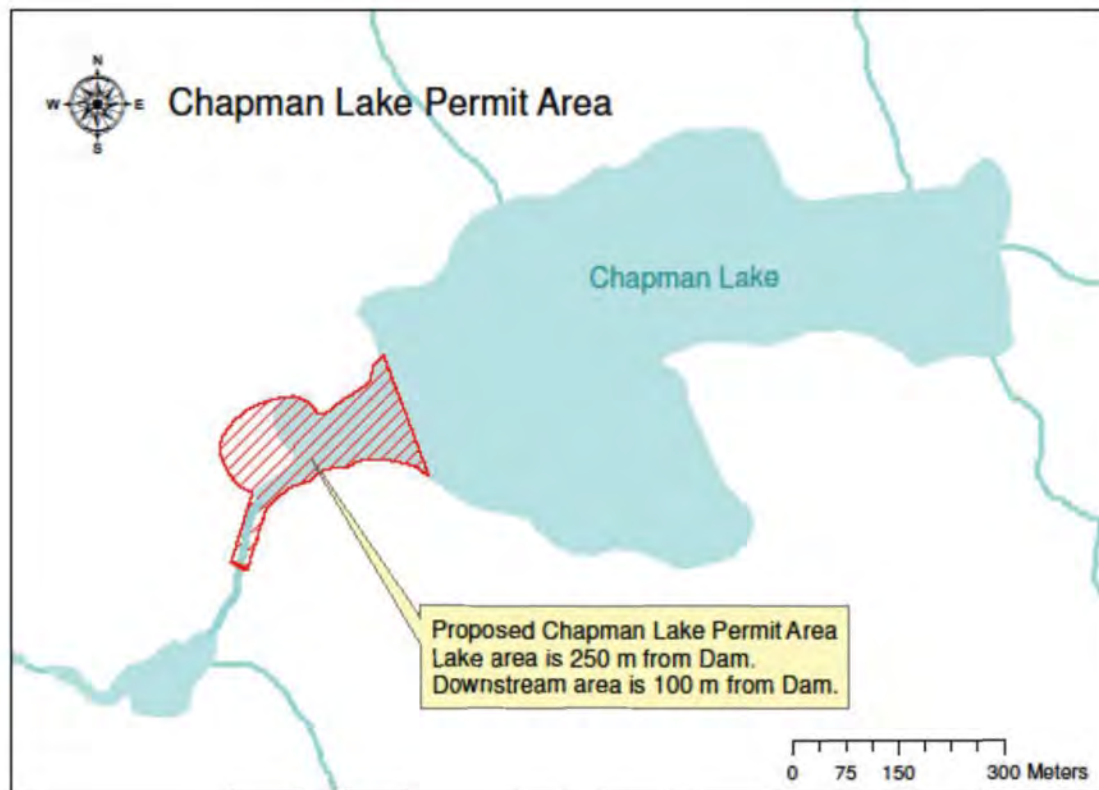
DRAFT

Edwards Lake Permit Area

Copyright

DRAFT

Temporary Chapman Lake Permit Area (valid until 06 September 2016)



FEE(s)

Protected Land: Tetrahedron Park

Activities: Water Impoundments (dams and dykes)

Purpose: Rights of way and miscellaneous land use without structures - The use of a defined area for a powerline, telephone line, pipeline or other service or utility right of way and other miscellaneous land use without structures - Company or local government. Fee charged for this purpose is for each protected land.

Fee Description: \$500 or \$60 per hectare whichever is greater

Schedule K Ref: Part 3, Column 2, Item 4

Fees:

Item	Number	Rate	Total
Minimum Fee	1	\$500.00	\$500.00
Hectares	1	\$60.00	\$60.00
Sub Total (based on Fee Description above):			\$500.00

Sub Total: \$500.00

**Minimum Fee Required:
(plus applicable taxes)** \$500.00

SPECIAL PROVISIONS

1. Purpose

This Permit is issued to the Permittee **for the purpose of maintaining water impoundment infrastructure at Chapman and Edwards Lake and helicopter pad at Chapman Lake in Tetrahedron Park.**

2. Permittee Designated Representative

The Permittee appoints the following representative to be responsible for liaison between BC Parks and the Permittee:

Name: Bryan Shoji
 Telephone: 604 885 6800
 Fax: 604 885 7909
 Email: Bryan.shoji@scrd.ca

3. BC Parks Representative(s):

Park, Protected Area or Conservancy Name	Area Supervisor	Phone	Email
Tetrahedron Park	Rod Dalziel	604-885-6755	Rod.Dalziel@gov.bc.ca

4. Conditions of Term

This permit shall be deemed valid until such time that it has expired under Article 2.01 and that the associated water licences are valid and in good standing and that activities carried out are permitted under:

- (a) the conditional water licences and;
- (b) this permit.

5. Water Regulations

All activities relating to maintaining water impoundment structures and regulating water levels must be in accordance with the *Water Act*.

6. Flight Access

- (a) The use of a helicopter for access to the structures is acceptable. The Permittee shall notify BC Parks as early as feasibly possible prior to any flights into Tetrahedron Park so that BC Parks may utilize available space or service of the helicopter for park operation purposes.
- (b) Recognizing that wildlife are sensitive to disturbance from helicopters, maintain an appropriate separation distance from animals (500 m line-of-sight is a recommended default) and take immediate action to increase separation distances if animals react to the helicopter.
- (c) If the Permittee chooses to use a helicopter company to access the structure the Permittee will cause any Person/Sub-licensee providing aviation services related to the Permittee's performance of this Permit to carry, and to provide evidence to the Province of their compliance with this requirement, Aviation Liability insurance on all aircraft operated or used in the performance of this Permit insuring against bodily injury, property damage, and passenger liability, in an amount not less than the limits of liability imposed by any *Canadian Aviation Regulation* and in any event not less than a per occurrence combined single limit of:

- (i) \$3,000,000 for aircraft up to 5 passenger seats, or
- (ii) \$3,000,000 plus \$1,000,000 for each additional passenger seat for aircraft up to 10 passenger seats, or
- (iii) \$10,000,000 for aircraft over 10 passenger seats;

and this insurance must:

- (i) include the Province and the Permittee as additional insureds;
- (ii) be endorsed to provide the Province and the Permittee with 30 days advance written notice of cancellation or material change; and
- (iii) include a cross liability clause;

7. Report Requirements

The Permittee shall provide the Province with a report, due upon the anniversary date of the Permit, describing all activities undertaken as a result of this Permit for the previous year. Please submit this report to the following address:

Ministry of Forests, Lands
and Natural Resource Operations
FrontCounter BC – Surrey
200 – 10428 153rd Street
Surrey BC V3R 1E1

Toll Free: 1-877-855-3222

Website: <http://www.frontcounterbc.gov.bc.ca/locations/index.html>

8. Safety Regulations

The Permittee shall be responsible for all WorkSafe BC regulations and staff safety program and plans for all its staff and sub-contractors utilizing the Park to conduct activities authorized by this permit.

9. Renewal

It is understood by BC Parks and the Sunshine Coast Regional District that this permit shall be renewed pending a review of the terms of this Management Plan Schedule and providing the Sunshine Coast Regional District continues to require water management and structures outlined in this permit and the conditional water licences.

10. Temporary Permit Amendment Conditions

(a) Term

- (i) The conditions of the temporary permit amendment will be valid during the period from permit approval until 2 weeks (14 days) following the expiry of the of the **"Section 8 application - 100140509 – Short Term Water Use on Chapman Lake - Approval 2003865"** on 23 August 2016. Therefore the temporary permit amendment will expire on **06 September 2016**.

- (b) All works and monitoring shall be conducted as described in BC Standards and Best Practices for Instream Works (<http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf>) (Appendix A) and should be informed by the 1999 Impact Assessment for the proposed floating pump station at Chapman Lake (Whitehead 1999) (Appendix B) and shall comply with "Section 8 Development Plan – Short Term Water Use" prepared by Sunshine Coast Regional District, dated 19 August 2015 (Appendix C) and "Emergency Water Supply at Chapman Lake" prepared by Opus DaytonKnight Consultants, dated 13 August 2015 (Appendix D) and "Environmental Monitoring Plan – Siphon System at Chapman Lake" prepared by Sunshine Coast Regional District (Appendix E).

(c) **Temporary additional infrastructure**

- (i) This will include equipment and materials required to access the additional water drawdown of Chapman Lake as permitted under the "Section 8 application - 100140509 – Short Term Water Use on Chapman Lake - Approval 2003865" which will include pipes, intakes, valves, screens, lock blocks, pumps, small dock, rowboat, ladders, containment unit (fuel, pumps and equipment) as described in the **Section 8 Development Plan (August 14, 2015)**.
- (ii) Any amendments to this plan must be approved by the Area Supervisor.

(d) **Temporary accommodation area**

- (i) The temporary accommodation will be constructed for use by the installation crew and the 24/7 onsite 2 person operator crew.
- (ii) The temporary accommodation area will include a tent, eating area, food and garbage storage and a portable toilet.
- (iii) The location of temporary accommodation area must be approved by the Area Supervisor.
- (iv) Food and garbage associated with accommodation area must be stored in bear-proof containers or otherwise protected from access by wildlife to prevent wildlife attraction. Garbage must be disposed of off-site and removed regularly to prevent odours and wildlife attraction.
- (v) The Permittee will remove human waste in portable toilet as required.
- (vi) The temporary accommodation area facilities shall be removed when no longer required for the season to the satisfaction of the Area Supervisor.

(e) **Environmental Monitor**

- (i) The Permittee shall retain a qualified Environmental Monitor to monitor Chapman Lake and Chapman Creek.
- (ii) The Environmental Monitor shall be onsite during construction phase and weekly thereafter until lake water levels have returned to levels where the siphon is no longer required and in use.
- (iii) The Environmental Monitor must have the authority to order suspension of work if necessary to prevent significant negative environmental effects from occurring.
 - i. The Environmental Monitor will contact the Area Supervisor should there be any deviation from the prescribed works, negative or substantial changes to the environment and/or park resources.
- (f) Equipment that could cause negative environmental impacts during operations, such as siphon intakes, pumps and generators, should be regularly inspected.
- (g) Ensure equipment and machinery are in good operating condition (power washed), free of leaks, excess oil, and grease.
- (h) All pumps and fuel will be contained in spill proof containment unit.
- (i) Equipment refuelling or servicing must be undertaken within the spill proof containment unit.
- (j) Ensure all hydraulic machinery uses environmentally sensitive hydraulic fluids that are non-toxic to aquatic life and that are readily or inherently biodegradable.
- (k) Keep a spill containment kit readily accessible onsite in the event of a release of a deleterious substance to the environment. Train onsite staff in its safe and proper use. Immediately report any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities to the Provincial Emergency Program 24-hour phone line at 1-800-663-3456.
- (l) The footprints associated with the areas for staging, installation and accommodation areas should all be minimized.

- (m) Foot and equipment traffic should be confined to designated lowest impact corridors or trails to minimize trampling impacts.
- (n) **Monitoring**
 - (i) As identified in the Whitehead 1999 Impact Assessment monitoring of the impacts of additional drawdown on the following values will be conducted - water quality, fish and amphibians (as indicators of lake ecology), and riparian vegetation in and around Chapman Lake. The monitoring plan will be developed to the satisfaction of BC Parks.
- (o) **Reporting**
 - (i) The Permittee will provide to BC Parks environmental monitoring reports resulting from visits by the Environmental Monitor (as identified in "Environmental Monitoring Plan – Siphon System at Chapman Lake" prepared by Sunshine Coast Regional District) on a weekly basis.
 - (ii) Additional reporting as required under condition (r) of the "Section 8 application - 100140509 – Short Term Water Use on Chapman Lake - Approval 2003865" issued on 23 August 2016 will also be provided to BC Parks on a weekly basis.
 - (iii) The Permittee will provide to BC Parks a copy of the Preliminary Field Reconnaissance for archaeology report.
- (p) **Removal and restoration**
 - (i) Permit area clean-up and equipment removal following the 2015 temporary operations shall be completed to the satisfaction of the Area Supervisor.
 - (ii) Removal of temporary additional infrastructure must be completed by **06 September 2016** to the satisfaction of the Area Supervisor.
 - (iii) Restoration of the temporary permit area must be completed to the satisfaction of the Area Supervisor.

APPENDIX A – Standards and Practices for Instream Works (attached)

APPENDIX B – Impact Assessment Report (attached)

APPENDIX C – Development Plan (attached)

APPENDIX D – Emergency Water Supply at Chapman Lake Report (attached)

APPENDIX E – Environmental Monitoring Plan (attached)

DRAFT



August 31, 2015

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
General Manager, Infrastructure Services
Sunshine Coast Regional District
1975 Field Road
Sechelt, BC V0N 3A1

Dear Mr. Shoji:

RE: Park Use Permit (PUP) #102714 amendment application

I am writing to inform you that the Park Use Permit amendment application the Sunshine Coast Regional District (SCRD) submitted on August 19, 2015 has been approved. Please carefully review the permit document including the Special Provisions required to ensure full compliance will all the permit provisions.

We understand this requested amendment to the existing Park Use Permit (#102714) is in response to an emergency situation and will enable the SCRD to meet the Regional District's community water needs and protect the fisheries values on the lower Chapman Creek; the importance of both are recognized by BC Parks. However, we emphasize that this amendment is a temporary emergency response to the extenuating circumstances the SCRD is currently experiencing. BC Parks strongly encourages the SCRD to develop a long-term solution to the water supply issue on the Sunshine Coast to avoid emergency measures like this being required in the future.

Sincerely,

Jennie Aikman
Regional Director
South Coast Region, BC Parks

Confirmation of Approval - Amendment of Park Use Permit #102714

Thursday, October 12, 2017
10:39 AM

Subject	Confirmation of Approval - Amendment of Park Use Permit #102714
From	Aikman, Jennie S ENV:EX
To	'Bryan.Shoji@scrd.ca'
Cc	'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris ENV:EX
Sent	Monday, August 31, 2015 9:20 AM
Attachments	 Letter to SCRD Conf...

Dear Bryan:

Please see the attached letter confirming approval of your park use permit amendment, which I understand you have received.

With regards,
Jennie

Jennie Aikman
 Regional Director
 South Coast Region, BC Parks
 Ministry of Environment
 Office phone: (604) 924-2227
 Cell phone: (778) 875-8494



August 31, 2015

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
General Manager, Infrastructure Services
Sunshine Coast Regional District
1975 Field Road
Sechelt, BC V0N 3A1

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We understand this requested amendment to the existing Park Use Permit (#102714) is in response to an emergency situation and will enable the SCRД to meet the Regional District's community water needs and protect the fisheries values on the lower Chapman Creek; the importance of both are recognized by BC Parks. However, we emphasize that this amendment is a temporary emergency response to the extenuating circumstances the SCRД is currently experiencing. BC Parks strongly encourages the SCRД to develop a long-term solution to the water supply issue on the Sunshine Coast to avoid emergency measures like this being required in the future.

Sincerely,

Jennie Aikman
Regional Director
South Coast Region, BC Parks

Ministry of Environment
BC Parks and Conservation Officer Service Division
South Coast Region

Mailing Address:
1610 Mount Seymour Road
North Vancouver BC V7G 2R9

Telephone: (604) 924-2200
Facsimile: (604) 924-2244
<http://www.gov.bc.ca/>
<http://www.gov.bc.ca/env/>

Page 186 of 401

Withheld pursuant to/removal as

DUPLICATE

SCRD and MFLNRO park use permit

Friday, October 13, 2017

2:34 PM

Subject	SCRD and MFLNRO park use permit
From	Monte Staats
To	FrontCounter BC FLNR:EX
Cc	Floyd, William FLNR:EX; Litke, Tony ENV:EX; Dalziel, Rod ENV:EX
Sent	Thursday, September 17, 2015 2:14 PM
Attachments	 2015-09-17 Park permi...  Chapman_ WeatherSt...  Chapman_ WeatherSt...  Chapman_ WeatherSt...  2015-09-17 Parks per...

Hi,

Please find attached the park use permit application submitted on behalf of the Sunshine Coast Regional District and Ministry of Forests Lands and Natural Resource Operations for a weather monitoring station and reestablishment of snow core survey locations in the Chapman Creek watershed situated within the Tetrahedron Provincial Park.

Attachments include:

1. PUP application
2. Part 2 – Detailed proposal
3. Maps x 3

If you have any questions please contact either myself or William Floyd.

Thanks,

Monte Staats, MLWS
 Environmental Technician
 Infrastructure Services Department
Sunshine Coast Regional District
 Tel: 604 885 6800 ext 6489
 Fax: 604 885 7909
 email: monte.staats@scrd.ca



Please consider the environment before printing this email

Part 3 – Detailed Proposal

This proposed park use permit is a joint application from the Sunshine Coast Regional District and Ministry of Forests Lands and Natural Resource Operations.

Section A – Proposed activity

a) Purpose of the land use or occupancy;

The purpose of the land use occupancy permit is to install a real time weather (Wx) station to provide data for wet weather safety shutdown guidelines, avalanche forecasting, flood forecasting, drinking water supply and to contribute to long term climate records to improve our understanding of climate change and the potential effects on the above. These data will be used in conjunction with the reestablishment of two historical snow survey courses discontinued in 2003. Installing the weather station and reestablishing the snow survey program are both listed as action items to address climate change in the Sunshine Coast Regional Districts (SCRD) Chapman Creek Source Assessment Response Plan.

b) Details of the existing uses, vegetation cover, wildlife present, water resources, geology, and historical/cultural significance of the proposed site and adjacent area;

Existing uses – There are no hiking trails that access or are near the proposed location.

Vegetation cover – The proposed site for the station is located in the BEC Mountain Hemlock zone, mm1 (windward moist maritime). Tree species include Mountain Hemlock and Amabilis fir. The location of the Wx station is in the parkland (MHmmP1), characterized by discontinuous forests with the station located in the middle of an opening. The vegetation consists of low lying shrubs (Vacc. spp. and early seral stage mountain hemlock and amabilis fir).

Wildlife present (referenced from Tetrahedron Provincial Park Master plan 1997)– Black tailed deer, mountain goat, black bear, cougar, coyote, mink, marten, river otter, bobcat, variety of rodents, Rock Ptarmigan, woodpecker, grouse, ravens, raptors and marbled murrelets., There was no obvious evidence or sign of large mammal activity at the location when surveyed on June 9, 2015.

Water resources – Chapman and Edwards Lakes are situated within the park boundary and serve as the raw water storage reservoirs for approximately 90% of the residents on the Sunshine Coast. The intent (in part) of the proposed location is to collect climate data that can inform the impacts to the water resources (i.e. Chapman and Edwards Lake). The proposed Wx station site is on a ridge and there is no perennial surface water in close proximity.

Geology – The geology of the proposed location is characterized by steep, short mountainous peaks and meadows. The geological bedrock is from the mid-Cretaceous –granodioritic (Variably foliated quartz diorite; lesser granodiorite; includes Malaspina, Howe Sound, East Sechelt and Spuzzum Plutons).

Historical and cultural significance – the Tetrahedron Park is within the traditional territories of the Sechelt Indian Band and the Squamish First Nation. The Sechelt Indian Band has classified the Chapman Creek watershed as a conservation area (A Strategic Land Plan for the *Shishálh Nation*, 2007)

c) Location and size of all proposed and current improvements (facilities/structures);

The proposed location of the weather station is on the South side of Mount Steele between the Edwards lake cabin and the Mt. Steele Cabin at an elevation of 1406 m (N49° 35'54.2" W123°36'18.5"). Two concrete bases (1.2x1.2m x0.5m) will be placed at the location to support 2 towers. Each tower will be 6m tall. One tower will have 3 m mast, with a windspeed sensor, tipping bucket, rain guage, a solar panel, snow depth sensor, solar radiation sensor and air/temperature attached to it. The other tower (to be installed in 2016), will have a 2 meter total precipitation gauge on top. In addition, a snow scale to measure snow water equivalent will be installed in 2016 (dimension of 2.4mx2.8m). The snow scale is set at ground level and measures the mass of snow. Total area covered by the towers and snow scale is approx. 10m².

There are three locations for snow surveys – One near Chapman Lake, the other near Edwards Lake and one located at the proposed Wx station. The locations of the snow course surveys are:

Chapman Lake: N49° 35'08" W123° 34'53"

Edwards Lake: N49° 35'34" W123° 37'38"

d) If applicable, details of the physical changes to the site that would be required to meet the needs of the proposal and the proposed mitigation of such changes;

Physical changes will include soil disturbance related to the concrete supports for the two towers and leveling the ground for the snow scale. Each concrete pad will be set approximately 60 cm below ground. The snow scale will require approximately 10cm deep of soil disturbance. The location is in an opening so no trees will be impacted during site preparation. In addition to the site disturbance, up to 25 L of propylene glycol (anti-freeze agent) and 25 L of denatured alcohol (antifreeze) will be disposed of on-site twice per season (depending on amount of precipitation) when the total precipitation gauge is emptied. The anti-freeze agents will be diluted with 100 to 140 L of water (from rain stored in the pipe). Propylene glycol is found in many foods and when disposed of in the soil environment has a half-life of 1-5 days due to rapid metabolization by microbes and higher organisms (Canadian Council of Ministers of the Environment, 2006). Denatured alcohol also has a rapid half-life of 1-5 days and is readily evaporated into the atmosphere. In addition, the high amount of precipitation at the site (3000 to 4000 mm) will further dilute the antifreeze. Both of these substances have acute toxicity if consumed in high amounts, however when disposed they will be diluted and rapidly bio-degraded, with minimal risk to the environment. Disposing of propylene glycol and denatured alcohol in the proposed manner is common practice for weather station maintenance and has not been shown to have detrimental impacts to local wildlife. Anti-freeze will not be stored on site, rather it will be brought in via helicopter when the pipe requires draining.

e) Construction schedule (if applicable) for proposed new permanent and/or temporary facilities;

There will be two phases of installation for the Wx station. Phase 1 will occur in the fall of 2015 and will focus on installing the first tower to support the Wx station equipment. The precipitation gauge and snow pillow will be installed in the fall of 2016. We have chosen two phases to fine tune the location of the stand-pipe and snow pillow to ensure the selected site represents snow cover in the area. This will be accomplished by visiting the site two or three times during the winter to measure variation in snow depth at the site. The objective is to have this Wx station run in perpetuity.

f) Photographs of the site and area adjacent to the proposed land use/occupancy;

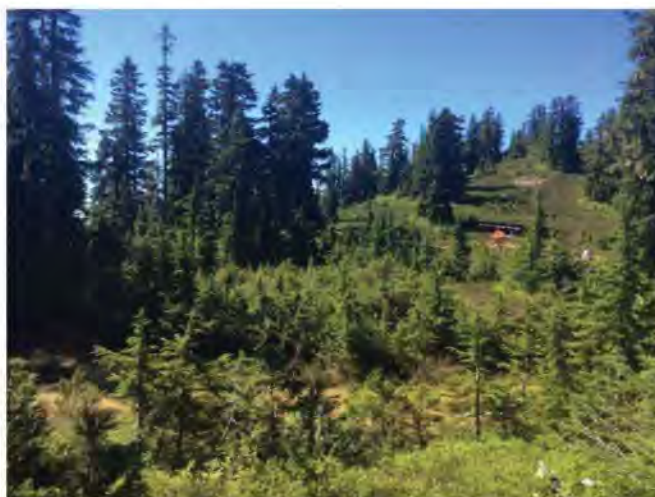


Figure 1. Location of opening for proposed weather station within the Tetrahedron Provincial Park.
The towers would be placed in open area in the foreground of the image.

g) Proposed site and adjacent area description and mapping in terms of its current legal status;

The proposed location is within a Class A park

h) Type of transportation and access route to the proposed site(s); and

The site will be accessed by helicopter or by foot. If access is by foot, a hidden branch trail will be located off of the trail between the Edwards Cabin and the Steele Cabin.

i) The initial 5 year operational plan related to this proposal.

The 5 year operational plan is outlined as follows:

Year 1 –

- Install Wx station and test /calibrate the sensors (access via helicopter)
 - o Install main tower and weather station components
- Conduct 4 to 6 visits to perform snow surveys and maintain site – (access via helicopter and/or foot)

Year 2

- Install total precipitation gauge and snow scale (access via helicopter)
- Continue maintenance of site and snow surveys; 4-6 visits. (access via helicopter and/or foot)

Year 3-5

- Continue maintenance of site and snow surveys; 4-6 visits. (access via helicopter and/or foot)

Section B – Experience in previous park use permits.

Name	Experience in previous park us permits
Monte Staats (SCRD)	Experience with other park use permits includes operating within and amending the SCRD's existing PUP (#102714) for impoundment structures on Chapman Lake and Edwards Lake, both of which make up the storage reservoirs for the main water supply on the Sunshine Coast.

Section C – Potential Impacts to the Park

a. Impacts to vegetation/wildlife

Impacts to vegetation will include soil disturbance related to the concrete supports for the two towers and leveling the ground for the snow scale. Each concrete pad will be set approximately 60 cm below ground. The snow scale will require approximately 10cm deep of soil disturbance. The location is in an opening so no trees will be impacted during site preparation. In addition to the site disturbance, up to 25 L of propylene glycol (anti-freeze agent) and 25 L of denatured alcohol (antifreeze) will be disposed of on-site twice per season (depending on amount of precipitation) when the total precipitation gauge is emptied. The anti-freeze agents will be diluted with 100 to 140 L of water (from rain stored in the pipe). Propylene glycol is found in many foods and when disposed of in the soil environment has a half-life of 1-5 days due to rapid metabolism by microbes and higher organisms (Canadian Council of Ministers of the Environment, 2006). Denatured alcohol also has a rapid half-life of 1-5 days and is readily evaporated into the atmosphere. In addition, the high amount of precipitation at the site (3000 to 4000 mm) will further dilute the antifreeze. Both of these substances have acute toxicity if consumed in high amounts, however when disposed they will be diluted and rapidly bio-degraded, with minimal risk to the environment. Disposing of propylene glycol and denatured alcohol in the proposed manner is common practice for weather station maintenance and has not been shown to have detrimental impacts to local wildlife. Anti-freeze will not be stored on site, rather it will be brought in via helicopter when the pipe requires draining.

Other than the potential to impact wildlife from the helicopter, there are no anticipated impacts to wildlife.

b. Impacts to water resources

There will be no impacts to any water resources from the weather station or the snow core surveys.

c. Impacts to aesthetics

It is expected that there will be no impact to aesthetic in the parks from this proposal. As the location of the weather station is not connected to any trails or visible from any trails, there will be no aesthetic impacts to park users. For the snow core surveys, both locations are away from hiking trails and the markings are flagging tape.

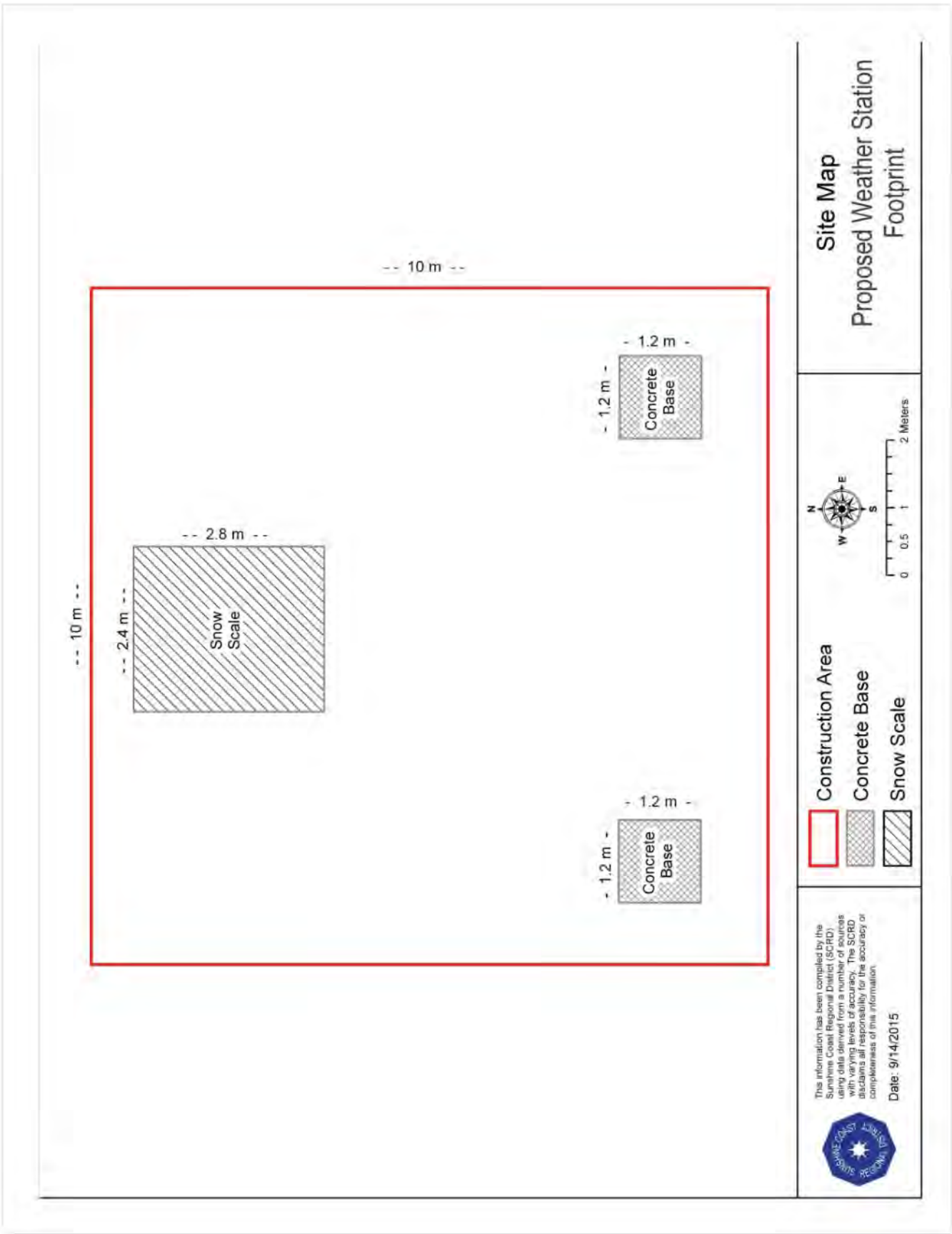
Section D – Maps

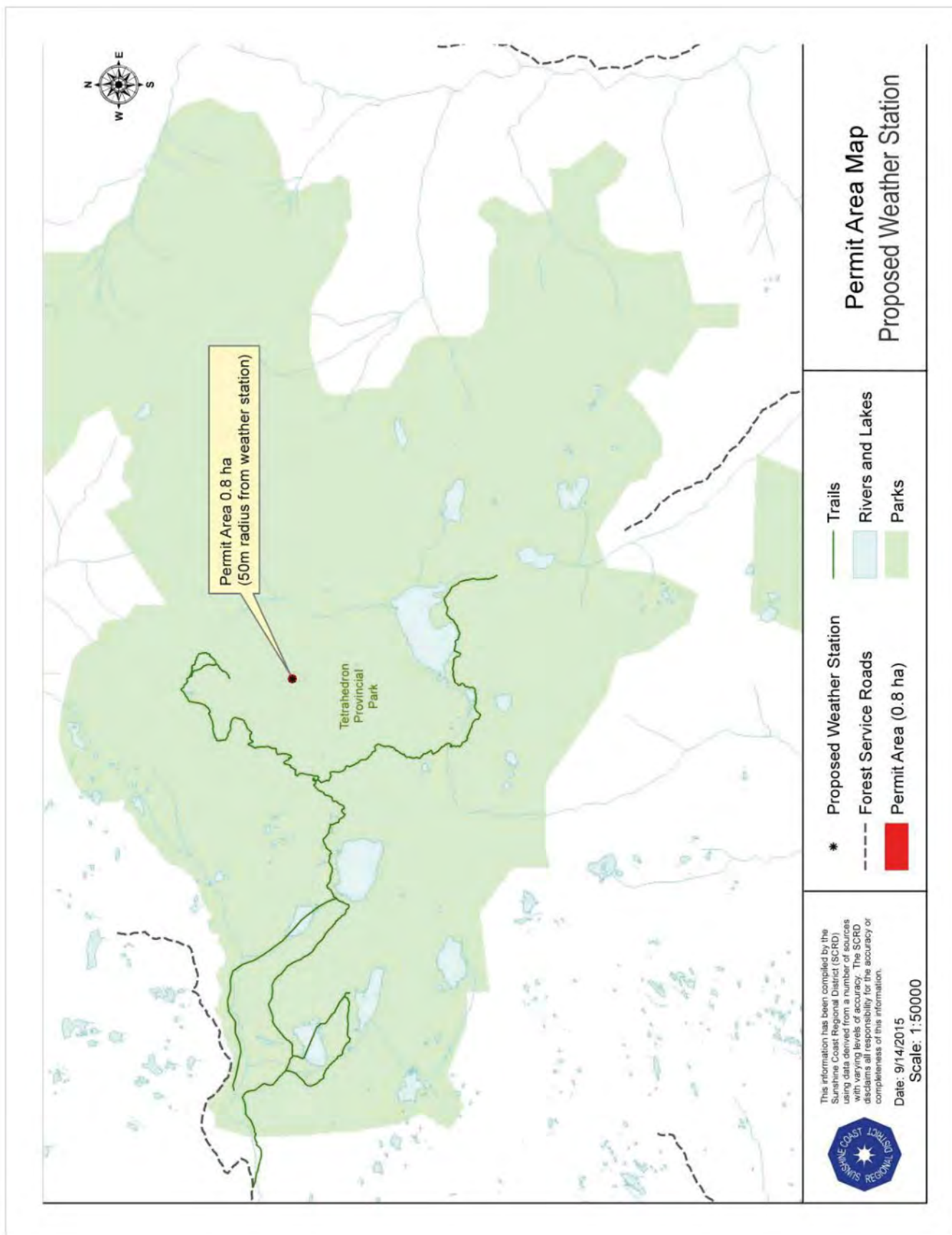
Please see attached maps.

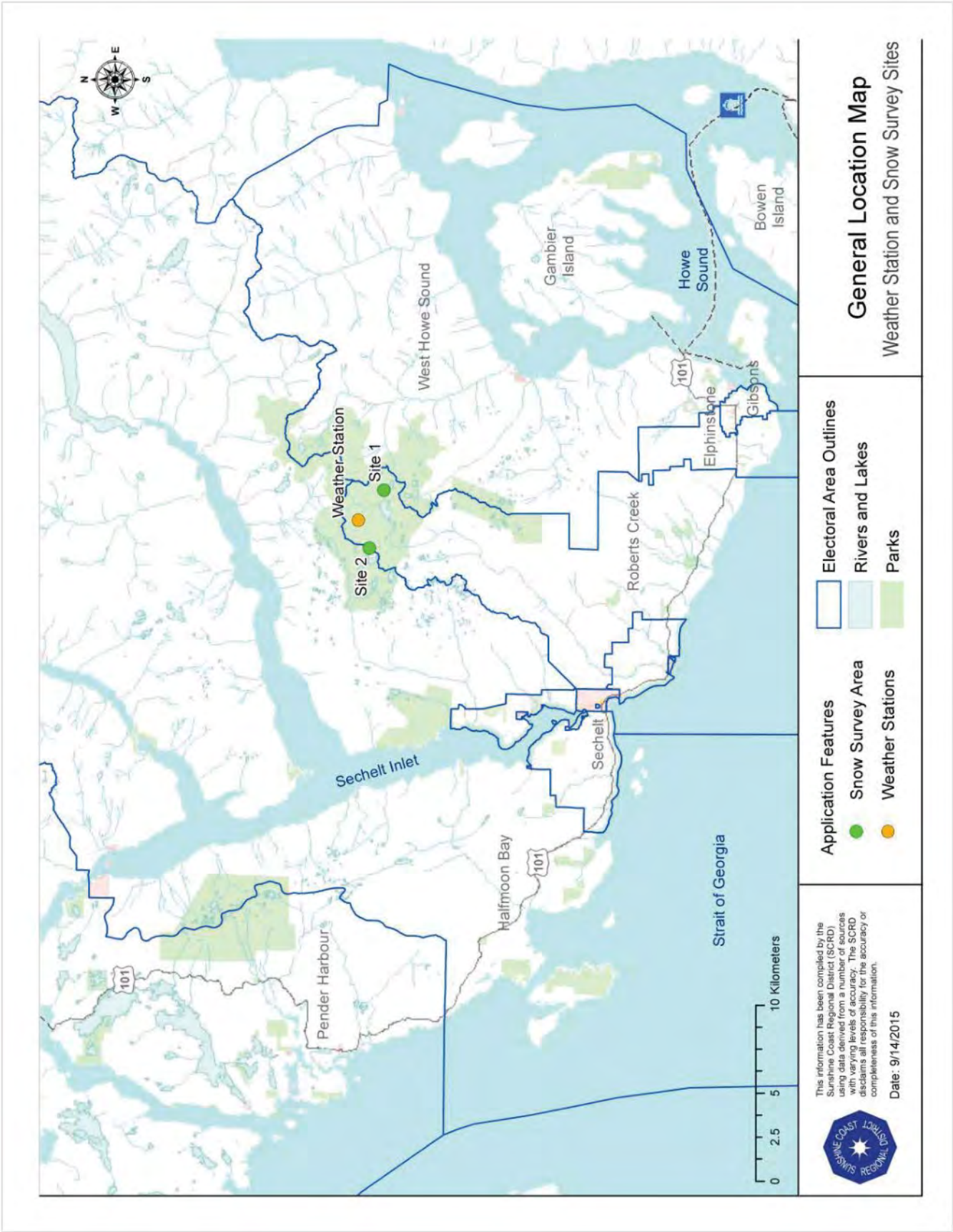
Coordinates of Weather station site location N 49°35'54.2" W 123°36'18.5"

Coordinates of Chapman Snow surveys (Site 1) – N 49°35'08" W 123°34'53"

Coordinates of Edwards snow surveys (Site 2) – N 49°35'34" W 123°37'38"









Ministry of
Environment

Land Use / Occupancy Park Use Permit Application

Only applications that are considered by BC Parks to be compatible with the conservation and recreation objectives identified for the park(s), protected area(s), conservancy(ies) and recreation area(s) (collectively 'parks') involved in the proposal will be evaluated.

All applications must include completed application form, map, attachments (as indicated below) and non-refundable application fee (plus applicable taxes). Please make payment by VISA/MasterCard/American Express or by cheque, made payable to the Minister of Finance.

INFORMATION REGARDING APPLYING FOR A PARK USE PERMIT AVAILABLE AT:
<http://www.frontcounterbc.ca/index.html>

Application Type:

☒ New

☐ Renewal (Authorization #) _____ Are you requesting changes to your authorization? ☐ Yes ☐ No

☐ Amendment (Authorization #) _____

If you are requesting changes to your authorization, please clearly indicate the changes under **Part 2: List of Proposed Changes**.

Requested Period of Use (inclusive): From 10/01/2015 to _____
mm/dd/yy mm/dd/yy

PART 1. NAME(S) AND MAILING ADDRESS

Applicant Name: Sunshine Coast Regional District in Partnership with
FULL LEGAL NAME (ENTITY): Ministry of Forests Lands and Natural Resource
Operations.

Contact Name(s): Monte Staats & William Floyd Age: 19 or over ☒ Yes ☐ No
(SCRD) (MFLNRD)

☐ BC Incorporation # _____ ☐ BC Registration # _____ ☐ Society Act # _____

☐ Individual(s) ☐ Company ☐ Registered Society or Association
☐ Federal Government ☒ Provincial Government ☒ Municipal Government/Regional District
☐ First Nation/Indian Band ☐ University, College or Museum ☐ Private School or Public School (K-12)

Legal Mailing Address: (SCRD)
1975 Field Rd

(MFLNRD) Address (if different from legal mailing add.):
2100 Labieux Rd.

City/Town: Sedbut BC

City/Town: Nanaimo BC

Province: BC Postal code: V0N 3A0

Province: BC Postal code: V9T 6E9

Contact Information: Monte Staats

Contact Information: William Floyd

Daytime Phone: 604 885 6800

Daytime Phone: 250 751 7051

Cell: S.16

Cell: _____

Fax: _____

Fax: _____

Email Address: monte.staats@scrd.ca

Email Address: william.floyd@gov.bc.ca

Preferred method of contact: ☐ Phone ☐ Cell Phone ☐ Regular mail ☒ Email

Do you hold a Crown Land Tenure: ☐ Yes ☒ No If yes, provide file number(s): _____	Have you previously held a Park Use Permit or Resource Use Permit: ☒ Yes ☐ No If yes, provide file number(s): <u>102714</u> (SLRD only)
---	--

PART 2: PURPOSE, LOCATION, AREA

Name of Park(s):

Tetrahedron Provincial Park

 Purpose (Summary of Proposed Activity:
Please select all that apply

- | | |
|---|--|
| ☐ Aquaculture and mariculture
☐ Alternative power project
☐ Grazing
☒ Meteorological or hydrological station & snow survey locations
☐ Seismic and gravity station
☐ Navigation Aid
☐ Trapping
☐ Trapline cabin
☐ Forestry Activities
☐ Mining, sand and gravel quarry
☐ Restoration/habitat enhancement project
☐ Roads and Trails
☐ Rights-of-way | ☐ Privately owned structure
☐ Cabin
☐ Private moorage
☐ Other: _____
☐ Provincially owned structure
☐ Communication sites
☐ Hydro transmission/distribution lines
☐ Pipelines (gas or oil)
☐ Telephone Booths
☐ Telephone lines
☐ Water impoundment (dam or dyke)
☐ Waterline/sewer |
|---|--|

Location of Proposed Activities:

- 1) Is the activity proposed for any frontcountry* areas? ☐ Yes ☒ No
 ****"Frontcountry" means an area within one kilometre of either side of the centreline of a park road or a highway.
- 2) Are the activities selected above the same for all parks listed on the application? ☒ Yes ☐ No
 ***If 'No', please indicate which park(s) each activity is proposed for (if not enough space, please provide an attachment):

List of Proposed Changes (Renewal and/or Amendment Application Types):

Applying for permit area to construct weather station and permit to conduct and establish snow core survey program.

PART 3: DETAILED PROPOSAL

Please attach a detailed proposal description that addresses the following (A-D):

- A. Please describe the proposed activity and provide the following information:
 - a) Purpose of the land use or occupancy;
 - b) Details of the existing uses, vegetation cover, wildlife present, water resources, geology, and historical/cultural significance of the proposed site and adjacent area;
 - c) Location and size of all proposed and current improvements (facilities/structures);
 - d) If applicable, details of the physical changes to the site that would be required to meet the needs of the proposal and the proposed mitigation of such changes;
 - e) Construction schedule (if applicable) for proposed new permanent and/or temporary facilities;
 - f) Photographs of the site and area adjacent to the proposed land use/occupancy;
 - g) Proposed site and adjacent area description and mapping in terms of its current legal status;
 - h) Type of transportation and access route to the proposed site(s); and
 - i) The initial 5 year operational plan related to this proposal.
- B. List all experiences of the applicant and/or others involved in this proposal in previous park use permits including the name, number, date and location of the permit(s).
- C. Describe expected or potential impacts on the park's environmental, cultural, recreational values changes including, but not limited to:
 - a) Habitat for vegetation and wildlife, particularly listed species or species at risk;
 - b) Any watercourses or water bodies (diversions, flows, potential siltation, etc.)
 - c) Special features such as unique geological formations;
 - d) Access to the park, and the area of the park under consideration;
 - e) aesthetics and visual values;
 - f) Cultural values, including traditional use of the area by First Nations;
 - g) Park visitors and local communities, including public health and safety and recreational use or enjoyment of the park; and
 - h) Actions that will be taken to mitigate identified impacts on the park(s).
- D. Provide maps of the proposed application area, including (if required):
 - a) General Location Map: A map(s) of the individual protected areas within the application, drawn to 1:50 000 to 1:250 000 (or larger if required to encompass boundaries of permit area) scale that illustrates at a landscape level scale the general location of the area under application, including boundaries of the proposed permit area and major landmarks, travel/access routes.
 - b) Permit Area Map: Where the land use/occupancy utilizes improvements or structures, a more detailed map(s) of the proposed permit area(s) within each park, drawn to 1:20 000 to 1:50 000 scale showing the exact proposed boundaries of the permit area, including the area (in hectares) as well as any watercourses or other identifying features (trails, facilities, roads, etc.). The permit area map must clearly identify the location of travel/access routes, and specific activity site(s). If applicable, the location and construction description of any temporary facilities or the use of existing facilities within the permit area, as well as the location and size of all proposed improvements must also be included.
 - c) Detailed Site Map: Where the operation proposes to use any existing or to construct any new improvements, a detailed site map at 1:1 000 to 1:5 000 scale must be submitted identifying the location of all improvements (buildings, structures, roads, power lines, fences, docks, etc.) in relation to the boundaries of the permit area.

PART 4: APPLICATION CERTIFICATION

All applications must be complete. Incomplete applications will not be processed until information is submitted. All of the following must be attached to or enclosed with this application form:

- **completed application form, including attached management plan;**
- **map(s) to standards detailed in application requirements;**
- **attachments as indicated below; and**
- **non-refundable application fee (plus applicable taxes).**

Upon submission of a complete application and application fee, allow 140 days to evaluate proposals. Applications requiring additional steps, or supplying insufficient information may delay evaluation. BC Parks reserves the right to deny any application. The information you provide will be subject to the *Freedom of Information and Protection of Privacy Act*. The submission of this form does not in any manner convey any rights to use or occupy land within a park, protected area, recreation area or conservancy.

- Businesses must either be licensed to do business in BC, or if licensed/incorporated outside of British Columbia (considered to be 'extra-provincial companies') must be in compliance with section 375 of the *Business Corporations Act* to operate in British Columbia.
- Extraprovincial societies must be registered under the *Society Act* in British Columbia in order to hold a park use permit or resource use permit. An extraprovincial society is a society or association formed outside British Columbia, and includes a branch of that society or association.

Additional costs and requirements:

Upon evaluation of the proposal it may be determined that additional costs and requirements must be provided prior to issuance of the permit, such as financial guarantees, or survey and inspection costs (as per Section 21 of the *Park Act*).

Commercial General Liability (CGL) insurance in the amount of \$2 million per occurrence may be required as a minimum for in parks, protected areas, conservancies and recreation areas. Applications will be assessed to determine whether additional types of insurance, such as aviation liability or marine liability, may also be required. Insurers must be licensed to do business in British Columbia or Canada.

Additional information on insurance is available at
http://www.env.gov.bc.ca/pasb/applications/process/park_use.html#insurance

THE APPLICANT HEREBY CERTIFIES THAT ALL THE INFORMATION PROVIDED IN THIS APPLICATION IS TRUE AND CORRECT.

Signature of Applicant or Authorized Signatory of Applicant: _____

Date: Sept 17, 2015

Interest will be charge on all overdue accounts, the interest rate charged is 3% + the prime lending rate of the principal banker to the Province as established each 3 month quarter starting Oct 1st.

Send completed application and proposal description to:

Ministry of Forests, Lands,
and Natural Resource Operations
FrontCounter BC

For additional information on how or where to submit your application, please call the FrontCounter BC Contact Centre or visit the website to determine an office nearest you:

Call FrontCounter BC toll free at: **1-877-855-3222**

FrontCounter BC Website: <http://www.frontcounterbc.ca/locations/index.html>

PLEASE RETAIN A COPY OF THIS APPLICATION FOR YOUR RECORDS

First Nations Consultations

Consulting with First Nations

The Province of British Columbia's legal duty to consult with First Nations arises from section 35 of the *Canadian Constitution Act*, which recognizes and affirms aboriginal and treaty rights. The duty to consult arises when the Crown has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it. Consultation with First Nations will be guided by principles of good faith, and meaningful dialogue with the intent to fully understand the nature and scope of the aboriginal right, the potential to adversely affect that aboriginal right, and address those potential impacts to an aboriginal right while balancing societal interests.

Agreements with First Nations

In many locations, the Province has agreements with First Nations. These agreements may be referred to as Collaborative Management Agreements, Reconciliation Protocol Agreements, Memorandum of Understanding or simply Working Agreements. In some cases the Province and Canada have entered into a treaty with a First Nation, which contains certain provisions regarding treaty rights within parks and protected areas. Modern treaties contain provisions to address those treaty rights in the management of parks and protected areas where a treaty right exists.

These agreements apply to a variety of parks and protected areas and conservancies and include obligations by the Province to discuss operational delivery of programs in addition to information associated with applications for park use permits with a First Nation. These discussions provide the First Nation and the Province with an opportunity to raise any questions or concerns associated with a park use permit application and/or the proposed activity in relation to aboriginal rights or title.

Important Considerations for Park Use Permit Applications

Applicants for park use permits should be aware of the Province's consultation obligations with First Nations and associated time requirements to seek meaningful consultation. There may be occasions when BC Parks may require additional, detailed information to allow for the necessary review of an application. It is important that applicants provide the necessary, detailed information as requested on the application form in order to avoid a longer than anticipated period of time to evaluate the application.

Proposed weather station in Tetrahedron Park

Friday, October 13, 2017

9:41 AM

Subject	Proposed weather station in Tetrahedron Park
From	Monte Staats
To	'Kim Wilkinson'
Cc	Bryan Shoji; Dave Crosby
Sent	Wednesday, September 23, 2015 10:41 AM
Attachments	 2015-09-17 Park permi...  Chapman_ WeatherSt...  Chapman_ WeatherSt...  Chapman_ WeatherSt...

Hi Kim,

I am emailing you to initiate consultation with the Sechelt Indian Band regarding a proposed weather station and re-establishment of a snow survey program in the Chapman watershed within the Tetrahedron Park boundary. This project is in partnership with the Ministry of Forests Lands and Natural Resource Operations, the Ministry of Environment - Environmental Sustainability and Strategic Policy Division, and BC Parks.

As these projects are proposed to occur within the Tetrahedron Provincial Park, a Park Use Permit (PUP) is required and we have already submitted this application to Front Counter BC. Included in this email is the detailed proposal that was prepared for the PUP application and a set of maps highlighting the location of the weather station and the snow survey areas.

As a background, installing the weather station and conducting the snow surveys are action items listed in the SCRD's Chapman Creek Source Assessment Response Plan (SARP). As you are likely aware, the SARP is a watershed plan that aims to address identified risks to water quality and quantity within the Chapman Creek watershed and the weather station and snow surveys are included to address the risk of climate change. The data collected through these initiatives will provide information on drinking water supply, avalanche forecasting, flood forecasting, and will contribute to long term climate records to improve our understanding of climate change.

We are targeting the install of the weather station this fall so we can start collecting data this winter. Therefore we are requesting a formal letter of support from the SIB that we can submit to BC Parks. Timing wise, we would appreciate a response at your earliest convenience.

If you have any questions or need more information please let me know.

Sincerely,

Monte Staats, MLWS
 Environmental Technician
 Infrastructure Services Department
Sunshine Coast Regional District
 Tel: 604 885 6800 ext 6489
 Fax: 604 885 7909

RE: Confirmation of Approval - Amendment of Park Use Permit 102714

Monday, October 16, 2015
1:00 PM

Subject	RE: Confirmation of Approval - Amendment of Park Use Permit
From	Dalziel, Rod ENV:EX
To	'Bryan.Shoji@scrd.ca'
Sent	Thursday, January 14, 2016 12:31 PM

Hello Bryan,

I hope you are well in the New Year. Following up to Jennie's letter BC Parks is required with SCRD representatives regarding the Regional District water supply. We would like to have an update and discussion about the SCRD's plans to develop a long-term solution to the issue on the Sunshine Coast including what options are being explored and what measures are being considered. When last I spoke with Monte before he took his leave, he mentioned that the SCRD was in the process of securing a company to investigate options. BC Parks have the Regional Director, Section Head, Conservation Specialist and myself in attendance and we hope to arrange a date in February. Please let me know if this can be arranged, with your assistance.

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environment
PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3
Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-6755
Rod.Dalziel@gov.bc.ca
Visit the BC Parks website @ bcparks.ca



BC Parks

From: Aikman, Jennie S ENV:EX
Sent: Monday, August 31, 2015 9:20 AM
To: 'Bryan.Shoji@scrd.ca'
Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris E
Subject: Confirmation of Approval - Amendment of Park Use Permit #

Dear Bryan:

Please see the attached letter confirming approval of your park use permit amendment. I hope you understand you have received.

With regards,
Jennie

Jennie Aikman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227
Cell phone: (778) 875-8494

RE: Confirmation of Approval - Amendment of Park Use Permit 102714

Monday, October 16, 2016
1:01 PM

Subject	RE: Confirmation of Approval - Amendment of Park Use Permit
From	Bryan Shoji
To	Dalziel, Rod ENV:EX
Cc	Dave Crosby; Shane Walkey
Sent	Friday, January 15, 2016 2:59 PM

Thank you for your timely email, Rod.

We just received Board approval yesterday to award the engineering services contract to the stakeholder/First Nations consultation, design, and approval processes of a lake water supply system for Chapman Lake, as per the plans discussed with you previously.

A meeting with your BC Parks team is at the top of the priority list, however, I suggest we set a date until we have finalized the consulting services contract and nailed down a meeting schedule. We hope to have all the paper work completed and project initiated within two weeks, after which we will contact you with a proposed meeting schedule. I hope this works for your team.

I anticipate that the meeting would include myself, Dave Crosby, and Shane Walkey as well as key members of the consulting team.

Please let me know if my proposal works for you and your team.

Best regards,
Bryan

Bryan Shoji, P.Eng.
General Manager, Infrastructure Service
Sunshine Coast Regional District
1975 Field Road, Sechelt, BC V0N 3A0

Phone: 604-885-6810
Fax: 604-885-7909

Follow us on Twitter at [sunshinecoast](#)
Visit us: www.scrd.ca

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]
Sent: Thursday, January 14, 2016 11:32 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

Hello Bryan,

I hope you are well in the New Year. Following up to Jennie's letter BC Parks is required to meet with SCRD representatives regarding the Regional District water supply. We would like to have an update and discussion about the SCRD's plans to develop a long-term solution to the water supply issue on the Sunshine Coast including what options are being explored and what solutions are being considered.

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Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environme
PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3
Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-
Rod.Dalziel@gov.bc.ca
Visit the BC Parks website @ bcparks.ca



From: Aikman, Jennie S ENV:EX
Sent: Monday, August 31, 2015 9:20 AM
To: 'Bryan.Shoji@scrd.ca'
Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris E
Subject: Confirmation of Approval - Amendment of Park Use Permit #

Dear Bryan:

Please see the attached letter confirming approval of your park use permit amend understand you have received.

With regards,
Jennie

Jennie Aikman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227
Cell phone: (778) 875-8494

RE: Confirmation of Approval - Amendment of Park Use Permit 102714

Monday, October 16, 2016
1:02 PM

Subject	RE: Confirmation of Approval - Amendment of Park Use Permit
From	Dalziel, Rod ENV:EX
To	'Bryan Shoji'
Cc	Dave Crosby; Shane Walkey; Aikman, Jennie S ENV:EX; Platz, Chris ENV:EX; Hirne
Sent	Monday, January 18, 2016 12:44 PM

Hello Bryan,

Thank you for your note. Glad to hear a meeting with BC Parks is at the top of the list. We will await your proposed meeting schedule in the next couple weeks.

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environment
PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3
Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-6755
Rod.Dalziel@gov.bc.ca
Visit the BC Parks website @ bcparks.ca



BC Parks

From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]
Sent: Friday, January 15, 2016 2:00 PM
To: Dalziel, Rod ENV:EX
Cc: Dave Crosby; Shane Walkey
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

Thank you for your timely email, Rod.

We just received Board approval yesterday to award the engineering services contract to the stakeholder/First Nations consultation, design, and approval processes of a lake system for Chapman Lake, as per the plans discussed with you previously.

A meeting with your BC Parks team is at the top of the priority list, however, I suggest we set a date until we have finalized the consulting services contract and nailed down the schedule. We hope to have all the paper work completed and project initiated in two weeks, after which we will contact you with a proposed meeting schedule. I'll work for your team.

I anticipate that the meeting would include myself, Dave Crosby, and Shane Walkey as well as key members of the consulting team.

Please let me know if my proposal works for you and your team.

Best regards,
Bryan

Bryan Shoji, P.Eng.

General Manager, Infrastructure Service
Sunshine Coast Regional District
1975 Field Road, Sechelt, BC V0N 3A

Phone: 604-885-6810
Fax: 604-885-7909

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Visit us: www.scrd.ca

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]
Sent: Thursday, January 14, 2016 11:32 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

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Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environment
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BC Parks

From: Aikman, Jennie S ENV:EX
Sent: Monday, August 31, 2015 9:20 AM
To: 'Bryan.Shoji@scrd.ca'
Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris E
Subject: Confirmation of Approval - Amendment of Park Use Permit #

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With regards,
Jennie

Jennie Aikman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227

FW: Chapman Lake Water Supply Project

Thursday, October 12, 2017

1:05 PM

Subject	FW: Chapman Lake Water Supply Project
From	dewynter, Brett
To	Dalziel, Rod ENV:EX
Cc	Ford, Bruce; Bryan Shoji; Takacs, Peter (Burnaby)
Sent	Wednesday, January 20, 2016 8:13 AM

Rod:

Further to my voicemail AECOM has been selected by the Regional District for the Chapman Lake water supply improvement project. We have scheduled the project kick-off meeting with the Regional District for Monday, January 25, 2016 from 10:00 – 1:00 ish. Are you available for 30 minutes shortly after lunch? Working with BC Parks is obviously a critical part of completing any approvals at the Chapman Lake site. We would like to introduce the key members of our team and briefly discuss the project. The intent is an information meeting to establish contact as we are too early in the project to be discussing details.

Please confirm your availability on Monday, January 25, 2016.

Thanks.

Brett deWynter, P.Eng.

D 250.980.7104

C 250.869.7126

From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]

Sent: Tuesday, January 19, 2016 3:48 PM

To: dewynter, Brett

Subject: FW: Confirmation of Approval - Amendment of Park Use Permit #102714

FYI, as discussed.

Bryan

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]

Sent: Monday, January 18, 2016 11:44 AM

To: Bryan Shoji <Bryan.Shoji@scrd.ca>

Cc: Dave Crosby <Dave.Crosby@scrd.ca>; Shane Walkey <Shane.Walkey@scrd.ca>; Aikman, Jennie S ENV:EX <Jennie.Aikman@gov.bc.ca>; Platz, Chris ENV:EX <Chris.Platz@gov.bc.ca>; Hirner, Joanna ENV:EX <Joanna.Hirner@gov.bc.ca>

Subject: RE: Confirmation of Approval - Amendment of Park Use Permit #102714

Hello Bryan,

Thank you for your note. Glad to hear a meeting with BC Parks is at the top of the priority list. We will await your proposed meeting schedule in the next couple weeks.

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment
 ✉: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0
 ☎: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445
 📧: Rod.Dalziel@gov.bc.ca
 Visit the BC Parks website @ bcparks.ca



From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]
Sent: Friday, January 15, 2016 2:00 PM
To: Dalziel, Rod ENV:EX
Cc: Dave Crosby; Shane Walkey
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit #102714

Thank you for your timely email, Rod.

We just received Board approval yesterday to award the engineering services contract to AECOM for the stakeholder/First Nations consultation, design, and approval processes of a lake drawdown system for Chapman Lake, as per the plans discussed with you previously.

A meeting with your BC Parks team is at the top of the priority list, however, I suggest that we not set a date until we have finalized the consulting services contract and nailed down a project schedule. We hope to have the all the paper work completed and project initiated within the next two weeks, after which we will contact you with a proposed meeting schedule. I hope this timeline works for your team.

I anticipate that the meeting would include myself, Dave Crosby, and Shane Walkey from the SCRD, as well as key members of the consulting team.

Please let me know if my proposal works for you and your team.

Best regards,
 Bryan

Bryan Shoji, P.Eng.
 General Manager, Infrastructure Services
Sunshine Coast Regional District
 1975 Field Road, Sechelt, BC V0N 3A1

Phone: 604-885-6810
 Fax: 604-885-7909

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From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]
Sent: Thursday, January 14, 2016 11:32 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit #102714

Hello Bryan,

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that the SCRD was in the process of securing a company to investigate options. BC Parks will plan to have the Regional Director, Section Head, Conservation Specialist and myself in attendance and hope to arrange a date in February. Please let me know if this can be arranged, who SCRD would have in attendance and some possible dates.

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

✉: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0

☎: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445

✉: Rod.Dalziel@gov.bc.ca

Visit the BC Parks website @ bcparks.ca



BC Parks

From: Aikman, Jennie S ENV:EX

Sent: Monday, August 31, 2015 9:20 AM

To: 'Bryan.Shoji@scrd.ca'

Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris ENV:EX

Subject: Confirmation of Approval - Amendment of Park Use Permit #102714

Dear Bryan:

Please see the attached letter confirming approval of your park use permit amendment, which I understand you have received.

With regards,

Jennie

Jennie Aikman

Regional Director

South Coast Region, BC Parks

Ministry of Environment

Office phone: (604) 924-2227

Cell phone: (778) 875-8494

RE: Chapman Lake Water Supply Proj

Monday, October 16, 2016
1:02 PM

Subject	RE: Chapman Lake Water Supply P
From	Dalziel, Rod ENV:EX
To	'dewynter, Brett'
Sent	Wednesday, January 20, 2016 10:20 AM

Hello Brett,

Thanks for making contact and the invitation. Yes I can be available on Jan 25th should we assume meeting at the Regional District office?

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environment
PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3
Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-
Rod.Dalziel@gov.bc.ca
Visit the BC Parks website @ bcparks.ca



From: dewynter, Brett [<mailto:Brett.dewynter@aecom.ca>]
Sent: Wednesday, January 20, 2016 8:13 A
To: Dalziel, Rod ENV:EX
Cc: Ford, Bruce; Bryan Shoji; Takacs, Peter (Burna
Subject: FW: Chapman Lake Water Supply Proj

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Brett deWynter, P.Eng.
D 250.980.7104
C 250.869.7126

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Sent: Tuesday, January 19, 2016 3:48 PM
To: dewynter, Brett
Subject: FW: Confirmation of Approval - Amendment of Park Use Permit

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Sent: Monday, January 18, 2016 11:44 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Cc: Dave Crosby <Dave.Crosby@scrd.ca>; Shane Walkey <Shane.Walkey@scrd.ca>
 ENV:EX <Jennie.Aikman@gov.bc.ca>; Platz, Chris ENV:EX <Chris.Platz@gov.bc.ca>;
 ENV:EX <Joanna.Hirner@gov.bc.ca>
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

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Regards,

Rod Dalziel

Sunshine Coast Area Supervisor
 BC Parks - South Coast Region - Ministry of Environment
 ☒ PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3
 ☎ Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-
 ✉ Rod.Dalziel@gov.bc.ca
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BC Parks

From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]
Sent: Friday, January 15, 2016 2:00 PM
To: Dalziel, Rod ENV:EX
Cc: Dave Crosby; Shane Walkey
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

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Bryan Shoji, P.Eng.
 General Manager, Infrastructure Service
Sunshine Coast Regional District

1975 Field Road, Sechelt, BC V0N 3A

Phone: 604-885-6810

Fax: 604-885-7909

Follow us on Twitter at [sunshinecoastr](#)

Visit us: www.scrd.ca

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc>]

Sent: Thursday, January 14, 2016 11:32 AM

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Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

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Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environme

✉ PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3

☎ Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-

✉ Rod.Dalziel@gov.bc.ca

Visit the BC Parks website @ bcparks.ca



BC Parks

From: Aikman, Jennie S ENV:EX

Sent: Monday, August 31, 2015 9:20 AM

To: 'Bryan.Shoji@scrd.ca'

Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris E

Subject: Confirmation of Approval - Amendment of Park Use Permit #

Dear Bryan:

Please see the attached letter confirming approval of your park use permit amen understand you have received.

With regards,

Jennie

Jennie Aikman

Regional Director

South Coast Region, BC Parks

Ministry of Environment

Office phone: (604) 924-2227

Cell phone: (778) 875-8494

RE: Chapman Lake Water Supply Proj

Monday, October 16, 2016

1:03 PM

Subject	RE: Chapman Lake Water Supply P
From	dewynter, Brett
To	Dalziel, Rod ENV:EX
Sent	Wednesday, January 20, 2016 10:35 AM

Rod:

We (the AECOM team) were planning to drive over to your office. I will send a separate request.

Thanks.

Brett deWynter, P.Eng.

D 250.980.7104

C 250.869.7126

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]

Sent: Wednesday, January 20, 2016 9:20 A

To: dewynter, Brett

Subject: RE: Chapman Lake Water Supply Proj

Hello Brett,

Thanks for making contact and the invitation. Yes I can be available on Jan 25th should we assume meeting at the Regional District office?

Regards,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

✉ PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3

☎ Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-6755

✉ Rod.Dalziel@gov.bc.ca

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BC Parks

From: dewynter, Brett [<mailto:Brett.dewynter@aecom.ca>]

Sent: Wednesday, January 20, 2016 8:13 A

To: Dalziel, Rod ENV:EX

Cc: Ford, Bruce; Bryan Shoji; Takacs, Peter (Burns)

Subject: FW: Chapman Lake Water Supply Proj

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Please confirm your availability on Monday, January 25, 2

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From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]

Sent: Tuesday, January 19, 2016 3:48 PM

To: dewynter, Brett

Subject: FW: Confirmation of Approval - Amendment of Park Use Permit

FYI, as discussed.

Bryan

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]

Sent: Monday, January 18, 2016 11:44 AM

To: Bryan Shoji <Bryan.Shoji@scrd.ca>

Cc: Dave Crosby <Dave.Crosby@scrd.ca>; Shane Walkey <Shane.Walkey@scrd.ca>

ENV:EX <Jennie.Aikman@gov.bc.ca>; Platz, Chris ENV:EX <Chris.Platz@gov.bc.ca>;

ENV:EX <Joanna.Hirner@gov.bc.ca>

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BC Parks

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Sent: Friday, January 15, 2016 2:00 PM

To: Dalziel, Rod ENV:EX

Cc: Dave Crosby; Shane Walkey

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I anticipate that the meeting would include myself, Dave Crosby, and Shane Walke as well as key members of the consulting team.

Please let me know if my proposal works for you and your team.

Best regards,
Bryan

Bryan Shoji, P.Eng.
General Manager, Infrastructure Service
Sunshine Coast Regional District
1975 Field Road, Sechelt, BC V0N 3A

Phone: 604-885-6810
Fax: 604-885-7909

Follow us on Twitter at [sunshinecoastrd](#)
Visit us: www.scrd.ca

From: Dalziel, Rod ENV:EX [<mailto:Rod.Dalziel@gov.bc.ca>]
Sent: Thursday, January 14, 2016 11:32 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Subject: RE: Confirmation of Approval - Amendment of Park Use Permit

Hello Bryan,

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Regards,

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Rod.Dalziel@gov.bc.ca
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From: Aikman, Jennie S ENV:EX
Sent: Monday, August 31, 2015 9:20 AM
To: 'Bryan.Shoji@scrd.ca'
Cc: 'monte.staats@scrd.ca'; Dalziel, Rod ENV:EX; Platz, Chris E
Subject: Confirmation of Approval - Amendment of Park Use Permit #

Dear Bryan:

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With regards,
Jennie

Jennie Aikman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227
Cell phone: (778) 875-8494

RE: Chapman Lake Water Supply Project

Monday, October 16, 2016

1:07 PM

Subject	RE: Chapman Lake Water Supply Project
From	Platz, Chris ENV:EX
To	Dalziel, Rod ENV:EX
Cc	Aikman, Jennie S ENV:EX; Hirner, Joanna ENV:EX; Haberl, Vicki
Sent	Monday, January 25, 2016 3:08 PM

Thank you Rod, this is what I thought might happen. Thank you for making contact forward.

Chris

From: Dalziel, Rod ENV:EX

Sent: Monday, January 25, 2016 2:06 PM

To: Platz, Chris ENV:EX

Cc: Aikman, Jennie S ENV:EX; Hirner, Joanna ENV:EX; Haberl, Vicki

Subject: FW: Chapman Lake Water Supply Project

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As I understand from the Tetrahedron Park Management Plan the Park Act does not allow for improvements to the existing watershed infrastructure as park designation changes are required, which I indicated to them.

So stay tuned for proposal and proposed meeting date.

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

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🌐 Visit the BC Parks website @ bcparks.ca

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Subject: RE: Chapman Lake Water Supply Project

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BC Parks

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Cc: Ford, Bruce; Bryan Shoji; Takacs, Peter (Burna
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ENV:EX <Jennie.Aikman@gov.bc.ca>; Platz, Chris ENV:EX <Chris.Platz@gov.bc.ca>;
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Please let me know if my proposal works for you and your team.

Best regards,
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Bryan Shoji, P.Eng.
General Manager, Infrastructure Service
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1975 Field Road, Sechelt, BC V0N 3A

Phone: 604-885-6810
Fax: 604-885-7909

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Jennie Aikman
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Office phone: (604) 924-2227
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RE: Chapman Lake Water Supply Project

Monday, October 16, 2016

1:08 PM

Subject	RE: Chapman Lake Water Supply Project
From	Dalziel, Rod ENV:EX
To	Platz, Chris ENV:EX
Cc	Aikman, Jennie S ENV:EX; Hirner, Joanna ENV:EX; Haberl, Vicki ENV:EX
Sent	Wednesday, February 3, 2016 10:36 AM

Hello Chris,

I just noticed this announcement on Facebook last night. <https://www.mailoutinteractive.com/Industry/LandingPage.aspx?id=20495> I think they might have had some initial discussions with BC Parks before making an announcement like this. Should we just wait for the meeting invite or should we do something prior to? Either way I think we will definitely need to sit down as a group to discuss this.

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

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BC Parks

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Sent: Monday, January 25, 2016 2:09 PM

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Cc: Aikman, Jennie S ENV:EX; Hirner, Joanna ENV:EX; Haberl, Vicki ENV:EX

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With regards,
Jennie

Jennie Alkman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227
Cell phone: (778) 875-8494

SCRD letter - meeting request

Friday, October 13, 2017

2:33 PM

Subject	SCRD letter - meeting request
From	Dalziel, Rod ENV:EX
To	Aikman, Jennie S ENV:EX; Platz, Chris ENV:EX
Cc	Haberl, Vicki ENV:EX; Hirner, Joanna ENV:EX
Sent	Thursday, February 25, 2016 11:36 AM
Attachments	 Letter to SCRD mee...

Hello Jennie and Chris,

As discussed on the call this morning here is a draft letter to Bryan Shoji requesting a meeting in early March for your review.

Cheers,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

📍: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0

☎: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445

✉: Rod.Dalziel@gov.bc.ca

Visit the **BC Parks** website @ bcparks.ca



BC Parks

- 1 -

DD MONTH 2016

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
General Manager, Infrastructure Services
Sunshine Coast Regional District
1975 Field Road
Sechelt, BC V0N 3A1

Dear Mr. Shoji:

RE: Park Use Permit (PUP) #102714

I am writing to follow-up on the letter I sent dated August 31st 2015 which was regarding the Sunshine Coast Regional District (SCRD) Park Use Permit #102714 amendment. As you are aware BC Parks reluctantly approved this temporary amendment due to the emergency response required to the extenuating circumstances the SCRCD experienced last summer.

BC Parks Sunshine Coast Area Supervisor, Rod Dalziel, contacted you early this year to arrange a meeting to discuss the SCRCD's plans to develop a long-term solution to the water supply issue on the Sunshine Coast. You had indicated this was an SCRCD priority although at the time you suggested to wait until you had finalized the consulting services contract.

The consultant, AECOM, hired by the SCRCD to explore additional water supply approached the BC Parks Sunshine Coast Area Supervisor and arranged a meeting on January 25th 2016 to make introductions and although they did not have a proposal or any details at the time indicated they would be exploring options for additional drawdown on Chapman Lake within Tetrahedron Provincial Park. AECOM stated they would prepare an initial proposal prior to having a meeting between BC Parks, AECOM and SCRCD later next month.

BC Parks has been made aware of the SCRCD press release "Chapman Lake Supply Expansion Project" released on February 1st 2016. There is a significant impediment to this plan as the Park Act does not currently allow for improvements to the existing watershed infrastructure in Tetrahedron Provincial Park. As well any improvements within Tetrahedron Provincial Park will require environmental assessments and comprehensive public and First Nations consultation.

BC Parks would like to arrange a meeting in early March to discuss the SCRCD's plans including the Chapman Lake proposal and what other options the SCRCD has investigated to provide multiple source water supply options outside of the Chapman watershed to provide diversity and reliability to the Regional District's water supply, as was put forward at the September 3rd 2015 SCRCD Infrastructure open meeting. BC Parks would hope to have Ministry of Forests, Lands

and Natural Resource Operations Water Authorizations staff, AECOM representatives, senior SCR D staff and Regional District elected representatives as well as BC Parks staff at the meeting. Could you please provide a project proposal so BC Parks has time to review prior to the meeting? Would you be able to provide a meeting space at the Regional District offices?

Comment [RD1]: Perhaps leave this out for now?

I look forward to discussing water supply issues for the Sunshine Coast Regional District and await a meeting date proposal.

Sincerely,



Jennie Aikman
Regional Director
South Coast Region, BC Parks

RE: SCRD letter - meeting request

Friday, October 13, 2017

1:08 PM

Subject	RE: SCRD letter - meeting request
From	Aikman, Jennie S ENV:EX
To	Dalziel, Rod ENV:EX; Platz, Chris ENV:EX
Cc	Haberl, Vicki ENV:EX; Hirner, Joanna ENV:EX
Sent	Monday, February 29, 2016 4:29 PM
Attachments	 Letter to SCRD mee...

Hi Rod,

Thank you for drafting the letter. I have reviewed it and made some edits and included a few comments.

I spoke with Ken Morrison this afternoon about our ability to issue a permit amendment for expanded infrastructure. Tetrahedron Park is designated under Schedule D, which grandfathers pre-existing uses. That being said, we will need to consider if what the SCRD is applying for is within scope of their original rights – meaning the rights that the SCRD held when the park was established. If it is within scope, we may have the ability to issue a permit amendment. If what they are contemplating clearly goes beyond the scope of their original authorisation, we will likely not be able to issue an amendment and may then need to investigate other alternatives (i.e., boundary amendment or re-designation to protected area).

I seem to recall you had a copy of the original (Lands Branch?) tenure which pre-dated their current park use permit. We will need to review that again to confirm the extent of their original rights, and may need to follow up with a legal opinion if the scope of their rights is still unclear.

Please give me a call if you wish to discuss.

Jennie

From: Dalziel, Rod ENV:EX
Sent: Thursday, February 25, 2016 11:37 AM
To: Aikman, Jennie S ENV:EX; Platz, Chris ENV:EX
Cc: Haberl, Vicki ENV:EX; Hirner, Joanna ENV:EX
Subject: SCRD letter - meeting request

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Rod Dalziel

Sunshine Coast Area Supervisor
 BC Parks - South Coast Region - Ministry of Environment
 PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0
 Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445
Rod.Dalziel@gov.bc.ca
 Visit the [BC Parks website](http://bc Parks website) @ bcparks.ca



- 1 -

DD MONTH 2016

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
 General Manager, Infrastructure Services
 Sunshine Coast Regional District
 1975 Field Road
 Sechelt, BC V0N 3A1

Dear Mr. Shoji:

RE: Park Use Permit (PUP) #102714

I am writing to follow-up on the letter I sent dated August 31st 2015 which was regarding the Sunshine Coast Regional District (SCRD) Park Use Permit #102714 amendment. As you are aware BC Parks ~~reluctantly~~ approved this temporary amendment ~~due to the~~ an emergency measure in response required to the extenuating drought circumstances the SCRCD experienced last summer.

~~BC Parks Sunshine Coast Area Supervisor~~, Rod Dalziel, Area Supervisor, contacted you early this year to arrange a meeting to discuss the SCRCD's plans to develop a long-term solution to the water supply issue on the Sunshine Coast. You had indicated this was an SCRCD priority although at the time you suggested ~~to that BC Parks~~ wait until you had finalized the consulting services contract.

The consultant, ~~AECOM~~, hired by the SCRCD, AECOM, ~~to explore additional water supply~~ approached the BC Parks Sunshine Coast Area Supervisor and arranged a meeting with Rod on January 25th 2016 to make introductions, ~~and a~~ Although they did not have a proposal or any details at the time, they indicated they would be exploring options for additional drawdown on Chapman Lake within Tetrahedron Provincial Park. AECOM stated they would prepare an initial proposal prior to having a meeting between BC Parks, AECOM and SCRCD later next month.

s.13

BC Parks has been made aware of the SCRCD press release "Chapman Lake Supply Expansion Project" released on February 1st 2016. ~~There is a significant impediment to this plan as the Park Act does not currently allow for improvements to the existing watershed infrastructure in Tetrahedron Provincial Park. As you know, Tetrahedron Park is a Class A park and therefore BC Parks will need to determine if we are even able to consider a permit amendment for expanded infrastructure or usage beyond what was originally contemplated when the park was established. As well Should we be able to consider a permit amendment, we any improvements within Tetrahedron Provincial Park will require further environmental assessments and comprehensive public and First Nations consultation.~~

BC Parks would like to arrange a meeting in early March to discuss the SCRD's plans including the Chapman Lake proposal and what other options the SCRD has investigated to provide multiple source water supply options outside of the Chapman watershed to provide diversity and reliability to the Regional District's water supply, as was put forward at the September 3rd 2015 SCRD Infrastructure open meeting. -BC Parks ~~would hope to have~~ is proposing a meeting with Ministry of Forests, Lands and Natural Resource Operations Water Authorizations staff, AECOM representatives, ~~senior SCRD staff and Regional District elected~~ representatives, as well as BC Parks staff ~~at the meeting~~. Could you please - It would be helpful if the SCRD could provide a project proposal so BC Parks has time to review prior to the meeting? - We are willing to come over and meet at the SCRD office if you are able to provide meeting space there. Would you be able to provide a meeting space at the Regional District offices?

s.13

Rod Dalziel will be contacting you to explore possible dates for a meeting.

I look forward to meeting with you ~~discussing water supply issues for the Sunshine Coast Regional District and await a meeting date proposal.~~

Sincerely,



Jennie Aikman
Regional Director
South Coast Region, BC Parks

RE: SCRD letter - meeting request

Friday, October 13, 2017

1:07 PM

Subject	RE: SCRD letter - meeting request
From	Dalziel, Rod ENV:EX
To	Aikman, Jennie S ENV:EX
Sent	Tuesday, March 1, 2016 11:09 AM
Attachments	 Letter to SCRD mee...

Hello Jennie,

I have made the edits suggested (attached) for your final review. I assume this will be sent from you?

I do not believe I have seen the Lands Branch tenure but I will dig around in the files we have here. It will be interesting to see what specifically was grandfathered in.

Cheers,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

✉: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0

☎: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445

✉: Rod.Dalziel@gov.bc.ca

Visit the BC Parks website @ bcparks.ca



BC Parks

From: Aikman, Jennie S ENV:EX

Sent: Monday, February 29, 2016 4:29 PM

To: Dalziel, Rod ENV:EX; Platz, Chris ENV:EX

Cc: Haberl, Vicki ENV:EX; Hirner, Joanna ENV:EX

Subject: RE: SCRD letter - meeting request

Hi Rod,

Thank you for drafting the letter. I have reviewed it and made some edits and included a few comments.

I spoke with Ken Morrison this afternoon about our ability to issue a permit amendment for expanded infrastructure. Tetrahedron Park is designated under Schedule D, which grandfathers pre-existing uses. That being said, we will need to consider if what the SCRD is applying for is within scope of their original rights – meaning the rights that the SCRD held when the park was established. If it is within scope, we may have the ability to issue a permit amendment. If what they are contemplating clearly goes beyond the scope of their original authorisation, we will likely not be able to issue an amendment and may then need to investigate other alternatives (i.e., boundary amendment or re-designation to protected area).

I seem to recall you had a copy of the original (Lands Branch?) tenure which pre-dated their current park use permit. We will need to review that again to confirm the extent of their original rights, and may need to follow up with a legal opinion if the scope of their rights is still unclear.

Please give me a call if you wish to discuss.

Jennie

From: Dalziel, Rod ENV:EX

Sent: Thursday, February 25, 2016 11:37 AM

To: Aikman, Jennie S ENV:EX; Platz, Chris ENV:EX

Cc: Haberl, Vicki ENV:EX; Hirner, Joanna ENV:EX

Subject: SCRD letter - meeting request

Hello Jennie and Chris,

As discussed on the call this morning here is a draft letter to Bryan Shoji requesting a meeting in early March for your review.

Cheers,

Rod Dalziel

Sunshine Coast Area Supervisor

BC Parks - South Coast Region - Ministry of Environment

📍: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0

📞: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445

✉: Rod.Dalziel@gov.bc.ca

Visit the BC Parks website @ bcparks.ca



BC Parks

- 1 -

DD MONTH 2016

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
 General Manager, Infrastructure Services
 Sunshine Coast Regional District
 1975 Field Road
 Sechelt, BC V0N 3A1

Dear Mr. Shoji:

RE: Park Use Permit (PUP) #102714

I am writing to follow-up on the letter I sent dated August 31st 2015 which was regarding the Sunshine Coast Regional District (SCRD) Park Use Permit #102714 amendment. As you are aware BC Parks approved this temporary amendment as an emergency measure in response to the extenuating drought circumstances the SCRD experienced last summer.

Rod Dalziel, Area Supervisor, contacted you early this year to arrange a meeting to discuss the SCRD's plans to develop a long-term solution to the water supply issue on the Sunshine Coast. You had indicated this was an SCRD priority although at the time you suggested that BC Parks wait until you had finalized the consulting services contract.

The consultant hired by the SCRD, AECOM, arranged a meeting with Rod on January 25th 2016 to make introductions. Although they did not have a proposal or any details at the time, they indicated they would be exploring options for additional drawdown on Chapman Lake within Tetrahedron Provincial Park. AECOM stated they would prepare an initial proposal prior to having a meeting between BC Parks, AECOM and SCRD later in February.

BC Parks has been made aware of the SCRD press release "Chapman Lake Supply Expansion Project" released on February 1st 2016. As you know, Tetrahedron Park is a Class A park and therefore BC Parks will need to determine if we are even able to consider a permit amendment for expanded infrastructure or usage beyond what was originally contemplated when the park was established. Should we be able to consider a permit amendment, we will require further environmental assessment and First Nations consultation,

BC Parks would like to arrange a meeting in early March to discuss the SCRD's plans including the Chapman Lake proposal and what other options the SCRD has investigated to provide multiple source water supply options outside of the Chapman watershed to provide diversity and reliability to the Regional District's water supply, as was put forward at the September 3rd 2015 SCRD Infrastructure open meeting. BC Parks is proposing a meeting with Ministry of Forests, Lands and Natural Resource Operations Water Authorizations staff, AECOM representatives,

SCRD representatives, as well as BC Parks staff. It would be helpful if the SCR D could provide a project proposal so BC Parks has time to review prior to the meeting. We are willing to come over and meet at the SCR D office if you are able to provide meeting space there. Rod Dalziel will be contacting you to explore possible dates for a meeting.

I look forward to meeting with you.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Jennie Aikman', with a stylized, flowing script.

Jennie Aikman
Regional Director
South Coast Region, BC Parks

Letter to the SCRD re Chapman Lake in Tetrahedron Park - Park Use Permit #102714

Friday, October 13, 2017
9:40 AM

Subject	Letter to the SCRD re Chapman Lake in Tetrahedron Park - Park Use Permit #102714
From	Aikman, Jennie S ENV:EX
To	'Bryan Shoji'
Cc	Dalziel, Rod ENV:EX; Platz, Chris ENV:EX
Sent	Tuesday, March 1, 2016 3:24 PM
Attachments	 Ltr to B Shoji - SCRD PU...

Dear Bryan,

Please see the attached letter regarding the SCRD's proposal to expand infrastructure for water withdrawal at Chapman Lake in Tetrahedron Park.

I have cc'd Rod Dalziel; Rod will be contacting you in the near future to explore dates for a meeting.

With regards,
Jennie

Jennie Aikman
Regional Director
South Coast Region, BC Parks
Ministry of Environment
Office phone: (604) 924-2227



March 1, 2016

File No: PUP #102714/Tetrahedron Park

VIA EMAIL

Bryan Shoji
General Manager, Infrastructure Services
Sunshine Coast Regional District
1975 Field Road
Sechelt, BC V0N 3A1

Dear Mr. Shoji:

RE: Park Use Permit (PUP) #102714

I am writing to follow-up on the letter I sent dated August 31st 2015 which was regarding the Sunshine Coast Regional District (SCRD) Park Use Permit #102714 amendment. As you are aware BC Parks approved this temporary amendment as an emergency measure in response to the extenuating drought circumstances the SCRD experienced last summer.

Rod Dalziel, Area Supervisor, contacted you early this year to arrange a meeting to discuss the SCRD's plans to develop a long-term solution to the water supply issue on the Sunshine Coast. You had indicated this was an SCRD priority although at the time you suggested that BC Parks wait until you had finalized the consulting services contract.

The consultant hired by the SCRD, AECOM, arranged a meeting with Rod on January 25th 2016 to make introductions. Although they did not have a proposal or any details at the time, they indicated they would be exploring options for additional drawdown on Chapman Lake within Tetrahedron Provincial Park. AECOM stated they would prepare an initial proposal prior to having a meeting between BC Parks, AECOM and SCRD later in February.

BC Parks has been made aware of the SCRD press release "Chapman Lake Supply Expansion Project" released on February 1st 2016. As you know, Tetrahedron Park is a Class A park and therefore BC Parks will need to determine if we are able to consider a permit amendment for expanded infrastructure or usage beyond what was originally contemplated when the park was established. Should we be able to consider a permit amendment, we will require further environmental assessment and First Nations consultation.

.../2

Ministry of Environment
BC Parks and Conservation Officer Service Division
South Coast Region

Mailing Address:
1610 Mont St Seymour Road
North Vancouver BC V1G 2R9

Telephone: (604) 924-2200
Facsimile: (604) 924-2244
<http://www.gov.bc.ca/>
<http://www.gov.bc.ca/env/>

-2-

BC Parks would like to arrange a meeting in early March to discuss the SCRD's plans including the Chapman Lake proposal and what other options the SCRD has investigated to provide multiple source water supply options outside of the Chapman watershed to provide diversity and reliability to the Regional District's water supply, as was put forward at the September 3rd 2015 SCRD Infrastructure open meeting. BC Parks is proposing a meeting with Ministry of Forests, Lands and Natural Resource Operations Water Authorizations staff, AECOM representatives, SCRD representatives, as well as BC Parks staff. It would be helpful if the SCRD could provide a project proposal so BC Parks has time to review prior to the meeting. We are willing to come over and meet at the SCRD office if you are able to provide meeting space there. Rod will be contacting you to explore possible dates for a meeting.

I look forward to meeting with you.

Sincerely,



Jennie Aikman
Regional Director
South Coast Region, BC Parks

RE: Chapman Lake Water Supply Improveme

Monday, October 16, 2016
1:09 PM

Subject	RE: Chapman Lake Water Supply Improveme
From	dewynter, Brett
To	Aikman, Jennie S ENV:EX
Cc	Dalziel, Rod ENV:EX; Bryan Shoji; Platz, Chris ENV:EX; Ford, Bruce; Mathé
Sent	Thursday, March 3, 2016 11:53 AM
Attachments	 BC Parks Preliminar...

Jennie:

Attached is a letter regarding the Chapman Lake project for the Sunshine Coast Regional District. We would appreciate your thoughts. Hopefully, we can meet face-to-face during on March 15th.

Look forward to your comments.

Thanks.

Brett deWynter, P.Eng.

D 250.980.7104

C 250.869.7126

From: dewynter, Brett

Sent: Wednesday, March 02, 2016 10:55 A

To: 'Jennie.Aikman@gov.bc.ca'

Cc: Rod.Dalziel@gov.bc.ca; 'Bryan Shoji'; 'Chris.Platz@gov.

Subject: Chapman Lake Water Supply Improvem

Jennie:

Further to the letter dated March 1st, 2016 submitted the Sunshine Coast Regional District (SCRD) is interested in meeting with BC Parks. We are aware of the Tetrahedron being a Class A province of the stakeholders involved with this project.

AECOM Canada has been hired by the SCRCD to provide technical support during the completion of the Chapman Lake project. We have been working for about a month on this assignment and are now somewhat familiar with the background social, political and technical challenges surrounding this project. We have public consultation and environmental and engineering people working on the project. We will share our high level thoughts and would like to meet to discuss the key aspects of this project. Are the BC Parks staff available?

Please review your schedules and let us know your thoughts regarding a meeting time and location.

Brett deWynter, P.Eng.

Water Group, Canada West

D 250.980.7104 C 250.869.7126

brett.deWynter@aecom.com

AECOM

Suite 201, 3275 Lakeshore Road

Kelowna, BC, V1W 3S9, CANADA

T 250.762.3727 F 250.762.7789

aecom.com

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AECOM
201 - 3275 Lakeshore Road 250 71
Kelowna, BC, Canada V1W 3S9 250 71
www.aecom.com

March 3, 2016

Jennie Aikman
Regional Director, South Coast Region
BC Parks and Conservation Officer Service Division – South Coast Region
1610 Mount Seymour Road
North Vancouver, BC V7G 2R9

Dear Ms. Aikman:

Project No: 60485918

Regarding: Chapman Lake Water Supply – Park Use Permit #102714 Amendment A

Introduction

The Chapman Lake water supply is operated by the Sunshine Coast Regional District (SCRD). The water supply is closely managed to ensure the environmental needs of the watershed are met while providing fish flow in Chapman Creek, water for fire protection, and serving as the primary source of potable water for the communities within the Regional District. During the summer months, significant water restrictions were imposed by the SCRD given the limited volume of water available from Chapman Lake with the existing infrastructure. To make the water supply more reliable in the future during prolonged conditions with limited precipitation the SCRD Board passed a resolution to construct modifications to the existing Chapman Lake outlet structure. The outlet structure needs to be re-configured to allow for an additional 5.0 m drawdown of Chapman Lake, for a total drawdown of 8.0 m. AECOM Canada Ltd. was hired by the SCRD on January 25, 2016 to complete the engineering, public consultation, and environmental assessment work associated with the implementation of this project. AECOM will be acting on behalf of the SCRD during the completion of the proposed modifications to Chapman Lake.

Background

There is significant background associated with this project as Chapman Creek has been a primary source of water by the surrounding community for over 50 years. In fact based on a review of the literature, part of the motivation for the creation of the Tetrahedron Provincial



With a focus on the current situation, some of the key background items are:

1. The Comprehensive Regional Water Plan, dated June 2013, was adopted by the Board. This document examined several different options for the long term supply water for the community. The conclusion in the final adopted plan was to access water from Chapman Lake with the use of a floating pump station or equivalent process to allow for the diversion of more water from Chapman Lake, resulting in 8.0 m of available drawdown.
2. During the summer of 2015, the SCRD implemented Stage 4 water restrictions on 13th given the limited volume of raw water available from Chapman Lake. Due to the seriousness of the situation, the SCRD applied for a Park Use Permit to construct that would allow for the diversion of more water from Chapman Lake. The syphon constructed since precipitation started falling the day after the permit was issued to Parks. This permit was not signed by the SCRD, but we understand it is still valid.
3. During the past couple of years further engineering review has determined that with drawdown capability of 8.0 m (i.e. an increase of 5.0 m) of Chapman Lake the SCRD be able to meet the environmental flow and community needs for the current planning horizon. Additionally, the lowest cost and most reliable method to divert additional Chapman Lake is the construction of a gravity pipe complete with a control valve. A pipe that allows for the drawdown of water up to 8.0 m in Chapman Lake will provide a reliable, low impact solution once construction is complete.
4. It is the goal of the SCRD to ensure there is the ability to direct more water from Chapman Lake during the summer of 2016 as additional severe water restrictions will not be placed by the community. Based on achieving the goals of the SCRD Board, the tentative schedule noted below in **Table 1** has been established. This schedule is based on the completion of Level 2 – Screening for the environmental permitting process.

Table 1 – Chapman Lake Water Supply, Tentative Schedule

Project Award	January 25, 2016
Environmental Permitting	January 25 – June 17, 2016
First Nation Engagement Consultation and Public Participation	January 25 – April 29, 2016
Field Reconnaissance	Week of April 11, 2016 (or earlier depending on snow melt)
Topographic Survey	Week of April 11, 2016 (or earlier depending on snow melt)



Optional Solutions

The construction of the modifications necessary to achieve the goals specified in the SCRD resolution involves many government agencies, local governments, First Nation community stakeholders. This means approval for the construction of the works can be time consuming and challenging. We have a detailed plan to meaningfully consult with affected First Nation community and encourage the participation of the public in project planning. As appropriate, we will incorporate mitigation of their issues or concerns into the design of the Chapman Lake outlet modification. Based on the work completed to date, we are offering the following solutions for consideration:

Option 1: Revise Existing Park Use Permit #102714

A Park Use Permit was provided to the SCRD on August 31, 2015 for the construction of a siphon. This permit was not signed and finalized by the SCRD since precipitation began on the Chapman Lake site the day after the permit was provided by BC Parks. To align with the plan, we would like confirmation on whether the existing Park Use Permit can be amended to the current planned scope of work. Specifically, this would include the construction of a 600 mm diameter pipe in the alignment of the existing channel complete with control valves. This pipe will function when the water level in Chapman Lake requires a drawdown of greater than 3.0 m and a maximum total drawdown depth of 8.0 m.

Option 2: File a New Park Use Permit Application and Complete a Level 2 Environmental Screening

This option is directly aligned with the proposal submitted by AECOM and accepted by the SCRD. Under this plan, a Park Use Permit application will be submitted and a Level 2 screening will be completed that allows for the construction of the permanent works described above. The challenge with this option is the project schedule given the available construction window within the Provincial Park. To complete the amount of work required prior to the winter season, it is expected that construction needs to start no later than July 4, 2016. It is our understanding that obtaining approval for a new Park Use Permit by July 4, 2016 could be a challenge.

Option 3: No Permanent Construction This Summer

The SCRD Board has stated to staff that the situation experienced during the summer of 2015 should not be repeated due to the severe impact to the community. This means that if a permit for the construction of the permanent solution cannot be obtained in time for construction this summer, a temporary by-pass siphon will need to be installed under the existing Park Use Permit (i.e. #102714). This will allow for the drawdown of Chapman Lake by more than 3.0 m if required during the dry summer months without the need to impose Stage 4 water restrictions. In parallel with this process, the application and engineering process would continue for the construction of a permanent solution.



Closure

Given the timing of this project and the cost implications of each option, we would appreciate guidance on the preferences of BC Parks regarding the approval process. We realize providing advance comment is not typical, but given the political sensitivity and the limited schedule for this project, assistance on the preferred approval approach would be appreciated. As noted by BC Parks, we would like to meet with BC Parks on March 15th at your preferred time and location.

Please contact the undersigned if you have any questions.

We look forward to receiving your comments.

Sincerely,
AECOM Canada Ltd.

A handwritten signature in blue ink, appearing to read "Brett deWynter".

Brett deWynter, P. Eng.
Project Manager

BD/yf

Copies: Sunshine Coast Regional District – Mr. Bryan Shoji
AECOM – Mr. Bruce Ford & Andrew Mathewson

March 15, 2016

Jennie Aikman

Regional Director

BC Parks and Conservation Officer Service Division

PO Box 220

Brackendale, B.C. V0N 1H0

Jennie.Aikman@gov.bc.ca

Dear Ms. Aikman:

I am writing to you about the water supply infrastructure works proposed for Chapman Lake, located within Tetrahedron Provincial Park. The Board of Directors of the Tetrahedron Outdoor Club (TOC) is extremely concerned about the ecological integrity and water levels in Chapman Lake - the core of Tetrahedron Provincial Park. We are asking that BC Parks ensures that its statutory responsibility for maintaining the environmental sustainability of Tetrahedron Park be honoured.

We understand that the Sunshine Coast Regional District (SCRD) intends to dredge a five metre deep channel in Chapman Lake, and are planning to first install a "short term" syphon system on the lake, in order to rectify their water shortfall problems. This \$700,000 syphon plan would require the construction of supportive structures and fossil fuel powered pumps which would cause noise and potential contamination in the heart of the park. The SCRД has serious water supply concerns with which we as residents sympathize. However, as stated in the approved **"Management Plan for Tetrahedron Provincial Park"**, there is a process to be followed when any water infrastructure development within the Park is proposed. Such development must first be subject to an **"impact assessment and comprehensive public consultation process"**.

The Management Plan for Tetrahedron Provincial Park is an excellent, thoroughly researched and very detailed plan, which came about through extensive consultation with local government, concerned citizens and local organizations when the park was created. I make reference to the

following key points contained in the plan as they relate to water supply and infrastructure development:

Listed under **"Plan Highlights"**, and first under **"Highest Priority Actions"**:

"Issue a Park Use Permit to the Sunshine Coast Regional District (SCRD) to allow for continued management of its existing watershed uses (Chapman/Gray Creeks) and infrastructure within the park. Where regional water supply improvements are proposed within the park, an impact assessment and comprehensive public consultation process will be developed." Page 38, emphasis added

There are many other references to water supply throughout the plan. Here are a select few:

"Conservation of water resources formed the foundation of all land use debate in the Tetrahedron. BC Parks must adopt a similar objective for managing natural and recreational resources within the park." Management Plan Background Document, page 22

"A considerable amount of interagency and public discussion originated through a public planning process which preceded park establishment." Appendix C Terms of Reference, page 47

"Preserving the Chapman/ Gray Creek Watersheds as the major source of potable water for Sunshine Coast residents is of primary concern." Appendix C, Terms of Reference, page 48

"...the importance of protecting these freshwater supply areas from impairment must remain a foremost objective." Management Plan Background Document, page 14

and finally, the overall guiding **"Vision Statement"**:

"The management plan for Tetrahedron Provincial Park will ensure a high level of water quality and quantity for residents of the Sunshine Coast, while preserving the integrity of the

park's natural, cultural and diverse ecosystems, maintaining its educational and spiritual values, and providing limited backcountry recreational experiences."

It is clear that BC Parks is mandated to play a key role with respect to water supply and infrastructure maintenance and development within Tetrahedron Provincial Park. We ask that BC Parks ensure that any changes to Chapman Lake and surrounding areas, beyond temporary syphoning, be subject to: a) a rigorous environmental impact study commissioned by BC Parks and b) a full public hearing process.

As BC Parks has legal jurisdiction and is the statutory decision maker for the park, we ask that a full environmental impact analysis and a thorough public hearing process be conducted before permanent changes are made to Tetrahedron Provincial Park. Thank you for considering our request and please do not hesitate to contact us at your earliest convenience.

Yours truly,

s.22

on behalf of the Board of Directors,

President, Tetrahedron Outdoor Club

Box 545 Gibsons, B.C. V0N 1V0

s.22

cc Rod Dalziel rod.dalziel@gov.bc.ca

From: [Bryan Shoji](#)
To: [Coupar, Meghan FLNR:EX](#)
Cc: [Dave Crosby](#); "[dewynter, Brett](#)"
Subject: RE: Tracking #342040 / Authorization #102714 Sunshine Coast Regional District - Amendment Permit
Date: Wednesday, April 6, 2016 4:42:43 PM
Attachments: [Tracking #342040 SCRD - Request for Final Requirements \(Draft Amendment....pdf\)](#)

Hi Meghan

Further to our March 16, 2016, meeting with BC Parks staff, and as originally requested in your attached August 28, 2015, email, please accept this email as confirmation that the SCRD accepts the terms and conditions of the Draft Amendment Permit (Tracking #342040 / Authorization #102714).

It is understood that we will be submitting a new PUP Amendment application for the long term improvements that are currently being discussed.

Best regards,
Bryan

Bryan Shoji, P.Eng.
General Manager, Infrastructure Services
Sunshine Coast Regional District
1975 Field Road, Sechelt, BC V0N 3A1

Phone: 604-885-6810
Fax: 604-885-7909

Follow us on Twitter at [sunshinecoastrd](#)
Visit us: www.scrd.ca

From: Coupar, Meghan FLNR:EX [mailto:Meghan.Coupar@gov.bc.ca]
Sent: Friday, January 29, 2016 11:35 AM
To: Bryan Shoji <Bryan.Shoji@scrd.ca>
Subject: RE: Tracking #342040 / Authorization #102714 Sunshine Coast Regional District - Amendment Permit

Hello Bryan,

I have reviewed SCRD file and checked my emails and it appears we hadn't received written agreement to the terms and conditions of the Draft Amendment Permit that was emailed to you and Monte Staats back in August 2015 (attached).

We will need written approval before the Draft Permit can be signed by the Regional Director of Parks and the Final Permit can be issued.

If you have any questions or concerns please let me know.

Thank you,

Meghan Coupar

Parks Permit Clerk

FrontCounter BC - South Coast Regional Office

South Coast, Haida Gwaii/South Island Sections

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Toll Free: 1-877-855-3222

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From: Bryan Shoji [<mailto:Bryan.Shoji@scrd.ca>]

Sent: Wednesday, January 27, 2016 1:25 PM

To: Coupar, Meghan FLNR:EX

Subject: Tracking #342040 / Authorization #102714 Sunshine Coast Regional District - Amendment Permit

Good afternoon, Meghan.

Sorry to bother you with this request, but would it be possible to have the digital copy of the final Amended Parks Use Permit, that incorporates the siphon water supply system for Tetrahedron Park, resent to us? We can only locate the draft Amended Parks Use Permit in our records system (it has the DRAFT watermark on each page).

Thank you,

Bryan

Bryan Shoji, P.Eng.

General Manager, Infrastructure Services

Sunshine Coast Regional District

1975 Field Road, Sechelt, BC V0N 3A1

Phone: 604-885-6810

Fax: 604-885-7909

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Visit us: www.scrd.ca

From: [Coupar, Meghan FLNR:EX](#)
To: ["monte.staats@scrd.ca"; "bryan.shoji@scrd.ca"](#)
Cc: [Aikman, Jennie S ENV:EX](#); [Dalziel, Rod ENV:EX](#); [Platz, Chris ENV:EX](#)
Subject: Tracking #342040 Sunshine Coast Regional District - Request for Final Requirements (Draft Amendment Permit)
Date: Friday, August 28, 2015 9:35:00 AM
Attachments: [T #342040 Sunshine Coast Regional District - Draft Amendment Permit.pdf](#)
[Appendix A - Standards and Practices for Instream Works.pdf](#)
[Appendix B - Impact Assessment Report.pdf](#)
[Appendix C - Development Plan.pdf](#)
[Appendix D - Emergency Water Supply at Chapman Lake Report.pdf](#)
[Appendix E - Environmental Monitoring Plan.pdf](#)

Permit: Tracking #342040 / Authorization #102714
Permittee: **Sunshine Coast Regional District**
Park: Tetrahedron Park
Purpose: Amendment – Land Use Occupancy
Term: February 1, 2014 to January 31, 2024

Hello Monte and Bryan,

Please find enclosed a **DRAFT** copy of Sunshine Coast Regional District's Amendment Park Use Permit for the term of February 1, 2014 to January 31, 2024 authorizing Water Impoundments (dams and dykes) within the above noted park.

Please carefully review the **DRAFT** copy of the Amendment Permit and confirm the terms and conditions of use in the above noted park. If revisions are required for this permit, please notify me, a FrontCounter BC office or the Area Supervisor as your request will need to be forwarded to the Regional Office for review and the Regional Director's approval. Revisions made by you to the **DRAFT** copy of the Amendment Permit document will not be included in the final copy of the permit.

In order to issue Sunshine Coast Regional District's Amendment Permit, we require the following item to be submitted:

- **Written agreement (return email) of the terms and conditions of the Draft Amendment Permit.**

Once we have received your approval that no changes are required to the Special Provisions and the above items, we will issue your permit and send you a final copy signed by the Regional Director. Your permit is not valid until you have received a final copy of the permit document. No activity authorized under this permit may take place without a valid permit.

If you have any questions or concerns regarding the above, you can contact me directly or call the FrontCounter BC Contact Centre, toll free at 1-877-855-3222 for assistance. If you

would like to come into a FrontCounter BC office, the following link will provide you with a list of office locations nearest you: www.frontcounterbc.ca/locations.

Thank you,

Meghan Coupar

Parks Permit Clerk

FrontCounter BC - South Coast Regional Office

South Coast, Haida Gwaii/South Island Sections

Tel: (604) 586-4439 Fax: (604) 586-4434

Toll Free: 1-877-855-3222

Our Vision: Economic prosperity and environmental sustainability

How Did We Do?

Clients of FrontCounter BC are invited to take our [customer satisfaction survey](#). We'd appreciate your input.

Or visit us at: www.frontcounterbc.gov.bc.ca

RE: Chapman Lake Water Supply Improvement - BC Pa

Monday, October 16, 2016
1:14 PM

Subject	RE: Chapman Lake Water Supply Improvement - BC Parks M
From	dewynter, Brett
To	Platz, Chris ENV:EX; Bryan Shoji; Mathewson, Andrew; Ford, Bruce; Aikman, Jennie S ENV:EX; Hirner, Jr Rod ENV:EX
Cc	Dave Crosby (Dave.Crosby@scrd.ca); Shane Walkey (Shane.Walkey@s
Sent	Thursday, April 7, 2016 11:06 AM
Attachments	 60485918 Chapman ...  60485918 - Chapman ...  SCRD parkuse_l...  2016-04-06- Chapman-...

All:

Further to our meeting planned for tomorrow we offer the following comments and disci

1. It was discussed that the temporary permit issued last summer needs to be signed-off and be completed and an original signed copy hand delivered tomorrow.
2. The preferred plan is to complete the construction of the proposed works at Chapman Lak support the installation of the diversion of water to a total depth of 8.0 m. To support the preliminary design drawing provided during the March 16, 2016 meeting a DRAFT Park Use and the supporting documentation has been prepared. These DRAFT document are attach
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Once the background documents are reviewed and discussed we are hoping to reach consensu to advance the project.

Let us know if you have any further comments, otherwise we look forward to the meeting pla
Thanks.

Brett deWynter, P.Eng.

D 250.980.7104

C 250.869.7126

-----Original Appointment-----

From: Platz, Chris ENV:EX [mailto:Chris.Platz@gov.bc

Sent: Wednesday, April 06, 2016 8:02 AM

To: Platz, Chris ENV:EX; Bryan Shoji; Mathewson, Andrew; Ford, Bruce; dewynter, Brett; Aikm Hirner, Joanna ENV:EX

Subject: Chapman Lake Water Supply Improvement - BC Parks I

When: Friday, April 08, 2016 10:30 AM-12:00 PM (UTC-08:00) Pacific Time (US

Where: ENV R North Van. 1610 Mount Seymour Road Main Floor N. Van (seats 10)

Good morning,

I am canvassing for agenda topics. Please send me your items and I will formulate an agenda for

Chris

Hi all,

As discussed during our first meeting I am looking to book a follow-up meeting in early April; if

this date works and if there is anyone else you would like invited to the meeting.

I will call for agenda items a few days ahead of the meeting but if you have any items now please

Chris

Sunshine Coast Conservation Association
PO Box 1969, Sechelt, BC V0N 3A4



April 22, 2016

Jennie Aikman
Regional Director
BC Parks and Conservation Officer Service Division
PO Box 220, Brackendale, BC
V0N 1H0

Dear Ms. Aikman,

We are writing to you in regards to the water supply infrastructure plan being proposed for Chapman Lake in the Sunshine Coast Regional District (SCRD). This lake, the chief source of coastal water supply, is located within the Tetrahedron Provincial Park. This is a cherished park in our area, especially as we are under-represented in terms of protected area (3% of our forest district compared to over 12% in the province as a whole).

In our discussions with the contractor (Aecom) which is carrying out the study on behalf of the SCRd, we understand that they are using the very old Whitehead report done in 1999. We feel that relying on a 17-year-old environmental report for such a critical project will not meet proper environmental and impact assessment requirements regarding the proposed dredging project. We therefore call upon BC Parks to carry out an updated assessment in the area before such a project is allowed to proceed.

The Sunshine Coast Conservation Association has been active in this community for close to twenty years and has been concerned about water issues and the drinking watershed over that time. We have made presentations to the SCRd about ways to diversify the water supply, currently heavily weighted toward Chapman Creek, a drinking watershed which has suffered from over-logging. Conservation is a key strategy but we have also suggested looking at aquifers in the region to expand the water supply.

We are committed to preserving this priceless asset for both human and wildlife needs which is why we are calling for a thorough assessment. On behalf of our many members and community organizations we respectfully ask for a response to our request.

Thank you and sincere regards,

Rick Carton and Gayle Neilson
Co-Chairs
Sunshine Coast Conservation Association

FW: Chapman Lake Water Supply Improvement - BC Parks Meeting

Thursday, October 12, 2017
12:59 PM

Subject	FW: Chapman Lake Water Supply Improvement - BC Parks Meeting
From	Dalziel, Rod ENV:EX
To	Lunn, Iain C FLNR:EX
Sent	Wednesday, April 27, 2016 3:06 PM
Attachments	 60485918 Chapman ...  60485918 - Chapman ...  SCRD parkuse_la...  2016-04-06- Chapman-...

Hello Iain,

As requested attached are the project documents provided by AECOM. Brett dewynter would be the main contact with AECOM representing the SCRD. BC Parks is having a quick update meeting in N.Van on Friday morning 10:30. SCRD board chair Garry Nohr is meeting with ADM Standen on May 5th at 3:30.

Cheers,

Rod Dalziel

Sunshine Coast Area Supervisor
BC Parks - South Coast Region - Ministry of Environment
📍: PO Box 950, 6451 Sechelt Inlet Road, Sechelt, BC V0N 3A0
☎: Desk (604) 885-6755 Mobile (604) 741-1967 Fax (604) 885-2445
✉: Rod.Dalziel@gov.bc.ca
Visit the **BC Parks** website @ bcparks.ca



From: dewynter, Brett [<mailto:Brett.dewynter@aecom.com>]

Sent: Thursday, April 7, 2016 11:07 AM

To: Platz, Chris ENV:EX; Bryan Shoji; Mathewson, Andrew; Ford, Bruce; Aikman, Jennie S ENV:EX; Hirner, Joanna ENV:EX; Dalziel, Rod ENV:EX

Cc: Dave Crosby (Dave.Crosby@scrd.ca); Shane Walkey (Shane.Walkey@scrd.ca)

Subject: RE: Chapman Lake Water Supply Improvement - BC Parks Meeting

All:

Further to our meeting planned for tomorrow we offer the following comments and discussion items:

1. It was discussed that the temporary permit issued last summer needs to be signed-off and finalized. This will be completed and an original signed copy hand delivered tomorrow.
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4. The need for stakeholder consultation was discussed to meet the obligations of the BC Parks process. These efforts have been ongoing. The background documents are provided to summarize the consultation efforts completed to date with a summary of some of the key issues. A couple specific areas that we would like to discuss are:
 - a. what specific areas of interest we should explore further in order to fulfil BC Parks First Nations and Public Participation requirements / expectations for a "comprehensive public consultation process" mentioned in the Tetrahedron Park Management Plan.
 - b. Other groups to consult / encourage participation.
5. BC Parks was going to investigate their files and documents to determine if the planned scope of work at Chapman Lake could be completed with an amendment. The results of this investigation will be shared with the project team.

Once the background documents are reviewed and discussed we are hoping to reach consensus regarding the plan to advance the project.

Let us know if you have any further comments, otherwise we look forward to the meeting planned for tomorrow. Thanks.

Brett deWynter, P.Eng.

D 250.980.7104

C 250.869.7126

-----Original Appointment-----

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Where: ENV R North Van. 1610 Mount Seymour Road Main Fl RM N. Van (seats 10-20) ENV:EX

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Chris

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I will call for agenda items a few days ahead of the meeting but if you have any items now please send them along.

Chris

Page 255 of 401 to/à Page 257 of 401

Withheld pursuant to/removed as

s.13; s.16

Page 258 of 401

Withheld pursuant to/removed as

s.16; s.13

Page 259 of 401 to/à Page 265 of 401

Withheld pursuant to/removed as

s.13; s.16



Ministry of
Environment

Land Use / Occupancy Park Use Permit Application

Only applications that are considered by BC Parks to be compatible with the conservation and recreation objectives identified for the park(s), protected area(s), conservancy(ies) and recreation area(s) (collectively 'parks') involved in the proposal will be evaluated.

All applications must include completed application form, map, attachments (as indicated below) and non-refundable application fee (plus applicable taxes). Please make payment by VISA/MasterCard/American Express or by cheque, made payable to the Minister of Finance.

INFORMATION REGARDING APPLYING FOR A PARK USE PERMIT AVAILABLE AT:

<http://www.frontcounterbc.ca/index.html>

Application Type:

☐ New

☐ Renewal (Authorization #) _____ Are you requesting changes to your authorization? ☐ Yes ☐ No

☒ Amendment (Authorization #) 102714

If you are requesting changes to your authorization, please clearly indicate the changes under **Part 2: List of Proposed Changes**.

Requested Period of Use (inclusive): From July 1, 2016 to January 31, 2024
mm/dd/yy mm/dd/yy

PART 1. NAME(S) AND MAILING ADDRESS

Applicant Name:

FULL LEGAL NAME (ENTITY):

Sunshine Coast Regional District

Contact Name(s): Bryan Shoji Age: 19 or over ☒ Yes ☐ No

☐ BC Incorporation # _____ ☐ BC Registration # _____ ☐ Society Act # _____

☐ Individual(s) ☐ Company ☐ Registered Society or Association
☐ Federal Government ☐ Provincial Government ☒ Municipal Government/Regional District
☐ First Nation/Indian Band ☐ University, College or Museum ☐ Private School or Public School (K-12)

Legal Mailing Address:

1975 Field Rd

City/Town: Sechelt

Province: BC Postal code: V0N 3A1

Contact Information:

Daytime Phone: 604-885-6810

Cell: _____

Fax: 604-885-7909

Email Address: bryan.shoji@scrd.ca

Billing Address (if different from legal mailing add.):

City/Town: _____

Province: _____ Postal code: _____

Contact Information:

Daytime Phone: _____

Cell: _____

Fax: _____

Email Address: _____

Preferred method of contact: ☒ Phone ☐ Cell Phone ☐ Regular mail ☒ Email

Do you hold a Crown Land Tenure: ☐ Yes ☐ No If yes, provide file number(s): _____ _____	Have you previously held a Park Use Permit or Resource Use Permit: ☒ Yes ☐ No If yes, provide file number(s): _____ _____
---	--

PART 2: PURPOSE, LOCATION, AREA

Name of Park(s): **Tetrahedron Provincial Park**

Requesting temporary use for construction including installation of a 210 m long, 1200 mm intake pipe and flow control structures and area for construction worker camp, see attached for details.

Purpose (Summary of Proposed Activity:
Please select all that apply

- ☐ Aquaculture and mariculture
- ☐ Alternative power project
- ☐ Grazing
- ☐ Meteorological or hydrological station
- ☐ Seismic and gravity station
- ☐ Navigation Aid
- ☐ Trapping
 - ☐ Trapline cabin
- ☐ Forestry Activities
- ☐ Mining, sand and gravel quarry
- ☐ Restoration/habitat enhancement project
- ☐ Roads and Trails
- ☐ Rights-of-way

- ☐ Privately owned structure
 - ☐ Cabin
 - ☐ Private moorage
 - ☐ Other: _____
- ☐ Provincially owned structure
- ☐ Communication sites
- ☐ Hydro transmission/distribution lines
- ☐ Pipelines (gas or oil)
- ☐ Telephone Booths
- ☐ Telephone lines
- ☐ Water impoundment (dam or dyke)
- ☒ Waterline/sewer

Location of Proposed Activities:

- 1) Is the activity proposed for any frontcountry* areas? ☐ Yes ☒ No
 ****"Frontcountry" means an area within one kilometre of either side of the centreline of a park road or a highway.
- 2) Are the activities selected above the same for all parks listed on the application? ☒ Yes ☐ No
 ***If 'No', please indicate which park(s) each activity is proposed for (if not enough space, please provide an attachment):

List of Proposed Changes (Renewal and/or Amendment Application Types):

Installation of a gravity fed water withdrawal system to access additional water from Chapman Lake to provide water to the SCRD system during drought conditions (see Part 3 for details)

PART 3: DETAILED PROPOSAL

Please attach a detailed proposal description that addresses the following (A-D):

- A.** Please describe the proposed activity and provide the following information:
 - a) Purpose of the land use or occupancy;
 - b) Details of the existing uses, vegetation cover, wildlife present, water resources, geology, and historical/cultural significance of the proposed site and adjacent area;
 - c) Location and size of all proposed and current improvements (facilities/structures);
 - d) If applicable, details of the physical changes to the site that would be required to meet the needs of the proposal and the proposed mitigation of such changes;
 - e) Construction schedule (if applicable) for proposed new permanent and/or temporary facilities;
 - f) Photographs of the site and area adjacent to the proposed land use/occupancy;
 - g) Proposed site and adjacent area description and mapping in terms of its current legal status;
 - h) Type of transportation and access route to the proposed site(s); and
 - i) The initial 5 year operational plan related to this proposal.
- B.** List all experiences of the applicant and/or others involved in this proposal in previous park use permits including the name, number, date and location of the permit(s).
- C.** Describe expected or potential impacts on the park's environmental, cultural, recreational values changes including, but not limited to:
 - a) Habitat for vegetation and wildlife, particularly listed species or species at risk;
 - b) Any watercourses or water bodies (diversions, flows, potential siltation, etc.);
 - c) Special features such as unique geological formations;
 - d) Access to the park, and the area of the park under consideration;
 - e) aesthetics and visual values;
 - f) Cultural values, including traditional use of the area by First Nations;
 - g) Park visitors and local communities, including public health and safety and recreational use or enjoyment of the park; and
 - h) Actions that will be taken to mitigate identified impacts on the park(s).
- D.** Provide maps of the proposed application area, including (if required):
 - a) General Location Map: A map(s) of the individual protected areas within the application, drawn to 1:50 000 to 1:250 000 (or larger if required to encompass boundaries of permit area) scale that illustrates at a landscape level scale the general location of the area under application, including boundaries of the proposed permit area and major landmarks, travel/access routes.
 - b) Permit Area Map: Where the land use/occupancy utilizes improvements or structures, a more detailed map(s) of the proposed permit area(s) within each park, drawn to 1:20 000 to 1:50 000 scale showing the exact proposed boundaries of the permit area, including the area (in hectares) as well as any watercourses or other identifying features (trails, facilities, roads, etc.). The permit area map must clearly identify the location of travel/access routes, and specific activity site(s). If applicable, the location and construction description of any temporary facilities or the use of existing facilities within the permit area, as well as the location and size of all proposed improvements must also be included.
 - c) Detailed Site Map: Where the operation proposes to use any existing or to construct any new improvements, a detailed site map at 1:1 000 to 1:5 000 scale must be submitted identifying the location of all improvements (buildings, structures, roads, power lines, fences, docks, etc.) in relation to the boundaries of the permit area.

PART 4: APPLICATION CERTIFICATION

All applications must be complete. Incomplete applications will not be processed until information is submitted. All of the following must be attached to or enclosed with this application form:

- **completed application form, including attached management plan;**
- **map(s) to standards detailed in application requirements;**
- **attachments as indicated below; and**
- **non-refundable application fee (plus applicable taxes).**

Upon submission of a complete application and application fee, allow 140 days to evaluate proposals. Applications requiring additional steps, or supplying insufficient information may delay evaluation. BC Parks reserves the right to deny any application. The information you provide will be subject to the *Freedom of Information and Protection of Privacy Act*. The submission of this form does not in any manner convey any rights to use or occupy land within a park, protected area, recreation area or conservancy.

- Businesses must either be licensed to do business in BC, or if licensed/incorporated outside of British Columbia (considered to be 'extra-provincial companies') must be in compliance with section 375 of the *Business Corporations Act* to operate in British Columbia.
- Extraprovincial societies must be registered under the *Society Act* in British Columbia in order to hold a park use permit or resource use permit. An extraprovincial society is a society or association formed outside British Columbia, and includes a branch of that society or association.

Additional costs and requirements:

Upon evaluation of the proposal it may be determined that additional costs and requirements must be provided prior to issuance of the permit, such as financial guarantees, or survey and inspection costs (as per Section 21 of the *Park Act*).

Commercial General Liability (CGL) insurance in the amount of \$2 million per occurrence may be required as a minimum for in parks, protected areas, conservancies and recreation areas. Applications will be assessed to determine whether additional types of insurance, such as aviation liability or marine liability, may also be required. Insurers must be licensed to do business in British Columbia or Canada.

Additional information on insurance is available at

http://www.env.gov.bc.ca/pasb/applications/process/park_use.html#insurance

THE APPLICANT HEREBY CERTIFIES THAT ALL THE INFORMATION PROVIDED IN THIS APPLICATION IS TRUE AND CORRECT.

Signature of Applicant or Authorized Signatory of Applicant: _____

Date: _____

Interest will be charge on all overdue accounts, the interest rate charged is 3% + the prime lending rate of the principal banker to the Province as established each 3 month quarter starting Oct 1st.

Send completed application and proposal description to:

Ministry of Forests, Lands,
and Natural Resource Operations
FrontCounter BC

For additional information on how or where to submit your application, please call the FrontCounter BC Contact Centre or visit the website to determine an office nearest you:

Call FrontCounter BC toll free at: **1-877-855-3222**

FrontCounter BC Website: <http://www.frontcounterbc.ca/locations/index.html>

PLEASE RETAIN A COPY OF THIS APPLICATION FOR YOUR RECORDS

First Nations Consultations

Consulting with First Nations

The Province of British Columbia's legal duty to consult with First Nations arises from section 35 of the *Canadian Constitution Act*, which recognizes and affirms aboriginal and treaty rights. The duty to consult arises when the Crown has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it. Consultation with First Nations will be guided by principles of good faith, and meaningful dialogue with the intent to fully understand the nature and scope of the aboriginal right, the potential to adversely affect that aboriginal right, and address those potential impacts to an aboriginal right while balancing societal interests.

Agreements with First Nations

In many locations, the Province has agreements with First Nations. These agreements may be referred to as Collaborative Management Agreements, Reconciliation Protocol Agreements, Memorandum of Understanding or simply Working Agreements. In some cases the Province and Canada have entered into a treaty with a First Nation, which contains certain provisions regarding treaty rights within parks and protected areas. Modern treaties contain provisions to address those treaty rights in the management of parks and protected areas where a treaty right exists.

These agreements apply to a variety of parks and protected areas and conservancies and include obligations by the Province to discuss operational delivery of programs in addition to information associated with applications for park use permits with a First Nation. These discussions provide the First Nation and the Province with an opportunity to raise any questions or concerns associated with a park use permit application and/or the proposed activity in relation to aboriginal rights or title.

Important Considerations for Park Use Permit Applications

Applicants for park use permits should be aware of the Province's consultation obligations with First Nations and associated time requirements to seek meaningful consultation. There may be occasions when BC Parks may require additional, detailed information to allow for the necessary review of an application. It is important that applicants provide the necessary, detailed information as requested on the application form in order to avoid a longer than anticipated period of time to evaluate the application.

Sunshine Coast Regional District

**Land Use / Occupancy Park Use Permit
Application for Amendment. Part 3: Detailed
Proposal**

Prepared by:

AECOM

3292 Production Way, Floor 4
Burnaby, BC, Canada V5A 4R4
www.aecom.com

604 444 6400 tel
604 294 8597 fax

Project Number:

60485918

Date:

April, 2016

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("Consultant") for the benefit of the client ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by Consultant represent Consultant's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since Consultant has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, Consultant, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by Consultant and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

AECOM: 2012-01-06
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2016-04-05-ChapmanLakePark-Use-Permit-Ap-00485018_Bst

Distribution List

# of Hard Copies	PDF Required	Association / Company Name

Revision Log

Revision #	Revised By	Date	Issue / Revision Description
A	David Huebert	8 March 2016	Initial Review

AECOM Signatures

Report Prepared By:

Melissa Mukai, R.P.Bio.
Biologist

Report Reviewed By:

Bruce S. Ford, MRM, R.P.Bio.
Senior Environmental Biologist

Executive Summary

<to be completed>

DRAFT

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Appendix B.	Wildlife Sensitive Species List

1. Introduction

The summer of 2015 was exceptionally dry, and resulted in the imposition of Stage 4 water restrictions in the Sunshine Coast Regional District (SCRD) through the fall of 2015. To alleviate the acute water shortage, the SCRД was granted approval for Short Term Use of Water by the Province, permitting a maximum diversion of an additional 1 million m³ of water from the Chapman Lake. Water restrictions were lifted in mid-September after a few days of rain refilled Chapman Lake. After water use restrictions were lifted, the SCRД Board approved a plan to upgrade the water supply infrastructure by installing a permanent gravity fed system that would be capable of accessing the additional 1 million m³ of water. At the SCRД Board's September 10, 2015 meeting the Board also approved the following Drought Mitigation Option:

THAT the General Manager Infrastructure Services' report dated August 25, 2015 titled Drought Mitigation Options be received; AND THAT the SCRД move forward with the design and approval process for the Deepen Channel option, recognizing that the system will only be utilized during periods of drought and until the long term source development projects specified in the Comprehensive Regional Water Plan are constructed;

AND FURTHER THAT the design, engineering and environmental impact assessment of the Deepen Channel option be presented to the Board for consideration.

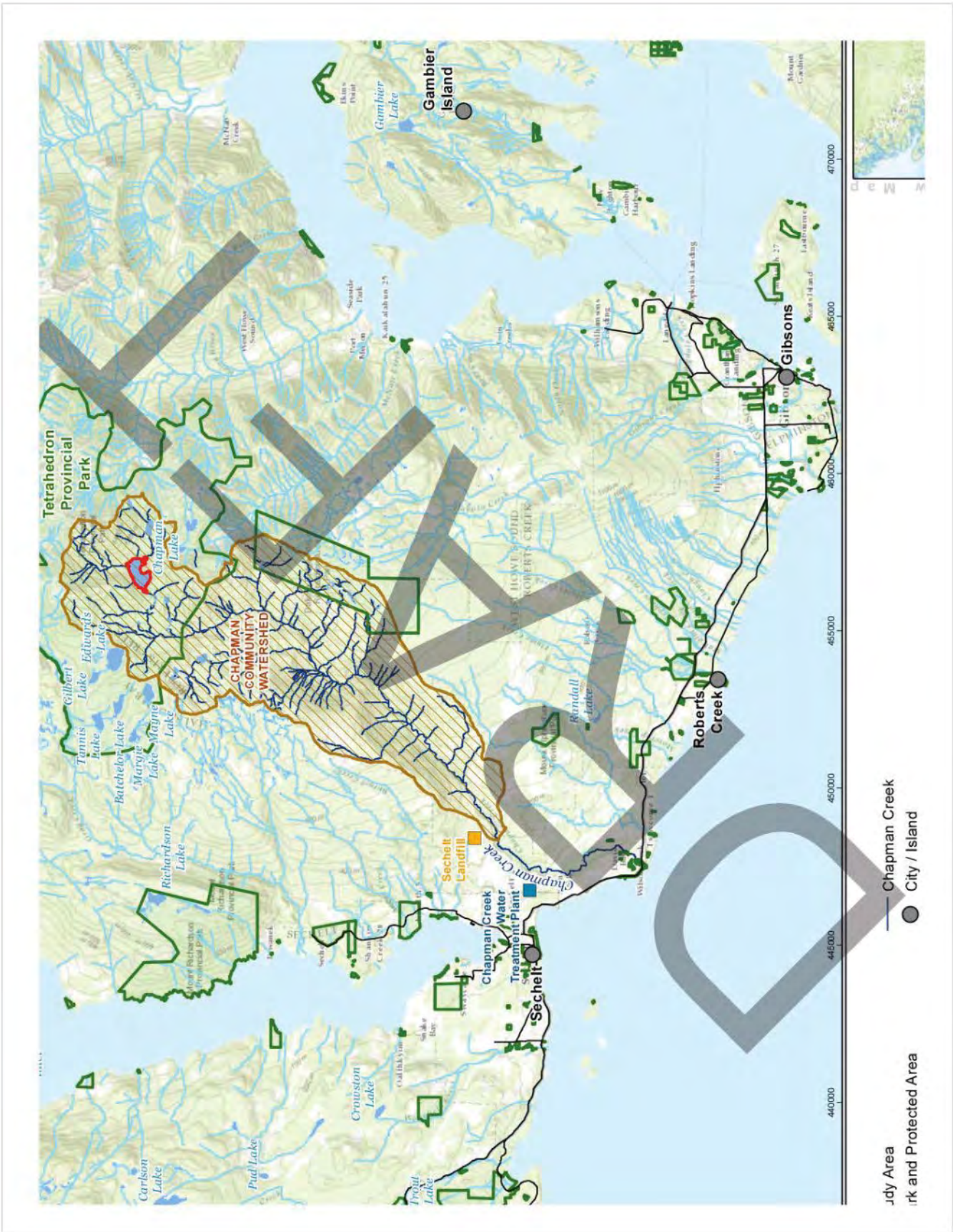
The Board committed to use the additional water from Chapman Lake only during periods of drought and other long term solutions would be investigated to meet the water demand for the growing population on the Sunshine Coast.

AECOM Canada Ltd. was hired by the SCRД to complete the engineering, public consultation, and environmental assessment work associated with the implementation of the Project. AECOM will be acting on behalf of the SCRД during the completion of the proposed modifications to the regional water supply.

This environmental review of the project has been based on previous studies conducted in the Chapman Lake watershed. In particular, the report *"Impact Assessment, Sunshine Coast's Proposed Water Storage Project (Floating Pump Station) on Chapman Lake, in Tetrahedron Provincial Park"*, prepared by Whitehead Environmental Consultants in 1999 was used extensively. The Whitehead report investigated the environmental effects of drawing down Chapman Lake for a total of 8 m which is the same effect of the current project proposed by the SCRД.

1.1 Overview of SCRД Water Supply

The SCRД Water System supplies potable water to approximately 10,000 Sunshine Coast service connections between Gibsons and Secret Cove (Figure 1). The water source is Chapman Creek and surrounding watershed, which includes two headwater alpine lake reservoirs. The primary reservoir is Chapman Lake, which flows into Chapman Creek, and which is controlled and operated by the SCRД with a concrete dam and valve located on the west side of the lake (Figure 1). The existing dam on Chapman Lake is three (3) metres high and when the water levels are high the water release is uncontrolled over top of the dam. When water levels drop below the dam crest a sluice gate at the bottom of the structure is used to control the release of water from the lake. The sluice gate can be operated remotely from Regional District offices through a SCADA system. The amount of accessible water that can be released annually from Chapman Lake is currently limited to a maximum of approximately 906,600 m³ by water licence No. C050724, and due to the configuration of the outlet channel and control infrastructure. Release of the maximum amount of stored water results in a drawdown in Chapman Lake of approximately 3 m. Photographs in Appendix 1 show the area of the existing dam, the outlet channel and immediately downstream in Chapman Creek.



During a typical year, water stored behind the dam is allowed to overflow naturally until the water level drops below the dam crest and there is a need to supplement the flows to Chapman Creek, at which time the dam is opened to release stored water from the reservoir. Flow in Chapman Creek is required to maintain minimum regulated flow rates (Whitehead 1999), and to supply the SCRD Water Treatment Plant, which is located on Chapman Creek approximately 14 km downstream from Chapman Lake.

Chapman Lake and the upper Chapman Creek watershed are located in Tetrahedron Provincial Park (Figure 1) a Class A park. These areas are protected under the *Park Act* and subject to conditions of the park's management plan (MELP, 1997 in Triton 2006). The lake is also in the traditional territory of the shishálh Nation (formerly Sechelt Indian Band; Figure 1). The SCRD license for water storage in Chapman Lake pre-dates the creation of Tetrahedron Provincial Park, and once the park was established, the park management plan (BC Parks 1997) allowed for the continued use of the lake as a community water supply for the SCRD. The current water control structures are permitted under an existing Park Use Permit and Water Licence. There is also a temporary Park Use Permit and temporary short-term Water Use Permit in place for a temporary siphon system (both of which expire in August 2016).

The SCRD is in the process of implementing a water metering program throughout the Regional District and will be charging users for water usage. This program is expected to be in operation by 2018 and is predicted to reduce the existing demand by 25% (Opus DaytonKnight Consultants 2013). This overall reduction also has the potential to reduce the drawdown in Chapman Lake under drought conditions by delaying the time for water levels to reach the -3 m level and reducing the rate of withdrawal once the water level is at -3 m.

1.1.1 Watershed Administration

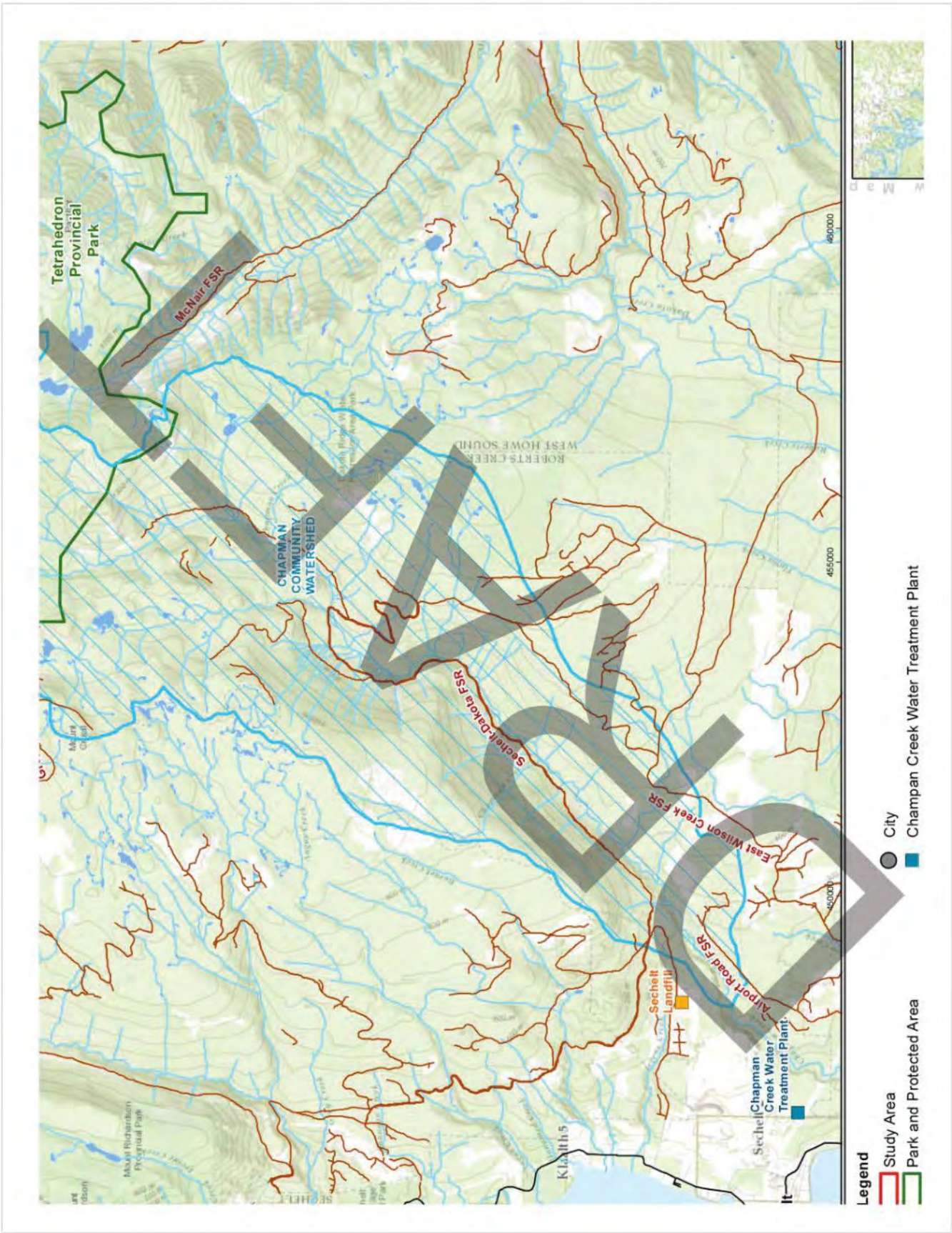
The Chapman Creek watershed intersects with the Coast Forest Region and the Sunshine Coast Forest District, the Sunshine Coast Timber Supply Area, and Tree Farm Licence Area 39 (MOF, 2005 in Triton 2006). The watershed falls under the jurisdiction of the Vancouver Coastal Health Authority North Shore/Coast Garibaldi region, responsible for overseeing drinking water quality for the SCRD.

The upper portions of the watershed (above 800 m elevation) are located within Tetrahedron Provincial Park (Figure 1). The middle portions of the watershed are mostly provincial Crown land. The lower portions of the watershed above the intake are also mainly Crown land, with five private legal parcels (District Lot 2461, 2463, 2462, 7613 and 3374).

The watershed is also located within the Chapman Landscape Unit, which is managed under the Chapman Landscape Unit Plan (MSRM, 2002 in Triton 2006). This plan specifies Old Growth Management Areas in which timber harvesting and road construction cannot occur unless no other practicable options exist, in which case there is a provision for replacement of these areas. There are at least seven OGMA's within the assessment area.

1.1.2 Access Description

The main access points into the lower watershed include the Sechelt-Dakota FSR, the Airport Road FSR and the East Wilson Creek FSR (Figure 2). Access roads within the watershed are gravel and vary in width (1 or 2 lanes) and accessibility. Since 2001 a number of access roads in the lower and mid-portions of the watershed have been deactivated and rehabilitated.



Access to the lakes and cabins in the upper watershed (Tetrahedron Provincial Park) is via West Main Road to Gray Creek Mainline, which is located within the Gray Creek watershed and provides foot access to the upper Chapman Creek watershed from the west. Access routes used for recreational purposes to the upper watershed and Tetrahedron Provincial Park include (Access Management Plan, IWMP kground report, 1998 in Triton 2006) McNair FSR and Gray Creek FSR.

1.2 Project

1.2.1 Plan

In order to access additional water to cover periods of drought the SCRD has chosen to augment the existing outlet infrastructure at Chapman Lake by adding a gravity fed system. This includes a 1200 mm diameter, 210 m long pipe buried beneath the existing outlet channel. The pipe intake would be located at an elevation of 966 m or 8 m below the current full pool water elevation of the lake (974 m) and the outlet would be drilled under the existing dam and equipment with appropriate valves to control the outflow. The location of the site to be used at the outlet of Chapman Lake and the additional park use area is provided in Figure 3. The yellow area is the extra space needed for construction, laydown and camp which represents a land area of 4,635 m² and an in-lake area of 10,719 m². At the proposed intake depth the SCRD would have access to an additional 1 million m³ of water that would be drawn on in the event of late summer and fall drought conditions. The intake will be fitted with a screen to avoid the entrainment of fish and debris into the pipe. Approximately 20 m east of the existing dam a precast concrete flow control structure with valves will be installed. The control system currently used to operate the water release structure when lake levels are below the crest of the dam will be upgraded and used to operate this lower level outlet. In pipe flow metering will allow water release through this new pipe to be precisely controlled.

1.2.2 Construction

Installation of this system will take approximately two months and will involve the following:

- Clear a site to set up a construction camp for up to six people
- Clear a site to store equipment, fuel, waste management facilities, etc.
- Install the syphon system to bypass water around the existing outlet channel to maintain flow in Chapman Creek
- Construct a coffer dam at the entrance to the outlet channel and dewater the channel
- Conduct geotechnical drilling around the existing dam and immediately upstream to determine the geology, extent and competency of the bedrock
- Excavate a trench approximately 5 m deep to install the low level outlet pipe. It is expected that blasting will be required to complete the trench. Blast rock will be used to line portions of the outlet channel.
- Using horizontal directional drilling techniques, drill the final 20 m of pipe through bedrock below the existing dam.
- Material removed from the trench will be used to backfill the trench and re-establish the existing channel at a -3m elevation (relative to full pool level). Excess material from the trench will be spread along the side and top of the existing channel and graded to match the existing land.
- The flow control structure will be a pre-cast structure located as shown on Figure 4
- A site restoration plan will be prepared to restore the camp, laydown and excavation areas and the banks of the outlet channel. Appropriate native grass seed will be used along with planting of trees and shrubs as appropriate.

Copyright

Legend

- Chapman Lake Permit Area
(0.344 ha)
- Temporary Use Area



Base mapping from ESRI Online Topographic;
Spatial Data from SCRD 2015



1:5,000

NAD 1983 UTM Zone 10N

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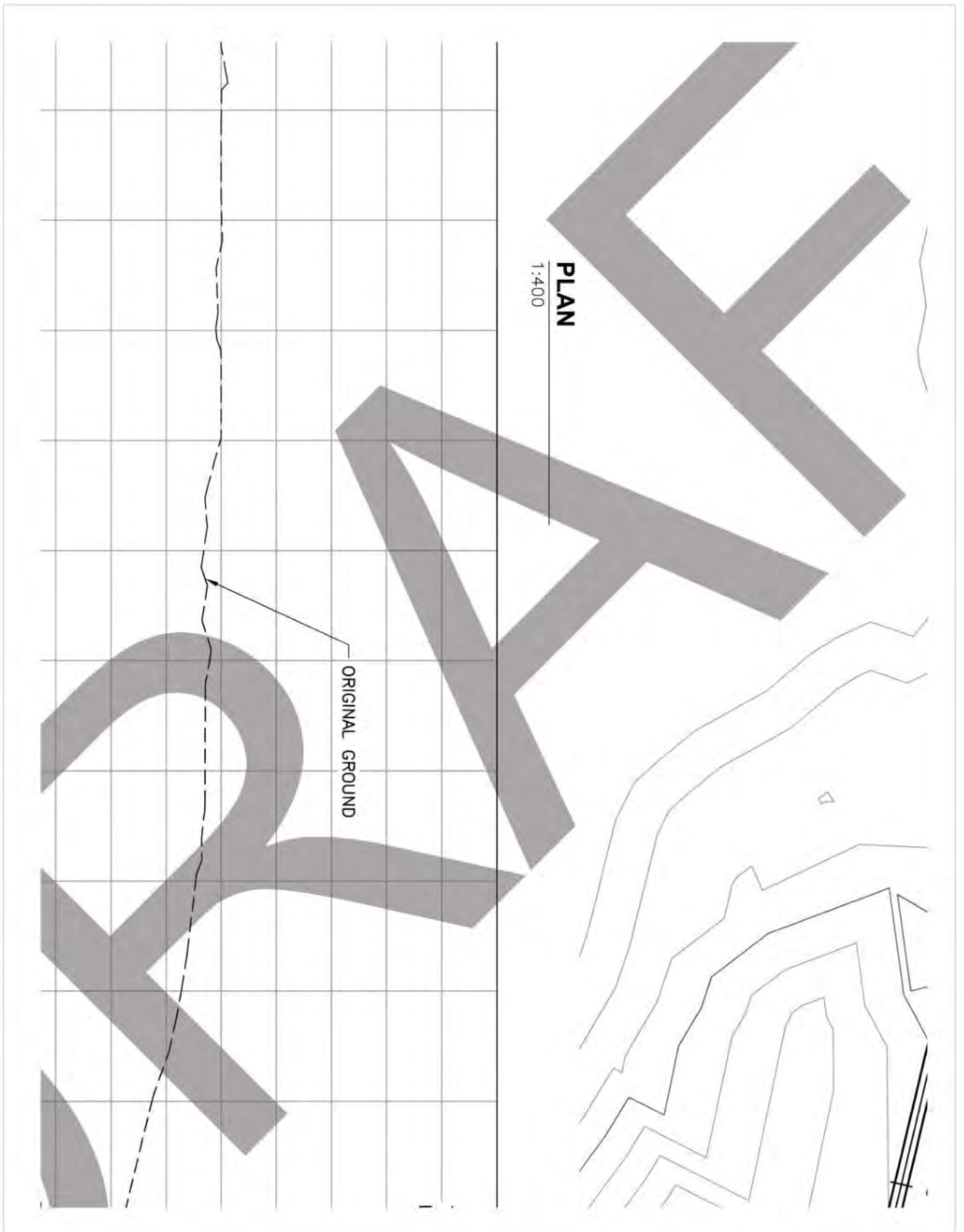
Chapman Lake Water Supply
Expansion Project
Location: Chapman Lake, BC

**Temporary Chapman
Lake Permit Area**

05 April 2016

AECOM

Figure 3



1.3 Construction Schedule

Timing of this work is restricted due to weather and snowpack conditions. Typically there is considerable inflow to the lake through June. In order to carry out the construction the lake level must be lowered in order to install a coffer dam to dewater the outlet channel to allow the excavation necessary to install the pipe. Work must be completed prior to the start of significant fall rain which would have the potential to overtop the coffer dam. Considering these constraints suggests that the preferred construction schedule is from July 4 to September 30, 2016. The following is the general order of work within that 3 month period. This schedule is likely to change as the design work is advanced and more details on the preferred construction methods are developed:

1. Establish construction camp and equipment laydown areas
2. Install syphon to draw down the lake
3. Conduct geotechnical drilling to confirm stability of existing dam and the plan to drill under the existing dam
4. Construct the coffer dam at the west end of the outlet channel and dewater the channel
5. Excavate the trench, install pipe and infill the trench. Anticipate this to be done in sections to avoid the need to stockpile significant volumes of trench material
6. Using horizontal directional drilling equipment, bore under the existing dam
7. Install precast valve chamber and control mechanisms
8. Final placement and contouring of overburden and excess rock along the outlet channel
9. Rehabilitate the outlet channel – seeding and planting
10. Dismantle and remove camp
11. Rehabilitate camp and laydown areas: de-compact soils, seed and plant to restore site to conditions similar to preconstruction

1.3.1 Operation:

As indicated the SCRD Board has passed a resolution that drawing water from below the existing operating level (-3 m) will only be allowed to avoid stage 4 water restrictions during times of drought. The SCRD's Drought Management Plan has identified four stages of restriction of water use. The first stage automatically goes into effect on May 1. Subsequent restrictions are imposed based on the evaluation of a set of criteria and guidelines used to assess risk of drought or water shortage. Water withdrawn from the lake will not occur unless drought conditions have required Stage 3 restrictions and the water level in the lake has reached the -3 m level. Sufficient water will be released through the low level outlet to meet the current requirements to protect fish and to service the community. The targeted instream flow for fish is 200 to 220 L/s with a targeted total flow release from Chapman Lake of approximately 400 to 550 L/s.

The frequency of accessing water below the -3 m level is currently hard to predict. Climate change has resulted in early snow melt and drier summers which would increase the frequency of drought conditions (Staats 2014 summarized in Section 3.1.1). However, the SCRD's water conservation measures, in particular the use of water meters that is expected to be fully operation in 2019 will result in a significant reduction in water use (Opus DaytonKnight Consultants 2013) which is expected to minimize the need to go below -3 m. The combination of these two factors makes the prediction of the frequency that the lake would have to be drawn down below -3 m very difficult.

1.4 Document Purpose

The Sunshine Coast Regional District has had a Park Use Permit in place since the park was created that allows the SCRD to occupy and use areas at the outlet of Chapman and Edwards Lake for the purposes of managing the drinking water supply for the Sunshine Coast. The current Park Use Permit was issued on February 1, 2014 for a period of 10 years. However, in order to construct the new infrastructure and manage additional drawdown of

Chapman Lake an amendment to the existing Park Use Permit will be required. The SCRD will also be seeking changes to its Water Licence(s) for the use of water from Chapman Lake. The purpose of this document is therefore to fulfil the information requirements of a Park Use Permit application, in particular Part 3: Detailed Proposal and will also be used to support Water Licence applications or amendments.

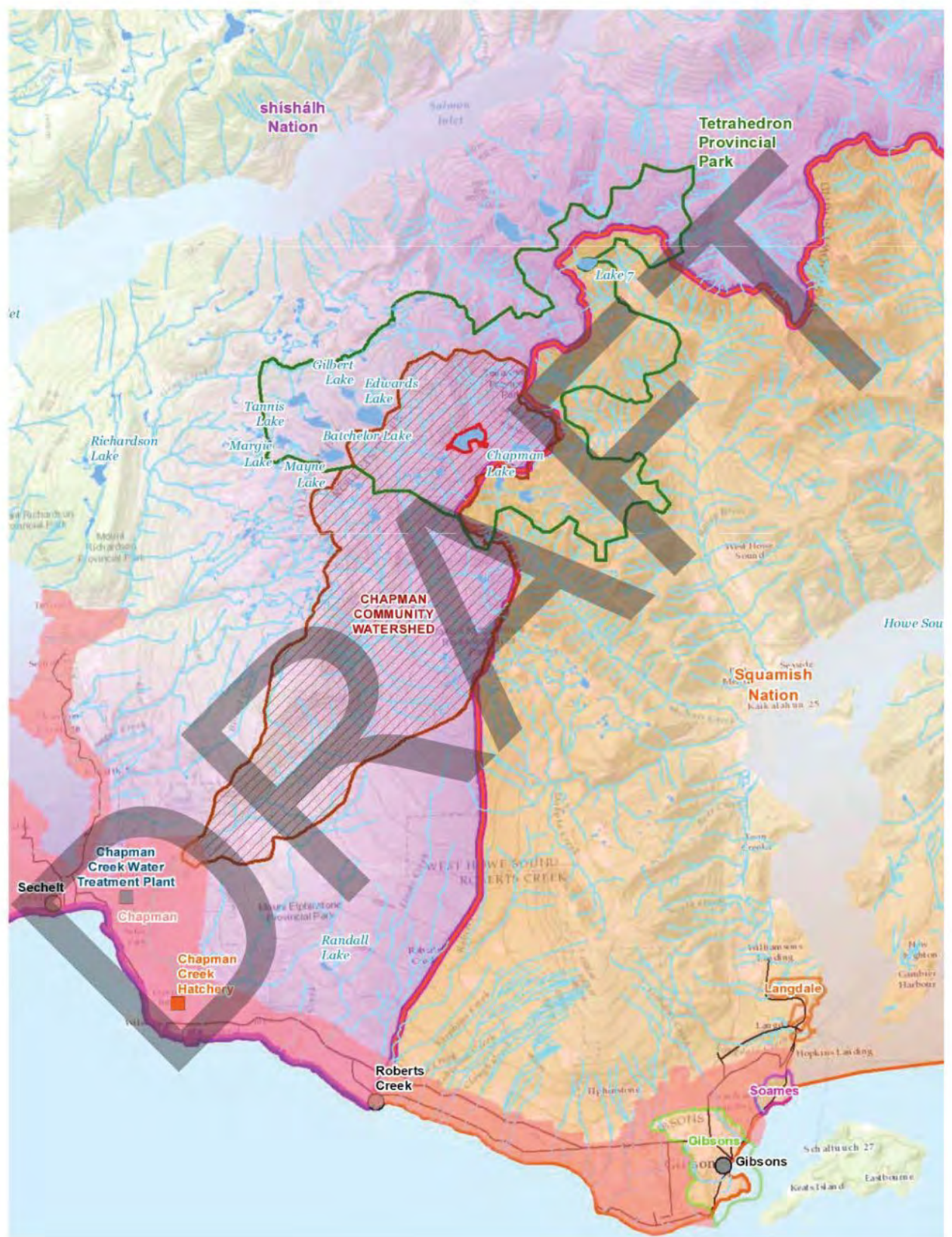
2. Consultation and Stakeholder Engagement Plan

The Project has prepared and is implementing an Aboriginal Consultation and Public Participation Plan. The Plan describes the Project, the purpose and objectives of Aboriginal consultation and public participation and the activities to fulfil regulatory requirements of meaningful consultation and active public participation in the planning process, in order to consider potential social, cultural and environmental effects and mitigation measures. The process follows extensive First Nation and public consultations undertaken as part of approval for the Sunshine Coast's Comprehensive Regional Water Plan in 2013.

Chapman Lake and the Chapman Creek watershed are located solely within shíshálh Nation territory. Tetrahedron Provincial Park is within the territories of the shíshálh Nation and the Squamish Nation (Figure 5). Given that the Chapman water system supplies water to 80% of Sunshine Coast's residents and businesses, consultation is proceeding with both the shíshálh Nation and the Squamish Nation. Detailed project information has been provided to both nations. Regulatory submissions will be reviewed through the shíshálh Nation's Lands and Resources Decision-making Policy and process, before being presented to Chief and Council. Squamish Nation will determine whether it chooses to actively participate in the consultation process now underway.

Public engagement is also proceeding with interested groups and individuals. A plain-language information package and map showing relevant project features has been prepared and distributed. Following an initial meeting with the shíshálh Nation, discussions were held with representatives from a number of local associations and organizations including the Sunshine Coast Conservation Association, the Tetrahedron Outdoors Club, the Tetrahedron Alliance and the Tuwanek Ratepayers Association. Informal discussions and information-sharing have also included the Sunshine Coast Salmonid Enhancement Society (Chapman Creek Hatchery) and the Ruby Lake Lagoon Nature Reserve Society. The District of Sechelt and town of Gibsons will continue to participate in the Project through the SCRD board, staff presentations to local councils and periodic updates. The Vancouver Coastal Health Authority will be invited to participate through the Sunshine Coast's local representative. The process will document all interests, comments and issues expressed, providing a report of this information to the SCRD, BC Parks and other regulatory agencies.

Planned Aboriginal consultation and public participation activities include a presentation to the SCRD's Infrastructure Committee, followed by consideration of the consultation process findings prior to approval of the Project's final design by the SCRD Board. An Open House to share Project details, proposed timelines and answer public questions will be held at the conclusion of the consultation and public participation process.



3. Existing Conditions

3.1 Geology

Chapman Lake lies within an area of granite rock of the late Jurassic and early Cretaceous ages (156 to 114 million years old), characterised as quartz diorite (Triton 2006). Coastal watersheds underlain by rock types such as quartz diorite tend to be slightly acidic due to the low buffering capacity of these rocks and the natural low pH of rainfall (McKeown *et. al.* 2002 in Triton 2006).

The dominant soil-types within the Chapman watershed contain large concentrations of organically combined iron and aluminium in their subsoils (Carson 1999 in Whitehead 1999). In poorly-drained soils on the Tetrahedron Plateau organic matter is not broken down as quickly as in areas of well-drained soils, which means that organic and clay colloids, and aluminium and iron compounds are common elements in the water supply and characterize the natural water quality in this area (Triton 2006).

3.2 Water Resources

The Chapman Creek watershed (Watershed Code: 900-120400) is located approximately 5 km east of Sechelt, BC and provides approximately 85% of the drinking water and fire protection for 21,000 residents between Langdale and Earl's Cove, including the District of Sechelt. Water storage is provided by both Chapman and Edwards Lakes which are located on the Tetrahedron Plateau in Tetrahedron Provincial Park (Figure 1). A control structure on Edwards Lake allows water to be released when required to augment flows in Chapman Creek.

Chapman Creek flows south from the Tetrahedron Plateau for approximately 17 km and discharges into the Georgia Strait. Chapman Creek watershed is approximately 73 km². The SCRD drinking water intake is located approximately 6.6 km upstream of the mouth of Chapman Creek and is approximately 175 m above sea level. Approximately 65 km² of the Chapman Creek watershed is located above the SCRD water intake.

3.2.1 Chapman Lake

Chapman Lake lies at an elevation of 976 m above sea level in steeply sloping terrain; surrounding ridgetops and peaks typically reach over 1,500 m elevation. The lake has a surface area of 31.2 ha and a maximum depth of approximately 30 m (Whitehead 1999), making it the largest lake in the Chapman Creek watershed. The catchment area of the lake is 6.58 km², and the lake is fed by 2 main streams, both of which enter at the east end of the lake. The lake volume at the high water level is approximately 3.7 million m³ with an average outflow rate of 0.476 m³/s. Based on these data, the average retention time of water in the lake is approximately 90 days (Whitehead 1999). The short retention time reflects the high level of precipitation in the watershed. Outflow from the lake is controlled by a concrete dam and valve located on the west side of the lake and operated by the SCRD. During a typical year, water stored behind the dam is allowed to overflow naturally until there is a need to supplement the flows to Chapman Creek, at which time the dam is opened to release stored water from the reservoir. The annual lake level variation is approximately 1.5 m to 3 m (Whitehead 1999).

3.2.2 Chapman Lake Water Quality

Whitehead (1999) reported the results of limited water quality monitoring on Chapman Lake. Parameters measured included Secchi disc transparency, temperature and dissolved oxygen. The Secchi disk indicated clear water with a reading at 6.5 metres. Temperature and dissolved oxygen results ranged from 16°C at the surface to 7°C at depth

and from 16 mg/l at the surface to 6.5 mg/l at depth, and indicated the lake was stratified with a thermocline between 2 m and 3 m. During the monitoring program gas bubbles were observed throughout the lake and particularly at the east end in the shallower areas. Based on the smell of hydrogen sulphide it was concluded the gas bubbles were originating from anaerobic decomposition originating in the lake sediments (Whitehead 1999).

3.2.3 Water Quantity

A water demand and supply analysis under changing climatic conditions was performed for the Chapman water system on the Sunshine Coast, BC as part of a University of British Columbia Masters Degree in Land and Water Systems (Staats 2014). The study was performed to determine impacts of climate change on water consumption and water supply within the Chapman watershed. Historic temperature, precipitation and discharge data were collected to determine historic trends. The impacts from Pacific Decadal Oscillations and El Niño Southern Oscillations on climate and discharge were analyzed to determine the impacts of climate change.

The results from this study indicated that climate patterns on the Sunshine Coast have changed over the last 50 years, with annual average temperatures increasing by approximately 2°C and average total annual precipitation decreasing by 24 mm. Climate trends were determined to impact the available water supply as temperatures and snowpack elevation were increasing. This increased temperatures and diminishing snow pack is causing the snow to melt earlier and more rapidly during the spring season and existing streamflow regime in Chapman Creek is shifting towards a more rain dominated regime, which would change the entire water holding dynamic of the watershed. Discharge data further showed that peak discharge occurred earlier in the spring, which affects summer base flows when demand for domestic distribution and environmental services was highest. Climate conditions during the summer season were also determined to be impacting supply as the increasing temperatures were assumed to cause the snowpack to be depleted earlier in the summer season and the decreasing trends in precipitation were resulting in less recharge to storage reservoirs.

The increases in temperature and decreases in precipitation trends were shown to be correlated to water consumption during the summer season when water supplies are the most limited. The significant correlation between water consumption and temperature and precipitation identifies how climate change may impact water consumption behaviors on the Sunshine Coast. If average summer temperatures continue to increase with population growth and the Sunshine Coast, in addition to increase in population due to summer tourism, regular water scarcity issues could occur more frequently in the near future.

As part of the study, a sensitivity analysis was completed and revealed two key findings: (1) the current capacity of the existing water treatment plant could be exceeded regularly in the next 5 years and (2) total water consumption during the summer could regularly exceed the equivalent to the available water supply in the next 10 years if water demand does not change, snow pack continues to decrease in the winter, summer temperatures increase by an average 1 or 2 °C, and prolonged droughts become more common.

3.3 Fisheries Resources

Fisheries information was gathered using the FISS database for Chapman Creek and Chapman Lake (FISS 2016). Fish species found in Chapman Creek include five species of anadromous fish: coho (*Oncorhynchus kisutch*), Chinook (*O. tshawytscha*), chum (*O. keta*), pink (*O. gorbuscha*), steelhead (*O. mykiss*) and anadromous cutthroat (*O. clarkii clarkii*). These fish can access the first 6.6 km of Chapman Creek up to an impassable series of two waterfalls. The headwaters section of Chapman Creek supports resident populations of Dolly Varden char (*Salvelinus malma*) and rainbow trout (*O. mykiss*).

A fish sampling program was undertaken as part of impact assessments conducted in 1998 to supplement existing information. Gill netting and minnow trapping methods were used to sample the lake during a 24 hour period. Only Dolly Varden averaging 14 cm long were captured in the lake during this sampling period (Whitehead 1999). Chapman and Gray Creeks Integrated Watershed Management Plan (1998) reports that Chapman Lake supports a sport fishery for Dolly Varden and possibly rainbow trout (*O. mykiss*).

Benthic macroinvertebrate sampling by Whitehead (1999) included sampling substrates at 3 m and 5 m depths and caddis fly and bloodworms were the most common animal captured. Overall density results indicate that benthic macroinvertebrate levels are low in Chapman Lake (Whitehead 1999).

3.4 Wildlife Resources

Wildlife values within the Chapman Creek watershed are not well known and information is limited. The watershed appears to support populations of Columbian black-tailed deer (*Odocoileus hemionus columbianus*), black bear (*Ursus americanus*), cougar (*Puma concolor*) and other furbearing animals. Other wildlife known to use the watershed include: waterfowl, gulls, shorebirds, raptors, upland game birds, woodpeckers, a variety of songbirds, small mammals, amphibians and reptiles (IWMP 1998). Species recorded in Tetrahedron Provincial Park include: mountain goat (*Oreamnos americanus*), coyote (*Canis latrans*), mink (*Mustela vison*), marten (*Martes Americana*), river otter (*Lontra canadensis*) and bobcat (*Lynx rufus*), a variety of rodents, rock ptarmigan (*Lagopus muta*), woodpecker, grouse, ravens (*Corvus corax*), and marbled murrelets (*Brachyramphus marmoratus*; MELP 1997). It is thought that many of the larger animals tend to be transient users wildlife corridors to pass through the park (MELP 1997). Hunting is prohibited within the park; however, the lower reaches of the watershed provide recreational hunting opportunities (IWMP, 1998). There are no approved Wildlife Habitat Areas in the assessment area. There is a lack of emergent vegetation (e.g., cattail, bulrush) within the high water perimeter of Chapman Lake, however, some limited opportunities for nesting birds is available in this area (Whitehead 1999).

3.4.1 Sensitive Wildlife Species

A list of sensitive wildlife species potentially found in the study area was compiled using the BC Conservation Data Centre database. The search categories used to compile the information included a search of the Sunshine Coast Forest District and refining the search results using the Coastal Western Hemlock and Mountain Hemlock biogeoclimatic zones. Habitat types used to further filter survey results included forest, grassland/shrub, lakes, riparian, stream/river and wetland. Appendix 2 provides a summary of the resulting species, including the BC designation and Species at Risk statuses. BC Red listed species include any plant, animal or plant community that is extirpated, endangered or threatened and Blue listed species are considered to be of special concern in BC, but are not extirpated, endangered or threatened. The Species at Risk Act, Schedule 1, is federal government legislation enacted to protect extirpated, endangered and threatened species and species of special concern across Canada. A total of 45 sensitive BC wildlife species were identified, with 16 SARA listed species results.

3.5 Vegetation

3.5.1 Vegetation Overview

Forest cover around Chapman Lake and the upper Chapman Creek watershed consists of mountain hemlock (*Tsuga mertensiana*), yellow cedar (*Chamaecyparis nootkatensis*) and Pacific silver fir (*Abies amabilis*), while lower elevations in Tetrahedron Provincial Park contain western hemlock (*Tsuga heterophylla*) and western redcedar (*Thuja plicata*; Triton 2006). The canopy formed by the tree cover varies from relatively open to dense. Throughout

the park, semi-open meadows, marsh complexes, and areas of dense shrub [e.g., blueberry (*Vaccinium sp.*)] are also found (Whitehead 1999).

The mid and lower reaches of the Chapman Creek watershed, outside the park boundaries, fall within the Coastal Western Hemlock biogeoclimatic zone, and are characterized by forests dominated by Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), western hemlock, western redcedar and a variety of understory shrub species. Widespread logging and associated disturbance and revegetation have resulted in a change in forest composition from old-growth conifer forests to communities with a higher proportion of broadleaved trees. Much of the riparian zone in the mid and lower reaches of Chapman Creek now consists of alder stands (Whitehead 1999). The park is situated within the Southern Pacific Ranges ecosection and Coastal Western Hemlock/Mountain Hemlock biogeoclimatic zones. The park contains one of the oldest undisturbed forests in Canada with stands containing trees over 1,000 years. Semi-open meadows, marsh complexes and dense understorey (e.g. blueberry) are characteristic of the park, which also contains ten lakes (MELP 1997).

3.5.2 Riparian Vegetation

Riparian vegetation surveys were completed in 1998 (Whitehead 1999) as part of impact assessment from the 5 m lake depth to 5 m above the high water level. The riparian area is largely forested to the high water level with several smaller areas where shrubs and/or herbaceous species predominate. The four habitat types identified include forest, shrubland, wet meadow and wetland/aquatic. Forest vegetation consisted of mountain hemlock and amabilis fir with some yellow cedar. The shrub layer was dominated by Alaskan blueberry (*Vaccinium alaskaense*) and oval-leaved blueberry (*Vaccinium ovalifolium*) with the herb layer consisting of moss. Meadow and wetland areas contained a gradation from one to the other with an increase in soil moisture. Meadow areas tended to be moist due to subsurface drainage from hillslope areas. Vegetation growth within the lake that was less than 2 m in depth was considered part of the wetland habitat.

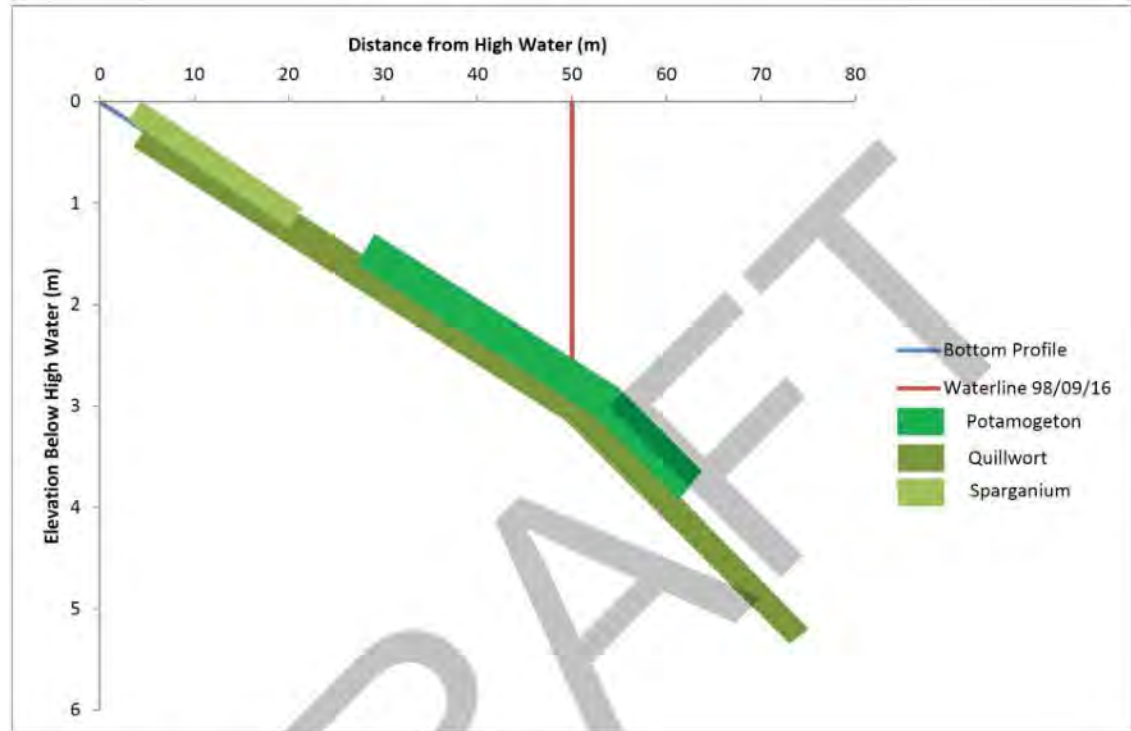
3.5.3 Aquatic Vegetation

Aquatic vegetation transects were conducted in Chapman Lake during late summer of 1998 (Whitehead 1999). Aquatic plants surveyed were limited to submergent species, however, water levels in the lake were below normal high water levels. The dominant species inventoried consisted of bristle-like quillwort (*Isoetes echinospora*) and was observed growing on suitable substrates throughout the lake. Dominant plant species typically occur between the 1 m and 4 m below the high water level. Narrow-leaved bur-reed (*Sparganium sp.*) and pondweed (*Potamogeton sp.*) were observed on the exposed or shallow lake areas, particularly at the east end of the lake. Figure 6 illustrates the zonation of aquatic vegetation in Chapman Lake from the survey transects for the study completed in 1998.

The main disturbance to aquatic vegetation during operations was identified as desiccation due to drying; however, it was noted that drying stress is already present seasonally in the littoral zone where most of the aquatic vegetation occurs and the dominant plant (quillwort) appeared to be very tolerant to desiccation under existing water level fluctuations in the reservoir. It is likely that the reduced growing season caused by existing drawdown leads to increased thermal drying stress on bur-reed and pondweed and abundance levels were low (Whitehead 1999).

Figure 6. Zonation of Aquatic Vegetation in Chapman Lake

Source: Whitehead 1999



3.5.4 Sensitive Species

A list of plant species potentially within the study area was compiled using the BC Conservation Data Centre database. The same search categories as above were used to compile the information. Table 1 provides a summary of the resulting species, including the BC designation and Species at Risk statuses. A total of seven sensitive BC species were identified, with no SARA listed species results.

Table 1. Sensitive Plant Species in the Sunshine Coast Forest District

Common Name	Scientific Name	Species Type	BC Status	SARA Status
elegant Jacob's-ladder	<i>Polemonium elegans</i>	Dicot	Blue	
Kamchatka spike-rush	<i>Eleocharis kamtschatica</i>	Monocot	Blue	
poison oak	<i>Toxicodendron diversilobum</i>	Dicot	Blue	
Roell's brotherella	<i>Brotherella roellii</i>	Nonvascular plant	Red	
slimleaf onion	<i>Allium amplexans</i>	Monocot	Blue	
small spike-rush	<i>Eleocharis parvula</i>	Monocot	Blue	
snow bramble	<i>Rubus nivalis</i>	Dicot	Blue	

3.6 Historical/Cultural Significance

There were no available records of archaeological, historical and cultural heritage values at Chapman Lake. Chapman Lake lies within the traditional aboriginal territory of the shishálh Nation. An assessment by Global Village Research Consultants (1998) confirmed the *'no sites recorded... within a 9 to 10 mile vicinity of Chapman Lake and the upper drainage of Chapman Creek'* (Whitehead 1999). AECOM recently reviewed the BC archaeological site database for any newly recorded sites in the project area and no new records have been added.

The SCRDC will be contracting In Situ Consulting through the shishálh Nation to conduct a preliminary field reconnaissance of the areas that will be affected by construction. This work will involve an ethnographic and desk-top review of the project area and when conditions allow, a field survey of the sites as well. The completion of this assessment will depend on snow melt at the project site and may not be available until early May.

4. Park Use Permit Experience

The SCRDC has held a Park Use Permit (PUP) for the purposes of maintaining water impoundment infrastructure at Chapman and Edwards Lake and a helicopter pad at Chapman Lake in Tetrahedron Park. The SCRDC's PUP was renewed February 1, 2014 and the current PUP No. 102714 is valid until January 31, 2024.

5. Potential Impacts and Mitigation

5.1 Soils, Vegetation and Wildlife

5.1.1 Construction

Construction will require:

- Regular helicopter flights to the work area and associated noise
- the establishment of a work camp,
- laydown area for equipment and supplies including on-site fuel containment
- excavation and blasting to create a trench to install a deep water withdrawal pipe
- disposal of excess overburden and rock removed from the trench, and
- drilling through bedrock to install the low level outlet.

Disturbance during construction will include removal of vegetation, compaction of soils, and excavation of a 5 m deep trench. Efforts will be made to contain the areas impacted by construction to one continuous area rather than creating several smaller areas. The construction is expected to take 3 months, during which time wildlife will likely avoid the work area. Also, the current plan anticipates a work camp to be assembled at the site. Given the nature of the area there is also potential for human/wildlife interactions. To minimize disturbance to vegetation the camp and laydown areas will be confined to areas used during the original dam construction in 1978.

Mitigation measures would include:

- Setting up the camp so that wildlife is deterred from entering the camp area
- Limiting the work area by flagging areas where equipment does not need to go
- Conducting pre-construction survey for any rare plants and relocate the plants to suitable habitat nearby either permanently or to be used for site rehabilitation after construction.
- Site hygiene including secure bins for garbage, no garbage left around the site, regular removal of garbage

- Application of appropriate erosion and sediment control measures, particularly in area where vegetation is removed and soils disturbed
- Emergency response plans in the event of accidental release of deleterious materials (i.e. sediment, fuel)
- Fully remediate areas used for construction camp and laydown including de-compacting soils, seeding and other plantings to re-establish vegetation and pre-existing habitat values. A full remediation plan will be developed prior to start of construction
- Develop a reclamation plan for overburden and/or rock disposal area

Potential effects on terrestrial habitat and wildlife could result from direct disturbance of habitat or exclusion from habitat areas. Most direct disturbance will occur during the construction phase and will be short term.

5.1.2 Operation

Deer, bear and other mammals use the lakeshore for drinking water. With receding water levels, segments of the shoreline may be soft, which can interfere with an animal's ability to approach the water. Also, animals crossing the shore to drink may be exposed to increased predation as the water line recedes from the cover provided by riparian vegetation. Whitehead (1999) identified areas around the lake where the substrate is firm, as well as small watercourses and ponds, where animals can access water without undue risk of predation or becoming hampered by soft ground. The potential effects on terrestrial wildlife from additional drawdown of the lake were not considered significant by Whitehead (1999).

Disturbance of terrestrial species and habitat during the operational phase is not considered significant. Drawdown below -3 m will only occur to avoid Stage 4 water use restrictions. Disturbance to wildlife during operation will be limited to human visits to check and maintain the infrastructure which takes place a few times a year. Essentially this aspect will be no different than the current operational and maintenance activities that the SCRD undertakes each year at Chapman Lake.

5.2 Aquatic Resources

5.2.1 Construction

The construction phase of the project has the potential to affect water quality in Chapman Lake and downstream. Potential sources of adverse effects on water quality during construction include:

- Accidental release of fuels, lubricants and other substances used in construction
- Resuspension of sediment
- Contamination by human and other wastes

The volumes of fuels, lubricants and other substances can be expected to be relatively small. Precautions will be taken during construction to avoid spills. However, small spills and leaks of hydrocarbons (fuel, grease and oils) or other substances from construction equipment are possible. Fuels, lubricants and other substances used in construction will be stored well away from the water, at least 30 m from the high water line. A Spill Prevention Plan will include details on refueling and maintenance of equipment that will reduce the potential for oils and greases from entering the lake.

The potential for spills to enter the lake waters and streams will be mitigated by providing the on-site workers with appropriate training in the handling and storage of deleterious substances and in spill response. The Spill Prevention Plan will also include specifications for spill cleanup equipment that will be on site during construction and procedures for handling and reporting spills.

To control adverse effects of resuspension of sediment, construction activities will be completed by excavating and installing the intake pipe in the dry. Only at the end of the pipe installation will any work be carried out that could cause sedimentation and degraded water quality. A water management plan will be developed to handle any water that seeps into the construction area and how any sedimentation will be contained during the final installation of the pipe.

In general the risk to water quality during construction will be low provided that adequate preventive measures are implemented. Events such as elevated sediment in the water released to Chapman Creek should have minimal impact on drinking water as there are numerous pools in the creek that will allow sediments to drop out of suspension during its approximately 10 km course from Chapman Lake to the intake for the water treatment plant.

5.2.2 Operation

The operation of the low level outlet will result in drawing the lake level down below the -3 m level during periods of drought. The timing of additional drawdown would be during the summer and early fall. Opus DaytonKnight (2013) predicted that by 2036 if the SCRD initiated intensive demand side management (i.e. water metering) the existing Chapman Creek storage would be robust enough to handle drought conditions expected to occur as infrequently as once every 15 years. Opus DaytonKnight (2013) also recognized the effect of climate change and concluded that it should have minimal impact on available summer lake storage through 2036.

Potential effects of drawdown below -3 m:

- Increased sedimentation from shoreline erosion, either by wave action or rilling and other effects from rain.
- Changes in lake dynamics that causes changes to temperature regimes and/or dissolved oxygen
- Lake bed drying

Erosion could occur on the exposed lake bed due to runoff and wave action. Runoff would occur during heavy rainfall and increase sediment transport into the water. Impacts of erosion would be the greatest immediately after the onset of fall rains when the greatest sediment surface area occurs; however, the still water within the lake will act as a settling basin, which will likely mitigate against a significant increase in turbidity at the outlet (Whitehead 1999). Wave action can create turbulence that may resuspend particulates and transport the material into the water. The length of exposed shoreline to wave action is expected to decrease with increasing drawdown from 3,800 m during high water to 2,500 m during the lowest water level predicted during a 1:20 year drought (Whitehead 1999). Impacts of wave action are expected to be not significant.

Aquatic life is constrained by physical and chemical factors such as temperature and dissolved oxygen. Typically, the biota do not occupy the entire lake volume, but are restricted to favourable areas. The short-term carrying capacity of the lake may decrease, as these organisms will continue to occupy the same relative upper strata within a reduced lake volume during the drawdown period (Whitehead 1999). Release of hydrogen sulphide from the sediment may be accelerated as a result of drawdown, due to the decrease in water pressure on the sediments and may affect benthic biota at a very localized level.

The surface area of exposed lakebed increases as the water level retreats. Under current conditions the maximum annual drawdown typically ranges from 1.5 to 3.0 m. With the low level pipe in place the predicted drawdown would increase. In 1998 it was predicted that a maximum draw down of 4 m would occur during the 1:10 year drought and 8 m during the 1:20 year drought conditions (Whitehead 1999). However, those numbers did not contemplate the type of demand side management that the SCRD is now committed to (water metering) which could reduce demand by 25% or more (Opus DaytonKnight 2013). Exposure of the lake bed to air and sun effects include partial to complete drying and warming of the sediment surface; physical-chemical reactions in the surface layer; biotic

community effects; and, lateral flow of pore water from the upper sediment layer toward the contiguous retreating water.

The fish population during the drawdown will be exposed to a reduced absolute volume of potential habitat. Fish spawning habitat, which are limited to the gravels of the larger inlet streams, will not be affected since it is not within the reservoir. Access to the spawning area may be restricted if the lake levels are substantially lower, however, the lake re-fills rapidly when fall rains do start allowing the fall spawning Dolly Varden to access spawning areas. During the summer, fish tend to remain in the upper layers of the water column due to thermal stratification and are expected to stay in this zone as the water level recedes. The drawdown to the lower levels would not likely occur until late summer early fall when the air temperature begins to drop (in part due to shorter days) so water temperatures are not expected to rise to a level that will impact the health of the fish. Benthic invertebrates provide a food source for fish and would remain available throughout a drawdown of the lake, however, there is a possibility of a decrease in the herbivorous prey species due to impacts of the drawdown on aquatic vegetation (Whitehead 1999). Overall the drawdown of Chapman Lake below the current level of 1.5 to 3 m is likely to have a minor effect on fish during those years when lake levels drop below -3 m but the effect is temporary and current projections of the frequency of drawdowns suggest that there will be adequate years of normal drawdown that the sustainability of the fish populations in Chapman lake will be maintained.

5.3 Access to the park

There will be no changes to park access during construction or operation. Helicopters will be used to move people and equipment to the site. The proposed works during construction would not obstruct the existing hiking trails.

5.4 Aesthetics and Visual Values

Chapman Lake is not highly visible from the surrounding terrain and trails due to its position at the foot of steep slopes, the forest cover, and lack of unobstructed view corridors from the trails. Chapman Lake is a visual feature of the area but can only be appreciated from a close distance directly from the shore or from the air.

Construction will affect the visual quality for some hikers passing the construction site. Mitigation measures that may be appropriate and could include layout of the construction camp, use of information signs and screening if there are significant concerns about the presence of a temporary work camp and site.

5.5 Air Quality

5.5.1 Construction

Potential sources of emissions that could degrade air quality include the helicopter, excavators, horizontal directional drill rig, generators, fires and fugitive dust. All these sources are considered minor due to the small scale and temporary nature of the project.

5.5.2 Operations

The only potential air quality effect during operation could be the dispersal of dust from newly exposed and dried out lake sediments. This impact will be limited to those years when the lake is drawn down below -3 m and will be restricted to a few weeks at the end of the summer. Also, the lake sediments contain a high organic content that

tends to hold the sediments together and limits the fraction that is small enough to become airborne during periods of wind (Whitehead 1999).

5.6 Noise

5.6.1 Construction

Helicopters will occur be used during construction to transport people, equipment and supplies to the work site. Several trips per day will likely be required during the initial start-up and then intermittently during the construction phase. During construction noise would also be generated through use of an excavator, generators, power tools and other incidental construction activities. Recreational use of the trail near the project site is reported to take place mostly during the winter (Whitehead 1999); however, there is known summer use of trails around Chapman Lake.

The potential effect to the area from construction noise will be to area wildlife and human park users. The greatest wildlife impacts will be to those species sensitive to noise, such as nesting birds during breeding season. To mitigate the risk to wildlife from noise, construction timing should occur outside sensitive breeding times such as spring and early summer. Mitigation measures for helicopter use includes the development of a standard flight path that can be used to efficiently fly between the pick-up and drop off spots but also minimize flying close to park trails and any sensitive environmental features such as active raptor nests. Additional mitigation measures to limit impact on park users could include scheduling the noisiest activities (i.e. blasting and helicopter use) to mid-day hours. Mitigation measures to minimize the impact of helicopter noise and the temporary and transient nature of the helicopter noise should result in minor impact. Further mitigation, similar to visual effects, would include putting up signs and using other methods to inform users that the construction activity is taking place. Noise associated with ground based activities isn't likely to travel far from the site due to the surrounding forest and mitigation measures should limit the impact to a moderate level.

5.6.2 Operational

There is no additional noise impact associated with the operation of this gravity fed system. The valve controls will be operated remotely by the SCRD and helicopter visits to the site will be similar to the frequency of visits to the site for the existing facility.

5.7 Cultural Values

As indicated in Section 3.6, In Situ Consultants will carry out a preliminary field investigation of the construction site once snow conditions allow. If there is an indication of potential archaeological findings in the area a more detailed Archaeological Impact Assessment will be required prior to start of construction.

5.8 Park visitors and Local Communities

The proposed work during construction would not obstruct the existing hiking trails. The project will not affect access to Chapman Lake by park visitors and the local community at any time of the year, as it does not impinge on any of the trails or other identified use areas.

6. Environmental Management Plan

Prior to start of construction a detailed environmental management plan (EMP) will be prepared and provided to BC Parks, Ministry of Forests Lands and Natural Resources Operations and the shishálh Nation for review and approval. The plan will identify the mitigation strategy to offset each of the impacts identified in this report and will define the role of an environmental monitor and the frequency of monitoring during the construction phase. The following will be addressed in the Construction EMP:

- Environmental monitor(s) and frequency of monitoring
- Daily monitoring form to be completed by the monitors
- Reporting requirements
- Details on how the mitigation measures will be implemented including:
 - Sediment and erosion control
 - Management of human waste
 - Noise management program
 - Management of visual aesthetics
 - Water quality monitoring
 - Protection of riparian vegetation
 - Wildlife management
 - Archaeological resources
 - Site restoration plan based on current vegetation found in the areas to be disturbed
- Provision for pre-construction site visit to identify the presence of any rare or endangered plant species in the area to be disturbed
- Survey of nesting birds in the construction area and raptor nests along the flight path of the helicopter
- Development of a helicopter flight path for flying into and out of Chapman Lake

The EMP will also include the operational phase of the project including

- Provisions for In Situ Consultants to examine the draw down area when it is 1 m or more below the existing – 3 m drawdown level
- Monitoring of shoreline conditions during drawdown
- Monitoring water quality conditions in Chapman lake under extreme drawdown conditions (i.e. temperature and oxygen profiles)
- Monitoring and assessment of the effectiveness of the site restoration works

7. References

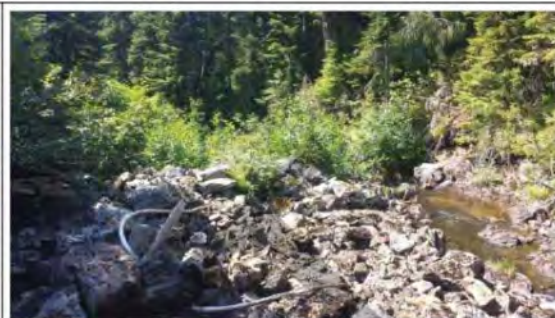
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Appendix 1 – Photo Log

DRAFT



Photograph 1. ↑
Chapman lake downstream of dam left side



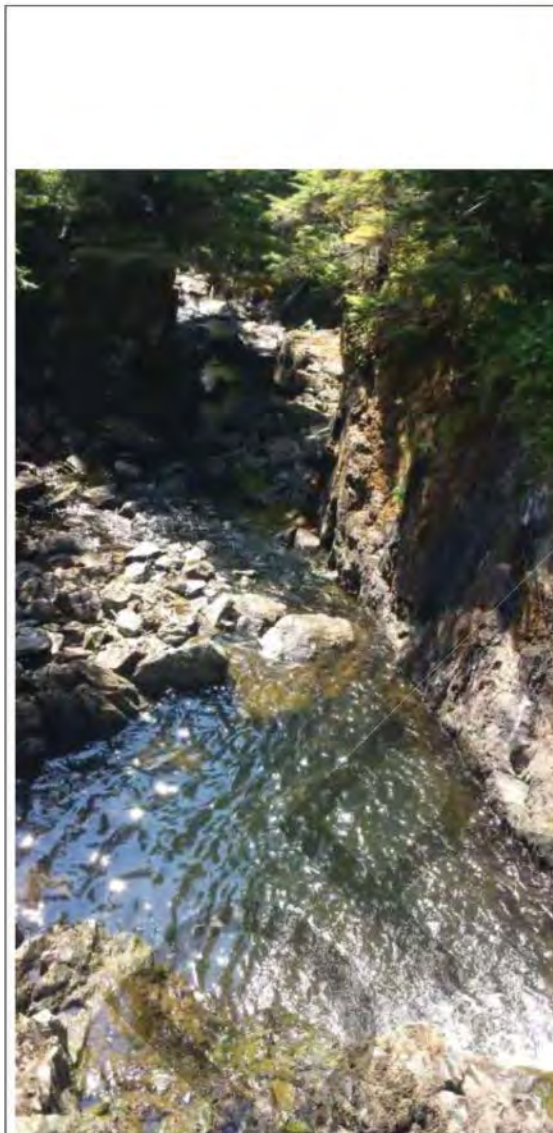
Photograph 2. ↑
Chapman lake downstream of dam right side



Photograph 3. ↑
Chapman Lake looking at lake and channel intersection



Photograph 4. ↑
Chapman Lake dam from inside lake area looking downstream



Photograph 5. ↑
Chapman Lake outlet top of waterfall looking downstream



Photograph 6. ↑
Chapman Lake dam from inside lake area looking downstream

Appendix 2: Wildlife Sensitive Species List

DRAFT

Common Name	Scientific Name	Species Type	BC Status	SARA Status
Autumn Meadowhawk	<i>Sympetrum vicinum</i>	Insect	Blue	
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	Bird	Blue	1-SC (Feb 2011)
Barn Swallow	<i>Hirundo rustica</i>	Bird	Blue	
Black Petaltail	<i>Tanypteryx hageni</i>	Insect	Blue	
Black Swift	<i>Cypseloides niger</i>	Bird	Blue	
Blue Dasher	<i>Pachydiplax longipennis</i>	Insect	Blue	
Clodius Parnassian, <i>claudianus</i> subspecies	<i>Parnassius clodius claudianus</i>	Insect	Blue	
Coastal Tailed Frog	<i>Ascaphus truei</i>	Amphibian	Blue	1-SC (Jun 2003)
Common Nighthawk	<i>Chordeiles minor</i>	Bird	Yellow	1-T (Feb 2010)
Common Wood-nymph, <i>incana</i> subspecies	<i>Cercyonis pegala incana</i>	Insect	Red	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Bird	Blue	
Fisher	<i>Pekania pennanti</i>	Mammal	Blue	
Great Blue Heron, <i>fannini</i> subspecies	<i>Ardea herodias fannini</i>	Bird	Blue	1-SC (Feb 2010)
Green Heron	<i>Butorides virescens</i>	Bird	Blue	
Grizzly Bear	<i>Ursus arctos</i>	Mammal	Blue	
Johnson's Hairstreak	<i>Callophrys johnsoni</i>	Insect	Red	
Keen's Myotis	<i>Myotis keenii</i>	Mammal	Blue	3 (Mar 2005)
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Bird	Blue	1-T (Jun 2003)
Meadow Rams-horn	<i>Planorbula campestris</i>	Gastropod	Blue	
Monarch	<i>Danaus plexippus</i>	Insect	Blue	1-SC (Jun 2003)
Mountain Goat	<i>Oreamnos americanus</i>	Mammal	Blue	
Northern Goshawk, <i>laingi</i> subspecies	<i>Accipiter gentilis laingi</i>	Bird	Red	1-T (Jun 2003)
Northern Red-legged Frog	<i>Rana aurora</i>	Amphibian	Blue	1-SC (Jan 2005)
Northern Rubber Boa	<i>Charina bottae</i>	Reptile	Yellow	1-SC (Jan 2005)
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Bird	Blue	1-T (Feb 2010)
Pacific Sideband	<i>Monadenia fidelis</i>	Gastropod	Blue	
Painted Turtle	<i>Chrysemys picta</i>	Turtle	No Status	1-E/SC (Dec 2007)
Peregrine Falcon, <i>anatum</i> subspecies	<i>Falco peregrinus anatum</i>	Bird	Red	1-SC (Jun 2012)
Prairie Fossaria	<i>Galba bulimoides</i>	Gastropod	Blue	
Purple Martin	<i>Progne subis</i>	Bird	Blue	
Rocky Mountain Physa	<i>Physella propinqua</i>	Gastropod	Blue	
Roosevelt Elk	<i>Cervus elaphus roosevelti</i>	Mammal	Blue	
Silver-spotted Skipper, <i>californicus</i> subspecies	<i>Epargyreus clarus californicus</i>	Insect	Red	
Sinuous Snaketail	<i>Ophiogomphus occidentis</i>	Insect	Blue	
Striated Fingernailclam	<i>Sphaerium striatinum</i>	Bivalves	Blue	
Sunset Physa	<i>Physella virginea</i>	Gastropod	Blue	
Threaded Vertigo	<i>Nearctula</i> sp. 1	Gastropod	Red	1-SC (Jul 2012)
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Mammal	Blue	
Western Branded Skipper,	<i>Hesperia colorado oregonia</i>	Insect	Red	

oregonia subspecies				
Western Pine Elf, <i>sheltonensis</i> subspecies	<i>Callophrys eryphon sheltonensis</i>	Insect	Blue	
Western Pondhawk	<i>Erythemis collocata</i>	Insect	Blue	
Western Screech-Owl, <i>kennicottii</i> subspecies	<i>Megascops kennicottii kennicottii</i>	Bird	Blue	1-SC (Jan 2005)
Western Thorn	<i>Carychium occidentale</i>	Gastropod	Blue	
Western Toad	<i>Anaxyrus boreas</i>	Amphibian	Blue	1-SC (Jan 2005)
Wolverine, <i>luscus</i> subspecies	<i>Gulo gulo luscus</i>	Mammal	Blue	

From: [Coupar, Meghan FLNR:EX](#)
To: ["monte.staats@scrd.ca"; "Bryan Shoji"](#)
Subject: 2016-04-29 Email
Date: Friday, April 29, 2016 11:39:00 AM
Attachments: [Authorization #102714 Sunshine Coast Regional District - Amendment Permit.pdf](#)
[Appendix A - Standards and Practices for Instream Works.pdf](#)
[Appendix B - Impact Assessment Report.pdf](#)
[Appendix C - Development Plan.pdf](#)
[Appendix D - Emergency Water Supply at Chapman Lake Report.pdf](#)
[Appendix E - Environmental Monitoring Plan.pdf](#)

Authorization: #102714

Permittee: **Sunshine Coast Regional District**

Park: Tetrahedron Park

Purpose: Amendment – Land Use Occupancy

Term: February 1, 2014 to January 31, 2024

Hello Monte and Bryan,

Please find enclosed your validated copy of the Amendment Park Use Permit - Authorization Number: 102714 for the term of February 1, 2014 to January 31, 2024 for the purpose of Water Impoundments within the above mentioned Park.

Please be advised the following is now due:

- 2015 Summary of Activities (due February 01, 2016)

If you have any questions or concerns regarding the above, you can contact me directly or call the FrontCounter BC Contact Centre, toll free at 1-877-855-3222 for assistance. If you would like to come into a FrontCounter BC office, the following link will provide you with a list of offices locations nearest you: www.frontcounterbc.ca/locations.

Sunshine Coast Regional District's recent Land Use Occupancy Application for a Major Amendment to Permit #102714 was received by FrontCounter BC Surrey on April 14, 2016 and will be entered into our system today.

Thank you,

Meghan Coupar

Parks Permit Clerk

FrontCounter BC - South Coast Regional Office

South Coast, Haida Gwaii/South Island Sections

Tel: (604) 586-4439 Fax: (604) 586-4434

Toll Free: 1-877-855-3222

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Ministry of
Environment

PARK USE PERMIT

LAND USE / OCCUPANCY

This Park Use Permit No. **102714** (the "Permit") is issued under the authority of the *Park Act*

(the "Park")

See "Management Plan Schedule, Permit Area Description" for a complete list of Parks and Protected Areas

FROM:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by the Minister responsible for the *Park Act* (the "Province") at the following address:

**Ministry of Environment
BC Parks
South Coast Region
200 - 10470 - 152nd Street
Surrey BC V3R 0Y3**

TO:

Sunshine Coast Regional District

(the "Permittee") at the following address:

**1975 Field RD
Sechelt, BC V0N 3A1**

THE PROVINCE AND THE PERMITTEE AGREE AS FOLLOWS:

ARTICLE I - GRANT OF PERMIT

- 1.01 The Province, on the terms and conditions of this Permit, grants to the Permittee permission to enter upon and use that part of the Park (the "Permit Area") described, and for the purposes described, in the Management Plan Schedule.

ARTICLE II - TERM

- 2.01 The duration of this Permit is for a term of **10 years** commencing on **February 1, 2014** (the "Commencement Date") and ending on **January 31, 2024** (the "Expiration Date"), unless cancelled, terminated or renewed in accordance with the terms and conditions of this Permit.

ARTICLE III - FEES

- 3.01 The Permittee must pay to the Province a minimum fee (the "Permit Fee") of **\$500.00 (plus applicable taxes)** prior to Commencement date and on each anniversary of the commencement date during the term of this Permit.
- 3.02 The Province may, by notice to the Permittee not less than 30 days prior to each anniversary of the Commencement Date, increase the Permit Fee to an amount solely determined by the Province at its discretion, and the Permittee must pay the increased amount.
- 3.03 The Permittee must pay interest to the Province on money payable by the Permittee and owing to the Province under this Permit, at the rate of interest prescribed by the *Financial Administration Act* in respect of money owing to the Province, which interest will be calculated from the date that the money becomes payable to the Province.

ARTICLE IV - INDEMNITY

- 4.01 The Permittee will indemnify and save harmless the Province, its servants, employees and agents against all losses, claims, damages, actions, costs and expenses that the Province, its servants, employees and agents may sustain, incur, suffer or be put to at any time arising, directly or indirectly, from any act or omission of the Permittee, its employees, agents, contractors and licensees under this Permit, except for any liability arising from any independent, negligent act of the Province.

ARTICLE V – SECURITY AND INSURANCE

- 5.01 On the Commencement Date, you will deliver to us Security in the amount of **\$0.00** which will:
- (a) guarantee the performance of your obligations under this Permit;
 - (b) be in the form required by us; and
 - (c) remain in effect until we certify, in writing, that you have fully performed your obligations under this Permit.
- 5.02 Despite section 5.01, your obligations under that section are suspended for so long as you maintain in good standing other security acceptable to us to guarantee the performance of your obligations under this Permit and all other Dispositions held by you.
- 5.03 We may use the Security for the payment of any costs and expenses incurred by us to perform any of your obligations under this Permit that are not performed by you and, if such event occurs, you will, within 30 days of that event, deliver further Security to us in an amount equal to the amount drawn down by us.
- 5.04 After we certify, in writing, that you have fully performed your obligations under this Permit, we will return to you the Security maintained under section 5.01, less all amounts drawn down by us under section 5.03.
- 5.05 You acknowledge that we may, from time to time, notify you to
- (a) change the form or amount of the Security; and
 - (b) provide and maintain another form of Security in replacement of or in addition to the Security posted by you under this Permit;
- and you will, within 60 days of receiving such notice, deliver to us written confirmation that the change has been made or the replacement or additional form of Security has been provided by you.
- 5.06 You must
- (a) without limiting your obligations or liabilities under this Permit, at your expense, effect and keep in force during the Term the following insurance with insurers licensed to do business in Canada:
 - (i) **Commercial General Liability** insurance in an amount of not less than two million dollars **\$2,000,000.00 inclusive per occurrence** insuring against liability for personal injury, bodily injury (including death) and property damage, including coverage for all accidents or occurrences on the Permit Area or any improvements. Such policy will include cross liability, liability assumed under contract, provision to provide 30 days advance notice to us of material change or cancellation, and include us as an additional insured; **See Attached Schedule**
 - (b) ensure that all insurance required to be maintained by you under this Permit is primary and does not require the sharing of any loss by any of our insurers;
 - (c) within 10 working days of the Commencement Date of this Permit, provide to us evidence of all required insurance in the form of a completed "Province of British Columbia Certificate of Insurance";
 - (d) if the required insurance policy or policies expire or are cancelled before the end of the Term of this Permit, provide within 10 working days of the cancellation or expiration, evidence of new or renewal policy or policies of all required insurance in the form of a completed "Province of British Columbia Certificate of Insurance";

- (e) notwithstanding subsections (c) or (d) above, if requested by us, provide to us certified copies of the required insurance policies to be maintained by you under this Permit.

5.07 We may, acting reasonably, from time to time, require you to

- (a) change the amount of insurance set out in subsection 5.06(a); and
- (b) provide and maintain another type or types of insurance in replacement of or in addition to the insurance previously required to be maintained by you under this Permit;

and you will, within 60 days of receiving such notice, cause the amounts and types to be changed and deliver to us a completed "Province of British Columbia Certificate of Insurance" for all insurance then required to be maintained by you under this Permit.

5.08 You shall provide, maintain, and pay for any additional insurance which you are required by law to carry, or which you consider necessary to insure risks not otherwise covered by the insurance specified in this Permit in your sole discretion.

5.09 You waive all rights of recourse against us with regard to damage to your own property.

ARTICLE VI - COVENANTS OF THE PERMITTEE

6.01 The Permittee must:

- (a) pay the Permit Fee and other money payable under this Permit when due at the address of the Province first written above or at such place as the Province may specify from time to time;
- (b) pay when due all taxes, levies, charges and assessments that relate to operations of the Permittee under this Permit;
- (c) comply with all laws, bylaws, orders, directions, ordinances and regulations of any competent governmental authority in any way affecting the Permit Area, the Park, its use and occupation or the Permittee's operations under this Permit;
- (d) advise its employees, contractors, licensees, and agents of the laws and regulations respecting provincial parks and recreation areas and the conditions of this Permit respecting conduct in the permit Area;
- (e) keep the Permit Area in a safe, clean and sanitary condition to the satisfaction of the Province and make safe, clean and sanitary any portion of the Permit Area that the Province may direct by notice in writing to the Permittee;
- (f) remove from the Permit Area and the Park all garbage, debris and effluent resulting from its use of the Park and Permit Area under this Permit, except as otherwise permitted in the Management Plan Schedule;
- (g) comply with all orders and directions made, verbally or in writing, by a park officer (as defined in the *Park Act*) relating to the Park, this Permit or the Permit Area;
- (h) not construct, erect, place, repair, maintain or alter any building, fixture, equipment, structure or improvement in the Permit Area except as may be permitted by this Permit or with the prior written consent of the Province;
- (i) take all reasonable precautions to prevent and suppress fires in the Permit Area;
- (j) not interfere with free public access through, across and upon the Permit Area, unless otherwise specified in the Management Plan Schedule;
- (k) not interfere with or disrupt the activities and operations of other Permittee's or users in the Park;
- (l) use and occupy the Permit Area only in accordance with the provisions of this Permit;
- (m) not remove, destroy, damage, disturb or exploit any natural resource (as that term is defined in the *Park Act*) or any archaeological or cultural artefact found in or on the Permit Area except as may be permitted by this Permit, and only then in accordance with the *Park Act* and all other applicable laws;
- (n) not commit or allow any wilful or voluntary waste, damage or destruction in or upon the Permit Area;

- (o) pay for or repair, as determined by the Province, any damage caused to the property of the Province by the Permittee, its employees, agents, contractors, or licensees;
- (p) upon the expiration, cancellation or termination of this Permit:
 - (i) peaceably quit and deliver up possession of the Permit Area to the Province,
 - (ii) remove all chattels and improvements of the Permittee from the Permit Area within 30 days of the expiration, cancellation or sooner termination of this Permit, unless otherwise advised in writing, by the Province,
 - (iii) deliver to the Province possession of all equipment, furnishings, fixtures, chattels and improvements owned by the Province in a state of good repair and working order, and
 - (iv) restore the Permit Area to the satisfaction of the Province;
 - (v) and to the extent necessary, this covenant will survive the expiration, cancellation or termination of this Permit; and
- (q) comply with all provisions of the schedules to this Permit.

ARTICLE VII - RIGHTS OF THE PROVINCE

- 7.01 The Province retains all rights in respect of the Park and Permit Area which are not expressly granted to the Permittee under this permit, including, without limitation:
- (a) the right at all times for the Province, its authorized representatives, employees, and agents to have unimpeded access over and along all portions of the Permit Area and to inspect any portions of the Permit Area;
 - (b) the right at all times to construct, repair, alter and maintain buildings, equipment, structures and improvements upon the Permit Area; and
 - (c) the right to grant further rights in respect of the Park and Permit Area, provided that such rights do not unreasonably impede, obstruct or compete with the rights of the Permittee under this Permit.

ARTICLE VIII - NOTICE

- 8.01 Any notice required to be given by either party to the other will be deemed to be given if it is in writing and is delivered by hand or prepaid registered mail to the address first written above or any other address that may be specified in writing by a party and a notice will be deemed to be delivered, if mailed, eight days after the time of mailing except, in the case of a postal interruption, actual receipt is required.
- 8.02 Notwithstanding section 8.01, any written notice to be given by the Province to the Permittee under this Permit will be effectively given if it is posted in a conspicuous place on the Permit Area.

ARTICLE IX - RENEWAL

- 9.01 Not later than 140 days prior to the Expiration Date, the Permittee may, by notice in writing delivered to the Province, apply to the Province for a renewal of this Permit.
- 9.02 Provided that the Permittee is not in default under this Permit and subject to the terms of the *Park Act*, the Province may renew this Permit upon the terms and conditions determined by the Province.
- 9.03 The Permittee acknowledges that nothing in this Permit obligates the Province to renew this Permit and the Province's decision in that respect is entirely within its discretion

ARTICLE X - TRANSFER

- 10.01 The Permittee must not assign, transfer, sublicense or grant any of the rights or privileges granted by this Permit without the prior written consent of, and on the terms and conditions determined by, the Province.
- 10.02 If the Permittee is a corporation then a change in the control (as that term is defined in subsection 2(3) of the *Business Corporations Act*) of the Permittee without the prior written consent of the Province is deemed to be a breach of section 10.01.

ARTICLE XI - CANCELLATION

- 11.01 In the event that
- (a) the Permittee defaults in the payment of the Permit Fee or other money payable under this Permit, and the default continues for 7 days after the giving of written notice of the default by the Province to the Permittee;
 - (b) the Permittee fails to perform or observe any of the terms or conditions of this Permit, other than the payment of money, and the failure is not remedied within a period specified by the Province;
 - (c) the Permittee has wilfully misrepresented information:
 - (i) on the application form which led to the granting of this Permit, or
 - (ii) required to be provided under the terms and conditions of this Permit;
 - (d) the Permit Area is damaged or destroyed by any cause whatsoever;
 - (e) the Park is closed by the Province;
 - (f) the Permittee files a petition in bankruptcy, is adjudged bankrupt, is petitioned into bankruptcy, makes an assignment for the benefit of its creditors, becomes insolvent or takes the benefit or protection of any statute for bankrupt or insolvent debtors;
 - (g) any of the Permittee's assets is seized in execution from the Permit Area;
 - (h) the Permittee, its employees, agents, contractors or licensees performs any act which in the opinion of the Province, affects the good standing or reputation of the Park, or adversely affects any other permit holder or park user within the Park;
- the Province may cancel this Permit immediately by written notice to the Permittee.
- 11.02 In the event that the Permittee and the Province mutually agree in writing to terminate this Permit, the parties will be released and discharged from their obligations under this Permit, except as otherwise provided in this Permit.
- 11.03 The obligation of the Permittee
- (a) to pay the Permit Fee and other money payable under this Permit; and
 - (b) to comply with Sections 4.01, 6.01(e), 6.01(o) and 6.01(p);
- will survive the expiration, cancellation or termination of this Permit.
- 11.04 The Permittee will not be entitled to any compensation from the Province, in damages or otherwise, in respect of a cancellation or termination of this Permit.

ARTICLE XII - MISCELLANEOUS

- 12.01 This Permit may be inspected by the public at such times and at such places as the Province may determine.
- 12.02 Time is of the essence in this Permit.
- 12.03 Nothing in this Permit will be considered to have been waived by the Province unless such waiver is in writing.
- 12.04 During the term of this Permit, the Permittee will be an independent contractor and not the agent, employee or partner of the Province.

- 12.05 The Province will not be liable for any loss, damage, cost or expense resulting from the destruction of or damage to the Permittee's property or a disruption of the Permittee's operations under this Permit which result from strikes, flooding or other acts of God, vandalism, or any other interference to the Permittee's operation or property.

ARTICLE XIII- INTERPRETATION

- 13.01 In this Permit, unless the context otherwise requires, the singular includes the plural and the masculine includes the feminine, a corporation and body politic.
- 13.02 The captions and headings contained in the Permit are for convenience only and are not to be construed as defining or in any way limiting the scope or intent of the provisions of this Permit.
- 13.03 In this Permit, a reference to an enactment of the Province of British Columbia or of Canada includes a reference to any subsequent enactment of like effect, and unless the context otherwise requires, all statutes referred to in this Permit are enactments of the Province of British Columbia.
- 13.04 If any part of this Permit is found to be illegal or unenforceable, that part will be considered separate and severable and the remaining parts will be enforceable to the fullest extent permitted by law.
- 13.05 If all or part of the Permit Area is in a recreation area established or continued under the *Park Act*, this Permit is deemed to be a resource use permit as that term is defined in the *Park Act*.
- 13.06 All schedules to this Permit form an integral part of this Permit.

IN WITNESS WHEREOF the parties have duly executed this Permit.

SIGNED and **DELIVERED** on behalf of the **Province** by a duly authorized representative of the Province.



Duly Authorized Representative

Jennie Aikman

Print Name

Regional Director

Print Title

April 29, 2016

Date

MANAGEMENT PLAN SCHEDULE

PERMIT AREA DESCRIPTION

The Permittee is authorized to enter the Permit Area described below and outlined on the attached maps.

Permit Area Overview Map

- Tetrahedron Park
- Area adjacent to the outlet of Chapman Lake
- Area adjacent to the outlet of Edwards Lake

Copyright

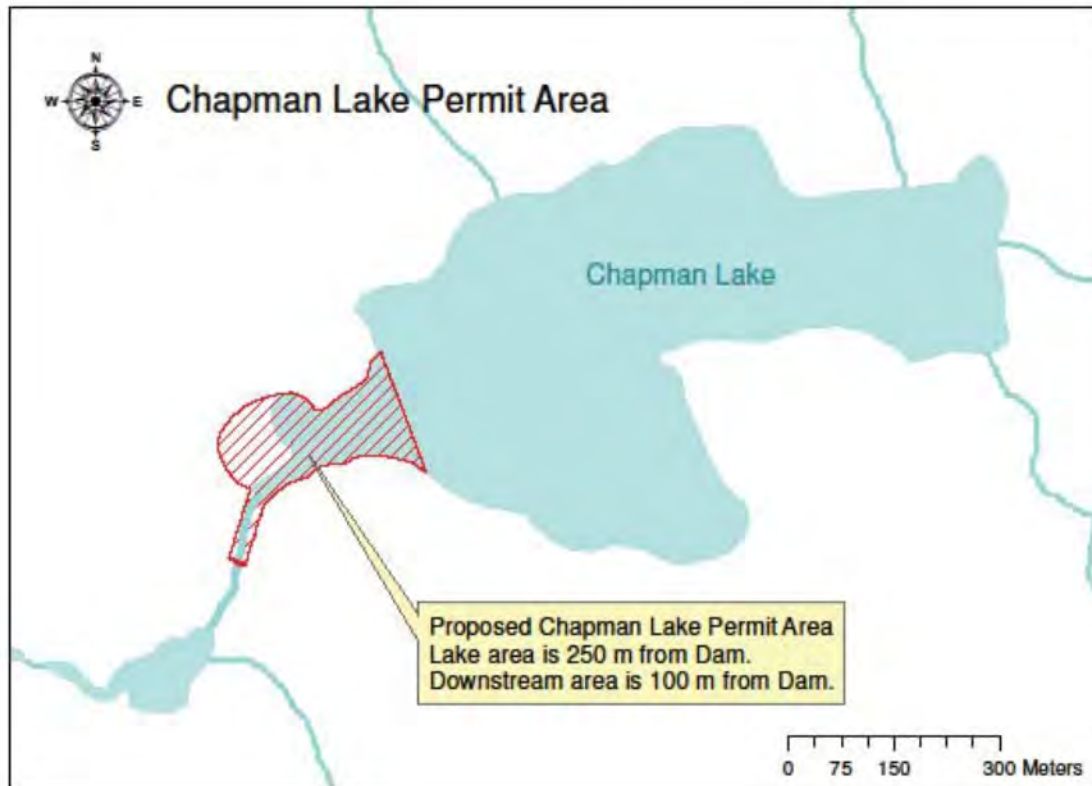
Chapman Lake Permit Area

Copyright

Edwards Lake Permit Area

Copyright

Temporary Chapman Lake Permit Area (valid until 06 September 2016)



FEE(s)

Protected Land: **Tetrahedron Park**

Activities: Water Impoundments (dams and dykes)
Purpose: Rights of way and miscellaneous land use without structures - The use of a defined area for a powerline, telephone line, pipeline or other service or utility right of way and other miscellaneous land use without structures - Company or local government. Fee charged for this purpose is for each protected land.

Fee Description: \$500 or \$60 per hectare whichever is greater
Schedule K Ref: Part 3, Column 2, Item 4

Fees:

Item	Number	Rate	Total
Minimum Fee	1	\$500.00	\$500.00
Hectares	1	\$60.00	\$60.00
Sub Total (based on Fee Description above):			\$500.00

Sub Total: **\$500.00**

Minimum Fee Required: **\$500.00**
(plus applicable taxes)