



TOWN OF LADYSMITH

A REGULAR MEETING OF THE
COUNCIL OF THE TOWN OF LADYSMITH
WILL BE HELD ON

MONDAY, SEPTEMBER 15, 2014

Call to Order 3:30 p.m. (Council Chambers - Ladysmith City Hall)

Closed Meeting 3:31 p.m.

Part 1 - Regular Meeting 6:00 p.m. (Council Chambers – Ladysmith City Hall)

Part 2 – 7:00 p.m. Aggie Hall (Corner of Symonds Street and First Avenue)

Part 3 – Council Chambers - Ladysmith City Hall

A G E N D A

CALL TO ORDER 3:30 P.M. in order to retire immediately into Closed Session

1. CLOSED MEETING

In accordance with section 90(1) of the *Community Charter*, this section of the meeting will be held *In Camera* to consider the following items:

- labour relations or other employee relations
- personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality
- the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose
- the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality

PART 1 - REGULAR MEETING 6:00 P.M. (LADYSMITH COUNCIL CHAMBERS)

2. AGENDA APPROVAL

3. MINUTES

3.1. Minutes of the Regular Meeting of Council held August 18, 2014.....1 - 6

4. PUBLIC HEARINGS – None

NOTE: THE REGULAR BUSINESS OF COUNCIL WILL CONTINUE UNTIL APPROXIMATELY 6:45 P.M. THE MEETING WILL THEN BE RELOCATED TO AGGIE HALL FOR THE WATERSHED MODELLING REPORT PRESENTATION.

PART 2 - REGULAR MEETING 7:00 P.M. (AGGIE HALL)

5. PRESENTATIONS

- 5.1. Watershed Modelling Report – Presentation by Maria Lau (Tetra Tech EBA) and John Manson (Director of Infrastructure Services). Report attached as Appendix 1.

PART 3 – REGULAR MEETING (LADYSMITH COUNCIL CHAMBERS)

6. BYLAWS – (OCP AND ZONING) - None

7. PROCLAMATIONS – None

8. DEVELOPMENT APPLICATIONS

- 8.1. Zoning Bylaw Amendment – Owner Occupancy and Housekeeping Amendments7 - 8
- 8.2. Holland Creek Place – Covenant CA3656639 (Kolk)9 - 10

9. REPORTS

- 9.1. Municipal Services Committee Recommendations – Meeting of August 18, 201411
- 9.2. Properties on the Permissive Tax Exemption Bylaw for 2015 12 - 22
- 9.3. Multi Materials B.C. (MMBC) Contract 23 - 26

10. BYLAWS

- 10.1. Town of Ladysmith Community Centre and Facilities Fees and Charges Bylaw 2014, No. 1846 27 - 28
May be adopted.

The purpose of Bylaw 1846 is to establish updated fees and charges for the use of the Frank Jameson Community Centre and other Town of Ladysmith recreation facilities.

- 10.2. Town of Ladysmith Permissive Tax Exemptions Bylaw 2014, No. 1867 29 - 37
May be read a first, second and third time.

The purpose of Bylaw 1867 is to exempt certain buildings and surrounding land from property taxes in 2015. The exemptions are in accordance with the *Community Charter*, and apply to churches, charitable, not-for-profit and recreational organizations and certain partnerships.

10.3. Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw (No. 1), 2014, No. 1868.....38
May be read a first and second time.

The purpose of Bylaw 1868 is to amend the Zoning Bylaw to require owner occupancy of the principal dwelling or the coach house dwelling on a property where both dwellings are located and to amend the definition of Civic Use and add a definition for Public Works Yard.

CORRESPONDENCE

10.4. Steve Dinsmore, Ladysmith Kinsmen Club - Update on Completed, Planned and Proposed Projects.....39

Staff Recommendation

That Council:

- a) receive with thanks the correspondence from the Kinsmen Club dated August 25, 2014 regarding various projects undertaken by the Club;
- b) refer the proposed project to replace the playground at Transfer Beach Park staff to discuss project details with the Kinsmen Club including, but not limited to, playground design, financial implications, project schedule, the option of partnering with other community groups such as the Ladysmith Rotary Club, etc., and ask staff to report back to Council in this regard; and,
- c) once approval in principle is given by Council to proceed with the project, refer the project details to the Parks, Recreation and Culture Commission for review and recommendation.

11. NEW BUSINESS - NONE

12. UNFINISHED BUSINESS

12.1. Extension of Municipal Services (Policy Paper) 40 - 57

Council requested that staff bring forward a policy paper regarding the proposed extension of municipal services. The report is attached for Council’s consideration.

Staff recommendation:

That Council receive the policy paper titled “Extension of Municipal Services” prepared by Allan Neilson-Welch, and refer the report to staff if further information is required.

13. QUESTION PERIOD

- A maximum of 15 minutes is allotted for questions.
- Persons wishing to address Council during “Question Period” must be Town of Ladysmith residents, non-resident property owners, or operators of a business.
- Individuals must state their name and address for identification purposes.

- Questions put forth must be on topics which are not normally dealt with by Town staff as a matter of routine.
- Questions must be brief and to the point.
- Questions shall be addressed through the Chair and answers given likewise. Debates with or by individual Council members or staff members are not allowed.
- No commitments shall be made by the Chair in replying to a question. Matters which may require action of the Council shall be referred to a future meeting of the Council.

14. ADJOURNMENT



TOWN OF LADYSMITH
MINUTES OF A MEETING OF COUNCIL
MONDAY, AUGUST 18, 2014
COUNCIL CHAMBERS, CITY HALL
CALL TO ORDER 6:00 P.M.

COUNCIL MEMBERS PRESENT:

Mayor Rob Hutchins	Councillor Steve Arnett	Councillor Jillian Dashwood
Councillor Bill Drysdale	Councillor Gord Horth	Councillor Duck Paterson
Councillor Glenda Patterson		

STAFF PRESENT:

Ruth Malli	Sandy Bowden	Felicity Adams
John Manson	Clayton Postings	Joanna Winter

CALL TO ORDER

Mayor Hutchins called this Regular Meeting of Council to order at 6:00 p.m.

CLOSED SESSION

CS 2014-284

Moved and seconded at 6:01 p.m.:

That Council retire into Closed Session to discuss the following items:

- discussions with municipal officers and employees respecting municipal objectives, measures and progress reports for the purposes of preparing an annual report under section 98 [annual municipal report]
- the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose
- the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality
- negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

Motion carried.

RISE AND REPORT

Council arose from Closed Session with report on the following item:

- That the listing price of the Town-owned property at 520 Jim Cram Drive be reduced to \$550,000 in accordance with the appraisal by Island Appraisals Ltd. dated July 30, 2014.

AGENDA APPROVAL

CS 2014-285

Moved and seconded:

That the agenda for the Regular Council Meeting of August 18, 2014 be approved as amended by the following addition:

12.1 School District 68 Issues

Motion carried.

MINUTES

CS 2014-286

Moved and seconded:

That the minutes of the Regular Meeting of Council held Monday, July 21, 2014 be approved.

Motion carried.

BYLAWS – OCP AND ZONING **New and Updated Zoning Bylaw**

Town of Ladysmith Area G and Area H Land Use Regulations Repeal Bylaw 2014, No. 1858

Moved and seconded:

CS 2014-287

That Town of Ladysmith Area G and Area H Land Use Regulations Repeal Bylaw 2014, No. 1858 be adopted.

Motion carried.

Official Community Plan Bylaw 2003, No. 1488, Amendment Bylaw (No. 43), 2014, No. 1859

Moved and seconded:

CS 2014-288

That Town of Ladysmith Official Community Plan Bylaw 2003, No. 1488, Amendment Bylaw (No. 43), 2014, No. 1859 be adopted.

Motion carried.

Town of Ladysmith Zoning Bylaw 2014, No. 1860

Moved and seconded:

CS 2014-289

That Town of Ladysmith Zoning Bylaw 2014, No. 1860 be adopted.

Motion carried.

Official Community Plan Bylaw 2003, No. 1488, Amendment Bylaw (No. 44), 2014, No. 1861

Moved and seconded:

CS 2014-290

That Town of Ladysmith Official Community Plan Bylaw 2003, No. 1488, Amendment Bylaw (No. 44), 2014, No. 1861 be adopted.

Motion carried.

Moved and seconded:

CS 2014-291

That Council direct staff to initiate an amendment to Town of Ladysmith Zoning Bylaw 1860 to require owner occupation of a property with a carriage house on it.

Motion carried.

REPORTS

Municipal Services Committee Recommendations

CS 2014-292

Moved and seconded:

That Council approve the draft Corporate Flag Protocol Policy as amended, with section 2.3 amended to read *"In the case of a death, flags shall be flown at half-mast from the day of the death until sunset on the day of the funeral or the seventh day following the death, whichever occurs first."*

Motion carried.

CS 2014-293

Moved and seconded:

That Council waive the trolley rental fee in support of the Ladysmith tour during the Savour Cowichan Wine and Culinary Festival on September 30, 2014, subject to availability of funds in the Trolley Rental Grant-in-Aid.

Motion carried.

CS 2014-294

Moved and seconded:

That Council request staff to investigate options for opting in or out of the provincial Ministry of Environment Contaminated Site Profile System and report back with their findings.

Motion carried.

CS 2014-295

Moved and seconded:

That Council direct staff to improve the lighting on the Bayview Connector.

Motion carried.

CS 2014-296

Moved and seconded:

That Council request Transport Canada to install signage for appropriate speeds adjacent to the channel between Woods Island and Slack Point to regulate the speed of watercraft in Ladysmith's inner harbour.

Motion carried.

Award of Tender – Holland Creek Bridge Replacement

CS 2014-297

Moved and seconded:

That Council

1. Confirm that the replacement Holland Creek Trail Bridge is to be built to support small equipment, such as ATVs and parks equipment
2. Confirm that the bridge is to be constructed at a Q200 rating for 200 year discharge levels
3. Authorize an increase in the project budget of \$75,000 to a total project cost of \$175,000, and direct staff to amend the 2014 to 2018 Financial Plan accordingly; and
4. Award Tender 2014PRC-04 "Holland Creek Bridge Replacement" to Heavy Metal Marine Ltd.

Motion carried.

Heritage Legacy Fund Application – Transfer Beach Interpretive History Pictorial Project

Moved and seconded:

CS 2014-298

That Council authorize staff to submit an application to the Heritage Legacy Fund for a grant of up to \$10,000 for the Transfer Beach Interpretive History Pictorial Project.

Motion carried.

BYLAWS

Town of Ladysmith Community Centre and Facilities Fees and Charges Bylaw 2014, No 1846

Moved and seconded:

CS 2014-299

That Town of Ladysmith Community Centre and Facilities Fees and Charges Bylaw 2014, No. 1846 be read a first, second and third time.

Motion carried.

CORRESPONDENCE

**R.J. MacLachlan, Ladysmith Baseball Association
Proposal for Scorekeepers' Building at Holland Creek Ball Park**

Moved and seconded:

CS 2014-300

That Council refer the proposal from the Ladysmith Baseball Association to build a scorekeeper's shelter at the Holland Creek Ball Park to the Parks, Recreation and Culture Commission for review and recommendation.

Motion carried.

**Kathleen Harrison, Cowichan Valley Regional District
Proposed CVRD Annual Financial Contribution Services –
Cowichan Sportsplex**

Moved and seconded:

CS 2014-301

That Council refer the correspondence from the Cowichan Valley Regional District regarding a funding model for the Cowichan Sportsplex to staff for investigation and recommendation.

Motion carried.

**Cochrane Mowbray
Proposed Contribution of Decorative Pavers for First Avenue**

Moved and seconded:

CS 2014-302

That Council refer the correspondence from Cochrane Mowbray outlining a proposal to donate decorative pavers for installation on First Avenue outside the Old Town Bakery to the Heritage Revitalization Advisory Commission for review and recommendation.

Motion carried.

Councillor D. Paterson declared a conflict of interest with the following agenda item and excused himself from the meeting.

**Steve Dinsmore, Kinsmen Club of Ladysmith
Request to Partner with the Town of Ladysmith for Grant
Application**

Moved and seconded:

CS 2014-303

That Council advise the Kinsmen Club of Ladysmith that it supports a proposed partnership between the Town of Ladysmith and the Kinsmen Club as outlined in the correspondence from the Club dated July 30, 2014, for the sole purpose of securing grant funding through the Nanaimo Foundation to replace the playground structure at Transfer Beach; and further, that Council direct staff to work with the Club to establish details of this arrangement.

Motion carried.

Councillor D. Paterson returned to the meeting.

**Dave Petryk, Tourism Vancouver Island
Request for Contribution to Hiking Trails Strategy for the
Vancouver Island Region**

Moved and seconded:

CS 2014-304

That Council refer the request from Tourism Vancouver Island for funding to support a proposed Hiking Trails Strategy for Vancouver Island to the Cowichan Valley Regional District for consideration for funding for the project on a regional basis.

Motion carried.

**Lisa Storoshenko, Municipal Insurance Association of British
Columbia**

Appointment of Voting Delegates to Annual General Meeting

Moved and seconded:

CS 2014-305

That Council appoint Mayor Hutchins as voting delegate and Councillor Arnett as alternate for the Annual General Meeting of the Municipal Insurance Association of British Columbia to be held on Tuesday, September 23, 2014.

Motion carried.

NEW BUSINESS

**Ratification of E-mail Vote to Support request form Town of
Qualicum Beach to Waive Trolley Rental Policy**

Moved and seconded:

CS 2014-306

That Council waive the trolley rental policy in order to permit the Town of Qualicum Beach to rent the Ladysmith Trolley to provide transportation to Qualicum Beach residents during the Qualicum Beach Train Station Centennial on August 23, 2014, and request staff to ensure that the Town of Qualicum Beach has appropriate liability insurance in place.

Motion carried.

School District 68 Facilities

Moved and seconded:

CS 2014-307

That Council write to the Board of Trustees of School District 68 insisting that grass and playing fields at schools in Ladysmith be maintained to the same standards as other schools throughout School District 68 and that the graffiti on portables be removed immediately, and requesting assurance as to the state of readiness of all Ladysmith schools to accommodate students for September.

Motion carried.

QUESTION PERIOD

Council advised that watering restrictions for high use facilities such as sports fields and parks differ from those in place for residential properties, and requested staff to investigate frequency of watering at Ladysmith Secondary School.

Council stated that staff will be bringing forward a report with recommendations for the use of revenues from Multi-Materials B.C.

Council advised that no policy direction has been given with respect to a time limit of maintenance of memorial benches.

Council advised that staff are looking at the Forward Road area as well as other sites in preparing its report with respect to the provincial Contaminated Sites Registry.

Council advised that it has not yet received the watershed modelling report with respect to the Couverdon boundary expansion application.

Council advised that any revenues budgeted for expenses related to the Couverdon boundary expansion application will be returned to the applicant if the forecast expenses are not incurred.

ADJOURNMENT

CS 2014-308

Moved and seconded:

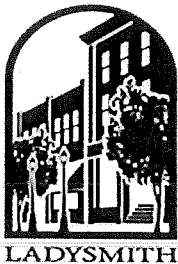
That this meeting of Council adjourn at 7:55 p.m.

Motion carried.

CERTIFIED CORRECT:

Mayor (R. Hutchins)

Corporate Officer (S. Bowden)



Town of Ladysmith
STAFF REPORT

To: Ruth Malli, City Manager
From: Felicity Adams, Director of Development Services
Date: September 10, 2014
File No: 3900-03

Re: ZONING BYLAW 2014, No. 1860 – OWNER OCCUPANCY AND HOUSEKEEPING AMENDMENTS

RECOMMENDATION(S):

That Council consider giving first and second reading to Bylaw 1868, cited as “Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw (No. 1), 2014, No. 1868”, to amend the Zoning Bylaw to:

- (1) require owner occupancy of the principal dwelling or the coach house dwelling on a property where both dwellings are located, and
 - (2) amend the definition of Civic Use and add a definition for Public Works Yard, and
- That Council direct that a Public Hearing be scheduled for Bylaw 1868.

PURPOSE:

The purpose of this staff report is to present a bylaw to amend the Zoning Bylaw regarding the owner occupancy of a dwelling unit or coach house when both are constructed on a property and to consider housekeeping amendments.

INTRODUCTION/BACKGROUND:

At its meeting held August 18, 2014, Council provided the following direction to staff:

Moved and seconded:

That Council direct staff to initiate an amendment to Town of Ladysmith Zoning Bylaw 1860 to require owner occupation of a property with a carriage house on it.

Motion carried.

Following the legal review of the Zoning Bylaw, civic use was changed from a use permitted in all zones to a use permitted in the P-1 zone. The definition of civic use should have been amended at the same time to address the public works yard in the P-1 zone. Staff are bringing forward a house-keeping amendment at this time.

SCOPE OF WORK:

The stage of this proposal is consideration of first and second reading and direction to hold a public hearing on the proposed bylaw. Statutory advertising will be placed in two consecutive issues of the local newspaper.

ALTERNATIVES:

That Council not proceed with bylaw readings.

FINANCIAL IMPLICATIONS:

The cost of advertising for the public hearing will be absorbed into the Development Services budget.

LEGAL IMPLICATIONS:

Staff consulted with the Town's legal counsel in preparing the owner occupancy bylaw amendment. A public hearing is required to be held.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS:

Council provided direction to staff as a result of the owner occupancy issue being raised during the approval process for the new Zoning Bylaw. This proposed bylaw change has not yet been considered by the community. Statutory notice for the public hearing will be provided in the local newspaper and posted on Town notice boards.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:

The Director of Infrastructure Services has provided input into the definition of public works yard.

RESOURCE IMPLICATIONS:

The holding of a public hearing will require staff time.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT:

Complete community land use is one of the sustainability strategies in the Visioning Report.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Effective land use planning and community design is a Council strategic direction.

SUMMARY:

Council may consider the first two readings of Bylaw 1868 and refer it to public hearing.

I concur with the recommendation.

Ruth Malli, City Manager

ATTACHMENTS:

Bylaw 1868



Town of Ladysmith

STAFF REPORT

To: Ruth Malli, City Manager
From: Felicity Adams, Director of Development Services
Date: September 10, 2014
File No: 3360-13-05

Re: Holland Creek Place – Covenant CA3656639 - Kolk
Subject Property: Lot A, District Lot 43, Oyster District, Plan EPP12594

RECOMMENDATION(S):

THAT Council confirm its direction from the July 7, 2014 meeting as follows:

That Council not require the construction of a walkway from Lot A, District Lot 43, Oyster District, Plan EPP12594 to the sidewalk on Dogwood Drive due to desired tree retention and long term maintenance implications.

PURPOSE:

The purpose of this staff report is to report to Council on the feasibility of installing a sidewalk at the entrance of the proposed subdivision on Holland Creek Place to connect with the existing sidewalk on Dogwood Drive.

INTRODUCTION/BACKGROUND:

At its meeting held July 7, 2014 Council passed the following resolutions regarding the proposed development:

That Council not require the construction of a walkway from Lot A, District Lot 43, Oyster District, Plan EPP12594 to the sidewalk on Dogwood Drive due to desired tree retention and long term maintenance implications.

That staff be requested to investigate with the developer the feasibility of installing a sidewalk at the entrance of the proposed subdivision to connect with the existing sidewalk on Dogwood Drive.

SCOPE OF WORK:

The developer's cost to install the original pedestrian improvements is estimated to be approximately \$4,000. Staff reviewed the potential to relocate this contribution to Holland Creek Place as directed by Council. The developer is not in favour of constructing a sidewalk in this location.

A concrete sidewalk exists on the north side of Holland Creek Place to Dogwood Drive. There are existing lawns and landscaping, as well as utility kiosks located along the south side of the cul-de-sac where an additional sidewalk was to be investigated. Staff in the Engineering Department estimated that to install a sidewalk on the south side of Holland

Creek Place would cost between \$7,600 and \$8,500. Staff recommend that no additional work be undertaken in this location.

ALTERNATIVES: n/a

FINANCIAL IMPLICATIONS:

The installation of new infrastructure requires on-going maintenance by the Town.

LEGAL IMPLICATIONS: n/a

CITIZEN/PUBLIC RELATIONS IMPLICATIONS:

If an additional sidewalk is to be constructed on Holland Creek Place, some of the residents of Holland Creek Place would be impacted and consultation with these residents is recommended.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:

The Town of Ladysmith sidewalk standard for cul-de-sacs is to have a concrete sidewalk on one side. Requiring the applicant to install a sidewalk on the south side of the street would be greater than the current standard. Staff had earlier recommended that a sidewalk not be constructed.

RESOURCE IMPLICATIONS:

Processing development amenity related requests is a function of the Development Services Department and is within available staff resources.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT:

The intention of the proposed walkway was to improve the pedestrian orientation of the Town. Tree protection in the boulevard area is also aligned with the Visioning Report.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Effective land use planning and community design is a Council strategic direction.

SUMMARY:

Council requested that staff investigate with the developer the feasibility of installing a sidewalk on Holland Creek Place. Staff recommends that a sidewalk not be constructed in this location.

I concur with the recommendation.



Ruth Malli, City Manager

ATTACHMENTS: none



Town of Ladysmith

COMMITTEE REPORT

To: Mayor and Council
From: Councillor Bill Drysdale
Chair, Municipal Services Committee
Date: August 20, 2014
File No:

Re: **MUNICIPAL SERVICES COMMITTEE RECOMMENDATIONS**

At its August 18, 2014 meeting, the Municipal Services Committee recommended that Council:

1. Direct staff to investigate and report back on a maintenance and replacement program and budget for public benches in the Town of Ladysmith, including the feasibility of having volunteer organizations assist with bench maintenance.
2. Request Councillors D. Paterson and G. Patterson to investigate Adopt-a-Block programs in neighbouring communities and report back with recommendations.



Town of Ladysmith

STAFF REPORT

To: Ruth Malli, City Manager
From: Erin Anderson, Director of Financial Services
Date: August 28, 2014
File No:

Re: Properties on the Permissive Tax Exemption Bylaw

RECOMMENDATION(S):

That Council receive the staff report regarding the permissive tax exemption bylaw and proceed with first three readings of the "Permissive Tax Exemption Bylaw 2014, No. 1867 later in the meeting.

PURPOSE:

The purpose of this report is to seek Council's authorization to proceed with the process of granting permissive tax exemptions for eligible properties for the 2015 tax year.

INTRODUCTION/BACKGROUND:

Under Section 224 of the *Community Charter*, Permissive Exemptions are permitted to certain properties providing the property or property owner meets specific conditions. These conditions include ownership, such as not for profit organizations and charitable organizations and specific use, such as care homes and recreational organizations. Many churches are already statutorily exempted for the building and footprint; the permissive tax exemption extends the exemption to the remaining portion of the property.

Each year, a bylaw is presented to Council. The necessary advertisement and subsequent bylaw adoption must be complete prior to October 31 for the exemption to be in effect for the following taxation year.

Please note that the Ladysmith Senior's Centre & Ladysmith Resources Centre plus the Boys and Girls club already receive an exemption under 2010 Bylaw No. 1742 and Island Corridor Foundation is exempt under 2011 Bylaw No. 1776.

Once the bylaws are adopted, they will be forwarded to BC Assessment to ensure the exemption to the assessments are put in place for 2015.

One of the overarching *Community Charter* sections states Council cannot provide assistance to a business (CC.25). Such assistance includes providing an exemption to a fee or a tax.

Per the Permissive Tax Exemption Policy, a renewal application was completed for all of the properties in the 2013 bylaw and these properties have been included on the 2014 Permissive Tax Exemption Bylaw. A copy of the Permissive Tax Exemption policy is attached.

Detailed application forms and renewal forms are available for review in a binder located in the Finance Department.

Ladysmith Maritime Society

The Oyster Bay Café, located in the Visitor Centre, is operating as a successful business run by the Ladysmith Maritime Society (LMS). Due to this business use, a portion of the Visitors Centre will be removed from the exempt area and become taxable. This is similar to other Permissive Tax Exemption properties that have commercial activity within an exempt building.

All other properties on the bylaw

The following properties are proposed to be included in the bylaw:

- | | |
|---|--|
| • Anglican Synod Diocese of BC | 314 Buller St |
| • Arts Council of Ladysmith | Units J, K & L - 610 Oyster Bay Rd |
| • Eco-Tourism Building | Transfer Beach |
| • Ladysmith & District Historical Society | 1115A - 1st Ave and 721 1 st Av |
| • Alcoholic Anonymous | 12 Buller St |
| • Ladysmith Fellowship Baptist Church | 381 Davis Rd |
| • Ladysmith Festival of Lights | 1163 4th Ave |
| • Ladysmith Golf Club Society | 380 Davis Rd |
| • Ladysmith Health Care Auxiliary | 910 1st Ave |
| • Ladysmith Maritime Society | 611 Oyster Bay Dr |
| • Ladysmith Maritime Society | Unit C, I & M - 610 Oyster Bay Dr |
| • Ladysmith Maritime Society | Visitors Information Centre |
| • Ladysmith Senior Citizens Housing Society | 207 Jamison Rd |
| • Ladysmith Senior Citizens Housing Society | 101 1st Ave |
| • Municipal Parking lot | 17 & 25 Roberts St |
| • Pentecostal Assemblies | 1149 4th Ave |
| • St John's Masonic Temple | 26 Gatacre St |
| • St. Mary's Catholic Church | 1135 4th Ave |
| • United Church of Canada | 232 High Street |

Please note that much of church buildings and the footprint that the buildings sit on are statutorily exempt. Council is awarding the permissive tax exemption to the remainder of the property.

It is requested that Council consider later in the agenda granting first three readings to the Permissive Tax Exemption bylaw, 2014 No. 1867.

ALTERNATIVES:

Option 1: No Exemptions. There is no requirement for Council to grant exemptions.

Option 2: Grant cash-in-lieu of exemptions. Instead of creating a bylaw, Council can grant exemptions in the actual taxation year. Rather than just forgoing the municipal taxes which are just shifted to other property owners, the Town would lose the municipal portion of taxation revenue and be responsible for paying all taxing agency taxes, which would be significantly more money.

FINANCIAL IMPLICATIONS:

For each exemption granted, the exemption tax burden is passed on to other property owners in the municipality. There is no property tax revenue lost; just a shifting of the taxation dollars from one property to all other properties. All other taxpayers pay for tax exemptions.

LEGAL IMPLICATIONS:

The bylaw, in its entirety, is at risk if one of the properties on the bylaw is successfully challenged in the Courts.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS:

Statutory notification will be published in the newspaper and the exemption notification will be forwarded to BC Assessment.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:

Corporate Services Department and the Financial Services Department will work together to complete the bylaw and all the statutory requirements.

RESOURCE IMPLICATIONS:

Not applicable.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT:

This aligns with the "Working Together" strategy.

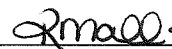
ALIGNMENT WITH STRATEGIC PRIORITIES:

Wise financial management is a Council strategic direction.

SUMMARY:

Later on tonight's agenda is the permissive tax exemption bylaw. The bylaw contains a schedule of properties similar to last year's list. Staff is requesting Council review the information the list and, later in the meeting, give first three readings to the "Permissive Tax Exemption Bylaw 2014, No. 1867"

I concur with the recommendation.



Ruth Malli, City Manager

ATTACHMENTS:

05-1970-B Permissive Tax Exemption Policy
Schedule 'G' - Ladysmith Maritime Society Visitor Centre

TOWN OF LADYSMITH
POLICIES AND PROCEDURE MANUAL

TOPIC:	PERMISSIVE TAX EXEMPTION POLICY	
APPROVED BY:	Council	DATE: Aug. 7, 2012
RESOLUTION #:	2012-274	
A. PREAMBLE		
<p>The Town of Ladysmith recognizes the significant value of volunteers, volunteer groups and agencies to the spiritual, educational, social, cultural, and physical well-being of the community. A permissive tax exemption is a means for Council to support organizations within the community that further Council's objective to enhance the quality of life while delivering services economically to the citizens of Ladysmith.</p> <p>The Permissive Tax Exemption Policy is intended to:</p> <ul style="list-style-type: none">-Provide clarity, consistency and certainty to the municipality, the public and prospective applicants.		
B. EXTENT, CONDITIONS, AND PENALTIES		
<ol style="list-style-type: none">1. Council may designate only a portion of land/improvements as exempted where the following circumstances exist:<ol style="list-style-type: none">a. A portion of the land/improvements is used by private sector and/or organization not meeting Council's exemption criteria.b. The applicant already receives grant in aid from the municipality, provincial or federal government.c. The applicant meets all eligibility criteria, however Council may at its discretion grant a partial exemption.2. Council may impose conditions on the exempted land/improvements with the applicant organization, including but not limited to:<ol style="list-style-type: none">a. Registration of a covenant restricting use of the propertyb. An agreement committing the organization to continue a specific service/programc. An agreement committing the organization to have field/facilities open for public use for specific times or a total amount of timed. An agreement committing the organization to offer use of the field/facility to certain groups free of charge or at reduced ratese. An agreement committing the organization to immediately disclose any substantial increase in the organization's revenue or anticipated revenue (i.e. receives large operating grant from senior government)3. Council may impose penalties on an exempted organization for knowingly breaching conditions of		

exemption, including but not limited to:

- a. Revoking exemption with notice
- b. Disqualifying any future application for exemption for specific time period
- c. Requiring repayment of monies equal to the foregone tax revenue.

C. PROCESS

Council will consider permissive tax exemption applications for 3 years.

Organizations will be required to complete a Comprehensive Application. If the application is approved for the next tax year, the organization will be required to submit a short renewal application every year for the next 2 years. The renewal application is confirmation that ownership and use of property has not changed and will be reviewed and approved before a permissive tax exemption is granted.

Comprehensive Non-Profit applications must have the following information attached before consideration of a 3 year permissive tax exemption:

Copy of last Registered Charity Information Return or Non-Profit Organization Information Return submitted to the CCRA

Copy of most current Audited Financial Statements or Financial Statements prepared by an Accountant.

Financial Budget (pro-forma Balance Sheet and Income Statement) for the current 12 months

Scale Drawing of Property, that includes buildings, parking lots, landscaping, playgrounds, fields, etc.

Copy of Lease Agreement if applicable

Applications with required supporting information must be submitted prior to August 15th of each year to be considered for the next permissive tax exemption year or cycle.

Additional Information

Council may request a presentation from applying organization.

The Town of Ladysmith may request additional information.

The Town of Ladysmith reserves the right to review records and/or property to verify information provided in support of application.

Successful applicants may be asked to publicly acknowledge the exemption.

Council may, at its discretion, reject any or all applicants in any given year.

This policy does not apply to permissive tax exemptions for revitalization, riparian, and other special exemption authority.

Eligibility Criteria

5 – 1970 - B

To be eligible for a permissive tax exemption an organization must comply with all of the eligibility criteria outlined below. The application forms and supporting documentation are an integral part of this policy. There is no obligation on the part of Council to grant permissive tax exemptions in any given year.

The applicant(s):

1. qualifies for an exemption under the provisions of the *Community Charter*, general authority for permissive exemptions. (Part 7, Division 7, Section 224).
2. and/or the property owner is in compliance with municipal policies, plans, bylaws, and regulations (i.e. business licensing, zoning).
3. is a Non-Profit Organization.

Tax exemptions will only be granted to organizations that are a Registered Charity or Non-Profit Organization.

The intent of this requirement is to ensure that municipal support is not used to further activities of an organization or individual that, if not for it's not-for-profit status would otherwise be considered business, i.e. an organization that is operating as a Non-Profit; although it charges market value for services available, and would be comparable in operations and perception to public as a For Profit Business.

Non-profit organizations conducting retail and/or commercial activity and charging rates or fees at market value are considered to be in competition with for-profit businesses and will not be eligible for tax exemption.

4. provides services or programs that are compatible or complementary to those offered by the Town of Ladysmith. When a service or program is offered by a non-profit group or club, the Community may benefit from a more cost effective provision of services.

Services provided by an organization should fulfill some basic need, or otherwise improve the quality of life for residents of Ladysmith.

5. principal use of property meets Council's objectives. The "principal use of the property" refers to the use related directly to the principal purpose of the organization owning the property.

Permissive tax exemptions will be based on the principal use of the property, not on the non-profit or charitable services of the organization.

6. will provide benefits and accessibility to the residents for Ladysmith. Specifically, members of the public, within the appropriate age range, are able to join a club or organization and participate in its activities for a nominal rate or fee.

Ladysmith residents must be the primary beneficiaries of the organization's services. The services provided on the property must be accessible to the public. Council may at its discretion provide partial exemptions.

7. that provide liquor and/or meal services as their primary function and/or source of revenue will not be eligible for permissive tax exemption.

Administration

5 – 1970 - B

The Financial Services Department will review all applications for completeness and contact the applicant if additional information is necessary.

The Financial Services Department will prepare a summary report of applications and bylaw for presentation to Council the first week of October for approval and adoption prior to October 31st of each year.

A public notice will be placed in the local newspaper of proposed bylaw. The notice will include:

Property subject to bylaw

Description of the proposed exemption

Number of years the exemption will be provided

Estimate of the amount of taxes that would be imposed on the property if it were not exempt for the year of exemption and following 2 years.

Public notice will be in accordance with Section 94 of the *Community Charter*.

Organizations that have been approved for permissive tax exemption will be exempt for up to 3 years.

Late Application

Applications received after the deadline for submission will be held until the next scheduled October presentation to Council that meets the application due date. Applicants may, at that time, request Council to consider a refund of the Municipal portion of taxes paid for the property to be exempted the following year.

*Council shall consider the granting of a Permissive Tax Exemption in relation to other funding requests by the same organization.



TOWN OF LADYSMITH
PO Box 220
Ladysmith, B.C. V9G 1A2
Tel: 250-245-6400 Fax: 250-245-6411

APPLICATION FOR PERMISSIVE TAX EXEMPTION

Instructions

In accordance with the *Community Charter*, the Council of the Town of Ladysmith may approve a tax exemption on properties that are owned or held by organizations that are not for profit. The exemptions must be approved by BYLAW, and the bylaw for the applicable taxation year must be approved by October 31st of the previous year.

Please complete the following application and submit it to the Town on or before August 15th in the year PRIOR to the budget year for which the application is made.

Note that exemptions are granted on an annual basis and approval in one year does not imply or suggest that approval in any year subsequent will occur.

- 1. Name of Organization _____

- 2. Date of Application _____

- 3. Taxation Year being applied for _____

NOTE: This is a request for an exemption from property taxes for NEXT YEAR.

Details of Organization

- Name of Organization: _____
 - Address of Organization: _____

 - Name of Contact Person: _____
 - Telephone Number: _____
 - Incorporation # of Society: _____
 - Folio Number: _____
 - Civic Address of Property: _____

 - Legal Description of Property: _____

-
-

Financial Information

Please provide a copy of the following:

- Most recent audited financial statements
- Projected statement of receipts and disbursements (budget) for the upcoming year together with comparatives from the previous year.

Property Ownership

Do you plan on selling any portion of the property during 2015 – 2017?

Yes

No

Section E – Other Information

On a separate sheet, please provide the following:

1. Details of efforts made by your organization to work towards self-sufficiency.
2. Details on the current membership of your organization (i.e. number of members, fees/dues paid. etc.
3. Details of specific accomplishments and/or contributions made by your organization that benefit the residents of the Town of Ladysmith.
4. Any other information which you feel Council should consider.

On behalf of _____, I/we hereby declare that all the information presented and/or provided with this application is true and correct. Should a permissive tax exemption be granted on the above listed property, I am agreeable to the following terms:

1. If the property is sold prior to the exemption expiration, the organization will remit to the Town an amount equal to the taxes that would have otherwise been payable to the Town by a non-exempt owner.
2. The property use will be in compliance with the applicable municipal policies and bylaws.
3. The organization will publicly acknowledge the permissive tax exemption granted by the Town.

DATED THIS _____ DAY OF _____, 2_____.

Authorized Signatory

Authorized Signatory



TOWN OF LADYSMITH
 PO Box 220
 Ladysmith, B.C. V9G 1A2
 Tel: 250-245-6400 Fax: 250-245-6411

RENEWAL APPLICATION FOR PERMISSIVE TAX EXEMPTION

Details of Organization

Name of Organization: _____
 Address of Organization: _____

 Name of Contact Person: _____
 Telephone Number: _____
 Incorporation # of Society: _____
 Folio Number: _____
 Civic Address of Property: _____

 Legal Description of Property: _____

Property Ownership

Do you plan on selling any portion of the property during 2015 – 2017?

Yes No

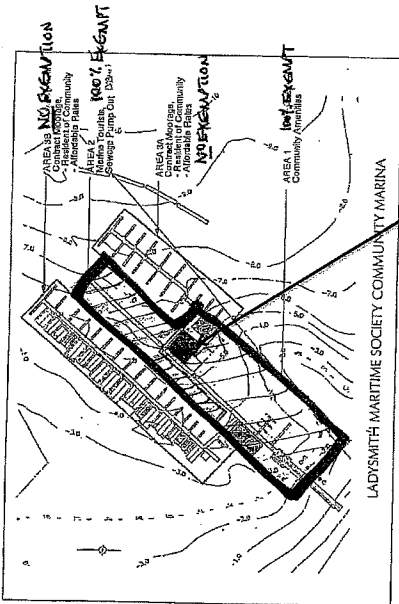
On behalf of _____, I/we hereby declare that all the information presented and/or provided with this application is true and correct. Should a permissive tax exemption be granted on the above listed property, I am agreeable to the following terms:

1. If the property is sold prior to the exemption expiration, the organization will remit to the Town an amount equal to the taxes that would have otherwise been payable to the Town by a non-exempt owner.
2. The property use will be in compliance with the applicable municipal policies and bylaws.
3. The organization will publicly acknowledge the permissive tax exemption granted by the Town.

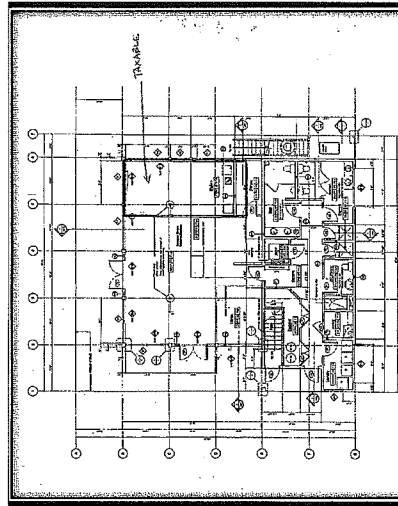
DATED THIS _____ DAY OF _____, 2_____.

 Authorized Signatory Authorized Signatory

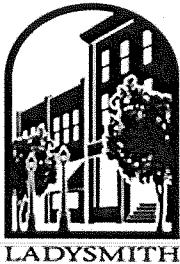
This is Schedule "C" attached to and forming part of
 Tax Exemption Bylaw 2014, No.1867



See insert below



Insert:



Town of Ladysmith
STAFF REPORT

To: Ruth Malli, City Manager
From: John Manson, Director of Infrastructure Services
Date: September 4, 2014
File No:

Re: Multi-Material BC (MMBC) Contract

RECOMMENDATION(S):

It is recommended that Council:

1. Confirm that the Town intends to continue with an agreement with MMBC, beyond the current agreement which ends on March 31, 2015 and authorize staff to negotiate with MMBC under terms similar to the existing agreement, for a period of 5 years;
2. Approve an additional \$25/ton tippage fee to the CVRD to cover the cost of shipping recycled materials from Bings Creek to Nanaimo for processing under the MMBC system;
3. Provide direction if it wishes staff to investigate and report to Council on:
 - a. an automated pick up system;
 - b. the feasibility of pick-up of glass and plastics;
 - c. the reduction of garbage and recycling fees for residents.

PURPOSE:

The purpose of this report is to provide Council with information on the renewal of the contract with MMBC and to commence the discussion of the use of the 'credit' that the contract provides to the municipality.

INTRODUCTION/BACKGROUND:

Council will recall that the Town entered into an agreement with MMBC for the period May 1, 2014 to March 31, 2015. The agreement provides an incentive (credit) for the Town to continue collection of recyclables. This incentive could be used for a variety of different purposes, such as an automated pick up system, pick up of glass and plastics and/or a reduction in recycling fees for residents.

The incentive offered by MMBC for the collection of recyclables is currently set to \$35.25/annum per account. This credit amounts to approximately 23% of the cost of our garbage, recycling, and composting contract price, currently undertaken through BFI Canada on a contract that expires April 1, 2015, with an option for a one year renewal option to April 1, 2016. The MMBC credit includes a basic rebate of \$32/household for the cost of

collection, plus \$3.25 for administration, and public education. The credit is expected to be approximately \$72,500 for 2014 based on 3,000 accounts.

Going forward, the credit could be approximately \$108,750 per year. A portion of the credit has been allocated to the advertising and educational programs. The full credit was not included in the Town's Financial Plan as, with any new service, unexpected costs could arise. One such cost is the additional fee of \$25 per tonne by the CVRD.

This net expected credit provides the Town with an opportunity to review the Town's collection system options going forward, such as:

1. Deliver the same or similar service, and reduce the residential rates.
2. Enhance the level of service, such as transitioning to an automated bin collection system, which is expected to require a large capital investment for the purchase of replacement bins required for this type of service.
3. Expand the type of service offered to our residential single family customers, such as collecting glass and/or plastics that are now only accepted at depots.
4. Expand the service to non-single family residential homes (may not affect rates significantly).
5. Continue with the current services, and place the credit into a reserve that can be used for future solid waste capital expenditures.

Some Municipalities in BC are considering using the MMBC credit opportunity to fund transitions to automated service, which typically require a number of years of additional funds to cover the capital cost of the new bins (large recycling, smaller garbage and composting bins, cost about \$120+/household). The automated service is generally considered to provide a better level of service to the customer, and provides for more efficient pickup, and adds capabilities such as weight tracking and bin identification as part of the technology.

The Town may also wish to consider other modifications of service, such as including a glass pickup service (MMBC offers an additional rebate of \$80.00/ton for residential glass pickup, which could offset some of the additional pickup costs). Some Municipalities offer glass pickup as part of the regular service, and some offer the service separately from the regular service, say every 2 weeks.

MMBC Service Options

As Council is aware, earlier this year the Town was offered the opportunity to continue to collect recyclables, and receive a rebate from MMBC, as an alternative to transferring responsibility of the collection to MMBC, as per recent changes to Provincial Paper and Packaging regulations. If the Town elected, starting in April of 2015, to cease pickup of recyclable materials, MMBC would have to issue their own contract for service in Ladysmith. To provide MMBC staff with the necessary time to potentially tender their own service, they are requesting that the Town provide direction at this time on our intent to continue with collecting recyclables on behalf of MMBC in 2015.

It is recommended that the Town continue to provide recycling pickup under the MMBC program in coordination with our garbage and organics service, as this model provides the public with an efficient coordinated service. It also lends well with the possibility to transition to an automated bin service should the Town wish to pursue this option in the future.

CVRD Tipping Fee

Previous to the MMBC program, the Town's recycling materials were delivered to Duncan for processing, along with our organics and garbage. Under the new MMBC program, the collector is responsible for delivering these materials to a designated recycling plant, which in our case has been designated at Nanaimo. The CVRD is coordinating the collection and shipment of all recycling materials delivered to Duncan to the Nanaimo recycling facility, in order to achieve economies of scale. The tipping fee set by the CVRD for shipments is \$25/tonne. It is recommended that the Town pay CVRD direct for this service, eliminating the need to re-negotiate our contract with BFI for shipment of recycling to Nanaimo from Duncan. The tipping fee is expected to be approximately \$15,000/yr, and will be funded from the solid waste budget in future.

SCOPE OF WORK:

The scope of work will be dependent upon the decisions of Council.

ALTERNATIVES:

Council may choose to not renew the contract with MMBC. Council may choose to continue to put the 'savings' from the credit from MMBC into a reserve to keep the options open for the future investigation of an automated pick up system.

FINANCIAL IMPLICATIONS:

The financial implications will be dependent upon the decisions of Council.

LEGAL IMPLICATIONS:

Contractual obligations exist.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS:

Citizens will either see reduced cost or changes to levels of service with the use of the incentive.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS:

Infrastructure Services is lead department, Finance and Corporate Services involved.

RESOURCE IMPLICATIONS:

Staff to manage negotiations and reports.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT:

Aligns with Sustainability Vision of protecting environment.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Aligns with Wise Financial Management, Responsible Stewardship of the Environment.

SUMMARY:

The purpose of this report is to provide information to Council on the renewal of the contract with MMBC and to commence the discussion of the use of the 'credit' that the contract provides to the municipality, and seek Council approval for an additional handling fee to ship recycling materials from Duncan to Nanaimo, in accordance with the MMBC program.

It is recommended that Council confirm that the Town intends to continue with an agreement with MMBC, beyond the current agreement which ends on March 31, 2015 and authorize staff to negotiate with MMBC and bring back an agreement. Further Council can provide direction to Staff on the use of the incentive for either an automated pick up system, feasibility of pick-up of glass and plastics, and/or the reduction of garbage and recycling fees for residents. Other options may be considered.

I concur with the recommendation.



Ruth Malli, City Manager

ATTACHMENTS:

None

TOWN OF LADYSMITH

BYLAW NO. 1846

**A bylaw to establish fee schedules for the Frank Jameson Community Centre and other
Town of Ladysmith recreation facilities.**

WHEREAS the Council may by bylaw, pursuant to the *Community Charter* establish fees for the use of recreation or community use property in the municipality;

AND WHEREAS it is deemed appropriate to establish fees for use of the Frank Jameson Community Centre and other recreation facilities;

NOW THEREFORE the Council of the Town of Ladysmith in open meeting assembled enacts as follows:

1. The fees set forth in Schedule "A" attached hereto and forming part of this bylaw are the admission and user fees for the Frank Jameson Community Centre and other recreation facilities.

2. **Repeal**

"Ladysmith Community Centre and Facilities Fees and Charges Bylaw 2013, No. 1835" is hereby repealed.

3. **Citation**

This bylaw may be cited for all purposes as "Town of Ladysmith Community Centre and Facilities Fees and Charges Bylaw 2014, No. 1846".

READ A FIRST TIME on the 18th day of August, 2014

READ A SECOND TIME on the 18th day of August, 2014

READ A THIRD TIME on the 18th day of August, 2014

ADOPTED on the _____ day of _____, 2014

Mayor (R. Hutchins)

Corporate Officer (S. Bowden)

Bylaw 1846 Schedule "A"

Admission Fees & Charges

Pass Category	Single	10X	30X	1 Month	3 Month	6 Month	12 Month
Tot (0-36 mos)	Free						
Child (3-12 yrs)	2.68	22.70	54.49	Not Applicable			
Youth (13-18 yrs)	3.66	31.31	83.07	37.08	100.27	189.37	359.21
Adult (19-59 yrs)	5.25	44.34	117.01	46.40	125.35	236.75	450.37
Senior (60-79 yrs)	3.66	31.31	83.09	37.08	100.27	189.37	359.21
Senior (over 80)	Free						
Family	10.51	88.68	234.02	92.80	250.70	473.49	900.74

Facility Fees and Charges

Frank Jameson Community Centre	
Meeting Room Hourly Rate	21.60
Meeting Room Hourly with Pool	19.90
Meeting Room Daily Rate	86.30
Gymnasium Hourly Rate	38.90
Lower Program Room Hourly Rate	38.35
Lower Program Room with Pool	19.90
Lower Program Room Daily Rate	153.40
One Pool	72.50
Two Pools	106.50
Chairs (25)	20.55
Transfer Beach	
Transfer Beach Kin Shelter per Day	48.20
Transfer Beach Amphitheatre – Full Day Private Family Function	88.75
Transfer Beach Amphitheatre – Half Day Private Family Function	50.70
Transfer Beach Amphitheatre – Full Day Public Special Event	342.35
Transfer Beach Amphitheatre – Performances per Hour	24.25
Park Permit (parking lot, upper beach, or lower beach) Full Day	88.75
Park Permit (parking lot, upper beach, or lower beach) Half Day	50.70
Park Permit (parking lot, upper beach, or lower beach) per Hour	24.25
Sports Fields	
Ball Diamonds per Hour Adult	15.00
Aggie Ball Diamonds Tournament per Day	126.30
Little League Diamonds Tournament per Day	126.30
Holland Creek Ball Diamonds Tournament per Day	126.30
Forrest Field per Hour Youth	6.50
Forrest Field per Hour Adult	23.25
Forrest Field per Day Youth	42.20
Forrest Field per Day Adult	156.90
Forrest Field Half Lights per Hour	10.90
Forrest Field Full Lights per Hour	14.15
FJCC Field Lights per Hour	5.45
Aggie Field Lights per Hour	5.45
Aggie Hall	
Aggie Hall Hourly Rate (no kitchen)	38.90
Aggie Hall Hourly Rate (with kitchen)	65.70
Aggie Hall Daily Rate (includes kitchen)	179.30
Aggie Hall Receptions Party, Dance	352.45

TOWN OF LADYSMITH

BYLAW NO. 1867

A bylaw to exempt from taxation certain lands and buildings for the year 2015.

WHEREAS Section 224 and 225 of the *Community Charter* permits Council, by by-law, to exempt from taxation certain buildings, the lands on which the buildings stand and the lands surrounding certain buildings;

NOW THEREFORE the Municipal Council of the Town of Ladysmith in open meeting assembled, enacts as follows:

Part 1 – Church Properties Tax Exemption

All church halls and lands within the legal boundaries of those properties listed under Part 1 of Schedule ‘A’ are hereby exempted from taxation for the year 2015.

Part 2 – Charitable, Not-for Profit and Recreational Tax Exemption

All lands and improvements within the legal boundaries of those properties listed under and to the extent described Part 2 of Schedule ‘A’ are hereby exempted from taxation for the year 2015.

Part 3 – Partnering Exemption Authority

All lands and improvements within the legal boundaries of those properties listed under and to the extent described in Part 3 of Schedule ‘A’ are hereby exempted from taxation for the year 2015.

Schedules A through G, inclusive, which are attached hereto, form a part of this bylaw.

This bylaw may be cited as "Permissive Tax Exemption Bylaw 2014, No. 1867."

READ A FIRST TIME on the day of

READ A SECOND TIME on the day of

READ A THIRD TIME on the day of

ADOPTED on the day of

Mayor (R. Hutchins)

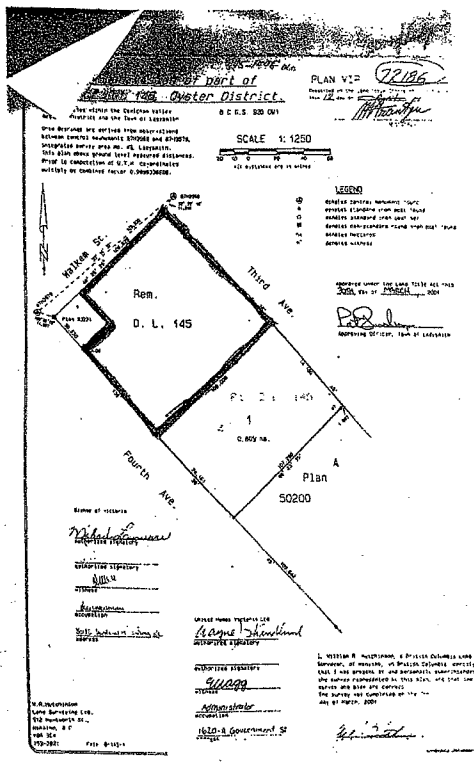
Corporate Officer (S. Bowden)

Schedule "A" attached to and forming part of
Permissive Tax Exemption Bylaw 2014, No.1867

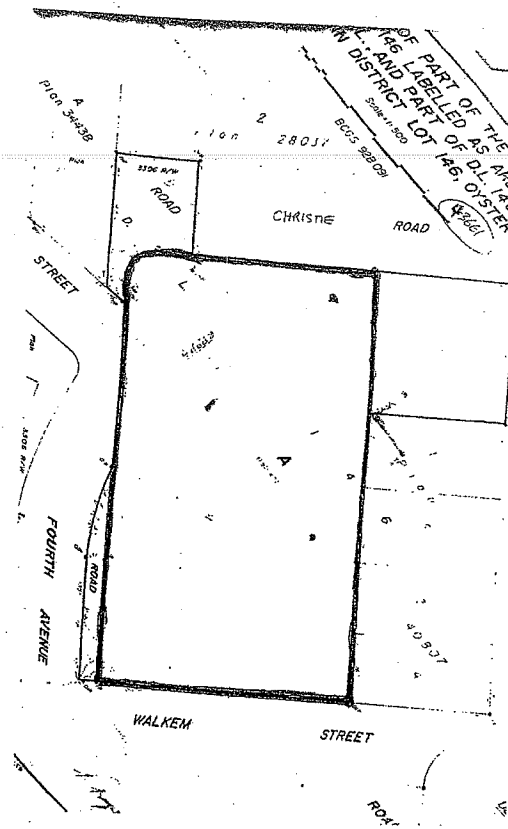
PROPERTY DESCRIPTION	
Part 1	
St. Mary's Catholic Church <i>224.2(f) Buildings for Public Worship</i>	1135 4th Ave Remainder of DL 145, LD43 Oyster Land District except Plans 33231 & VIP72186 (Specifically the area of land and buildings outlined in bold on Schedule 'B') Folio 1448.000
Pentecostal Assemblies of Canada <i>224.2(f) Buildings for Public Worship</i>	1149 4th Ave Lot A, Plan 46331, DL43, Oyster District (Specifically the area of land and buildings outlined in red on Schedule 'C') Folio 1449.080
United Church of Canada <i>224.2(f) Buildings for Public Worship</i>	232 High Street Lot A, Plan VIP63119, DL56 Oyster Land District Folio 327.010
Ladysmith Fellowship Baptist Church <i>224.2(f) Buildings for Public Worship</i>	381 Davis Rd Lot 1, Plan 43316, DL 43, LD43 Folio 1041.500
Anglican Synod Diocese of BC <i>224.2(f) Buildings for Public Worship</i>	314 Buller St Lot A, Blk 76, LD 43 Plan 703A Folio 494.000
Part 2	
Ladysmith Senior Citizens Housing Society <i>224.2(a) Non-Profit</i>	101 1st Ave Lot 1, DL56, LD43, Plan 31443 Folio 1338.000
Ladysmith Senior Citizens Housing Society <i>224.2(a) Non-Profit</i>	207 Jamison Rd Lot 1, DL 56, LD 43, Plan 21490 (Specifically the area of land surrounding the building footprint as shown on Schedule D) Folio 1322.300
Ladysmith Historical Society (Museum) <i>224.2(a) Non-Profit</i>	721 1st Ave Lot 11, Blk 7, LD43, Plan 703 Folio 0055.000
Alcoholics Anonymous <i>224.2(a) Non-Profit</i>	12 Buller St Lot 14, Blk 7, LD43, Plan 703 Folio 0058.000
Ladysmith Maritime Society <i>224.2(a) Non-Profit</i>	611 Oyster Bay Dr Blk C, DL2016, LD 43. Foreshore lease for marina Lease/Permit #106431 As shown in Schedule 'G' including the insert for the Visitors Centre Folio 1602.100 AND
Ladysmith Maritime Society <i>224.2(a) Non-Profit</i>	Unit C, I & M - 610 Oyster Bay Dr Lot 4, Plan 45800 Folio 1109.317 AND
Ladysmith Maritime Society <i>224.2(a) Non-Profit</i>	616 Oyster Bay Dr Car Shop, Lot 4, Plan 45800 Parent parcel 1109.316, folio 1109.316
Ladysmith Golf Club Society <i>224.2(i) Recreational</i>	380 Davis Rd DL43, LD43, except Plans 2478, 4670, 5873, 7527, 8922, 12027, 14051, 15693, 835R, 34197, 48247 & VIP57353. exc E&N R/W Pcl A (DD24404N) Pcl C (DD344431), VIP65242 Folio 1017.005

Ladysmith Festival of Lights 224.2(a) <i>Non-Profit</i>	1163 4th Ave Lot A, DL146, LD43, Plan 34438 Folio 1449.200
Arts Council of Ladysmith & District 224.2(a) <i>Non-Profit</i>	Units J, K & L - 610 Oyster Bay Rd Lot 4, 45800 Folio 1109.328
Eco-Tourism Building (mechanical room and public storage only) 224.2(a) <i>Non-Profit</i>	Transfer Beach Lot 2, Plan 36262 (Specifically the area of land and buildings outlined in bold on Schedule 'E') Folio 1110.110
Ladysmith Health Care Auxiliary 224.2(a) <i>Non-Profit</i>	910 1st Ave (Thrift Shop) Lot 1, Blk 30, Plan 703A Folio 263.000
Canadian Legion Branch #171 224.2(a) <i>Non-Profit</i>	621 1st Ave Lot A, Blk 8, Plan 703 (except the section outlined in Schedule "F") Folio 70.000
Part 3	
St John's Masonic Temple Assoc (Leased by Town for parking lot) 225.2(a) <i>Partnering Agreement</i>	26 Gatacre St Lot 9, Blk 9, LD43, Plan 703 Folio 85.000
Ladysmith & District Historical Society <i>archives</i> 225.2(a) <i>Partnering Agreement</i>	1115A - 1st Ave (under Tim Horton's) Lot 1, VIS5873, DL118, LD43 Folio 1373.010
Municipal Parking lot 225.2(a) <i>Partnering Agreement</i>	17 & 25 Roberts St Lots 8 & 9, Blk 11, Plan 703A Folios 123.000 & 125.000

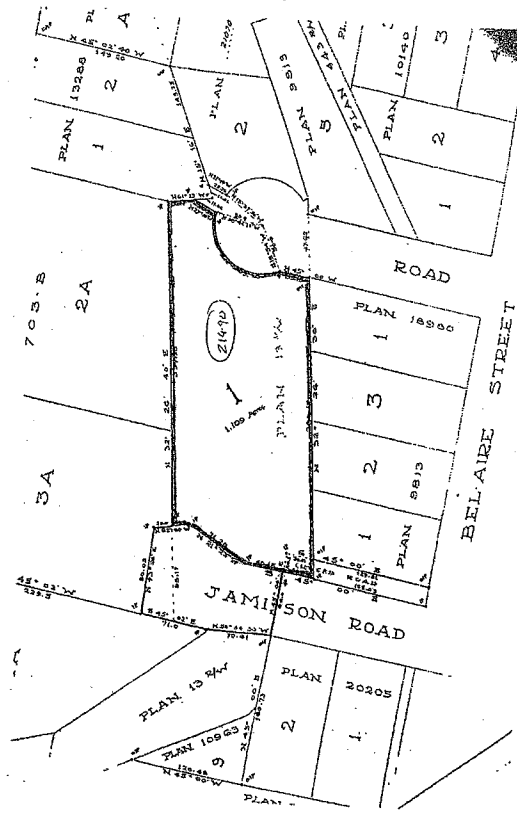
This is Schedule "B" attached to and forming part of
 Tax Exemption Bylaw 2014, No.1867



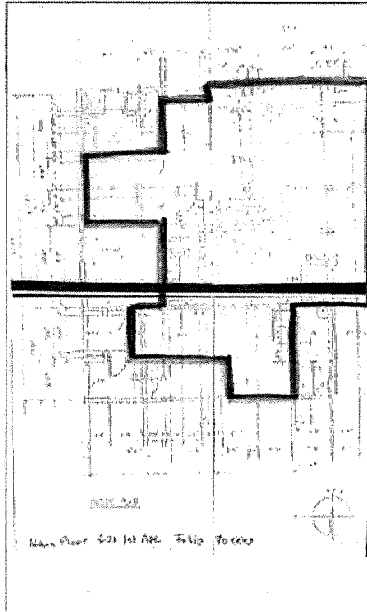
This is Schedule "C" attached to and forming part of
Tax Exemption Bylaw 2014, No.1867



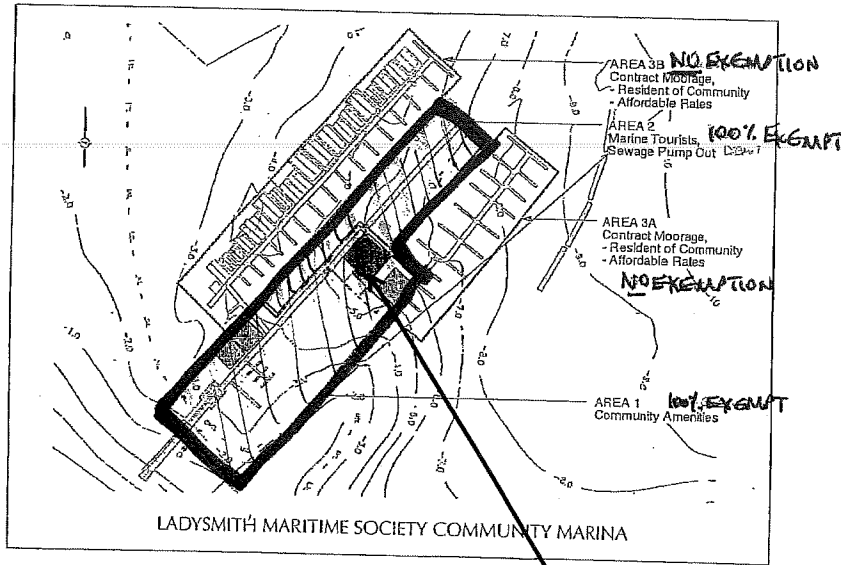
This is Schedule "D" attached to and forming part of
Tax Exemption Bylaw 2014, No.1867



This is Schedule "F" attached to and forming part of
Tax Exemption Bylaw 2014, No.1867

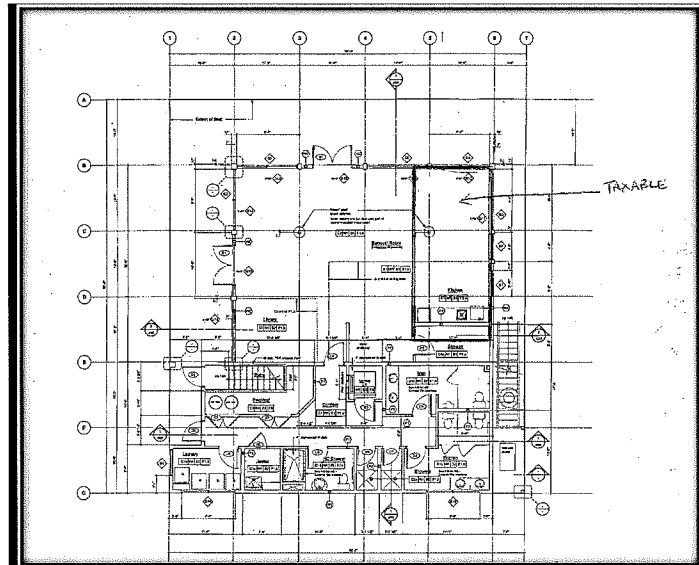


This is Schedule "G" attached to and forming part of
Tax Exemption Bylaw 2014, No.1867



See insert below

Insert:



TOWN OF LADYSMITH

BYLAW NO. 1868

A bylaw to amend "Town of Ladysmith Zoning Bylaw 2014, No. 1860"

WHEREAS pursuant to the *Local Government Act*, the Municipal Council is empowered to amend the Zoning Bylaw;

AND WHEREAS after the close of the Public Hearing and with due regard to the reports received, the Municipal Council considers it advisable to amend "Town of Ladysmith Zoning Bylaw 2014, No. 1860";

NOW THEREFORE the Council of the Town of Ladysmith in open meeting assembled enacts as follows:

- (1) Part 4: Definitions of Schedule A - Zoning Bylaw Text of "Town of Ladysmith Zoning Bylaw 2014, No.1860" is hereby amended:
 - (a) By replacing the definition of "Civic Use" with the following definition:
 "CIVIC USE: means the *Use of Land, Buildings or Structures* for civic activities and operations for municipal offices, cemetery or columbarium, community centre or hall, fire hall, police station, ambulance station, hospital, *Public Works Yard* or *Public Utility Use*.
 - (b) By adding a definition for "Public Works Yard" following the definition for "Public Utility Use" as follows:
 "PUBLIC WORKS YARD: means the *Use of Land, Buildings or Structures* for parks and municipal infrastructure operations, including municipal composting, processing or storage for use by municipal operations, community organizations, residents or for *Wholesale Sales*."
- (2) Part 6: Specific Use Regulations of Schedule A - Zoning Bylaw Text of "Town of Ladysmith Zoning Bylaw 2014, No.1860" is hereby amended by adding the following clauses to Section 6.5 Coach House Regulations:
 - (d) A *Coach House Dwelling* is only permitted as a use of a *Parcel* when a *Single Unit Dwelling* or *Coach House Dwelling* located on the *Parcel* on which the *Coach House Dwelling* is located is used as the *Principal Residential Dwelling Unit* of one or more of the owners of the parcel.
 - (e) For the purposes of section 6.5(d) "owner" means a person who holds an interest in the *Parcel* as a joint tenant or a person owning at least a 25% interest in the *Parcel* as a tenant in common and not in trust for another person."

CITATION

- (3) This Bylaw may be cited for all purposes as "Town of Ladysmith Zoning Bylaw 2014, No. 1860 Amendment Bylaw (No. 1), 2014, No. 1868".

READ A FIRST TIME on the day of

READ A SECOND TIME on the day of

PUBLIC HEARING held pursuant to the provisions of the *Local Government Act*

on the day of

READ A THIRD TIME on the day of

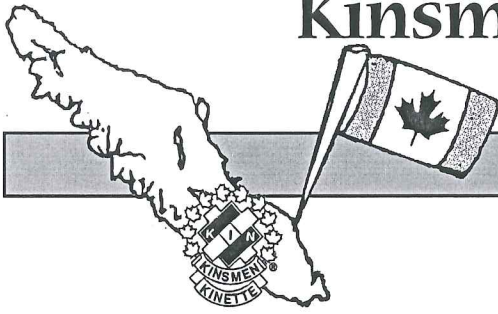
ADOPTED on the day of

Mayor (R. Hutchins)

Corporate Officer (S. Bowden)

Kinsmen Club of Ladysmith On The 49th Parallel

P.O. Box 324, Ladysmith, B.C. V9G 1A3



August 25, 2014

Mayor and Council
Town of Ladysmith
P.O. Box 220
Ladysmith, B.C.

Dear Mayor Hutchins and Council

On April 25th, 2014 the Kinsmen Club wrote a letter to the Town regarding a couple of projects that we wished to undertake...

Those were ...

1/putting a sidewalk along the north side of the new playground at Brown Dr/Kin Park so that people with strollers or those with disabilities would have better access to all the venues in the playground. Our plan is to do this in September when the playground is not quite as busy and our members are caught up on their holidays and other projects.

2/ removing the old, decayed roof on the Kin Shelter, at Transfer Beach, and installing a new roof on the shelter... which we actually had completed in time for the Town's Ladysmith Days celebration. There is a new permanent metal room on there now at no cost to the community.

3/ the last one was to get permission to rebuild the aging and very tired playground at Transfer Beach. Our members built that playground over 17 years ago and we believe it is one of the most popular adventure playgrounds on the island... and being in such an amazing spot like Transfer Beach makes it that much more popular.

At this time we are seeking the go ahead, from Town Council, to proceed with this project. We have done some preliminary fundraising as well as seeking grants, etc to help cement this. At this time our members have committed \$20,000 for the project and plan on doing various projects to help raise the necessary funds.

It is our understanding that the time frame is pretty short and we want to get moving on this quickly.

We have a design done up, by Henderson Playgrounds, which has been seen by Mr. Postings, and we really feel that it will be as successful as the recent playground our members (with huge community help) have recently completed at Brown Dr/Kin Park. Henderson Playgrounds has done over 50 such projects in the province including the new one up the hill so we believe that we have a very viable project....

... but... we very aware of the time frame in which we believe it needs to be done.

We want to thank you for your time and look forward to your favourable response. Please contact project Chair, Kin Duck Paterson, if you would like more information.

Yours in Kin

Steve Dinsmore
President

Ladysmith Kinsmen Club



cc: Mr. Clay Postings - Director of Parks & Rec & Culture

TOWN OF LADYSMITH

EXTENSION OF MUNICIPAL SERVICES

POLICY PAPER

This *Policy Paper* has been prepared by Neilson-Welch Consulting Inc. (NWC) for the Town of Ladysmith. The *Paper* is presented for discussion with, and for the sole use of, the Town. No representations of any kind are made by NWC to any party with whom NWC does not have a contract.

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT

Neilson-Welch Consulting Inc.
1-600 Sherwood Road
Kelowna, BC, V1W 5K1
nwc@nwc.ca



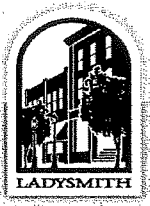
TABLE OF CONTENTS

INTRODUCTION	1
Policy Paper.....	1
1. POLICY RATIONALE.....	2
Growth Management	2
Infrastructure Use Control.....	3
Equity	4
Local Market Competition	5
Impact on Resources	6
Inter-Governmental Relations.....	7
Representation	8
2. EXCEPTIONS TO EXISTING POLICY.....	9
Health & Safety.....	9
Economies of Scale	10
Source of Revenue	10
Control Over Development.....	11
Service Duplication	12
3. REFINED POLICY.....	13
Recommended Policy	13

SERVICE
EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



INTRODUCTION

Section 13 of the *Community Charter* gives municipalities in British Columbia the authority to provide municipal services to properties outside of municipal boundaries in electoral areas.

The Town of Ladysmith periodically receives requests to extend services — specifically, its water and sewer utilities — to areas or properties located outside of the municipality. The Town has been willing in the past to provide service extensions to the Diamond Improvement District and to First Nations that border Ladysmith. The Town has not been willing, however, to provide extensions to private developers in electoral areas who require servicing in order to proceed with developments. The Town has traditionally taken the position that land owners who wish to receive services must agree to enter the Town through an extension of Ladysmith's boundary.

Ladysmith's existing policy is consistent with the position taken by many municipalities in BC and elsewhere. In general, cities and towns are reluctant to provide services outside of their boundaries to benefit private land owners. Ladysmith and other municipalities recognize, however, that this default position may not fit all situations. In some cases, circumstances may compel a municipality to entertain and agree to a request for extension.

It is almost certain that Ladysmith will receive new requests for service extensions in future years. In anticipation of these requests, the Town wishes to revisit and clarify its long-standing policy. The Town wishes, specifically, to determine whether there are circumstances under which the Town's existing position against extra-territorial extensions should be relaxed.

POLICY PAPER

Neilson-Welch Consulting Inc. was retained by the Town to address possible changes to the existing policy. This *Policy Paper* presents the consultant's work. The *Paper* begins with a review of the existing policy rationale — the set of reasons, that is, for the existing position against service extensions to private parties outside of Ladysmith. Possible exceptions to the position are then identified and examined. The *Paper* ends with a set of recommendations for Council to consider.

SERVICE
EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



CHAPTER 1 POLICY RATIONALE

The Town of Ladysmith does not have an actual written policy that specifically deals with service extensions to properties beyond the municipality's boundary. Over past years, however, the Town has consistently taken the approach that lands in need of the municipality's utility services (i.e., water and/or sewer) must join the municipality through a boundary extension. This practice — the Town's *de facto* servicing policy — is currently being followed in the Town's ongoing dealings with Couverdon Real Estate (TimberWest) over the company's desire to service and develop a total of ten large parcels of land in Electoral Areas G and H.

As noted earlier, Ladysmith's refusal to extend water and sewer services beyond its boundary is consistent with the policy embraced by most municipalities. The rationale for this approach applies across most municipalities and can be assumed to apply in the case of Ladysmith. In all, the policy rationale consists of a number of key points related to:

- Growth Management
- Controlling Infrastructure Use
- Equity
- Local Market Competition
- Impact on Resources
- Inter-Governmental Relations
- Representation

Each of these points is reviewed separately in this chapter.

GROWTH MANAGEMENT

Within the municipality's boundary, Ladysmith Council exercises primary jurisdiction over land use planning and development approvals. Council has the clear ability (and responsibility) in the municipality to ensure that all development which is proposed supports the growth management objectives of the community, and meets the planning regulations and standards put in place by the municipality. Council also oversees development as it occurs to ensure that limitations imposed by the Town are respected.

Outside of the municipality, Council is not the responsible authority with jurisdiction over land use and development. Through the use of agreements between the Town and a developer, and between the Town and the Regional District, Council can establish some degree of control over development that relies on the Town's infrastructure. In general, however, the level of control will not compare to that which Council automatically enjoys over development within Ladysmith. Section 13

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



of the *Charter* appears to give Council the ability to exercise its powers as if the area in question were part of Ladysmith. The powers are limited, however, to those relating to the service in particular, and do not automatically extend to include planning authority. The municipality could negotiate with the Regional District under section 13 to gain some influence over planning matters in the area. The Regional District, however, would be understandably reluctant to cede too much control to the Town.

It is worth noting that Ladysmith Council, with the strong involvement of the community, has invested considerable resources and effort in developing a strong and progressive growth management framework for the municipality. The Town's *Official Community Plan*, its report on sustainability (*A Community Vision for a Sustainable West Coast Town*), and other supporting documents present a clear vision for the community, identify a number of progressive principles and objectives to promote, and identify specific areas in which to focus most growth, namely Downtown Ladysmith, Holland Creek, the Waterfront and South Ladysmith.¹ Service extensions to areas outside of the Town could result, despite all precautions taken, in developments that do not support the values and preferences that have been articulated by the Ladysmith community. Indeed, the very extension of services to fringe areas outside of the Town would take the focus off of the identified growth areas and, as such, could undermine the community's planning efforts.

INFRASTRUCTURE USE CONTROL

Ladysmith's 2010 *Liquid Waste Management Plan* highlights the need for the Town to implement a number of regulations, standards and programs to govern the use of the utility. Some of these rules deal directly with the utility — an example is the recommendation for a source control bylaw to regulate discharges into the collection system. Other rules, however, apply to activities and behaviours that impact but may be only indirectly related to the system. One example is the call for a storm drainage bylaw to integrate stormwater and liquid waste management. Another example relates to efforts to reduce the volume of wastewater in the utility. Regulations around water restrictions and the mandatory use of low-flow toilets in all new constructions and renovations fit under this example.

These examples speak to the reality that utility systems form part of the broader servicing network in a municipality. They speak, as well, to the idea that the effective control of infrastructure use will often require the imposition of regulations and initiatives in other areas of service. It may be difficult to impose and

¹ Note that The Town's 2010 *Liquid Waste Management Plan* incorporates the vision and principles, and confirms the major growth areas. The *LWMP* also identifies the North End for limited growth, and lists Saltair, the Diamond Improvement District and the Couverdon lands as areas that could potentially be serviced by the Town's sewer utility. As in the case of Couverdon, it is assumed that any extension of the sewer utility into these areas would occur through a boundary expansion.

SERVICE
EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



enforce the full range of necessary regulations in areas outside of the municipality to which the Town chooses to extend its utilities. It may be particularly difficult to impose and enforce any such regulations that are established in future years, after an extension has already occurred, in response to changing community's values and needs.

EQUITY

A decision to extend municipal water and/or sewer to properties outside the municipality may be viewed as inequitable by at least four different groups:

- Property owners (taxpayers) inside Ladysmith who are not yet connected to the Town's utilities may feel that efforts should be made to fully service the existing community before services are offered to properties outside of the municipality. It is understood that, at present, most developed properties within the Town have been connected to municipal services already. South Ladysmith, however, does not have municipal water or sewer. This area has been identified by the community as a future growth centre, particularly for industrial development.
- Property owners who, as a condition of receiving municipal water and/or sewer service, have joined the municipality through boundary extensions could view as unfair any extensions to properties that do not join the Town. These owners have invested the time and funds required to move through boundary extension process. They have also demonstrated their willingness to be governed by all of Ladysmith's bylaws and regulations, and to pay all development costs and charges associated with property development (e.g., DCCs, 5% parkland dedication, etc.).² Finally, they have accepted the need to share, through municipal taxes, in the cost of providing all municipal services, not only the ones that they use or that directly benefit them.
- Property owners who have NOT joined the Town, and who have been denied access to utilities as a result, could also view any extensions as unfair.
- Municipal taxpayers who receive and pay for utility services as part of a much larger service package may bristle at the suggestion that owners who have chosen to not join the community should be allowed to selectively access and benefit from the Town's infrastructure.

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT

² The authority granted the Town under section 13 for extra-territorial services does not include the authority to collect 5% parkland dedication from new development that uses any service extensions. The authority may also not allow the Town to collect DCCs (views are mixed among Ministry staff, and no attempt has been made to date to collect DCCs under section 13 authority). The Town could attempt in all cases to obtain equivalent buy-in payments from properties as a condition of extension.



Related to these points is the issue of "free ridership". Residents and properties outside of a municipality will often make use of, and/or benefit from, services that are provided by the municipality to its citizens and property owners. When these residents and properties receive benefit from a service without contributing towards the cost of providing it, the residents are said to get a "free ride".

The free ridership problem exists today in Ladysmith as it does in many other municipalities, particularly those that are surrounded by unincorporated areas. In the past, the Town has made efforts to limit the problem by asking surrounding electoral areas for taxpayer contributions to services, such as indoor recreation, for which direct benefit can be shown. Such efforts have met with little success.

Free ridership need not exist in the case of municipal water and sewer utilities. In economics terms these services have private good characteristics, which means in essence that providers are able to charge directly for all usage, and limit or deny access if necessary. The potential for free ridership exists, however, in the case of other Town services that provide benefit, directly or indirectly, to properties that receive water and/or sewer extensions. Steps can be taken to limit the free ridership potential by requiring annual contributions to other municipal services as a condition of infrastructure extensions. It may be difficult, however, to secure ongoing payments for all services, particularly those whose benefit would be considered indirect at best.

LOCAL MARKET COMPETITION

Ladysmith's property market has a limited number of new development units that it can absorb each year. The precise number at any given period is impossible to state precisely since it will depend on local demand, which in turn will depend on a variety of economic, demographic and other factors that cannot be fully predicted. Data in the Town's *2012 Community Profile*, however, give a sense of the level of absorption that might be expected today. These data document population growth and the level of activity in the local real estate market in recent years. The data show that:

- Ladysmith's population grew by 5.1% between 2007 and 2011. This figure was lower than growth for the province as a whole — a reversal to earlier years when Ladysmith's growth far eclipsed that of the province.
- In 2011 the number of single family dwellings sold was 110.³ This figure was down from approximately 150 in 2010 and 160 in 2009.
- The average sale price of single family units sold decreased from a high of close to \$350,000 in 2008, to \$315,000 in 2011.

³ Single family dwellings currently account for approximately 71% of all dwelling units in Ladysmith.

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



In 2011 a total of 54 new dwelling units (all types) were constructed and added to the market. The average number over the past five years has been 62.

Taken together, these data suggest that Ladysmith's local real estate market is not robust at present, and may not be able to absorb a large influx of new units. Companies and individual owners in Ladysmith who are attempting to make sales would likely view any new developments on the municipality's fringe as unwelcome competition. The same companies and owners could object to efforts by the Town to facilitate these developments by granting service extensions.

The local market for goods and services other than property or housing may also be limited. New businesses on the fringe made possible through the extension of municipal services may also be viewed as unwelcome competition, particularly by merchants in areas such as Downtown Ladysmith. Such competition could make local economic goals, such as those being pursued through "Shift 10", more difficult to achieve.⁴

IMPACT ON RESOURCES

Like every small local government organization, the Town of Ladysmith has limited resources — money, staff, time, energy — with which to meet its numerous responsibilities. A decision by the Town to consider requests for extra-territorial service extensions would impact the Town's resources in some key ways. Consider the following points:

- Every request for a service extension must be reviewed closely against the municipality's existing infrastructure development plans, such as the 2010 *Liquid Waste Management Plan*. Considerable care was taken in creating these plans to ensure that utilities have adequate capacity, are properly laid out, have sufficient redundancy, make the most cost-effective use of expensive components (e.g., lift stations), and are supported by a strong financial strategy. Care was also taken to ensure that the build-out of the systems supports the community's overall growth management objectives. In Ladysmith, these objectives favour the concentration of development in specified growth areas.

Any request to extend services outside of the municipality constitutes a deviation from the plans, and needs to be studied carefully.⁵ Such study requires staff time and may involve consulting costs.

⁴ Conversely, it might be argued that new commercial development in and around Ladysmith would broaden the range of goods and services available, and could help to keep shoppers in the Town.

⁵ The *Liquid Waste Management Plan*, for example, does not anticipate extensions of the utility to serve areas outside of Ladysmith.

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



- Every request for an extension must be discussed with the Regional District at the staff level and, ultimately, the political level. Whether structured under section 13 of the *Community Charter*, or as a service contract through a regional district service under *Local Government Act*, a prospective extension requires a considerable amount of time and effort to develop. Among other tasks, terms and limitations must be identified and negotiated, costs and cost-recovery mechanisms must be developed and put in place, and safeguards must be established.

In all, the resources spent by the organization in reviewing and, where warranted, facilitating requests for service extensions must be taken from other tasks, projects and initiatives that the organization wishes or is required to pursue. One of the current initiatives in which the organization is invested is the Couverdon project. This project may be particularly telling for three reasons:

- it involves a property development company that has agreed to join Ladysmith in order to obtain access to municipal services
- it is an initiative that supports the Town's sustainability and planning objectives
- it involves a considerable amount of staff time and energy — time and energy that are not, arguably, available for other tasks, particularly those that may be considered as diversions from the organization's focus, such as requests for extra-territorial service extensions

INTER-GOVERNMENTAL RELATIONS

Ladysmith has worked hard in recent years to develop an excellent working relationship with the Stz'uminus First Nation (SFN). The Town recognizes that the community- and economic-development efforts of the SFN will benefit not only the SFN and its members, but also the Town of Ladysmith and its local residents and economy. The Town and the SFN have signed a *Community Accord* framework agreement, and are in the process of developing a servicing agreement. Under the terms of the servicing agreement, the Town will extend its water and sewer systems to SFN Reserve lands bordering the northern section of the municipality.

Initiatives by the Town to extend municipal services to other properties outside of Ladysmith could have an impact, or a perceived impact, on the SFN's ability to successfully develop its soon-to-be-serviced parcels. As noted earlier in the paper, there is a limit to how many residential, commercial and other units the local economy can absorb at any one time. Units developed by SFN will add to the stock of available units in the local market. Other units that are developed using

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



municipal water and sewer outside of the Town also add to the stock and may compete with those developed by the SFN.

To be sure, nothing in the draft service agreement between the Town and the SFN limits the Town's authority to provide service extensions outside of its boundary to other non-SFN lands. The choices the Town makes regarding other extensions, however, have the potential to impact the Town-SFN relationship that both parties have worked to establish.

REPRESENTATION

Property owners who are granted access to Ladysmith's utilities through an extra-territorial service extension must comply with the regulations that Ladysmith Council sets for all utility users. Property owners must also comply with the restrictions and extra fees (e.g., amenity fees, DCC-in-lieu charges, etc.) that the Town is able to impose on the users under any agreement that is struck with the Regional District.

At some point in the near or distant future, these property owners may begin to chafe at having to comply with rules and regulations that are established and changed by Ladysmith Council and municipal voters. These owners, who would not enjoy the right to vote in Ladysmith, may begin to resent having no formal say in the decision-making process, and no ability to hold decision-makers accountable through municipal elections. Objections may be more likely to arise over time as properties change hands, and obligations and restrictions are passed on to new owners who were not present when the rules and obligations were originally set.

In response to this concern, Council would likely make an effort to broaden consultation processes to include users outside of the municipality. Council would be reluctant, however, to give too much opportunity for input to these users for fear of alienating property owners in Ladysmith who may view any extra-territorial service extensions as unfair (for reasons noted earlier, such as free-ridership).

The challenges of balancing the competing expectations of different groups of users regarding representation in rate and usage decision-making may be a reason for not entertaining requests for extensions.

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT

PAGE 8



CHAPTER 2 EXCEPTIONS TO EXISTING POLICY

As noted in the previous chapter, there are several reasons why municipalities in general — and Ladysmith in particular — may be reluctant to extend services beyond their boundaries to benefit private properties. This general policy, however, may not represent the best course of action for Ladysmith in every situation. The Town may encounter circumstances in which service extensions make sense for Ladysmith's taxpayers and the broader community. This chapter — Chapter 2 — explores a number of such situations presented under the following headings:

- Health & Safety
- Economies of Scale
- Source of Revenue
- Control Over Development
- Service Duplication

HEALTH & SAFETY

Rural development on the fringe of a municipality is typically serviced to rural standards with on-site sewage control using septic systems. Over time, as populations grow and infrastructure ages, on-site septic systems can fail. Failing systems create health and safety problems for the immediate population being served, but can also create problems for the neighbouring municipality in the form of contaminated surface water and/or groundwater.

In instances of septic service failure, it may be in the interest of the community to provide relief through an extension of its sewer system. As a default position, the municipality may require that the area in need of service join the municipality through a boundary extension prior to receiving any connection. In some cases, however, the municipality may prefer to leave the area unincorporated. Council may determine that the broader service needs and expectations of residents in the subject area would be too significant and too costly for the municipality to address. Council may recognize, for example, that the cost to maintain and improve the rural road system, and that the difficulty of introducing and enforcing municipal development standards, may far outweigh any financial and other benefits associated with a boundary change. Council may wish in these cases to agree to a service extension in order to protect the local environment, but to explicitly not allow a boundary extension in order to protect municipal taxpayers from significant future difficulties.

Rural development on Ladysmith's fringe is concentrated to the immediate north of the community in the region served by the Diamond Improvement District (water).

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



Septic systems are common in the area; however, it is not known if there have been any service failures, or if there are any concerns related to future potential failures.

ECONOMIES OF SCALE

Sewer and water utilities are expensive systems with clear economies of scale. In general, the more users attached to the system, the lower the cost per user for the service. Given this reality, there may be cases in which Ladysmith Council could determine that the benefit in the form of lower sewer rates to existing utility ratepayers justifies an extra-territorial extension of the municipality's sewer system to broaden the user base.

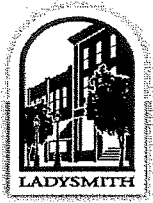
It is worth noting that the economies of scale benefit would not exist in cases where an extension resulted in enough new customers to consume all remaining capacity and trigger the need for a system upgrade. Such cases could actually result in diseconomies of scale, since additional users could create higher costs per user for all ratepayers. In Ladysmith, diseconomies of scale would not likely materialize. The maximum number of potential extra-territorial users is almost certainly not large enough under any scenario to trigger capacity issues.⁶

SOURCE OF REVENUE

As suggested under the previous section on economies of scale, a decision to extend the municipality's utility systems would result in extra utility fee revenues to help lower the per-user service cost for existing customers. Council may decide that these additional fees warrant an extension in certain instances, particularly if other contributing factors exist (e.g., health and safety issues).

Council may also be able to use service extensions as a source of revenue for other municipal services that benefit rural, fringe area residents. In Chapter 1 the issue of free ridership was presented as one element of the policy rationale against service extensions. It was noted that municipalities typically require boundary expansion as a condition of utility extension in part to eliminate the free ridership concern. Where boundary expansion is either not possible or not desired by the municipality, Council could structure utility extension to mitigate the free ridership issue. With

⁶ The discussion on infrastructure in Ladysmith's *Official Community Plan* (see p. 47) suggests that the water and sewer systems are planned for a service population of 15,000 — a population that will take many years to reach even under aggressive growth projections. The timing of any major future service extension could, in theory, require the Town to build planned extensions to its utility systems sooner than originally anticipated (the *OCP* and the 2010 *Liquid Waste Management Plan* do speak to the construction of utilities in stages to match population growth with new blocks of capacity). The need to build sooner than anticipated could, in turn, have cost implications for all users. This scenario, however, would not be likely given the small number of potential extra-territorial users.



the concurrence of the Regional District,⁷ Council could require every benefitting property to pay a one-time or annual general charge for other municipal services. This general charge would not completely eliminate the free ridership problem, since the charge would not likely equal (or even be close to) the general municipal tax that would be paid within the municipality. The general charge could at least, however, address the issue in part, and could provide the Town with some much-needed revenues to help offset key service costs (e.g., recreation, policing, etc.).

CONTROL OVER DEVELOPMENT

In some instances, Ladysmith may be the preferred but not the only service option for an existing or new fringe-area development. Residents and/or a developer in need of municipal-level water and/or sewer may be able to address their water and sewer service needs using on-site solutions, by joining an existing Regional District (rural) community system, or by developing a new local system to rural standards. These other options may be less desirable in terms of level of service and cost, but they may be enough to allow the existing fringe-area community to remain unincorporated and to re-develop, or to allow a new fringe-area development to proceed. The type of re-development or development to occur in the area may not support Ladysmith's growth management, sustainability, economic development and other goals.

In these types of situations, where re-development or development in the fringe is likely to proceed with or without Ladysmith's utilities, a decision to extend the Town's services to the existing or prospective development may provide the municipality with the leverage necessary to impose some level of control over development. A standard approach could take the form of a cap on the number of connections and, in the case of water, on the re-sale of supply.⁸ Other controls could impose limits on the volume of water supplied to the area, or to the volume of sewage to be received from the area. These limits would in turn limit the amount of development and re-development that could take place.

In theory, the Town could attempt to impose a broad range of planning controls on development in the benefitting area in exchange for providing a service extension. The level of control that would be accepted by the party making the request would depend on the cost of the servicing alternative. The Regional District would also have a say in determining what level would be considered acceptable. As noted in

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT

⁷ Under section 13 of the *Community Charter* the Regional District has the right to attach conditions to the provision of municipal services in electoral areas. In practical terms this provision would require the Town to negotiate with the Regional District key terms related to fees and contributions by users.

⁸ This stipulation is common in servicing agreements and has been used by Ladysmith in its inter-governmental service extensions.



Chapter 1, the Regional District would likely be reluctant to cede too much planning authority to the Town.

SERVICE DUPLICATION

In cases where a fringe-area community (existing or prospective) is intending to construct its own local-area utilities, Ladysmith Council may wish to provide an extension of the Town's utilities simply to avoid a duplication of services.

Duplication is problematic for a number of reasons:

- First, duplication is inherently inefficient, particularly in cases where sufficient capacity is available in the Town's system to avoid duplication.
- Second, in cases where the duplicate system is constructed to a lower, rural-standard, duplication can introduce environmental and health risks that could affect the broader community. The discharge of sewage from a rural system with primary level treatment, for example, would be more harmful to Ladysmith's environment than discharge from Ladysmith's secondary level treatment plant.⁹
- Third, a small rural utility is inherently less resilient in financial terms than the Town's municipality utilities. This lack of resiliency can result in systems having to be taken over in future years in an effort to protect against (or address) service failure. Over the past several years, the Cowichan Valley Regional District (CVRD) has felt compelled to assume ownership over a number of private, failing utilities. As a member of the CVRD, Ladysmith is part of the decision and is affected by the decision to take over these systems.

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT

⁹ As indicated in the 2010 *Liquid Waste Management Plan*, Ladysmith will be upgrading its treatment plant to secondary-level treatment in the coming years. Any new rural-area system, it can be assumed, would provide primary-level.



CHAPTER 3 REFINED POLICY

Chapter 1 of the *Paper* outlined the existing policy rationale against extra-territorial service extensions. The points raised in the chapter stand out as strong cautions for the Town to consider and understand. Some or all of them may provide compelling arguments for a continuation of the existing *de facto* policy that requires boundary expansion as a pre-condition of any service extension. The points raised in Chapter 2 of the *Paper*, conversely, suggest that service extensions may be in the best interest of the community in some instances. There may be cases, in other words, in which the Town would be well-advised to use its authority under section 13 in place of a boundary change.

Local governments establish policies to guide decision-makers on specific matters. Policies are also designed to provide a high level of consistency and predictability for the organization and the community, and for others who interact with make requests of the organization. It is important to understand, however, that policies are not statutes or regulations that require the municipality to act in a given way in every case. Implicit in every policy is the potential for exceptions. The challenges for Council are:

- to determine when to consider an exemption
- to identify the conditions to apply to any exemption

This chapter — Chapter 3 — presents a refined policy on extensions that is designed to help Council meet these challenges.

RECOMMENDED POLICY ON EXTRA-TERRITORIAL SERVICE EXTENSIONS

Default Position

1. As a general policy, the Town of Ladysmith will not extend the municipality's utilities and other services to properties outside of the Town's boundary.
 - 1.1. Properties outside of the Town that wish to access the Town's utilities or other services shall first petition Council to enter the municipality through a boundary expansion.

The Town's default position reflects the Town's strong desire to ensure that all users of the Town's utilities and other services:

- fall under the Town's land-use planning jurisdiction, and are subject to the Town's growth management policies, objectives and regulations

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



- fall under the Town's regulatory jurisdiction as it relates to usage of the services, and to activities and behaviours (e.g., water conservation) that are deemed by the Town to impact the services
- receive access to the services in accordance with the relevant expansion schedules as set out in the Town's *Official Community Plan*, and in key service-specific documents such as the *Liquid Waste Management Plan*
- are Town of Ladysmith municipal taxpayers who contribute, on the same basis as all other taxpayers, to the net costs incurred by the Town in providing the full range of local government services to Ladysmith

The Town's default position also reflects the Town's concern that extra-territorial service extensions have the potential to:

- adversely impact Ladysmith's local economy and economic development efforts by facilitating the development of new residential, commercial, industrial and other activities on the Town's periphery
- unreasonably tax the Town's administrative resources, which must be diverted from other business to assess applications for extensions and, in cases where applications are supported, develop necessary agreements and other mechanisms that are required to protect the Town's interests
- setback the Town's strong relationship with the Stz'uminus First Nation (SFN) — a relationship in which both parties have invested considerable resources
- create unnecessary difficulties for the Town in dealing with users who, as a result of their locations beyond Town boundaries, would have little effective input into the development of important rules and regulations that the users would be required to follow

Exceptions

2. Council may enter into servicing agreements with the Stz'uminus First Nation and local improvement districts to provide services to properties that fall under the jurisdiction of these bodies.
3. Council may consider requests for service extensions from private interests and the Cowichan Valley Regional District (CVRD) in cases where the properties in question are unable to join the City, and in cases where the City does not wish to include the properties inside the municipality.

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



4. Council may provide extensions to the properties identified in article 3 under the following circumstances:
 - 4.1. The Town determines, through communication with Vancouver Island Health Authority and the CVRD, that failure to provide access to services would likely result in contamination that could affect the health of inhabitants and/or Ladysmith's natural environment.
 - 4.2. The addition of new users through an extension would capture economies of scale that would, in turn, significantly reduce the cost-per-user paid by existing users of the service in question.
 - 4.3. The addition of new users through an extension would generate significant net revenues for the municipality, over and above utility fees, that the Town would not otherwise receive.
 - 4.4. The Town wishes to limit or shape development of the properties through the imposition of various controls that can best be applied through a servicing extension agreement.
5. In all cases the Town will consider the other servicing options available to the properties in question and determine whether the options, if pursued, would have a negative impact on Ladysmith.
6. In all cases the Town will consult the Stz'uminus First Nation prior to entering into any agreement on an extension.

Requirements

7. Any service extension that is granted by the Town under article 4 shall be implemented using the Town's authority under section 13 of the *Community Charter*.
8. The following requirements shall be imposed on all properties that receive the extended service:
 - 8.1. Benefitting properties shall pay the full cost of all planning, design, engineering, construction, consultation, legal and administrative work required to extend the service(s) and bring properties into the service's administrative structure.
 - 8.2. Benefitting properties shall pay a one-time charge equal to, but in lieu of, the Town's development cost charge for the service.
 - 8.3. Benefitting properties that are to be developed as a new subdivision shall pay a one-time charge equal to, but in lieu of, the parkland

SERVICE EXTENSIONS

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



dedication contribution that would be paid by subdivision if it were in Ladysmith.

- 8.4. Benefitting properties shall pay an annual charge, in lieu of tax payments and in addition to all other fees and charges, in return for receiving access to and benefit from Town services that are not 100% funded by user (utility) fees.

- 8.4.1. At a minimum, the annual fee shall include negotiated payments for policing, indoor recreation, parks and playing fields, and fire.

- 8.5. Benefitting properties shall not re-sell or otherwise provide access to the extended service.

- 8.5.1. The Town will identify and limit the number of properties to which the extension applies, and/or the amount of service that may be consumed.

- 8.6. Benefitting properties shall abide by all regulations in the Town's bylaws that govern usage of the service.

- 8.6.1. The Town's bylaws related to the service shall apply, pursuant to section 13 of the *Charter*, in the extension area.

**SERVICE
EXTENSIONS**

POLICY PAPER

NEILSON-WELCH
CONSULTANTS TO GOVERNMENT



HOLLAND LAKE AND STOCKING LAKE HYDROLOGY UPDATE



PRESENTED TO
The Town of Ladysmith

SEPTEMBER 2014
ISSUED FOR USE
FILE: V13203036-01

This page intentionally left blank.

EXECUTIVE SUMMARY

The Town of Ladysmith (the Town) retained Tetra Tech EBA Inc. (Tetra Tech EBA) in January 2014 to carry out a hydrology update for Holland Lake and Stocking Lake in support of the Town's long-term planning for its surface water supply system. In February 2008, Tetra Tech EBA completed the Stocking Lake Dam Hydrotechnical Assessment for the Town. This earlier study included the hydrologic and hydraulic analyses performed for the water sources available in the Stocking Lake watershed, the Holland Lake/Creek watershed, and the Banon Creek watershed. Subsequent to the 2008 study, the Town required an update of the 2008 hydrological model (water balance) to consider the impacts of current water licence limitations, current minimum flow requirements, updated water demand projections and climate change. This report covers the hydrology update and findings from the evaluation of five water supply options identified.

Additional hydrometric/climatic data and water consumption records/projections subsequent to the 2008 study were collected and analyzed. The 2008 hydrological model developed by generating rating curves at reservoirs, by taking into account average water losses throughout the water supply and distribution systems, by using a time series of calibrated synthetic inflows at various points of interest was used as the basis for the current study. Current water licence limitations (both at Stocking Lake and in the Holland Lake/Creek system) and minimum flow requirements (10% of the mean annual discharge at point of diversion) were considered in the model update. As requested by the Town, future water demand projections when the population of Ladysmith (excluding other service areas) reaches the thresholds of 18,000 and 30,000 were considered in the current analysis. A review of research on the impacts of climate change on the hydrology of the Vancouver Island region was also conducted. Based on the findings in the research, changes were applied to the seasonal inflows developed for the Holland and Stocking Lake watersheds to take into account the impacts of climate change. Based on discussion with the Town and Koers & Associates Engineering Ltd., five water supply options were developed, resulting in a total of 25 model scenarios for the years of 2013, 2054 with and without climate change considerations, and 2080 with and without climate change considerations. The five water supply options evaluated are as follows:

- Option 1: Existing Conditions with Banon Creek Diversion (with manual flows released from Holland Lake)
- Option 2: Banon Creek Diversion with Water Treatment Plant (with manual flows released from Holland Lake)
- Option 3: Banon Creek Diversion, Holland Lake Diversion Pipeline and Water Treatment Plant
- Option 4: Banon Creek Diversion with Water Treatment Plant and Chicken Ladder Storage
- Option 5: Banon Creek Diversion with Water Treatment Plant, Chicken Ladder Storage and Raised Holland Lake Dams

A matrix of simulation scenarios was developed with different combinations of demand assumptions, water supply options and climate change considerations. Frequencies of depletion and spilling were determined over a period of 51 years for each case. The return period to reach the deficiency level (minimum lake level in the final water source beyond which supply is not possible) for each case based on 51 years of available hydrometric record was also determined. Based on the findings from this study, it is recommended that:

- Option 4, which includes a water treatment plant with additional storage at Chicken Ladder, is further explored. Results from the analysis suggest that this option would result in a more reliable long-term water supply for the Town of Ladysmith.

- Option 3, which includes a diversion pipeline from Holland Lake to Stocking Lake, should also be further considered in view of its advantage with regards to long-term water supply reliability for Saltair.
- Option 5, which includes raising the Holland Lake Dams by 1.5 metres, would provide enhanced long-term water supply reliability if combined with diversion from Banon Creek, a water treatment plant and additional Chicken Ladder storage.
- The Town continues with the review of existing water licences in conjunction with the Cowichan Valley Regional District and the Province and consideration of new water licences for potential surface water source improvements to sustainably meet the future water demand from both the Stocking Lake and Holland Lake/Creek systems.
- The potential effects of climate change are further assessed, to support the development of a long-term strategy to achieve system resiliency.
- The potential reduction of storage capacity due to sedimentation, in both Stocking and Holland Lakes should be assessed for the long-term analyses including climate change conditions.
- A more user friendly water balance tool is developed to help the Town of Ladysmith assess various water policy and operational rules in a quicker system, easier to communicate and transfer. A suggested software package to achieve this is GoldSim.
- Further model calibration to be conducted to refine the synthetic inflow time series developed for Stocking Lake if more historical water levels and consumption records can be retrieved.
- Continuous flow monitoring at Stocking Creek is conducted.
- Continuous flow monitoring to be conducted on Holland Lake/Creek for further refinement of the synthetic inflow time series for Holland Lake and Holland Creek. Also, in order to calibrate the Holland Lake/Creek hydrological model, actual diversion rates from Banon Creek, water levels at Holland Lake, and consumption records will be required. It is recommended that the Town to consider these additional hydrometric monitoring programs in the long-term planning of its water supply system.

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1

2.0 SCOPE OF WORK..... 1

3.0 REVIEW OF BACKGROUND INFORMATION 1

4.0 SITE DESCRIPTION 2

 4.1 Operation of Water Supply Sources2

 4.2 Watershed Characteristics.....2

 4.3 Climatic Data.....3

 4.4 Hydrometric Data3

 4.5 Water Licences4

5.0 HYDROLOGY UPDATE 6

 5.1 Model Components.....6

 5.1.1 Volume-Elevation Relationship.....6

 5.1.2 Rating Curve6

 5.1.3 Mean Annual Runoff and Synthetic Inflows.....8

 5.1.4 Lake Evaporation and Other Losses8

 5.1.5 Minimum Flow Requirements9

 5.1.6 Existing and Future Water Demand9

 5.1.7 Climate Change Considerations10

 5.2 Water Supply Options11

 5.3 Model Result Analysis13

6.0 CONCLUSIONS 15

7.0 RECOMMENDATIONS 16

8.0 CLOSURE..... 17

REFERENCES 18

LIST OF TABLES IN TEXT

Table 4.1: Environment Canada Climate Stations	3
Table 4.2: Water Survey of Canada Hydrometric Stations	3
Table 4.3: Current Water Licence Information.....	4
Table 5.1: Mean Monthly and Mean Annual Runoff (mm)	8
Table 5.2: 2013 Monthly Water Usage Information, m ³	9
Table 5.3: Population Projections	10
Table 5.4: Future Water Usage, m ³	10
Table 5.5: Seasonal Changes to Inflows by 2054 and 2080.....	11
Table 5.6: Summary of Return Periods Reaching Minimum Lake Level (Years)	15

APPENDIX SECTIONS

FIGURES

- Figure 4.1 Layout of Existing Water Supply and Distribution System
Figure 4.2 Study Area Watershed Boundaries

APPENDICES

- Appendix A Tetra Tech's General Conditions
Appendix B Water Supply Options Schematics

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of the Town of Ladysmith and its agents. Tetra Tech EBA Inc. (Tetra Tech EBA) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than the Town of Ladysmith, or for any Project other than the proposed water supply options evaluated in the current study. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech EBA's Services Agreement. Tetra Tech EBA's General Conditions are provided in Appendix A of this report.

1.0 INTRODUCTION

Tetra Tech EBA Inc. (Tetra Tech EBA) has been retained by the Town of Ladysmith (the Town) to carry out a hydrology update for Holland Lake and Stocking Lake in support of the Town's long-term planning for its surface water supply system. In February 2008, Tetra Tech EBA completed the Stocking Lake Dam Hydrotechnical Assessment for the Town. This earlier study included the hydrologic and hydraulic analyses performed for the water sources available in the Stocking Lake watershed, the Holland Lake/Creek watershed, and the Banon Creek watershed. It is our understanding that the Town requires an update of the 2008 hydrological model to consider the impacts of current water licence limitations, current minimum flow requirements, updated water demand projections and climate change. Based on discussions with representatives from the Town and Koers & Associates Engineering Ltd. (Koers), a number of water supply options were developed. Tetra Tech EBA is pleased to submit this report to summarize the results of the hydrology update.

2.0 SCOPE OF WORK

The scope of work for the current assignment is listed as follows:

- Update the 2008 Holland Lake and Stocking Lake hydrological model to include:
 - All water licences on Holland Lake and Stocking Lake for the Town and the Cowichan Valley Regional District;
 - Minimum flow requirements at various points of diversion equivalent to 10% of mean annual discharge;
 - Updated water demand projections; and
 - Consideration of climate change.
- Determine the statistical return period of water deficiency events, for selected water supply scenarios; and
- Prepare a report to summarize the findings.

3.0 REVIEW OF BACKGROUND INFORMATION

The following data provided by the Town and Koers were reviewed to extract relevant information with respect to the hydrology and hydraulics of the project site:

- Current water licence information for the study area;
- Recent water usage information by Ladysmith and Saltair and water demand projections;
- Historical water levels for Stocking Lake and Holland Lake; and
- Additional rainfall data within the study area from 2011 to 2013.

4.0 SITE DESCRIPTION

Located in the Cowichan Valley Regional District and along the east coast of Vancouver Island, Ladysmith is approximately 23 km south of Nanaimo and 97 km north of Victoria on Highway #1. Two nearby communities are Diamond Improvement District and Saltair located just north and south of Ladysmith, respectively. The main sources of water supply for these three communities are the Stocking Lake system and the Holland Lake/Creek system (Figure 4.1). The following sections provide general descriptions of the water supply sources within the study area and the water licences currently held by the Town of Ladysmith and CVRD.

4.1 Operation of Water Supply Sources

In 2007/2008, a new covered reservoir (Arbutus Reservoir) was constructed to replace the previous open reservoir. The new Arbutus Reservoir collects water from both the Stocking Lake and the Holland Lake/Creek systems and distributes water either to South Ladysmith or North Ladysmith/Diamond District. In addition, a separate pipeline, approximately following the alignment of Stocking Creek, ties in to the main pipeline just south of Stocking Lake, and feeds to the Saltair (CVRD) system.

Water released from Holland Lake and available at Holland Creek enters the water supply system at a diversion point at a small stilling basin called Chicken Ladder Dam. This source is conveyed to the new Arbutus Reservoir, where it combines with the water from the Stocking Lake system. Additional flow is also available via seasonal diversion from Banon Creek to help fill Holland Lake.

4.2 Watershed Characteristics

The Stocking Lake, Holland Lake/Creek and Banon Creek watersheds are all located along the east side of Vancouver Island. Figure 4.2 shows the major watershed boundaries within the study area. The following paragraphs provide brief descriptions of the characteristics of each watershed.

The Stocking Lake watershed is small compared to other watersheds in the area. It has a drainage area of approximately 1.65 km², and varies in elevation from 360 m to 600 m, with a median elevation of 380 m. Overflows from Stocking Lake flow to Stocking Creek, which runs in a southeast direction for about 3.2 km and then northeast for about 2.2 km before it drains into Stuart Channel.

The Holland Lake/Creek watershed at the Chicken Ladder Dam has a drainage area of approximately 25 km² and varies in elevation from 189 m to 1300 m. Holland Lake, located in the upper watershed, has a drainage area of approximately 1.75 km² at its outlet. Water stored in Holland Lake is released to South Holland Creek and collected at Chicken Ladder on Holland Creek where it is diverted to town via the Arbutus Reservoir. The median basin elevations of the Holland Lake watershed and the remaining portions of Holland Creek watershed are 670 m and 580 m, respectively.

Banon Creek, a tributary of the Chemainus River, has a drainage area of approximately 7 km² at the point of diversion to Holland Lake. The watershed elevation ranges from 660 m to 1300 m. The Banon Creek watershed shares a boundary with the Holland Creek watershed in the north. Banon Creek is joined by West Banon Creek downstream before it flows into the Chemainus River.

4.3 Climatic Data

A number of climate stations operated by the Meteorological Service of Canada (MSC) are located within the study region. In view of their close proximity to the project site, elevation, and relatively long period of record, the following stations were considered to have climatic data that are useful in determining the climate conditions at the project site.

Table 4.1: Environment Canada Climate Stations

Station ID	Station Name	Elevation (m)	Period of Record
1025370	Nanaimo Airport	28.4	1971 – 2010
1021830	Comox A	25.6	1971 – 2010
1016940	Saanichton CDA	61.0	1971 – 2010
10253G0	Nanaimo City Yard	114	1971 - 2010

According to the 1981 to 2010 climate normal, the mean annual precipitation at Nanaimo Airport station and at Nanaimo City Yard station are 1,165 mm (1,098 mm of rainfall and 69 mm of snowfall) and 1,140 mm (1,100 mm of rainfall and 40 mm of snowfall), respectively. Most rainfall occurs in the fall and winter (November to March) while most snowfall occurs in winter (December to January). Mean daily temperatures at Nanaimo Airport station ranges from about 3°C in December to 18°C in August.

It should be noted that recent rainfall data has been collected at Ladysmith Secondary School and at a local logging site situated at an elevation of 490 m GSC. Based on data provided by the Town, the 2013 annual rainfall total at Ladysmith Secondary School is within 10% of that collected at Nanaimo Airport station while the mean annual rainfall total at the local logging site from 2011 to 2013 is about 50% higher than that at Nanaimo Airport station, likely due to the higher basin elevation at the local logging site.

4.4 Hydrometric Data

Historical streamflow data were gathered from Environment Canada to characterize the hydrology of the study area. It should be noted that there is no long-term stream discharge information available within the Stocking Lake and Holland Lake/Creek watersheds. The hydrologic characteristics of these watersheds must be inferred from regional hydrometric stations. The regional hydrometric stations used in this study are listed in Table 4.2.

Table 4.2: Water Survey of Canada Hydrometric Stations

Station ID	Station Name	Drainage Area (km ²)	Period of Record	Years of Data	Status
08HA001	Chemainus River near Westholme	355	1914 - 2012	65	Active
08HA003	Koksilah River at Cowichan Station	209	1914 - 2012	63	Active
08HA016	Bings Creek near the mouth	15.5	1961 - 2012	52	Active
08HB002	Englishman River near Parksville	324	1913 - 2012	41	Active
08HB003	Haslam Creek near Cassidy	95.6	1914 - 1998	22	Inactive
08HB027	Millstone Creek near Wellington	46.1	1961 - 1974	10	Inactive
08HB032	Millstone Creek at Nanaimo	86.2	1961 - 2012	32	Active
08HB041	Jump Creek at the mouth	62.2	1970 - 2012	43	Active

Of the above selected hydrometric stations, Chemainus River near Westholme station has the largest drainage area and the longest period of record. Bings Creek near the mouth station has the smallest drainage area and a fairly long period of record.

As part of a source water quality monitoring project conducted by Earth Tech in 2000 for the Town, daily flow data on Holland Creek were obtained from May 2000 to June 2001. This information was utilized later for calibrating calculated inflows on Holland Creek.

4.5 Water Licences

Current water licence information for the Town of Ladysmith and the Cowichan Valley Regional District (CVRD) within the study area was provided by Koers and is summarized in the following table.

Table 4.3: Current Water Licence Information

Licensee – The Town of Ladysmith	
Stocking Lake System	
CL 005333	500,000 gal/day (2,273 m ³ /day) maximum from Stocking Lake; or 182,500,000 gal/year (829,662 m ³ /year) from Stocking Lake
Holland Creek System	
CL 017746	600,000 gal/day (2,728 m ³ /day) maximum from Holland Lake; or 219,000,000 gal/year (995,594 m ³ /year) from Holland Creek
CL 112812	200 ac-ft per annum (246,696 m ³ /year) storage from Holland Creek in Holland Lake
CL 125167	1,475 ac-ft per annum (1,819,396 m ³ /year) from Banon Creek between November 1 and May 31/A maximum of 1,475 ac-ft per annum (1,819,396 m ³ /year) at a rate not to exceed 800,000 gal/day (3,637 m ³ /day) may be re-diverted from Holland Lake for waterworks purpose.
Licensee – The Cowichan Valley Regional District (CVRD)	
CL 067481	98,550,000 gal/year (448,017 m ³ /year) from Stocking lake and Stocking Creek
CL 067482	105,000,000 gal/year (477,340 m ³ /year) from Stocking Lake and Stocking Creek
CL 067483	100 ac-ft per annum (123,348 m ³ /year) storage from Stocking Creek in Stocking Lake
CL 067484	650 ac-ft per annum (801,762 m ³ /year) storage from Stocking Creek in Stocking Lake

The licences that permit the diversion of water by the Town, allow a maximum annual usage/storage of:

Stocking Lake System

Withdrawal

CL 005333 500,000 gal/day (2,273 m³/day) maximum or 830,000 m³

Note: Water withdrawal subject to the availability of inflow to Stocking Lake

Holland Creek System

Withdrawal

CL 017746 996,000 m³
 (600,000 gal/day or 2,728 m³/day max)

CL 125167 1,327,500 m³ re-diverted from Holland Lake with diversion from Banon Creek
 (800,000 gal/day or 3,637 m³/day max)

Storage

CL 112812 247,000 m³

CL 125167 1,819,000 m³

Note: Minimum flow requirement of 10% mean annual discharge applies on Holland Creek

Annual Total 2,323,500 m³ Annual Total 2,066,000 m³

The licences that permit the diversion of water by CVRD, allow a maximum annual usage of:

Stocking Lake System

Withdrawal

CL 067481 448,000 m³

CL 067482 477,000 m³

Storage

CL 067483 123,000 m³

CL 067484 802,000 m³

Total 925,000 m³ Total 925,000 m³

It should be noted that Conditional Water Licence No. 125167 is an amendment to Conditional Water Licence No. 112813. The new water licence has been issued due to a change of works request for the addition of a pipe from Holland Lake to Stocking Lake pipeline and for administrative reasons to correct the spelling of the water source, Banon Creek. There has been no change to the rights authorized by former Conditional Water Licence No. 112813. However, the Town is required to release 10% of the mean annual discharge of Holland Creek to the original watercourse in order to maintain flow for fish.

Also, it is our understanding that Water Licence No. 5333, which allows the Town to withdraw a theoretical rate of 500,000 imperial gallons per day from Stocking Lake during the entire year, is subject to the availability of inflow to Stocking Lake.

5.0 HYDROLOGY UPDATE

An update of the 2008 hydrological model (water balance) was carried out for the Stocking Lake and Holland Lake/Creek systems to incorporate recent water usage and water demand projections, additional flow data available from Water Survey of Canada for the study area, current water licence limitations, minimum flow requirements, and climate change considerations. Five water supply options were developed through discussions with the Town and Koers, resulting in a total of 20 model scenarios.

5.1 Model Components

A hydrological model was developed to simulate water levels in Stocking Lake and Holland Lake and to evaluate different water supply options to meet future water demand. The model was developed using Excel and successfully met the requirements of this project, however the Town should consider implementing the model using GoldSim, a more user friendly tool to enable quick assessment of water policies and operational rules. The following sections present the methodology used in updating the 2008 base model.

5.1.1 Volume-Elevation Relationship

The volume-elevation relationships for Stocking Lake and Holland Lake were provided by the Town in 2008 in the following documents:

- Ministry of Environment Water Management Branch, May 1986. Storage Inventory Programme Cowichan Basin – Vancouver Island System, Stocking Lake Reservoir Plan of Reservoir (Dwg. No. 4984-12).
- Stantec Consulting Ltd., November 2003. Holland Lake Topographic Survey Drawing No. 60501BASE and Reservoir Storage Information.

Based on the above information, Stocking Lake has a bottom elevation of 333.63 m GSC (Geodetic Survey of Canada) and a capacity of approximately 1,074,400 m³ when the water level is at the spillway crest (360.55 m GSC). Holland Lake has a bottom elevation of 646.16 m GSC and a capacity of approximately 1,704,000 m³ when the water level is at the drop inlet pipe spillway crest at an elevation of 654.16 m GSC. Based on discussion with the representatives of the Town and additional survey information available, it is our understanding that the spillway crest at Holland Lake was raised prior to the 2003 survey. Therefore, the 2003 survey presents the volume-elevation relationship with respect to the existing or raised spillway crest elevation of 654.16 m GSC.

5.1.2 Rating Curve

Stocking Lake Dam was constructed in 1902 and reconstructed in 1964. In 1966, the earth-fill dam was raised by 1.3 m to the existing dam crest elevation (361.75 m GSC). The dam contains a rough, masonry-lined broad-crested spillway with a crest length of 4 m and a crest elevation of 360.55 m GSC. There is a 450 mm diameter low level outlet (upstream invert elevation at 654.53 m GSC) as the water intake. The dam has a granular foundation, which is reportedly leaking.

There are two dams, East Dam and West Dam, impounding water in Holland Lake. The dams were constructed in 1980. The West Dam has a crest length of 460 m and the East Dam is 915 m long. The dams have an average height of 4.6 m and a maximum height of 7.6 m. The dams were constructed mainly with silty, sandy gravel. On the East Dam, at the south abutment, there is a water diversion conduit designed to divert water from Banon Creek into Holland Lake. On the West Dam, there is a low level conduit and a spillway. The 300 mm diameter low level conduit is controlled by two valves. The drop inlet pipe spillway consists of a concrete square

box weir structure with a 1.2 m inside diameter, precast, segmental concrete conduit (upstream invert elevation at 652.45 m GSC) passing through the dam at an approximate slope of 10%.

The discharge for the broad-crested spillway at Stocking Lake Dam was estimated based on the following equation (Smith, 1995):

$$Q = CLH^{1.5} \quad \text{Equation (1)}$$

where

Q = Discharge (m³/s);

C = Discharge coefficient, 1.705 (for broad-crested spillway);

L = Effective spillway length (m); and

H = Head above spillway crest (m)

The discharge for the drop inlet pipe spillway at the West Dam on Holland Lake was estimated based on Equation (1) for the weir flow with the discharge coefficient varying based on the ratio of the head above spillway crest (H) to the effective spillway length (L). For pipe flow, the following equations were used:

$$Q = 0.785D_o^2(2gh/(1.3+fL/D_o))^{0.5} \quad \text{Equation (2)}$$

where

Q = Discharge (m³/s);

D_o = Pipe diameter (m);

g = Acceleration of gravity, 9.81 m/s²;

h = Effective head, H – z + S_oL + D_o/2, (m);

$$fL/D_o = 2gn^2L/R^{1.33} \quad \text{Equation (3)}$$

where

n = Manning's n, 0.013 for concrete;

L = Length of pipe (m);

R = Flow area over wetted perimeter or D_o/4 at full flow (m);

H = Water surface elevation (m);

z = Inlet pipe spillway crown elevation (m); and

S_o = Inlet pipe spillway slope.

The rating curves developed for the spillways at Stocking Lake and at Holland Lake were then used in the hydrological model.

5.1.3 Mean Annual Runoff and Synthetic Inflows

The 2008 hydrological model was developed using hydrometric/climatic data available at the time of the study. In general, a regional analysis was first conducted to estimate the preliminary mean annual runoff for the watersheds of interest, followed by the development of synthetic inflow time series at various points of interest based on selected monthly streamflow data in the region. The synthetic inflow time series adjusted to match with the mean annual runoff values were then further calibrated using available historical water levels in Stocking Lake and available flow data on Holland Creek.

For the current analysis, additional streamflow data from 2005 to 2012 at all selected regional hydrometric stations were incorporated, resulting in an extended period of record of 51 years. As in the 2008 hydrological analysis, the Bings Creek near the mouth (08HA016), the Millstone Creek at Nanaimo (08HB032) and the Jump Creek at the Mouth (08HB041) stations were used to develop the synthetic inflow time series at various points of interest. To calibrate the synthetic inflows for Stocking Lake, available historical water levels and water usage information for Stocking Lake were reviewed. A model calibration was carried out using Stocking Lake water levels from 2003 to 2005. In order to minimize the difference between calculated and measured water levels, a reduction factor (0.79) was applied to the synthetic inflow time series. It is recommended that to further refine the synthetic inflow times series developed for Stocking Lake, additional model calibration be conducted if more historical water levels and consumption records can be retrieved.

Calibration of synthetic inflows for Holland Lake/Creek was performed by using available flow data on Holland Lake/Creek measured in 2000 and 2001. A reduction factor (0.69) was determined and applied to the synthetic inflow time series for Holland Lake/Creek. It is recommended that flow measurements be made on Holland Lake/Creek in the future for further refinement of the synthetic inflow time series for Holland Lake and Holland Creek. Furthermore, in order to calibrate the Holland Lake/Creek hydrological model, actual diversion rates from Banon Creek, water levels at Holland Lake, and consumption records will be required. It is recommended that the Town to consider these additional hydrometric monitoring programs in the long-term planning of its water supply system. Table 5.1 summarizes the mean monthly and mean annual runoff for the various watersheds of interest.

Table 5.1: Mean Monthly and Mean Annual Runoff (mm)

Watershed	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Stocking Lake	196	135	122	67	42	21	10	9	10	35	124	187	960
Holland Lake	260	179	163	89	56	29	14	12	13	47	165	248	1277
Holland Creek*	232	160	146	79	50	26	12	10	12	42	147	222	1141

Notes: *Holland Creek watershed excluding Holland Lake watershed

5.1.4 Lake Evaporation and Other Losses

Other losses such as leakage through the Stocking Lake system supply pipe (0.002 m³/s) and seepage through Stocking Lake Dam (0.001 m³/s) remain the same as determined in the 2008 study. However, evaporation rates in the lakes were updated based on the more recent climate normal values (1981 to 2010) available at Sannichton CDA and Comox A climate stations. The mean annual lake evaporation was determined to be 642 mm for the study area.

5.1.5 Minimum Flow Requirements

Due to the likeliness of the need for amendment or adjustment of existing water licences, consideration of new water licences for potential surface water source improvements, and conditions required in Water Licence No. 125167, a minimum flow equivalent to 10% of the mean annual discharge was assumed at each point of diversion in the analysis. Such minimum flows estimated for Holland Lake, Holland Creek at Chicken Ladder Dam and Stocking Lake are 0.007 m³/s, 0.09 m³/s and 0.005 m³/s, respectively.

5.1.6 Existing and Future Water Demand

Recent water usage information of the Town and Saltair from the Stocking Lake and Holland Lake/Creek systems was provided to Tetra Tech EBA by Koers. The information for the year of 2013 is tabulated in Table 5.2, and in particular, this recent water usage pattern was used in the current analysis for the monthly water demand projections.

Table 5.2: 2013 Monthly Water Usage Information, m³

From Stocking Lake System*			From Holland Lake/Creek System**		Total Water Usage by Ladysmith
Month	Ladysmith	Saltair	Month	Ladysmith	
Jan	89,759	21,439	Jan	0	89,759
Feb	86,235	18,319	Feb	0	86,235
Mar	92,544	20,410	Mar	2,981	95,525
Apr	46,305	21,140	Apr	38,418	84,723
May	15,166	24,758	May	92,829	107,995
Jun	23,506	27,523	Jun	94,528	118,034
Jul	1,922	40,234	Jul	168,656	170,578
Aug	1,333	38,034	Aug	148,963	150,296
Sep	11,610	23,618	Sep	94,429	106,039
Oct	20,307	20,774	Oct	70,124	90,431
Nov	52,620	19,331	Nov	30,010	82,630
Dec	7,444	20,630	Dec	89,067	96,511
Annual	448,751	296,211	Annual	830,005	1,278,756

Notes: *Water usage from Stocking Lake System by Ladysmith/Diamond and Saltair

**Water usage from Holland Lake/Creek System by Ladysmith/Diamond only

As requested by the Town, future water demand projections when the population of Ladysmith (excluding other service areas) reaches the thresholds of 18,000 and 30,000 were considered in the current analysis. It was assumed that Ladysmith will have an annual growth rate of 2%. The years of interest were therefore determined to be 2054 and 2080, with the population in Saltair, with an annual growth rate of 1%, reaching 2,740 and 3,550, respectively. Based on discussion with the Town and Koers, various annual growth rates were also applied to the Diamond Improvement District, IR12 and IR13. The water demand per capita for Ladysmith/Diamond was estimated to be 430 L/cap/day while that for Saltair, IR12 and IR13 was assumed to be 490 L/cap/day. The 2013 water usage percentage from each system by Ladysmith/Diamond was assumed as a starting point. The following tables provide a summary of the future water demand projections.

Table 5.3: Population Projections

Area	Ladysmith	Diamond	IR 12	IR 13	Ladysmith (All Serviced Areas)	Saltair
Annual Growth Rate	2%	1%	14% up to 1,800	3% up to 3,120	N/A	1%
Year 2013	8,077	614	0	0	8,691	1,822
Year 2054	18,191	923	1,800	1,767	22,681	2,740
Year 2080	30,441	1,196	1,800	3,120	36,557	3,549

Table 5.4: Future Water Usage, m³

Year 2054				Year 2080			
Month	Ladysmith (All Serviced Areas)	Saltair	Total	Month	Ladysmith (All Serviced Areas)	Saltair	Total
Jan	255,527	35,491	291,018	Jan	410,583	45,970	456,552
Feb	245,495	30,326	275,821	Feb	394,463	39,280	433,743
Mar	271,942	33,788	305,729	Mar	436,958	43,764	480,722
Apr	241,191	34,996	276,186	Apr	387,547	45,328	432,875
May	307,442	40,984	348,426	May	493,999	53,085	547,085
Jun	336,021	45,563	381,584	Jun	539,921	59,016	598,937
Jul	485,604	66,605	552,209	Jul	780,272	86,271	866,543
Aug	427,865	62,962	490,827	Aug	687,496	81,552	769,048
Sep	301,873	39,098	340,971	Sep	485,052	50,642	535,694
Oct	257,440	34,390	291,830	Oct	413,657	44,544	458,201
Nov	235,232	32,001	267,233	Nov	377,973	41,450	419,423
Dec	274,749	34,151	308,900	Dec	441,468	44,235	485,703
Annual	3,640,379	490,355	4,130,734	Annual	5,849,389	635,136	6,484,525

5.1.7 Climate Change Considerations

A review of research on the impacts of climate change on the hydrology of the Vancouver Island region was conducted. In general, by the 2050s, southern and central BC regions are expected to become drier in the summer while wetter winters are expected across BC. In particular, in the Vancouver Island and Lower Mainland watersheds, more of the precipitation will fall as rain rather than snow. Fall and winter flows will generally increase while spring and summer flows will generally decrease.

In 2009, the Comox Valley Regional District completed a climate change impact analysis for the Comox Lake reservoir (KWL, 2009). The purpose of this study was to assess impacts of future climate change on temperature, precipitation and inflow into the lake and to assess how these changes will impact the availability of storage for future water supply purposes. Based on the results of this analysis, it was determined that climate change is expected to cause the following impacts for the region:

- Increased temperature year round with higher winter precipitation and lower summer precipitation (from about +0.7°C to +1.1°C by 2020 and from about +1.3°C to +1.9°C by the 2050s);

- Increased winter inflows (about 11% to 16% higher by the 2020s and about 14% to 21% by the 2050s), increased spring inflows (about 0.3% to 2.3 % higher by the 2020s and about 0.9% to 4.3% higher by the 2050s), decreased summer inflows (about 4% to 5% lower by 2020s and about 14% to 20% lower by the 2050s), and increased fall inflows (about ;9.3% to 11% higher by the 2020s and about 12% to 19% higher by the 2050s);
- Slightly increased total annual inflow to the lake (about 5% to 6% higher by the 2020s and about 4% to 7% higher by the 2050s).

In 2010, the Arrowsmith Water Service developed an updated water management framework for the Englishman River, which included a general review of streamflows in the Englishman River with climate change considerations (KWL, 2010). The results of this climate change impact assessment again indicated that fall and winter flows could increase while spring and summer flows could decrease in general.

Based on the above findings in the Vancouver Island region, changes were applied to the seasonal inflows developed for the Holland and Stocking Lake watersheds to take into account the impacts of climate change. Table 5.5 summarizes the percentage changes applied to the seasonal inflows for the current study. It should be noted that the same percentage changes were applied to both the 2054 and 2080 model scenarios.

Table 5.5: Seasonal Changes to Inflows by 2054 and 2080

Winter (Jan to Mar)	Spring (Apr to Jun)	Summer (Jul to Sep)	Fall (Oct to Dec)
+15%	+2.5%	-15%	+15%

It was assumed that the storage capacity of both lake systems remained the same for the long-term hydrological assessments conducted in this study, however it can be expected that with increased flow rates, sediment pick-up rates will increase and in-lake sedimentation will lead to a reduction in the storage capacity.

5.2 Water Supply Options

Five water supply options were identified based on discussions with representatives from the Town and Koers (schematics can be found in Appendix B), and they are listed as follows:

- Option 1: Existing Conditions with Banon Creek Diversion (with manual flows released from Holland Lake)
 - Option 1 includes existing conditions with the Banon Creek diversion to Holland Lake as per Water Licence No. 125167, allowing the Town to divert 1,819,396 m³ of water from Banon Creek to Holland Lake between November 1st and May 31st each year. A drainage area of 7 km² is available at this point of diversion on Banon Creek, and a maximum diversion rate of 0.099 m³/s can be diverted from Banon Creek to Holland Lake during the diversion period in accordance with the existing water licence.
 - The Town will continue to release water from Holland Lake to Holland Creek, maintaining the minimum flow requirement (10% of the mean annual discharge) at the outlet of Holland Lake and at Chicken Ladder when necessary.
 - The Town will continue to draw water from the Chicken Ladder intake on Holland Creek following the 2013 water usage pattern, which may be exceeding the current water licence limitations (maximum daily withdrawal rate) at certain times.

- The Town will continue to draw water from Stocking Lake under Water Licence No. 5333 in accordance with the 2013 water usage pattern, which may occasionally be exceeding the current water licence limitations (maximum daily withdrawal rate).
- Saltair will continue to draw water from the Stocking Lake outlet pipe following the 2013 water usage pattern.
- During low flow periods, the Town will have to release sufficient water from Holland Lake to provide the maximum day withdrawal at Chicken Ladder and to meet the minimum flow requirements. When the Arbutus Reservoir is full and no water is being drawn into the Chicken Ladder intake, Holland Lake storage water will be spilled over the dam at Chicken Ladder. To model this potential issue, three sets of monthly flow release rates representing the three water demand projection scenarios were applied in the hydrological model.
- Option 2: Banon Creek Diversion with Water Treatment Plant (with manual flows released from Holland Lake)
 - Option 2 includes the Banon Creek diversion and a water treatment plant. With a treatment plant in place, it was assumed that the Holland Creek system can provide water to the service areas all year round. In other words, whenever depletion occurs in Stocking Lake, the Holland Creek system serves as the back-up source to meet the overall water demand.
 - The Town will continue to release water from Holland Lake to Holland Creek to meet the minimum flow requirements (10% of the mean annual discharge) at its outlet and at Chicken Ladder when necessary.
 - The Town will continue to draw water from the Chicken Ladder intake on Holland Creek following the 2013 water usage pattern. However, it was assumed that the Town will only draw water from the Stocking lake system up to the licenced limits (i.e. The Town will draw water from Stocking Lake at a maximum rate of 500,000 gal/day from mid-September to the end of March over 200 days in accordance with the terms of the water licence).
 - Saltair will continue to draw water from the Stocking Lake outlet pipe.
 - Similar to Option 1, during low flow periods, the Town will have to release sufficient water from Holland Lake to provide the maximum day withdrawal at Chicken Ladder and to meet the minimum flow requirements. When the Arbutus Reservoir is full and no water is being drawn into the Chicken Ladder intake, Holland Lake storage water will be spilled over the dam at Chicken Ladder. To model this potential issue, three sets of monthly flow release rates representing the three water demand projection scenarios were applied in the hydrological model.
 - Another potential issue with this option is that there is a possibility that a hydrocarbon contamination event may take place again on Holland Creek, and the Town will have to shut off the Chicken Ladder intake and exceed its allowable withdrawal from Stocking Lake until the Holland Creek contamination event passes.
- Option 3: Banon Creek Diversion, Holland Lake Diversion Pipeline and Water Treatment Plant
 - Option 3 includes the Banon Creek diversion, a diversion pipeline constructed between Holland Lake and the outlet pipe at Stocking Lake, and a water treatment plant. Holland Lake serves as the water source for both the Holland Creek and Stocking Lake systems to meet overall water demand. A connection between Holland Lake and Stocking Lake was established in the model; whenever depletion occurs in Stocking Lake, Holland Lake serves as the back-up source to meet the overall water demand. The main advantage with this option would be that the Town could continue to use water both at Chicken Ladder and

in Holland Lake even if the turbidity is high because the treatment plant would be in place. In addition, the Town could provide water to Saltair through the diversion pipeline in the event that Stocking Lake cannot be recovered during dry years.

- The Town will only release sufficient water from Holland Lake to Holland Creek to meet the minimum flow requirements (10% of the mean annual discharge) at the outlet of Holland Lake and at Chicken Ladder where necessary.
- The Town will draw water from the Chicken Ladder intake on Holland Creek but at a maximum rate of 600,000 imperial gallons per day (0.0316 m³/s) in accordance with Water Licence No. 17746 while meeting the instream flow requirement. It is expected that the Town will attempt to use this water supply from early spring to early summer and capture the snowmelt in the Chicken Ladder watershed.
- The Town will continue to draw water from Stocking Lake but at a maximum rate of 500,000 imperial gallons per day (0.0263 m³/s) from mid-September to the end of March (200 days) in accordance with the terms of the water licence.
- All additional water required by the Town will be drawn from the Holland Lake diversion pipeline.
- Saltair will continue to draw water from the Stocking Lake outlet pipe.
- **Option 4: Banon Creek Diversion with Water Treatment Plant and Chicken Ladder Storage**
 - Option 4 is similar to Option 3 except that it was assumed there will be no spilling of Holland Lake water at Chicken Ladder during non-spillway operation. It was assumed that the Town will increase the size of the Chicken Ladder balancing reservoir in Holland Creek to eliminate the spilling issue. Typically only the minimum flow required (10% of the mean annual discharge) will pass downstream of the upgraded Chicken Ladder balancing reservoir in the summer.
- **Option 5: Banon Creek Diversion with Water Treatment Plant, Chicken Ladder Storage, and Raised Holland Lake Dams**
 - Option 5 is similar to Option 4 except that the Holland Lake Dams are raised by 1.5 metres (storage increased by approximately 736,000 m³, which equates to 43% of the existing capacity (1,704,000 m³) of Holland Lake). The volume-elevation relationship at Holland Lake was extended based on the approximate surface area of Holland Lake at an elevation of 660 m GSC, and the rating curve of the spillway at Holland Lake was also adjusted. The purpose of this option is to determine whether increased storage in the Holland Lake would be beneficial in the long-term.

5.3 Model Result Analysis

A matrix of simulation scenarios was developed with different combinations of demand assumptions, water supply options and climate change considerations. Frequencies of depletion and spilling were determined over a period of 51 years for each case. For example, when the monthly water level reaches the minimum allowable level in the governing water body (i.e. 1 m above the intake invert at Stocking Lake and 1 m above the lake bottom at Holland Lake), the system is considered to be depleted in that month. Consecutive months with depletion were grouped together to represent one occurrence of depletion in the system. The return period to reach the deficiency level (minimum lake level in the final water source beyond which supply is not possible) for each case based on 51 years of available hydrometric record was also determined. A summary of results is listed as follows:

- Option 1: Existing Conditions with Banon Creek Diversion (with manual flows released from Holland Lake)
 - With the existing conditions including the diversion from Banon Creek to Holland Lake, the return periods to reach the minimum lake level in the final water source for this option are more than 51 years in 2013 and 1 year in other modelled scenarios. It should be noted that this option was evaluated for the purpose of recognizing that the management of the water supply sources need to be improved. It should also be noted that during non-spillway operation, Chicken Ladder continues to spill water in excess of the water licence limits. With and without consideration of climate change, this option has a low reliability. Results of this option indicate that the current operation of the Holland Lake valve and the Chicken Ladder intake is inefficient. It is recommended that the Town continues with the review of the existing water licences and consideration of new water licences for potential surface water source improvements to sustainably meet the future water demand from both the Stocking Lake and Holland Lake/Creek systems.
- Option 2: Banon Creek Diversion with Water Treatment Plant (with manual flows released from Holland Lake)
 - Although a water treatment plant is in place in this option, possible excess of Holland Lake water at the Chicken Ladder intake was taken into account. At the same time, the Town would be limited to drawing water from Stocking Lake in accordance with the water licence. As a result, the return periods to reach the minimum lake level in the final water source for the 2054 scenarios are 51 years while that for the 2080 scenarios are only 2 years.
- Option 3: Banon Creek Diversion, Holland Lake Diversion Pipeline and Water Treatment Plant
 - With the Holland Lake diversion pipeline in place to divert water directly from Holland Lake to the Stocking Lake outlet pipe, there will be no depletion at Holland Lake in the 2013 scenario. The return periods to reach the minimum lake level in the final water source are 17 years without climate change consideration and 13 years with climate change consideration in the 2054 Scenario. However, the reliability of the system becomes low in the 2080 scenarios. It should be noted that there would be no excess of Holland Lake water at Chicken Ladder intake in this case because the Holland Lake diversion pipeline would draw from Holland Lake as the final water source for the water supply system. It should also be noted that this option would allow the Town to provide water to Saltair through the diversion pipeline in the event that Stocking Lake cannot be recovered during dry years.
- Option 4: Banon Creek Diversion with Water Treatment Plant and Chicken Ladder Storage
 - By comparing to other options, the reliability of the system in this case is relatively high due to the assumption that there would be no spilling of Holland Lake water at the Chicken Ladder intake. This indicates that the additional storage available at the Chicken Ladder intake would be an important component in maximizing the benefits of having a water treatment plant in place. In particular, no depletion was determined in this option for the 2054 scenario without consideration of climate change. It is recommended that the Town to further consider this option in the long-term.
- Option 5: Banon Creek Diversion with Water Treatment Plant, Chicken Ladder Storage and Raised Holland Lake Dams
 - Raising Holland Lake Dams by 1.5 metres combined with a water treatment plant and additional storage at Chicken Ladder resulted in return periods of reaching the minimum lake level at Holland Lake being greater than 51 years in the 2054 scenarios. The reliability of the system remains relatively high for the 2080 scenarios, with return periods of deficiency events equal to 51 years. Results of this option indicate that raising the Holland Lake Dams by 1.5 metres for increasing available live storage in Holland Lake would be beneficial when combined with diversion from Banon Creek, a water treatment plant and additional Chicken

Ladder storage. It is recommended that the Town to consider increasing storage available in Holland Lake in the long-term planning.

A summary table of the return periods to reach the minimum lake level at the final water source for each modelled scenario is provided in Table 5.6.

Table 5.6: Summary of Return Periods Reaching Minimum Lake Level (Years)

Scenario	2013	2054	2054 (Climate Change)	2080	2080 (Climate Change)
Ladysmith Population	8,077	18,191		30,441	
Total Ladysmith Population*	8,691	22,681		36,557	
Saltair Population	1,822	2,740		3,549	
Option 1	>51	1	1	1	1
Option 2	>51	51	51	2	2
Option 3	>51	17	13	1	1
Option 4	>51	>51	51	2	2
Option 5	>51	>51	>51	51	51

Note: *Total Ladysmith population includes Diamond, IR12 and IR13.

6.0 CONCLUSIONS

- An update of the 2008 hydrological model to consider the impacts of current water licence limitations, current minimum flow requirements, updated water demand projections and climate change has been conducted.
- The 2013 water usage pattern was used in the current analysis for the monthly water demand projections. Future water demand projections when the population of the Town of Ladysmith reaches the thresholds of 18,000 and 30,000 were considered in the current analysis.
- For the model update, additional streamflow data from 2005 to 2012 at all selected regional hydrometric stations were incorporated, resulting in an extended period of record of 51 years.
- A minimum flow equivalent to 10% of the mean annual discharge was assumed at each point of diversion in the water supply system.
- A review of research on the impacts of climate change on the hydrology of the Vancouver Island region was conducted. Based on the findings in the research, changes were applied to the seasonal inflows developed for the Holland and Stocking Lake watersheds to take into account the impacts of climate change.
- Five water supply options were developed, resulting in a total of 25 model scenarios. A matrix of simulation scenarios was developed with different combinations of demand assumptions, water supply options and climate change considerations.

7.0 RECOMMENDATIONS

Based on the findings from this study, it is recommended that:

- Option 4, which includes a water treatment plant with additional storage at Chicken Ladder, is further explored. Results from the analysis suggest that this option would result in a more reliable long-term water supply for the Town of Ladysmith.
- Option 3, which includes a diversion pipeline from Holland Lake to Stocking Lake, should also be further considered in view of its advantage with regards to long-term water supply reliability for Saltair.
- Option 5, which includes raising the Holland Lake Dams by 1.5 metres, would provide enhanced long-term water supply reliability if combined with diversion from Banon Creek, a water treatment plant and additional Chicken Ladder storage.
- The Town continues with the review of existing water licences in conjunction with the CVRD and the Province and consideration of new water licences for potential surface water source improvements to sustainably meet the future water demand from both the Stocking Lake and Holland Lake/Creek systems.
- The potential effects of climate change are further assessed, to support the development of a long-term strategy to achieve system resiliency.
- The potential reduction of storage capacity due to sedimentation, in both Stocking and Holland Lakes should be assessed for the long-term analyses including climate change conditions.
- A more user friendly water balance tool is developed to help the Town of Ladysmith assess various water policy and operational rules in a quicker system, easier to communicate and transfer. A suggested software package to achieve this is GoldSim.
- Further model calibration to be conducted to refine the synthetic inflow time series developed for Stocking Lake if more historical water levels and consumption records can be retrieved.
- Continuous flow monitoring at Stocking Creek is conducted.
- Continuous flow monitoring to be conducted on Holland Lake/Creek for further refinement of the synthetic inflow time series for Holland Lake and Holland Creek. Also, in order to calibrate the Holland Lake/Creek hydrological model, actual diversion rates from Banon Creek, water levels at Holland Lake, and consumption records will be required. It is recommended that the Town to consider these additional hydrometric monitoring programs in the long-term planning of its water supply system.

8.0 CLOSURE

We trust report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.



Prepared by:
Maria Lau, M.Eng., P.Eng.
Hydrotechnical Engineer
Water and Marine Engineering
Direct Line: 604.685.0017 x262
Maria.Lau@tetrattech.com

/ML



Reviewed by:
Mauricio Herrera, Ph.D., P.Eng.
Project Director
Water and Marine Engineering
Direct Line: 604.685.0017 x286
Mauricio.Herrera@tetrattech.com

REFERENCES

BC Hydro. Potential Impacts of Climate Change on BC Hydro's Water Resources.

Kerr Wood Leidal Associates Limited. October 2009. Comox Valley Regional Water Supply Strategy Technical Memorandum for the Comox Valley Regional District.

Kerr Wood Leidal Associates Limited, Associated Engineering, Koers & Associates Engineering Ltd. June 2010. Arrowsmith Water Service Englishman River Water Intake Study. Discussion Paper 6-1: Watershed Hydrology Assessment.

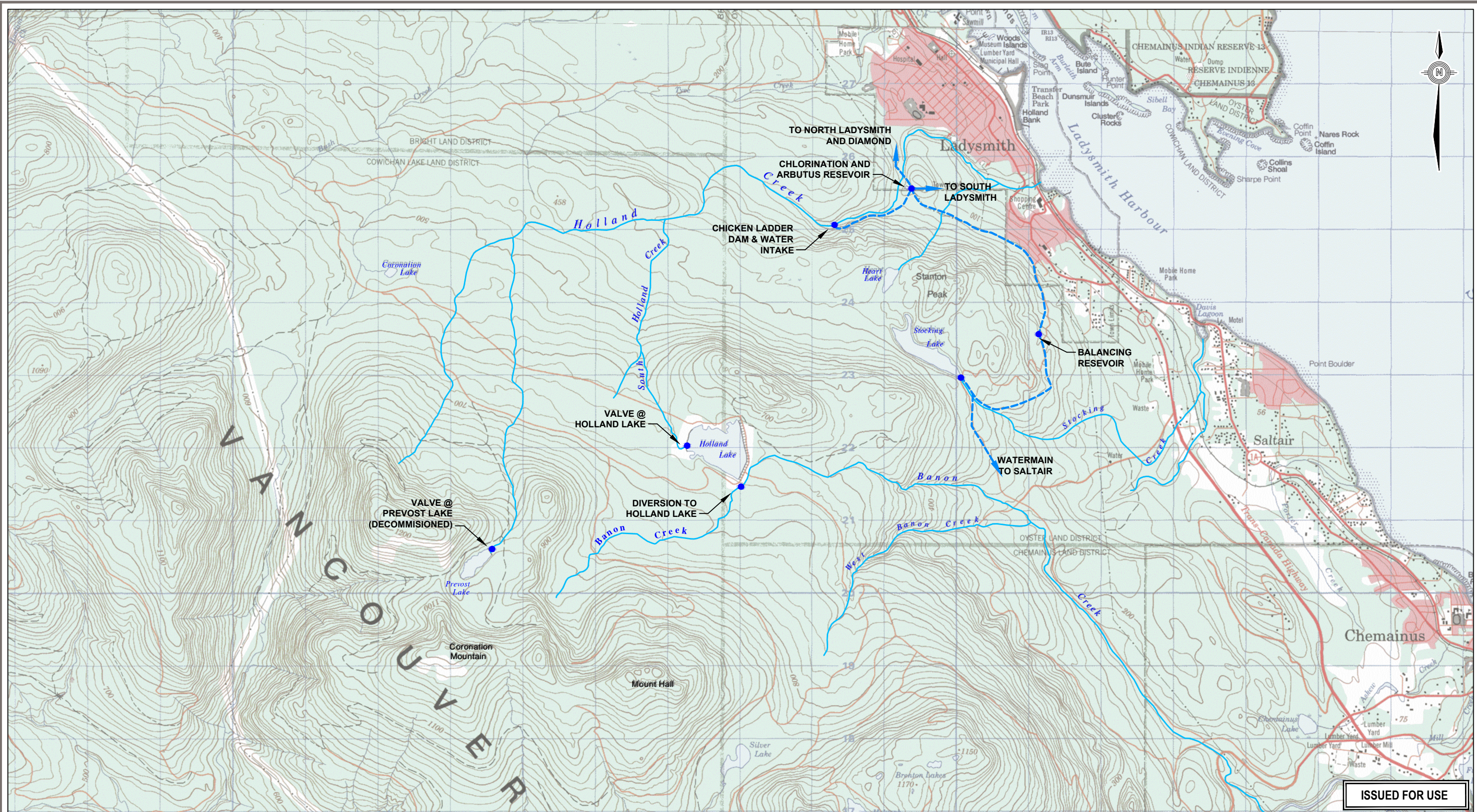
Pacific Climate Impacts Consortium. July 2011. Hydrologic Impacts of Climate Change on BC Water Resources. Summary Report for the Campbell, Columbia and Peace River Watersheds.

Smith, C.D., 1985. Hydraulic Structures.

FIGURES

- Figure 4.1 Layout of Existing Water Supply and Distribution System
Figure 4.2 Study Area Watershed Boundaries

Q:\Vancouver\Engineering\132\Projects\13203036 Holland and Stocking Lakes Hydrology Update\05 CAD\13203036_FIG 3.1.3.2_F0.dwg [FIGURE 3.1] June 11, 2014 - 11:14:37 am (BY: MANG, JUSTIN)



ISSUED FOR USE

LEGEND
 WATERMAIN
 POINT OF INTEREST

SCALE 1:50,000

NOTES

CLIENT



**HOLLAND & STOCKING LAKES
 HYDROLOGY UPDATE**

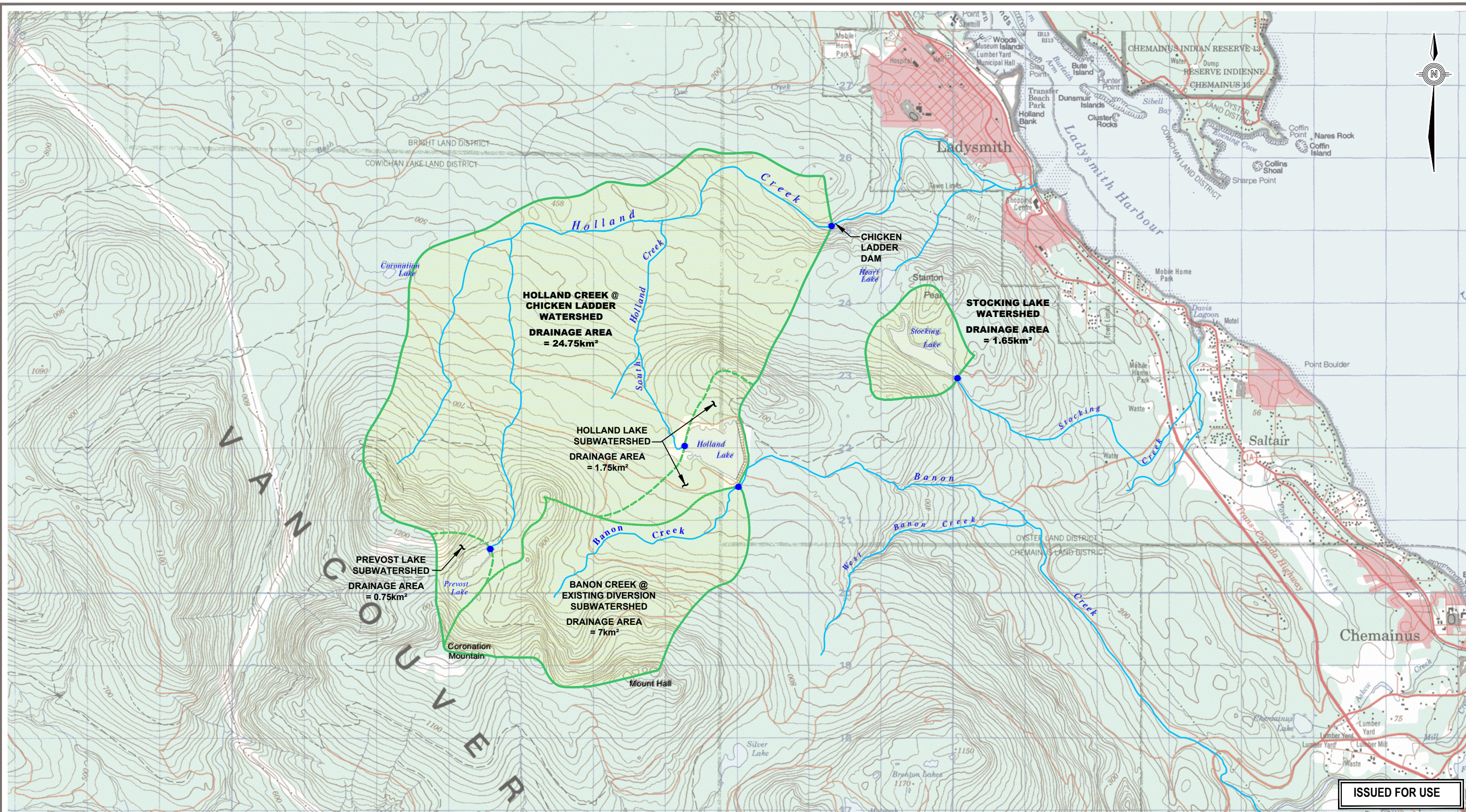
**LAYOUT OF EXISTING WATER SUPPLY
 AND DISTRIBUTION SYSTEM**



PROJECT NO. V13203036-01	DWN JDM	CKD ML	REV 0
OFFICE VANC	DATE Sep, 2014		

Figure 4.1

Q:\Vancouver\Engineering\132\Projects\13203036 Holland and Stocking Lakes Hydrology Update\05 CAD\13203036_FIG 3.1.3_2_F0.dwg [FIGURE 3.2] June 11, 2014 - 11:31:15 am (BY: MANG, JUSTIN)



ISSUED FOR USE

LEGEND
 ——— WATERSHED BOUNDARY
 - - - - SUBWATERSHED BOUNDARY
 ● POINT OF INTEREST

SCALE 1:50,000
 0.5 0 0.5 1.0 2.0km

NOTES

CLIENT



HOLLAND & STOCKING LAKES HYDROLOGY UPDATE

STUDY AREA WATERSHED BOUNDARIES



PROJECT NO. V13203036-01	DWN JDM	CKD ML	REV 0
OFFICE VANC	DATE Sep, 2014		

Figure 4.2

APPENDIX A

TETRA TECH'S GENERAL CONDITIONS

GENERAL CONDITIONS

DESIGN REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This Design Report pertains to a specific site, a specific development, and a specific scope of work. The Design Report may include plans, drawings, profiles and other support documents that collectively constitute the Design Report. The Report and all supporting documents are intended for the sole use of Tetra Tech EBA's Client. Tetra Tech EBA does not accept any responsibility for the accuracy of any of the data, analyses or other contents of the Design Report when it is used or relied upon by any party other than Tetra Tech EBA's Client, unless authorized in writing by Tetra Tech EBA. Any unauthorized use of the Design Report is at the sole risk of the user.

All reports, plans, and data generated by Tetra Tech EBA during the performance of the work and other documents prepared by Tetra Tech EBA are considered its professional work product and shall remain the copyright property of Tetra Tech EBA.

2.0 ALTERNATIVE REPORT FORMAT

Where Tetra Tech EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed Tetra Tech EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by Tetra Tech EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of Tetra Tech EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Tetra Tech EBA. Tetra Tech EBA's instruments of professional service will be used only and exactly as submitted by Tetra Tech EBA.

Electronic files submitted by Tetra Tech EBA have been prepared and submitted using specific software and hardware systems. Tetra Tech EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless so stipulated in the Design Report, Tetra Tech EBA was not retained to investigate, address or consider, and has not investigated, addressed or considered any environmental or regulatory issues associated with the project specific design.

4.0 CALCULATIONS AND DESIGNS

Tetra Tech EBA has undertaken design calculations and has prepared project specific designs in accordance with terms of reference that were previously set out in consultation with, and agreement of, Tetra Tech EBA's client. These designs have been prepared to a standard that is consistent with industry practice. Notwithstanding, if any error or omission is detected by Tetra Tech EBA's Client or any party that is authorized to use the Design Report, the error or omission should be immediately drawn to the attention of Tetra Tech EBA.

5.0 GEOTECHNICAL CONDITIONS

A Geotechnical Report is commonly the basis upon which the specific project design has been completed. It is incumbent upon Tetra Tech EBA's Client, and any other authorized party, to be knowledgeable of the level of risk that has been incorporated into the project design, in consideration of the level of the geotechnical information that was reasonably acquired to facilitate completion of the design.

If a Geotechnical Report was prepared for the project by Tetra Tech EBA, it will be included in the Design Report. The Geotechnical Report contains General Conditions that should be read in conjunction with these General Conditions for the Design Report.

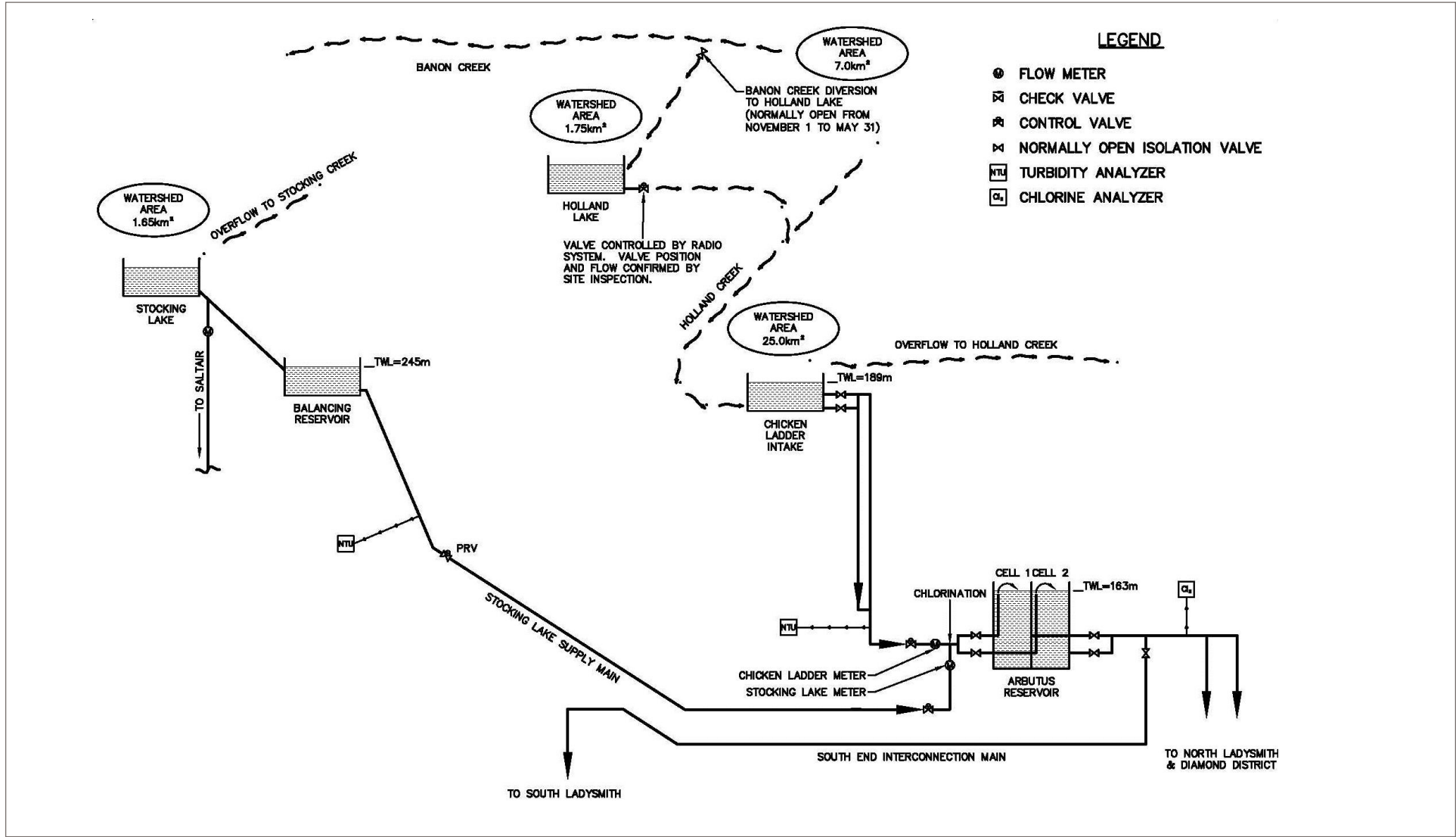
6.0 INFORMATION PROVIDED TO TETRA TECH EBA BY

OTHERS

During the performance of the work and the preparation of the report, Tetra Tech EBA may rely on information provided by persons other than the Client. While Tetra Tech EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, Tetra Tech EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

APPENDIX B

WATER SUPPLY OPTIONS SCHEMATICS



LEGEND

NOTES
Schematics provided by
Koers & Associates
Engineering Ltd.
dated July 14, 2014

STATUS
ISSUED FOR USE

CLIENT
Town of
Ladysmith

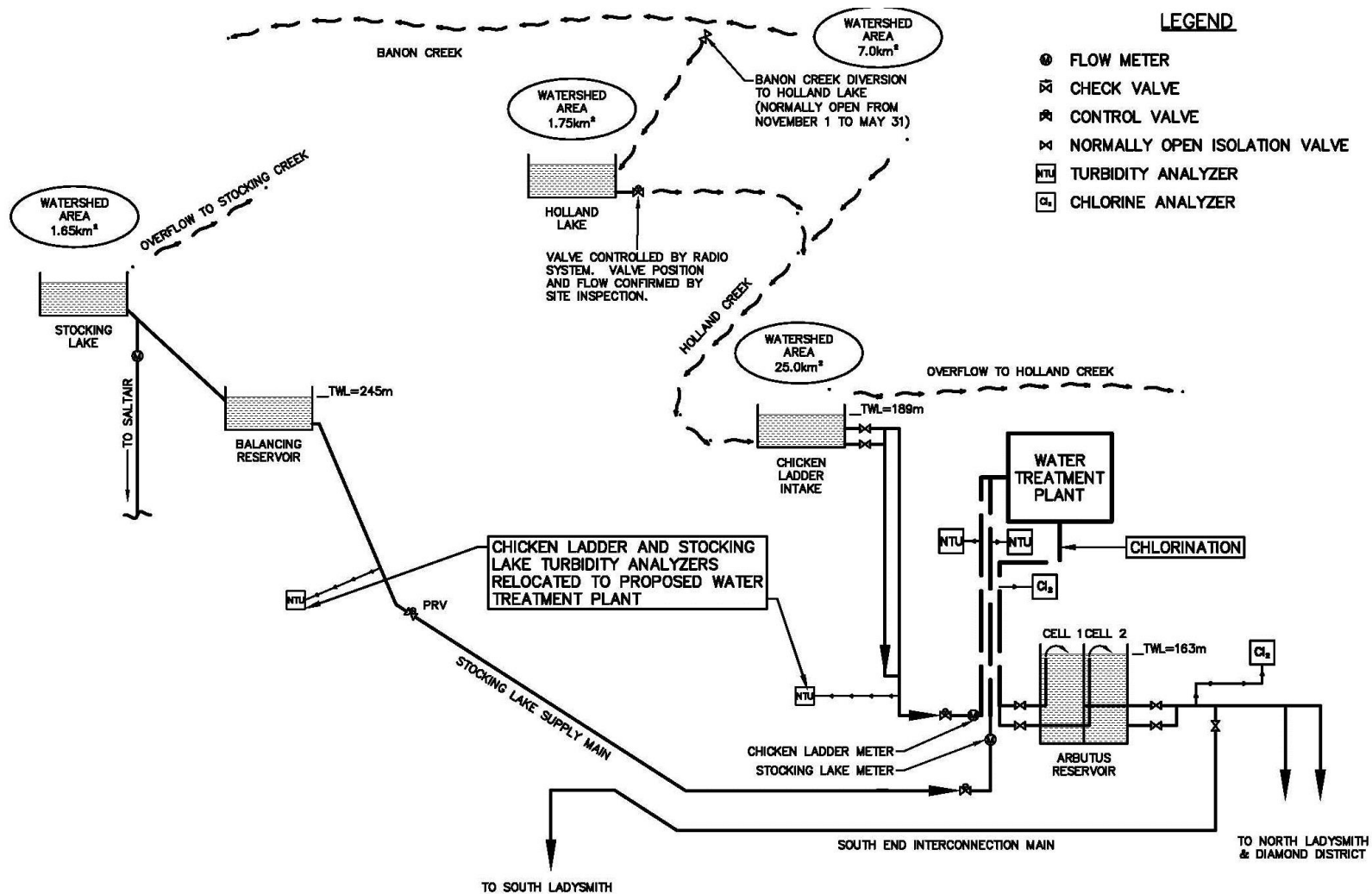


**HOLLAND & STOCKING LAKES
HYDROLOGY UPDATE**

WATER SUPPLY OPTION 1

PROJECT NO. V13203036-01	DWN	CKD	APVD	REV
	ML	ML	MH	0
OFFICE EBA-VANC	DATE Sep, 2014			

Figure 1



LEGEND

NOTES
Schematics provided by
Koers & Associates
Engineering Ltd.
dated July 14, 2014

STATUS
ISSUED FOR USE

CLIENT

Town of
Ladysmith

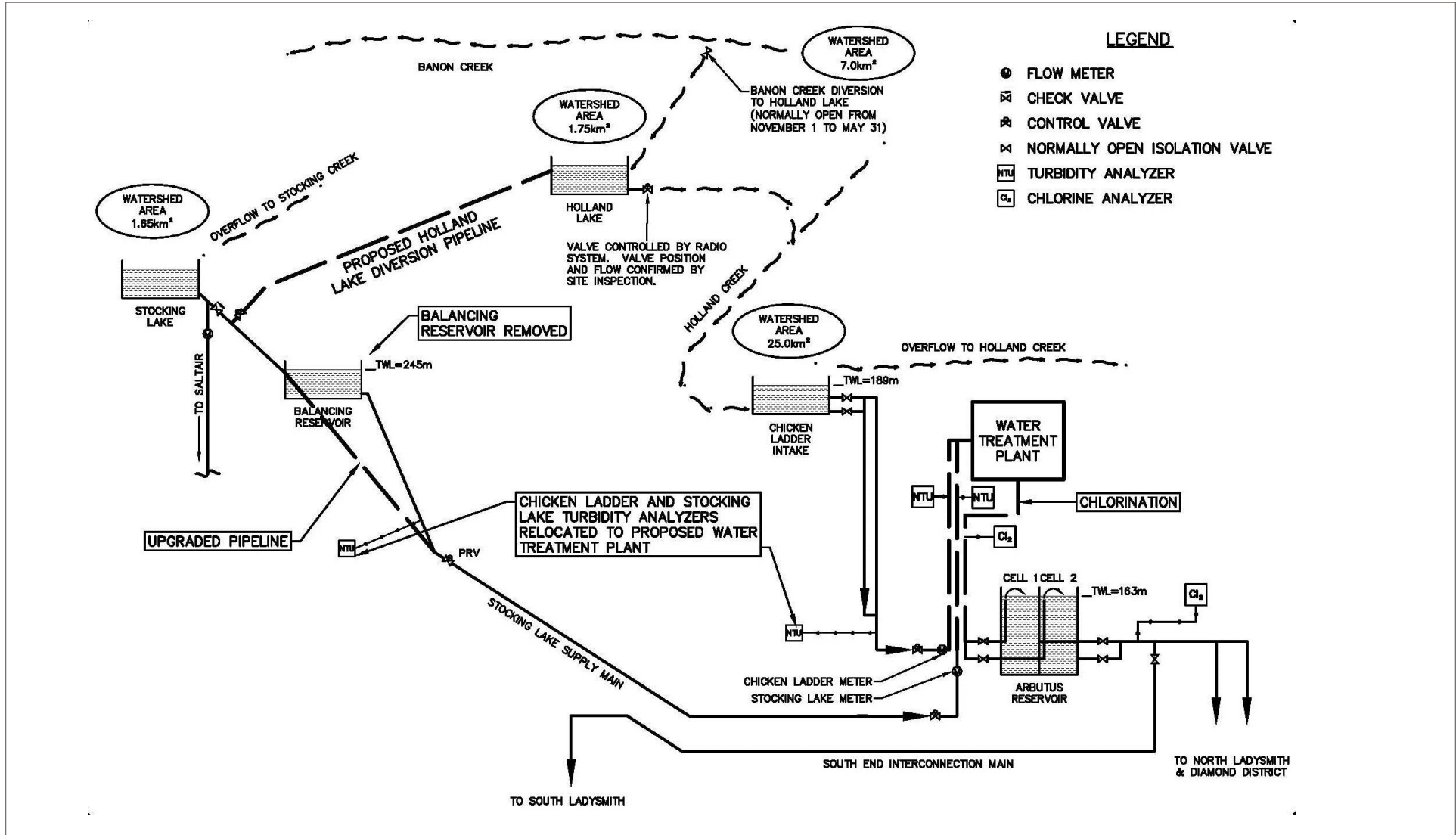


**HOLLAND & STOCKING LAKES
HYDROLOGY UPDATE**

WATER SUPPLY OPTION 2

PROJECT NO. V13203036-01	DWN	CKD	APVD	REV
	ML	ML	MH	0
OFFICE EBA-VANC	DATE Sep, 2014			

Figure 2



LEGEND

NOTES
Schematics provided by
Koers & Associates
Engineering Ltd.
dated July 14, 2014

STATUS
ISSUED FOR USE

CLIENT
Town of
Ladysmith

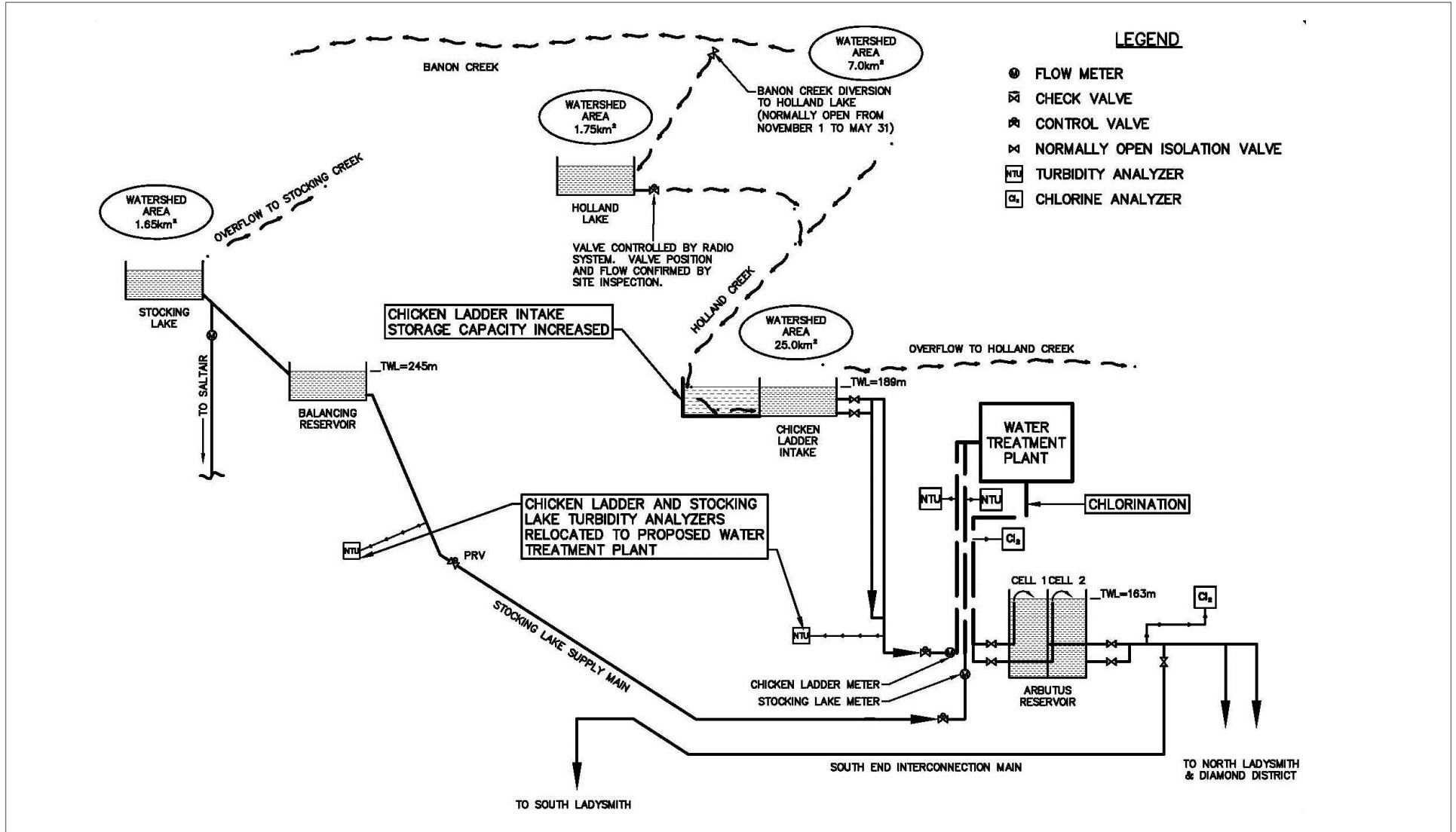


**HOLLAND & STOCKING LAKES
HYDROLOGY UPDATE**

WATER SUPPLY OPTION 3

PROJECT NO. V13203036-01	DWN	CKD	APVD	REV
	ML	ML	MH	0
OFFICE EBA-VANC	DATE Sep, 2014			

Figure 3



LEGEND

NOTES
Schematics provided by
Koers & Associates
Engineering Ltd.
dated July 14, 2014

STATUS
ISSUED FOR USE

CLIENT
Town of
Ladysmith

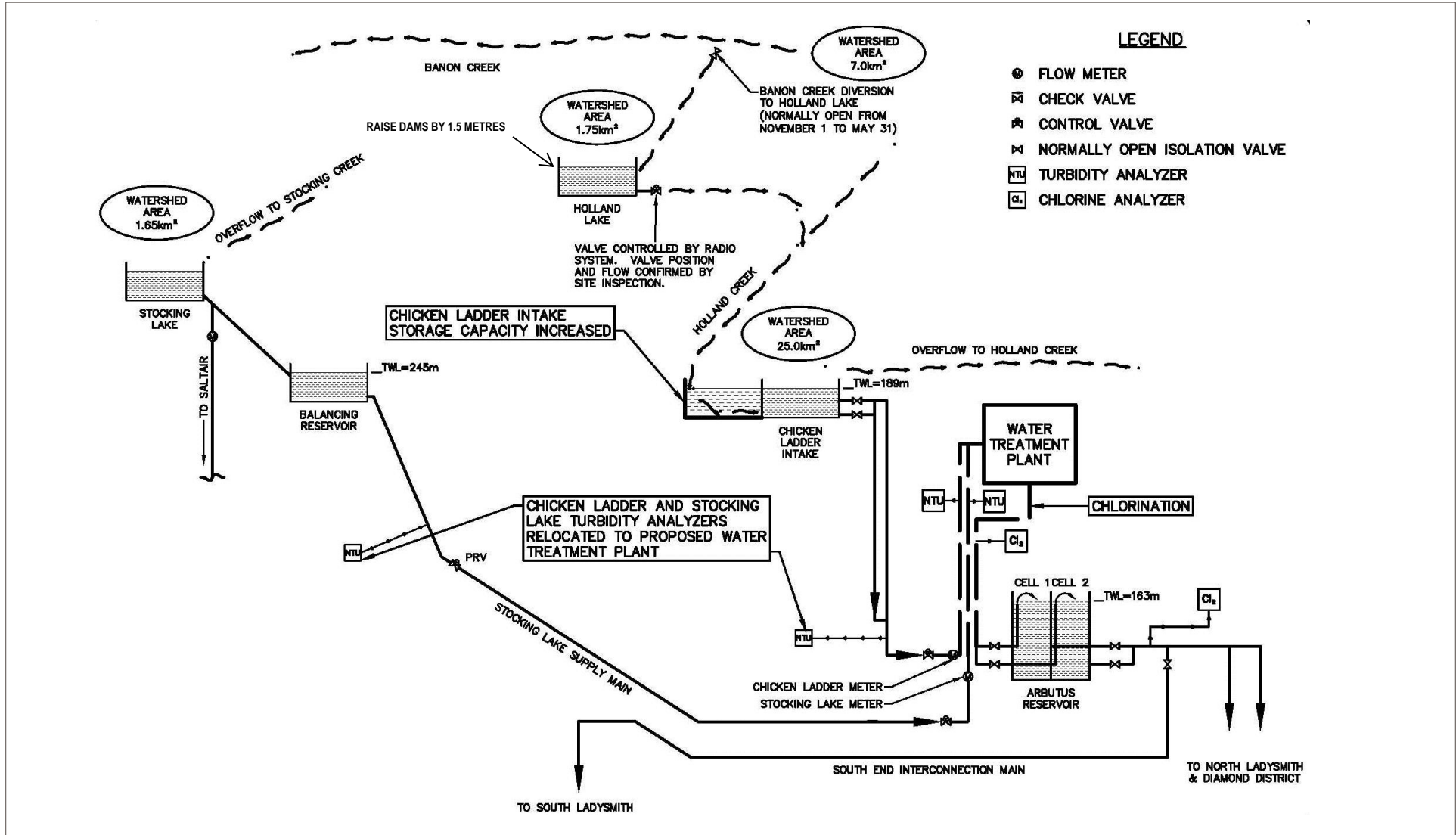


**HOLLAND & STOCKING LAKES
HYDROLOGY UPDATE**

WATER SUPPLY OPTION 4

PROJECT NO. V13203036-01	DWN	CKD	APVD	REV
	ML	ML	MH	0
OFFICE EBA-VANC	DATE Sep, 2014			

Figure 4



LEGEND

- ⊙ FLOW METER
- ⊠ CHECK VALVE
- ⊗ CONTROL VALVE
- ⊠ NORMALLY OPEN ISOLATION VALVE
- NTU TURBIDITY ANALYZER
- Cl₂ CHLORINE ANALYZER

LEGEND

NOTES
Schematics provided by
Koers & Associates
Engineering Ltd.
dated July 14, 2014

STATUS
ISSUED FOR USE

CLIENT

Town of
Ladysmith

**HOLLAND & STOCKING LAKES
HYDROLOGY UPDATE**

WATER SUPPLY OPTION 5



PROJECT NO. V13203036-01	DWN	CKD	APVD	REV
	ML	ML	MH	0
OFFICE EBA-VANC	DATE Sep, 2014			

Figure 5