



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

REGULAR MEETING OF THE COUNCIL OF THE VILLAGE OF LIONS BAY HELD ON TUESDAY, FEBRUARY 7, 2017 at 7:00 PM COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY

AGENDA

- 1. Call to Order**
- 2. Approval of Agenda**
- 3. Public Participation**
- 4. Delegations**
 - A. Rod Tulett – Pulling Together Canoe Journey (Page 5)
- 5. Minutes**
 - A. Regular Council Meeting – January 24, 2017 (Page 21)
THAT the Regular Council Meeting minutes of January 24, 2017 be approved as circulated.
- 6. Business Arising from the Minutes**
- 7. Unfinished Business**
 - A. Information and Resource Requests (IRRs) (Page 27)
THAT the IRRs be updated in accordance with the following:
- 8. Reports**
 - A. Staff
 - i. CAO – Information Report: Notes from Public Information Meeting re. Zoning Bylaw (Page 33)
THAT the Information Report: Notes from Public Information Meeting re. Zoning Bylaw, be received.
 - ii. CAO – Request for Decision: Emergency Notification System (Page 41)
THAT Council direct staff to proceed with the emergency notification system which provides the best value for Lions Bay up to \$2,000/year.
 - iii. CAO – Request for Decision: Election Advertising and Campaigning Policy No. 1701 (Page 43)
THAT Council approve the draft Policy No. 1701: Election Advertising and Campaigning.

iv. PW Manager – 335 Oceanview Road Encroachment (Page 47)

THAT the application for encroachments at 335 Oceanview Road be approved subject to and in accordance with the following terms:

- a) the applicant shall sign a standard licence of occupation with respect to the encroachment in substantially the form of Attachment (a) as prepared by the Village of Lions Bay indemnifying the Village from any and all liability and costs related to the driveway encroachment;
- b) the applicant shall pay the sum of \$400 in accordance with Schedule 2 of Fees Bylaw No. 497, 2016, in respect of the encroachment application.

v. PW Manager – 345 Bayview Encroachment (Page 59)

THAT the application for encroachments at 345 Bayview Place be approved subject to and in accordance with the following terms:

- a. the applicant shall sign a standard licence of occupation with respect to the encroachment in substantially the form of Attachment (a) as prepared by the Village of Lions Bay indemnifying the Village from any and all liability and costs related to the driveway encroachment;
- b. the applicant shall pay the sum of \$400 in accordance with Schedule 2 of Fees Bylaw No. 497, 2016, in respect of the encroachment application.

B. Mayor

i. Lions Bay Air Quality Monitoring Study Report (Page 71)

THAT the Lions Bay Air Quality Monitoring Study report, prepared by the Air Quality and Climate Change Division of Metro Vancouver, be received for information.

C. Council

D. Committees

i. Trees, Views & Landscapes Committee – Tree Application #77 (Page 97)

THAT the subject trees and associated debris in Tree Application #77 be removed.

ii. Trees, Views & Landscapes Committee – Tree Application #78 (Page 99)

THAT the subject trees and associated debris in Tree Application #78 be removed.

E. Emergency Services

i. Lions Bay Fire Rescue Monthly Report – December (Page 101)

ii. Lions Bay Fire Rescue Monthly Report – January (103)

9. Resolutions**10. Bylaws**

A. Utility User Rate Amendment Bylaws No. 514 and 515 (Page 105)

THAT the following bylaws be read a first, second and third time:

- 1. Water Rates and Regulations Bylaw No. 2, 1971, Amendment Bylaw No. 514, 2017

2. Sewer User Rates Bylaw No. 122, 1984, Amendment Bylaw No. 515, 2017

- B. Election Procedures Amendment Bylaw No. 511, 2017– First, Second, Third Reading (Page 113)

THAT Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017 be introduced and given first, second and third reading.

- C. Village of Lions Bay Repeal of Sewer Parcel Tax Bylaw No. 108, 1982, Repeal Bylaw No. 512, 2017 – Adoption (Page 129)

THAT the Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017 be adopted.

- D. Secondary Suites Surcharge Bylaw No. 513, 2017 – Adoption (Page 133)

THAT Secondary Suite Surcharge Bylaw No. 513, 2017 be adopted.

11. Correspondence

- A. List of Correspondence to February 2, 2017 (Page 137)

THAT the following actions be taken with respect to the correspondence:

12. New Business

- A. Award of Contract for Water Modelling Works (Page 169)

THAT GeoAdvice Engineering Inc. (GAE) be awarded the water modelling project; and

THAT the Mayor and Corporate Officer be authorized to execute contract documents in accordance with Projects 1 and 2 of the Water Distribution System Modelling Proposal submitted by GAE.

13. Public Questions & Comments**14. Closed Council Meeting**

THAT the meeting be closed to the public on the basis of matters to be considered under the following sections of the *Community Charter*:

90 (1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

c) labour relations or other employee relations.

e) 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.

90 (2) A part of a council meeting must be closed to the public if the subject matter being considered relates to one or more of the following:

b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

Agenda – Regular Meeting of Council – February 7, 2017

Village of Lions Bay

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15. Reporting Out From Closed Portion of Meeting

16. Adjournment



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

DELEGATION REQUEST FORM

Please forward your Delegation Request Form to the Village Office by 4:00 pm, the Thursday prior to the regular Council meeting. Delegations may speak for a maximum of 10 minutes total.

Today's Date: _____ Council Meeting Date: _____

SUBJECT OF DELEGATION I wish to speak before the Council regarding:

[Empty box for subject of delegation]

SUPPORTING MATERIAL I will provide additional information in advance of the Council meeting: (by 12:00 pm the Thursday prior to the Council meeting so that the material can be included in Council package.)

[Empty box for supporting material]

ACTION. The specific action I would like Council to take is:

[Empty box for action]

NAME AND ADDRESS OF SPEAKER FOR THE DELEGATION:

Name: _____

Signature: _____

Organization (if any): _____

Address: _____

Phone: _____ Fax: _____

Email: _____

Note: A telephone number (where a message can be left with a person or voicemail), fax number or email address is required so that we can contact you in a timely manner.

Mayor Karl Buhr
Village of Lions Bay
PO Box 141
400 Centre Road
Lions Bay, BC
V0N 2E0

27 January 2017

RE: PULLING TOGETHER CANOE JOURNEY 2017

Your Worship;

For the past nineteen years, Police and Government Public Service agencies have partnered with First Nations Communities, focussing on youth, in the Pulling Together Canoe Journey. Together, they embark on an eight to ten day trip through hundreds of kilometres of British Columbia's waterways. The goal is simple: reconciliation by learning and understanding of each other's cultures.

BACKGROUND

The Journey rose from an event called Vision Quest, which placed RCMP side by side with First Nations in a journey down the coast of BC in 1997. Since then, annual journeys have been visiting communities on both the Pacific Coast and in the BC Interior with participants and support being drawn from the RCMP, Department of Fisheries & Oceans, Municipal Police, Royal Canadian Navy, Metro Vancouver Regional District and a host of other agencies. The Pulling Together Canoe Society was formed to organize and manage these annual Journeys

In 2017 the Journey is proposed to take place through Shíshálh (Sechelt) and Skwxwú7mesh Úxwumixw (Squamish) Territories from Sechelt to Vancouver with overnight camps at Gibsons, Potlatch Creek, Squamish, and Ambleside Park during the period 5 – 15 July (Map and Day Plan attached). Due to the proposed location we expect 25 Canoes, with about 400 paddlers, to take part in all or part of the Journey.

The story of Pulling Together can best be explained by watching this 8 minute video:
<https://vimeo.com/95229732>.

INITIAL REQUEST

The Pulling Together Canoe Society is requesting permission from the Village of Lions Bay to use Beach Park adjacent to the Marina for a lunch stop from about 11:00AM to 1:00PM on Thursday July 13th. We would need to be able to pull the canoes up onto the beach inside the designated swimming area and, due to the number of participants, have exclusive use of the park. We would provide additional portable toilets to avoid undue stress upon the Village's small washroom in the park, and ensure clean-up of any situation we create.

The Society further requests that Council consider receiving a presentation on the Journey from members of the Planning Committee at an upcoming meeting to gain your support.

FUTURE POSSIBLE SUPPORT

Eventually, if approved, we ask that Council consider further support by hosting the lunch at Lions Bay and/or having Mayor and Council members greet and visit with the paddlers during the planned stop in your community.

Yours Truly,

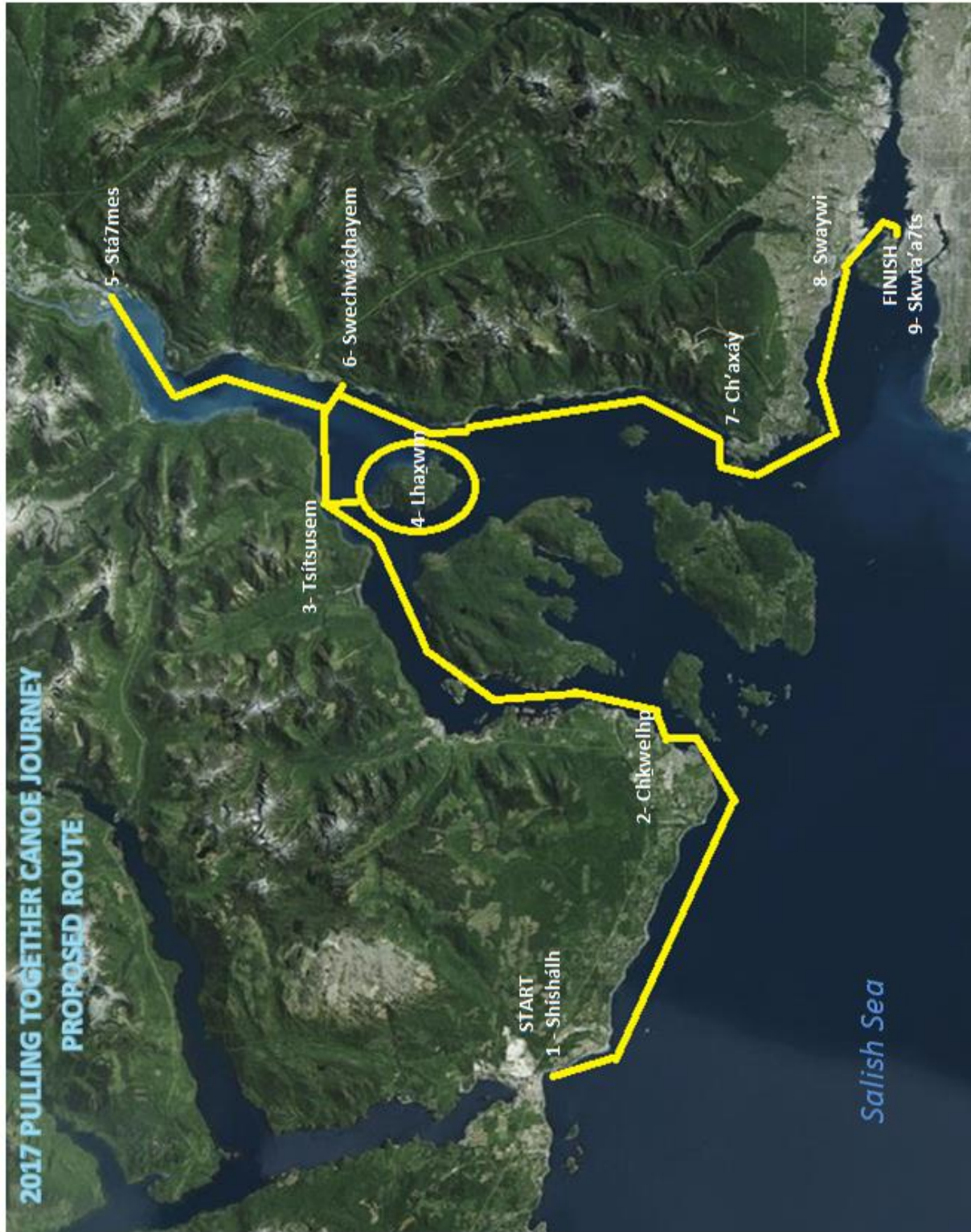
A handwritten signature in blue ink, appearing to read 'Rod Tulett', with a stylized flourish at the end.

Rod Tulett CD
Pulling Together 2017 Planning Committee
604.313.9486
rod.tulett@metrovancover.org

2017 CANOE JOURNEY PLAN

Day #	Date	Day	Day's Activities	Canoe Camp Location	Main Camp Location
1	5 Jul		Arrival Day		Gibsons
2	6 Jul		Orientation and Canoe Launching		Gibsons
3	7 Jul		Paddle Shíshálh to Chkwelhp (Sechelt to Gibsons)		Gibsons
4	8 Jul		Paddle Chkwelhp to Tsítsusem (Gibsons to Potlatch Ck)	Tsítsusem (Potlatch Creek)	Gibsons
5	9 Jul		Canoes Circumnavigate Lhaxwm (Anvil Island)	Tsítsusem (Potlatch Creek)	Squamish
6	10 Jul		Paddle Tsítsusem to Stá7mes (Potlatch Ck to Squamish)		Squamish
7	11 Jul		Cultural Day		Squamish
8	12 Jul		Paddle Stá7mes to Swechwáchayem (Squamish to Porteau Cove)		Squamish
9	13 Jul		Paddle Swechwáchayem to Ch'axáy (Porteau Cove to Horseshoe Bay)		Ambleside Park
10	14 Jul		Paddle Ch'axáy to Swaywi (Horseshoe Bay to Ambleside)		Ambleside Park
11	15 Jul		Paddle Swaywi to Skwta'a7ts (Ambleside to Deadman's Island)		Ambleside Park
12			Travel home day		Ambleside Park

PROPOSED ROUTE MAP



Pulling Together 2017



Presentation to Village of Lions Bay Mayor and Council

Wes Nahanni

Emanuela Sheena

Rod Tulett

History

- Begun as Vision Quest in 1997
- Became Pulling Together in 2001
- Most Recent Journeys:
 - 2016 Mt. Currie to Harrison
(Lil'wat to Sts'ailes)
 - 2015 Harrison to White Rock
(Sts'ailes to Semiahmoo)
 - 2014 Nanoose Bay to Sideny
(Snaw-naw-as to Tseycum)
 - 2013 Salmon Arm to Kamloops
(Splatsin to Tk'emlúps)

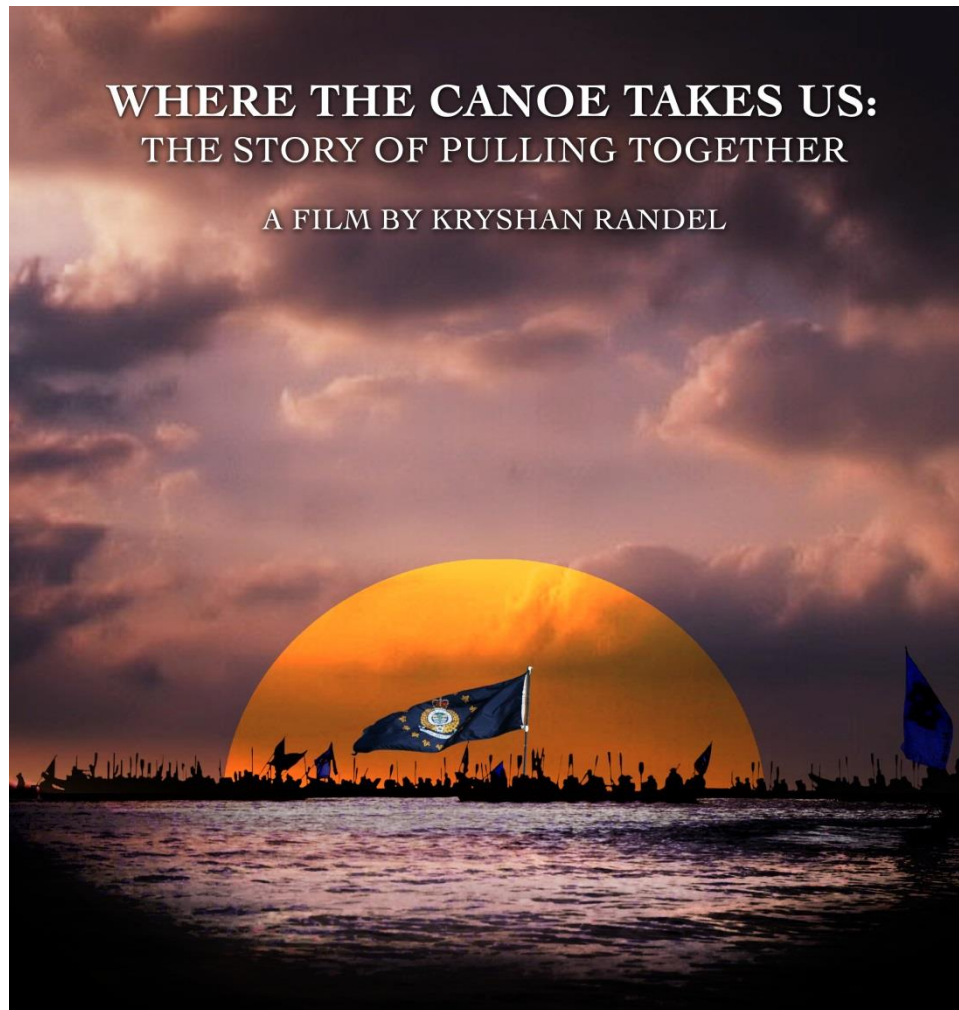


PT Canoe Society

- **Vision:** To lead the way in the elimination of prejudice & stereotypes
- **Core values:** Fun!, Unity, Respect, Cultural Diversity & Empathy.
- **Mission Statement:** “Recognizing the past by Pulling Together to enhance understanding between Public Service Agencies and Aboriginal Peoples by Canoeing the traditional highway, strengthening our future relations”

Video

(8 mins)



Sponsors

Major Financial Support



In Kind Support (Personnel and Logistics)



Skwxwú7mesh Úxwumixw



2017



Journey

- Shíshálh to Chkwelhp (Sechelt to Gibsons)
- Chkwelhp to Tsítsusem (Gibsons to Potlatch Ck)
- Lhaxwm tour of cultural sites (Anvil Island)
- Tsítsusem to Stá7mes (Potlatch Ck to Squamish)
- Stá7mes to Swechwáchayem (Squamish to Porteau Cove)
- Swechwáchayem to Ch'axáy (Porteau Cove to Horseshoe Bay)
- Ch'axáy to Swaywi (Horseshoe Bay to Ambleside Park)
- Swaywi to Skwta'a7ts (Ambleside to Deadman's Island)

Plus Lunch stops along the way about halfway between points

Camp Locations

- **Chkwelhp (Gibsons)**
 - Will be confirmed early in 2017
- **Tsítsusem (Potlatch Creek)(independent camp)**
 - Canoes only, support people will move to...
- **Stá7mes (Squamish)**
 - Confirmed
- **Swaywi (Ambleside Park)**
 - Confirmed

Anticipated Participation

- Prime Minister
- Lieutenant Governor of BC
- Minister of National Defence
- Commander Royal Canadian Navy
- West Vancouver Police Chief
- Vancouver Police Chief

Due to schedules, VIPs will be available only for parts of the Journey, which may not include the visit to Lions Bay.

Requests

- Permission from the Village of Lions Bay to use Beach Park for a lunch stop from about 11:00AM to 1:00PM on Thursday July 13th.
- Provide a contact person to keep the Council up to date on activities.
- Consider showing further support for the Journey by:
 - Mayor and Council greeting paddlers on arrival
 - Hosting the lunch (estimated to be about \$1500)

Huy chexw (Thank You)



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

REGULAR MEETING OF THE COUNCIL OF THE VILLAGE OF LIONS BAY HELD ON TUESDAY, JANUARY 24, 2017 at 7:00 PM COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY

MINUTES

In Attendance:

Council: Mayor Karl Buhr
Councillor Fred Bain
Councillor Jim Hughes
Councillor Ron McLaughlin
Councillor Eileen Wilke

Staff: Chief Administrative Officer Peter DeJong
Chief Financial Officer Pamela Rooke
Public Works Manager Nai Jaffer
Office Coordinator Shawna Gilroy (Recorder)

Delegations: 0

Public: 0

1. Call to Order

Mayor Buhr called the meeting to order at 7:03 p.m.

2. Approval of Agenda

Moved/Seconded

THAT 12A – Emergency Steering Committee be added; and

THAT 12B – Councillor Wilke’s Question be added; and

THAT section 90(1)(e) be added as a basis of matters to close the meeting to the public; and

THAT the agenda be approved as amended.

CARRIED

3. Public Participation

None

4. Delegations

None

5. Minutes

A. Regular Council Meeting – January 10, 2017

Moved/Seconded

THAT the Regular Council Meeting Minutes of January 10, 2017 be approved as circulated.

CARRIED

6. Business Arising from the Minutes

A. Item 7A: ID 122 – Area ‘A’ OCP

Mayor Buhr to bring forward a report regarding Area ‘A’ OCP at the next meeting in February.

Audio: 00:09

7. Unfinished Business

A. Information and Resource Requests (IRRs)

Moved/Seconded

THAT the IRRs on the Requests for Council page be updated in accordance with the following:

- ID 114: Drones – staff waiting on an estimate – leave on requests
- ID 117: Signage – CAO to review “use at own risk” signage on Lions Bay hiking trails
- ID 119: Correspondence Policy – move to the completed list
- ID 120: IPGs – move to the completed list
- ID 123: Mapping – item part of budget process, move to the Pre-Empted list
- ID 124: Remembrance Day Quilt – PW to hang quilt on wall above the couch in Hall kitchen, order a plaque, and CFO to add to Council budget (remain on IRR list until complete)
- ID 125: Leaving Metro Boundary – CAO to write a letter to Metro requesting that they provide boundary signage for the reasons outlined by Mayor Buhr

AND THAT the IRRs on the Resolutions page be updated in accordance with the following:

- ID1: Oceanview Creep – move the item to the Pre-Empted list
- ID22: SOFI Changes – move the item to the Completed Resolutions list
- ID87: Bear Smart Sign – staff to approach the new store owner to request placement
- ID98: Office Hours – move the item to the Pre-Empted list
- ID104: Chambers Monitor – part of budget process; move to Pre-Empted list
- ID105: Correspondence Policy – move to the Completed list
- ID106: Emergency Notification System – budget process; move to Pre-Empted list
- ID108: Property Tax – move to Completed list
- ID110: BCAA Data – move to Completed list
- ID113: Festive Lights – part of budget process; move to Pre-Empted list

CARRIED

Moved/Seconded

THAT Council appoint Councillor Wilke in place of Councillor Waterson as the head of Volunteer Recognition.

CARRIED

Audio: 00:41

8. Reports

A. Staff

i. CAO: Request for Decision

Council reviewed the Correspondence Policy and made the following amendment:

Section 2.0, 4th bullet, 1st arrow – add a comma after “when addressed to Council” and strike the words “be referred to Council”.

Moved/Seconded

THAT Council adopt the Correspondence Policy No. 1405 as amended.

CARRIED

Council reviewed the Electronic Communication Policy and made the following amendments:

Replace the words “will” and “shall” wherever they appear with the word “must”.

Moved/Seconded

THAT Council adopt the Electronic Communications Policy No. 1401 as amended.

CARRIED

B. Mayor

None

C. Council

None

Audio: 00:54

D. Committees

The following budget request was discussed at the earlier Council Strategy Committee Meeting.

Moved/Seconded

THAT staff be directed to prepare the Water Rates Bylaw with a 6% increase in water utility fees, a 0% increase in sewer utility fees, and a 6% decrease in solid waste utility fees.

CARRIED

Councillor Bain provided a brief update on the last Infrastructure Committee meeting and noted that the next meeting is on February 27, 2016.

Councillor Bain updated Council on the Emergency Plan Steering Committee.

Councillor Wilke updated Council on the Lions Bay Community Association (LBCA) umbrella group, noting that Council will need to think about terms for any municipal grant for the Directory project given the still formative stage of the LBCA.

Audio: 01:02

E. Emergency Services

i. RCMP Monthly Report

Council reviewed the RCMP monthly report and requested staff to advise the RCMP that Strachan Pt. and Ocean Pt. are not within the *boundaries* of Lions Bay, and to ask for details regarding the “Bylaw x 1” and “Other x 4” service calls.

Moved/Seconded

THAT Council receive the RCMP monthly report for information.

CARRIED

9. Resolutions
 None

Audio: 01:07

10. Bylaws

A. Repeal of Village of Lions Bay Sewer Parcel Tax By-Law No. 108, 1982

Moved/Seconded

THAT the Village of Lions Bay Sewer Parcel Tax By-Law No. 108, 1982, Repeal Bylaw No. 512, 2017 be introduced and read a first, second and third time.

CARRIED

B. Secondary Suite Surcharge Bylaw No. 513, 2017

Moved/Seconded

THAT Secondary Suite Surcharge Bylaw No. 513, 2017 be introduced and read a first, second and third time, as amended by adding the heading “Severance” before section 4, and the heading “General” before section 5.

CARRIED

Audio 01:18

11. Correspondence
 Moved/Seconded

THAT the following actions be taken with respect to the correspondence:

- G-1: North Shore Neighbourhood Speed Reduction Forum – no response
- G-2: Leadership Forum – Councillor Wilke to attend the Leadership Forum if interested
- G-3: SBA Communications Canada – staff to continue discussions with SBA Communications Canada
- R-1: Mark Fleming – PW Manager to respond to resident
- R-2: Jan Schneider – CAO to respond to resident
- R-3: Residents at Brunswick Beach – CAO or PW Manager to respond to the writer, as well as the residents who signed the petition, and cc Council.

CARRIED

12. New Business
 A. Emergency Plan Steering Committee
 Moved/Seconded

THAT Eileen Wilke be appointed to be a member of the Emergency Plan Steering Committee.

CARRIED

B. Councillor Wilke's Question

Play Group contacted Councillor Wilke regarding a request for a guard or railing along the highway from Kelvin Groveto Central Lions Bay - Councillor Wilke requested that the matter be added to the IRR list? A discussion took place about various potential routes and CAO DeJong said the matter would be added to the IRRs.

13. Public Questions & Comments
 None

14. Closed Council Meeting
 Moved/Seconded

THAT the meeting be closed to the public on the basis of matters to be considered under the following sections of the *Community Charter*:

90 (1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

- c) labour relations or other employee relations
- e) 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

90 (2) A part of a council meeting must be closed to the public if the subject matter being considered relates to one or more of the following:

- b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

CARRIED

The meeting was closed to the public at 8:49 p.m.

The meeting was re-opened to the public at 9:45 p.m.

15. Reporting Out From Closed Portion of Meeting

That in various closed meetings, Council discussed the notion of closing the road between 51 and 53 Brunswick Beach Road with a view to its sale. Council instructed staff to bring forward a Road Closure Bylaw, the process for which will include a public consultation process and other statutory requirements.

16. Adjournment

Moved/Seconded

THAT the meeting be adjourned.

CARRIED

The meeting was adjourned at 9:46 p.m.

Mayor

Corporate Officer

Date Approved by Council:	
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RESOLUTIONS

Request ID	Date of Request	Requester	Subject	Information Provided and/or Requested	Requestor's Priority 1 (lo) - 5 (hi)	Rationale	Personnel and/or Financial Resources Est'd by Requestor	Admin Owner	Preliminary Administration Response	Committee Recommendation and/or Council Disposition
44	25/Jan/16	Buhr	Highway Water Tank	Please develop a plan to run a "Decorate the Tank" competition thru the Arts Council mural?	2	Showing pride in our Village	Staff report	CAO	Staff can prepare a report with options for Council to consider.	THAT staff be directed to prepare report and liaise with Arts Council
60	15/Feb/16	Buhr	Anti-encroachment marketing	Can we undertake an Anti-Encroachment campaign?	2		Staff time	CAO	Let's discuss what this should look like, resources to be devoted to it, timing, communication plan, etc.	THAT "anti-encroachment marketing" be dealt with in the larger context of a comprehensive anti encroachment policy.
63	15/Feb/16	Buhr	2016 water shortage plan	Please provide staff's recommendations for 2016 water contingency plans, and comments on 2015 Water Plan	4	Water supply	Staff time	PWM & CAO	Require confirmation whether this is in reference to an operational water contingency plan, or Village-wide. PWM can work with CAO to ensure that operational plans are referenced within the strategic plan for water contingency and conservation; and that the strategic plan is congruent with EMBC's plans	THAT the "2016 Water Shortage Plan" be referred to the Emergency Plan Steering Committee.
83	15/Feb/16	Buhr	Clean air 1	Learn to Burn campaign	2	Public health		CAO	Metro may have some materials. Once we have data from MAMU, we should discuss appropriate communication plan, resources, etc.	THAT "Clean Air Learn to Burn Campaign" be kept on the IRR sheet but tabled until Fall.

RESOLUTIONS

Request ID	Date of Request	Requester	Subject	Information Provided and/or Requested	Requestor's Priority 1 (lo) - 5 (hi)	Rationale	Personnel and/or Financial Resources Est'd by Requestor	Admin Owner	Preliminary Administration Response	Committee Recommendation and/or Council Disposition
87	16/Feb/16	Buhr	Move Bear Smart sign	Can we move the Bear Smart Community sign to a more highly visible location?	3	Council priority (communication)		CAO	Staff to approach the new store owner to request placement.	THAT staff consult with the Bear Smart Committee regarding the preferred location of the Bear Smart sign.
96	13/Apr/16	Buhr	Procedure Bylaw	Procedure Bylaw should be amended to allow Delegations to present to Council re. matters not on the Agenda.		Governance	Staff time	CAO	Agreed. Will review and bring recommendations in due course, if desired by Council, along with other potential changes to the Procedures Bylaw.	THAT staff amend the Council Procedures Bylaw for delegations, as time permits.
97	13/Apr/16	Buhr	Procedure Bylaw	Procedure Bylaw should be amended to allow Delegations to present to Council re. matters not on the Agenda; and remove 18(1)(d) so Mayor doesn't have to certify minutes.		Governance	Staff time	CAO	Mayor doesn't certify minutes - only CO does that. Mayor or Councillor presiding signs only after adoption of minutes by Council.	THAT staff amend Procedure Bylaw to allow Delegations to present to Council regarding matters not on the agenda.
102	25/Apr/16	Waterson	Volunteer Recognition	Request that a policy be drafted regarding Volunteer recognition. Willing to do the initial research to see what other municipalities do and consult with Volunteer organizations. Will report back to Council with a first draft for discussion.	?	Council Priority (Volunteers)	Time to check research and tweak/format draft policy. Consider if there should be any budget allocation.	CAO	Normally, staff would take direction from Council and report back with a draft, but I agree that this is important and support Councillor Waterson's proposed methodology, given my workload. If Council approves, please provide her with input at the outset regarding your thoughts so she can incorporate them early in the process.	THAT Councillor Waterson research Volunteer Recognition policies, obtain Council input and create a first draft for discussion.

RESOLUTIONS

Request ID	Date of Request	Requester	Subject	Information Provided and/or Requested	Requestor's Priority 1 (lo) - 5 (hi)	Rationale	Personnel and/or Financial Resources Est'd by Requestor	Admin Owner	Preliminary Administration Response	Committee Recommendation and/or Council Disposition
103	12/May/16	Waterson	Communications Policy/Plan	Request that a policy/plan be drafted regarding communications.		Communications	Staff time required to properly draft a Communications Policy and Plan	CAO	Agreed that one is required, but this will take some time to pull together amidst all the other matters requiring my attention.	THAT the CAO work on a Communication Policy framework as time permits.
109	27/Oct/16	Buhr	Hydrology Grants	Can we seek Metro funding for the Watershed Hydrology Study (WHYS?) under their Climate Change Impacts & Adaption Strategy work? Green Municipal Fund: can it be used for the WHYS			Staff time	PWM		staff to review potential grants from Metro and FCM regarding hydrology study with UBC
116	20/Dec/16	Buhr	Signage	Please find and mount the "Harvey Creek" trestle sign, which was seen in Chambers after the reno and prior to the other signs being mounted.				PWM		Staff to find sign and report back.
117	10/Jan/17	Buhr	Signage	Mayor's request for signage changes around Village per email of Jan./16				PWM	Staff has the email and some of these things have been addressed. They will continue to be addressed slowly as time permits. We are consulting with Metro and other LM munis re. some of their signage standards and wording and will work toward a consistent standard.	CAO to review "use at own risk" signage on Lions Bay hiking trails

RESOLUTIONS

Request ID	Date of Request	Requester	Subject	Information Provided and/or Requested	Requestor's Priority 1 (lo) - 5 (hi)	Rationale	Personnel and/or Financial Resources Est'd by Requestor	Admin Owner	Preliminary Administration Response	Committee Recommendation and/or Council Disposition
121	10/Jan/17	Buhr	Website	Please report on website progress, including demo				CAO	We are still plugging away on preparing our existing documentation for transfer to the new website (OCRing of documents, content proofing, copywriting, etc.) Will need to get assistance with labour intensive task of uploading and ask that Council approve re-budget of remaining allocation from \$10,000 budget (about \$1600). Once we have content on the site, there will be additional tweaking of formats and functionality by contractor. Not currently ready for any demos.	THAT the unspent remainder of the 2016 \$10,000 new website budget be re-budgeted for 2017 to enable staff to complete the project as soon as possible.
122	10/Jan/17	Buhr	Area A OCP	Can we have a recommendation on input to the Area A OCP				CAO	I have not yet had time to thoroughly review this document. Council must also read it if they are to provide input to Metro, regardless of any thoughts staff may have.	THAT the Mayor bring a report to the next meeting regarding the Area 'A' OCP.
124	24/Jan/17	Buhr	Remembrance Day Quilt	Need a recommendation on where to hang it.				CAO	Perhaps above fireplace in hall? Or somewhere else in hall?	PW to hang quilt on wall above the couch in Hall kitchen, order a plaque, and CFO to add to Council budget

RESOLUTIONS

Request ID	Date of Request	Requester	Subject	Information Provided and/or Requested	Requestor's Priority 1 (lo) - 5 (hi)	Rationale	Personnel and/or Financial Resources Est'd by Requestor	Admin Owner	Preliminary Administration Response	Committee Recommendation and/or Council Disposition
125	24/Jan/17	Buhr	Leaving Metro Boundary	Request Metro to install signage at its northern boundary indicating "Leaving/Entering Metro" etc.		Please provide rationale for Lions Bay.		CAO		CAO to write a letter to Metro requesting that they provide boundary signage for the reasons outlined by Mayor Buhr.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Information Report		
Title	Notes from Public Information Meeting re. Zoning Bylaw		
Author	Peter DeJong	Reviewed By:	
Date	February 2, 2017	Version	
Issued for	February 7, 2017		

Recommendation:

THAT the Information Report, “Notes from Public Information Meeting re. Zoning Bylaw” be received.

Attachments:

- (1) CAO’s Notes from Public Information Meeting January 19, 2017 re. Zoning Bylaw;
- (2) Mayor Buhr’s Consolidated Notes from Zoning Bylaw Information Meeting;
- (3) Councillor Bain’s Notes from Zoning Bylaw Information Meeting.

Key Information:

A Public Information Meeting regarding the proposed new Zoning Bylaw was held in Broughton Hall the evening of January 19, 2017. The planning consultant, Steve Olmstead, gave a powerpoint presentation and then the public were invited to ask questions and make comments. The attached sets of Notes provide a snapshot of the questions and comments received at the meeting.

A couple of additional comments were received after the meeting, one dealing with potential reasons why young families may or may not be moving to Lions Bay, with cost being only one possible factor, given that there seems to be no shortage of young families with money living in West Vancouver or the West Side of Vancouver where prices are much higher than Lions Bay.

Another writer is a former long-time resident of Lions Bay whose parents still live here and could benefit from a change in zoning bylaws to allow for a small carriage house on their property, either to move into themselves or have a caregiver move in to look after them.



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The writer is a builder and spoke of the great opportunities for small, highly energy efficient homes that could provide opportunities for older residents to age in place or young families to share a property with their parents but still have some sense of privacy.

Staff has not yet had an opportunity to consult further with the planner on potential changes to the draft bylaw, but there is a good deal of guidance which can be taken from the Public Information Session, subject to Council's further input on key issues.

Follow Up Action: Council to provide staff with further input on key issues. Staff will then consult further with the planner on incorporation of changes to the draft bylaw for further discussion.

Notes from Public Information Meeting re. Draft Zoning Bylaw

1. Introductions
2. Presentation by Planning Consultant, Steven Olmstead
3. Question and Answer Period

(Began with staff reading out some feedback received prior to the Public Information Meeting)

- a. Resident wrote in to complain of short term rentals in their Kelvin Grove neighbourhood and noted the difference between these kinds of rentals and rentals where the owner is on site (eg: traditional B&Bs, secondary suites with owner in main house, etc.)
- b. One of the houseboat owners wrote in suggesting that the elimination of a certain class of vessel from mooring seems highly discriminatory and sought to know the Village's rationale for singling out houseboats. Perhaps other options would be more reasonable and in keeping with the objectives of the foreshore zoning.
- c. A resident wrote in to advise of the constant disruption from a short term rental in her Kelvin Grove neighbourhood. She noted that some guests were respectful and others were not. Lions Bay is a quiet residential neighbourhood – not a resort community and party destination. She called on Council to limit short term rentals as they do not add value or stability to the community.

(Commenced questions/comments from speakers' list)

- d. All bylaws apply within boundaries so don't need water zoning – just enforce noise bylaw and good neighbour bylaw, etc. Wharf would require a variance over current zoning. Boats only in water 6 months of the year.

Planner noted that zoning over water currently exists in old GVRD bylaw and BL362, so should that be repealed? Staff noted that water zoning provides the municipality with control over Province granting foreshore leases contrary to municipal preferences.

- e. Resident currently in business of long-term rentals, but could see a day when short term rentals (STRs) may be wanted. Why should everyone else be penalized for those who are bad property managers?

- f. If houseboats allowed, there should be a minimum setback from the shore. Currently, you can't even throw a stick for the dog without knocking over someone on the boat. Not sure whether 72 hour provision will work (can't they just untether/retether?)
- g. Would like to see consideration of OCP before Zoning – 8 key themes in OCP. Density bonusing seems to involve a weighing of monetary benefits vs. the intangible benefits of lower density. Increased costs of having to provide amenities would add to the cost of the additional housing to be built.

Staff spoke to some of the tangible benefits from density bonusing, examples of which are noted on pages 8-13 of the website materials.

- h. Should've done OCP review. Short-term rentals okay. Different map colour for Kelvin Grove RS-1 is because they have underground services. Brunswick Beach was supposed to conform to Lions Bay zoning. Filming isn't listed as a permitted use and should be included.

Planner noted that filming is usually dealt with under other licensing processes or bylaws. Also, the Brunswick zoning was inherited with the boundary expansion and is applicable until changed, which is what we're doing now.

- i. Resident with issues re. neighbour parking all over the cul-de-sac and running home occupation business that presents pollution problems for others and there's no enforcement. And why can't I park a boat over 7 metres in length on my property?

Staff noted that attempts are being made to work with MOTI re. the parking issue (their ROW is being used) and the 7 m boat restriction is already in the current zoning bylaw.

- j. Resident thanked planner to completing this zoning job that he and others tried to do years ago – very complicated. Brunswick Beach setbacks are difficult with small lots and some hooked parcels. Off street parking difficult when rail is on road ROW.

Planner offered to meet with resident and building inspector to ensure full understanding of Brunswick Beach nuances.

- k. What is the definition of a "short term rental"? Does it include "home exchange"? This issue needs some clarity.

- l. Concern expressed regarding whether density bonusing would even be possible in more than a few lots due to the challenges of Lions Bay's topography. What would the process be? Concern re. monetary focus vs. creation of extra housing.

Planner discussed some examples of how this works in other places, with Roberts Creek, Pemberton and Coquitlam being examples of 3 different approaches. Community Amenity Contributions, which should be identified in the OCP and/or a Council Policy, can provide a framework for various different opportunities that are important to the community.

- m. Resident expressed desire for small affordable housing and said she would prefer this over amenities, to help families move to or stay in Lions Bay.

Staff noted that affordable housing agreements can be used in conjunction with bonus density provisions.

- n. Would not be that easy to put detached structures on existing lots.

Planner noted that engineering can solve a great many issues related to space and topography and may be worthwhile at local values. It may be that people would need to upgrade their septic systems to more modern systems which are small but expensive.

- o. Resident indicated support for the idea of small detached dwellings, but the amenity contribution of "up to 75% of the lift in value" was too steep. Need to find a more reasonable balance.

- p. What about water shortages and parking issues? [related to additional housing opportunities].

- q. What is the status of zoning vs. the school district lands?

Planner made some comments about the topic area and suggested he would take the position that SD45 lands would be subject to municipal zoning. Topic has been noted for further clarification.

- r. A question was asked about subdivision. *Planner noted that a detached dwelling on a lot has the potential for stratification. This needs further discussion and clarification.*

- s. A question was asked about grandfathering. *Planner gave a short description of circumstances under which a use may become a legal non-conforming use.*
 - t. A resident commented on a question/comment card that they would like to see exclusion of boat moorage directly in front of the beach, as they would like to appreciate the beauty of the view, without someone's personal property in the way.
4. Mayor Buhr wrapped up, stating that beyond some important housekeeping, the intent of reviewing the bylaw was ultimately to provide a suite of new regulations that would address many of the issues raised here, all within the parameters of the OCP. On a non-binding basis among engaged Lions Bay residents, he took a straw poll of the presented options related to short term rentals and parking for secondary suites:

Noting that enforcement of the zoning bylaw is triggered by complaint rather than proactive staff inquiries, and that we seek to propose rules that induce compliance, options for Short Term Rentals (STRs):

- i. Allow STRs – about 15 people in favour
 - ii. Prohibit STRs (i.e. maintain status quo) – about 10
 - iii. Permit in principal residence and prohibit in suites – about 5
 - iv. Create site specific zoning and zone existing operations – about 5
 - v. Consider temporary use permits on a site specific basis – about 15
-
- i. Parking for Secondary Suites Options for Consideration: Eliminate requirement for an additional space – 0
 - ii. Eliminate requirement for an additional space if transit nearby – 0
 - iii. Amend siting regulations for parking uses within setbacks – about 10
 - iv. Allow parking uses within setbacks via dev't variance permits – 10
 - v. License "on street" parking for secondary suites – 0
 - vi. Maintain the status quo – 10

The mayor thanked staff and the planner for the work to date and noted there will be more to come, including work on a new building bylaw this spring. Council is very conscious of water issues. Council sees a need to provide for additional housing options to ensure that young families can afford to live here and so that long-time residents can downsize.

Mayor Buhr's Consolidated Notes from the ZB Public Info Meeting:

1. Need to expand on carriage house/cottage/detached SS concepts: >110 sq.m needed, but only on lots > 10,000 sq.m
2. Need to speak to W-1 zone being a result of a new understanding that by its letters patent (define/explain), Lions Bay's municipal boundary extends 1000 feet from the high water mark
3. Do we need the "resource use" designation?
4. We should change "infrastructure use" to "municipal use" to make it broader
5. Do current setback requirements disallow the landside mounting of wharves? Should they?
6. Do we need a separate Mooring Zone, or is that covered by W-1? Could we instead *allow* houseboats by requiring their mooring lines to be X feet from shore?
7. Does the new bylaw address other uses inconsistent with residential zoning, specifically car repair, coffee roasting, glass kilning?
8. How do STR provisions impact home swaps?
9. The boat length allowed in the front yard may need to increase slightly to 24 feet actual [actual is important: my own boat, for example, is a 240 model, nominally 24 feet long, but actually 28.5, from rear deck to front anchor]

Notes from Public Info Meeting re. ZB (FB)

	A	B	C	D	E	F	G	H	I	J	K
	W1	STR	OCP	D. BONUSS	ZONING AMALG.	AMMENITIES	TAX BASE	INDUSTRIAL	BUSINESS	FILMING	PARKING
	3	3	2	3	2	4	1	0	1	1	2

Some of the questions:

- A** Is W1 necessary? Should we repeal W1 zoning? No Need.
- B** Is a single (or few) instances of poor management justify prohibition for STR?
- A** Mooring set backs would help. 72 hour limit inadequate as occupant could just untie and retie.
- C** OCP, then zoning (x2)
- G** Do proposals affect tax base?
- ?** 1 person's violation shouldn't penalize the rest of us.
- J** Filming should be in the bylaw
- I** Issue of clean business vs "dirty business.
- ?** Dumping of green waste. (Can't remember about what the speaker was speaking.)
- E** Buiding limits in zoning? Impacts of rezoning?
- K** Parking in Brunswick. Right of way issues, re: railway & varience issues.
- B** Re: STR. How about a home exchange?
- F** Community Amenity Charges. Cities get addicted. We need to be clear as to what amenities are of real value to the community vs "cash grab".
- D** Density should be based on lot's ability to absorb due to terrain & size, and periferral issues such as parking. What's the benefit vs cost of developement?
- ?** Need a provision for smaller housing on smaller lots.
- D** Small detached housing is a good idea (x4)
- F** 75% of lot value for amenities is excessive
- E** A single lot with a private home addon should be exempt from high amenitie charges

Some comments were missed due to writing the previous speaker's note.

The letters to the left of the text refer, somewhat, to the category to which the text is related.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision Report		
Title	Emergency Notification System		
Author	Peter DeJong	Reviewed By:	
Date	February 2, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT Council direct staff to proceed with the emergency notification system which provides the best value for Lions Bay up to \$2,000/year.

KEY INFORMATION

As Council is aware, Lions Bay gets more than its fair share of weather related events, including storms which knock out phone lines, internet services, and electric power as well as rock slides and debris flows which readily compromise our water supply. As a result, we are often in a position of having to convey important information about local conditions to residents who may or may not have all of their usual means of receiving that information available to them. Even when they do, the municipality presently has limited means to distribute such messaging.

Staff were directed to look into potential options to address the foregoing and have had extensive discussions with two possible providers. The first option is a basic service which provides the ability to send out text or email messages to subscribers advising of important or emergency information. Text to speech capabilities are also available for those opting to register with a land line versus a cellular phone. Subscribers can be divided geographically (eg: by neighbourhood) or in other manners (eg: staff, LBFR, ESS, etc.) There is a relatively low cost per month plus a fee per text or email. Total costs will depend upon the number of subscribers and the number of texts or email sent by the municipality.

The second solution is similar in terms of the basic concept, but has a wider scope of additional features which are available to subscribers and organizations including pre-authorized waivers and consents, medical records, etc. Again, subscribers can be divided geographically or by groups. The pricing is based upon the number of adult users subscribing to the network and there is no additional cost per text, email or phone message.



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This product already has a substantial foothold in the community with current Lions Bay resident subscribers.

While both products would result in an estimated annual cost of under \$2,000, staff recommends the second product as it has greater potential to attract a greater number of subscribers due to the additional features available, while also meeting the key objectives of the municipality. The more subscribers to the system, the greater the reach of the municipality in disseminating important information regarding local conditions, whether related to our water system or weather events affecting transportation or communication. In addition, the second product has already been vetted by the Office of the Information and Privacy Commissioner and comes with a Privacy Impact Assessment, which is generally required for implementing communications solutions of this nature.

Options:

- a. Approve the recommendation as presented above;
- b. Amend the recommendation before approving it;
- c. Refer the matter back to staff for further research and development.

Preferred Option: Approve the recommendation as presented.

Follow-up/Communication:

Assuming approval, staff will work with the provider to set up and train staff on the use of the system before undertaking a communications campaign aimed at enlisting as many subscribers as possible.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision Report		
Title	Approval of Election Advertising and Campaigning Policy No. 1701		
Author	Peter DeJong	Reviewed By:	
Date	February 2, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT Council approve the draft Policy No. 1701: Election Advertising and Campaigning

ATTACHMENTS

Draft Policy No. 1701: Election Advertising and Campaigning

KEY INFORMATION

Further to the Chief Election Officer's By-Election Report, considered by Council at the December 20, 2016 regular meeting, staff have drafted the attached policy to address matters that were identified in the recent by-election as requiring some policy around them in order to provide guidance to staff, Council, candidates and the general public. The matters essentially revolve around three topics:

1. Candidate advertising on the municipal website;
2. All-Candidates meetings; and
3. Obligations arising under the *Local Elections Campaign Financing Act*.

Options:

- a. Approve the draft Policy 1701 as presented;
- b. Amend and then approve Policy 1701;
- c. Refer the draft policy back to staff for further research and development.

Preferred Option: Approve the draft Policy 1701 as presented.

Follow-up/Communication:

Assuming approval, the policy will be included with other election materials in the upcoming by-election to fill the Council seat vacated by Eileen Wilke.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	POLICY		Policy No	POL – 1701
Title	Election Advertising and Campaigning			
Author	CAO	Reviewed By:		
Date	February 1, 2017		Version	1

Purpose

The purpose of this Policy is to provide guidance for staff, elected officials and candidates in a General Election or By-Election in Lions Bay. The Municipality of the Village of Lions Bay (the “Municipality”) recognizes that election advertising and campaigning can be challenging and expensive in a small community with no local newspaper. The following policy is aimed at creating a minimum level playing field for all local election candidates.

Policy

1. Each candidate in a local general election or by-election is entitled to provide Municipal staff with a PDF document of their election platform at any time after the date on which the Chief Election Officer has declared an election by voting, as opposed to election by acclamation, which is 26 days prior to voting day. Staff will post the document on the Municipality’s website on a page dedicated to election information as soon as practicable. The document should be less than 10 MB in size and may be updated by the candidate once during the election period, by providing a replacement PDF document to staff.
2. Candidates must provide staff with a ‘Consent to Use of Image Form’ (provided by the Municipality) for any photographs of persons other than the candidate themselves in candidate documents provided under section 1, signed by the applicable person(s) in the photograph.
3. Documents provided by candidates under section 1 may contain hyperlinks to external websites or webpages but the municipality reserves the right to edit such hyperlinks if, in its sole discretion, it is concerned that the content to which the document links may contain defamatory material, whether intended or unintended.



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4. For local General Elections and for By-Elections with more than 2 candidates, Municipal staff will organize an All-Candidates Meeting to be held in Broughton Hall between the 26th day and the 10th day before voting day. To the extent possible and in the interests of bi-partisanship, a moderator from outside the community should be engaged for the event, with any costs to come from the elections budget.

5. In addition to compliance with the regulations pertaining to election signs under the *Local Government Act* and Election Procedures Bylaw No. 474, 2014, as amended, candidates are to be reminded of their statutory obligations under the *Local Elections Campaign Financing Act*. Any candidates, residents or others with questions regarding election advertising, including 3rd party advertising, open house events, and campaign expenses must be referred to Elections BC.

Corporate Officer

Mayor or Delegate

Adopted by Council:	February 7, 2017
Updated:	

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THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision		
Title	Encroachment Application – 335 Oceanview Road		
Author	Naizam Jaffer	Reviewed By:	Peter DeJong
Date	February 1, 2017	Version	
Issued for	February 7, 2017 Council Meeting		

Recommendation:

(1) THAT the application for encroachments at 335 Oceanview Road be approved subject to and in accordance with the following terms:

(a) the applicant shall sign a standard licence of occupation with respect to the encroachment in substantially the form of Attachment (a) as prepared by the Village of Lions Bay indemnifying the Village from any and all liability and costs related to the driveway encroachment;

(b) the applicant shall pay the sum of \$400 in accordance with Schedule 2 of Fees Bylaw No. 497, 2016, in respect of the encroachment application.

Attachments:

- (a) Draft Licence of Occupation for 335 Oceanview Road
- (b) Proposed rendering of additional driveway

Key Information:

As Council is aware, staff will be reviewing the Village's encroachment policies and other relevant information in light of the perceived need of the municipality to protect and reclaim its rights of way. While Council also passed a resolution putting a moratorium on further applications until such time as staff reports back to Council, staff believe that due to the non-permanence of this encroachment, granting approval does not negatively impact any proposed encroachment limitations being considered as part of the new policy.



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Options:

- (1) Deny the application for the driveway realignment encroachment as proposed;
- (2) Allow the application but require amendments to the plan or the conditions set out above, as seen fit by Council;
- (3) Allow the application in full as proposed, with the conditions as set out above.

Preferred Option: The preferred option is number 3, as indicated in the recommendations at the beginning of this report. Notwithstanding that staff has not yet had an opportunity to report back to Council on the larger issues pertaining to encroachments, this application deals with a non-permanent structure that does not impact the drainage or stability of Oceanview Road. Future consideration of the road allowance for use in the construction of utility pipeworks is still possible as the encroachment may be removed and replaced with minimal cost and effort.

Legal Considerations: The applicant must sign a licence to occupy providing the Village with a six month notice period to terminate the agreement and request removal of the encroachment.

Follow Up Action: If approved, staff will follow up with the applicant for processing an encroachment covenant under Schedule 2 of Fees Bylaw No. 497, 2016.

Communication Plan: The applicant will be directly notified of Council's decision.

**HIGHWAY ENCROACHMENT AGREEMENT
(LICENCE TO OCCUPY)**

THIS AGREEMENT dated for reference the 7th day of February, 2017.

BETWEEN:

NORMAN BARMIEIER, residing at 335 Oceanview Road, Lions Bay, BC, V0N 2E0
(hereinafter called the “**Licensee**”)

AND:

THE VILLAGE OF LIONS BAY, a municipal corporation, having offices at 400
Centre Road, Lions Bay BC, V0N 2E0
(hereinafter called the “**Village**”)

GIVEN THAT:

- A. The Village holds ownership and possession of highways lying and being in the Village of Lions Bay in the Province of British Columbia as per s. 35(1) of the *Community Charter*. The highway subject to this agreement is outlined in black as shown on the sketch plan in Schedule “A”

(the “**Road**”).
- B. The Licensee is the fee simple owner of those lands adjacent to the Road being in the Village of Lions Bay in the Province of British Columbia, more particularly known and described as:

PID 008006717 Lot 35 Block 8 District Lot 6748 Plan 13843

(the “**Licensee’s Property**”).
- C. The Licensee wishes to encroach upon an area of the Road as outlined in black crosshatches on Schedule “A” to this agreement (the “**Licence Area**”).
- D. The Village has agreed that the Licensee may occupy the Licence Area for the purposes and on the terms and conditions herein set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and covenants contained herein and sum of \$10.00 now paid by the Licensee to the Village and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. **Grant of Licence** – The Village, on the terms and conditions set forth herein, grants to the Licensee the non-exclusive right and licence (the “**Licence**”) to construct and maintain in good working order a non-permanent secondary paving stone parking space

(the “**Proposed Structures**”) for only the Licensee and its permitted assigns and their servants, agents and invitees and for the Village and its successors and assigns and their servants, agents and invitees.

2. **Term and Renewal** – This Licence shall commence on the **7th day of February, 2017** (the “**Commencement Date**”), and shall terminate upon the occurrence of any of the circumstances detailed in section 3, unless otherwise agreed in writing by the Village.

3. **Termination**

- (a) This Licence does not create any interest in property and is exclusively for the benefit of the Licensee. The Licence will automatically terminate upon any of the following occurrences:
 - (i) the Licensee disposing of the Licensee’s Property by sale, agreement for sale or lease;
 - (ii) the Proposed Structures being torn down, removed, or replaced;
 - (iii) at any time upon the Licensee providing written notice to the Village; or
 - (iv) at any time upon the Village providing at least 6 months written notice of termination to the Licensee.
- (b) The Licence may be cancelled or terminated despite any rule of law or equity to the contrary in accordance with any of the following provisions:
 - (i) if the Licensee defaults in the observance or performance of any of the terms and conditions contained in this Licence and the Licensee fails to cure such default(s) within 30 days after written notice from the Village then the Village will be entitled to terminate the Licence without limiting the Village’s other remedies at law or at equity; and
 - (ii) if the default under subsection (i) reasonably requires more time to rectify or cure than 30 days, the Licensee will be deemed to have complied with the rectification or curing of it if the Licensee commences rectifying or curing the default within 30 days after notice from the Village and diligently completes same as soon thereafter as is reasonably practical.

All of the Licensee’s obligations under this Licence that are outstanding on the date that this Licence is terminated will survive the termination of this Agreement. For certainty, the Licensee’s obligations to release and indemnify the Village shall survive the termination of this Agreement, but only in respect of events occurring before termination of this Agreement.

4. **License Fee** - The Licensee shall pay to the Village in advance a license fee in accordance with Schedule 2 of Fees Bylaw No. 497, 2016 (the “**License Fee**”).

5. **Powers** – For the purposes of the Licence herein, the Licensee and its servants, agents and invitees shall have the right to:
 - (a) use the Licence Area;
 - (b) have unobstructed access to and from the Licence Area at any and all times;
 - (c) clear the Licence Area and keep it clear of anything which might in the opinion of the Licensee, acting reasonably, constitute an obstruction to the use of the Licence Area by the Licensee; and
 - (d) do all other things on the Licence Area as may be reasonably necessary, desirable and incidental to the use of the Licence Area.
6. **Village May Access and May Undertake Work** – The Village shall have free access to all parts of the Licence Area. The Village is not required to give any notice to repair the Road or the Licence Area.
7. **No Other Improvements** – The Licensee will not, without the prior written consent of the Village, construct, install, affix, place or store or permit the construction, installation, affixing, placing or storage of any buildings, structures, works, improvements, fencing or materials on any part of the Licence Area.
8. **Use** – The Village will at all times have a priority right to use and occupy any portion or all of the Licence Area, without notice, in order to access other portions of the Road, or the Licensee’s property, or to carry out any public service or responsibility that requires use of or access to the Licence Area.

The Licensee acknowledges and agrees that, by granting this Agreement, the Village is not accepting any responsibility for the Licensee’s use of the Licence Area. The Licensee shall use best efforts to cause a minimum of obstruction and inconvenience in the Licence Area.
9. **Site Clean-up** – Upon termination of this Licence, the Licensee will leave the Licence Area in a tidy condition, and the Licensee, if required by the Village in its sole discretion, shall remove all personal property belonging to the Licensee within 60 days after termination of this Agreement. Any personal property not removed by the Licensee shall become the absolute property of the Village free of all encumbrances, without payment of any compensation to the Licensee.
10. **No Waste or Nuisance** – The Licensee will not commit or allow any wilful or voluntary waste or destruction of the Licence Area, or do anything that may become a nuisance or annoyance to other occupiers of the Road or adjoining lands. The Licensee will not stockpile or burn any materials on the Licence Area.
11. **Compliance with Laws** – The Licensee will at all times during the currency of this Licence use the Licence Area in compliance with all statutes, laws, regulations and orders of any authority having jurisdiction and, without limiting the generality of the foregoing,

all federal, provincial, or local government laws or statutes or bylaws relating to environmental matters, including all the rules, regulations, policies, guidelines, criteria or the like made under or pursuant to any such laws.

12. **Assignment** – Except as expressly set out herein, the rights granted to the Licensee under this Agreement may not be sublicensed, assigned, or otherwise transferred. The Licensee may assign its interest under this Licence with the prior written consent of the Village, such consent not to be unreasonably withheld or delayed.
13. **Risk** – The Licensee accepts the Licence Area on an as-is basis and agrees that it will use the Licence Area at its own risk, and that the Village will not be liable in respect of any loss of life, personal injury, damage to property or loss of property suffered by the Licensee, its servants, agents, or invitees arising out of this Agreement or its or their use and occupation of the Licence Area.
14. **Indemnity** – The Licensee hereby indemnifies and saves harmless the Village, its officers, directors, elected officials, employees and agents from and against any and all losses, claims, costs, expenses, damages and liabilities, causes of action, suits and judgments including all costs of defending or denying the same, and all costs of investigation, monitoring, remedial response, removal, restoration or permit acquisition and including all solicitor’s fees and disbursements in connection therewith which at any time may be paid or incurred by or claimed against the Village, its officers, directors, elected officials, employees, agents and invitees arising, directly or indirectly, out of:
 - (a) the uses of the Licensee under this Licence;
 - (b) a breach by the Licensee of any of the covenants contained in this Licence;
 - (c) any wrongful act or neglect of the Licensee on or about the Licence Area;
 - (d) any damage to property related to the Licensee’s use and occupancy of the Licence Area;
 - (e) the death of or injury to any person arising out of or in any way connected with, directly or indirectly, the Licensee’s use and occupancy of the Licence Area.

This section does not apply to liabilities, damages, costs, claims, suits or actions arising out of the gross negligence or wilful misconduct of the Village, its agents, servants, employees or contractors.

15. **Insurance** – The Licensee shall obtain and keep in force throughout the existence of the Licence insurance naming the Village as an additional insured and protecting the Village and the Licensee (without any rights of cross-claim or subrogation against the Village) against claims by any person, including any member of the public using the Road, for personal injury, death, property loss or damage, and third party liability or public liability claims arising from any accident or occurrence on the Road or other loss relating to the Licensee’s use of the Road to an amount of not less than Five Million (\$5,000,000.00) Dollars per occurrence (the “**Insurance Policy**”).

- (a) The Insurance Policy shall provide that it is not terminable or alterable without the giving of 30 days' written notice to the Village.
 - (b) At the time of execution of this Licence, the Licensee shall deliver to the Village a copy of the Insurance Policy or an insurance binder or note evidencing that the Licensee has obtained the Insurance Policy on the terms set out herein.
 - (c) At any time during the Term of this Licence the Village may require the Licensee to provide evidence to it that the Insurance Policy is valid and in full effect.
16. **Breach** – In the event that the Licensee breaches any term, condition, or provision of this Agreement, the Licensee shall remedy the breach within 30 days of receipt of a notice from the Village and if the breach is not remedied within that time period, all rights accruing to the Licensee under this Agreement shall cease without further notice to the Licensee, unless the Village, in its sole discretion, decides otherwise.
17. **Village May Take Action** – If the Licensee fails to do any matter required of them under this Agreement, the Village is entitled to take all such actions on the Licensee's behalf and at the Licensee's cost as are reasonably necessary to rectify the Licensee's failure, but the Village is in no circumstance liable for not taking such action or its manner of doing so, provided that the Village acts reasonably. The Licensee shall pay to the Village the costs the Village incurs pursuant to this provision forthwith upon receipt of an invoice.
18. **General**
- (a) This Agreement will enure to the benefit of and be binding upon the Licensee and its successors, administrators and approved assigns and upon the Village and its successors, administrators and assigns.
 - (b) Every reference to each party is deemed to include the heirs, executors, administrators, corporate successors, servants, employees, agents, contractors, officers, licensees and invitees of such party, wherever the context so requires or permits.
 - (c) Wherever the singular or masculine or neuter is used in this Agreement, the same shall be construed as meaning the plural, the feminine or body corporate where the context or the parties thereto so require.
 - (d) The Schedules attached to this Agreement form part of this Agreement.
 - (e) This Agreement constitutes the entire agreement between the parties and no understanding or agreement, oral or otherwise, exists between the parties with respect to the subject matter of this Agreement except as expressly set out in this Agreement, and this Agreement may not be modified except by subsequent agreement in writing between the parties.
 - (f) Time is of the essence of this Agreement.

- (g) The section headings have been inserted for reference only and do not define, limit, alter or enlarge the meaning of any provision of this Agreement.
- (h) The Licensee's use of the Licence Area will under all circumstances be viewed as a licence only and will not create nor be deemed to create any property interest in favour of the Licensee in the Licence Area.
- (i) This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia.
- (j) Nothing contained or implied in this Agreement shall fetter in any way the discretion of the Village or the Council of the Village. Further, nothing contained or implied in this Agreement shall derogate from the obligation of the Licensee under any other agreement with the Village or, if the Village so elects, prejudice or affect the Village's rights, powers, duties or obligation in the exercise of its functions pursuant to the *Community Charter* or the *Local Government Act*, as amended or replaced from time to time, or act to fetter or otherwise affect the Village's discretion, and the rights, powers, duties and obligations of the Village under all public and private statutes, by-laws, orders and regulations, which may be, if the Village so elects, as fully and effectively exercised in relation to the Road as if this Agreement had not been executed and delivered by the Licensee and the Village.

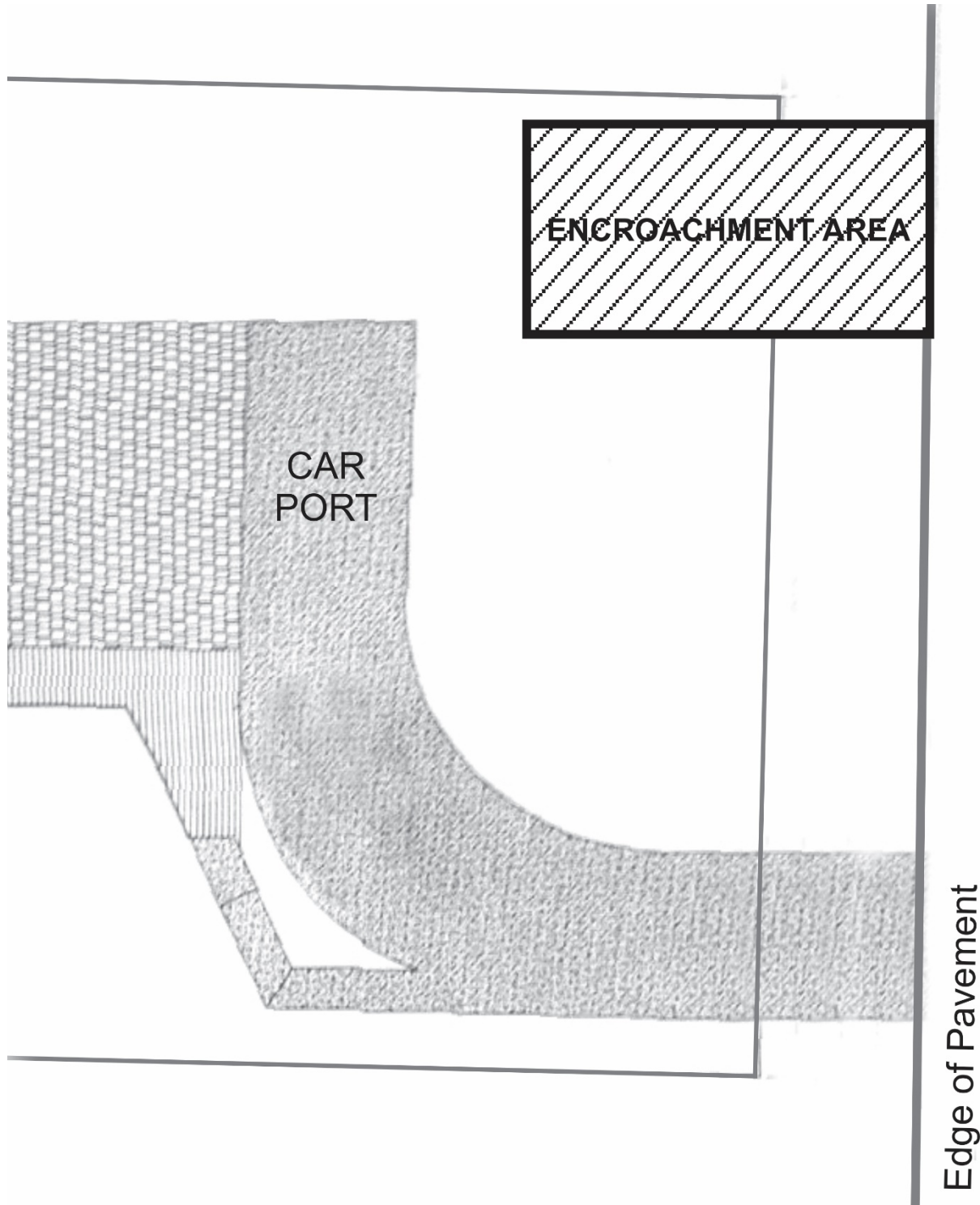
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IN WITNESS WHEREOF the parties have executed this Agreement as of the date first above written.

Village of Lions Bay)
by its authorized signatories:)
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_____)
Mayor)
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_____)
Corporate Administrator)

Norman Barmeier)
)
)
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_____)
Norman Barmeier)
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SCHEDULE A
SKETCH PLAN OF ROAD AND LICENCE AREA



335 Oceanview Road -
Existing condition



335 Oceanview Road -
Proposed condition



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THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision		
Title	Encroachment Application – 345 Bayview Place		
Author	Naizam Jaffer	Reviewed By:	Peter DeJong
Date	February 1, 2017	Version	
Issued for	February 7, 2017 Council Meeting		

Recommendation:

- (1) THAT the application for encroachments at 345 Bayview Place be approved subject to and in accordance with the following terms:
- a. the applicant shall sign a standard licence of occupation with respect to the encroachment in substantially the form of Attachment (a) as prepared by the Village of Lions Bay indemnifying the Village from any and all liability and costs related to the driveway encroachment;
 - b. the applicant shall pay the sum of \$400 in accordance with Schedule 2 of Fees Bylaw No. 497, 2016, in respect of the encroachment application.

Attachments:

- (a) Draft Licence of Occupation for 345 Bayview Place
- (b) Condition of original retaining wall

Key Information:

As Council is aware, staff will be reviewing the Village's encroachment policies and other relevant information in light of the perceived need of the municipality to protect and reclaim its rights of way. While Council also passed a resolution putting a moratorium on further applications until such time as staff reports back to Council, staff believes that the aforementioned encroachment needs to proceed in order to protect the safety and security of the residence.

Maintaining access to the residences on the upslope side of Bayview Place is not possible without some form of retaining wall or structure along driveways. Likewise, any potential use of the highway right of way for Village purposes would also require significant retaining structures making it impractical and cost prohibitive for any potential use. There is a small



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

portion of useable land at the toe of the slopes that might serve as a location for future pipe works (drainage, water, or future sanitary) and this is maintained as usable land in this application.

Options:

- (1) Deny the application for the driveway realignment encroachment as proposed;
- (2) Allow the application but require amendments to the plan or the conditions set out above, as seen fit by Council;
- (3) Allow the application in full as proposed, with the conditions as set out above.


Preferred Option: The preferred option is number 3, as indicated in the recommendations at the beginning of this report. Notwithstanding that staff has not yet had an opportunity to report back to Council on the larger issues pertaining to encroachments, this application deals with an inconsequential portion of the highway right of way and does not impede the future installation of pipeworks or other infrastructure.

Legal Considerations: The applicant must sign a licence to occupy providing the Village with a six month notice period to terminate the agreement and request removal of the encroachment. It is not anticipated that we will ever need to rely upon this provision.


Follow Up Action: If approved, staff will follow up with the applicant for processing an encroachment covenant under Schedule 2 of Fees Bylaw No. 497, 2016.

Communication Plan: The applicant will be directly notified of Council's decision.


345 Bayview Place, Lions Bay



Creosote timber wall does not contain tie-backs for support. Timbers are rotten and have deteriorated leading to a collapse of a section of the wall.



Rocks presumably placed in the interstitial spaces between timbers have come to be all that supports each successive layer of timber beams.



The steepness of the slope and deterioration of the retaining wall is jeopardizing the embankment supporting the main dwelling and needs immediate attention.

**HIGHWAY ENCROACHMENT AGREEMENT
(LICENCE TO OCCUPY)**

THIS AGREEMENT dated for reference the 7th day of February, 2017.

BETWEEN:

ALYSSA MEGAN LEWIS and **WARREN JAMES LEWIS**, residing at 345 Bayview Place, Lions Bay BC, V0N 2E0

(hereinafter called the “**Licensee**”)

AND:

THE VILLAGE OF LIONS BAY, a municipal corporation, having offices at 400 Centre Road, Lions Bay BC, V0N 2E0

(hereinafter called the “**Village**”)

GIVEN THAT:

- A. The Village holds ownership and possession of highways lying and being in the Village of Lions Bay in the Province of British Columbia as per s. 35(1) of the *Community Charter*. The highway subject to this agreement is outlined in black as shown on the sketch plan in Schedule “A”

(the “**Road**”).

- B. The Licensee is the fee simple owner of those lands adjacent to the Road being in the Village of Lions Bay in the Province of British Columbia, more particularly known and described as:

Parcel Identifier 002957787, Lot 26, Except Part In Statutory Right of Way Plan VAP20457 Block 10 District Lots 1575 and 6748 Plan 13629

(the “**Licensee’s Property**”).

- C. The Licensee wishes to encroach upon an area of the Road as outlined in black crosshatches on Schedule “A” to this agreement (the “**Licence Area**”).

- D. The Village has agreed that the Licensee may occupy the Licence Area for the purposes and on the terms and conditions herein set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and covenants contained herein and sum of \$10.00 now paid by the Licensee to the Village and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. **Grant of Licence** – The Village, on the terms and conditions set forth herein, grants to the Licensee the non-exclusive right and licence (the “**Licence**”) to construct and maintain in good working order a concrete retaining wall as identified in Schedule “B” (the “**Proposed Structures**”) for only the Licensee and its permitted assigns and their servants, agents and invitees and for the Village and its successors and assigns and their servants, agents and invitees.
2. **Term and Renewal** – This Licence shall commence on the **7th day of February, 2017** (the “**Commencement Date**”), and shall terminate upon the occurrence of any of the circumstances detailed in section 3, unless otherwise agreed in writing by the Village.
3. **Termination**
 - (a) This Licence does not create any interest in property and is exclusively for the benefit of the Licensee. The Licence will automatically terminate upon any of the following occurrences:
 - (i) the Licensee disposing of the Licensee’s Property by sale, agreement for sale or lease;
 - (ii) the Proposed Structures being torn down, removed, or replaced;
 - (iii) at any time upon the Licensee providing written notice to the Village; or
 - (iv) at any time upon the Village providing at least 6 months written notice of termination to the Licensee.
 - (b) The Licence may be cancelled or terminated despite any rule of law or equity to the contrary in accordance with any of the following provisions:
 - (i) if the Licensee defaults in the observance or performance of any of the terms and conditions contained in this Licence and the Licensee fails to cure such default(s) within 30 days after written notice from the Village then the Village will be entitled to terminate the Licence without limiting the Village’s other remedies at law or at equity; and
 - (ii) if the default under subsection (i) reasonably requires more time to rectify or cure than 30 days, the Licensee will be deemed to have complied with the rectification or curing of it if the Licensee commences rectifying or curing the default within 30 days after notice from the Village and diligently completes same as soon thereafter as is reasonably practical.

All of the Licensee’s obligations under this Licence that are outstanding on the date that this Licence is terminated will survive the termination of this Agreement. For certainty, the Licensee’s obligations to release and indemnify the Village shall survive the termination of this Agreement, but only in respect of events occurring before termination of this Agreement.

4. **License Fee** - The Licensee shall pay to the Village in advance a license fee in accordance with Schedule 2 of Fees Bylaw No. 497, 2016 (the "**License Fee**").
5. **Powers** – For the purposes of the Licence herein, the Licensee and its servants, agents and invitees shall have the right to:
 - (a) use the Licence Area;
 - (b) have unobstructed access to and from the Licence Area at any and all times;
 - (c) clear the Licence Area and keep it clear of anything which might in the opinion of the Licensee, acting reasonably, constitute an obstruction to the use of the Licence Area by the Licensee; and
 - (d) do all other things on the Licence Area as may be reasonably necessary, desirable and incidental to the use of the Licence Area.
6. **Village May Access and May Undertake Work** – The Village shall have free access to all parts of the Licence Area. The Village is not required to give any notice to repair the Road or the Licence Area.
7. **No Other Improvements** – The Licensee will not, without the prior written consent of the Village, construct, install, affix, place or store or permit the construction, installation, affixing, placing or storage of any buildings, structures, works, improvements, fencing, or materials on any part of the Licence Area.
8. **Use** – The Village will at all times have a priority right to use and occupy any portion or all of the Licence Area, without notice, in order to access other portions of the Road, or the Licensee's property, or to carry out any public service or responsibility that requires use of or access to the Licence Area.

The Licensee acknowledges and agrees that, by granting this Agreement, the Village is not accepting any responsibility for the Licensee's use of the Licence Area. The Licensee shall use best efforts to cause a minimum of obstruction and inconvenience in the Licence Area.

9. **Site Clean-up** – Upon termination of this Licence, the Licensee will leave the Licence Area in a tidy condition, and the Licensee, if required by the Village in its sole discretion, shall remove all personal property belonging to the Licensee within 60 days after termination of this Agreement. Any personal property not removed by the Licensee shall become the absolute property of the Village free of all encumbrances, without payment of any compensation to the Licensee.
10. **No Waste or Nuisance** – The Licensee will not commit or allow any wilful or voluntary waste or destruction of the Licence Area, or do anything that may become a nuisance or annoyance to other occupiers of the Road or adjoining lands. The Licensee will not stockpile or burn any materials on the Licence Area.

11. **Compliance with Laws** – The Licensee will at all times during the currency of this Licence use the Licence Area in compliance with all statutes, laws, regulations and orders of any authority having jurisdiction and, without limiting the generality of the foregoing, all federal, provincial, or local government laws or statutes or bylaws relating to environmental matters, including all the rules, regulations, policies, guidelines, criteria or the like made under or pursuant to any such laws.
12. **Assignment** – Except as expressly set out herein, the rights granted to the Licensee under this Agreement may not be sublicensed, assigned, or otherwise transferred. The Licensee may assign its interest under this Licence with the prior written consent of the Village, such consent not to be unreasonably withheld or delayed.
13. **Risk** – The Licensee accepts the Licence Area on an as-is basis and agrees that it will use the Licence Area at its own risk, and that the Village will not be liable in respect of any loss of life, personal injury, damage to property or loss of property suffered by the Licensee, its servants, agents, or invitees arising out of this Agreement or its or their use and occupation of the Licence Area.
14. **Indemnity** – The Licensee hereby indemnifies and saves harmless the Village, its officers, directors, elected officials, employees and agents from and against any and all losses, claims, costs, expenses, damages and liabilities, causes of action, suits and judgments including all costs of defending or denying the same, and all costs of investigation, monitoring, remedial response, removal, restoration or permit acquisition and including all solicitor's fees and disbursements in connection therewith which at any time may be paid or incurred by or claimed against the Village, its officers, directors, elected officials, employees, agents and invitees arising, directly or indirectly, out of:
 - (a) the uses of the Licensee under this Licence;
 - (b) a breach by the Licensee of any of the covenants contained in this Licence;
 - (c) any wrongful act or neglect of the Licensee on or about the Licence Area;
 - (d) any damage to property related to the Licensee's use and occupancy of the Licence Area;
 - (e) the death of or injury to any person arising out of or in any way connected with, directly or indirectly, the Licensee's use and occupancy of the Licence Area.

This section does not apply to liabilities, damages, costs, claims, suits or actions arising out of the gross negligence or wilful misconduct of the Village, its agents, servants, employees or contractors.

15. **Insurance** – The Licensee shall obtain and keep in force throughout the existence of the Licence insurance naming the Village as an additional insured and protecting the Village and the Licensee (without any rights of cross-claim or subrogation against the Village) against claims by any person, including any member of the public using the Road, for personal injury, death, property loss or damage, and third party liability or public liability

claims arising from any accident or occurrence on the Road or other loss relating to the Licensee's use of the Road to an amount of not less than Five Million (\$5,000,000.00) Dollars per occurrence (the "**Insurance Policy**").

- (a) The Insurance Policy shall provide that it is not terminable or alterable without the giving of 30 days' written notice to the Village.
 - (b) At the time of execution of this Licence, the Licensee shall deliver to the Village a copy of the Insurance Policy or an insurance binder or note evidencing that the Licensee has obtained the Insurance Policy on the terms set out herein.
 - (c) At any time during the Term of this Licence the Village may require the Licensee to provide evidence to it that the Insurance Policy is valid and in full effect.
16. **Breach** – In the event that the Licensee breaches any term, condition, or provision of this Agreement, the Licensee shall remedy the breach within 30 days of receipt of a notice from the Village and if the breach is not remedied within that time period, all rights accruing to the Licensee under this Agreement shall cease without further notice to the Licensee, unless the Village, in its sole discretion, decides otherwise.
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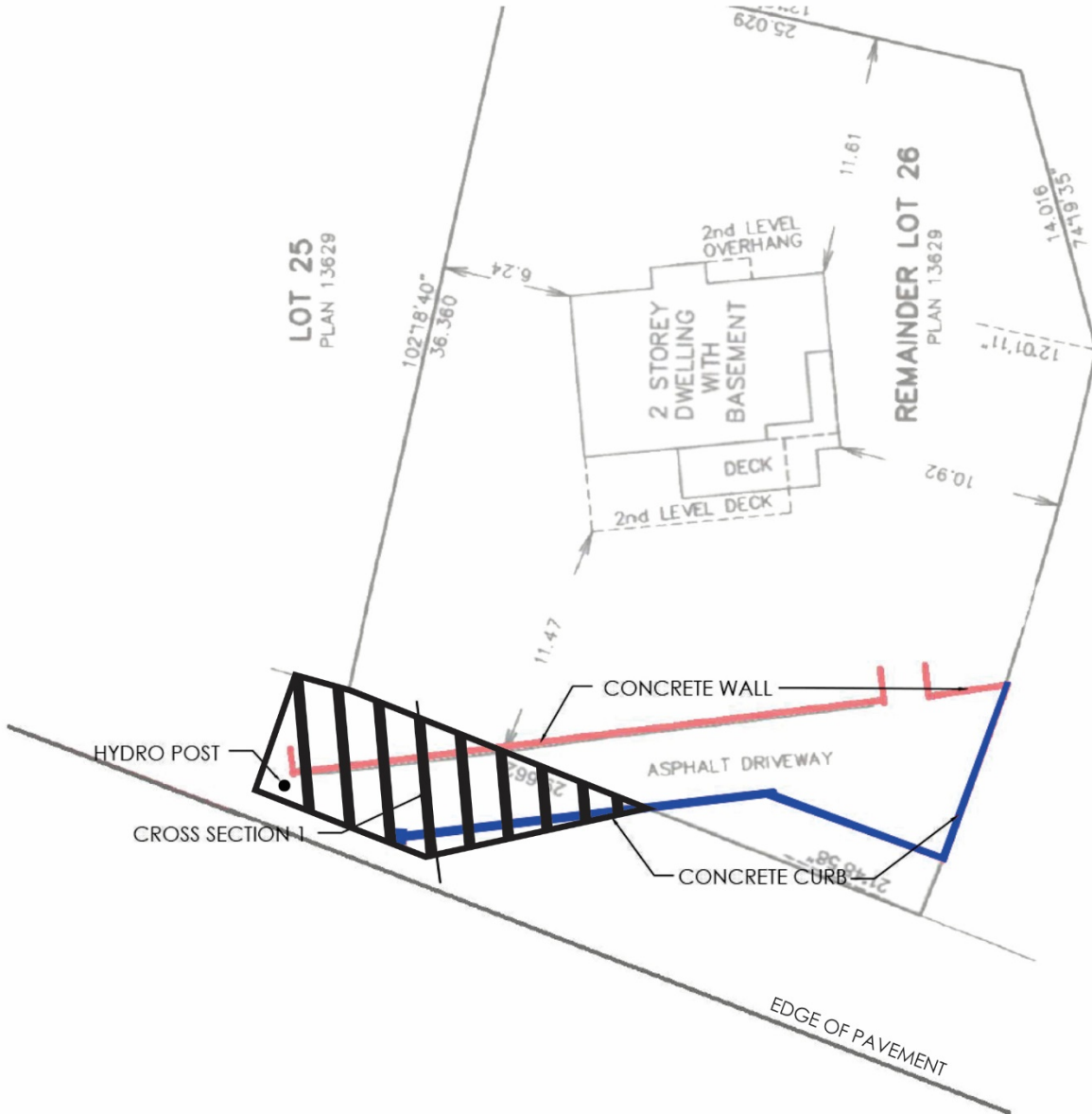
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Village of Lions Bay)
by its authorized signatories:)
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_____)
Mayor)
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_____)
Corporate Administrator)

ALYSSA MEGAN LEWIS)
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Alyssa Megan Lewis)
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WARREN JAMES LEWIS)
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Warren James Lewis)
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SCHEDULE A
SKETCH PLAN OF ROAD AND LICENCE AREA



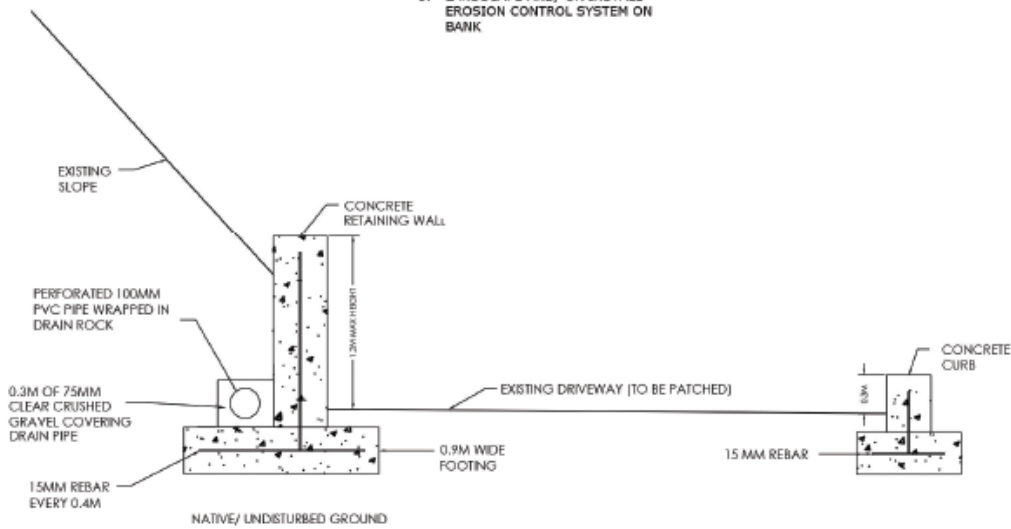
SCHEDULE B PROPOSED STRUCTURES

SCOPE:

1. DEMOLISH DECAYING WOODEN WALL
2. EXCAVATE BANK FOR FOOTINGS
3. BUILD NEW CONCRETE WALL
4. BACKFILL AND COMPACT SLOPE USING STRUCTURAL MATERIAL
5. LANDSCAPE AND/ OR INSTALL EROSION CONTROL SYSTEM ON BANK

NOTES:

1. NEW CONCRETE WALL'S LOCATION WILL REMAIN THE SAME AS THE EXISTING WOODEN WALL



1 RETAINING WALL/ DRIVEWAY/ CURB CROSS SECTION
 C-1 N.T.S



2 SITE PLAN UPPER BAYVIEW
 C-1 N.T.S

Lions Bay Air Quality Monitoring Study



November 2016



This report was prepared by the Air Quality and Climate Change Division of Metro Vancouver.

Cover Photo: Julie Saxton

Published: November 2016.

Metro Vancouver would like to acknowledge the involvement of Mayor Karl Buhr and the Village of Lions Bay and staff at School District 45 in assisting with securing the monitoring location for this study.

Questions on the report should be directed to AQInfo@metrovancover.org or the Metro Vancouver Information Centre at 604-432-6200.

Contact us:

Metro Vancouver

Air Quality and Climate Change Division

4330 Kingsway, Burnaby, BC V5H 4G8

604-432-6200

www.metrovancover.org

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Summary

The findings of a specialized air quality monitoring study conducted in Lions Bay between December 2015 and March 2016 are described in this report. Summaries of air quality monitoring data collected in Lions Bay are presented and compared with data from air quality monitoring network stations in West Vancouver and North Vancouver.

Results indicate that air quality in Lions Bay did not exceed any of Metro Vancouver's air quality objectives during the period of the study and was generally better than air quality measured at other air quality monitoring stations in the region. Sporadic occurrences of elevated levels of fine particulate matter for short periods were recorded. Analysis to investigate the possible sources contributing to these 'spikes' in fine particulate matter are discussed.

The report concludes that the results of the monitoring study are suggestive of both traffic emissions and smoke from residential wood burning influencing air quality conditions in Lions Bay at times. Clean air initiatives conducted by Metro Vancouver to address wood smoke and traffic emissions are described. The opportunities provided by these programs to support clean and healthy air offer a path to reducing the air emissions most likely to be negatively impacting air quality in Lions Bay.

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1 Introduction

1.1 Overview

A specialized air quality monitoring study was conducted in Lions Bay between December 21, 2015 and March 2, 2016 using Metro Vancouver's Mobile Air Monitoring Unit (MAMU). The MAMU was installed close to the Community School in Lions Bay (*Figure 1*) so an assessment could be made of baseline air quality in Lions Bay and to investigate any effects from different sources of air emissions, such as residential wood burning and traffic.

This report summarizes the findings of the study.

1.2 Study location

Lions Bay is a village (population approximately 1300¹) located in Howe Sound in northwestern Metro Vancouver. Highway 99 (the Sea to Sky highway) bisects the community and steep terrain rises from sea level on the western boundary to an elevation of approximately 230 metres at the eastern municipal boundary. The predominant land use in Lions Bay is categorized as general urban.²

1.3 Air quality context

Air contaminants are known to have potentially harmful effects on human health and the environment. Metro Vancouver conducts specialized air monitoring studies to inform decisions about air quality management in the region and to protect the region's good air quality. Measurements taken by the MAMU in Lions Bay included air contaminants that are routinely monitored at air quality monitoring stations throughout the region. Measurements made in Lions Bay, as well as data from the regional



Figure 1. Map showing the approximate positions of the MAMU in Lions Bay (orange) and the ambient air quality monitoring network stations in Horseshoe Bay (red) and North Vancouver-Mahon Park (blue).

¹ Statistics Canada, 2012. *Lions Bay, British Columbia (Code 1217) and Canada (Code 01)* (table). *Census Profile*. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E> (accessed August 24, 2016).

² http://www.metrovancouver.org/services/regional-planning/PlanningPublications/NorthandWestVancouver_LionsBay.pdf.

network of monitoring stations, provide a means to track air quality trends, measure the performance of air management programs, identify problem areas, inform the development of new policies and actions, and provide data to the public.

1.3.1 Key air contaminants

Air contaminants monitored in this study are known to have effects on human health or the environment and include nitrogen dioxide (NO₂) and nitric oxide (NO), sulphur dioxide (SO₂), ground-level ozone (O₃), carbon monoxide (CO), fine particulate matter (PM_{2.5}) and black carbon (BC).

Nitrogen dioxide is a reddish-brown gas that contributes to visibility degradation. It can cause the yellow-brown haze occasionally observed in Metro Vancouver and elsewhere, and reacts in the air with other air contaminants (such as ammonia) to form secondary particulate matter. It also plays roles in the formation of ground-level ozone and acid rain. Exposure to nitrogen dioxide can damage human health, causing aggravation of existing lung diseases and reducing immunity to lung infections. Nitric oxide is a related air contaminant and is usually measured with nitrogen dioxide because these two gases play an important role in atmospheric chemistry. Together, nitric oxide and nitrogen dioxide are referred to as nitrogen oxides or 'NOx'. Vehicles are the largest source of NOx emissions in the region.

Ground-level ozone is a secondary contaminant that is formed in the atmosphere when NOx and volatile organic compounds (VOCs) react in the presence of sunlight. The highest levels of ground-level ozone generally occur in the spring and summer. Exposure to ozone can irritate the eyes, throat and nose, cause coughing, worsen existing lung and heart diseases, and reduce life expectancy. Ground-level ozone also damages vegetation, causing stunted growth and reduced crop yields, and materials such as plastics.

Sulphur dioxide is involved in acid rain formation and also reacts in the air to form secondary particulate matter. Its harmful effects on health include aggravation of asthma and increases in respiratory symptoms. The main sources of emissions of this air contaminant are marine vessels and some industrial activities.

Carbon monoxide has a relatively long lifetime in the air so may be transported long distances. It is found in the region at concentrations well within ambient air quality air quality objectives (Section 1.3.4) and levels have been steadily declining due to reductions in emissions. Vehicles and non-road equipment are the main sources of carbon monoxide emissions in the region.

Fine particulate matter consists of solid particles and liquid droplets with an aerodynamic diameter of less than 2.5 µm. It may be emitted directly into the air (primary fine particulate matter) or be formed from reactions with other air contaminants (secondary fine particulate matter). Sources of primary fine particulate matter emissions in the Metro Vancouver region include industry, transportation, heating and non-road engines. Adverse impacts of fine particulate matter range from serious health effects, including aggravation of existing lung and heart conditions, increased risk of cancer, and reductions in life expectancy, to environmental effects including damage to vegetation and acid deposition. It is also the primary driver of visual air quality impairment in the Lower Fraser Valley. Ultraviolet or **UV-**

absorbing particulate (UVPM) represents a subset of fine particulate matter including black carbon and other species. Measurement of UVPM can provide a qualitative indication of the presence of wood smoke.

Black carbon (BC) is a subset of fine particulate matter that is formed when fossil fuels and other carbon-containing fuels are incompletely combusted. Diesel engine exhaust, which has been classified as carcinogenic to humans³, is a significant source of BC in Metro Vancouver. Wood burning is also a source of BC emissions. As a component of PM_{2.5}, BC contributes to negative impacts on human health, visual air quality and the environment. BC is also a short-lived climate forcer, which means that it can contribute to climate change.

1.3.2 Air quality monitoring in Howe Sound

Air contaminants routinely measured in the Howe Sound area include fine particulate matter and carbon monoxide in Horseshoe Bay; nitrogen dioxide, nitric oxide, sulphur dioxide, fine particulate matter, inhalable particulate matter (PM₁₀) and total reduced sulphur in Langdale; and ground-level ozone, nitrogen dioxide, nitric oxide, fine particulate matter and total reduced sulphur in Squamish. The air quality monitoring station collecting data in Horseshoe Bay is part of the Lower Fraser Valley air quality monitoring network operated by Metro Vancouver and reported through airmap.ca. Data from the air quality monitoring stations in Langdale and Squamish are collected by the BC Ministry of Environment and made available through the web site bcairquality.ca.

Meteorological data are collected in the Howe Sound airshed at the air quality monitoring stations in Horseshoe Bay and Squamish as well as at Langdale Ferry Terminal and Port Mellon by BC Ministry of Environment and at Pam Rocks by Environment Canada. The information provided by meteorological monitoring is used to help identify emissions sources and source areas influencing air quality.

1.3.3 Emissions sources in Howe Sound

The air contaminants of concern in any given community will generally relate to the nature of the emissions sources contributing to air quality in that location. Sources may be local, nearby or, for transported pollutants, tens to thousands of kilometres away.

The main sources of air emissions in Lions Bay are light-duty vehicles, construction and demolition activities, residential wood heating and natural emissions.⁴ More broadly, other sources including heavy-duty vehicles, non-road equipment, industrial and commercial emissions from facilities in Port Mellon and Squamish as well as forestry activities and emissions from other parts of Metro Vancouver can contribute to regional air quality in the Howe Sound/Sea-to-Sky airshed.

Natural sources in the airshed contribute to the presence of a number of air contaminants including volatile organic compounds, or VOCs, emitted from vegetation, and particulate matter derived from sea

³ <http://monographs.iarc.fr/ENG/Monographs/vol105/mono105.pdf>

⁴ From data collected for the 2010 Lower Fraser Valley Air Emissions Inventory, personal communication.

salt spray and wildfire smoke. VOCs and sea salt spray require highly specialized sampling techniques and were not measured as part of this study. Although wildfires can periodically contribute to air quality degradation for communities in Howe Sound, the monitoring conducted for this study was completed in the winter months, a time during which impacts from wildfire smoke are generally not significant.

1.3.4 Ambient air quality objectives and air quality

Ambient air quality objectives define limits on the maximum concentrations of air contaminants that are considered acceptable and generally protective of human health and the environment, based on current knowledge about the effects of air contaminants.⁵ Metro Vancouver has ambient air quality objectives for common air contaminants that are based on short-term averaging periods and annual averages (*Table 1*).

Table 1. Metro Vancouver's ambient air quality objectives

	1-hour	8-hour	24-hour	Annual
PM _{2.5}	--	--	25 µg/m ³	8 µg/m ³ (6 µg/m ³) ^a
NO ₂	106 ppb	--	--	21 ppb
O ₃	82 ppb	65 ppb	--	--
SO ₂ ^b	75 ppb	--	48 ppb	11 ppb
CO	26.2 ppm	8.7 ppm	--	--

-- indicates that there is no objective for this averaging period

^a A planning goal has also been established, which guides airshed planning activities.

^b Objective adopted by Metro Vancouver in 2015 on an interim basis until new national standards were in place.

Peak concentrations are represented by concentrations measured over the shortest averaging period, generally one hour. While the ambient air quality objective for PM_{2.5} is based on a rolling 24 hour average, the concentration data are collected every hour, allowing comparisons to be made between maximum 1-hour levels recorded at different locations. These 1-hour concentrations provide an indication of the relative magnitude of short-term peak levels, which can be intermittent and as a result not easily discerned within the value of the rolling 24-hour average.

Annual objectives represent average air contaminant concentrations considered over the longer term. Since the study in Lions Bay took place over a period of less than 12 months, it is not appropriate to formally compare averages for the study period to the annual average. However, comparisons with the numeric values of objectives based on annual averages provide a useful guide to the long-term average concentration.

⁵ Further information about the ambient air quality objectives applicable in Metro Vancouver is available at: <http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQOFactsheet.pdf>.

2 Methods

2.1 Monitoring locations

Monitoring took place between December 2015 and March 2016. Working with the Village of Lions Bay, a site for the MAMU was found in an unpaved overflow parking area off Bayview Road, Lions Bay ($49^{\circ} 27.800' N$, $123^{\circ} 14.158' W$) at an elevation of approximately 110 metres. The site was approximately 80 metres northeast of Highway 99 and 20 metres higher in elevation than the highway. In the immediate area a grass sports field was adjacent to the parking area which was surrounded by trees (*Figure 2*). Lions Bay Community School was approximately 100 metres to the north of the site and residential properties were to be found to the south, east and northeast of the site.



The MAMU can be used for air quality monitoring in specialized studies, compliance monitoring, “hot spot” evaluations and emergency situations. The instrumentation contained within the MAMU is comparable to that found at ambient air quality monitoring network stations. Data from the MAMU are collected and validated in the same way as data from monitoring stations.



Figure 2. The MAMU sampling site in Lions Bay (a) to the southwest, (b) to the northeast and (c) showing the MAMU from the southwest.

Measurements collected at the nearest Lower Fraser Valley air quality monitoring network stations, 11 km away in Horseshoe Bay and 19 km away in North Vancouver (Figure 1), for the same period provide perspective for the air quality measurements made in Lions Bay. The Horseshoe Bay and North Vancouver–Mahon Park stations are situated at Gleneagles Ch’axáy Elementary School at an elevation of 65 metres and in Mahon Park at an elevation of 71 metres respectively. The land-uses of the areas surrounding these stations are predominantly residential and parkland.⁶

2.2 Data collection

Eight air contaminants were measured continuously using the MAMU during the Lions Bay study: nitrogen dioxide, nitric oxide, ground-level ozone, fine particulate matter, sulphur dioxide, carbon monoxide, black carbon and UV absorbing particulate matter. Meteorological data including wind speed and direction, temperature, and relative humidity were collected by the MAMU using instruments mounted on a 10 metre mast.

Within the Metro Vancouver air quality monitoring network, fine particulate matter and carbon monoxide data are collected nearby at the Horseshoe Bay monitoring station and nitrogen dioxide, nitric oxide, ground-level ozone, fine particulate matter, sulphur dioxide and carbon monoxide are measured at the North Vancouver-Mahon Park monitoring station. Wind data are also collected at both monitoring network stations but are not reported here.

Data from the MAMU and the air quality monitoring network stations were collected continuously at one minute resolution and these are used to provide concentration measurements for each hour. Air contaminant concentrations averaged over periods of at least one hour are presented and discussed in this report.

3 Results and Discussion

3.1 Air quality data summary

3.1.1 Air contaminant concentrations

Air contaminants were monitored in Lions Bay over a period of approximately eleven weeks. Monitoring results indicate that air quality met air quality objectives in Lions Bay during the study period. Levels of the key air contaminants measured in Lions Bay are shown in *Table 2*, along with short-term ambient air quality objectives.

⁶ Additional information about these stations can be found in [Station Information: Lower Fraser Valley Air Quality Monitoring Network](#), Metro Vancouver, December 2012.

Table 2. Summary of criteria air contaminant concentrations from continuous data measured using the MAMU in Lions Bay for the period 16:00 December 21, 2015 to 09:00 March 02, 2016.

	Lions Bay (MAMU)		Air quality objective concentration
	Maximum concentration	Average concentration	
PM _{2.5} (1-hour, µg/m ³)	52.1	2.8	No objective
PM _{2.5} (rolling 24-hour, µg/m ³)	8.3	See 1 hour data	25
NO ₂ (1-hour, ppb)	17.0	4.2	106
O ₃ (1-hour, ppb)	43.0	19.2	82
O ₃ (rolling 8-hour, ppb)	37.2	See 1 hour data	65
SO ₂ (1-hour, ppb)	0.5	<0.1	75
SO ₂ (rolling 24-hour, ppb)	0.1	See 1 hour data	48
CO (1-hour, ppm)	0.40	0.15	26.2
CO (rolling 8-hour, ppm)	0.28	See 1 hour data	8.7

Air contaminant concentrations measured in Lions Bay did not exceed short-term ambient air quality objectives for any air contaminants during the study period. There were also no exceedances of ambient air quality objective at any stations in the Lower Fraser Valley air quality monitoring network during the same period. The nearest Lower Fraser Valley monitoring network stations are located in Horseshoe Bay and in North Vancouver in Mahon Park. Summaries of measurements from these two stations of the same air contaminants for the study period are shown in Table 3.

Table 3. Summary of air contaminant concentrations from continuous data measured at the air quality monitoring network station at Horseshoe Bay and North Vancouver – Mahon Park for the period 16:00 December 21, 2015 to 09:00 March 02, 2016.

	North Vancouver – Mahon Park		Horseshoe Bay	
	Maximum concentration	Average concentration	Maximum concentration	Average concentration
PM _{2.5} (1-hour, µg/m ³)	35.2	4.2	20.5	3.1
PM _{2.5} (rolling 24-hour, µg/m ³)	14.5	See 1 hour data	6.0	See 1 hour data
NO ₂ (1-hour, ppb)	35.7	14.0	nm	nm
O ₃ (1-hour, ppb)	39.9	14.4	nm	nm
O ₃ (rolling 8-hour, ppb)	34.4	See 1 hour data	nm	nm
SO ₂ (1-hour, ppb)	3.1	0.3	nm	nm
SO ₂ (rolling 24-hour, ppb)	0.8	See 1 hour data	nm	nm
CO (1-hour, ppm)	1.0	0.28	0.64	0.23
CO (rolling 8-hour, ppm)	0.79	See 1 hour data	0.39	See 1 hour data

nm indicates the species is not measured at the station

Generally, average concentrations of key air contaminants in Lions Bay were lower than at the stations in Horseshoe Bay and North Vancouver-Mahon Park as well as other monitoring network stations in the Metro Vancouver region. Average concentrations were also at levels well within the numerical values of annual average-based objectives at the Lions Bay, Horseshoe Bay and North Vancouver-Mahon Park locations during the data collection period.

Levels of air contaminants associated with emissions from combustion sources, such as motor vehicle engines and marine vessels, including nitrogen dioxide, sulphur dioxide, and carbon monoxide were lower in Lions Bay than at the Horseshoe Bay and North Vancouver-Mahon Park monitoring stations over the same period. In contrast, levels of ground-level ozone were fractionally higher in Lions Bay than in West Vancouver and North Vancouver, although overall, concentrations of ground-level ozone were relatively low. Since the study was conducted in the winter and ground-level ozone levels are generally expected to be low at this time of year, this study does not provide any insights into the potential for elevated levels of ground-level ozone to occur during peak seasons of spring and summer.

Peak levels of particulate matter in Lions Bay were higher than those measured in Horseshoe Bay and in North Vancouver at Mahon Park and among the highest measured in the Metro Vancouver region during the study period, with only the stations in New Westminster and Langley reaching higher 1-hour concentrations. Additional analysis exploring peak PM_{2.5} concentrations in Lions Bay is described in Section 3.2.2.

Concentrations of black carbon and nitric oxide measured during the study are shown in *Table 4*. There are no ambient air quality objectives for these air contaminants. The data show that levels of black carbon and nitric oxide were the lowest measured at any air quality monitoring locations in the region during the study period. Maximum and average concentrations of black carbon were considerably lower than those of fine particulate matter; analysis indicated that on average less than one-fifth (16%) of the fine particulate matter measured during the study may be attributable to black carbon.

Table 4. Summary of other air contaminants measured in Lions Bay using the MAMU during the sampling period December 21, 2015 to March 02, 2016.

	Lions Bay (MAMU)	
	Maximum concentration	Average concentration
BC (1-hour, µg/m ³)	3.1	0.2
BC (rolling 24-hour, µg/m ³)	0.5	<i>See 1 hour data</i>
NO (1-hour, ppb)	10.2	1.0

Measurements of UV absorbing particulate matter indicate the presence of a subset of fine particulate matter that includes black carbon and other species, however, since quantitative analysis is not appropriate for this species, numerical data are not shown. Qualitative comparisons of black carbon measurements and UV absorbing particulate matter are discussed in Section 3.2.1.

3.1.2 Wind measurements

Air quality is the result of emissions, dispersion and deposition processes in the atmosphere so meteorological conditions play an important role in determining air quality and can assist in identifying contributing sources of air contaminants. The results of the wind speed and direction monitoring are presented in the wind rose shown in *Figure 3*.

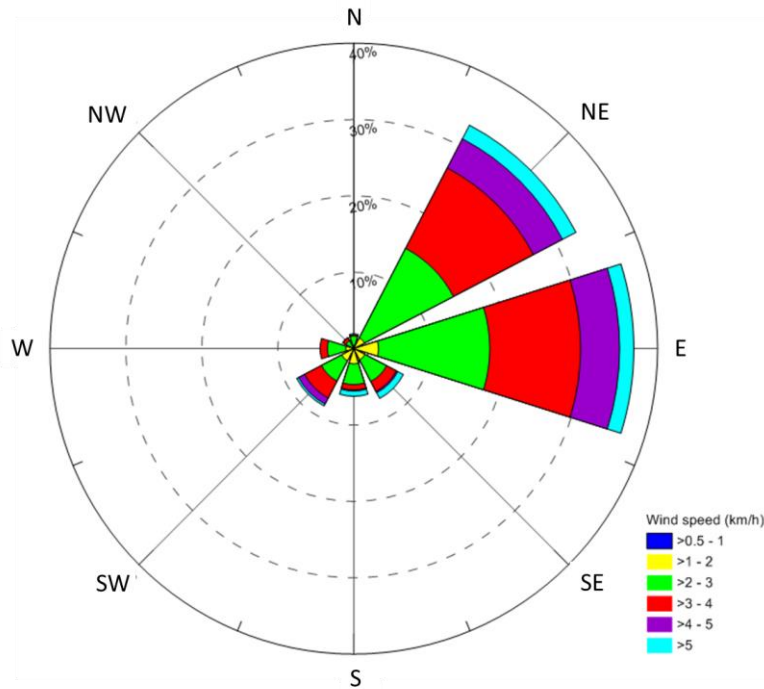


Figure 3. Wind rose showing the frequency of winds blowing from the directions indicated on the compass at the MAMU site in Lions Bay during the sampling period 16:00 December 21, 2015 to 09:00 March 02, 2016.

Wind predominantly came from the easterly and north-easterly directions, meaning that measurements at the MAMU were predominantly influenced by sources located in those directions. The sources of air contaminants found in these sectors are likely to generally be associated with residential activities and local traffic. Winds from the south and westerly sectors were recorded as occurring less than 20% of the time. Therefore traffic on the highway which is located south and west of the site is expected to have influenced air quality at the MAMU site less frequently.

The effects of topography and tree cover in Lions Bay and the surrounding area presents challenges in collecting wind speed and wind direction data. The monitoring site selected was in a clearing approximately 25 metres in diameter, however, trees surrounding the site may have resulted in reduced air flow to the wind sensor equipment at times. Although this reduced air flow could have affected the representativeness of the wind speed and direction measurements, the situation is likely to be typical of the sheltering from wind found around residences similarly situated near trees in Lions Bay. It follows

that while the measurements made at a monitoring location are expected to be generally representative of air quality in the area, air contaminant levels in any specific location may be highly localized when air emissions are found nearby.

3.1.3 Ambient temperatures

Temperatures can influence emissions from sources such as home heating. Temperatures were seasonable during the study with cool temperatures recorded during the first two weeks of the study. The minimum temperature recorded during the study period was -1.1°C on December 31. The maximum of 14.3°C occurred on January 28 and the average temperature during the study was 5.1°C.

3.2 Characterizing air quality in Lions Bay

3.2.1 Diurnal variation in air contaminant concentrations

Patterns in air contaminant concentrations seen on a daily basis represent the combined effects of regularly occurring air emissions and atmospheric dispersion processes. A daily pattern, referred to as a 'diurnal profile' for air contaminant concentrations measured in Lions Bay during the sampling period is shown in *Figure 4*.

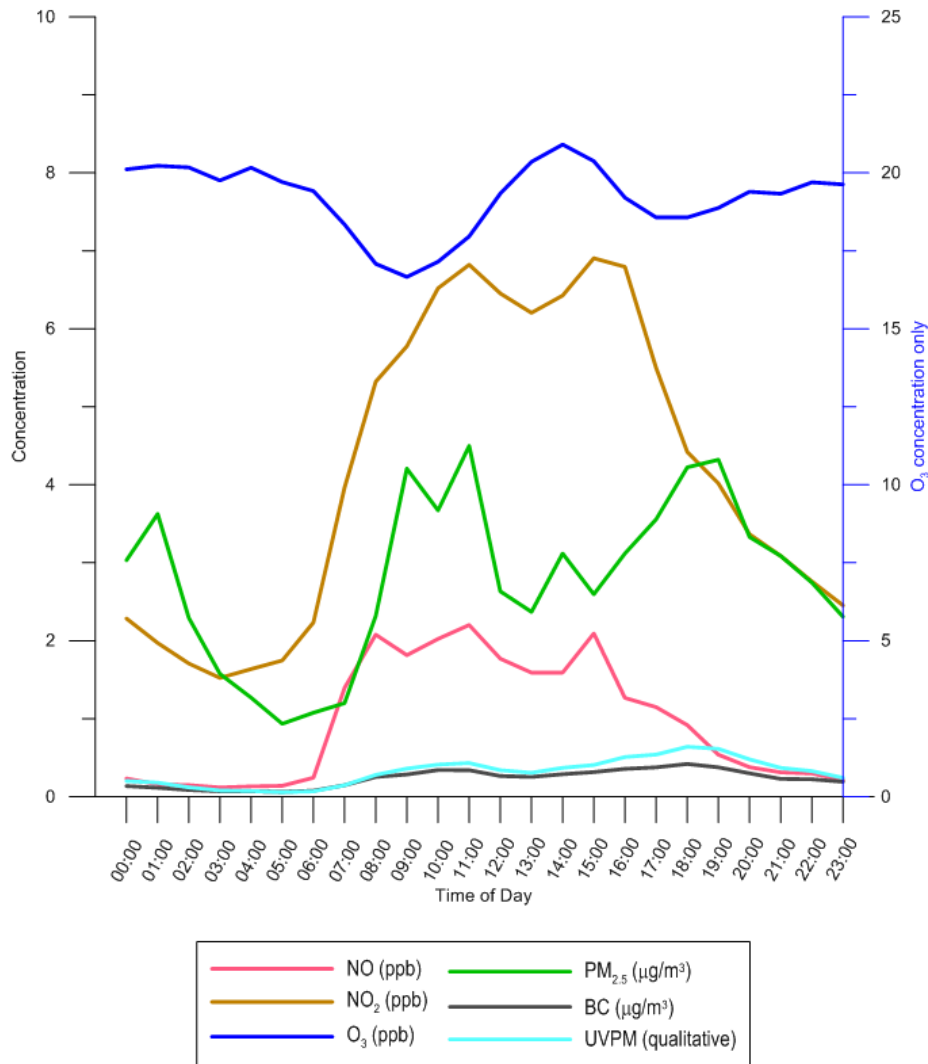


Figure 4. Diurnal profiles of average concentrations of air contaminants measured in Lions Bay. Levels of sulphur dioxide and carbon monoxide were very low and are not shown. Concentrations of ground-level ozone were numerically higher than the other air contaminants illustrated and are shown on the secondary axis. The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

The diurnal profile illustrates a pattern of levels peaking during daytime hours, when human activities are generally busiest. For example, the nitrogen dioxide profile has a double peak feature that is typical of a traffic signature. This is mirrored to a lesser extent in the nitric oxide profile.

The diurnal profile of fine particulate matter is different in character with the second peak occurring later in the evening than the NO_x peaks. Evening peaks can be representative of decreased dispersion after sunset, but unlike traffic emissions that decrease as traffic flow decreases, the profile suggests that emissions of fine particulate matter continue later into the evening. Additional evidence of the changing relative contribution of different fine particulate matter emissions sources is found by examining the profiles of black carbon and UV absorbing particulate matter.

An expanded view of the profiles of black carbon and UV absorbing particulate matter is shown in *Figure 5*. A strong divergence of the UV absorbing particulate matter profile from that of black carbon is observed in the late afternoon and early evening. This pattern is more pronounced at the weekend than on weekdays (data not shown) and supports the premise that a change occurs in the types of sources contributing to fine particulate matter levels over the course of the day.

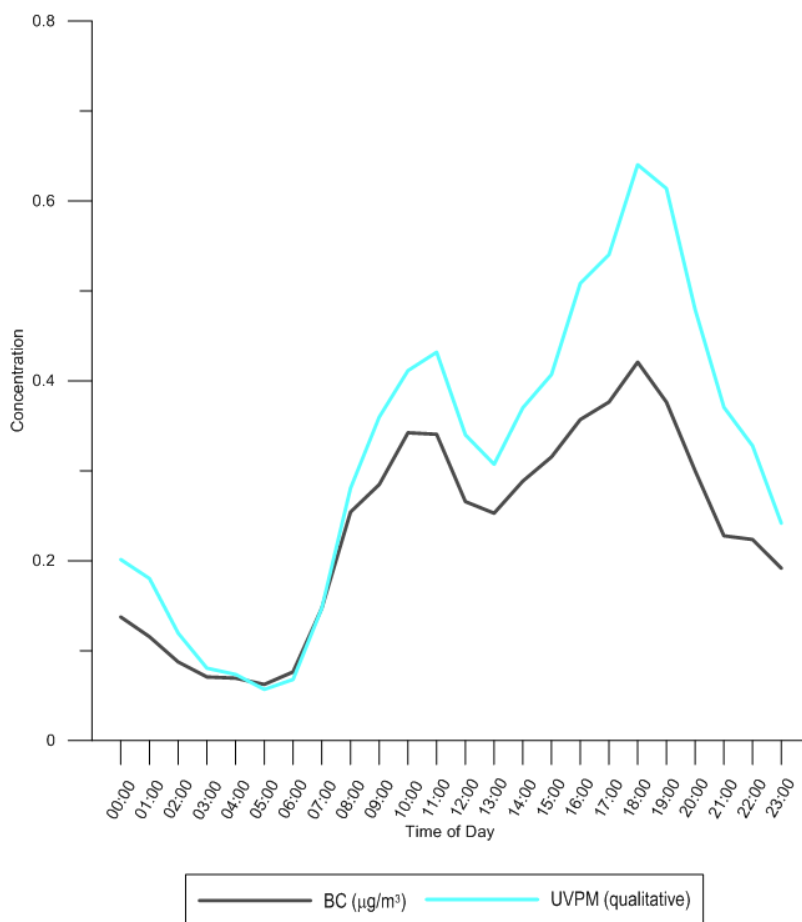


Figure 5. Diurnal profiles of black carbon and UV absorbing particulate matter measured in Lions Bay. The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

The differences between black carbon and UV absorbing particulate matter measurements are suggestive of the presence of wood smoke in Lions Bay in the evening and that it is also present during the day. An anecdotal report of the smell of wood smoke in Lions Bay during the day supports the data-based hypothesis that wood smoke contributes to fine particulate matter levels in Lions Bay throughout the day.

3.2.2 Particulate matter

3.2.2.1 Analysis of occurrence of elevated levels of fine particulate matter

The distribution of fine particulate matter concentrations in Lions Bay was compared to nearby monitoring stations including Horseshoe Bay and North Vancouver-Mahon Park. The distributions of 1-hour fine particulate matter concentrations are shown in *Figure 6*.

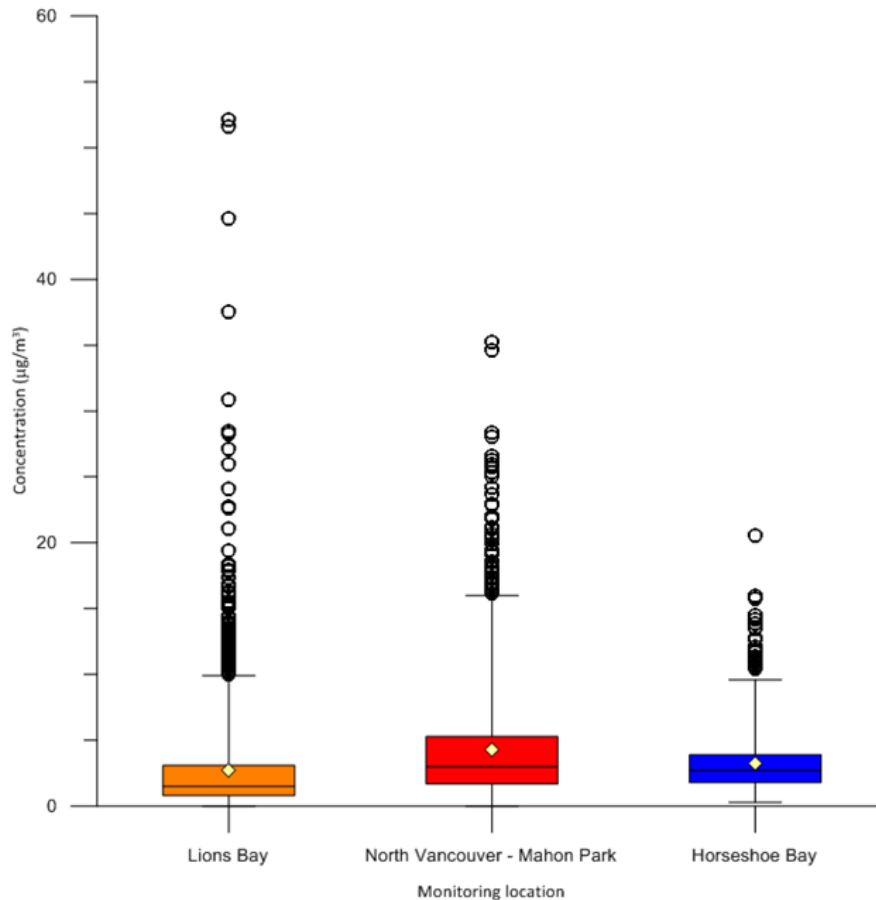


Figure 6. Box plot illustrating the distribution of fine particulate matter data from Lions Bay, North Vancouver – Mahon Park, and Horseshoe Bay. Each coloured box represents the interquartile range (IQR) which illustrates the spread of most of the data from each station. The horizontal black line in the box indicates the median value and the white diamond indicates mean of the data for each station. The 'whiskers' represent the value of 3xIQR; data points outside the whiskers may be considered extreme values compared to the rest of the dataset.

There are some similarities between these stations with a highly skewed distribution of low fine particulate matter concentrations occurring most of the time; more than 75% of the measurements made in each of Lions Bay, North Vancouver-Mahon Park and Horseshoe Bay during the study period were less than $6 \mu\text{g}/\text{m}^3$, the numerical value of the planning goal for the region on an annual average basis. However, the highest observed 1-hour fine particulate matter concentrations during the study period occurred in Lions Bay.

To further investigate the occurrence of elevated levels of fine particulate matter, the number of hours during which 1-hour concentrations were greater than 25 $\mu\text{g}/\text{m}^3$ and 20 $\mu\text{g}/\text{m}^3$, levels selected to be numerically close to the short-term objective, was calculated and is summarized in *Table 5*.

Table 5. Summary of the number of hours of elevated concentrations $\text{PM}_{2.5}$ concentrations measured in Lions Bay, Horseshoe Bay and North Vancouver – Mahon Park during the sampling period December 21, 2015 to March 02, 2016.

	Lions Bay	North Vancouver - Mahon Park	Horseshoe Bay
Number of hours with 1-hour $\text{PM}_{2.5}$ concentration > 25 $\mu\text{g}/\text{m}^3$	9	9	0
Number of hours with 1-hour $\text{PM}_{2.5}$ concentration > 20 $\mu\text{g}/\text{m}^3$	14	21	1
Total number of hours of data collected	1667	1720	1719

The highest fine particulate matter concentrations (i.e. greater than 20 $\mu\text{g}/\text{m}^3$) measured in Lions Bay were greater than the highest concentrations recorded at the Horseshoe Bay and North Vancouver-Mahon Park stations. However, concentrations above this level were slightly more common at the North Vancouver–Mahon Park station, representing 1.2% of the data analyzed, than in Lions Bay where they represented less than 1% of the study measurement period. In addition, average concentrations from Mahon Park were higher than those from Lions Bay during this study. Average concentrations in Horseshoe Bay were also higher than those measured in Lions Bay despite maximum concentrations being lower. These results suggest that air quality in Lions Bay is relatively good most of the time, compared to other populated parts of the region, however, air quality degradation may be experienced in Lions Bay at times, particularly when local sources such as wood-fired heating may be the dominant factor influencing air quality.

3.2.2.2 Effect of rain

As described in Section 3.1.2, measured contaminant levels can be strongly influenced by weather. Precipitation, as rain or snow, can reduce levels of particulate matter and commonly occurs in the Metro Vancouver region during the months in which sampling took place for this study. Measurements of rainfall were not undertaken at the MAMU site during the monitoring phase of the study. Rainfall measurements from Horseshoe Bay were examined (data not shown). The highest levels (concentrations greater than 20 $\mu\text{g}/\text{m}^3$) of fine particulate matter were generally recorded in Lions Bay when no precipitation occurred at the Horseshoe Bay air quality monitoring station.

3.2.2.3 Diurnal profiles

An analysis of hour-by-hour maximum fine particulate matter concentrations was conducted. Typically this type of analysis allows patterns to be identified to help determine whether specific sources are contributing to air quality degradation. However, it is a limitation of ambient air quality monitoring

techniques that the detection of narrow plumes from localized sources, for example residential wood burning, is affected by relatively small changes in wind flow. This type of behaviour may be reflected in the data, presented in *Figure 7*, which show that the highest 1-hour concentrations in Lions Bay occurred on both weekdays and weekends and usually between the hours of 9 am and 2 am.

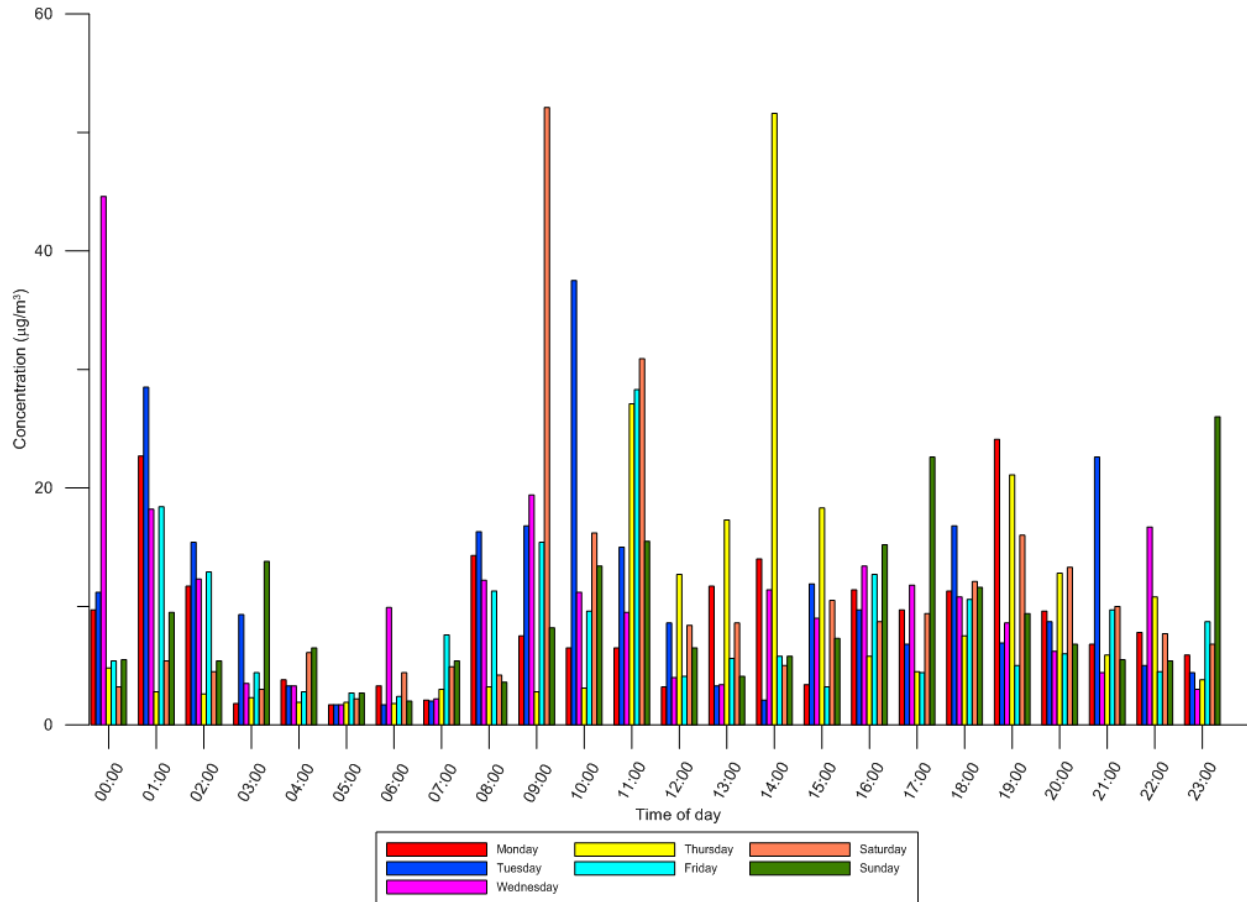


Figure 7. Maximum fine particulate matter concentrations measured in Lions Bay for each hour of the day for each day of the week. The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

A similar diurnal analysis considering average concentrations for each hour on weekdays and weekends (*Figure 8*) indicates that the periods of peak concentrations were generally between 9 am and noon and between 5 pm and 8 pm at night, while minimum concentrations occurred between 5 am and 8 am. These observations are consistent with daytime anthropogenic emissions sources such as traffic, wood smoke and emissions from elsewhere in the region, influencing fine particulate matter levels.

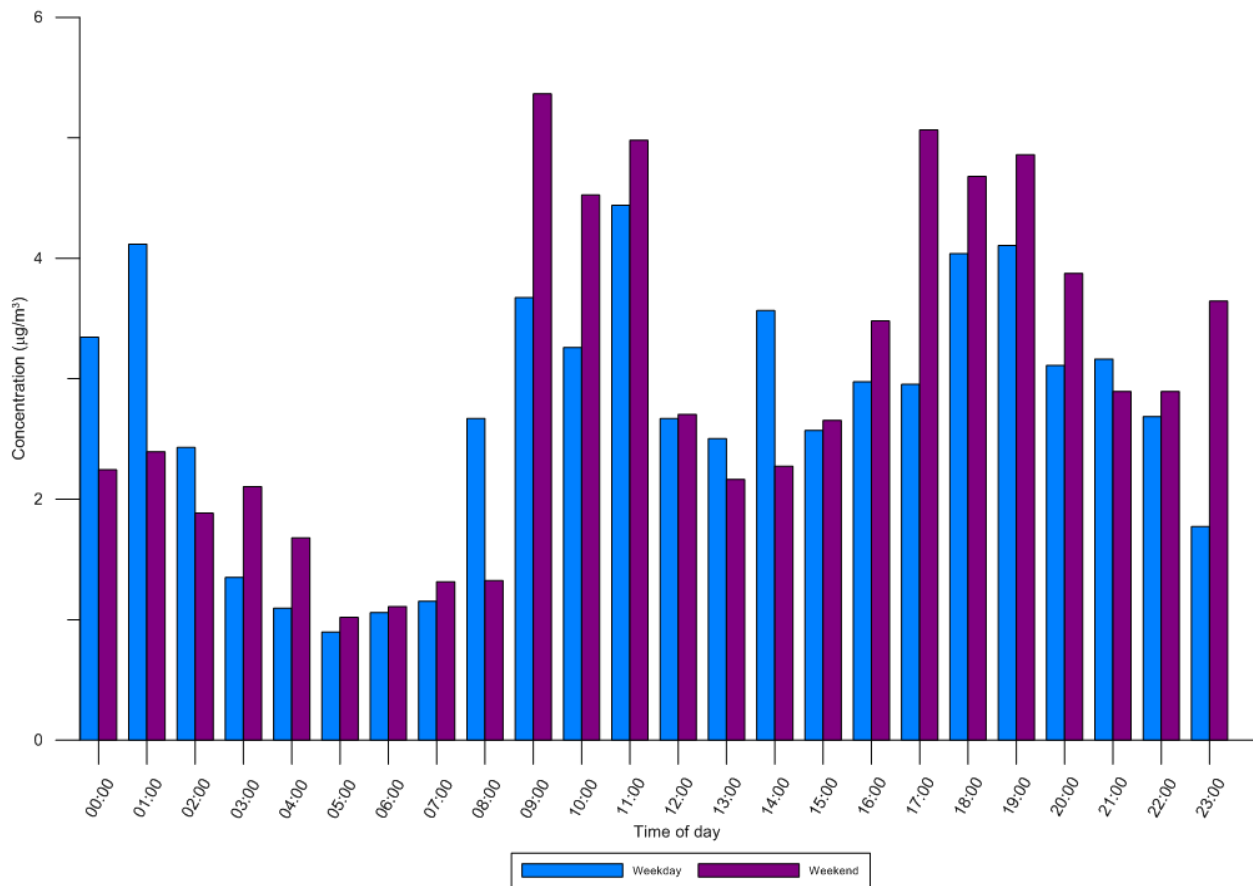


Figure 8. Average fine particulate matter concentrations measured in Lions Bay for each hour of the day for weekdays (blue) and weekend days (purple). The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

3.2.3 Traffic

Mobile sources, such as road traffic, marine vessels and railway locomotives, are major sources of air emissions in the Metro Vancouver region. The Sea to Sky highway is the major road in the Lions Bay area, carrying an average of 19,000 vehicles per day⁷, including heavy duty trucks and light duty passenger vehicles. Nitrogen dioxide, nitric oxide and black carbon data were examined to investigate whether any traffic signature, particularly from the Sea to Sky highway, could be detected.

Diurnal patterns of nitrogen dioxide and nitric oxide concentrations on weekdays and weekend days are shown in *Figure 9* and *Figure 10* respectively. Average concentrations were generally higher on weekdays compared to weekends. Two peaks, one in the morning and the second in the afternoon, on weekdays and a single 'hump' in the middle of the day on weekends were observed. Although

⁷ BC Ministry of Transportation and Infrastructure, Traffic Data Program, 2015 reporting year AADT: <https://prdoas3.pub-apps.th.gov.bc.ca/tig-public/Report.do?pdbSiteId=23273>

concentrations in Lions Bay are relatively low, these patterns are similar to those observed at other air quality monitoring stations in the Lower Fraser Valley air quality monitoring network and suggest that traffic plays a role in air quality in Lions Bay, particularly on weekdays. However, it is not possible to determine whether the most significant factor is local traffic within the village, traffic on the highway, or transported air contaminants from traffic movement in other parts of the airshed.

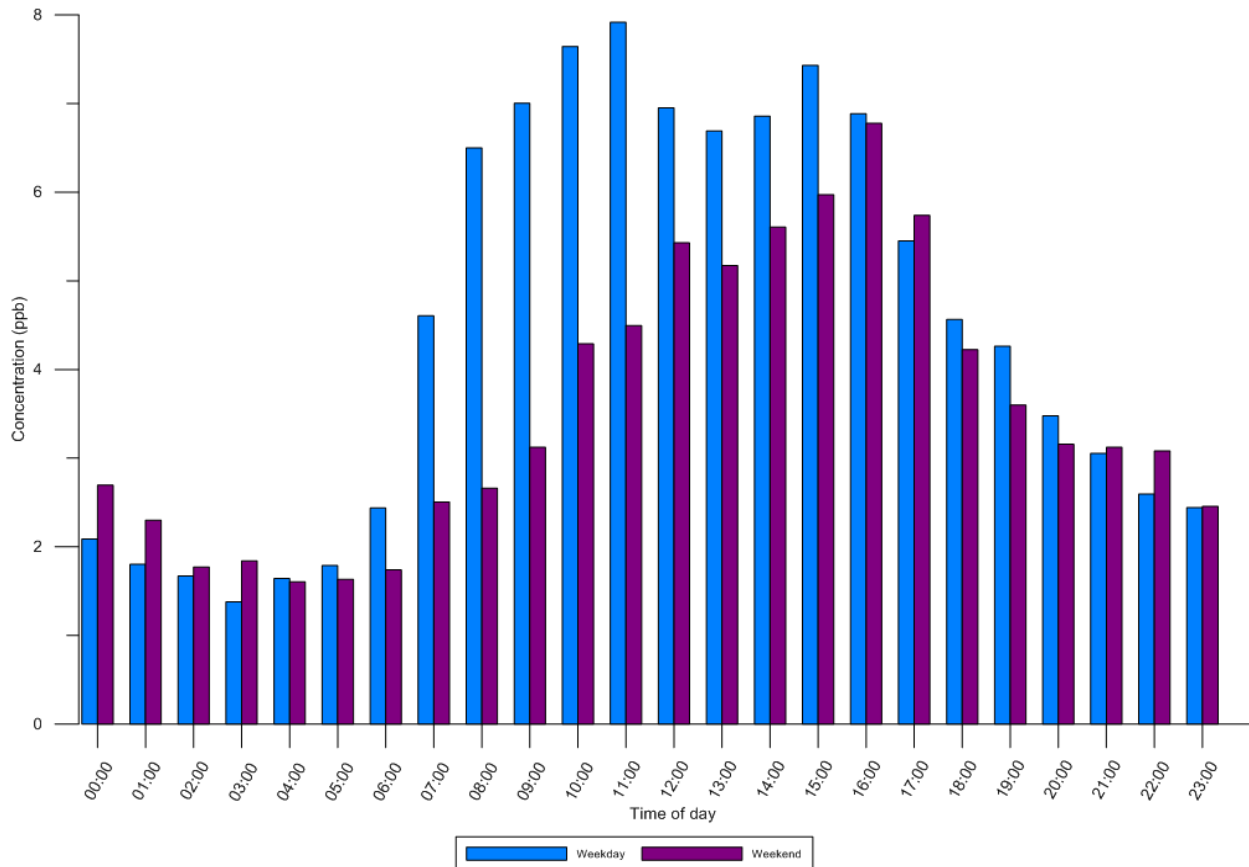


Figure 9. Average nitrogen dioxide concentrations measured in Lions Bay for each hour of the day for weekdays (blue) and weekend days (purple). The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

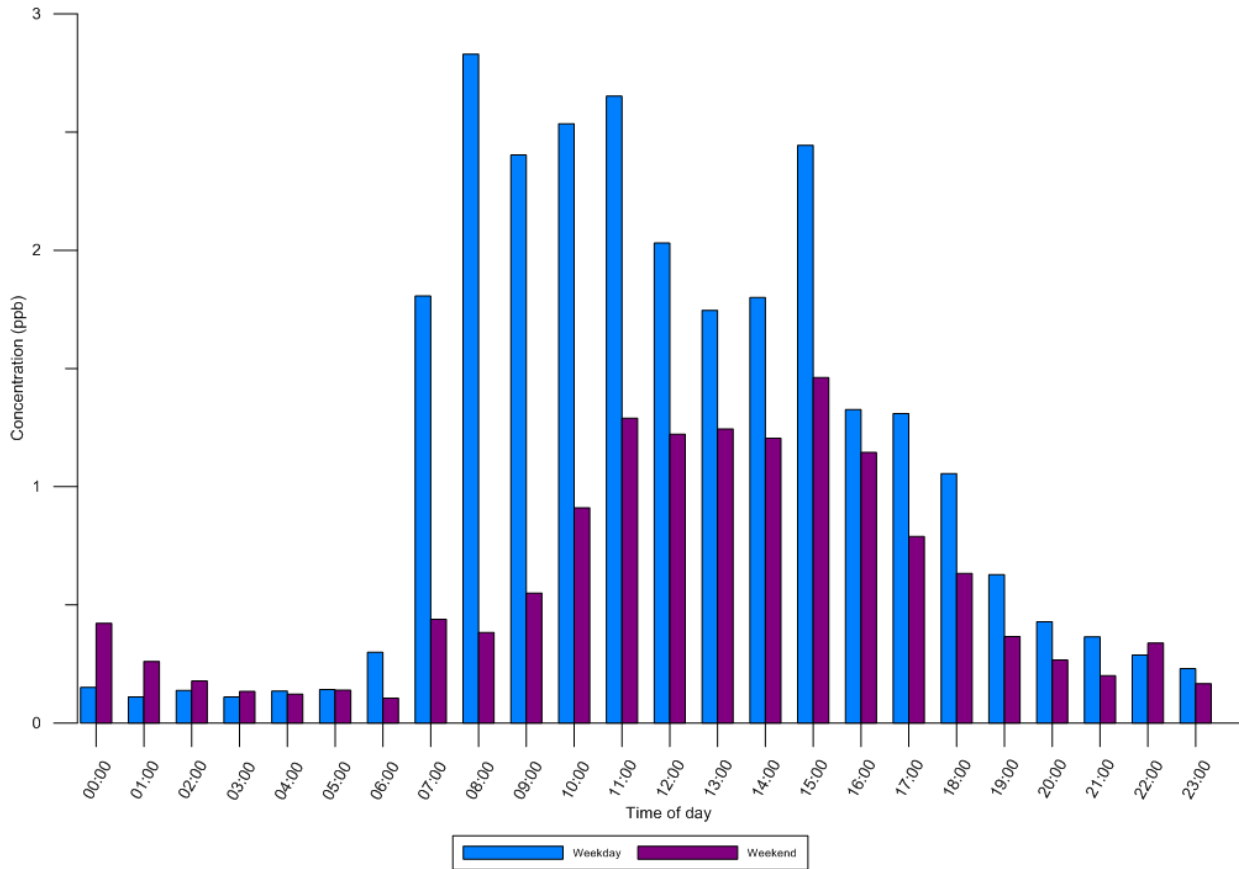


Figure 10. Average nitric oxide concentrations measured in Lions Bay for each hour of the day for weekdays (blue) and weekend days (purple). The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

A major source of black carbon emissions in the Metro Vancouver region is diesel engines. Although black carbon concentrations in Lions Bay were low, the daily diurnal profiles (Figure 11) were examined to investigate whether diesel emissions could be a source contributing to fine particulate matter levels in Lions Bay. The diurnal profile shows elevated concentrations occurring between approximately 8 am and 8 pm, which is a pattern that is consistent with a traffic signature.

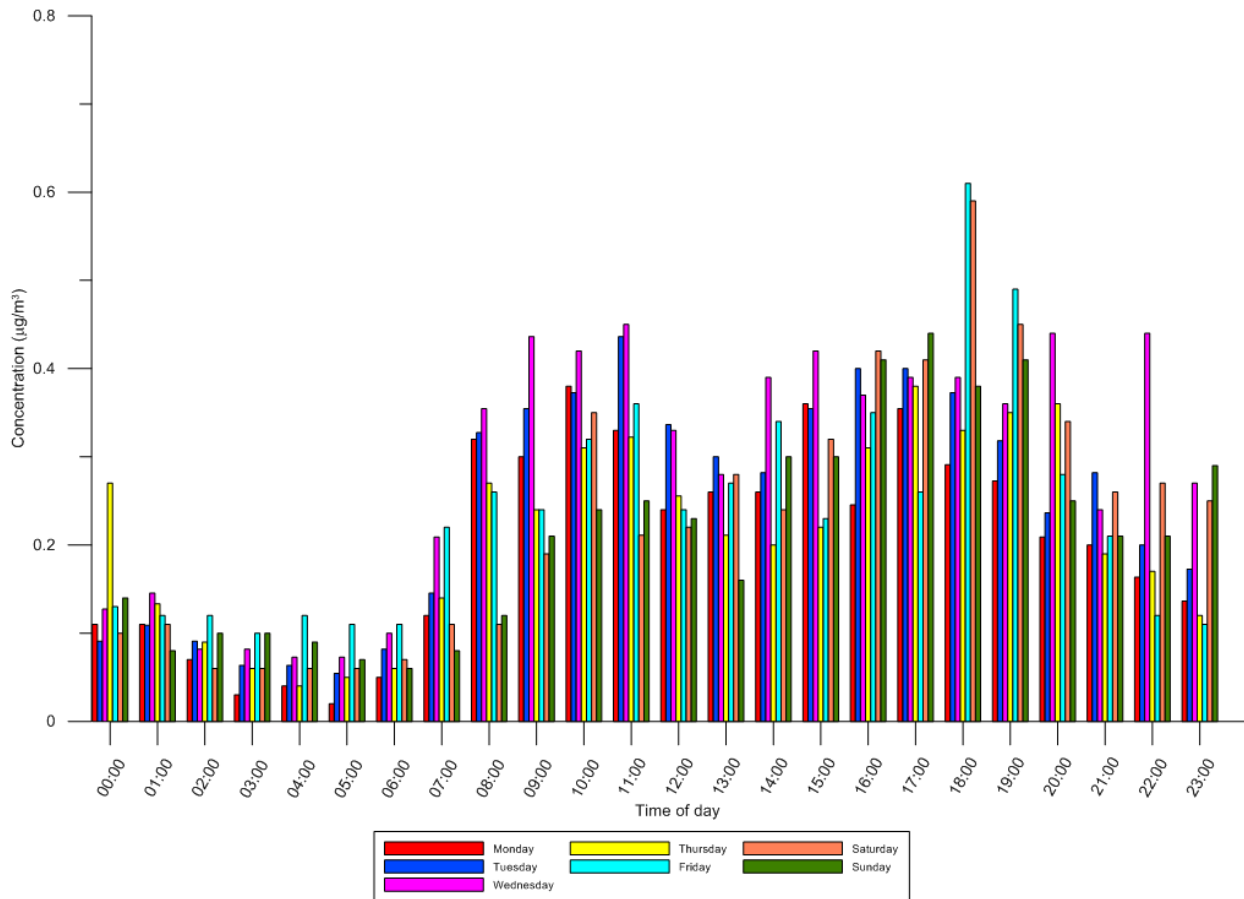


Figure 11. Average black carbon concentrations measured in Lions Bay for each hour of the day for each day of the week. The x-axis labels represent the time at the beginning of the hour long measurement for each point, e.g. the points at 01:00 represent the data collected between 1 am and 2 am.

A notable feature of the diurnal profile is the relatively high concentrations of black carbon that stand out for Friday and Saturday evenings. The highest concentrations during the evening on these days were generally measured in December and January. The results suggest an increase in emissions from one or more sources, which could include residential wood heating, in this period and since a similar peak was not observed in the nitrogen dioxide and nitric oxide data, it is likely these occurrences do not relate solely to traffic emissions.

4 Conclusions

Air quality in Lions Bay was generally good during the study period. Relatively elevated levels of fine particulate matter were measured during the study, although this occurred for short periods (single hours) and infrequently (approximately 1% of the time). Weather conditions during the study period generally represented a range of temperatures and rainfall expected in the winter and consequently the results are considered likely to be generally representative of air quality in Lions Bay normally expected during the winter. Therefore the results of the study suggest that it is unlikely that exceedances of ambient air quality objectives will occur in Lions Bay, particularly in the winter, other than during

exceptional events, such as incursions of intense wildfire smoke or in situations when dispersion is sufficiently restricted that air contaminants can build up.

Analysis indicated that local emissions sources contribute to air quality conditions in the village. Anecdotal reports about the smell of wood smoke have been received from Lions Bay but the transient nature of wood smoke from residential wood burning means that unless a plume is directed over the instruments for an extended period of time, the effects of this source can be difficult to characterize by air quality monitoring studies and are not generally conclusive without additional specialized analysis, which was not available for this study. However, there is sufficient evidence in the monitoring data to suggest that wood smoke contributes to levels of fine particulate matter in Lions Bay. In addition, traffic emissions were also identified as likely to be contributing to the air quality experienced in the area.

5 Clean air initiatives

Air quality management activities have been key to the steady improvements seen in regional air quality in the last ten or more years. Even with population growth in the region, concentrations of air contaminants including carbon monoxide, nitrogen dioxide, sulphur dioxide and fine particulate matter are generally lower than at the turn of the century. For example, sulphur dioxide levels improved as sulphur was reduced in vehicle and marine fuels and emissions from the cement industry decreased. Improved vehicle emission standards and the AirCare program are largely responsible for the lower carbon monoxide and nitrogen dioxide levels.

Metro Vancouver offers a number of initiatives to address wood smoke from residential wood burning. Programs that may offer support for working to achieve cleaner air in Lions Bay include:

- Metro Vancouver's wood stove exchange program, which provides a rebate to individuals who are replacing an uncertified wood burning stove or fireplace with a cleaner, low emission unit;
- Wood heat workshops providing information to new and experienced wood burners about how to heat with wood cleanly, safely, and efficiently; and
- An indoor residential wood burning forecast report, accessible by phone during heating season (October to March). This forecast service allows residents to find out whether smoke from their fireplace or wood stove may negatively affect air quality in their neighbourhood.

In addition, regional programs to reduce emissions from traffic, such as the EMOTIVE electric vehicle campaign, the Smart Drive Challenge, and increasing the availability of electric vehicle charging stations are aimed at providing benefits in the region that are also anticipated to be reflected in local air quality in communities such as Lions Bay.

In the Sea-to-Sky airshed, an area that encompasses Howe Sound and extends from West Vancouver, Bowen Island and Gibsons in the south to Pemberton and Mount Currie in the north, the Sea-to-Sky Clean Air Society is a registered charitable society with a mandate to protect clean air and support climate initiatives. It works in cooperation with local governments to offer information and additional initiatives to residents to promote healthy air quality.

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Minutes of the Tree Committee meeting

January 16th, 2017

On-site

1. In attendance; Chair, Simon Waterson, Tony Clayton and Mike Jury
2. The meeting was called to order at 09:31 am.
3. Simon Waterson was appointed Recorder for the meeting.
4. The Agenda was approved unanimously.
5. Public Participation - none
6. The previous minutes from the meeting dated 7th December 2016 were approved unanimously.
7. Old Business; - none
8. New Business;
Tree Application #77 – 45 Periwinkle - Moved by Tony Clayton; Seconded by Simon Waterson, that the subject trees and associated debris, be removed. Approved unanimously.
9. Adjournment; - The meeting adjourned at 09:37 am.

Simon Waterson

Recorder

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Minutes of the Tree Committee meeting

Jan 24th, 2017

On-site @ 85 Isleview Place

1. In attendance; Chair, Simon Waterson, Tony Clayton and Ron McLaughlin
2. The meeting was called to order at 09:31 am.
3. Simon Waterson was appointed Recorder for the meeting.
4. The Agenda was approved unanimously.
5. Public Participation – Mr. Kirk Henry
6. The previous minutes from the meeting dated 16th January 2017 were approved unanimously.
7. Old Business; - Abbott Application question still outstanding – CAO to respond
8. New Business;
Tree Application #78 – 85 Isleview Place - Moved by Tony Clayton; Seconded by Simon Waterson, that the subject trees and associated debris be removed. Approved unanimously.
9. Adjournment; - The meeting adjourned at 09:36 am.

Simon Waterson

Recorder

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Lbfd Monthly Report – November 30th 2016**December 1st – December 31st call outs = 15**

Breakdown of call outs:

5 x MVA – Rescue Required, 1 x MVA, 1 x Post Fire, 1 x Structure Fire, 3 x Wires Down, 1 x MESA B, 2 x MESA C, 1 x MESA D

Incidents on the Highway

12/30/2016 16:38:21	HWY 99	MVA - RESCUE REQUIRED
12/26/2016 13:30:30	HWY 99	MVA - RESCUE REQUIRED
12/19/2016 08:24:39	HWY 99	MVA
12/15/2016 19:48:29	HWY 99	MVA - RESCUE REQUIRED
12/11/2016 07:56:39	HWY 99	MVA - RESCUE REQUIRED
12/02/2016 22:32:01	HWY 99	MVA - RESCUE REQUIRED

Incidents in the Village

12/25/2016 21:16:02	MOUNTAIN	POST FIRE INSPECTION
12/23/2016 09:56:30	BAYVIEW	STRUCTURE FIRE - RESIDENTIAL
12/21/2016 22:36:34	TIMBERTOP	MESA-B
12/15/2016 16:07:53	STRACHAN PT	WIRES DOWN
12/11/2016 12:44:33	HWY 99	WIRES DOWN
12/05/2016 09:39:27	LAWRENCE	WIRES DOWN
12/05/2016 00:33:00	PANORAMA	MESA-C
12/03/2016 19:12:55	BAYVIEW	MESA-C
12/02/2016 05:53:16	BRUNSWICK BEACH	MESA-D

Fundraising:

- The members finished working their shifts for the Christmas Tree sales

Miscellaneous:

- The department has currently 33 members (including those undergoing pre-response training)
- **2016 – approx. total claimed from sources OUTSIDE the village = \$38,049.-**
- *MESA is an acronym for Medical Emergency Service Assist. The letter denotes the seriousness of the incident. A is minor and E is serious.*
- *Pre-Recruits are members who are volunteering for LBFR while endeavoring to get hired by career departments*
- *Pre-Response training is required before new recruits respond to calls*

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LBFD Monthly Report – January 31st 2017

January 1st – January 31st call outs = 5

Breakdown of call outs:

2 x MVA – Rescue Required, 1 x MVA, 1 x Residential Structure Fire, 1 x MESA D

Incidents on the Highway

01/09/2017 06:20:06	HWY 99	MVA - RESCUE REQUIRED
01/06/2017 06:30:15	SEA-TO-SKY HWY 99	MVA
01/01/2017 20:00:32	HWY 99	MVA - RESCUE REQUIRED

Incidents in the Village

01/22/2017 02:47:17	MOUNTAIN	STRUCTURE FIRE - RESIDENTIAL
01/19/2017 21:15:13	KELVIN GROVE	MESA-D

Fundraising:

Presented BCCH, via Save on Foods, a cheque for \$5,000

Miscellaneous:

- The department has currently 31 members (including those undergoing pre-response training)
- **2017 – approx. total claimed from sources OUTSIDE the village = \$990.-**
- *MESA is an acronym for Medical Emergency Service Assist. The letter denotes the seriousness of the incident. A is minor and E is serious.*
- *Pre-Recruits are members who are volunteering for LBFR while endeavoring to get hired by career departments*
- *Pre-Response training is required before new recruits respond to calls*

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THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision		
Title	Utility User Rate Amendment Bylaws No. 514 and 515		
Author	Pamela Rooke	Reviewed By:	Peter DeJong
Date	February 2, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT the following bylaws be read a first, second and third time:

1. Water Rates and Regulations Bylaw No. 2, 1971, Amendment Bylaw No. 514, 2017
2. Sewer User Rates Bylaw No. 122, 1984, Amendment Bylaw No. 515, 2017

ATTACHMENTS

1. Bylaws No. 514 and 515 as set out above.

KEY INFORMATION

At the January 24, 2017 Regular Council Meeting, staff were directed to prepare the water, sewer and solid waste utility user rate bylaws in accordance with the draft budgets presented to Council indicating the revenue required for each service. The solid waste utility user rate bylaw will be presented at a special meeting to be held the week of February 13, 2017.

OPTIONS

1. Approve the recommendations above and give the bylaws three readings;
2. Amend the bylaws and then give them three readings;
3. Refer one or more of the bylaws back to staff for revisions.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

FOLLOW UP ACTION

Assuming three readings are given, the bylaws will be brought back to the next regular Council meeting for adoption.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



Water Rates and Regulations Bylaw No. 2, 1971, Amendment Bylaw No. 514, 2017

Adopted:

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

Water Rates and Regulations Amendment Bylaw No. 514, 2017

A bylaw to amend Water Rates and Regulations By-law No. 2, 1971

The Council of the Village of Lions Bay, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as "Water Rates and Regulations Bylaw No. 2, 1971, Amendment Bylaw No. 514, 2017".

2. Schedule "A" attached to Bylaw No. 2, 1971, as amended, is hereby deleted and the attached Schedule "A" is substituted therefore.

3. This bylaw shall take effect upon adoption.

READ A FIRST TIME

READ A SECOND TIME

READ A THIRD TIME

ADOPTED

Mayor

Corporate Officer

**Certified a true copy of
Water Rates and Regulations
Bylaw No. 2, 1971, Amendment
Bylaw No. 514, 2017 as adopted.**

Corporate Officer

SCHEDULE "A"

**Attached to and forming
part of Bylaw No. 2, 1971, as amended**

WATER USER RATES**Prompt Payment Discount**

1. Single Family Residence	\$1,504.00 per year	2.0%
2. Condominiums, Apartments	\$1,504.00 per year	2.0%
3. Businesses – Café/Restaurant	\$3,940.00 per year	2.0%
4. Businesses – Marina	\$3,940.00 per year	2.0%
5. Businesses – Other	\$1,035.00 per year	2.0%
6. Schools	\$3,940.00 per year	2.0%



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



Sewer User Rates Bylaw No. 122, 1984 Amendment Bylaw No. 515, 2017

Adopted:

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

Sewer User Rates Amendment Bylaw No. 515, 2017

A bylaw to amend Sewer User Rates By-law No. 122, 1984

The Council of the Village of Lions Bay, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as "Sewer User Rates Bylaw No. 122, 1984, Amendment Bylaw No. 515, 2017".
2. Schedule "A" attached to Bylaw No. 122, 1984, as amended, is hereby deleted and the attached Schedule "A" is substituted therefore.
3. This bylaw shall take effect upon adoption.

READ A FIRST TIME

READ A SECOND TIME

READ A THIRD TIME

ADOPTED

Mayor

Corporate Officer

**Certified a true copy of
Sewer User Rates Bylaw No. 122, 1984,
Amendment Bylaw No. 515, 2017 as adopted.**

Corporate Officer

SCHEDULE "A"

**Attached to and forming
part of Bylaw No. 122, 1984, as amended**

SEWER USER RATES

Prompt Payment Discount

- | | | |
|----------------------------|-------------------|------|
| 1. Single Family Residence | \$800.40 per year | 2.5% |
|----------------------------|-------------------|------|



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision Report		
Title	Election Procedures Amendment Bylaw No. 511, 2017		
Author	Peter DeJong	Reviewed By:	
Date	February 2, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017 be introduced and given first, second and third reading.

ATTACHMENTS

- (1) Draft Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017;
- (2) Draft Consolidation of Election Procedures Bylaw No. 474, 2014 showing tracked changes.

KEY INFORMATION

Further to the Chief Election Officer's By-Election Report, considered by Council at the December 20, 2016 regular meeting, staff have drafted the attached amending bylaw to address matters that were identified in the recent by-election as requiring amendments. The matters essentially revolve around three topics:

1. Providing the maximum time possible for mail ballot voting;
2. Handling of mail ballots once received; and
3. General streamlining and clean up of the bylaw.

Options:

- a. Give 3 readings to draft Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017;
- b. Amend and then give 3 readings to Bylaw No. 511;
- c. Refer the draft Bylaw No. 511 back to staff for further research and development.

Preferred Option: Give 3 readings to the draft Bylaw No. 511 as presented.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Follow-up: Assuming 3 readings, the bylaw will come back for adoption consideration on February 21, 2017. Staff is currently working on potential schedules for a by-election to fill the Council seat vacated by Eileen Wilke. Preliminary estimates are concentrated on dates in early to mid-June, 2017. Staff will provide further information as it becomes available.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



**Election Procedures Bylaw No. 474, 2014,
Amendment Bylaw No. 511, 2017**

Adopted:

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017

A bylaw to amend Bylaw No. 474, 2014

The Council of the Village of Lions Bay, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as "Election Procedures Bylaw No. 474, 2014, Amendment Bylaw No. 511, 2017".
2. The definition of "General Voting Day" in Section 1.3 of Election Procedures Bylaw No. 474, 2014 ("Bylaw 474") is amended by striking the word "November" and substituting the word "October".
3. Section 3.2 of Bylaw 474 is deleted and replaced with the following:

"3.2 Subject to restrictions under the Local Government Act, public access to nomination documents will be available via the internet or other electronic means."
4. Section 3.3 of Bylaw 474 is deleted and the subsequent sections in Part 3 are renumbered accordingly.
5. The renumbered section 3.5 of Bylaw 474 is amended by striking "97 (3)" and substituting "100 (2)".
6. Section 4.3 of Bylaw 474 is amended by adding the word "by" between the words "apply" and "giving" and striking "twenty-one (21) days" and substituting "twenty-six (26) days".
7. Section 4.4 of Bylaw 474 is deleted and replaced with the following:

"4.4 Upon receipt of a request for a mail ballot, the Chief Election Officer will, between the day after ballots are received from the printers, and 4:00 pm on the Monday before General Voting Day, make available to the mail ballot applicant, a mail ballot package as specified in Section 110 of the *Local Government Act*".

8. Section 4.9 of Bylaw 474 is deleted and the replaced with the following:

“4.9 Until 4 p.m. on the Thursday two days before General Voting Day, on receiving the outer envelope and its contents, the Chief Election Officer will, in the following order:

- (a) immediately record the date of receiving the outer envelope;
- (b) open the outer envelope and remove and examine the certification envelope and if applicable, the application for registration as an elector; and
- (c) mark the certification envelope as “accepted”, if satisfied as to:
 - i. the application for registration as an elector, if applicable;
 - ii. the identity and entitlement to vote of the elector whose ballot is enclosed; and
 - iii. the completeness of the elector’s certification,
- (d) mark the certification envelope as “challenged” if not satisfied as to the requirements in subsections 4.9 (c) (i) and (ii) and shall:
 - i. attempt to contact the elector and request they provide evidence satisfactory to the CEO that the person is entitled to vote; and
 - ii. reject and not count in the election the challenged certification envelope and its contents unless the CEO is satisfied that the person is entitled to vote.
- (e) advise the candidates, or their representatives, that they may review with the CEO and challenge, if applicable, under section 126 (2) of the *Local Government Act*, the certification envelopes with the CEO at 4 pm on the Thursday two days before General Voting Day, or as soon as possible thereafter, at a place specified by the CEO and, in the presence of at least one witness;
- (f) in the event of any challenges under subsection 4.9 (e) above, the CEO shall follow the procedure in subsection 4.9 (d) (i) and (ii).”

9. Sections 4.10 through 4.16 of Bylaw 474 are deleted and replaced with the following sections:

-
- “4.10 Any certification envelopes received after 4 pm the Thursday two days before General Voting Day shall be dealt with in the same manner as specified in subsections 4.9 (a) through (d) and all certification envelopes will remain, unopened, in the custody of the Chief Election Officer until the close of voting on General Voting Day.
- 4.11 After the close of voting on General Voting Day, unless the right of a person voting by mail ballot has been challenged and not resolved in favour of the person being permitted to vote, the Chief Election Officer will remove all secrecy envelopes from accepted certification envelopes and deposit the ballots inside the secrecy envelopes into the ballot box for mailed in ballots.
- 4.12 If there are fewer than 25 accepted certification envelopes, the ballots contained therein shall be deposited into the ballot box for advance voting and that ballot box may then be opened and the ballots counted in accordance with Part 3, Division 14, of the *Local Government Act*.
- 4.13 Any certification envelopes received after the close of voting on General Voting Day shall remain unopened and not counted in the election.
- 4.14 The Chief Election Officer will retain and treat all certification envelopes in the same manner as for a voting book. “
10. Delete subsection 5.2 (c) of Bylaw 474 and renumber the subsequent subsections accordingly.
11. Add the words “, on the day of such proceedings;” to the end of subsection 5.2 (e) of Bylaw 474.
12. Add the following as section 5.4 to Bylaw 474:
- “5.4 Sections 5.2 and 5.3 do not apply to the Village.”

-
13. Section 7.1 of Bylaw 474 is amended by striking the words: “, three times and in conjunction with the use of a tallying sheet to confirm accuracy of results” and replacing them with the following: “under the direction of the Chief Election Officer.”

READ A FIRST TIME	February __, 2017
READ A SECOND TIME	February __, 2017
READ A THIRD TIME	February __, 2017
ADOPTED	February __, 2017

Mayor

Corporate Officer

Certified a true copy of Election Procedures Bylaw No. 474, 2014,
Amendment Bylaw No. 511, 2017 as adopted

Corporate Officer



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



**Election Procedures Bylaw
Bylaw No. 474, 2014**

**Draft Consolidation
(Tracked Changes & Comments)**

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

A BYLAW TO PROVIDE FOR THE VARIOUS PROCEDURES FOR THE CONDUCT OF LOCAL GOVERNMENT
ELECTIONS AND OTHER VOTING OPPORTUNITIES WITHIN THE MUNICIPALITY

WHEREAS pursuant to the Local Government Act, Council of the Municipality of the Village of Lions Bay may, by bylaw, determine various procedures and requirements to be applied in the conduct of local government elections and other voting opportunities;

AND WHEREAS pursuant to the Local Government Act the Council may, by bylaw, determine various other procedures and requirements to be applied to the conduct of local government elections and other voting;

AND WHEREAS the Council of the Municipality of the Village of Lions Bay wishes to establish various procedures and requirements under these authorities;

NOW THEREFORE Council of the Municipality of the Village of Lions Bay, in open meeting assembled, enacts as follows:

PART 1 – CITATION, REPEAL AND INTERPRETATION

CITATION

1.1 This bylaw may be cited as “Election Procedures Bylaw 474, 2014.”

REPEAL OF PREVIOUS BYLAWS

1.2 The following bylaws are hereby repealed:

Bylaw #220 *Elections Regulations 1993*;

Bylaw #375 *Lions Bay Register of Electors*; and

Bylaw #429 *Mail Ballot Authorization and Procedure Bylaw*.

DEFINITIONS

1.3 In this Bylaw,

“*Chief Election Officer*” or “*CEO*” means the person appointed under section 41 of the *Local Government Act*, and in the absence or inability to act of the Chief Election Officer, the person appointed as deputy chief election officer;

“*election*” *sign* means a sign promoting a political party or a candidate for office in a federal, provincial, municipal or school trustee election or by-election, or for a cause or part in relation to a referendum or other voting;

“*General Voting Day*” means:

the third Saturday of **October** in the year of a general local election;

the Saturday set for a by-election or other voting under the *Local Government Act*;

Commented [CAO1]: Per changes to Local Government Act and 4 year terms

Deleted: November

“other voting” means voting under Part 4 of the *Local Government Act* [assent of the electors/referendum]; and

“Village” means the Village of Lions Bay.

- 1.4 Words and phrases in this Bylaw shall be interpreted consistently with the *Local Government Act* and the Interpretation Act. Any reference to a statute in this Bylaw refers to a statute of the Province of British Columbia, and a reference to an enactment includes the enactment as amended or replaced from time to time. Headings are for convenience only and do not limit, expand or modify the scope of any provisions herein. If any part, section, subsection or paragraph of this bylaw is held to be invalid by a court of competent jurisdiction, it shall be severed and the remainder of the bylaw shall remain valid and in effect.

PART 2 - REGISTRATION OF ELECTORS

- 2.1 The most current provincial list of voters prepared under the *Election Act* that is available at the time of an election or other voting shall become the register of resident electors for the Village for such election or other voting.
- 2.2 The Provincial list of voters shall become the register of resident Electors no later than 52 days before General Voting Day for any election or other voting held in the municipality.

PART 3 – GENERAL PROCEDURES

Proceedings Before the Poll

- 3.1 The Chief Election Officer will order ballot papers and other supplies for the purposes of the Election and will see to the provision of ballot boxes and polling booths, the rental of necessary premises and all other physical arrangements for the holding of the Election. The Chief Election Officer will arrange for polling clerks to efficiently and expeditiously conduct the Election.

Access to Documents

- 3.2 Subject to restrictions under the Local Government Act, public access to nomination documents will be available via the internet or other electronic means.

Commented [CAO2]: “Nomination Documents” includes the other documents mentioned below. Section numbers have changed and bylaw should not reference specific sections, if possible, as they may change (and have) and one does not want to be limited in the bases upon which they are relying, in this case, to restrict access (general principle in bylaw writing)

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Additional General Voting Opportunities

- 3.3 The Chief Election Officer may establish additional voting opportunities for General Voting Day for each election or for other voting, and for this purpose may:
- (a) designate the location of voting places, and
 - (b) set the voting hours, up to 8 p.m. on General Voting Day.

Deleted: As authorized by Section 93(2) of the *Local Government Act*, public access to disclosure statements, signed declarations, and supplementary reports will be available via the internet or other electronic means.¶
Use of information contained in the documents described in sections 3.2 and 3.3 is subject to restrictions established under the *Local Government Act*, section 73 (8) and 93 (3) respectively.

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Required Advance Voting Opportunities

- 3.4. An advance voting opportunity will be held on the 10th day (Wednesday) before General Voting Day, between the hours of 8 a.m. and 8 p.m.
- 3.5. Pursuant to section 107 (2) of the *Local Government Act*, no other advance voting opportunity will be held.

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Commented [CAO3]: Specific Authority so okay to specifically reference it.

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Deleted: 97 (3)

PART 4 - MAIL BALLOT AUTHORIZATION & PROCEDURE

Mail Ballot Authorization

- 4.1 An elector who:
 - (a) has a physical disability, illness, or injury that affects their ability to vote at another voting opportunity; or
 - (b) expects to be absent from the Village of Lions Bay on General Voting Day and at the times of all advance voting opportunities
 may vote by mail ballot in accordance with this Bylaw.
- 4.2 A person applying to vote by mail ballot may also apply to register as an elector in conjunction with voting by mail ballot.

Mail Ballot Application Procedure

- 4.3 A person wishing to vote by mail ballot, and to register as an elector for that purpose, must apply by giving their name and address to the Chief Election Officer during the period commencing twenty-six (26) days before General Voting Day and ending at 4:00 pm on the Monday before General Voting Day.
- 4.4 Upon receipt of a request for a mail ballot, the Chief Election Officer will, between the day after ballots are received from the printers and 4:00 pm on the Monday before General Voting Day, make available to the mail ballot applicant, a mail ballot package as specified in Section 110 of the *Local Government Act*.
- 4.5 The Chief Election Office will record and make available for inspection, upon request by any person, the name and address of the person to whom the mail ballot package was issued.
- 4.6 It is the obligation of the applicant for a mail ballot to ensure that the completed certification envelope and ballot is received by the Chief Election Officer before the close of voting on General Voting Day.

Commented [CAO4]: Date on which CEO declares election or acclamation

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Commented [CAO5]: Earliest date we can possibly release mail ballot packages

Deleted: of advanced voting

Commented [CAO6]: Contains all the requirements for the CEO to follow. The package, in turn, contains all of the requirements in the Act for the applicant to follow. Don't need wording below, which does not mirror the wording of the requirements in the Act.

Deleted: 100

Deleted: (7)

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Mail Ballot Voting Procedure

- 4.7 To vote using a mail ballot, the elector must mark the ballot in accordance with the instructions contained in the mail ballot package provided by the Chief Election Officer.
- 4.8 After marking the ballot, the elector must:
 - (a) place the ballot in the secrecy envelope provided and seal the secrecy envelope;
 - (b) place the secrecy envelope in the certification envelope, and complete and sign the certification printed on such envelope, and then seal the certification envelope;

Deleted: together with an application to register as an elector, if applicable, and a statement advising that the applicant must attest that he or she:¶
meets the requirements for being an elector under the *Local Government Act*; ¶
meets the requirements of Section 4.1 of this Bylaw [section 100 (2) of the *Local Government Act*] for mail ballot voting; and¶
has not previously voted in the election and will not afterwards vote again in the election.

- (c) place the certification envelope, together with a completed elector registration application, if required, in the outer envelope, and then seal the outer envelope;
- (d) mail, or have delivered, the outer envelope and its contents to the Chief Election Officer at the address specified so that it is received no later than the close of voting on General Voting Day.

Mail Ballot Acceptance or Rejection

- 4.9 Until 4 p.m. on the Thursday two days before General Voting Day, on receiving the outer envelope and its contents, the Chief Election Officer will, in the following order:
- (a) immediately record the date of receiving the outer envelope;
 - (b) open the outer envelope and remove and examine the certification envelope and if applicable, the application for registration as an elector; and
 - (c) mark the certification envelope as "accepted", if satisfied as to:
 - i. the application for registration as an elector, if applicable;
 - ii. the identity and entitlement to vote of the elector whose ballot is enclosed; and
 - iii. the completeness of the elector's certification,
 - (d) mark the certification envelope as "challenged" if not satisfied as to the requirements in subsections 4.9 (c) (i) and (ii) and shall:
 - i. attempt to contact the elector and request they provide evidence satisfactory to the CEO that the person is entitled to vote; and
 - ii. reject and not count in the election the challenged certification envelope and its contents unless the CEO is satisfied that the person is entitled to vote.
 - (e) advise the candidates, or their representatives, that they may review with the CEO and challenge, if applicable, under section 126 (2) of the Local Government Act, the certification envelopes with the CEO at 4 pm on the Thursday two days before General Voting Day, or as soon as possible thereafter, at a place specified by the CEO and, in the presence of at least one witness;
 - (f) in the event of any challenges under subsection 4.9 (e) above, the CEO shall follow the procedure in subsection 4.9 (d) (i) and (ii).

Custody and Counting of Mailed Ballots

- 4.10 Any certification envelopes received after 4 pm the Thursday two days before General Voting Day shall be dealt with in the same manner as specified in subsections 4.9 (a) through (d) and all certification envelopes will remain, unopened, in the custody of the Chief Election Officer until the close of voting on General Voting Day.
- 4.11 After the close of voting on General Voting Day, unless the right of a person voting by mail ballot has been challenged and not resolved in favour of the person being permitted to

Commented [CA07]: Amendments below are to align procedure with intent of challenge provisions in LGA s.126

Deleted: mark the certification envelope as "accepted". ¶

Deleted: 4.10

Deleted: If, on reviewing a certification envelope, the Chief Election Officer is not satisfied as to the identity of the elector whose ballot is enclosed or as to the sufficiency of the certification:¶
 (a) the CEO shall mark that envelope as "rejected" and note the reasons for the rejection; and ¶
 (b) the rejected certification envelope and its contents must remain unopened and any ballot contained therein must not be counted in the election.

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Deleted: The Chief Election Officer must treat any certification envelope in an outer envelope received after the close of voting on General Voting Day in the same manner as for rejected envelopes in section 4.10. ¶

Commented [CA08]: Streamlining of procedure in sections below.

Deleted: 2

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Deleted: marked as "accepted"

Deleted: 4 p.m. on the Thursday two days before

Deleted: , in order to deal with any challenges brought under **section 116 of the Local Government Act.**

Deleted: 4.13

Deleted: As soon as possible after 4 p.m. on the Thursday two days before General Voting Day, the Chief Election Officer will, at a place specified by the CEO and, in the presence of at least one witness, including any candidate representatives who are present, will open the certification envelopes, and remove the secrecy envelopes. ¶
4.14

Deleted: Unless the right of a person voting by mail ballot has been challenged and not resolved in favour of the person being permitted to vote, the Chief Election Officer will deposit all secrecy envelopes received into a ballot box specified for this purpose until after the close of voting on General Voting Day. For any outer envelope received thereafter and until the close of voting on General Voting Day, the CEO will **follow the procedures of sections 4.9 and 4.10.** ¶

Deleted: 5

vote, the Chief Election Officer will remove all secrecy envelopes from accepted certification envelopes and deposit the ballots inside the secrecy envelopes into the ballot box for mailed in ballots.

- Deleted: any
- Deleted: ballots
- Deleted: them

4.12 If there are fewer than 25 accepted certification envelopes, the ballots contained therein shall be deposited into the ballot box for advance voting and that ballot box may then be opened and the ballots counted in accordance with Part 3, Division 14, of the Local Government Act.

Commented [CAO10]: Won't work because there will certainly be less than 25 ballots – therefore, will need to be combined.

4.13 Any certification envelopes received after the close of voting on General Voting Day shall remain unopened and not counted in the election.

- Deleted: !
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- Deleted: at a place specified by the CEO and,
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4.14 The Chief Election Officer will retain and treat all certification envelopes in the same manner as for a voting book.

PART 5 ELECTION ADVERTISING

Use of Municipal Logos

5.1 Other than as expressly authorized in writing by the Village, no person shall use or display on any election sign or other form of election advertising a logo, trademark or official mark, in whole or in part, that is owned or licensed by the Village.

Election Signs

5.2 A person responsible for posting, erecting or otherwise displaying an election sign must ensure the sign:

- (a) is not illuminated and does not flash;
- (b) does not obstruct or otherwise interfere with sight lines or movement of vehicles, pedestrians, cyclists or any other highway traffic, or obstruct the visibility of regulatory signs or other traffic control devices;
- (c) is not attached to a utility pole or apparatus or a street light pole;
- (d) is not posted on or attached to the Village Hall or other Village structure or located on the lot thereof;
- (e) is not located or displayed within 100 metres of a building, structure or other place where voting proceedings are being conducted, on the day of such proceedings;
- (f) as part of a structure, does not stand higher than 2.5 metres above the ground supporting the structure; or
- (g) is not, on any single side, more than 3.0 square metres in area.

Deleted: <#>is not located within 0.5 metres of a sidewalk or walkway, within 15 metres of a fire hydrant or within 3.0 metres of a roadway;¶

5.3 A person must not post, erect or display an election sign earlier than 30 days before the date of a General Voting Day, and must remove any such signs within 72 hours after General Voting Day.

5.4 Sections 5.2 and 5.3 do not apply to the Village.

PART 6 VOTING PLACE PROCEDURES

- 6.1 As soon as an elector enters a voting place, he or she must proceed to an election official and follow any directions given by that official for producing identification, registering to vote, signing a written declaration, signing the list of electors or the voting book and obtaining assistance, as applicable.
- 6.2 After receiving a ballot, the elector must:
 - (a) immediately proceed to a voting booth provided;
 - (b) while the ballot is screened from observation, mark it by making a cross or tick in the blank space opposite the name of the candidate or candidates for whom the elector wishes to vote; and
 - (c) in the case of other voting (on a bylaw or other matter for which the assent or an opinion of the electors is sought), place a mark beside either "yes" or "no" on the ballot;
 - (d) fold the ballot to conceal all marks made on it;
 - (e) deposit the ballot in the sealed ballot box to which the elector has been directed; and
 - (f) leave the voting place without delay.

Replacement of Spoiled Ballot

- 6.3 If, before inserting the ballot into the ballot box, an elector determines that he or she has made a mistake when marking the ballot, the elector may request a replacement ballot by advising the presiding election official, who will then issue a replacement ballot to that elector, mark the original ballot as spoiled, and retain the spoiled ballot for return to the Chief Election Officer.

PART 7 CLOSE OF VOTING

- 7.1 Ballots will be considered and counted manually, under the direction of the Chief Election Officer. 7.2 If a recount is required it shall be conducted under the direction of the Chief Election Officer.

Deleted: three times and in conjunction with the use of a tallying sheet to confirm accuracy of results.

Commented [CAO12]: CEO should have discretion to perform his/her functions as he/she sees fit. Should not be too prescriptive as it may preclude finding better ways to do things. Current practice is to use a tally sheet and bundle after each 25 votes, so that won't change until there's a better way to do it. But shouldn't be in bylaw.

Deleted: ¶

Resolution of Tie Vote

- 7.3 In the event of a tie vote after a judicial recount, the tie vote will be resolved by conducting a lot in accordance with the *Local Government Act*.

READ A FIRST TIME	May 6, 2014
READ A SECOND TIME	May 6, 2014
READ A THIRD TIME	June 17, 2014
ADOPTED	July 22, 2014

Village of Lions Bay
Election Procedures Bylaw No. 474, 2014

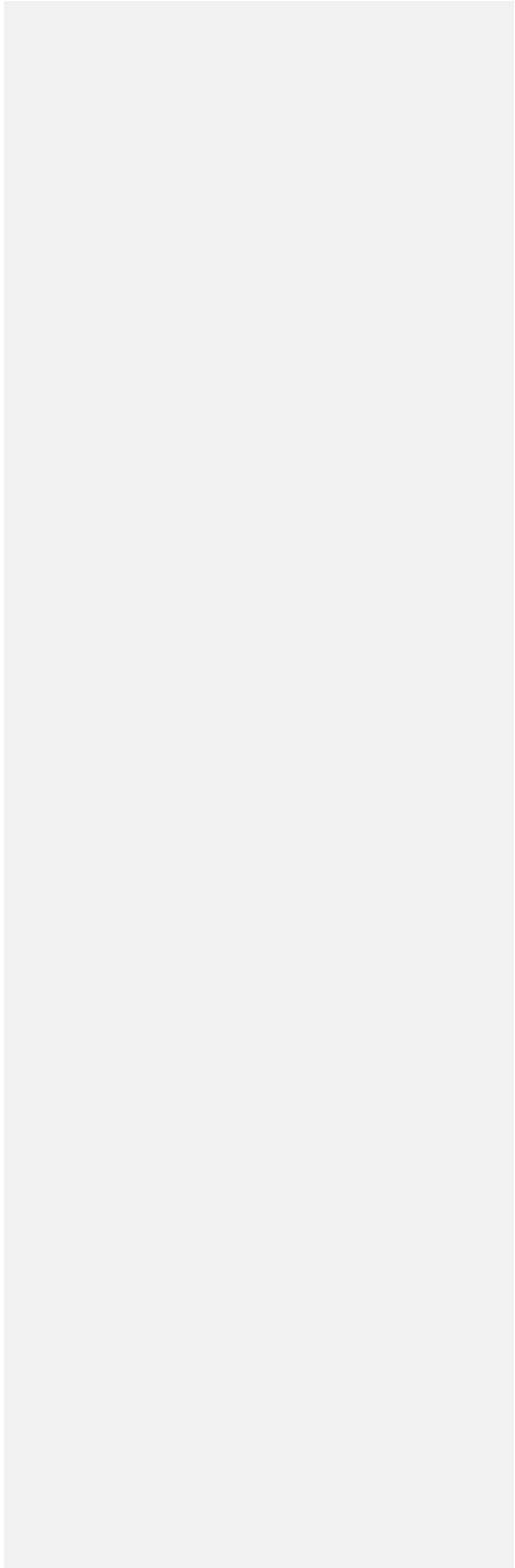
Page 8

Mayor

Corporate Officer

**Certified a true copy of
Bylaw No. 474, 2014 as adopted.**

Corporate Officer



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THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Report to Council		
Title	Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017		
Author	Pamela Rooke	Reviewed By:	Peter DeJong
Date	January 30, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT the Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017 be adopted.

ATTACHMENTS

1. Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017

KEY INFORMATION

A resolution was passed at the January 10, 2017 Regular Council Meeting directing staff to prepare a bylaw to repeal Sewer Parcel Tax By-law #108, 1982. The Repeal Bylaw was read a first, second and third time at the January 24, 2017 Council Meeting.

COMMUNICATION PLAN

A letter will be sent to Kelvin Grove property owners with the 2017 Utility Notice explaining the changes made to the sewer revenue and the impact on their property tax and utility notices.

FOLLOW UP ACTION

The sewer revenue adjustments will be incorporated into the 2017 – 2021 Five Year Financial Plan.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017

Adopted:

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

Bylaw No. 512, 2017

Village of Lions Bay Sewer Parcel Tax Bylaw Repeal

A bylaw to repeal Village of Lions Bay Sewer Parcel Tax By-law #108, 1982

WHEREAS the Village of Lions Bay wishes to consolidate its sewer cost recoveries under the Sewer User Rates Bylaw;

NOW THEREFORE the Council of the Village of Lions Bay, in open meeting assembled, enacts as follows:

1. This bylaw may be cited for all purposes as “Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, Repeal Bylaw No. 512, 2017.”
2. Village of Lions Bay Sewer Parcel Tax By-law #108, 1982, as amended, is hereby repealed.
3. For clarity, the following amending bylaws are also hereby repealed:
 - (a) Sewer Parcel Tax By-law #108, 1982, Amendment Bylaw No. 504, 2016;
 - (b) Sewer Parcel Tax By-law #108, 1982, Amendment Bylaw No. 487, 2015;
 - (c) Sewer Parcel Tax By-law #108, 1982, Amendment Bylaw No. 470, 2014;
 - (d) Sewer Parcel Tax By-law #108, 1982, Amendment Bylaw No. 459, 2013;
 - (e) Sewer Parcel Tax By-law #108, 1982, Amendment Bylaw No. 436, 2011;
 - (f) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 294, 1999;
 - (g) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 274, 1998;
 - (h) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 265, 1997;
 - (i) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 250, 1996;
 - (j) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 239, 1995;
 - (k) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 221, 1994;
 - (l) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 214, 1993;
 - (m) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 201, 1992;
 - (n) Sewer Parcel Tax By-law #108, 1982, Amendment By-law No. 163, 1988;

READ A FIRST TIME

THIS 24TH DAY OF JANUARY, 2017

READ A SECOND TIME

THIS 24TH DAY OF JANUARY, 2017

READ A THIRD TIME

THIS 24TH DAY OF JANUARY, 2017

ADOPTED

THIS ___ DAY OF _____, 2017

Mayor

Corporate Officer

**Certified a true copy of
Village of Lions Bay Sewer
Parcel Tax By-law #108, 1982,
Repeal Bylaw No. 512, 2017 as adopted.**

Corporate Officer



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Report to Council		
Title	Secondary Suite Surcharge Bylaw No. 513, 2017		
Author	Pamela Rooke	Reviewed By:	Peter DeJong
Date	January 30, 2017	Version	
Issued for	February 7, 2017 Regular Council Meeting		

RECOMMENDATION

THAT Secondary Suite Surcharge Bylaw No. 513, 2017 be adopted.

ATTACHMENTS

1. Draft Secondary Suite Surcharge Bylaw No. 513, 2017

KEY INFORMATION

Secondary Suite Surcharge Bylaw No. 513, 2017 was read a first, second and third time at the January 24, 2017 Council Meeting.

COMMUNICATION PLAN

The new bylaw will be posted on the website.



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY



Secondary Suite Surcharge Bylaw No. 513, 2017

Adopted:

PO Box 141, 400 Centre Road, Lions Bay, BC V0N 2E0
Phone: 604-921-9333 Fax: 604-921-6643
Email: office@lionsbay.ca Web: www.lionsbay.ca

Secondary Suite Surcharge Bylaw No. 513, 2017

A bylaw to provide for Secondary Suite utilities surcharges

The Council of the Village of Lions Bay, in open meeting assembled, enacts as follows:

Citation

1. This bylaw may be cited for all purposes as "Secondary Suite Surcharge Bylaw No. 513, 2017".

Repeal

2. Secondary Suite Surcharge Bylaw No. 442 is hereby repealed.

Definitions

3. In this bylaw:
 - (a) *immediate family members* means parents, brothers, sisters, children (including adopted and step children), father-in-law, mother-in-law, sister-in-law and brother-in-law, and in addition, other relatives in the case that they are being supported financially by the property owner;
 - (b) *occupied* means as occupied at any time during the calendar year.
4. If any section or other part of this bylaw is held invalid by a court, the invalid portion shall be severed and the remainder of this bylaw is deemed to have been adopted without the severed portion.
5. If a property contains a secondary suite, the property owner must pay a secondary suite surcharge. The property owner will be exempted from the surcharge if the secondary suite is not *occupied*, or if the suite is accommodating the property owner's *immediate family members*.
6. The secondary suite surcharge for an applicable property shall be based on and added to the property's annual municipal charges for utilities, before prompt payment discount. The rate of the surcharge shall be 40% of the property's utility billing for garbage and recycling collection, water and, where applicable, sewer.
7. When remitting annual Village utility charges, all property owners must certify:

- (a) whether the property contains a secondary suite;
- (b) if so, whether the secondary suite is occupied; and
- (c) if so, whether the secondary suite is accommodating the homeowner's *immediate family members*.

8. Every person who:

- (a) makes a false report under Section 7 of this bylaw, or
- (b) neglects to report under Section 7 and is later found to have a secondary suite on the property,

shall be deemed to have committed an offence and, upon a summary conviction, is liable to a minimum fine of \$2,000 and a maximum fine of \$10,000.

9. Despite section 8, this bylaw is designated under section 264(1)(a) of the *Community Charter* as a bylaw that may be enforced by means of a municipal ticket information under the *Community Charter*, and is also designated under section 4 of the *Local Government Bylaw Notice Enforcement Act* as a bylaw that may be enforced by means of a bylaw notice, in which case contravention of this bylaw shall not constitute the commission of an offence.

READ A FIRST TIME
READ A SECOND TIME
READ A THIRD TIME
ADOPTED

January 24th, 2017
January 24th, 2017
January 24th, 2017
February __, 2017

Mayor

Corporate Officer

Certified a true copy of Secondary Suite Surcharge Bylaw No. 513, 2017

 Corporate Officer

VILLAGE OF LIONS BAY

Incoming Correspondence - February 7, 2017

General Correspondence:

G-1: "Lets Talk" Housing Report (Page 1)

G-2: Notice of Taxi License Application to Passenger Transportation Board (Page 11)

G-3: Air Quality Symposium/Joint Meeting (Page 20)

Resident Correspondence:

R-1: Louis Peterson (Page 22)

R-2: Trudi Luethy (Page 23)

R-3: Marcus and Brigitta von Krosigk (Page 24)

The City of North Vancouver
OFFICE OF MAYOR DARRELL MUSSATTO



January 19, 2017

Mayor Karl Buhr
Village of Lions Bay
PO Box 141
400 Centre Road
Lions Bay, BC V0N 2E0

Dear Mayor Buhr:

Further to North Vancouver City Council's unanimous resolution of December 12, 2016 (attached), I am writing to request that your Council consider passing a similar motion to write to the Federal Government in follow up to the release of the "Let's Talk" Housing Report (What we Heard: Shaping Canada's National Housing Strategy). I enclose a copy of my letter to Prime Minister Justin Trudeau outlining the City of North Vancouver's efforts to support affordable housing in our community, and urging the Federal Government to continue to include stakeholder feedback in the development of the National Housing Strategy so that it will most effectively address our local issues of homelessness, affordable housing and diminishing vacancy rates.

Through the North Shore Congress, we are working together to address key community issues that affect the health and social wellbeing of all North Shore residents. In responding to the "Let's Talk" Housing Report, our voices together would send a stronger message to the Government of Canada that there is an immediate need to take effective action that will improve the availability and affordability of housing on the North Shore across the housing continuum.

Thank you for your consideration of this request. We look forward to continuing to work with you on this and other important multi-jurisdictional issues that impact the wellbeing of our residents.

Yours sincerely,

Darrell Mussatto
Mayor

Encl.

cc North Vancouver City Council

The City of North Vancouver
OFFICE OF MAYOR DARRELL MUSSATTO



January 19, 2017

The Right Honourable Justin Trudeau, PC, MP
Prime Minister of Canada
80 Wellington Street
Ottawa, ON K1A 0A2

COPY

Dear Prime Minister Trudeau:

Further to North Vancouver City Council's unanimous resolution on December 12, 2016 (attached), and in follow up to my October 19, 2016 letter (attached), I write to provide further context on the City of North Vancouver's efforts to address the unmet housing needs of City residents across the housing continuum in advance of the release of the Government of Canada's National Housing Strategy later this year.

Housing affordability continues to be a top priority for City Council and over the last several years, in the absence of adequate senior government support, the City of North Vancouver has made a significant effort to use the resources at our disposal to mitigate affordability gaps and unmet housing needs. Since the early 1990s, the City has facilitated the replacement, renewal and creation of affordable and rental housing units, including over 360 non-market and special needs units and 725 market rental units. Many of these projects were made possible through additional Council allowances, including additional density, waived fees and charges, and contributions from the City's Affordable Housing Reserve Fund. The following list outlines several affordable housing projects and policies that the City has supported since this time.

- In 1998, Adaptable Design Guidelines were adopted so that adaptations to many City units can be easily and inexpensively done to facilitate independent living and support aging in place.
- In 1999, the City supported a significant density bonus and density transfer, as well as relaxation of parking requirements to facilitate the development of Summerhill Residences that includes 107 units of supportive rental housing for seniors, with all units designed to Adaptable Design Level 3.
- In 2005, the City of North Vancouver supported the opening of the Lookout Society's North Shore Housing Centre and Shelter through purchase of the site, offering a discounted lease to the Society, waiving fees and development cost charges, and advocacy to secure sufficient capital and operating funds from senior governments. The City also funds a Community Liaison Worker and a staff member from the Salvation Army to provide outreach services to individuals who are homeless, at risk of homelessness and low-income.
- In 2007, 27-units of below-market seniors housing were achieved at Kiwanis St. Andrew's through density bonusing, density transfer and exclusion of floor area, as well as waiving of \$140,000 in fees and development cost charges.
- In 2008, the City secured 6 units of supportive seniors housing – all Adaptable Design Level 2 – in 'The Kimpton' project in Central Lonsdale. Under City ownership, these units are leased to Hollyburn Family Services Society for operation as supportive seniors housing for low income seniors.

...Page 2

January 19, 2017

The Right Honourable Justin Trudeau, PC, MP

- In 2011, the City supported an innovative partnership between the Army, Navy and Air Force Veterans Society (ANAVETS) and a developer to redevelop older seismically unsound rental building stock with 72 units of below-market seniors housing. The City supported a density bonus, a reduction of parking requirements by half, and a waiver of \$211,000 in development cost charges in order to facilitate this project.
- In 2012, the City secured 10,000 sq. ft. of affordable housing floor area in a new development at 13th and Lonsdale; this area will be sold to the YWCA to support the needs of hard to house single mothers who need strong support systems.
- In 2014, the City embarked on a Multiple Unit Residential Building Retrofit Pilot Project that aims to help existing rental building owners to renew and extend the life of existing rental buildings without eviction of tenants.
- In 2016, Council endorsed a policy which requires developers to provide enhanced notice and assistance to tenants who are displaced through redevelopment of existing rental buildings.

In addition to these significant contributions to housing in our community, the changes to the City's Zoning Bylaw to support secondary suites in single-family dwellings and duplexes, and particularly the change to permit coach houses, have offered new opportunities for seniors and other residents to age in place in multi-generational homes and living arrangements. Furthermore, City staff have created a Housing Action Plan to establish goals and strategies to address the housing needs of City residents. You can read about our work in this regard on our website at www.cnv.org/housingactionplan. We continue to explore ways of creating more affordable rental and homeownership options for City residents, including reducing the minimum lot size to allow for smaller lots and allowing secondary suites and coach houses in single family lots to help increase the availability of rental housing and serve as mortgage helpers.

The City of North Vancouver looks forward to increased support from the Federal Government in addressing the housing needs of residents across the housing continuum. We respectfully urge your government to continue to include all stakeholders – including local governments – in the drafting and reviewing of the National Housing Strategy.

Thank you for your consideration of our further feedback, and we look forward to the release of the National Housing Strategy.

Yours sincerely,



Darrell Mussatto
Mayor

Encl. (2)

January 19, 2017

The Right Honourable Justin Trudeau, PC, MP

cc: Honourable Jean-Yves Duclos, Minister of Families, Children and Social Development
Honourable Christy Clark, Premier of BC
Terry Beech, MP, Burnaby North-Seymour
Pamela Goldsmith-Jones, MP, West Vancouver-Sea to Sky
Jonathan Wilkinson, MP, North Vancouver
Honourable Rich Coleman, Minister Responsible for Housing
Honourable Naomi Yamamoto, MLA for North Vancouver – Lonsdale
Jordan Sturdy, MLA for West Vancouver – Sea to Sky
Ralph Sultan, MLA for West Vancouver – Capilano
Jane Thornthwaite, MLA for North Vancouver – Seymour
Mayor Karl Buhr and Council, Village of Lions Bay
Mayor Murray Skeels and Council, Municipality of Bowen Island
Mayor Michael Smith and Council, District of West Vancouver
Mayor Richard Walton and Council, District of North Vancouver
North Vancouver City Council

MINUTES OF THE REGULAR MEETING OF COUNCIL HELD IN THE COUNCIL CHAMBER, CITY HALL, 141 WEST 14th STREET, NORTH VANCOUVER, BC, ON MONDAY, DECEMBER 12, 2016.

11. City Homelessness Initiatives and Activities – File: 09-4000-01-0001/2016

Report: Planner 1 and Manager, Bylaw Services, December 7, 2016

Moved by Councillor Keating, seconded by Councillor Buchanan

PURSUANT to the report of the Planner 1 and Manager, Bylaw Services, dated December 7, 2016, entitled “City Homelessness Initiatives and Activities”:

THAT a letter from the Mayor, substantially in the form presented as Attachment #1, be sent to the District of North Vancouver and the District of West Vancouver requesting each municipality to match the financial contributions provided by the City of North Vancouver towards Homeless Outreach Services and to work in partnership with the City to explore more effective ways to address the issue of homelessness on the North Shore, with a copy to Premier Christy Clark, the Minister Responsible for Housing and the local MLA’s;

THAT a letter from the Mayor, substantially in the form presented as Attachment #2, be sent to Vancouver Coastal Health requesting an expansion in its efforts to provide services and supports for homeless individuals who have mental health and addictions issues, with a copy to Premier Christy Clark, Minister Rich Coleman, Minister Responsible for Housing and the local MLA’s;

AND THAT a letter from the Mayor be sent to Premier Christy Clark requesting that additional funding be identified to address homelessness issue on the North Shore, with a copy of the letter sent to the Minister Responsible for Housing and the local MLA’s.

CARRIED UNANIMOUSLY

Moved by Councillor Buchanan, seconded by Councillor Bell

THAT the North Shore Congress be requested to write a letter to Prime Minister Justin Trudeau to provide feedback in response to the “Let’s Talk” Housing Report (What we Heard: Shaping Canada’s National Housing Strategy) that was issued in November 2016 by the Federal Government to explore effective ways to address the issue of housing;

Continued . . .

THAT the letter include examples of initiatives that the North Shore municipalities have done to address housing across the continuum and be sent in advance of the National Housing Strategy release in 2017;

AND THAT a copy of the letter be sent to Minister Duclos, Minister of Families, Children and Social Development, Premier Christy Clark, Minister Rich Coleman, Minister Responsible for Housing, local MP's and local MLA's.

CARRIED UNANIMOUSLY

Moved by Mayor Mussatto, seconded by Councillor Bell

THAT Dr. Paul Kershaw, Associate Professor, UBC, School of Population and Public Health, and Founder, Generation Squeeze, be invited to a future Council meeting to present on the issue of housing affordability.

CARRIED UNANIMOUSLY

The City of North Vancouver
OFFICE OF MAYOR DARRELL MUSSATTO



October 19, 2016

The Honourable Jean-Yves Duclos
Minister Responsible for Canada Mortgage and Housing Corporation
700 Montreal Road
Ottawa, ON K1A 0P7

Dear Minister Duclos:

Re: City of North Vancouver Input on the National Housing Strategy

Further to the City of North Vancouver Council Resolution on October 17, 2016 (attached), I am writing to respectfully submit the City of North Vancouver's feedback to you and the National Housing Strategy Team on the development of a new National Housing Strategy. After decades of lobbying the Government of Canada for increased funding and supports for affordable housing, I commend the federal government's leadership in providing new funding opportunities for affordable housing and developing this much-needed Strategy.

Residents in the City of North Vancouver have repeatedly told Council that housing affordability is their number one issue of concern. Many individuals and families are struggling in the City to find safe, appropriate, and affordable housing and have resorted to unsustainable and, in some instances, unsafe living situations. A comprehensive and proactive National Housing Strategy would have real impacts in this community and improve the lives of everyday Canadians.

As a local government, the City can attest to the importance of federal government participation in housing. Due to recent years of limited federal housing investment, local residents of all income levels are facing increasing challenges in the housing market with high housing prices in the ownership market, high rents and low vacancy rates in the rental market, and long wait lists in aging non-market housing. The inability of many individuals to be housed in the community where they work not only takes away valuable time from their families, friends, and other life pursuits, but is further crippling to our community in relation to local economic development, transportation impacts, and overall quality of life. The scale of the challenges faced today, along with the limited authority provided to local governments, has limited new development of affordable housing to well below what is required to meet the growing demand for quality, affordable housing in the Metro Vancouver region.

In light of this experience as a local government, the City of North Vancouver is very pleased to provide input on the National Housing Strategy. The City plays a vital role, together with non-profit and private sector housing providers, in the delivery of housing across the continuum. Federal support that strengthens local partnerships and supports local priorities and capacity is essential. The City therefore asks that the following issues be considered in the development of the National Housing Strategy:

General Recommendation

- Include local governments as key participants and collaborators on the creation and implementation of the National Housing Strategy considering the role that local governments have in land use planning, zoning regulation, and overall community development;

...Page 2

PAGE 7

The Honourable Jean-Yves Duclos
October 19, 2016

Funding Recommendations

- Earmark a minimum of 10 years of funding to support the delivery of the goals established in the National Housing Strategy;
- Prioritize federal infrastructure investments in affordable housing development, rehabilitation, and maintenance based on population and housing needs;
- Coordinate housing investment and seize the opportunity to create long-term affordable housing investments and solutions with large-scale infrastructure funding investment. For example, funding for transit to promote sustainable community development;
- Increase funding for support services that serve individuals who are homeless or at-risk of homelessness, but who are not eligible under Housing First funding. For example, youth, who are one of the fastest growing homeless populations in Canada, but have not been homeless long enough to be eligible for Housing First funding;
- Increase funding for Housing First, particularly additional capital funding to create affordable housing units for individuals who are homeless or at-risk of homelessness;
- Increase funding for social housing development and renewal to provide housing for vulnerable populations;
- Set out a number of principles in federal legislation that puts in place conditions by which individual provinces and territories in Canada may receive funding for housing, as with the Canada Health Act in respect of health care funding. For example, the federal government could require provinces and territories to legislate that local governments be permitted to zone for rental housing.

Resource Allocation Recommendations

- Donate surplus federal lands to provinces and territories, at low or no cost, to be utilized directly by provinces or territories to construct new non-market and/or affordable rental housing development. Alternately, the lands could be provided to municipalities, non-profits, and/or private sector housing providers via a public Request for Proposal process to construct new non-market affordable housing and/or affordable rental housing;
- Provide meaningful financial incentives and tax exemptions to increase the supply and renewal of market rental housing;
- Provide housing supports and opportunities along the full housing continuum, including affordable housing options for working individuals and families who are overextending financially to afford quality market rental housing and/or homeownership;
- Re-examine federal income assistance rates (e.g. Guaranteed Income Supplement, Old Age Security Pension, Canada Pension Plan Disability Benefits, Employment Insurance, etc.) to account for the cost of living, including housing costs, in different parts of Canada to ensure Canadians are adequately supported.

The Honourable Jean-Yves Duclos
October 19, 2016

- Continue and expand CMHC's role in collecting, analyzing, and disseminating data on the Canadian housing market.

Thank you for this opportunity to provide input. The City of North Vancouver looks forward to continuing to participate in this process and contributing further to the development of the National Housing Strategy.

Yours sincerely,



Darrell Mussatto
Mayor

Encl.

cc: North Vancouver City Council
Ken Tollstam, Chief Administrative Officer

**MINUTES OF THE REGULAR MEETING OF COUNCIL HELD IN THE
COUNCIL CHAMBER, CITY HALL, 141 WEST 14th STREET, NORTH
VANCOUVER, BC, ON MONDAY, OCTOBER 17, 2016.**

REPORTS OF COMMITTEES, COUNCIL REPRESENTATIVES AND STAFF

24. **City of North Vancouver Input on National Housing Strategy
– File: 10-5040-03-0001/2016**

Report: Planner 1, October 12, 2016

Moved by Councillor Buchanan, seconded by Councillor Clark

PURSUANT to the report of the Planner 1, dated October 12, 2016,
entitled "City of North Vancouver Input on National Housing Strategy":

THAT a letter from the Mayor be submitted as input on the National
Housing Strategy;

AND THAT staff be directed to continue its efforts in advocating to senior
levels of government for affordable housing and to remain involved in the
National Housing Strategy process.

CARRIED UNANIMOUSLY



TRANSPORTATION BOARD

202-940 BLANSHARD STREET • PO BOX 9850 STN PROV GOVT • VICTORIA BC V8W 9T5

Municipal Notice | Taxi Applications PT Board Form 4

About this Form:

The form has 2 pages. It must be completed by:

- ✓ Licensees applying to operate taxis in a new municipality (see **Part 1**)
- ✓ Licensees applying to add more taxis to their fleet (see **Part 1**)
- ✓ **New applicants** applying to start a taxi service (see **Part 2**)

Applicants must:

- (a) send completed forms to each municipality where they are licensed or seek a licence to pick up passengers, and
- (b) include copies of completed forms in their application package.

Note: The Passenger Transportation Board sends applicants a copy of any negative comments it receives from a municipality. Applicants have an opportunity to comment.

NOTICE

To: Chief Administrative Officer

Village of Lions Bay
Name of Municipality

Jan. 30, 2017
Date

Please be advised that the Licensee or New Applicant listed on page 2 of this Notice is applying to the Passenger Transportation Board to provide taxi service in your municipality.

A municipality may send comments about this application or taxi services in general to the Passenger Transportation Board by:

Fax: (250) 953-3788

E-mail: ptboard@gov.bc.ca

Mail: PO Box 9850 STN PROV GOVT
Victoria British Columbia V8W 9T5

We recommend that municipalities comment **within 30 days** of receipt of this notice. This should ensure that comments are received on time.

After an applicant sends its municipal notices and submits its application, the Board publishes the application in the Board's "Weekly Bulletin." Bulletins are published on Wednesdays. They may be viewed online at: <http://www.th.gov.bc.ca/ptb/bulletins.htm>. The Board will consider any comments received up until 10 days after publication in the "Weekly Bulletin".



Ripe TX

#215 – 1080 Mainland Street
Vancouver, BC V6B 2T4
Work: 604 971 6200
www.riperides.ca

Village of Lions Bay
Box 141, 400 Centre Road
Lions Bay, BC V0N 2E0
January 25, 2017
Attention: Village Clerk

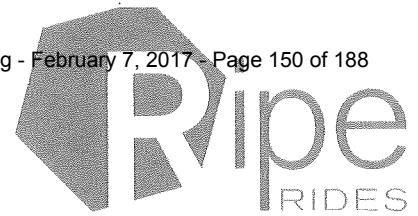
Our company, Ripe Holdings Inc. (license no. 72137), is applying to the Passenger Transportation Board (PTB) for 150 new taxi licenses that will be able to pickup and drop-off from anywhere in the Greater Vancouver Regional District. These taxis will all be digitally dispatched, meaning no top lights, flagging, or use of taxi stands.

Included with this letter are our completed forms that were submitted to the PTB.

Regards,

Ripe Holdings Inc.
215 – 1080 Mainland Street
Vancouver, BC V6B 2T4





Ripe Holdings Inc.
215 – 1080 Mainland Street
Vancouver, BC V6B 2T4
Canada

RIPE HOLDINGS INC. ACCESSIBLE SERVICE PLAN

COMPANY INFORMATION

Ripe Holdings Inc. dba Ripe Rides is looking to introduce a new form of taxi passenger transportation in British Columbia, Ripe TX. Our service will be fully dispatched digitally through our smartphone application for iOS and Android. This means no top lights, flagging, or cash-for-hire transactions. Our intention is to be the first taxi company to service the entire Greater Vancouver Regional District and eliminate existing jurisdictional boundaries to address common passenger complaints/concerns about going to and from the suburbs to downtown Vancouver.

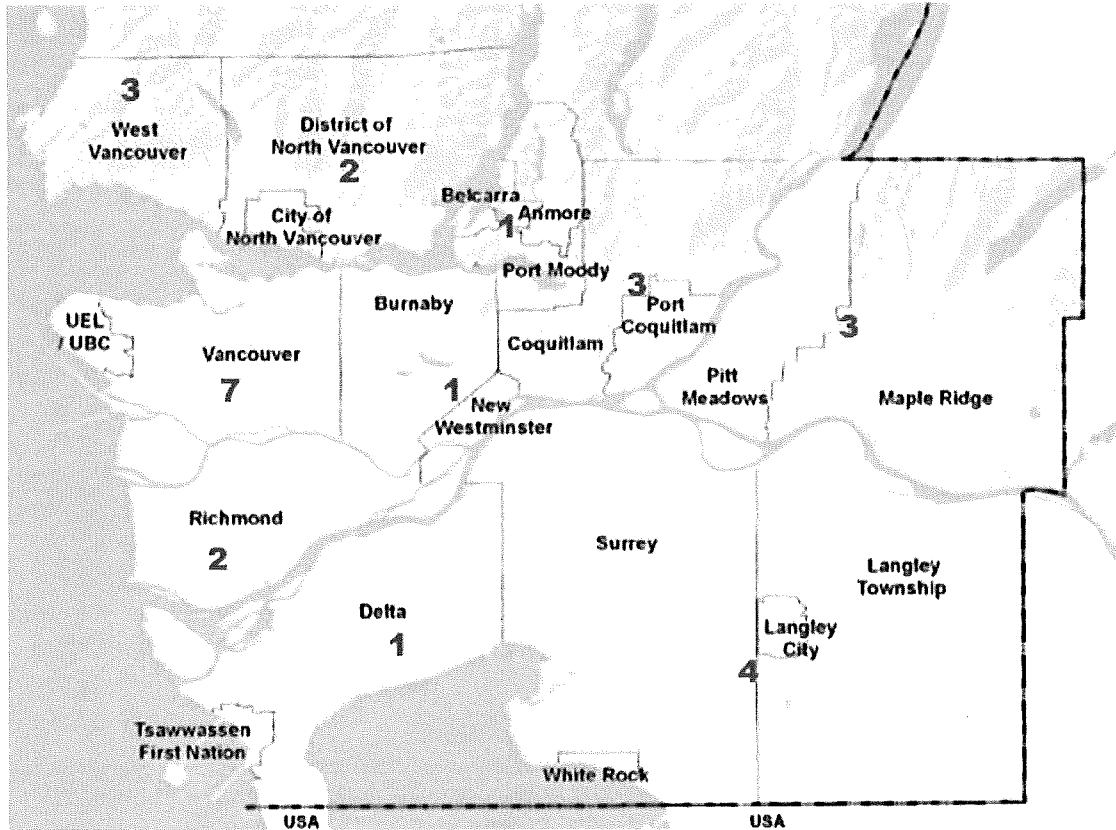
1. VEHICLES

Our application is for 150 licenses. Of the 150 licenses, 27 will be accessible taxis accounting for 18% of the total fleet. All of our accessible taxis will have flip seats. We will be purchasing on lease hybrid energy efficient vehicles for our fleet. The wheelchair accessible vehicles (WATs) will be newer (2015 or above) minivans, most likely Toyota Siennas or Honda Odysseys.

2. VEHICLE USAGE

We intend our wheelchair accessible vehicles to be used in equal proportion to our regular vehicles.

The distribution plan at the beginning of our operations will be to have the vehicles spread strategically across the region with the distribution proportionate to the density of the area. Below is a map that demonstrates the approximate number of WATs per area. Within each of these cities and municipalities we will place the cars strategically based off of population data – for example, in Surrey/White Rock we will have more of the WATs near typical retirement communities to anticipate their need for accessible vehicles.



Our app and technology will allow us to dynamically capture real-time information to be able to serve the region better, meaning on an ongoing basis we will be optimizing our fleet distribution to ensure each municipality's needs are met based on demand.

When a customer opens the Ripe TX app, they have a few options for requesting a vehicle. If a customer simply puts in their pickup and drop-off locations, their request will go to the closest available vehicle, which could be a regular four-seater or a wheelchair accessible vehicle. A customer could also select a specific driver based on their aggregated ratings or based off personal preferences, again which could result in either a four-seater or WAT vehicle. These requests will be placed in the order they are received on a 'first-come, first served' basis.

A customer could also further filter their requests, which will cause the 'matching' algorithm to prioritize. The most relevant distinction for our accessible service plan will be requests for vehicles that can accommodate more than 6 passengers and those who specifically need a WAT. If a customer selects they need a vehicle that can transport 6 or more passengers, then only WATs will display on the map. They will then be placed in the queue for one of these vehicles. Similarly, if a customer specifies they need a WAT, then only those vehicles will appear on the map. Once the request is inputted, it will automatically go above all other ride requests to the closest available WAT.

3. HOURS OF SERVICE

We plan to have all of our wheelchair accessible taxis to be available as close to 24/7 as possible. These will be the same hours of service as our regular vehicles.

Within the first 6 months of obtaining our licenses, we will have at least 75 total vehicles on the road operating, with 14 of those being wheelchair accessible. On a daily basis this number may be bigger depending on special events and customer demand.

4. TRAINING

Drivers, Driver Support, Day and Night Driver Managers, and Logistics Managers will all receive training for serving passengers with disabilities and wheelchair accessible taxis specifically. This is to ensure at multiple levels of the organization we can meet the needs of customers who need accessible taxis.

All drivers will be required to complete the TaxiHost Pro program offered by the Justice Institute of BC, as stipulated by the PTB. As a part of the TaxiHost program, drivers go through the WorldHost and Serving Customers with Disabilities course. This course goes through (in a classroom-setting), amongst other things, serving customers with disabilities. It also reviews appropriate language for discussing the eight major disabilities (mobility, vision, hearing, etc)ⁱ.

In addition to the TaxiHost program, drivers will be required to go through hands on training for operating the actual equipment used in WATs. This includes how to tie down a wheelchair, using the loading ramp, and more. We are currently in the progress of setting up such a program with various organizations in the Lower Mainland who service those with disabilities. We hope to set up a program similar to the 'Ask-Listen-Act' program run by the Vancouver Taxi Associationⁱⁱ. The General Manager and the Day and Night Managers will also be required to go through TaxiHost Pro as well as the hands on training to ensure they can train other staff members.

Other staff members will also be required to go through training for serving those with accessibility needs. For the majority of staff, training will be conducted by the General Manager. For Logistics Managers, the General Manager will do live demonstrations with the vehicle as well as provide the owners' manuals so that these staff members can communicate to drivers and customers when needed. For the drivers (including Driver Managers and Driver Support staff), the General Manager will follow the same procedures, but will also add in a couple of test scenarios to ensure the drivers are comfortable operating the additional features of a wheelchair accessible vehicle.

Any drivers that are driving a wheelchair accessible taxi are required to go through live scenarios with the General Manager before they go on shift.

PRIORITY DISPATCH PLAN

1. DISPATCH SYSTEM

Our wheelchair accessible taxis will be dispatched using the same system as our regular vehicles. The primary method is through our app, where customers can input their pickup and drop-off locations to request a vehicle. A customer can also select a specific driver by tapping on them first. Additionally, a customer can first filter the vehicle options by selecting 'Accessible' or a 6+ vehicle, and then inputting

their location information. There is also a 'Pooling' feature whereby customers input their pickup and drop-off locations as well as approximate trip start time, and the app automatically matches them with other customers travelling along a similar route and time window.

For the visually impaired, our app can work in conjunction with other reading applications or software to direct the customer what to press.

In addition to our smartphone app, customers can order a taxi by logging on to our website. The process is very similar to the app where a customer can filter available cars to specifically select an accessible taxi.

Thirdly, we will have customer service representatives / office workers at the Ripe office who can assist with teaching customers how to book using the app. These customer service employees are not acting as dispatchers; they are simply acting as educators and assisting with operating the app similar to how Ripe Rides' office staff currently operates.

During everyday operations, our WATs will be available on the general map for anyone to book. If a customer inputs their pickup and drop-off locations without any vehicle preferences and a WAT is the closest one available, then that vehicle will be dispatched automatically through the app. If a customer inputs they would like an accessible vehicle, then this supersedes any other requests and puts that customer at the top of the ride queue.

Customers also have the option to request a vehicle that accommodates more than 6 passengers, including for pooling services. If a customer requests an accessible vehicle, which are also the same as 6+ vehicles, then this accessible request will override the 'regular' 6+ request in the app.

If there are multiple requests for WATs, they will be digitally dispatched on a first-come, first served basis above the regular taxi requests. We will also implement a few checks and balances on the technology side to ensure there are WATs available as much as possible. Primarily this will be done by ensuring at least 30% of our WATs are available for accessibility needs at all times. This means that if there are only 9 active WATs available, a customer would only be able to book them if they specifically request an accessible vehicle. Therefore, if there are only 9 WATs available at a given time, a customer would not be able to book one of them as a regular taxi even if it is the closest available vehicle to their pickup location. Instead in that scenario the customer's request would be sent to the next closest 4-seater vehicle. The moment the number of WATs available goes back to 10 or more, they would be repopulated to the main TX map and be able to be booked by anyone (with priority still to accessible requests).

A customer's GPS location or inputted pickup location is used to determine where to dispatch wheelchair accessible taxis. If a customer inputs their current location or a specific location in the app, this information is automatically relayed to the driver's app. The same occurs if a customer requests a vehicle via our website. Regardless of if a customer is requesting a regular vehicle or a WAT, the app will always calculate the closest available vehicle to their pickup location. Then once a trip request is actually sent through, the app tracks the driver in real-time as they make their way towards the customer. This adds another level of assurance and transparency for customers that is not currently available in the taxi

marketplace. With this feature, customers know 100% once they've ordered a Ripe TX vehicle, it is coming for them specifically.

If a customer requests a larger vehicle, whether for a large group of customers or just due to preference, then this is noted in the app by the options 6-6+. This is recorded differently in our system than an accessible vehicle even though for practicality purposes they are the same vehicle type.

If there are requests for a wheelchair accessible taxi and none are available, the customer will automatically receive a popup in their app informing them. The customer could then try ordering a vehicle at a later time. Our system automatically records requests that aren't met due to lack of available cars, and management as well as dispatch can rearrange driver schedules to meet this demand in the future.

2. DISPATCHERS

Our policies and procedures for wheelchair accessible taxis are the same as for our regular vehicles; our company does not discriminate on any basis.

Our system is automatically built to prioritize any accessible vehicle requests made through the app or website. The technology is built so that any time someone inputs they would like an accessible vehicle, their request automatically goes to the top of the queue for the closest available driver. Our Logistics Managers are trained as well to analyze and create reports based on trip data, which includes accessible vehicle requests. This way they can plan and anticipate what times of day may need more accessible vehicles on shift, which areas might need more accessible vehicles than others, and etcetera.

Our customer service / office staff are trained to prioritize accessible vehicle requests as well. Similar to app and website requests, as soon as customer service staff receives a call for an accessible vehicle, they prioritize this over other customer requests and assist the customer with ordering the vehicle through the Ripe TX app.

Ultimately what makes our application distinct from current providers in the region is that all dispatch is done through the app. The technology will be built to ensure accessible vehicle requests are prioritized, minimizing human error and/or discrimination.

If Logistics managers or other staff are found to be disregarding our policies on service to all customers, it will be cause for termination.

3. DRIVERS

Our policies and procedures for wheelchair accessible taxis are very similar to our regular vehicles; drivers are not to discriminate on any basis.

Drivers of accessible vehicles are required to go through live scenarios with the General Manager before they go on shift, as mentioned above. Once on shift, an accessible taxi driver will automatically appear on our system as such. If all customer requests have no filtering, these vehicles will be placed regularly

on the queue, which is by time/distance in relation to the customer's pickup location. If a customer filters the vehicles for wheelchair accessible, then these drivers will automatically be first to receive this request.

Drivers who operate WATs will be offered a lower lease rate and higher commission rate on trip revenues than drivers who operate regular vehicles. This will be offered not only to incentivize drivers, but also to combat the higher vehicle operational costs associated with WATs.

If drivers are found to be disregarding our policies on service to all customers, it will be cause for termination.

4. VEHICLE LOCATIONS & CONTRACTS

All of our vehicles are spread across the GVRD strategically with the distribution proportionate to the density of the area in the beginning of our operations. Once real-time trip data is available, we can serve the region better, meaning we will be optimizing our fleet distribution on an ongoing basis to meet demand. Our wheelchair accessible vehicles will be similarly distributed; first based off of population density and then based off of real-time trip requests.

In many of the areas where our wheelchair accessible taxis are located, they will be parked near the end of transportation lines. Examples include at YVR airport, near the end of the Expo Line in Surrey, Lougheed Station, and Waterfront Station. Customers still have to order these vehicles through the app; they wouldn't be able to just hop in from a taxi stand or from the street. We would have our vehicles parked in these areas to anticipate demand, as it is more likely customers who need accessible vehicles would also be taking transit services.

COMMUNITY INFORMATION

1. LOCAL OPTIONS FOR WHEELCHAIR ACCESSIBLE SERVICES

As we will be serving the entire GVRD, there are many wheelchair accessible services available including TransLink, handyDART, and more.

2. COMMUNITY OUTREACH

We will do our best to meet with each municipality in the GVRD to communicate the introduction of our service which includes wheelchair accessible vehicles. We are in regular contact already with many local committees and government counselors.

Additionally, we are in the process of reaching out to various care facilities to educate and inform about our proposed service. This will help to reach those who will be using WATs on a regular basis and to go over the app functionality. We also intend to start setting up some pre-arranged trips with these groups once we are in service, especially for frequently occurring events. For example, if a care facility does a

biweekly outing to grocery shop, we could arrange these trips in advance and distribute our fleet accordingly.

ⁱ <https://catalogue.jibc.ca/Lists/Courses/CustomDispForm.aspx?ID=872&InitialTabId=Ribbon.Read>

ⁱⁱ <http://vancouver.ca/news-calendar/new-taxi-driver-training-program-for-customers-with-disabilities-and-seniors-launches-in-vancouver.aspx>

From: [pfrinton](#)
To: [Council @ Lions Bay](#); [Shawna Gilroy](#); [Karl Buhr](#); [dhawkins@westvancouver.ca](#); [shanson@westvancouver.ca](#); [MayorandCouncil@westvancouver.ca](#); [mayorandcouncil@gibsons.ca](#); [aboel@gibsons.ca](#); [planning@slrd.bc.ca](#); [Shannon Didier](#)
Cc: [mayorandcouncil@gibsons.ca](#); [council@sechelt.ca](#); [cao@sechelt.ca](#); [council@squamish.ca](#); [lglenday@squamish.ca](#); [gbuxton@squamish.ca](#); [cashekian@squamish.ca](#); [wbradbury@whistler.ca](#); [mayorsoffice@whistler.ca](#); [engineers@whistler.ca](#); [mrichman@pemberton.ca](#); [admin@pemberton.ca](#)
Subject: Air Quality symposium/joint meeting (Sunshine Coast and Sea-to-Sky Clean Air Societies) March 14, 2017- 10:15am-2:30pm
Date: Wednesday, February 01, 2017 12:22:01 PM

THIS WILL CONFIRM a joint meeting/symposium, to be held March 14th, 10am (coffee), 10:30 am start, to wrap up by 2:30pm, clear building by 3pm. Venue will be the Fairview Room- Gleneagles Golf Course ClubHouse 6190 Marine Drive West Vancouver.

<https://westvancouver.ca/parks-recreation/community-centres/gleneagles-golf-course-club-house>

We are inviting appropriate staff from the airshed municipalities and R.D.'s, as well as political officers for the symposium portion- to be held first. The invitation list may be extended. Then, we will regroup for an inter-society meeting.

Speakers will be:

Dr. Mark Lysyshyn- Medical Health Officer- Vancouver Coastal Health: Elements of human health and air quality

Graham Veale- - Air Quality Meteorologist - Ministry of Environment: Provincial perspectives and updates on air quality

Derek Jennejohn- Senior Engineer- Metro Vancouver: Regional air quality initiatives

Dr. James Pawley- Emeritus Professor, University of Wisconsin- presenting the work of Ryan Logtenberg on electric vehicles.

The venue is within long walking distance of Horseshoe Bay Ferry Terminal-1.7kms (about 25 minutes) or take Bus #250 - leaves Horseshoe Bay 9:33am/10:03 am/10:33am. The ferry connection from Langdale is a bit awkward, resulting in early or late arrival at the venue depending on whether the 8:25 ferry is taken or the one after that, at 9:25am

There will be a light lunch provided.

This will be an interesting and informative gathering. Thanks go to the District of West Vancouver for providing the venue without charge, and also of course to the speakers and attendees who plan to take the opportunity to learn more about air quality issues in our areas.

I look forward to seeing everyone. Please contact me with additional ideas and prospective attendee names. We are planning to have about 30 attendees.

PLEASE RSVP TO THE SIGNATURE EMAIL so we can confirm room size required and catering. Thank you.

Peter Frinton

Retired Local/Regional politician
Chair-Sea-to-Sky Clean Air Society

Tel: (604) 947-9412
pfrinton@shaw.ca

**To: Mayor and Council, Village of Lions Bay.
Response to Zoning Bylaw Amendments.
01 February 2017.**

It seems to me that while the proposed Zoning Bylaw Amendments Bylaw is good in several aspects, there are several weaknesses that could and should be addressed.

From my generalised perspective and opinion, among the problems currently facing the Municipality and that are being addressed are:

(a) the high cost of providing the fundamental services required by the Municipality, whether by taxation or borrowing;

(b) the difficulty of expanding the Municipal Tax Base in an equitable manner, given (among other things), the limited space available for both residential and commercial development;

(c) a latent concern in the community that costs of long term infrastructure deficits (especially water) are not addressed, but may in fact be aggravated, by the current Amendment proposals;

(d) a latent concern that demographic diversity will be further compromised by proposed development proposals that aggravate the trend to increased housing costs, putting homes out of reach for many and especially for young families;

(e) proposals relating to Secondary Suites do not cover some options that could be applicable to the elderly;

(f) while Council has "chewed and digested" the apparent problems and dilemmas, and has taken time to do so, the same is not true for the community at large. A deadline to attempt to complete the Bylaw by the end of February is too short and runs the risk of negative feedback and a failure for public to "buy-in". An allowance of sufficient time for the public and the Council to "chew and digest" the complexities that are being identified is essential. Council needs to be able to exercise some control over "market driven" influences.

(g) the option to secure an expansion of the Municipal boundaries to secure space for "bonussed" development may not have been explored effectively. A diminutive model of the Cheekye Development (see the Squamish Chief, January 26, 2017 edition) might be useful background for Lions Bay to consider;

(h) the development (e.g., subdivision) of nine or so individual lots likely cannot be done as a "collective" in a manner that would secure much by way of a Community Development Benefit. Could such an "incremental" development be incorporated within a broader comprehensive "Development Plan" attractive to a developer - a "Plan" that might include the Works Yard, the Brunswick Bench Lands, the expanded boundary lands and other Lands - a Plan that would be substantial enough to afford substantial "Community Bonussing"?

(i) the eight "core themes" of the current Official Community Plan provide some guidance, but several of the "themes" are not defined, are ambiguous and are open to contradictory interpretations.

In fairness, substantial progress is being made.

**Louis K. Peterson,
90 Oceanview Road.
01 February 2017**

From: Trudi Luethy

Sent: Thursday, February 02, 2017 10:52 AM

To: Karl Buhr <mayor.buhr@lionsbay.ca>; Ron McLaughlin <councillor.mclaughlin@lionsbay.ca>; Fred Bain; Jim Hughes

Cc: Lions Bay Reception <reception@lionsbay.ca>

Subject: RE; Our Lions Bay flags

To Mayor and Council!

Thank you for flying our flags at Half Mast.

We grieve with our humanity, their Muslim community, the innocent victims and their families in Quebec.

Sincerely !

Trudi & Rudy Luethy

*Marcus and Birgitta von Krosigk
PO Box 214
Lions Bay, BC V0N 2E0*

February 2, 2017

Mayor and Council
Peter deJong, CAO; Dave Butler, Building Inspector
Naisam Jaffer, Public Works Manager
The Municipality of the Village of Lions Bay
PO Box 141 – 400 Centre Road
Lions Bay, BC V0N 2E0

By email and hand delivery

February 2, 2017

Re: 25 Brunswick Drainage and plan to put a waste water line through the public beach access and terminating on the beachfront

Further to a letter dated January 31, 2017 from Naizam Jaffer ("Re: 25 Brunswick Drainage), we write to register our strong concerns about, and opposition to, the proposed "most viable solution" set out therein, and to request your response to our questions below. That "most viable solution" is described as follows:

"...to install a line running underneath and across the road allowance, up and across the knoll that is the public beach access, and terminating on the beachfront side of the knoll."

There has been a long standing problem with the drainage at 25 Brunswick Beach Road. However, the proposed solution is not a solution at all, but instead creates new, and more serious, problems. In addition, the plan is likely to create significant legal exposure for the Village, far beyond the issues outlined in the January 31 letter.

As time may be of essence, we want to register our opposition and concerns right away. We may have additional points at a later date. In summary, our concerns include these areas:

- 1) Information to residents and the Petition
- 2) Environmental concerns
- 3) Public Beach Access
- 4) Recreational concerns
- 5) Public Safety concerns
- 6) Effectiveness of the proposed solution
- 7) Equal treatment
- 8) Precedent created by proposed solution
- 9) Negative impact on property values of other owners
- 10) Importance of institutional memory / corporate knowledge base

1) Information to residents about this "solution" and the petition itself

Marcus signed a petition regarding the drainage issue, and this is apparently why he was sent the January 31, 2017 letter.

What, if anything, is the Village doing about informing residents who did not sign this petition (either because they chose not to sign, or because they were not aware of it/not at home when it was being circulated)?

This is a matter that concerns all Brunswick residents, not just those who happened to sign a petition. (It is of course of wider concern to, for any and all current and potential visitors to the public beach, but we will get back to that).

When Marcus signed the petition, he explicitly stated he was opposed to any solution that involved dumping the waste water onto or near the beach, including at or on the public beach access. We do not know whether or not that message was relayed to you (but it is now, through this letter).

We were able to speak to a few residents this morning, and understand they are also opposed to any plan that involves the public beach access / beach front.

QUESTION #1:

Will the Village confirm that, before doing any further planning, and certainly before commencing any physical work, you will inform all Brunswick Beach residents and owners of this proposal, and provide them with a reasonable time period in which to respond/comment?

2) Environmental concerns

The environmental concerns are many and it is not possible for us to list them all here, given time constraints. However, they include:

Compliance with both the *Fisheries Act* (fish habitat) and the *Species at Risk Act* (Howe Sound is designated under SARA as having one or more extirpated, endangered or threatened species).

Impact on bird life, both permanent and migratory. This includes, but is not limited to, water quality, beach access, and impact on the foods consumed by the birds.

It also includes the availability of trees for roosting and protection. As you are probably aware, the cutting of trees at Brunswick Beach is a highly controversial topic and this is only increasing as more owners choose to cut down trees on their private property. The proposed "solution" may well include the cutting of trees on public property. Even if it did not, there is a substantial risk that the construction will damage the root system of many of the trees, threatening their survival. We are so fortunate to still regularly have eagles, herons, and a multitude of other birds in this area. They all need access to trees.

QUESTION #2:

Will the Village commit to assessing the impact on the environment from this “solution” before taking any further steps?

If so, what would that assessment include?

3) Public Beach Access

It is not entirely clear from the letter how installing a line “up and across the knoll that is the public beach access and terminating on the beachfront side of the knoll” would be implemented or what it would look like. However, we note the following concerns:

Public access to the beach would be restricted or even prevented during the construction phase.

Such a line would create a potential impediment to public access, particularly for anyone with any mobility restrictions.

Such a line would create a potential danger to the public, ranging from trip and falls to direct contact with contaminated water (on its own creating liability issues).

Apart from safety, having the line terminate right at the beachfront side would also effectively eliminate access to the public access to the beach at high tide since the area immediately adjacent to the public beach access is the only area that is accessible at higher tides. Installing a line with an end point here could serve to encourage trespassing on private property.

QUESTION #3:

What will the Village do to ensure continued public access to the beach?

4) Recreational concerns

There are many people using and enjoying the subject beach. Of course most people prefer to restrict their swimming to the summer months, but people visit and walk the beach year around.

It is also highly valued by Brunswick residents for other reasons, including having smaller pebbles and fewer barnacles, making it a very pleasant place to relax, wade, and swim. Also, many residents are not comfortable using Alberta Bay beach due to the annual invasion of nudists, making the subject beach an even more precious place.

Having a pipe spewing sewage contaminated water onto the beach certainly threatens, and may destroy, the recreational enjoyment and use of this area.

QUESTION #4:

In light of the severe threat to these recreational values by the proposed “solution”, on what basis can the Village justify shifting the burden of this problem – the clear responsibility of one private owner – onto all residents and visitors to this beach?

5) Public Safety concerns

It should go without saying that sewage contaminated water constitutes a very serious health concern to people. Nevertheless, since this is another area not mentioned in the letter dated January 31, 2017, we will go into some detail.

According to both Health Canada and the BC Ministry of Health Services, recreational water quality is a very important matter. **The Federal-Provincial-Territorial Working Group on Recreational Water Quality of the Federal-Provincial-Territorial Committee on Health and the Environment** has issued the third edition of its very comprehensive **Guidelines for Canadian Recreational Water Quality**¹ (<https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-recreational-water-quality-third-edition.html?page=16>).

Here are some extracts from the Executive Summary (our emphasis in **bold**):

The primary goal of the *Guidelines for Canadian Recreational Water Quality* is the protection of public health and safety. This document provides guidance on the factors that can interfere with the safety of recreational waters from a human health perspective. It is intended to guide decisions by provincial and local authorities that are responsible for the management of recreational waters.

...

Recreational waters are considered to be any natural fresh, marine or estuarine bodies of water that are used for recreation. These include lakes and rivers, as well as human-made constructions (e.g. quarries, artificial lakes) that are filled with untreated natural waters. **The principal health risk associated with exposure to recreational water quality hazards is infection as a result of contact with pathogenic microorganisms.** Other risks include injury or illness due to the physical or chemical properties of the water.

The *Guidelines for Canadian Recreational Water Quality* consider the human health risks associated with recreational activities—**primary contact activities, such as swimming (this includes bathing/wading for the purposes of this document), windsurfing and waterskiing**, as well as **secondary contact activities, such as canoeing or fishing—in natural waters through intentional or incidental immersion.** They establish guideline values for specific parameters used to monitor recreational water quality, **including the bacteriological indicators of faecal contamination, cyanobacteria and their toxins, and values for physical and aesthetic objectives.**

¹ Health Canada (2012). *Guidelines for Canadian Recreational Water Quality, Third Edition*. Water, Air and Climate Change Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. (Catalogue No H129-15/2012E). The document was prepared by the Federal-Provincial-Territorial Working Group on Recreational Water Quality of the Federal-Provincial-Territorial Committee on Health and the Environment.

This document also outlines a risk management approach to safe recreational water quality and describes the current scientific knowledge regarding the water quality hazards that can be encountered in the natural recreational water environment. It discusses pathogenic microorganisms of concern, water sampling and analysis, as well as emerging issues, such as faecal contamination of beach sand and faecal pollution source tracking.

The protection and safe management of recreational waters require the cooperation of all stakeholders. The best approach is based on a **preventive risk management strategy** that focuses on the identification and control of water quality hazards and their associated risks before users could be exposed. As with drinking water, the multi-barrier approach provides this preventive strategy through an integrated system of procedures, actions and tools that collectively reduce the risk of human exposure to recreational water quality hazards. The effectiveness of these procedures, actions and tools is then verified or confirmed by monitoring results and the application of guideline values. The success of this approach rests primarily with the establishment of multiple barriers to protect watersheds.

Potential water quality hazards or risk scenarios that can affect the recreational water area need to be identified through an Environmental Health and Safety Survey. The results of this survey are then used to identify the appropriate procedures or actions that should be put in place as barriers. These may include **physical actions, such as beach cleanup and grooming, or processes or tools to improve the effectiveness of the recreational water management program, such as monitoring, guidelines and standards, and education and communication strategies.**

Appendix D of the Guidelines contains the **Recreational Swimming Area Environmental Health and Safety Survey (EHSS)** and shows the very extensive nature of the protocol for ensuring public safety of recreational swimming areas. *One small part* of the Survey reads as follows:

Items for Consideration during the Resulting Risk Assessment:

- Proximity of potential contamination sources to the bathing area.
- Potential for contamination sources to have an impact on the swimming area (including an indication of their risk priority: Low, Medium, High).
- Discharges: Assessment of such factors as volume, flow rate, treatment type, periodicity (continuous, sporadic) and predictability.
- Effects of rainfall: Levels triggering contamination events and typical event duration.
- Assessment of swimming area circulation: Effect of onshore winds, tides, currents, flow patterns in potentially transporting chemical contamination to and entrapping it within the swimming area.
- Motorized watercraft: Assessment of their types and numbers.
- Assessment of potential barriers: Barrier types and points at which they may be applied to reduce impact of the contamination source and/or swimmer exposure.

QUESTION #5:

Regardless of what the result of the monitoring would show at any particular time, or in any particular season (e.g., low risk, medium risk, high risk), why would the Village even entertain the prospect of not only allowing this pipe and sewage contaminated drainage onto the beach but actively participate in the construction and realization of this “solution” when it could result in extensive responsibilities regarding risk monitoring?

How would this be a wise allocation of scarce Village resources?

6) Effectiveness concerns

We are not engineers, and cannot offer a professional opinion on the effectiveness of the proposed solution. As a matter of common sense however, we note that the “beachfront side of the knoll” is the high tide water mark. Dumping water there, especially during winter storms (when the “need” would presumably be the highest) would not “solve” the drainage problem but instead likely just cause back flow into the pipe and potentially create an even greater flooding issue on the municipal roadway and public beach access.

At a minimum, it should be the obligation of the owner of #25 to present an appropriate engineering report – at their expense - regarding the effectiveness of the proposed “solution”, before there is any further work towards implementation. Failure to do this will only create more problems in the future, and additional expenses to the Village.

QUESTION #6:

Will the Village confirm that it will require the owner of #25 Brunswick to present an appropriately qualified engineering report regarding effectiveness of the suggested “solution” before proceeding any further?

7) Equal treatment across the Village, for ALL residents

QUESTION #7:

Would the Village even consider, let alone approve of, a proposal to put a private resident’s pipe draining septic tank/sewage contaminated water right onto the public beach at Lions Bay Beach Park?

No? Then why is this being proposed at Brunswick Beach?

Yes? If so, what do you imagine families using Lions Bay Beach Park would have to say on the matter?

(These questions are admittedly rhetorical in nature. Nevertheless, we hope they illustrate our point about equality of treatment and consideration).

8) Dangerous precedent

The proposed “solution” should not proceed on this basis of precedence alone, regardless of all the other points raised in this letter.

We realize this is a difficult problem. However, it is one brought on by the owners themselves, in full knowledge of the potential consequences. It should not be allowed to set precedence for future demands on Village resources (even demands that are ultimately denied take a lot of time and money to address).

QUESTION #8:

If this proposed “solution” goes ahead, how will the Village respond to other residents in the future, demanding a right to place what amounts to private pipes / private encroachments under Village roads, and across public access routes, and onto public beaches?

9) Negative impact on property values of other owners

This point may be of less concern relative to the many other points we have listed here. However, in case the owner of #25 raises issues to do with their own property value, or other owners raise property value issues to do with the unsightliness / flooding currently happening, please remember that it is not a one-sided equation with a one-sided “solution”.

In addition, for those of us who rely entirely on the public beach access (since we do not own beach front property), any restriction on that public access arguably also impacts on our property values.

There are already negative impacts from this issue. Please do not make them worse.

The owner of #25 bought a property that has a long history of flooding. According to the January 31 letter, they were advised to install a crawl space, and to retain a geotechnical engineer, but chose not to do so. They are solely responsible for the consequences, and should not be allowed to pass on their responsibility to the Village and other residents (directly and through taxes being used up in staff and council time, legal fees, and future liabilities). If this means they have to change their plans for their “basement”, so be it.

QUESTION #9:

If impact on property values are to be taken into consideration, will the Village confirm that it will include impact on all Brunswick Beach property values, and not just that of #25 and immediate neighbours?

10) Importance of institutional memory/corporate knowledge base

This is not the first time private residents have proposed using the public beach for private purposes, with potential legal and financial liability consequences for the Village.

With the turnover of staff and council it is perhaps understandable if people do not have personal experience with these incidents. However, good governance includes easy access to previous documents and decisions so that current staff and elected officials can inform themselves, rather than repeatedly going down potentially expensive, ineffective, and potentially harmful routes.

By way of example, one such incident involved a private resident installing geothermal pipes from the house, across the beach, and into the ocean. After other residents intervened (and undoubtedly at considerable expense, including in terms of staff and council time), the pipes were eventually removed.

QUESTION #10:

Perhaps files/records can be located relating to the geothermal installation event in case there is information regarding legal, safety, and environmental concerns? It could perhaps also be a precedent in the Village's favour in terms of the resident having to bear the cost of removal/addressing the situation?

There may also be helpful precedents/policies associated with the amalgamation of Brunswick Beach and Lions Bay, specifically relating to grandfathering of (then) existing structures but the banning of new encroachments?

This is a long letter, and we would not have taken so much of our own time to write it (and your time in reading it), were it not for the importance of this issue, and the apparent decision to proceed with "the most viable solution".

We look forward to hearing from you in connection with these questions, and we particularly look forward to your confirmation **that further planning/implementation as per the January 31st letter will not take place without full consideration of these issues, and full notice to all residents of Brunswick Beach.**

Finally, we encourage all decision makers to come for a site visit in order to have a first hand experience of the location and context.

Thank you for your attention.

Sincerely,

Marcus and Birgitta von Krosigk

Encl. photos of the affected area



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

Type	Request for Decision		
Title	Award of Contract for Water Modelling Works		
Author	Naizam Jaffer	Reviewed By:	Peter DeJong
Date	January 31, 2017	Version	1
Issued for	February 07, 2017 Council Meeting		

Recommendation:

- (1) THAT GeoAdvice Engineering Inc. (GAE) be awarded the water modelling project; and
- (2) THAT the Mayor and Corporate Officer be authorized to execute contract documents in accordance with Projects 1 and 2 of the Water Distribution System Modelling Proposal submitted by GAE.

Attachments:

- (1) GAE Water Distribution System Modelling Proposal, November 28, 2016.

Key Information:

The Village of Lions Bay's has submitted two infrastructure projects through the federal Clean Water and Wastewater Fund (CWWF). The first project includes the replacement of four water storage facilities while the second includes the replacement and refurbishment of 13 pressure reducing valve (PRV) stations.

Project construction timelines for these works are very tight with initiation occurring on March 31, 2017 to project completion on March 31, 2018. In advance of the potential award of one or both of these projects, Public Works Staff believes it prudent to initiate preparatory work to facilitate construction works.

The initial phase of these preparatory works consists of modelling our existing water distribution network to determine various parameters with respect to each project. These include sizing of valves and storage facilities as well as determining appropriate site locations. Where feasible, Public Works will stipulate the retention of existing structures while construction of the new structures take place. Under this scenario, obtaining the exact site



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

locations, valve types and settings, water storage tank sizes, and infrastructure elevations are critical in order to mesh with the existing distribution system hydraulics. Further to this, each project specific requirements are as follows:

1. CWWF Project 1 – Replacement of the Harvey 1.72 ML, the Highway 0.09 ML, the Phase IV 0.08 ML, and the Phase V 0.10 ML tanks:
 - (a) What are the optimal sizes for each tank taking into account requisite storage capacity for fire supply, daily consumption equalization, and improvement of deficient fire flows throughout the system?
 - (b) Can Phase IV and Phase V tanks be replaced with a single optimally sized tank that will meet the parameters identified in (a) above?
 - (c) Can the Highway 0.09 ML tank be eliminated from the system without compromising fire flows and consumption equalization? If not, what is the optimal size per item (a) above?
2. CWWF Project 2 – Replacement and rehabilitation of 12 PRV stations throughout the Village:
 - (a) For PRV's 2, 4, 5, 8, 9, and the temporary above-ground PRV on Bayview Road at the Lions Bay Community School, which are to be completely replaced, determine the appropriate size fire-flow, domestic, and bypass valves; determine the preferred location upstream or downstream of the existing station; and determine the appropriate settings for each valve.
 - (b) PRV's 1, 3, 6, 7, 10, and 11 which are to be rehabilitated, determine the appropriate size fire-flow, domestic, and bypass valves; and determine the appropriate settings for each valve.

The completion of these modelling scenarios will enable Public Works staff to accurately prepare tender packages for either CWWF project should they be approved. Should the Village not be awarded any grant funding, the information gathered will form the basis for future long term capital replacement strategy.

Three local firms with expertise and experience with water distribution system modelling were selected to provide quotes on this project and all three submitted proposals. The proposals were reviewed and assessed by Public Works staff. In addition to their proposal fees which were the lowest of the three, the GAE proposal was superior in terms of the breadth of knowledge, experience and with respect to their recent project list. Further to this,



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

GAE has previous experience with the Lions Bay water distribution system through their work with AECOM on the Village of Lions Bay Infrastructure Master Plan. Total Price: \$17,992

Options:

- (1) Do nothing – this work is required in order to complete either of the two projects applied for. Should Council elect to forgo this work at the current time, the work will be included within the scope of either of the CWWF project timelines. This will result in a much tighter timeline for project completion and will push works into the late fall and early winter months. The resultant weather challenges may increase costs and there is a potential that the projects may not be completed within the grant funding timelines.
- (2) Award the contract to GAE – this option provides impetus for implementing construction at an accelerated pace. The information garnered is critical in preparing for the replacement of these pieces of infrastructure regardless of the award of grant funding; however, should grant funding be approved, the contract price for these works can be claimed as part of either, or both grant projects.

Preferred Option:

Staff recommend Option two (2) for the aforementioned reasons.

November 28, 2016

The Municipality of the Village of Lions Bay
PO Box 141
400 Centre Road
Lions Bay, BC V0N 2E0

Attention: Mr. Nai Jaffer, Public Works Manager

Re: Consultant Services for the Village of Lions Bay Water Distribution System Modeling

Dear Nai:

GeoAdvice Engineering Inc. (GeoAdvice) is pleased to submit to the Village of Lions Bay (the Village) our proposal to complete the engineering and consulting services for the Village water distribution system modeling. Contained in this proposal is our scope of work, list of deliverables, fee proposal and company profile.

The Village is seeking GeoAdvice for the purpose of completing the following projects:

- **Project 1: Storage Tank Capacity Analysis, Modeling and Sizing**
- **Project 2: PRV Capacity Analysis, Modeling and Sizing**
- **Project 3: Water Quality Modeling and Analysis**

The use of computer models as a tool to assist with hydraulic and water quality analyses for water system planning has become well established. Municipalities are increasingly basing significant capital infrastructure investments on modeling results. Through comprehensive modeling of the Village system, we will gain a better understanding of the hydraulic and water quality performance of the Village system.

EXECUTIVE SUMMARY

Our Team’s Strengths: We are experts in water utility planning, hydraulic, and water quality modeling.

Our project team is uniquely qualified for this assignment for the following reasons:

- Our team is led by Werner de Schaetzen, Ph.D., P.Eng., who is a world expert in water system modeling and planning. He was awarded the 2010 New Canadian Entrepreneur of the Year, and is the leading author of over 30 published papers. Dr. de Schaetzen conducted in person training for over 2,500 engineers. He received from the BC Water and Waste Association (BCWWA) the 2016 Excellence and Innovation award.
- We have extensive experience in the provision of hydraulic and water quality modeling and capacity analysis services with many municipalities in BC (Burnaby, Coquitlam, Delta, Mission, Vancouver, Victoria, etc.).

Our Local Knowledge: GeoAdvice has significant local experience and a working history with the Village.

- GeoAdvice has previously completed several successful hydraulic modeling and analysis projects for the Village, including (partial list):
 - 2015 – Village of Lions Bay Water Distribution System Modeling and Analysis.

Our QA/QC Program: GeoAdvice is proud of its exceptional quality standards.

GeoAdvice utilizes numerous quality control processes that are specific to computer modeling so that the Village infrastructure being modeled and flows being simulated are as accurate as possible. GeoAdvice is OQM certified since August 2016 (APEGBC Organizational Quality Management Program).

- We use a hierarchical review process of all model inputs and outputs.



We are committed to this project. Above all, we are motivated to work again with the Village.

- Currently, all of our key team members have sufficient time available to undertake this assignment as well as all other committed work.
- Delivering on-time and on budget assignments require deliberate prioritization and the Village’s project will be the focus of our team through to its completion.

GEOADVICE COMPANY PROFILE

GeoAdvice Engineering Inc., founded in 2006, is a local consulting engineering firm located in Port Moody, BC with a team of uniquely qualified practitioners who specialize in hydraulic and water quality modeling, system analysis, and utility master planning.

A rapidly growing company, GeoAdvice is the only company in Canada offering the full suite of advanced modeling services, training and tools for drainage management systems, sewer collection systems, and water distribution systems.



Now employing ten staff members, the GeoAdvice team continues to grow while expanding the range of specialist skills and the depth of resources offered to our clients. GeoAdvice is committed to using the latest technologies to provide the Village with the benefits of advanced computer analysis and data management. GeoAdvice also has access to a wide range of technical resources including the latest computer-aided drafting systems, advanced computer modeling software, and sophisticated survey and geospatial data collection technology.

KEY PERSONNEL

Werner de Schaetzen, Ph.D., P. Eng. – Project Manager and Modeling Expert

Werner will be the Project Manager and Modeling Expert for this project. He will actively participate in and supervise all aspects of each project, guiding and reviewing a wide range of modeling and analysis tasks. He will ensure that any project documentation is of the highest technical and professional level. Werner is a world leader in hydraulic and water quality modeling and optimization. His work on genetic algorithm optimization applied to water systems has gained him both international recognition and numerous award prizes. Werner is the leading author of over 30 papers published in international journals, conference proceedings, and internal research reports. Werner has conducted in person training for over 2,500 engineers in water, sanitary sewer and storm sewer systems modeling, optimization, and analysis. He has designed, implemented, and maintained many hydraulic modeling software applications, including InfoWater and InfoSewer, currently used by the Village. Dr. de Schaetzen recently received the 2016 Excellence and Innovation in the Water and Waste Industry Award in the Leadership and Innovation Category. The Industry Excellence Awards program is run by the BC Water & Waste Association (BCWWA) and recognizes leaders and innovators in the water and wastewater sectors throughout BC and Yukon.

Sean Geyer, E.I.T. – Project Engineer/Water Modeler

Sean has over five years of experience working on water utility modeling and system optimization projects. He has worked on many municipal InfoWater models (Calgary, Kelowna, Niagara, Peel, Vancouver, etc.) including the model building/updating, calibration and capacity analysis of the Village of Lions Bay water distribution system. Sean has also over three years of experience utilizing GIS for the purposes of data capture, analysis, and presentation. He has worked on many modeling projects and he brings a great knowledge of GIS and the application of analytical tools to our team. Sean will be responsible for the water modeling and hydraulic and water quality analyses. He has extensive experience using InfoWater.

The resumes of our key personal are provided in **Appendix A**.

REFERENCES

The following are detailed client references from recent projects completed by GeoAdvice.

Name	
Phone	
Email	
Scope of Services	

Name	
Phone	
Email	
Scope of Services	

The following table provides a short summary outlining experience relevant to the current assignment. We are confident in our abilities to effectively deliver on the requirements for this assignment. For convenience and reference, we compiled a few examples of our recent experiences throughout BC.

The Municipality of the Village of Lions Bay
Water Distribution System Modeling Proposal

Specific Expertise	City of Vancouver	City of Nanaimo	City of Victoria	City of Coquitlam
InfoWater Modeling	✓	✓	✓	✓
Data Collection & Evaluation	✓	✓	✓	✓
Model Construction using GIS	✓	✓	✓	✓
Model Validation & Analysis	✓	✓	✓	✓
Field Testing/Verification	✓	✓	✓	✓
Hydraulic & Water Quality Modeling	✓	✓	✓	✓
System Performance Evaluation	✓	✓	✓	✓
Upgrade Recommendations	✓	✓	✓	✓
System Master Planning	✓	✓	✓	✓
Upgrade Prioritization and Costing	✓	✓	✓	✓
Model Training & Support	✓	✓	✓	✓
Model Standards Development	✓	✓	✓	✓
Development Application Reviews	✓	✓	✓	✓

Our project data sheets are attached with this proposal under **Appendix B**.

SCOPE OF WORK

Project 1: Storage Tank Capacity Analysis, Modeling and Sizing

Background:

The first project involves the potential replacement of the Harvey 1.72 ML, the Highway 0.08 ML, the Phase IV 0.08 ML, and the Phase V 0.10 ML tanks. Three scenarios are to be considered:

- What size should the replacement tanks be to meet MMCD criteria at the 2045 planning horizon?
- Can Phase IV and Phase V tanks be replaced with a single tank? If so, what is the optimal size (to meet MMCD criteria at the 2045 planning horizon) and at which location (elevation) should it be placed?
- Is the Highway tank required and, if so, what is the optimal size (to meet MMCD criteria at the 2045 planning horizon)? Can the Highway tank be eliminated without affecting fire flows further downstream?

Tasks:

- Build 1-day extended period simulation (EPS) model to represent the 2045-MDD (Maximum Day Demand) scenario.
- Conduct spreadsheet analyses to determine optimal tank sizes to meet MMCD criteria at the 2045 planning horizon. Verify tank sizing results using 2045-MDD EPS scenario.
- Conduct hydraulic modeling and capacity analysis under 2045-MDD EPS and 2045-MDD+FF (Maximum Day Demand with Fire Flow) scenarios to assess the system's ability to function with a combined Phase IV/V tank and to determine the optimal tank elevation.
- Conduct hydraulic modeling and capacity analysis under 2045-MDD EPS and 2045-MDD+FF scenarios to determine the system's ability to function without the Highway tank.

Assumptions:

- All tank sizing analyses will be verified under MDD EPS conditions. Analysis scenarios will utilize the Village's existing system without the inclusion of previously identified system improvement recommendations.
- Up to two potential locations will be assessed for a potential combined Phase IV/V tank.
- The existing model is an accurate and up-to-date representation of the Village system.
- Only one (1) iteration of the analyses will be conducted, save for the correction of errors made by the consultant.
- One (1) teleconference will be held to discuss the results of Project 1.

Deliverables:

- Brief technical memorandum (TM) summarizing the finding and recommendations of the storage tank capacity analysis, modeling and sizing project. The TM will be provided in electronic (PDF) format. No mapping will be provided.

Project 2: PRV Capacity Analysis, Modeling and Sizing

Background:

The second project involves the replacement / rehabilitation of 12 PRV stations throughout the Village. The replacement / rehabilitation projects will be conducted in accordance with the following requirements:

- PRVs 2, 4, 5, 8, 9, and 13 (at Bayview School) to be completely replaced with new chambers and valves – require appropriately sized large and small valves.
- PRVs 1, 3, 6, 7, 10, and 11 will be rehabilitated – i.e. new valves and piping – require appropriately sized large and small valves.
- Each of the above mentioned PRV's will require an external bypass PRV. The minimum acceptable diameter will be determined for each bypass PRV.

Tasks:

- Conduct modeling, capacity and sizing analyses under 2045-ADD (Average Day Demand), 2045-MDD+FF and 2045-PHD to determine the optimal sizes for all required domestic and high-demand/emergency PRVs (one at each station).

Assumptions:

- All analyses will be conducted under steady-state conditions. Analysis scenarios will utilize the Village's existing system without the inclusion of previously identified system improvement recommendations.
- A fire flow requirement of 60 L/s will be applied to all hydrant nodes.
- Optimal sizes will be determined based on the average and maximum flows required at the 2045 planning horizon.
- The existing model is an accurate and up-to-date representation of the Village system.
- Only one (1) iteration of the analyses will be conducted, save for the correction of errors made by the consultant.
- One (1) teleconference will be held to discuss the results of Project 2.

Deliverables:

- Brief technical memorandum (TM) summarizing the finding and recommendations of the PRV sizing analysis project. The TM will be provided in electronic (PDF) format. No mapping will be provided.

Project 3: Water Quality Modeling and Analysis

Background:

The Village has been experiencing areas of low chlorine residuals. In order to compensate, the Village has typically increased the chlorine dosage at the treatment plants. The Village wishes to optimize the system so that appropriate residuals (concentration target to be provided by the Village) are achieved at all locations downstream while optimizing the chlorine dosage at the treatment plants.

Tasks:

- Conduct an analysis of the Village's existing (2015) system under ADD conditions to determine the optimal chlorine dosage required to provide adequate chlorine residual levels at all points in the system.
- If necessary, provide recommendations for optimizing system performance to achieve the required water quality performance.

Assumptions:

- Water quality modeling and analysis will be conducted using a 7-day extended-period simulation (EPS) under 2015-ADD conditions.
- Pipe wall reaction rates, the bulk reaction rate and tank mixing model assumptions to be provided by the Village.
- No field work will be conducted by GeoAdvice.
- No water quality model calibration will be conducted.
- All necessary condition-dependent infrastructure controls (pumps, valves, tanks, etc.) to be provided by the Village.
- System demand patterns (24 hour pattern with one hour time steps) to be provided by the Village. If this data is not available, a standard residential demand pattern will be assumed.
- The location of all chlorine injection sources will be provided by the Village.
- The existing model is an accurate and up-to-date representation of the Village system.
- Only one (1) iteration of the analyses will be conducted, save for the correction of errors made by the consultant.
- One (1) teleconference will be held to discuss the results of Project 3.

Deliverables:

- Brief technical memorandum (TM) summarizing the finding and recommendations of the water quality analysis and optimization project. The TM will be provided in electronic (PDF) format. No mapping will be provided.

FEE PROPOSAL

We propose to complete each project detailed in this proposal for the fees provided below:

- Storage Tank Capacity Analysis, Modeling and Sizing: [REDACTED]
- PRV Capacity Analysis, Modeling and Sizing: [REDACTED]
- Water Quality Modeling and Analysis: [REDACTED]

The following table lists the rates for each staff member for this project.

Project Team	Role	Preferred Rate
Werner de Schaetzen Ph.D., P. Eng.	Project Manager Modeling Expert	[REDACTED]
Sean Geyer, E.I.T.	Project Engineer Hydraulic Modeler	[REDACTED]

The breakdown of the proposed fees, by task and by team member, and the total time required for each task (by team member) is presented on the following page.

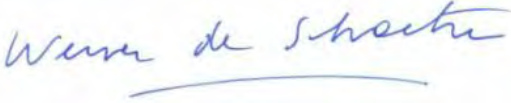
PROJECT SCHEDULE

We have created a rigid timeframe to which we will adhere to ensure that the projects are completed in a timely manner. The completion of the projects is based on an award date of December 6, 2016 and the availability of the Village staff to provide all files required to start each project. The target completion date of all projects is March 31, 2017.

CLOSING

We trust that this proposal meets your current needs. Should you have any questions or wish to discuss further please do not hesitate to contact us.

Regards,



Werner de Schaetzen, Ph.D., P.Eng.
President and Chief Executive Officer

Appendix A: Resumes

PROJECT DIRECTOR - MODELING EXPERT

Dr. de Schaetzen is a world expert in hydraulic modeling of water systems. He has more than 18 years of professional experience with engineering consulting firms, water utilities, universities, and government agencies worldwide including Canada, the United Kingdom, and the United States of America. His work on genetic algorithm optimization applied to water systems has gained him both international recognition and numerous award prizes. Dr. de Schaetzen is the **leading author of over 30 papers** published in international journals, conference proceedings and internal research reports. **Dr. de Schaetzen conducted in person training for over 2,500 engineers in hydraulic modeling, optimization and analysis.** He also designed, implemented and maintained several software applications (InfoSewer/GAnet®/GACal®/H₂OSURGE/InfoWater Calibrator and WQ Calibrator/Model Comparator/Tracker/Pipe Grouper). Dr. de Schaetzen peer-reviews scientific journals including Urban Water (UK) and the ASCE Journal of Water Resources Planning and Management (USA). **In May 2010, Dr. de Schaetzen received the BC New Canadian Entrepreneur Award in the category of Environmental Technology.**

REPRESENTATIVE PROJECT EXPERIENCE

Water Distribution and Supply

- Water Model Update, Calibration and Analysis – City of Toronto, ON
- North Calgary Hydraulic Model Update, Calibration and Analysis – City of Calgary, AB
- Hydraulic Modeling Analysis of the Proposed Eastern Hillside Zone 1 Balancing Reservoir – City of Chilliwack, BC
- Fleetwood Pressure Zone Optimization – City of Surrey, BC
- South Surrey Water Model Review and Update – City of Surrey, BC
- Campbell Heights Water Distribution Capacity Analysis – City of Surrey, BC
- Metro Vancouver Demand Allocation Study – City of Surrey, BC
- Water Distribution System Modeling and Master Plan – City of Port Coquitlam, BC
- Water Distribution System Master Plan – Town of Lake Cowichan, BC
- Water Distribution System Master Plan – City of Victoria, BC
- Water Distribution System Hydraulic Model Upgrade and Analytical Services – District of North Vancouver, BC
- Waterworks Emergency Response Plan – City of Chilliwack, BC
- Water Distribution System Water Quality Modeling in Preparation for Emergency Chlorination Testing – City of Chilliwack, BC
- Water Distribution System Model Development and Calibration –

Education

PhD, Engineering,
University of Exeter, UK

MS, Applied
Mathematics, University
of Louvain, Belgium

BS, Engineering,
University of Louvain,
Belgium

Professional Registrations

Graduate member of the
Institution of Civil
Engineers (UK)

Professional Engineer
Alberta, #157715

Professional Engineer
British Columbia, #30059

Professional Engineer
Ontario, #100116349

Professional Awards

2010 BC New Canadian
Entrepreneur Award in
the category of
Environmental
Technology

Earth Tech President
Award for the best
technical paper (Gold
Level) 2006

Outstanding Employee
Award, Innovyze, USA,
2001, 2002 and 2003

“Highest Grading” award
for GAnet® software by
Teaching Company
Directorate, UK, 2000

Miller Prize, Institution
of Civil Engineers, UK,
2000

“Highly Commended” at
the International Water
and Effluent Treatment
Exhibition Innovation
Awards for GAnet®
software, UK, 1999

Winner of the Institution
of Civil Engineers’ paper

Capital Regional District, BC

Sanitary Sewer

- Millstone and Chase River Catchment Area Sanitary Sewer Studies – City of Nanaimo, BC
 - Sanitary Sewer Hydraulic Model Update and System Analysis for OCP – City of Chilliwack, BC
 - Sanitary Sewer Master Servicing Plan – City of Brantford, ON
 - Latimer Neighbourhood Plan Sanitary Sewer Model Update and System Analysis – Township of Langley, BC
 - Sanitary Sewer Collection System Modeling and Analysis – University of British Columbia
 - Sanitary Sewer Master Plan – City of Langley, BC
 - Sanitary Sewer Modeling and Analysis – City of Abbotsford, BC
 - Sanitary Storage Tank Impact Assessment – City of Thorold, ON
 - Wastewater Model Update – City of Brantford, ON
 - Sewer Hydraulic Network Model Development – City of Burnaby, BC
 - Sewer System Capacity and Modeling Analysis – City of Langley, BC
 - Hydraulic Network Modeling of Sewer Collection Systems – City of Coquitlam, BC
 - Sanitary Sewer Utility Master Plan – City of Merritt, BC
- Sewer System Study and Model Update – City of Powell River, BC

Stormwater

- Water Loss Study – City of Saskatoon, SK
- Latimer & Carvolth Stormwater Modeling – Township of Langley, BC
- Model Development and Calibration Northeast Coquitlam Stormwater System – City of Coquitlam, BC
- Austin Rochester Stormwater Conveyance System Modeling – City of Coquitlam, BC
- Mundy Creek Watershed Area Model Development, Calibration and Analysis – City of Coquitlam, BC
- Stormwater Modeling Standards, Conventions and Guidelines – City of Coquitlam, BC
- Northfield Creek Storm Drainage Modeling Study – City of Nanaimo, BC
- Integrated Stormwater Management Plan – City of Merritt, BC
- 2013 OCP Stormwater Modeling – City of Chilliwack, BC
- Stormwater Detention and System Optimization Analysis, University of British Columbia, BC
- Hydrologic Parameter Review & Sensitivity Analysis – City of Richmond, BC
- Sanitary Sewer Hydraulic Model Update and System Analysis for OCP – City of Chilliwack, BC

competition, UK, 1999

Oasys Award Finalist for GAnet® software, UK, 1999

Winner of the Chartered Institution of Water and Environmental Management's paper competition, UK, 1997

Deans' Commendation of the School of Engineering, University of Exeter, UK (1997)

Awarded the Highest Grade of Distinction, University of Louvain, Belgium (1997)

Employment History

2006 – Present, GeoAdvice, Vancouver, Canada

2004 – 2006, Earth Tech, Vancouver, Canada

2000 – 2004, Innovyze, CA, USA - Director of Education

1996 – 2000, Ewan, Exeter, UK - Optimization Manager

Publications

Lead author of over 35 papers published in international journals, conference proceedings and internal research reports.

Training and Certifications

ISO 5 Easy Steps for Project Managers, 2005

ISO New Staff Orientation, 2005

Safety Orientation

Hazard Communication (US) /WHMIS (Canada)

PROJECT ENGINEER GIS EXPERT

Sean Geyer has over five years of experience working on water utility modeling and system optimization projects. Sean specializes in GIS spatial analysis and data processing. He has worked on many municipal models (Calgary, District of North Vancouver, Kelowna, Niagara, Peel, etc.) including model building/updating, calibration and analysis projects.

EMPLOYMENT HISTORY

- 2012 – Present, Project Engineer, GeoAdvice
- 2009 – 2012, Research Assistant – Reservoir Modeling and Optimization with Forecasting, University of British Columbia

REPRESENTATIVE PROJECT EXPERIENCE

- Northwest Coquitlam Water Distribution System Model Development, Calibration and Capacity Analysis – City of Coquitlam, BC
- Water Distribution System Modeling and Master Planning – City of Abbotsford, BC
- Water Distribution System Hydraulic Modeling and Water Master Plan – District of North Vancouver, BC
- Metro Vancouver Demand Allocation Study – City of Surrey, BC
- Campbell Heights Water Distribution Capacity Analysis – City of Surrey, BC
- North Calgary Hydraulic Model Update, Calibration and Analysis – City of Calgary, AB
- Royal View Transmission Watermain Project – City of Kelowna, BC
- Development Applications – District of Mission, BC
- Water Distribution System Hydraulic Model Upgrade and Analysis Services – District of North Vancouver, BC
- Development Applications – District of North Vancouver, BC
- Hydraulic Model Update and Capacity Analysis – Town of Lake Cowichan, BC
- Water Treatment Plant Optimization Study – City of Calgary, AB
- Water Master Servicing Plan – City of Brantford, ON
- Hydraulic Analysis Support Services – City of St. Catherines, ON
- Schedule B Class Environmental Assessment – Increased Storage Stevensville Reservoir – Region of Niagara, ON
- Hydraulic Analysis Support Services – Region of Peel, ON
- Eastern Hillside Drainage Model Development – Chilliwack, BC
- Latimer & Carvolth Stormwater Modeling – Township of Langley,

Education

Bachelor of Applied Science, University of British Columbia, B.C.

Professional Affiliations

Engineer In Training (E.I.T.) Association Of

Professional Engineers And Geoscientists (APEGBC)

Canadian Society for Civil Engineering (CSCE)

Areas of Practice

GIS Spatial Analysis and Data Processing

Water Distribution Systems

Wastewater Sewer Collection Systems

Network Modeling

Hydraulic Capacity Analysis

Water Demand Calculation and Allocation

Sanitary Load Calculation and Allocation

Development Application Reviews

BC

- Model Development and Calibration Northeast Coquitlam Stormwater System – City of Coquitlam, BC
- Austin Rochester Stormwater Conveyance System Modeling – City of Coquitlam, BC
- Water, Sewer and Stormwater Master Servicing Plan – City of Brantford, ON
- Water, Sewer and Stormwater Model Update – City of Brantford, ON
- Storm Sewer System Infrastructure Needs Study – City of Port Colborne, ON
- Sewer System Assessment – Region of York, ON
- Hydraulic Network Modeling of Sewer Collection Systems – City of Coquitlam, BC
- Water and Sewer Modeling and Analysis – Kwikwetlem First Nation, BC

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