



**VILLAGE OF BELCARRA
REGULAR COUNCIL AGENDA
Village Hall
May 8, 2023
7:00 PM**



*This meeting is live streamed and recorded by the Village of Belcarra
To view the meeting click: [Village of Belcarra - YouTube](#)*

We wish to acknowledge that this meeting is taking place on the unceded territory of the Coast Salish Peoples. Tum-Tumay-Whueton, or Belcarra, is home to an ancestral village of the Tsleil-Waututh Nation. We are thankful to conduct our work within their territory.

COUNCIL

Mayor Jamie Ross
Councillor Carolina Clark
Councillor Joe Elworthy
Councillor Janet Ruzycki
Councillor Liisa Wilder

1. CALL TO ORDER

Mayor Ross will call the meeting to order.

2. APPROVAL OF THE AGENDA

2.1 Regular Council Meeting, May 8, 2023

Recommendation:

That the agenda for the Regular Council Meeting, May 8, 2023 be approved as circulated.

3. ADOPTION OF MINUTES

3.1 Special Council Meeting, April 24, 2023

Recommendation:

That the minutes from the Special Council Meeting held April 24, 2023 be adopted.

3.2 Regular Council Meeting, April 24, 2023

Recommendation:

That the minutes from the Regular Council Meeting held April 24, 2023 be adopted.

4. DELEGATIONS AND PRESENTATIONS**4.1 Colleen MacDonald, Belcarra Resident**

- Presentation on the Watson Trail

4.2 Corporal Neil Roemer, RCMP, Coquitlam Detachment

- Presentation on the Village of Belcarra Police Service Levels – 2022 in review

5. REPORTS**5.1 Ken Bjorgaard, Financial Consultant, report dated May 8, 2023 regarding the Integrated Long-Term Financial/Asset Management Plan Grant****Recommendation:**

That the Village of Belcarra's grant application in the amount of \$50,000 under the Union of British Columbia Municipalities' (UBCM) Asset Management Planning Program for the Development of an Integrated Long-Term Financial/Asset Management Plan including the Village's commitment to providing grant management be supported; and

That the Village of Belcarra's share (50% or \$25,000) of the project costs come from the Village's Canada Community-Building Fund – Community Works Fund (CWF) reserve fund.

5.2 Ken Bjorgaard, Financial Consultant, report dated May 8, 2023 regarding a Growing Communities Reserve Fund Establishment Bylaw**Recommendation:**

That Village of Belcarra Growing Communities Reserve Fund Establishment Bylaw No. 612, 2023 be given first and second readings.

5.3 Paula Richardson, Chief Administrative Officer, report dated May 8, 2023 regarding a follow up information on a chlorination system for the Tatlow Tank.**Recommendation:**

That the report dated May 8, 2023 titled "Follow Up Report – Chlorination System for the Tatlow Tank" be received into the record for information.

6. REPORTS FROM MAYOR AND PROJECT LEADS**6.1 Mayor's Report**

Mayor Ross attended the following:

- A TransLink Mayors' Council Meeting on April 27, 2023
- A Metro Vancouver Board Meeting on April 28, 2023

- A National Day of Mourning for Workers Killed and Injured on the Job event hosted by the City of Burnaby on April 28, 2023
- The Tri-City Chamber of Commerce Business Excellence Awards Gala on April 29, 2023
- The Community Recreation Association of Belcarra (C.R.A.B.) Spring Social Pub Night and Chicken BBQ held at the Belcarra Village Hall on May 6, 2023
- The Crossroads Hospice Society Hike for Hospice on May 7, 2023

7. REPORT FROM CHIEF ADMINISTRATIVE OFFICER

8. BYLAWS

8.1 Village of Belcarra 2023 Tax Rates Bylaw No. 610, 2023

A bylaw to set tax rates for the Year 2023

Recommendation:

That Village of Belcarra 2023 Tax Rates Bylaw No. 610, 2023 be adopted.

8.2 Village of Belcarra 5-Year (2023-2027) Financial Plan Bylaw No. 606, 2023, Amendment Bylaw No. 611, 2023

A bylaw to amend the 5-Year Financial Plan for the years 2023 – 2027 inclusive

Recommendation:

That Village of Belcarra 5-Year (2023 – 2027) Financial Plan Bylaw No. 606, 2023, Amendment Bylaw No. 611, 2023 be adopted.

9. CORRESPONDENCE/PROCLAMATIONS

Recommendation:

That correspondence items 9.1 to 9.5 be received into the record.

ACTION ITEMS

None

INFORMATION ITEMS

- 9.1** Tracey Takahashi, Deputy Corporate Officer, City of Port Moody, letter dated April 26, 2023 regarding the City of Port Moody's nomination of City of Port Moody Mayor Meghan Lahti and City of Port Coquitlam Councillor Nancy McCurrach to the E-Comm Board of Directors for the 2023-2024 term.

- 9.2** Mayor Meghan Lahti, Port Moody, email dated May 1, 2023 regarding Lower Mainland Local Government Association (LMLGA) Resolution L26 – Casino Revenue Sharing in Regional Districts and requesting support for the resolution at the May 2023 LMLGA conference.
- 9.3** Colin Fowler and Andrew Hartline, Co-Chairs, HUB Cycling Tri-Cities Local Committee, letter dated May 1, 2023 regarding the maze gate on Watson Trail.
- 9.4** Honourable Selina Robinson, Minister, Ministry of Post-Secondary Education and Future Skills, letter dated May 2, 2023 regarding the Provincial Government's StrongerBC: Future Ready Action Plan.
- 9.5** Lisa Graham, Legislative Clerk, City of Port Coquitlam, letter dated May 3, 2023 regarding the nomination of City of Port Moody Mayor Lahti and City of Port Coquitlam Councillor McCurrach to the E-Comm Board of Directors for the 2023-2024 term.

10. NEW BUSINESS

11. PUBLIC QUESTION PERIOD

12. ADJOURNMENT

Recommendation:

That the May 8, 2023 Regular Meeting be adjourned.



**VILLAGE OF BELCARRA
SPECIAL COUNCIL MEETING MINUTES
April 24, 2023**



This meeting was held in Council Chambers

Council in Attendance

Mayor Jamie Ross
Councillor Carolina Clark
Councillor Joe Elworthy
Councillor Janet Ruzycki
Councillor Liisa Wilder

Staff in Attendance

Paula Richardson, Chief Administrative Officer
Stewart Novak, Public Works & Emergency Preparedness Coordinator
Amanda Seibert, Corporate Officer/Recording Secretary

Others in Attendance

Guy Patterson, Young Anderson, Barristers & Solicitors
Aidan Andrews, Articling Student, Young Anderson

We wish to acknowledge that this meeting took place on the unceded territory of the Coast Salish peoples. Tum-Tumay-Whueton, or Belcarra, is home to an ancestral village of the Tsleil-Waututh Nation. We are thankful to conduct our work within their territory.

Note: Councillor Wilder was not in attendance at the beginning of the meeting.

1. CALL TO ORDER

Mayor Ross called the meeting to order at 5:00 pm

2. APPROVAL OF THE AGENDA

2.1 Special Council Meeting, April 24, 2023

Moved by: Councillor Clark

Seconded by: Councillor Elworthy

That the agenda for the Special Council Meeting of April 24, 2023 be approved.

CARRIED

3. RESOLUTION TO MOVE INTO CLOSED COUNCIL MEETING

Moved by: Councillor Ruzycki

Seconded by: Councillor Clark

That the resolution to move into the April 24, 2023 Closed Council Meeting be amended to include Section 90(1)(a) Personal information about an identifiable individual who holds a position as an employee of the municipality; and

That the April 24, 2023 meeting of Council be closed pursuant to the *Community Charter* Section 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:

- (a) Personal information about an identifiable individual who holds a position as an employee of the municipality.**
- (b) Personal information about an identifiable individual who is being considered for a municipal award or honour.**
- (e) The acquisition or expropriation of land if the council considers that disclosure could reasonably be expected to harm the interests of the municipality.**
- (i) The receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose.**
- (j) Information that is prohibited or information that if it were presented in a document would be prohibited, from disclosure under Section 21 of the Freedom of Information and Protection of Privacy Act.**
- (k) Negotiations and related discussions respecting the proposed provision of a municipal service that are in their preliminary sates and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.”**

CARRIED

Note: Councillor Wilder joined the meeting at 5:02 pm. She participated in the vote to move into a Closed Council meeting.

4. ADJOURNMENT

Moved by: Councillor Clark
Seconded by: Councillor Ruzycki

That the April 24, 2023 Special Council Meeting be adjourned at 5:04 pm.

CARRIED

Certified Correct:

Jamie Ross
Mayor

Paula Richardson
Chief Administrative Officer



**VILLAGE OF BELCARRA
REGULAR COUNCIL MINUTES
April 24, 2023**



This meeting was held in Council Chambers and live streamed at
[Village of Belcarra - YouTube](#)

Council in Attendance

Mayor Jamie Ross
Councillor Carolina Clark
Councillor Joe Elworthy
Councillor Janet Ruzyski
Councillor Liisa Wilder

Staff in Attendance

Paula Richardson, Chief Administrative Officer
Stewart Novak, Public Works & Emergency Preparedness Coordinator
Connie Esposito, Accounting Clerk
Amanda Seibert, Corporate Officer/Recording Secretary

Others in Attendance

Ken Bjorgaard, Financial Consultant (participated via Zoom)

We wish to acknowledge that this meeting took place on the unceded territory of the Coast Salish peoples. Tum-Tumay-Whueton, or Belcarra, is home to an ancestral village of the Tsleil-Waututh Nation. We are thankful to conduct our work within their territory.

1. CALL TO ORDER

Mayor Ross called the meeting to order at 7:00 pm

2. APPROVAL OF THE AGENDA

2.1 Regular Council Meeting, April 24, 2023

Moved by: Councillor Wilder
Seconded by: Councillor Clark

That the agenda for the Regular Council Meeting of April 24, 2023 be approved as circulated.

CARRIED

3. ADOPTION OF MINUTES

3.1 Regular Council Meeting, April 11, 2023

Moved by: Councillor Elworthy

Seconded by: Councillor Clark

That the minutes from the Regular Council Meeting held on April 11, 2023 be adopted as circulated.

CARRIED

3.2 Special Council Meetings, March 27, 2023 and April 11, 2023

Moved by: Councillor Ruzycki

Seconded by: Councillor Clark

That the minutes from the Special Council Meetings held on March 27, 2023 and April 11, 2023 be adopted as circulated.

CARRIED

4. DELEGATIONS AND PRESENTATIONS

4.1 Bailey Hubbs, team member of the Tri City Predators, gold medal winners at the 2023 U13 Hockey Provincial Championships.

Mayor Ross welcomed Bailey Hubbs of the Tri City Predators and congratulated her on the team gold medal win at the 2023 U13 Hockey Provincial Championships hosted by the City of Cranbrook.

5. REPORTS

5.1 Ken Bjorgaard, Financial Consultant, report dated April 24, 2023 regarding the Village of Belcarra 2023 Tax Rates Bylaw

The Financial Consultant reviewed the report. He explained the tax rates bylaw and the rates required to raise taxes as approved. He advised that three readings of the bylaw are being requested due to a legislative requirement to adopt the bylaw by May 15, 2023.

Moved by: Councillor Ruzycki

Seconded by: Councillor Elworthy

That Village of Belcarra 2023 Tax Rates Bylaw No. 610, 2023 be read a first, second and third time.

CARRIED

5.2 Paula Richardson, Chief Administrative Officer, report dated April 24, 2023 regarding a Water Committee Motions Table Update

The Chief Administrative Officer reviewed the report. She addressed items on Appendix B – Table – Council Motions brought forward at the May 24, 2023 Council Meeting and reported that an inspection of the Tatlow Tank by WSP Canada Inc. and Inland Divers has been scheduled.

Mayor Ross opened the floor to comments from residents.

Ian Devlin, Belcarra resident, referred to No.'s 12 and 28 on Appendix B attached to the staff report. He queried whether a report was presented to Council on the feasibility and cost of adding chlorination capacity to Belcarra's water system and on the status of a notification to building permit applicants pertaining to the water system and the recommended addition of a sprinkler system to new construction projects.

Staff responded to questions. The Chief Administration Officer will provide more detailed information on both items at a future meeting of Council.

Jim Chisholm, Belcarra resident, queried on the future plans for increased water for firefighting and improvements to the system. He requested further information on items listed on Appendix B attached to the staff report.

Staff responded to questions and concerns.

Moved by: Councillor Clark

Seconded by: Councillor Ruzycki

That the report dated April 24, 2023 regarding the Water Committee Motions Table Update be received into the record for information.

Council discussion and questions ensued on item numbers presented as part of Appendix B attached to the staff report. Staff answered questions and will provide further information to address concerns and queries that could not be answered at the meeting without further research.

The Mayor called the question on the motion.

CARRIED

6. REPORTS FROM MAYOR AND PROJECT LEADS

6.1 Mayor's Report

Mayor Ross attended the following:

- A Tri-Cities Chamber Lunch with Leaders, guest speaker: Kevin Falcon, Leader of the Official Opposition and MLA for Vancouver-Quilchena – on April 12, 2023
- A TransLink Mayors' Council Meeting on April 13, 2023
- A Metro Vancouver Board Budget Meeting on April 19, 2023
- A Metro Vancouver Parks Committee Meeting on April 19, 2023
- A Metro Vancouver Special Board Meeting on April 21, 2023

- A TransLink Mayors' Council Meeting on April 21, 2023
- Metro Vancouver Metro MVRD Board released information; attended on April 21, 2023

Mayor Ross attended the Village of Belcarra Volunteer Appreciation Evening. He noted that all members of Council attended the event. .

6.2 Councillors' Reports

Councillors Wilder & Clark attended the Soroptimist International of the Tri-Cities -Give Her Wings Awards Gala on April 12, 2023.

7. REPORT FROM CHIEF ADMINISTRATIVE OFFICER

The Chief Administrative Officer announced that Item 4.5 Appointment of Connie Esposito as Acting Chief Administrative Officer was released from Closed Council status at the April 24, 2023 Closed Council Meeting.

She advised on messages sent out by TransLink regarding Earth Day on April 22, 2023 and encouraging residents to take public transit. The TransLink media release was posted on the Village's website and sent to residents via email.

8. BYLAWS

8.1 Village of Belcarra 5-Year (2023-2027) Financial Plan Bylaw No. 606, 2023, Amendment Bylaw No. 611, 2023

A bylaw to amend the 5-Year Financial Plan for the years 2023 – 2027 inclusive

Moved by: Councillor Clark

Seconded by: Councillor Wilder

That Village of Belcarra 5-Year (2023 – 2027) Financial Plan Bylaw No. 606, 2023, Amendment Bylaw No. 611, 2023 be read a third time.

CARRIED

8.2 Village of Belcarra Council Code of Conduct Bylaw No. 609, 2023

A bylaw to govern the conduct of members of Council

Moved by: Councillor Elworthy

Seconded by: Councillor Clark

That Village of Belcarra Council Code of Conduct Bylaw No. 609, 2023 be adopted.

CARRIED

9. CORRESPONDENCE/PROCLAMATIONS

Moved: Councillor Ruzycki
Seconded: Councillor Clark

That correspondence item 9.1 be received into the record as information.

CARRIED

ACTION ITEMS

- 9.1 Janet Andrews, Secretary-Treasurer, New Westminster & District Labour Council, letter dated March 27, 2023 regarding Declaration of April 28, 2023 as the official "Day of Mourning for Workers Killed and Injured on the Job"

Moved by: Councillor Elworthy
Seconded by: Councillor Clark

That Council declare April 28, 2023 as the official "Day of Mourning for Workers Killed and Injured on the Job".

CARRIED

INFORMATION ITEMS

None

10. NEW BUSINESS

11. PUBLIC QUESTION PERIOD

Jim Chisholm, Belcarra resident, requested a date for the presentation of a report from WSP Canada Inc.

Staff will provide a date at a future Council meeting.

Deborah Struk, Belcarra resident, acknowledged the Day of Mourning and drew attention to the workers killed during the construction of the Buntzen Lake Tunnel.

Jim Chisholm, Belcarra resident, questioned the disappearance of the cat's eyes road markings on Bedwell Bay Road.

The Public Works & Emergency Preparedness Coordinator addressed the question. It was noted that extra cat's eyes were installed at a correct level to replace those originally installed too high and dislodged as a result. The replacement cat's eyes will be permanent.

12. ADJOURNMENT

Moved by: Councillor Wilder
Seconded by: Councillor Ruzycki

That the April 24, 2023 Regular Meeting be adjourned at 8:08 pm

CARRIED

Certified Correct:

Jamie Ross
Mayor

Paula Richardson
Chief Administrative Officer

From: Colleen MacDonald <**Sent:** Tuesday, May 2, 2023 11:12 AM
Subject: Watson Trail Request for May 8 council meeting

.....
 Jamie Ross, Mayor
 Carolina Clark, Councillor
 Joe Elworthy, Councillor
 Janet Ruzyski, Councillor
 Liisa Wilder, Councillor
 Village of Belcarra

Dear Belcarra Mayor and Council,

Re: Maze gate on Watson Trail

We will come before council on May 8, 2023 to discuss the Watson Trail issues:

1. Accessibility
2. Safety + Maintenance
3. Timeline

1. Accessibility:

The 31" maze gate at Watson Road is too narrow, impedes travel and denies accessibility for anyone riding a wider bike such as a handcycle, recumbent bike or trike, and many styles of cargo bikes. The height of the gate is also dangerous.

- The Provincial Guidelines recommends that this style of barrier no longer be used. If a maze gate is necessary, the minimum gap is 51"

2. Safety and Maintenance:

The Watson trail surface needs a crushed gravel surface; it is too chunky for a cyclist and for a person pushing a buggy. Vegetation has encroached and narrowed the trail. (*see attached documents*)

3. Timeline:

We have been asking for many years for the gate to be rectified.

Summary:

1. We ask council to vote now to rectify the Watson Gate – remove one of the barriers or widen the gap to 51"
2. We ask council to direct staff to repair the Watson Trail surface.

Colleen & Ian MacDonald

- *Supporting documents attached.*
- *Link to BC Active Transportation Guidelines, specifically page G105*

https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_g_rfs.pdf

Village of Belcarra Police Service Levels 2022 in Review



Total calls for service in 2022 were 79 compared with 110 in 2021.

Property Offences

	2021	2022
Break and Enter – Res/Bus/Oth	0	1
Theft From Auto	0	0
Theft – Veh & Other	4	0
Mischief Offences	1	0
Fraud	3	0

Person Offences

	2021	2022
Assault – all levels	0	4
Utter Threats/Harassing Behaviour	2	1

Other Criminal Offences

	2021	2022
Causing A Disturbance	4	3
Other	2	1

Traffic Calls for Service

	2021	2022
Collisions	1	6
Driving Complaints	4	2

Other Calls for Service

	2021	2022
Bylaw – Noise and Other	7	2
Suspicious Per/Veh/Circumstance	9	5
Mental Health Act	1	3

Comments

Police calls for service in 2022 were down approximately 28% from 2021. The most noticeable decrease was in reported property crime which was very nearly zero for the year. Assaults returned to normal historical levels. There was an increase in collisions up to 6 for the year, but an analysis shows no particular cause or trend. Belcarra is one of the safest communities in BC.



COUNCIL REPORT

Date: May 8, 2023

From: Ken Bjorgaard, Financial Consultant

Subject: Integrated Long-Term Financial/Asset Management Plan Grant

Recommendations:

1. That the Village of Belcarra's grant application in the amount of \$50,000 under the Union of British Columbia Municipalities' (UBCM) Asset Management Planning Program for the Development of an Integrated Long-Term Financial/Asset Management Plan including the Village's commitment to providing grant management be supported; and
2. That the Village of Belcarra's share (50% or \$25,000) of the project costs come from the Village's Canada Community-Building Fund – Community Works Fund (CWF) reserve fund.

Purpose:

The purpose of this report is to seek Council's support for the Village of Belcarra's grant application under the Asset Management Planning Program through the Union of British Columbia Municipalities (UBCM).

Background:

The UBCM has an Asset Management Planning Grant Program which is funded by contributions from the Ministry of Municipal Affairs. Eligible applicants are local governments (municipalities and regional districts) in British Columbia.

The 2023 Asset Management Planning Grant Program (Program) provides up to 50% of total project costs to the grant maximum (\$25,000). Therefore, the maximum total project budget is \$50,000. The local government's share of the project costs can come from the Canada Community-Building Fund – Community Works Fund (CWF). The deadline for the next Program grant application intake is May 12, 2023. The stipulations in the Program application are a Council resolution indicating local government support for the proposed project and a willingness to provide overall grant management.

The eligible costs under the Program are shown in the table below. As noted, one of the eligible costs is “Development of a Long-Term Financial Plan.” As the Village was going to be developing a long-term financial plan before we were aware of this Program it makes sense to apply for the grant in order to offset some of the Village’s costs. In addition, the grant funds can be used to further the Village’s asset management program including creating a GIS integrated asset inventory that will enable staff to analyze and report on the condition, life expectancy, replacement cost as well as the probability and consequence of failure of assets. The asset replacement cost and life expectancy data would be fed in the long-term financial plan model. This data is essential in producing a realistic long-term financial plan. Overall, the project name would be Development of an Integrated Long-Term Financial/Asset Management Plan.

Table 1: Eligible Activities	
Eligible Activity	Examples
Assessing	<ul style="list-style-type: none"> • Conducting organizational/corporate capacity assessments • Risk assessments
Planning	<ul style="list-style-type: none"> • Development of an Asset Management Policy • Development of an Asset Management Plan • Development of an Asset Management Plan component <ul style="list-style-type: none"> ◦ i.e. Condition Assessment Framework or Level of Service Framework • Development of an Asset Management Strategy • Development of a Long-Term Financial Plan
Implementing	<ul style="list-style-type: none"> • Providing Asset Management Training/Education (<i>see Training for Asset Management</i>) • Outcome reporting • Performance measurement

It is recommended that the Village of Belcarra apply for a UBCM 2023 Asset Management Planning Grant in the amount \$50,000 for the Development of an Integrated Long-Term Financial/Asset Management Plan with the Village’s share (50% or \$25,000) of the project costs coming from the Village’s Canada Community-Building Fund – Community Works Fund (CWF) reserve fund.



COUNCIL REPORT

Date: May 8, 2023

From: Ken Bjorgaard, Financial Consultant

Subject: Growing Communities Reserve Fund Establishment Bylaw

Recommendation:

That Village of Belcarra Growing Communities Reserve Fund Establishment Bylaw No. 612, 2023 be given first and second readings.

Purpose:

The purpose of this report is to bring forward a Growing Communities Reserve Fund Establishment Bylaw (Reserve Bylaw) for first and second readings.

Background:

The Province of BC recently transferred a grant of \$759,000 from the Growing Communities Fund to the Village Belcarra to be used for specific purposes as per the attached letter. The Province requires that a reserve be set up to account for or track the use of these funds, therefore, a Reserve Bylaw is now being brought forward for first two readings.

Attachments:

- Appendix A: Letter dated March 16, 2023 from the Province of BC outlining the Growing Communities Fund Grant
- Appendix B: Village of Belcarra Growing Communities Reserve Fund Establishment Bylaw No. 612, 2023



March 16, 2023

Ref: 271994

Their Worship Mayor Jamie Ross
Village of Belcarra
4084 Bedwell Bay Rd
Belcarra BC V3H 4P8

Dear Mayor Ross:

The population of B.C. has increased consistently over the past decade and is projected to keep growing in the next 10 years. The provincial government understands the need to facilitate greater housing supply for our growing population. The province will support local governments in addressing the multiple funding and financing constraints to aid in the construction of infrastructure and amenities for all B.C. communities. Local governments' investment in core community infrastructure and amenities increases the amount of land that is ready to be developed to a higher density.

The Government of B.C. has invested considerable resources in infrastructure and amenities in the past 10 years and has strategically leveraged federal funding to that effect. More than \$1.6 billion in federal and provincial funding have been invested in our communities since 2018 through the Investing in Canada Infrastructure Program. However, as there is still more to be done for infrastructure and amenities, the provincial government is pleased to provide the Growing Communities Fund (GCF) for local governments province-wide.

As a one-time grant, the GCF will provide up to \$1 billion through direct grants to local governments to support all B.C. communities, with a focus on those communities that need to increase the pace and scale of housing supply. The principal objective of the GCF is to increase the local housing supply with investments in community infrastructure and amenities. Municipalities are encouraged to work closely with adjacent local First Nations, in recognition of the *Declaration on the Rights of Indigenous Peoples Act*, as this collaboration strengthens our communities and regions.

The funding provided through the GCF should be limited to one-off costs needed to build required infrastructure and amenities rather than funding ongoing or operational activities. These funds are to be incremental to currently planned investments and should accelerate the delivery of capital projects.

Eligible costs are as follows:

- Public drinking water supply, treatment facilities and water distribution;
- Local portion of affordable/attainable housing developments;

.../2

- Childcare facilities;
- Municipal or regional capital projects that service, directly or indirectly, neighbouring First Nation communities;
- Wastewater conveyance and treatment facilities;
- Storm water management;
- Solid waste management infrastructure;
- Public safety/emergency management equipment and facilities not funded by senior level government;
- Local road improvements and upgrades;
- Sidewalks, curbing and lighting;
- Active transportation amenities not funded by senior level government;
- Improvements that facilitate transit service;
- Natural hazard mitigation;
- Park additions/maintenance/upgrades including washrooms/meeting space and other amenities; and
- Recreation-related amenities.

Further to the above-noted capital costs, one-off costs can include:

- Costs of feasibility studies (including infrastructure capacity assessment); other early-stage development work; costs of designing, tendering and acquiring land (where it is wholly required for eligible infrastructure projects); constructing eligible infrastructure projects; and, in limited situations, non-capital administrative costs where these are necessary, for example adding staff capacity related to development or to establish complementary financing for local government owned infrastructure or amenities.

I am pleased to advise you that the Village of Belcarra is the recipient of a \$759,000 grant under the Growing Communities Fund. This amount will be directly transferred to your local government by March 31, 2023.

Under part 7 of the Local Government Grants Regulations, the amount of the grant to each local government is set by the Minister of Municipal Affairs. The determination of this amount was based on a formula that applies to all municipalities.

This formula is based on three components: a flat funding amount, an “adjusted population” amount and a “population growth” amount. The flat amount is \$500,000. The “adjusted population” amount is \$365 per adjusted population. The population adjustment ensures smaller municipalities get a higher per capita share of funding despite larger municipalities receiving more funding in absolute dollars. The “population growth” amount is \$1,000 per capita population growth between 2016 and 2021.

As a condition of this funding, the grant must be placed in a segregated reserve fund established by bylaw under section 188 of the *Community Charter* for the Capital and Planning purposes of the GCF. This fund must be separate from other existing reserve funds. To ensure full transparency regarding the use of funds, your local government will be required to annually report on how it spends this grant. This will be part of the annual financial reporting required under section 167 of the *Community Charter*. Your local government will provide a schedule to the audited financial statements respecting the amount of funding received, the use of those funds and the year-end balance of unused funds. Your local government must continue to annually report on the use of grant money until the funds are fully drawn down.

Further to the financial reporting, an annual report that identifies work-related Housing Needs Reports and pre-zoning requirements, as applicable, is required. The province also encourages highlighting projects that align with provincial priorities such as CleanBC and childcare; as well as those that align with the province's Environmental, Social and Governance framework for capital projects.

Finally, requirements will include parameters for public recognition of the funding related to projects. The province must be consulted prior to any proactive media events or news releases related to the project. Funded projects must also acknowledge the province's contribution through temporary and permanent on-site signage. The provincial government anticipates that the funds will be expended within approximately five years of receipt.

If you have any questions or comments regarding this letter, please feel free to contact the Local Government Infrastructure and Finance Branch by email at: LGIF@gov.bc.ca. Further information on the program will be available on the following webpage: <https://www2.gov.bc.ca/gov/content/governments/local-governments/grants-transfers/grants/bc-s-growing-communities-fund>.

The province welcomes this opportunity to support the growth of the supply of housing throughout British Columbia. We believe that this funding will contribute to the capacity of B.C. local governments to provide critical services as our province and economy grows.

Sincerely,



Anne Kang
Minister

pc: Paula Richardson, Chief Administrative Officer, Village of Belcarra
Vacant CFO, Chief Financial Officer, Village of Belcarra

Attachment with Example Calculation for a Municipality with 15,000 People

Population Range	From	To	Adjustment Factor
1. Very Small	0	2,000	100%
2. Small	2,001	5,000	80%
3. Small-Med	5,001	10,000	60%
4. Medium	10,001	20,000	40%
5. Large-Med	20,001	40,000	20%
6. Large	40,001	150,000	10%
7. Very Large	150,001	900,000	5%

To illustrate, for a city of 15,000 people, the adjusted population is:

- For this first 2,000 residents, adjustment of 100% = $2,000 \times 100\% = 2,000$
- For the next 3,000 (up to 5,000), adjustment of 80% = $3,000 \times 80\% = 2,400$
- For the next 5,000 (up to 10,000), adjustment of 60% = $5,000 \times 60\% = 3,000$
- For the last 5,000 (up to 15,000), adjustment of 40% = $5,000 \times 40\% = 2,000$

Thus, the city of 15,000 people has an adjusted population of 9,400 ($=2,000 + 2,400 + 3,000 + 2,000$).

If the city grew by 4,500 people between 2016-2021, the total grant amount is calculated as follows:

Component	Calculation	Result
Flat Funding	\$500,000	\$500,000
Adjusted Population	$= 9,400 \times \$365$	\$3,431,000
Population Growth	$= 4,500 \times \$1,000$	\$4,500,000
Total Grant		\$8,431,000



VILLAGE OF BELCARRA
Growing Communities Reserve Fund Establishment
Bylaw No. 612, 2023



A bylaw to establish a reserve fund to account for the Growing Communities Fund grant monies received from the Province of BC which are to be used for specific purposes

WHEREAS, pursuant to section 188 of the *Community Charter*, Council may, by bylaw, establish a reserve fund for a specified purpose and direct that money be placed to the credit of the reserve fund;

NOW THEREFORE the Council of the Village of Belcarra, in open meeting assembled, ENACTS AS FOLLOWS:

1. This bylaw may be cited for all purposes as "Village of Belcarra Growing Communities Reserve Fund Establishment Bylaw No. 612, 2023".
2. There shall be and is hereby established a reserve fund, under the provisions of section 188 of the *Community Charter*, to be known as the "Growing Communities Reserve Fund".
3. The one-time grant funds received from the Province of BC under the Growing Communities Fund program, together with interest earned on the reserve fund balance, will be paid into the "Growing Communities Reserve Fund".
4. Monies in the "Growing Communities Reserve Fund" shall be used to pay for one-off infrastructure and amenity costs as detailed by the Province of BC.
5. This bylaw comes into force upon adoption.

READ A FIRST TIME on

READ A SECOND TIME on

READ A THIRD TIME on

ADOPTED by the Council on

Jamie Ross
Mayor

Paula Richardson
Chief Administrative Officer

This is a certified true copy of
Village of Belcarra Growing Communities Reserve Fund
Bylaw No.612, 2023

Chief Administrative Officer



COUNCIL REPORT

Date: May 8, 2023
From: Paula Richardson, Chief Administrative Officer
Subject: Follow up Report – Chlorination System for the Tatlow Tank

Recommendation

That the report dated May 8, 2023 titled “Follow Up Report – Chlorination System for the Tatlow Tank” be received into the record for information.

Purpose

To provide clarification on queries related to Item 12 of the Water Committee Motions Table attached to the staff report dated April 28, 2023 which stated, “that in response to the 2019 recommendation from Fraser Health, a report be presented to Council on the feasibility and cost of adding chlorination capacity to our system’ and to provide a timeline and background documentation on the topic.

Background

Staff have reviewed documents provided at previous Council meetings, including to a preceding Council body, regarding a recommendation from Fraser Health pertaining to a chlorination system.

At the **June 21, 2021** Council meeting, staff was directed to prepare a plan/report and consult with the Water Committee to assess the feasibility of increasing the minimum water level setting on the Tatlow Tank.

On **June 28, 2021**, in response to Council direction, staff provided a report titled “Raising the Water Level in the Tatlow Reservoir” to the Water Committee. It was indicated that changes to testing and water levels must be approved by the Fraser Health District Officer. This report was attached to a staff report to Council dated September 7, 2021 titled “Letter from Fraser Health regarding Raising the Water Level in Tatlow Reservoir.” (see below)

On **September 7, 2021**, resulting from a request for input from Fraser Health, staff provided a report and a letter from Fraser Health dated July 19, 2021 commenting on raising the water levels in the Tatlow reservoir. The letter from Fraser Health referred to an inspection report provided in 2019 recommending that chlorination equipment be obtained for future needs. The inspection report dated July 31, 2019 was also provided by Fraser Health as an attachment to their letter.

On **November 8, 2021**, Councillor Drake provided a report to Council regarding Water Committee Recommendations. Item 12 pertained to the addition of chlorination capacity.

“12. [3(a)] That in response to the 2019 recommendation from Fraser Health (*2), a report be presented to Council on the feasibility and cost of adding chlorination capacity to our system. The (*2) refers to the July 19, 2021 letter from Fraser Health which references the 2019 inspection report.

On **January 24, 2022**, staff provided a report titled “Water Model Quote from WSP” requesting funding for the development of a water model study.

Note: The background statement in the staff report dated January 24, 2022 on the WSP Water Model Quote erroneously refers to a 2019 “letter” from Fraser Health, when in fact Fraser Health provided an inspection report. Below is a quote from the January 24, 2022 staff report:

“At a Regular Council meeting dated November 8, 2021, a report was submitted by Councilor Drake:

“6.2 Councilor Drake – Water Committee Recommendations

12. That in response to the **2019 letter** from Fraser Health recommending a report be presented to Council on the feasibility and cost of adding chlorination capacity to our system.”

The recommendation put forward in the November 8, 2021 report by Councillor Drake was worded as follows:

“12. [3(a)] That in response to the 2019 recommendation from Fraser Health (*2), a report be presented to Council on the feasibility and cost of adding chlorination capacity to our system. The (*2) refers to the July 19, 2021 letter from Fraser Health which references the 2019 inspection report.

The above notations are provided to clarify that the Village of Belcarra did not receive a letter from Fraser Health in 2019 referencing a chlorination system, rather, a Drinking Water Inspection Report dated July 31, 2019 included a comment stating that a chlorination system may be required to address future needs.

On **May 24, 2022**, staff provided a report titled “Water Committee Recommendations – Status Report” which included a table form of the committee’s recommendations from the November 8, 2022 report. The status of the various items was indicated on the table.

On **September 6, 2022**, Michael Levin, WSP presented a report on the Village of Belcarra Hydraulic Water Model Development which was received for information.

On **April 11, 2023**, queries were raised on specific items of the Water Committee Motions Table and staff was given direction to provide further detail on the status of these items at the April 24, 2023 meeting.

On **April 24, 2023**, staff provided a report titled “Water Committee Motions Table Update” indicating the status of items on the table. Staff were asked to provide further information on Item 12 pertaining to chlorination capacity.

Summary

This report is in response to queries on the 2019 recommendation from Fraser Health regarding the addition of chlorination capacity to the Village’s water system and is intended to encompass a timeline and provide Council with as much background documentation as possible.

Though much work has been carried out on the development of a Hydraulic Water Model for the Village of Belcarra, a report on the feasibility and cost of adding chlorination capacity to the Tatlow Reservoir has not been brought forward, as per the recommendation, Item 12, of the Water Committee Motions Table.

WSP Canada Inc. is scheduled to carry out inspections on the Tatlow and Dutchman Tanks and staff have requested that an estimate on the addition of chlorination capacity to the Tatlow Reservoir be provided.

Attachments

- Appendix A: Regular Council Minutes – June 21, 2021 – Item 9. New Business
- Appendix B: Staff report dated September 7, 2021 titled “Letter from Fraser Health regarding Raising the Water Level in Tatlow Reservoir.” Attachments included a July 19, 2021 letter from Fraser Health/July 31, 2019 Drinking Water Inspection Reports and a staff report dated June 28, 2021 titled “Raising the Water Level in Tatlow Reservoir” presented at a Water Committee Meeting.
- Appendix C: Report dated November 8, 2021 from Councillor Drake titled “Water Committee Recommendations.”
- Appendix D: Staff report dated January 24, 2022 titled “Water Model Quote from WSP.” Attachments included a proposal letter from WSP to under the development of a Water Model
- Appendix E: Staff report dated May 24, 2022 titled “Water Committee Recommendations – Status Report.”
- Appendix F: Report from WSP Canada Inc. dated September 2, 2022 titled “Village of Belcarra Hydraulic Water Model Development.

That correspondence items 8.1 to 8.5 be received.

CARRIED

ACTION ITEMS

No items.

INFORMATION ITEMS

- 8.1 Kelly Kenney, Corporate Officer, City of Langley, letter dated June 4, 2021, to Tamara Jansen, MP, Cloverdale – Langley City, regarding Support for 988 Suicide and Crisis Line Initiative
- 8.2 Leslie Kellett, Legislative Coordinator, City of Prince George, email dated June 2, 2021, regarding City of Prince George Council 2021 UBCM Resolutions
- 8.3 Brad West, Mayor, City of Port Coquitlam, letter dated June 9, 2021, regarding the City of Port Coquitlam 2020 Annual Report (full report available at the Village office)
- 8.4 Bill Dingwall, Mayor, City of Pitt Meadows, letter dated June 14, 2021, to Honourable Marc Dalton, Member of Parliament and Honourable Lisa Beare, Member of the Legislative Assembly, regarding Truth and Reconciliation Commission's Call to Action 75
- 8.5 Cindy Graves, Corporate Officer, Township of Spallumcheen, letter dated June 11, 2021, to BC Hydro regarding Residential Rate Review

9. NEW BUSINESS

Councillor Drake

Water Level at Tatlow Tank

Councillor Drake outlined a proposed motion related to various settings for the Altitude Valve and the ability to raise the water level in the reservoir.

C. Boit, ISL Engineering, expressed caution with regard to large incremental increases and recommended that smaller incremental increases are best to ensure water quality remains safe.

Moved by: Councillor Drake

Seconded by: Councillor Clark

That staff prepare a plan / report and consult with the Water Committee to assess the feasibility to increase the minimum water level setting on the Tatlow Tank.

CARRIED

Councillor Drake

Remote Activation of the Altitude Valve

Councillor Drake outlined a proposed motion related to remote activation of triggering the Altitude Valve by a person other than staff. Discussion ensued.

Moved by: Councillor Drake

Seconded by: Councillor Snell

That staff prepare a report on the feasibility of providing the capacity to trigger the intake on the SCADA by other individuals other than the Water Operators.



COUNCIL REPORT

Date: September 7, 2021

From: Stewart Novak, Public Works and Emergency Preparedness Coordinator

Subject: Letter from Fraser Health regarding Raising the Water Level in Tatlow Reservoir

Recommendation

That the letter from Heather Slater, Water & Land Use Program, Abbotsford Health Protection Office, Fraser Health, dated July 19, 2021, regarding Raising the Water Level in Tatlow Reservoir be received for information.

Purpose

Council requested opinion / input from Fraser Health regarding the plan to raise the Tatlow Reservoirs minimum water level setting.

Background

On July 9, 2021, Fraser Health visited Belcarra for their annual inspection of the water distribution system.

Upon completion of the inspection, a discussion took place with S. Novak, the Belcarra Water Operators and Heather Slater from Fraser Health.

The feasibility of raising the minimum water level of the Tatlow reservoir was discussed and the Report to the Water Committee dated June 28, 2021, was provided to H. Slater for background information.

Staff received a letter from Fraser Health dated July 19, 2021, regarding raising the water level in the Tatlow Reservoir. A copy of the previous Fraser Health inspection report dated July 31, 2019 was also provided.

Attachments:

- A. Letter from Heather Slater, Water & Land Use Program, Abbotsford Health Protection Office, Fraser Health
- B. Stewart Novak, Public Works & Emergency Preparedness Coordinator, report to the Water Committee dated June 28, 2021, Raising the Water Level in Tatlow Reservoir



July 19, 2021

Village of Belcarra
Public Works Department
4084 Bedwell Bay Rd.
Belcarra, BC, V3H 4P8

Attn: Stewart Novak, Public Works and Emergency Preparedness Coordinator

RE: Report on Raising the Water Level in Tatlow Reservoir

Dear Mr. Novak,

Thank you for the opportunity to comment on the report on raising water levels in Tatlow reservoir you had prepared for the City of Belcarra Water Committee.

The three options presented in the report can be summarized as follows:

- 1) Increase water flow at DNV.
- 2) Raising minimum tank levels of the Tatlow Reservoir.
- 3) Engineered structural changes.

While Fraser Health would support all three options, the report states increasing water flow as described in option #1 may not help areas with low pressure.

Option #2 of raising the minimum tank levels of Tatlow reservoir should include a detailed long-term monitoring plan to ensure chlorine residuals are maintained throughout the drinking water distribution system. In the absence of chlorine treatment at the start of the treatment train and / or booster stations, chlorine residuals in the distribution system will be directly proportional to the source water and continue to dissipate while in the distribution system, including storage. Contact with organic matter, stagnation and temperature can quickly reduce disinfection levels. The problem with stagnation is most often noticed by the drop in chlorine levels at dead ends within the distribution system and flushing of the lines at the dead ends is a common solution. Similarly, the frequent turn-over of chlorinated water into the Tatlow reservoir ensures an adequate chlorine residual is maintained during storage in the reservoir. A higher reservoir water level may equate to a longer storage time (less turn-over) and reduced chlorine residual at point of delivery to homes.

If the Village of Belcarra chooses the second option, it would be prudent to gradually raise the reservoir water level in increments to allow for careful monitoring of water quality to ensure chlorine residuals are adequately maintained throughout the distribution system to protect public health.

The third option for engineered system upgrades to ensure water quality is maintained while providing increased capacity for firefighting can include several design options. Although it would be impractical to comment on options not yet proposed, Fraser Health recommended chlorine disinfection equipment be obtained for future needs in a 2019 inspection report. Currently an adequate chlorine residual appears to be maintained in the Belcarra water system via diligent water quality monitoring, skillful equipment operation, and selective line flushing.

Please contact me if you would like to discuss further or have any questions.

Regards,

A handwritten signature in black ink, appearing to be 'H. Slater', with a long horizontal line extending to the right.

Heather Slater, PhD, MASC, REHS, CPHI(c)
Water and Land Use Program
Abbotsford Health Protection Office
400 – 2777 Gladwin Rd., V2T 3S3
Ph. 604-870-7900 (Loc. 647902)
Fax. 604-852-1558



DRINKING WATER INSPECTION REPORT

Health Protection

5845

FACILITY NAME: <i>VILLAGE OF BELLARNA</i>		INSPECTION DATE (yyyy/mm/dd): <i>2019/07/31</i>	TIME SPENT:
FACILITY ADDRESS: <i>BELLARNA</i>		NEXT INSPECTION DATE (yyyy/mm/dd): <i>2020/07</i>	
<input type="checkbox"/> NEW PERSON IN CHARGE:		<input type="checkbox"/> New Tel: () <input type="checkbox"/> New Fax: ()	
<input type="checkbox"/> NEW EMERGENCY CONTACT:		<input type="checkbox"/> New Tel: () <input type="checkbox"/> New Fax: ()	
FACILITY TYPE: <input type="checkbox"/> WS1 (300+ connections) <input type="checkbox"/> WS4 (1 public connection) <input checked="" type="checkbox"/> WS2 (15 - 300 connections) <input type="checkbox"/> WS9 (other) <input type="checkbox"/> WS3 (2 - 14 connections)		INSPECTION TYPE: <input type="checkbox"/> Initial <input type="checkbox"/> Consultation <input type="checkbox"/> Follow Up to Lab Report <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Sampling <input type="checkbox"/> Water Quality Complaint <input type="checkbox"/> Follow Up <input type="checkbox"/> Investigation <input type="checkbox"/> Water Borne Illness Complaint	
ACTION TAKEN: ADMINISTRATIVE <input checked="" type="checkbox"/> Information Provided <input type="checkbox"/> No Action Required <input type="checkbox"/> Permit Issued <input type="checkbox"/> Rescind Public Notification		OTHER INFORMATION: (complete for Routine Inspection) EOCP (operator certification) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Acceptable SWS Training <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A ERCP (emergency plan) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Annual Report Provided to Users <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
ENFORCEMENT <input checked="" type="checkbox"/> Require Corrections <input type="checkbox"/> Ticket Issued <input type="checkbox"/> Written Order <input type="checkbox"/> Order Public Notification			

HAZARD RATING FOR YOUR FACILITY: ☐ High ☐ Moderate ☒ Low

Follow Up to "Critical" Violations Noted on Previous Inspections (if applicable)

Code	Corrected?	Code	Corrected?
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No

Code	Explanation of Violations, Recommendations or Comments	(✓) Corrected During Insp.	Date To Be Corrected By
	2018 ANNUAL REPORT AVAILABLE SAMPLE RESULTS MEET THE REGULATORY REQUIREMENTS		
	ENSURE THAT THE SAMPLING FREQUENCY IS INCREASING DURING SUMMER MONTHS APRIL - OCTOBER		
	RECOMMENDED THAT THE VILLAGE OBTAIN CHLORINATION EQUIPMENT FOR FUTURE NEEDS.		

RECEIVED BY (Signature): <i>[Signature]</i>	EHO (Signature): <i>[Signature]</i>
PRINTED NAME: <i>19/07/31</i>	EHO PRINTED NAME: <i>BIRNIE SIVA</i>



REPORT TO WATER COMMITTEE

Date: June 28, 2021
From: Stewart Novak, Public Works and Emergency Preparedness Coordinator
Subject: **Raising the Water Level in Tatlow Reservoir**

Council Motion June 21, 2021

“That staff prepare a plan / report and consult with the Water Committee to assess the feasibility to increase the minimum water level setting on the Tatlow tank.”

Background

In 2017 / 2018 Opus International designed and installed an electronic override control that gives the ability to the Public Works Water Operators to electronically override the Altitude valve.

The benefit of the installation allows Water Operators to:

1. Open the tank fill electronically via the SCADA System in times of high demand during firefighting conditions.
2. Electronically set the minimum and maximum water levels of the reservoir.

Council requested that staff prepare a report for the Water Committee which will assesses the feasibility of permanently increasing the minimum water level of the tank. After review by the Water Committee, the report will be brought to Council.

Objective Plan

The objective of the Public Works Water Operators is to continually improve the water operation service, collect data and to maintain a safe drinking water distribution system. The Water Operators manage the system according to the Drinking Water Protection Regulations and the Fraser Health Authority.

As per the discussion and motion at the Council meeting held June 21, 2021, Public Works Water Operators were requested to explore the possibilities of raising the minimum tank level of the Tatlow reservoir. Prior to the June 21, 2021 Council meeting, Water Operators began collecting additional data samples beyond the minimum requirements.

Procedure

- Commencing in May 2021, staff began collecting additional water samples from all testing ports every two weeks. This is in addition to the mandated samples that are required by the Fraser Health Authority.

- Staff will continue collecting additional samples until the annual review and consultation with the district Fraser Health Officer.
- All changes to the testing and water levels must be approved by the Fraser Health District Officer.
- The proposed change is to raise the Tatlow Reservoir water level by 2% for one year.
- After reviewing the data for one year and with acceptance from the Fraser Health Officer, Water Operators would raise the level an additional 2% higher for a second year. This process would be repeated each year until a peak level is determined based on the evolving data.

Impact

The beneficial change may be perceived as being too slow. Following this process, it will take three years to raise the minimum level of the reservoir by 6%. Over the next three years and based on the data collected, the ideal level of the reservoir will be established.

Raising the minimum level of the Tatlow Reservoir is an operational change as opposed to an engineered structural change. No operational changes may be implemented unless they are within the parameters of the Water Operators license and are made in consultation with Fraser Health.

Opinion

Council is requesting the following three scenarios be explored:

1. Increasing the water flow from DNV from 22 LPS to 30 LPS, 60 LPS and 120 LPS. It is the opinion of Public Works that one of these situations may partially assist with this matter.
In the low end of the water distribution system where the water pressure is already somewhat acceptable (Belcarra Bay Road), increasing the flow rate from DNV will speed up filling the reservoir and would allow a firefighting water flow of approximately 60 LPS for well over one hour.
Increasing the water flow from DNV on the upper end of the low lines (Senkler) may not benefit the firefighting capacity because these areas are lacking pressure.
2. Raising the minimum tank levels of Tatlow Reservoir would be a very slow implementation and may still not solve the Senkler matter. The Water Operators continually monitor the SCADA system and open the tank fill as soon as a potential fire call is received. This assists with ensuring a water draw cushion for the Belcarra Bay Road area.
3. Engineered structural change. Multiple designs are available which may include additional/higher reservoir tanks, pump stations or a combination of both. This option represents a permanent solution to increasing water flow for firefighting operations. This may result in the requirement for a chlorination system.



COUNCIL REPORT

Date: November 8, 2021
From: Councillor Drake
Subject: Water Committee Recommendations

Whereas the Water Committee has thoroughly studied the Village water system, the documentation and management of the system and provided many suggestions; therefore, be it resolved:

Recommendation A:

That Council thank the Water Committee members for all their work; welcome future input from Committee members as individuals and declare the work of the Water Committee completed.

Recommendation B:

That Council approve the Water System motions below #1 to #32.

Purpose / Background

Introduction:

After consultation with the Water Committee Chair, Ian Devlin, a few modifications have been made to the motions. The reporting of status on those steps approved by Council is now specified as to be in writing and scheduled monthly.

Most motions outlined below were included in the Water Committee Technical Report #2 and are subject to the disposition of Council.

Water System Recommendation B:

1. That each of the following list of recommendations derived primarily from the Water Committee Technical Brief Report #2 dated September 26, 2021 be approved; amended and approved; deferred for subsequent discussion or not approved.
2. That, unless otherwise specified, recommendations be referred to staff for action and
3. That the motions approved be retained and that staff advise Council as progress is made on the motions adopted which would include such matters as projected completion dates and completed status.
4. That a written report on progress be provided at the first Council meeting of each month.

5. [1(a)] *¹That staff prepare and maintain an up-to-date Water System Operation and Maintenance Manual (OMM); and
6. [1(b)] That staff prepare and maintain an up-to-date SCADA manual;
7. [1(c)] That Council recognize that the Belcarra water system is dual-purpose - intended both to provide potable water in accordance with applicable regulations and to support fire fighting.
8. [1(d)] That the OMM and the procedures outlined reflect and support the dual-purpose nature of its water system ensuring water quality while optimizing firefighting capacity subject to that water quality assurance
9. [2(a)] That the OMM framework prepared by Ralph Drew be adopted and that detailed material, as completed, be inserted into this framework, as required.
10. [2(a.1)] That the detailed operating procedure pertaining to the triggering of Tatlow inflow upon SVFD fire callout and the advising of DNV of any substantial structural fire be included in the manual.
11. [2(b)] That as sections of the OMM are completed, the sections be presented to Council.
12. [3(a)] That in response to the 2019 recommendation from Fraser Health, (*2), a report be presented to council on the feasibility and cost of adding chlorination capacity to our system.
13. [3(b)] That tracking of the ongoing chlorine & water sampling monitoring program through Metro Vancouver and ongoing documentation be described in the OMM.
- 14 [4(a)] That a complete set of water system drawings (including engineering drawings for both Tatlow and the Dutchman Creek reservoirs) be included in the OMM or referenced and readily accessible
15. [5(a)] That Village wide meter readings be used to provide a report to Council estimating domestic consumption and comparing the consumption to measured inflow.
16. [6(a)] That results of the 2022 inspections of both the Tatlow & Dutchman Creek reservoirs be reported to Council and include assessments of the life expectancy of the reservoirs, as well as information for use in long term capital planning.
- [7] That WSP engineers report the following to Council:
17. [7(a)] That the potential for and high level costs of increased inflow from DNV be discussed considering:
18. [7(a.1)] a modest increase with modest impact and costs and

19. [7(a.2)] a more ambitious option which may be dependent on a number of factors including funding (grant) assistance.
 20. [7(b)] a review and upgrade of the SCADA system
 21. [7(c)] a report on the apparent discrepancy between DNV metering of water provided to the Village and the Village metering of received water
 22. [7(d)] should a discrepancy be found per 7(c) above, either resolve the matter or suggest and cost estimate potential solutions.
 23. [7(e)] report on the capacity of the twin lines that cross under Indian Arm connecting the District of North Vancouver water system to the Village water system while assuming a credible range of flow rates
- [8] That the Master Capital Asset Management Plan being prepared for the Village:
24. [8(a)] include the water system and all components
 25. [8(b)] include a multiyear financial plan for the water system.
- [9] That, as part of mitigation strategies, Council consider:
26. [9(a)] Fire Smart practices
 27. [9(b)] Sprinkler bylaws - Council assess the benefits of seeking mandatory sprinkler authority; the cost and probability of success in addition to the impact in terms of sprinkler installations and decide whether to pursue this authority.
 28. [9(c)] If council decides to not seek approval to mandate sprinklers, that the Village prepare an information sheet for homeowners explaining local firefighting challenges, particularly for larger homes, and recommending sprinkler installations.
 29. [9(d)] That Council approve offering further information to residents about the benefits of other mitigating steps such as monitored and/or modern alarm systems.
 30. [9(e)] That Council consider the recommendations of the Tree Committee related to fire risk reduction.
 31. [9(f)] That the reduction and mitigation strategies suggested by B.A. Blackwell and Associates be considered as outlined in the Community Wildfire Resilience Plan presented to Council September 26, 2021.
 32. [10(a)] sprinklers - see 9b & 9c above

Notes:

- *1 – figures in [] brackets largely reference the Belcarra Water Committee - Technical Brief #2 dated September 26, 2021 prepared by Committee Chair, Ian Devlin.
- *2 -July 19, 2021 letter from Fraser Health

Abbreviations:

OMM - Operating and Maintenance Manual

SCADA - Supervisory Control and Data Acquisition



COUNCIL REPORT

Date: January 24, 2022

From: Stewart Novak, Public Works, and Emergency Preparedness Coordinator

Subject: **Water Model Quote from WSP**

Recommendation

That Council approve a quote for \$25,205.00 plus GST for payment to WSP:

- for the development of water model and assessment of the capacity of the Belcarra water system at a cost of \$19,745.00; and
- for the conducting of field testing in order to calibrate the model results with the actual observations at a cost of \$5,460.00; and

That the funds come from the 2022 Water Capital Funding Budget.

Purpose

The purpose of a water model study is to develop a water model to assess the long-term infrastructure capacity of the water service area, and to carry out a hydrant field testing and model calibration program for the Water Distribution System. This work is strongly recommended prior to implementing larger improvements in the water distribution system such as chlorination or looping of the distribution lines.

Background

At a Regular Council meeting dated November 8, 2021, a report was submitted by Councilor Drake:

“6.2 Councilor Drake – Water Committee Recommendations

12. That in response to the 2019 letter from Fraser Health recommending a report be presented to Council on the feasibility and cost of adding chlorination capacity to our system.”

Staff continue to work to follow up on Water Committee Recommendations. A Water Model engineering study is recommended prior to planning and designing any larger scope upgrades of the Water Distribution System.

Attachment A – WSP letter dated December 3, 2021



December 3, 2021

Lorna Dysart & Stewart Novak
Village of Belcarra
4084 Bedwell Bay Road
Belcarra BC V3H 4P8

Attention: Lorna Dysart, Chief Administrative Officer; Stewart Novak, Public Works & Emergency Preparedness Coordinator

Dear Ms. Dysart & Mr. Novak:

We are pleased to submit the following proposal to undertake the development of a Water Model and assessment of the capacity of the water system of the Village of Belcarra (the "Village"). WSP has extensive experience in modelling, planning, designing, and assessing municipal water systems. This proposal outlines our scope of work, the tasks required, a preliminary schedule, and our fees for the defined scope.

Thank you for the opportunity to continue our collaborative working relationship with the Village. We have presented a strong team with a combination of experience, expertise, project management skills, and familiarity with the Village's system to complete this project.

PROJECT BACKGROUND

The Village's water system is supplied by a connection to the District or North Vancouver and provides potable drinking water to its residents through the Midden Road Valve Chamber and the Tatlow Reservoir. The objective of this study is to develop a Water Model and assess the long-term infrastructure capacity of the service area. An optional scope item to carry out a hydrant field testing and model calibration program has also been identified and provided in this proposal.

SCOPE OF WORK

PROJECT MANAGEMENT

WSP will provide project management services over the course of the project to promote effective project delivery. The project management services will include the following:

- Project kick-off meeting;
- Monthly progress reports, tracking budget, scope, and schedule; and
- Monthly update meetings with WSP's project manager, client liaison, and the Village.

Suite 1000
840 Howe Street
Vancouver, BC, Canada V6Z 2Z9

T: +1 604 631 9579
F: +1 604 683-8655
wsp.com



The project kick-off meeting will be conducted in order to ensure that our work program, schedule, and budget will produce the expected outcome. The following items will be addressed during this meeting:

- Define liaison and reporting roles and structures;
- Confirm documentation and communication protocols;
- Review work program and expected outputs;
- Review the schedule and highlight any key dates or project milestones; and
- Obtain ACAD copies of legal composite from the Village and obtain any aerial mapping and photography, current survey, plans, and any other relevant background documents.

We have assumed all meetings will be conducted via teleconference.

BACKGROUND DOCUMENT REVIEW

WSP will review all background documentation provided by the Village. This data should include design information on the water supply, watermains, storage components, and accurate record drawings and GIS data as available. The Village currently receives treated water from Metro Vancouver through an underwater crossing from the District of North Vancouver. Historical demands and reservoir level data will also be useful.

DEMAND AND POPULATION ESTIMATION

WSP will develop the average day demand (ADD), maximum day demand (MDD), peak hour demand (PHD), and fire flow (if applicable) for the Village. Demands will be estimated assuming the per capita usage stipulated in the Village Subdivision and Development Bylaw No. 492, and other information supplied by the Village as necessary. Population estimates will be assessed based on current census and land use planning documents.

WSP will submit a list of assumptions to the Village for review prior to proceeding to the model development task.

HYDRAULIC MODEL DEVELOPMENT

Using the data collected in the tasks as outlined above and the design criteria agreed to, WSP will proceed with developing the hydraulic model to represent the existing water system; the model will include ADD, PHD and MDD + fire flow (if applicable) scenarios. The hydraulic model will be developed in WaterCAD, but also delivered in EPANET, which is a non-proprietary and free software, so that the Village may take ownership of the computer water model in the future for their own internal use.

WATER AGE ASSESSMENT

Once the hydraulic model build is complete, the model will be used to assess water age under ADD conditions to determine average water residence time throughout the distribution network.

TECHNICAL MEMORANDUM

WSP will develop a technical memorandum (TM) to document the results of the study for each water system. The TM will include the following details:

- Summary of water system;



- Discussion on assumptions for existing populations and scenarios;
- Overview of the approach to developing the existing system hydraulic model with ability to perform water age assessments;
- Discussion on the findings of the hydraulic analysis, including issues related to service pressures, fire flows, and water age; and,
- Recommendations on further studies to identify capital upgrades required to address any issues identified in the bullet point above.

ENGINEERING FEES

The following personnel from WSP will be involved in the project. Their resumes can be provided upon request.

— Michael Levin, P.Eng	(\$170)	Project Manager
— Clive Leung, P.Eng	(\$200)	Technical Reviewer
— Sanwal Gilani, EIT	(\$125)	Project Engineer / Modeller
— Negin Tousi, EIT	(\$130)	Client Liaison

The proposed scope of work will be completed on a time and materials basis for a fixed fee of **\$19,745.00** (excl of GST). A detailed fee matrix has been appended to this letter proposal. Additional WSP staff may be utilized to meet our commitments as laid above.

The Village may, during the project, without invalidating this agreement, make changes in the scope of services to be provided by WSP. Additional services as requested will be provided at hourly rates as set out above and the schedule will be changed as is reasonably necessary to allow for the changes in the scope of services.

OPTIONAL SCOPE OF WORK: FIELD DATA COLLECTION AND MODEL CALIBRATION

In order to provide confidence in model accuracy, a calibration process is highly recommended. This process involves estimating model parameters to minimize the difference between the model results and actual observations. To calibrate the hydraulic model, WSP will work with the Village operations staff to collect field data. A hydrant testing program will be developed for the purposes of model calibration. Prior to field testing, maps will be provided to the Village operations staff, to facilitate discussion and confirm the location of proposed test hydrants. WSP can provide one hydrant diffuser and four (4) digital pressure loggers to record field measurements. WSP will also document the condition of hydrants and flow achieved. This data will be used to calibrate the water model to be built. Calibration will be carried out to AWWA Standards. The optional scope of work will be completed on a time and materials basis for a fixed fee of **\$5,460.00** (excl of GST). The Village can conduct this at a later date if required.

At least one operations or qualified staff will be required to accompany our staff during the testing to assist our team in operating the fire hydrants.



SCHEDULE

The WSP team would initiate work with 7 days of approval. The estimated time for completion of the base scope is approximately 10 weeks. The optional scope including field data collection and model calibration will require approximately an additional 3 weeks to complete.

LIMITATIONS

In developing this fee estimate WSP have assumed that the data provided by the Village will be fit-for-purpose and readily used to develop the hydraulic model. Should additional effort be required to review, compile, or collect the necessary information, this will be discussed with the Village. The extra services would be provided at hourly rates as set out above, and the project schedule would be reasonably extended to allow for the extra scope.

CLOSURE

We are fully confident that WSP has the right team and expertise to complete this assignment to your satisfaction. We look forward to working with you on this project.

Thank you for considering us for this assignment, and if you have any questions about this proposal, please do not hesitate to contact the undersigned.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'ML', with a long horizontal stroke extending to the right.

Michael Levin, P.Eng
Project Manager, Infrastructure

Encl.
SG/AK/ML/NT/lp

**Village of Belcarra
Water System Capacity Assessment**



	Michael Levin Project Manager	Clive Leung Technical Reviewer	Sanwal Gilani Project Engineer	Negin Tousi Client Liaison	Subtotal Fees
Team Member >>					
Hourly Rates >>	\$170	\$200	\$125	\$130	
1 - Project Management & Initiation					
Project Initiation	4		4	4	\$ 1,700
Project Meetings	6			2	\$ 1,280
Subtotal Fees	\$1,700	\$0	\$500	\$780	\$2,980
Sub Total Hours	10	0	4	6	20
2 - Review of Existing System					
Background Information Review	4	2	5	3	\$ 2,095
Subtotal Fees	\$680	\$400	\$625	\$390	\$2,095
Sub Total Hours	4	2	5	3	14
3 - Water System Assessment					
Estimate Water Demands	2		18		\$ 2,590
Develop Hydraulic Model	2		50		\$ 6,590
Water Age Assessment	2		18		\$ 2,590
Technical Memorandum	4	1	12	4	\$ 2,900
Subtotal Fees	\$1,700	\$200	\$12,250	\$520	\$14,670
Sub Total Hours	10	1	98	4	113
Total Hours	24	3	107	13	147
TOTAL FEES (excluding Optional Work & GST)	\$4,080	\$600	\$13,375	\$1,690	\$19,745
4 - Optional Work					
Field Data Collection and Model Calibration	8	2	28		\$ 5,260
Disbursements					\$200
Subtotal Fees	\$1,360	\$400	\$3,500	\$0	\$5,460
Sub Total Hours	8	2	28	0	38
TOTAL FEES (excluding GST)	\$5,440	\$1,000	\$16,875	\$1,690	\$25,205



COUNCIL REPORT

Date: May 24, 2022

From: Stewart Novak, Public Works, and Emergency Preparedness Coordinator

Subject: **Water Committee Recommendations – Status Report**

Recommendation

That the May 24, 2022, Monthly Water Report be received for information.

Purpose

To provide Council with a monthly progress report on the motions adopted on November 8, 2021, and include items submitted by the Water Committee.

Background

This version of the status report is intended to render down the recommendations to those that are truly outstanding and have yet to be completed or worked on. The numbering below does not relate to the table, but rather is simply a numeric listing of the outstanding work.

1. Water System O&M Manual
 - a. O&M manual exists and is being updated and improved as required.
 - b. Item 10 – Tatlow reservoir operating procedure included in the current O&M manual.
 - c. SCADA & Fire procedures manual exists and has been inserted into the Tatlow O&M.
 - d. #13 – water sampling is done on a bi-weekly basis from April to September, and monthly during the remainder of the year. Lab results are sent to Metro Vancouver, the Village, and to Fraser Health (only if there is an issue). Annual Water report widely circulated.
 - e. #14 – water system drawings are stored on the Village computer server and backed up offsite for security.
2. Village water readings versus DNV metered readings. Items 15, 21 and 22
 - a. (15) - Village meter reading is conducted twice per year to monitor high volumes and general maintenance.
 - b. (21) – The Strathcona meter and all valve assemblies have been reconditioned.
3. Reservoir(s) inspection – Completed and awaiting results.
4. Tree Removal around the reservoir to be conducted.
5. Scada System – item 20
 - a. WSP contracted to undertake a SCADA upgrade.

- b. Work in progress.
- 6. Mandatory sprinklers
 - a. FireSmart program to develop DPAs in wildfire hazard areas
 - b. In the past ten years, there have been 11 new homes built, nine of which have installed sprinklers.
- 7. Alarm systems – item 29
 - a. This is something that can be proceeded with relatively quickly and easily through a public education campaign.
 - b. Work in conjunction with the Fire Chief.

Attached is a copy of the Water Committee recommendations – in table form – approved by Council on November 8, 2021, updated March 28, 2022.



VILLAGE OF BELCARRA
Council Motions – November 8, 2021
Water Committee – Councillor Drake
Updated May 24, 2022



Recommendation B:

That Council approve the Water System motions below #1 to #31.

1. That each of the following list of recommendations derived primarily from the Water Committee Technical Brief Report #2 dated September 26, 2021 be approved; amended and approved; deferred for subsequent discussion or not approved.
2. That, unless otherwise specified, recommendations be referred to staff for action and
3. That the motions approved be retained and that staff advise Council as progress is made on the motions adopted which would include such matters as projected completion dates and completed status.

Motion	Action	Completed
4. That a written report on progress be provided at the first Council meeting of each month.	Dec 6/21 – WSP to Council re: SCADA Upgrades <ul style="list-style-type: none">• Additional reports are being worked on by WSP	
5. That staff prepare and maintain an up-to-date Water System Operation and Maintenance Manual (OM Manual); and	Ongoing – Draft Manual O&M Manual exists digitally as a reference document, and final version expected within a week.	
6. That staff prepare and maintain an up-to-date SCADA Manual ;	Ongoing – Draft Manual Manual is complete but is subject to update as needed.	Complete
7. That Council recognize that the Belcarra water system is dual-purpose - intended both to provide potable water in accordance with applicable regulations and to support fire fighting.	No Action	Council supported

Motion	Action	Completed
8. That the OM Manual and the procedures outlined reflect and support the dual-purpose nature of its water system ensuring water quality while optimizing firefighting capacity subject to that water quality assurance	Procedures for fire calls are included in the Water Operator manual. Water Operators are trained in the procedures. Fire hydrants are maintained to operational standards as is the entire water distribution system. The water model study currently being conducted by WSP Engineers will help to identify and determine the maximum usage and limitations of the water distribution system. (see item 12)	Complete
9. That the OM Manual framework prepared by Ralph Drew be adopted and that detailed material, as completed, be inserted into this framework, as required.	Ongoing. The Water Operators manuals are continually revised, as operators needs and conditions change. Using as an overarching framework. Full integration expected within two weeks.	
10. That the detailed operating procedure pertaining to the triggering of Tatlow inflow upon SVFD fire callout and the advising of DNV of any substantial structural fire be included in the manual.	Manual – section completed in the Draft Manual . As per question 8. Tatlow reservoir operating procedure included in the current O&M manual	Complete
11. That as sections of the OM Manual are completed, the sections be presented to Council.	Draft Manual under review	
12. That in response to the 2019 recommendation from Fraser Health, (*2), a report be presented to council on the feasibility and cost of adding chlorination capacity to our system.	Nov 19/21 – Council approved a motion for WSP Engineers to prepare a water model on January 24, 2022. The work is now being conducted. (see item 8)	Complete
13. That tracking of the ongoing chlorine & water sampling monitoring program through Metro Vancouver and ongoing documentation be described in the OM Manual .	Ongoing – this is included in the Annual Water Report Water sampling is done on a bi-weekly basis from April – September & monthly during the remainder of the year. Lab results are sent to Metro Van., the Village & to Fraser Health (only if there is an issue)	Complete

Motion	Action	Completed
14. That a complete set of water system drawings (including engineering drawings for both Tatlow and the Dutchman Creek reservoirs) be included in the OM Manual or referenced and readily accessible	Ongoing – Water System drawings are in the main computer. There are too many files to make hard copies the manual. They are in a secure location on the office computer files. Water system drawings are stored on the Village computer server & backed up offsite for security.	Complete
15. That Village wide meter readings be used to provide a report to Council estimating domestic consumption and comparing the consumption to measured inflow.	Future Council Strategic Planning Item Village meter reading is conducted twice per year to monitor high volumes & general maintenance.	
16. That results of the 2022 inspections of both the Tatlow & Dutchman Creek reservoirs be reported to Council and include assessments of the life expectancy of the reservoirs, as well as information for use in long term capital planning.	Will take place in 2022 <ul style="list-style-type: none"> • Quotes being tendered as work progresses • Work is being conducted around the reservoir site to accommodate a proper inspection, which includes removing of some trees and excavation work. Tree removal around the reservoir to be conducted. Reservoir inspections complete and awaiting results.	
That WSP engineers report the following to Council:		
17. That the potential for and high-level costs of increased inflow from DNV be discussed considering:	Nov 19/21 – Stewart & Lorna meeting with Negin Tousi (WSP) Report Forthcoming March 30/22 WSP report presented to Council & subsequently released publicly on May 9/22.	Complete
18. a modest increase with modest impact and costs and	See #17 above	
19. a more ambitious option which may be dependent on a number of factors including funding (grant) assistance.	See #17 above	
20. a review and upgrade of the SCADA system	Report to Council Dec 6/21. A contract was awarded to WSP for a SCADA upgrade. Work will begin February 2022.A Zoom meeting was held on March 11 th with Sea to Sky, WSP and Public Works. Sea to Sky will provide quotes for the required equipment for review. WSP work in progress. Reviewing pricing on equipment upgrades.	

Motion	Action	Completed
21. a report on the apparent discrepancy between DNV metering of water provided to the Village and the Village metering of received water	WSP overseeing project. The water meter in Strathcona is being replaced. Strathcona water meter has been serviced and repaired as required. A service technician is working on the remaining items.	The Strathcona meter & all valve assemblies have been reconditioned.
22. should a discrepancy be found per 7(c) above, either resolve the matter or suggest and cost estimate potential solutions.	See #21 above	
23. report on the capacity of the twin lines that cross under Indian Arm connecting the District of North Vancouver water system to the Village water system while assuming a credible range of flow rates	WSP overseeing project WSP report dated March 30/22. See item #17.	Complete
That the Master Capital Asset Management Plan being prepared for the Village:		
24. include the water system and all components	Asset Management Plan under way See JW Infrastructure Planning report – presented to Council on April 11/22	Complete
25. include a multiyear financial plan for the water system.	See #24 above - 5 yr financial plan includes water system. Second phase of long term financial plan to be undertaken later this year.	
That, as part of mitigation strategies, Council considers:		
26. Fire Smart practices	Residents received an overview from Blackwell, Grant Application completed for prescription (prescribed area identified). Second phase contract awarded to BA Blackwell to designate DPA areas.	Complete
27. Sprinkler bylaws - Council assess the benefits of seeking mandatory sprinkler authority; the cost and probability of success in addition to the impact in terms of sprinkler installations and decide whether to pursue this authority.	Future Council Strategic Planning consideration. Future report to be prepared & submitted to Council in June.	

Motion	Action	Completed
28. If council decides to not seek approval to mandate sprinklers, that the Village prepare an information sheet for homeowners explaining local firefighting challenges, particularly for larger homes, and recommending sprinkler installations.	See #27 above	
29. That Council approve offering further information to residents about the benefits of other mitigating steps such as monitored and/or modern alarm systems.	Future Council Strategic Planning consideration. Public education to be undertaken, working in conjunction with the Fire Chief.	
30. That Council consider the recommendations of the Tree Committee related to fire risk reduction.	This work is ongoing as per #26 above, FireSmart BA Blackwell DPA designation.	
31. That the reduction and mitigation strategies suggested by B.A. Blackwell and Associates be considered as outlined in the Community Wildfire Resilience Plan presented to Council September 26, 2021.	Ongoing for staff and residents as per #26 & #30. Grant funding has been approved and a staff report is pending. Moving forward with recommendations in BA Blackwell initial report & this resulted in phase two work in 2022 contract.	Complete

Abbreviations:

OM Manual - Operating and Maintenance Manual

SCADA - Supervisory Control and Data Acquisition



VILLAGE OF BELCARRA
REPORT NUMBER: 211-09148-00

VILLAGE OF BELCARRA HYDRAULIC WATER MODEL DEVELOPMENT

SEPTEMBER 02, 2022

CONFIDENTIAL





VILLAGE OF BELCARRA WATER MODEL DEVELOPMENT

VILLAGE OF BELCARRA

FINAL
CONFIDENTIAL

PROJECT NO.: 211-09148-00
DATE: SEPTEMBER 02, 2022

WSP
100 – 840 HOWE STREET
VANCOUVER, BC V6Z 2M1

T: +1 604-685-9381
WSP.COM



September 02, 2022

Confidential

Village of Belcarra
4048 Bedwell Bay Road
Belcarra BC, V3H 4P8

**Attention: Paula Richardson, Acting Chief Administrative Officer;
Stewart Novak, Public Works & Emergency Preparedness Coordinator**

Dear Ms. Richardson & Mr. Novak:

Subject: Water Model Development

WSP Canada Inc. is pleased to submit to the Village of Belcarra one (1) digital copy of our Village of Belcarra Water Model Development Report.

Yours sincerely,



Michael Levin, P.Eng., PMP
Project Manager, Infrastructure

SG/ML/ab
Encl
WSP ref.: 211-09148-00

REVISION HISTORY

SECOND ISSUE

September 1, 2022	Draft Submission	
Prepared by	Approved By	
Sanwal Gilani, E.I.T.	Michael Levin, P.Eng., PMP	
September 2, 2022	Final Submission	
Prepared by	Approved By	
Sanwal Gilani, E.I.T.	Michael Levin, P.Eng., PMP	

SIGNATURES

PREPARED BY





September 2, 2022

Sanwal Gilani, E.I.T.
Project Engineer

Date

APPROVED BY



2022-09-02
PERMIT NUMBER: 1000200
WSP CANADA INC. 2222 08 22

September 2, 2022

Michael Levin, P.Eng., PMP
Project Manager

Date

WSP prepared this report solely for the use of the intended recipient, Village of Belcarra, in accordance with the professional services agreement. The intended recipient is solely responsible for the disclosure of any information contained in this report. The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report. This limitations statement is considered an integral part of this report.

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CONTRIBUTORS

CLIENT

Acting Chief Administrative Officer	Paula Richardson
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Public Works & Emergency Preparedness Coordinator	Stewart Novak
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Village Operations Staff	Brad Smith
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Village Operations Staff	Lance Fortier
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WSP

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Technical Advisor	Clive Leung, P.Eng., PMP
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Project Engineer	Kaede Durrant, E.I.T.
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Project Engineer	Sanwal Gilani, E.I.T.
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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Purpose	1
1.2	Scope of Work	1
1.3	Data Collection and Information Review	1
2	EXISTING WATER SYSTEM	3
2.1	Water System Overview	3
3	DESIGN CRITERIA	5
4	MODEL AND SCENARIO DEVELOPMENT ..	6
4.1	Model Software Selection	6
4.2	Model Development Overview	6
4.2.1	Junctions	6
4.2.2	Pipes	6
4.2.3	Reservoirs	6
4.2.4	Tanks	6
4.3	Scenario Development	7
4.3.1	Average Day Demand	7
4.3.2	Maximum Day Demand	7
4.3.3	Peak Hour Day Demand	7
5	MODEL CALIBRATION	8
5.1	Background	8
5.2	Methodology	8
5.2.1	Calibration Parameters	12
5.3	Results and Discussion	12
5.3.1	C-Factor Field Calibration Results	12
5.3.2	Multi-Pressure Field Calibration Results	13
5.3.3	Calibration summary	15
6	HYDRAULIC ANALYSIS	16
6.1	Pressures During Average Day Demand	16

6.2	Pressures During Peak Hour Demand	18
6.3	Fire Flows During Maximum Day Demand	20
6.4	Water Age under Average Day Demand	22
7	SUMMARY AND RECOMMENDATIONS	24

TABLES

TABLE 1:	DATA COLLECTION SUMMARY	2
TABLE 2:	BELCARRA WATER SYSTEM OVERVIEW	3
TABLE 3:	DESIGN CRITERIA	5
TABLE 4:	RECORDED PARAMETERS DURING HYDRANT FLOW TESTING	12
TABLE 5:	C-FACTOR CALIBRATION RESULTS	12
TABLE 6:	CALIBRATED C-FACTORS	13
TABLE 7:	UNCALIBRATED MULTI-PRESSURE TEST RESULTS	14
TABLE 8:	CALIBRATED MULTI-PRESSURE TEST RESULTS	14
TABLE 9:	NODES NOT IN COMPLIANCE WITH SERVICE PRESSURE REQUIREMENTS (ADD)	16
TABLE 10:	NODES NOT IN COMPLIANCE WITH SERVICE PRESSURE REQUIREMENTS (PHD)	18
TABLE 11:	DEMAND NODES WITH DEFICIENT FIRE FLOW (MDD)	20
TABLE 12:	WATER AGE DURING ADD	22
TABLE 13:	TATLOW RESERVOIR STORAGE CAPACITY ANALYSIS	24

FIGURES

FIGURE 1:	WATER SYSTEM OVERVIEW	4
FIGURE 2:	MULTI-PRESSURE HYDRANT TESTING LOCATIONS	10
FIGURE 3:	C-FACTOR HYDRANT TESTING LOCATIONS	11
FIGURE 4:	PRESSURES DURING AVERAGE DAY DEMAND	17
FIGURE 5:	PRESSURES DURING PEAK DAY DEMAND	19
FIGURE 6:	FIRE FLOWS DURING MAXIMUM DAY DEMAND	21

FIGURE 7:	WATER AGE DURING AVERAGE DAY	
	DEMAND	23

APPENDICES

A HYDRANT TESTING

1 INTRODUCTION

1.1 PURPOSE

WSP Canada Inc. (WSP) was retained by the Village of Belcarra (the ‘Village’) to develop the Village of Belcarra water model to represent the existing water model and to provide recommendations on further studies to identify capital upgrades to address any issues in the existing system.

The purpose of this assignment was to develop the model using the AutoCAD drawing developed by WSP in 2017 and a 5-meter contour map for the Village. The hydraulic model was developed in WaterCAD, but will also be delivered in EPANET, which is a non-proprietary and free software. This is done to allow the Village to take ownership of the computer water model in the future for their own internal use.

This report summarizes the model development and calibration efforts as well as presents recommendations on further studies to identify upgrades to address any deficiencies in the existing system. This will provide guidance for improved and more transparent decision-making for the management and operation of the Village’s water utility system.

1.2 SCOPE OF WORK

The scope of work for this assignment is as follows:

- Gather and review all existing information related to water supply, such as studies, reports, drawings, etc. from the Village.
 - Provide a summary of the water system.
 - Discuss assumptions for existing populations and scenarios.
 - Develop the water model in Bentley’s WaterCAD and convert it to the latest version of U.S. EPA’s EPANET.
 - Conduct a hydraulic analysis to identify issues related to service pressures, fire flows, storage capacity, and water age.
 - Recommend further studies to identify capital upgrades required to meet the Village’s level of service assessment criteria.
-

1.3 DATA COLLECTION AND INFORMATION REVIEW

The Village provided record drawings that were used to develop the model. Table 1 lists the data collected and reviewed by WSP to develop the model. The information was provided in electronic format, and consists of geospatial data, drawings, records, and reports of previous relevant studies.

Table 1: Data Collection Summary

DESCRIPTION	DATA TYPE	SOURCE	PURPOSE
Civil Water System Overall Plan (see Figure 1)	AutoCAD	WSP	Model Development
Belcarra Water System Overview	PDF	Village of Belcarra	Model Development
Tatlow Road Reservoir and Pump Station Valve Operational Procedures – Record Drawing	PDF	Village of Belcarra	Model Development
Tatlow Fire Pump Plate	JPEG	Village of Belcarra	Model Development
Metro Vancouver Water Consumption Statistics Report (March 2021)	PDF	Village of Belcarra	Demand Estimation
Belcarra Water Consumption from Billings	.xlsx	Village of Belcarra	Demand Estimation
Belcarra Park Meter Readings	.xlsx	Village of Belcarra	Demand Estimation
Available Capacity of Pipeline Supply from DNV Memo (2022)	PDF	WSP	Demand Estimation
Village of Belcarra Bylaw 492 – Subdivision and Development (2015)	PDF	Village of Belcarra	Level of Service Criteria

2 EXISTING WATER SYSTEM

2.1 WATER SYSTEM OVERVIEW

The District of North Vancouver (DNV) has been the primary supplier of potable water for the Village since 2011. Water is supplied from the DNV via two 200 mm High Density Polyethylene (HDPE) marine pipelines which are currently located at the bottom of the waterway between the Deep Cove area and Belcarra Pier. These watermains are approximately 1,400 m in length and feed potable water from the DNV at Strathcona Road to the Village at the intersection of Midden Road and Belcarra Bay Road.

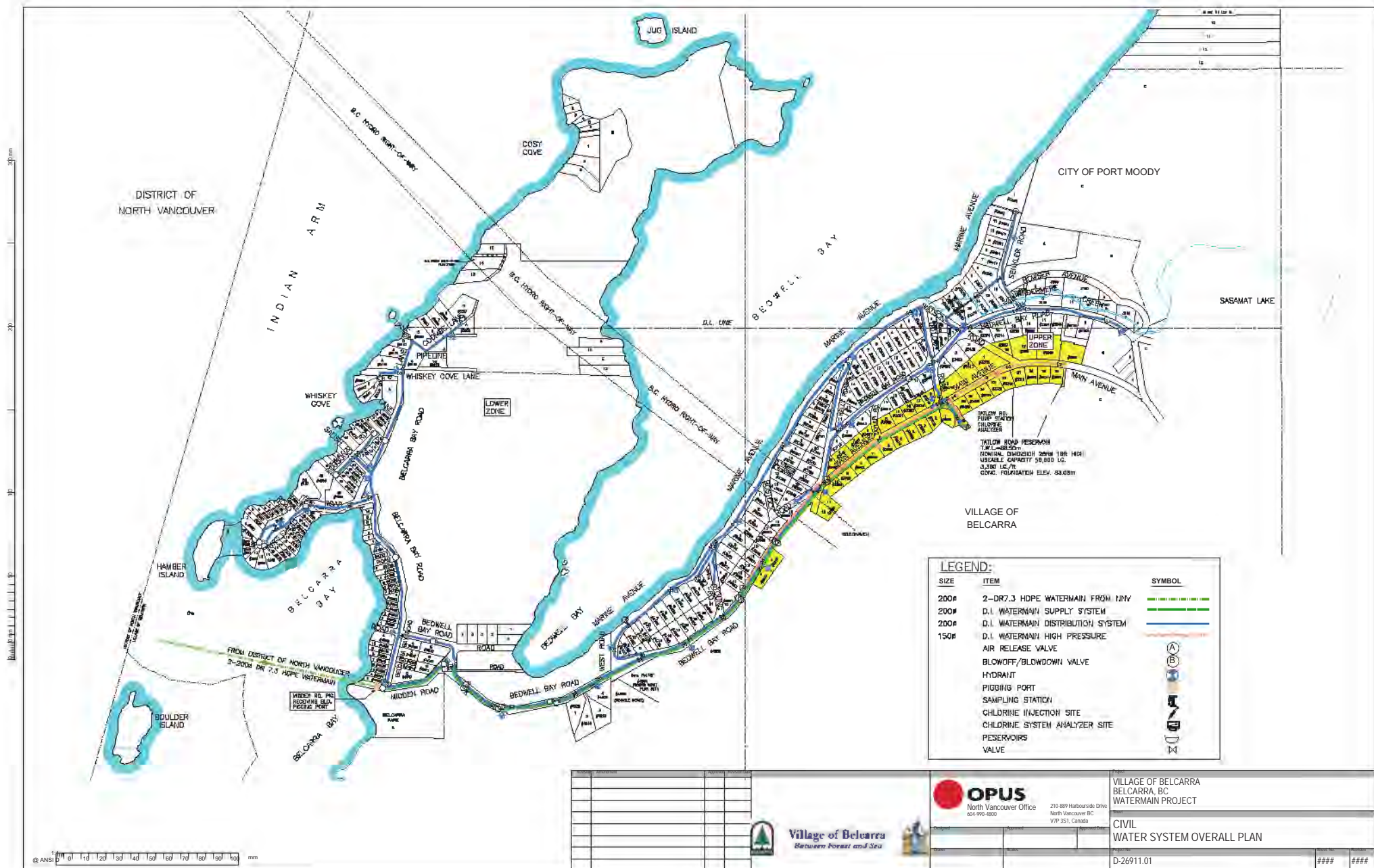
The water is supplied at a maximum instantaneous flow of 20 L/s at a hydraulic grade of 107 m. It is then transported to the Tatlow Road Reservoir at a maximum tank water level (TWL) of 88.5 m through a 200 mm Ductile Iron (DI) watermain.

Potable water is supplied to the two pressure zones within the Village from the Tatlow Road Reservoir via a 200 mm DI gravity main and a 150 mm DI high pressure main.

Table 2 provides a summary of the Belcarra water system infrastructure. Figure 1 is the AutoCAD drawing developed by WSP in 2017 which illustrates the water system infrastructure.

Table 2: Belcarra Water System Overview

ITEM	QUANTITY
Number of Water Sources	1
Number of Reservoirs	1
Number of Pressure Zones	2
Number of Pump Stations	1
Number of Hydrants	35
Length of Watermains (Potable)	11.98 km



3 DESIGN CRITERIA

The design criteria used to review the system's minimum and maximum service pressures, storage volume, available fire flows, and other standards are outlined in this section. The design criteria are in accordance with the Village of Belcarra Waterworks Bylaw No.456, 2012, Village of Belcarra Subdivision and Development Bylaw No. 492, 2015, and MMCD design guidelines. Table 3 below provides a summary of the design standards utilized.

Table 3: Design Criteria

DESIGN PARAMETER	VALUE		
Minimum pressure during MDD + FF	20 psi		
Minimum pressure during PHD	40 psi		
Maximum pressure during ADD	120 psi		
Fire Flow Demand	Land Use	Fire Flow (L/s)	Duration (Hrs)
	Residential single family	60	1.5
	Cluster housing	120	2
	Suburban	60	1.5
	Institutions	90	2
	Isolated commercial	90	2
	Small grp. commercial	120	2
Per Capita Demand	ADD – 500 L/capita/day MDD – 1000 L/ capita/day (2xADD) PHD – 2000 L/ capita/day (4xADD)		
Hazen-William's 'C' Values	For all mains 250 mm and larger – 115 For all mains 200 mm and smaller – 100		
Storage Tank Volume Requirement	Volume=A+B+C Where: A = Fire Storage (required extent and duration of fire flow as noted above) B = Equalization Storage (25% of Maximum Day Demand serviced by the Storage Reservoir) — C = Emergency Storage (25% of A + B)		

4 MODEL AND SCENARIO DEVELOPMENT

4.1 MODEL SOFTWARE SELECTION

The hydraulic model was developed in WaterCAD, as the modelling platform allows for all components of the distribution network to be represented dynamically, with allowance for multiple scenarios to be generated, including fire flow simulations. However, the model will be delivered in EPANET, which is a non-proprietary and free software to allow the Village to take ownership of the computer water model in the future for their own internal use. Recent record drawings and 5 m contour data was the primary source of data used for the model development.

4.2 MODEL DEVELOPMENT OVERVIEW

4.2.1 JUNCTIONS

Junctions in the model represent changes in pipe material or diameter in the distribution network and indicate intersections of pipes or locations of hydrants. Data from the AutoCAD drawing illustrated in Figure 1 was used for watermains and other water infrastructure which has been used to create the existing network in the model. New junctions that were added to the model were assigned pressure zone and elevation according to the contour information. There are currently 35 hydrants in the Belcarra water distribution system.

4.2.2 PIPES

Watermains in the Belcarra distribution network are modelled in WaterCAD as pipes with pressure drop due to friction estimated using the Hazen–William’s equation. In this formulation, friction is proportional to the C-factor, which is a measure of pipe smoothness and dependent on pipe material and install year. The model was developed to include pipe material and size using information contained in the AutoCAD drawing shown in Figure 1. Assigned C-factors are described in greater detail in the Model Calibration section of this report.

The majority of the watermains are Ductile Iron (DI). There are two HDPE marine pipelines which supply potable water to the Village from the DNV. The majority of Belcarra’s 11.98 km potable water distribution network consists of pipes that are 200 mm in diameter (83%), with 17% of the network being 150 mm in diameter.

4.2.3 RESERVOIRS

Reservoirs in WaterCAD represent raw water sources. The DNV source is represented in the model as a reservoir with a static water level of 107 m.

4.2.4 TANKS

Tanks in WaterCAD represent storage in the distribution system. There is only one active storage reservoir in the Belcarra water distribution system constructed in 1999. The Tatlow reservoir receives water from a gravity main from the DNV source and has a top water level of 88.50 m and a capacity of 58,800 imperial gallons (or 0.27 ML). WSP reviewed reservoir information such as capacity, base elevation and top water level provided by the Village. The design life of the Tatlow Reservoir is estimated to be 50 years, however a detailed condition assessment would be required to determine its current state and estimated remaining service life. WSP is currently in discussions with

Village staff on a condition assessment plan taking into account the unique circumstances of the site (i.e. the difficult and steep terrain locally).

4.3 SCENARIO DEVELOPMENT

The hydraulic water model was used to assess the existing hydraulic performance of the water network under Average Day, Maximum Day Demand, and Peak Day Demand conditions. In addition, a water age analysis was conducted, and fire flows coincident to MDD were also assessed. Prior to conducting these analyses, base demands were first determined for each demand scenario and water age analysis.

4.3.1 AVERAGE DAY DEMAND

The Average Day Demand is the average demand in a year regardless of season. The value is useful in analyzing historic demands and patterns and in assessing maximum service pressures in the water system.

Based on recent consumption data received from the DNV, the highest ADD recorded for the Belcarra system between 2016 and 2021 was 3.4 L/s in 2020. Using the park meter data provided by the Village, the highest recorded ADD was 0.8 L/s in 2020. The cumulative ADD including DNV consumption records and park flows is 4.2 L/s for 2020, equating to 535 L/capita/day based on a residential population of 678 persons (2021 BC Stats).

The calculated ADD for 2020 is 7% higher than the ADD calculated using the 500 L/capita/day consumption rate in the Village's Subdivision and Development bylaw. The flows during 2020 are higher than typical demands experienced by the Village in recent years. The high 2020 demand may potentially be considered an outlier due to COVID correlating to a higher water usage. It is suggested that the Village continue to monitor annual consumption trends in the short-term to determine if 2020 was an outlier and if model demands can be adjusted down to a more representative year, or if it worthwhile revising the per capita consumption rates in the Bylaw to reflect higher domestic usage.

For the purposes of this study, the 2020 ADD was chosen as representative of existing demands in the model as it is a more conservative estimate.

Demands were proportionally assigned to each parcel in the system based on user type. From the Village's Zoning Bylaw 510, 2018, it was determined that a majority of the lots fall under 'one family residential zone (RS-1)'. There is one 'civic institutional (CI-I)' lot and three 'regional park (P-1)' lots. Civic and park demands totaling 0.8 L/s were proportionally split amongst the four ICI lots. The residential portion of the overall ADD (3.4 L/s) was proportionally split amongst the remaining parcels in the Village.

4.3.2 MAXIMUM DAY DEMAND

The Maximum Day Demand gives an estimation of the maximum water usage per capita for one day (presumably the hottest summer day) in a given year. It is used for sizing storage reservoirs, distribution system pumping capacities, and transmission mains. Due to a lack of daily flow data, a multiplication factor of 2*ADD was used to establish the 2020 MDD, in line with the Village's current design standards as discussed in Section 3. This resulted in an MDD of 8.3 L/s.

4.3.3 PEAK HOUR DAY DEMAND

The Peak Hour Demand is an estimation of the maximum water usage of the system in an hour during a day in a given year, which typically occurs on or around the day when MDD occurs. The PHD is recorded through water usage from the source, as well as balancing storage in the system reservoirs. In the absence of reservoirs, the supply must meet this demand. PHD is typically used to assess low pressures in water systems. Due to a lack of hourly flow data, a multiplication factor of 4*ADD was used to establish the 2020 MDD, in line with the Village's current design standards as discussed in Section 3. This resulted in a PHD of 16.6 L/s.

5 MODEL CALIBRATION

5.1 BACKGROUND

“Water-distribution-model calibration consists of comparing model results with field measurements, making adjustments to a model, and reviewing field data to improve agreement between the two. The calibration process should result in a more accurate model as well as a better understanding of the strengths and weakness of the model – and in many cases a better understanding of the distribution system itself”.

(Committee Report: Defining Model Calibration, AWWA, 2013)

A water model is a decision-support tool. Although a water model can be calibrated to accurately perform an analysis of fire flows, water quality, and/or energy requirements, a model that is calibrated for one of these analyses may not be well calibrated for another. It is how the water model will be used as a decision support tool that will dictate the type and extent of model calibration.

The hydraulic calibration of a water model for fire flow analysis provides a model that is well suited to assess other demands on the system such as ADD and MDD and how these demands impact the sizing of reservoirs, sizing of transmission and distribution watermains, pumping capacity, PRV settings, etc. The calibration of the hydraulic water model for a fire flow analysis therefore provides the Village with a tool to develop a cost-effective strategy to manage and upgrade its potable water infrastructure to meet the demands of the current population as well as anticipated growth.

Calibration of a water model is an iterative review process encompassing the details of each component of the water system including: the length, diameter, material, and roughness factors of the watermains; node demands and elevations; and PRV configurations and operational settings. The calibration process allows for confirmation and, where appropriate, revisions to the assumptions and/or estimates made in the development of the model.

Calibration requires confirmation of the model predictions by comparison to field measurements. A hydrant flow testing program was developed such that static and residual pressures within the water distribution network could be recorded during a simulation of fire flows, as well as any special operational changes to the system (such as main closures, valve closures, etc.). The recorded field results are then compared to the computer water model predicted results through the calibration process.

A hydraulic water model is considered calibrated if 10% of the network is calibrated to within 10% of field-recorded static and residual flows.

5.2 METHODOLOGY

A program for multi-pressure and C-factor hydrant flow testing was developed for the purpose of collecting field data from which to calibrate the constructed hydraulic water model. Due to the number and location of fire hydrants and in-line isolation valves, multi-pressure hydrant testing and C-factor testing locations were limited in the Belcarra system. In order to get useful results for the Belcarra system, WSP conducted a scaled down multi-pressure test set, 3 C-factor tests and 1 one-point C-factor test.

A multi-pressure hydrant flow testing program includes fully opening a pre-determined hydrant and measuring flow from it, while simultaneously recording residual pressures at four other hydrants in the surrounding area, within the same pressure zone. However, due to the number and locations of fire hydrants and in-line valves, the type of testing available within the Village is limited. For this reason, the full multi-pressure test as described above is not able to be implemented in the Village. In order to get useful results for the Village, WSP conducted a scaled down multi-pressure test.

A C-factor hydrant flow testing program includes isolating supply to and fully opening a pre-determined hydrant and measuring flow from it, while simultaneously recording residual pressures at the flow hydrant and at an adjacent hydrant upstream. The procedure used to collect data for model calibration is outlined as follows:

- For multi-pressure hydrant flow testing, three high resolutions pressure loggers ($\pm 0.2\%$ of full scale) were installed on predetermined hydrants within the test zone and one was installed on the hydrant adjacent to the flow hydrant. For C-factor hydrant flow testing, two pressure loggers were installed on the hydrants immediately upstream of the flow hydrant;
- One 2.5-inch turbine flow meter (accuracy 0.5%) was installed on a predetermined flow hydrant port to achieve full hydrant flow, this was repeated two more times within each test set;
- Village field crews monitored flow and supervised drainage and dechlorination;
- Flow rates were recorded from an analog readout meter. This flow is later used to simulate flow in the water model to calibrate the modelled system pressure changes to those recorded by the pressure loggers; and,
- Pressure loggers were removed, stopped, and downloaded into a computer program. From this recorded data, static and residual pressures were later retrieved.

The following were considered in the selection of the multi-pressure hydrant flow and pressure locations to obtain representative coverage of the zone:

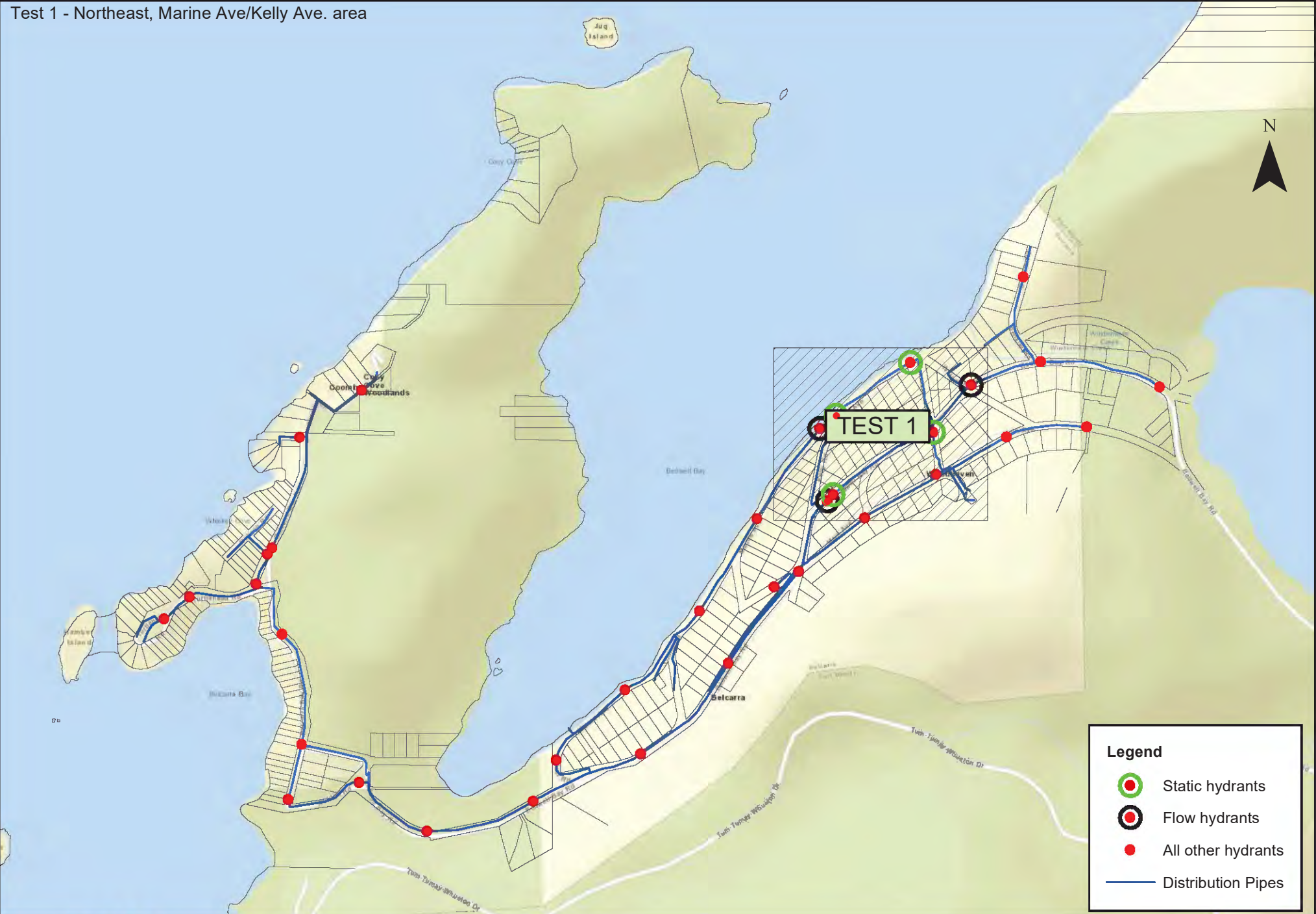
- All hydrants are in the same pressure zone;
- General location and populated areas; and,
- Land use.

The following were considered in the selection of the C-factor hydrant flow test and pressure locations to obtain representative coverage of the system's watermain:

- All hydrants are in the same pressure zone;
- Range of pipe diameters; and,
- Range of pipe materials.

Four C-Factor tests were conducted across the Village's two pressure zones and are presented in detail in Appendix A

Figure 2 and Figure 3 illustrate the hydrant testing locations.



Legend

- Static hydrants
- Flow hydrants
- All other hydrants
- Distribution Pipes

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**VILLAGE OF
BELCARRA**

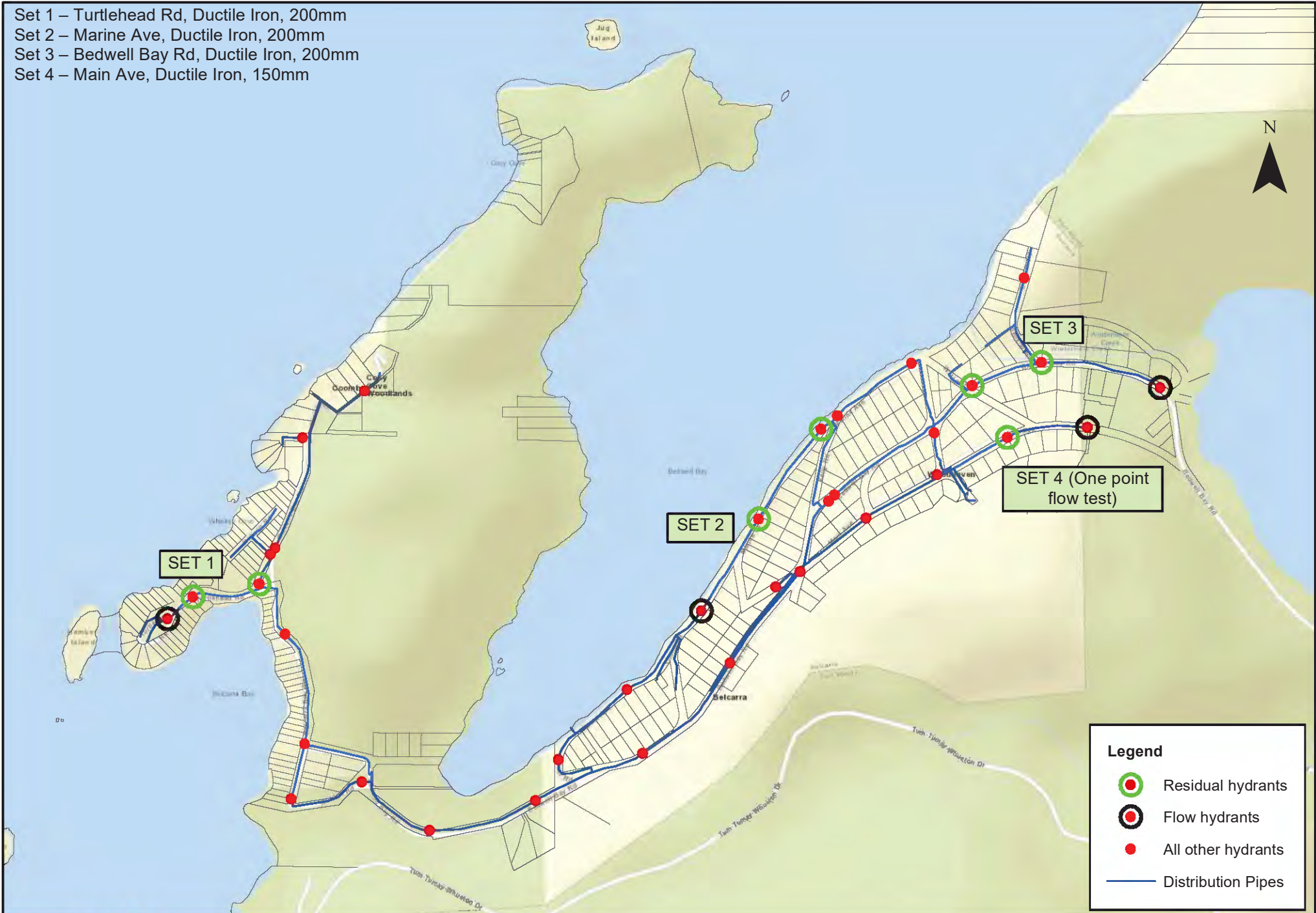
Village of Belcarra

Multi-Pressure Hydrant Flow Test Overview

Source: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NOAA, Esri Japan, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Drawn By:	Approved By:	Scale
SG	ML	0 110 220 Meters
Project No: 211-09148-00		1:12,500 June 2022

- Set 1 – Turtlehead Rd, Ductile Iron, 200mm
- Set 2 – Marine Ave, Ductile Iron, 200mm
- Set 3 – Bedwell Bay Rd, Ductile Iron, 200mm
- Set 4 – Main Ave, Ductile Iron, 150mm



5.2.1 CALIBRATION PARAMETERS

Recorded system demands at the Midden Road Station were provided by Village operations staff to determine the actual water usage during the days the hydrant flow tests were carried out. Table 4 summarizes the recorded demands and reservoir level for the calibration scenario and compares the values to the calculated values in the model.

Table 4: Recorded Parameters during Hydrant Flow Testing

PARAMETER	MODEL	CALIBRATION	DIFFERENCE
ADD (L/s)	4.16	6.92	60%
Reservoir Level	95%	95%	0%

As noted in Table 4, the ADD demand was inflated by 60% to capture conditions on the day of field testing. Likewise, the Tatlow Reservoir level was kept at 95% to match the boundary conditions on the day of testing.

5.3 RESULTS AND DISCUSSION

5.3.1 C-FACTOR FIELD CALIBRATION RESULTS

Watermain materials and diameters were based on available record drawings and the AutoCAD drawing shown in Figure 1. Typical C-factor values were assigned in the model based on the Village's standards outlined in Section 3 and further adjusted based on the calibration results.

C-factor verification was completed using the Hazen-Williams equation, by calculating the C-factor value that provides the closest calculated headloss in comparison to field recorded results. Where some values fell within expected values for C-factor, these have been used and included as updated values into the hydraulic water model. Where values did not fall within expected values, WSP did not include the C-factors into the water model. Poor correlation is due to suspected field measurement errors or other unknown sources of errors such as valve configurations in the field which were not fully closed as envisioned, or unknown connections. Because of this, C-factor test set #2 and set #3 have not been included into to water model.

Table 5 shows the calibrated C-factor values for sets #1 and #4.

Table 5: C-Factor Calibration Results

FLOW TEST	MATERIAL	DIA (mm)	ZONE	CALIBRATED C-FACTOR	FIELD RECORDED HEADLOSS (m)	CALIBRATION CALCULATED HEADLOSS (m)	%DIFFERENCE
Set #1	DI	180	1 (Gravity)	130	7.50	7.91	5.4%
Set #4	DI	150	2 (High Pressure)	115	8.97	8.94	-0.30%

The flow hydrant for set#1 is located on Turtlehead Road. This section is considered a dead-end and may experience low flow. This length of pipe may also experience potential tuberculation and as such, the diameter of the pipe was reduced by 10% from 200 mm to 180 mm, to be confirmed by Village staff.

5.3.2 MULTI-PRESSURE FIELD CALIBRATION RESULTS

The results of the multi-pressure test indicated a poor correlation between the field pressure measurements and computer predicted results when using previously assigned C-factors, as illustrated in Table 7.

Using the calibrated C-factors (as shown in Table 6), the results of the calibration process indicate a good correlation between the field pressure measurements and computer predicted results, as shown in Table 8.

Table 6: Calibrated C-Factors

PIPE MATERIAL	PIPE DIAMETER	CALIBRATED C-FACTOR
Ductile Iron	200	130
Ductile Iron	150	115

Table 7: Uncalibrated Multi-Pressure Test Results

Date	Flow set no.	Pressure Zone	Hydrant Test No. & Time	Flow (GPM)	Flow (L/s)	Test ID	Hydrant	Hydrant Elev. (m)	Field Result						Computer Result				Static Pressure Diff (psi)	% diff Static Pressure	Residual Pressure Diff (psi)	% diff Residual Pressure	Demand Boundary Conditions
									Static (psi)	Residual (psi)	HGL (m)	Static HGL (m)	Residual HGL (m)	Pressure Drop (psi)	Static (psi)	Residual (psi)	Static HGL (m)	Residual HGL (m)					
20-Jul-22	1	2	Q1 Start 10:24:00 AM End 10:29:00 AM		937	R1 R2 R3 R4	H-28 H-14 H-16 H-10 H-30	32.9 8.7 46.8 11.0 42.0	107.9	99.8	84.6	84.6	78.9	8.0	113.0	96.0	88.2	76.2	5.1	5%	-3.8	-4%	1.66 ADD
									59.6	51.6	88.6	88.6	83.0	8.0	59.0	43.0	88.2	77.0	-0.6	-1%	-8.6	-17%	
									104.6	96.6	84.5	84.5	78.9	8.0	109.0	93.0	87.7	76.4	4.4	4%	-3.6	-4%	
									61.4	53.5	85.1	85.1	79.5	7.9	66.0	49.0	88.4	76.4	4.6	8%	-4.5	-8%	
			Q2 Start 10:37:00 AM End 10:42:00 AM		1062	R1 R2 R3 R4	H-36 H-14 H-16 H-10 H-30	42.1 8.7 46.8 11.0 42.0	107.5	99.0	84.3	84.3	78.4	8.5	113.0	89.0	88.2	71.3	5.5	5%	-10.0	-10%	
									59.1	51.3	88.3	88.3	82.8	7.7	59.0	40.0	88.2	74.9	-0.1	0%	-11.3	-22%	
									104.3	94.9	84.3	84.3	77.8	9.3	109.0	82.0	87.7	68.7	4.7	5%	-12.9	-14%	
									61.1	51.2	84.9	84.9	78.0	9.8	66.0	36.0	88.4	67.3	4.9	8%	-15.2	-30%	
			Q3 Start 10:46:00 AM End 10:51:00 AM		1172	R1 R2 R3 R4	H-37 H-14 H-16 H-10 H-30	9.3 8.7 46.8 11.0 42.0	107.2	95.3	84.1	84.1	75.7	12.0	113.0	83.0	88.2	67.1	5.8	5%	-12.3	-13%	
									58.8	48.5	88.1	88.1	80.9	10.3	59.0	36.0	88.2	72.1	0.2	0%	-12.5	-26%	
									104.0	89.9	84.1	84.1	74.2	14.1	109.0	73.0	87.7	62.3	5.0	5%	-16.9	-19%	
									60.8	47.8	84.7	84.7	75.6	12.9	66.0	33.0	88.4	65.2	5.2	9%	-14.8	-31%	

Table 8: Calibrated Multi-Pressure Test Results

Date	Flow set no.	Pressure Zone	Hydrant Test No. & Time	Flow (GPM)	Flow (L/s)	Test ID	Hydrant	Hydrant Elev. (m)	Field Result						Computer Result				Static Pressure Diff (psi)	% diff Static Pressure	Residual Pressure Diff (psi)	% diff Residual Pressure	Demand Boundary Conditions
									Static (psi)	Residual (psi)	HGL (m)	Static HGL (m)	Residual HGL (m)	Pressure Drop (psi)	Static (psi)	Residual (psi)	Static HGL (m)	Residual HGL (m)					
20-Jul-22	1	2	Q1 Start 10:24:00 AM End 10:29:00 AM		937	R1 R2 R3 R4	H-28 H-14 H-16 H-10 H-30	32.9 8.7 46.8 11.0 42.0	107.9	99.8	84.6	84.6	78.9	8.0	113.0	102.0	88.2	80.5	5.1	5%	2.2	2%	0.83 MDD
									59.6	51.6	88.6	88.6	83.0	8.0	59.0	49.0	88.2	81.2	-0.6	-1%	-2.6	-5%	
									104.6	96.6	84.5	84.5	78.9	8.0	109.0	99.0	87.7	80.6	4.4	4%	2.4	3%	
									61.4	53.5	85.1	85.1	79.5	7.9	66.0	55.0	88.4	80.6	4.6	8%	1.5	3%	
			Q2 Start 10:37:00 AM End 10:42:00 AM		1062	R1 R2 R3 R4	H-36 H-14 H-16 H-10 H-30	42.1 8.7 46.8 11.0 42.0	107.5	99.0	84.3	84.3	78.4	8.5	113.0	98.0	88.2	77.6	5.5	5%	-1.0	-1%	
									59.1	51.3	88.3	88.3	82.8	7.7	59.0	47.0	88.2	79.8	-0.1	0%	-4.3	-8%	
									104.3	94.9	84.3	84.3	77.8	9.3	109.0	93.0	87.7	76.4	4.7	5%	-1.9	-2%	
									61.1	51.2	84.9	84.9	78.0	9.8	66.0	47.0	88.4	75.0	4.9	8%	-4.2	-8%	
			Q3 Start 10:46:00 AM End 10:51:00 AM		1172	R1 R2 R3 R4	H-37 H-14 H-16 H-10 H-30	9.3 8.7 46.8 11.0 42.0	107.2	95.3	84.1	84.1	75.7	12.0	113.0	94.0	88.2	74.8	5.8	5%	-1.3	-1%	
									58.8	48.5	88.1	88.1	80.9	10.3	59.0	45.0	88.2	78.4	0.2	0%	-3.5	-7%	
									104.0	89.9	84.1	84.1	74.2	14.1	109.0	87.0	87.7	72.2	5.0	5%	-2.9	-3%	
									60.8	47.8	84.7	84.7	75.6	12.9	66.0	46.0	88.4	74.3	5.2	9%	-1.8	-4%	

5.3.3 CALIBRATION SUMMARY

100% (18/18 of the hydrant tests were successfully calibrated, showing less than 10% differences between field-recorded and model predicted values. It should be noted that the calibrated hydrants represent approximately 50% of the water distribution system, which is sufficient for the purposes of this model. Model calibration error is approximately within 5 psi of actual. While the model appears to be sufficiently calibrated for the current system modelling analysis, pipe conditions should be field checked to improve the accuracy of and confidence in the model. Specifically, the section of watermain from Belcarra Bay Road to the dead end on Turtlehead Road should be verified for signs of tuberculation.

6 HYDRAULIC ANALYSIS

This section assesses the capacity of the Belcarra water distribution system with respect to its ability to convey adequate flows to meet service pressure requirements and fire flows throughout the network system under existing ADD, MDD, PHD conditions, as well as a storage capacity and water age analysis. The Belcarra hydraulic water model developed and calibrated as part of this study was specifically used to carry out this analysis.

6.1 PRESSURES DURING AVERAGE DAY DEMAND

As discussed in Section 3, the allowed normal operating range for the Belcarra water distribution system is 40 psi to 120 psi.

The maximum service pressure within each zone occurs at the properties at the lowest elevation compared to the HGL of the zone set by a reservoir, and typically occurs under low demand conditions. ADD represents low demand conditions and is typically used to identify nodes with pressure exceedances.

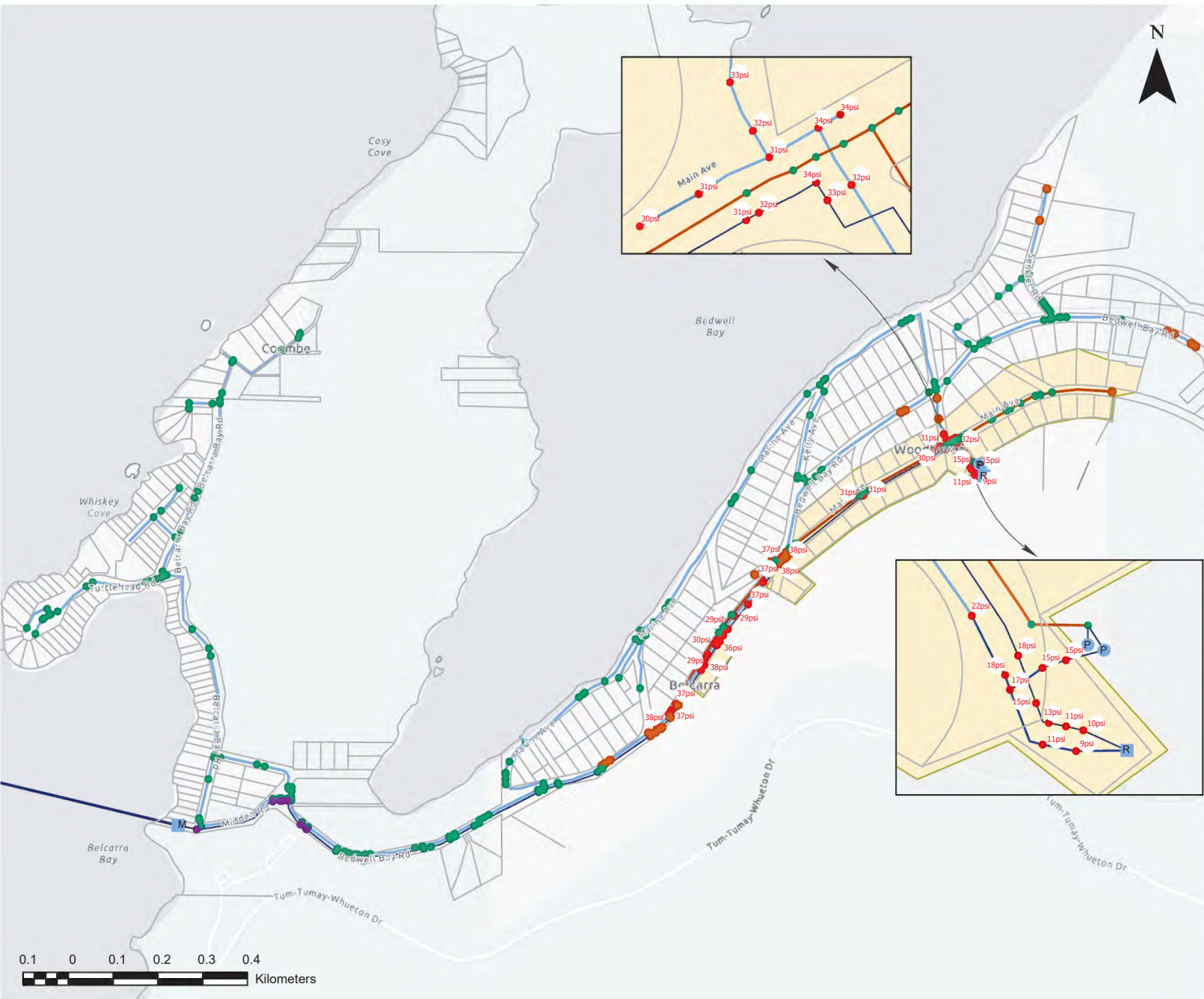
Table 9 summarizes the maximum service pressures assessed under ADD conditions for the existing system. Figure 4 presents an overview of available service pressures under ADD conditions.

Table 9: Nodes not in Compliance with Service Pressure Requirements (ADD)

PRESSURE ZONE	NO. NODES >120 PSI	NO. NODES >150
Gravity (Zone 2)	7	0
High Pressure (Zone 1)	0	0
Total	7	0
Total Percent of System	2.4%	0%

As noted in Table 9, there are 7 pressure exceedances in Zone 2 that occur under ADD conditions. All of the pressure exceedances are on the supply line within Zone 2 which transports potable water from Midden Station to the Tatlow Reservoir. As such, these pressure exceedances are considered acceptable as they do not impact service pressures and only make up 2.4% of the system.

All of the nodes within Zone 1 under ADD conditions are in compliance with service pressure requirements.



Legend

- High Pressure Zone
- R Tatlow Reservoir
- P Tatlow Pump Station
- M Midden Station
- ADD Pressures**
- <40 psi
- 40-60 psi
- 60-120 psi
- 120-150 psi
- 200mm DI Supply Main
- 150mm DI High Pressure Main
- 200mm DI Gravity Main
- 2-200mm HDPE Supply

Client:



Vancouver, BC

Figure 3:

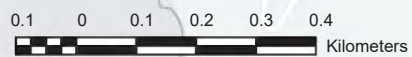
Pressures During Average Day Demand

Drawn: S. Gilani

Approved: M. Levin

Project: 211-09148-00

Date Printed: 2022-08-28 3:47 PM



6.2 PRESSURES DURING PEAK HOUR DEMAND

The minimum service pressure within each zone occurs at the properties at the highest elevation compared to the HGL of the zone set by a reservoir, and typically occurs under high demand conditions. PHD represents high demand conditions and is typically used to identify nodes with pressure exceedances.

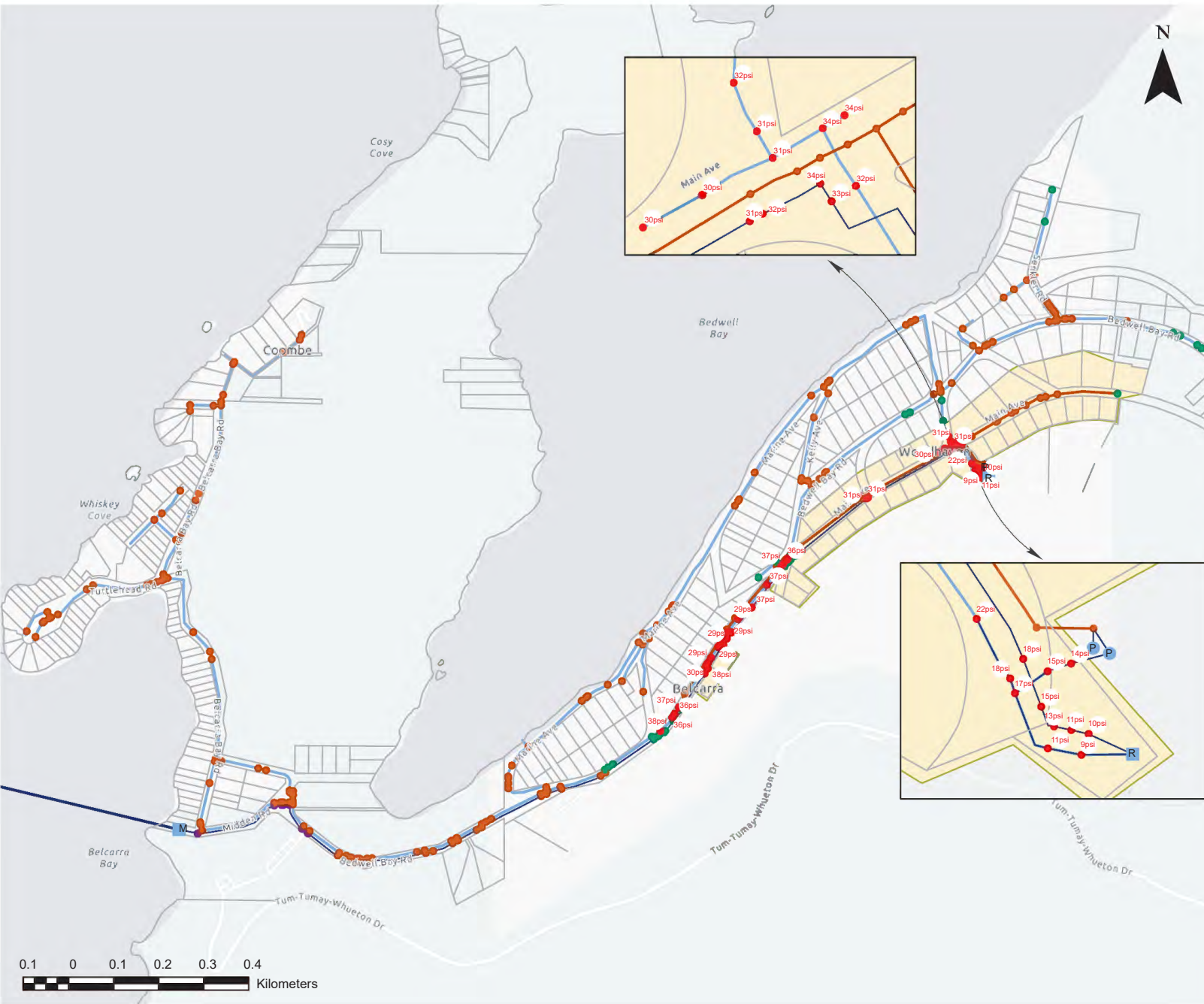
Table 10 summarizes the minimum service pressures assessed under PHD conditions for the existing system. Figure 5 presents an overview of available service pressures under PHD conditions.

Table 10: Nodes not in Compliance with Service Pressure Requirements (PHD)

PRESSURE ZONE	NO. NODES <40 PSI
Gravity (Zone 2)	51
High Pressure (Zone 1)	0
Total	51
Total Percent of System	17.8%

As noted in Table 10, there are 51 pressure deficient nodes in Zone 2 that occur under PHD conditions. A majority of the pressure deficient nodes are on the supply line within Zone 2 which supplies water from Midden Station to the Tatlow Reservoir. The remaining pressure deficient nodes within Zone 2 are along Main Avenue, and experience pressures between 30 psi – 40 psi.

All of the pressures within Zone 1 under PHD conditions are in compliance with service pressure requirements.



British Columbia

Belcarra, BC

Legend

High Pressure Zone

PHD Pressures

- <40 psi
- 40-60 psi
- 60-120 psi
- 120-150 psi

— 200mm DI Supply Main

— 150mm DI High Pressure Main

— 200mm DI Gravity Main

— 2-200mm HDPE Supply

R Tatlow Reservoir

P Tatlow Pump Station

M Midden Station

Client:

VILLAGE OF

BELCARRA

Vancouver, BC

Figure 4:

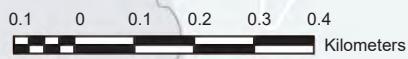
Pressures During Peak Day Demand

Drawn: S. Gilani

Approved: M. Levin

Project: 211-09148-00

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6.3 FIRE FLOWS DURING MAXIMUM DAY DEMAND

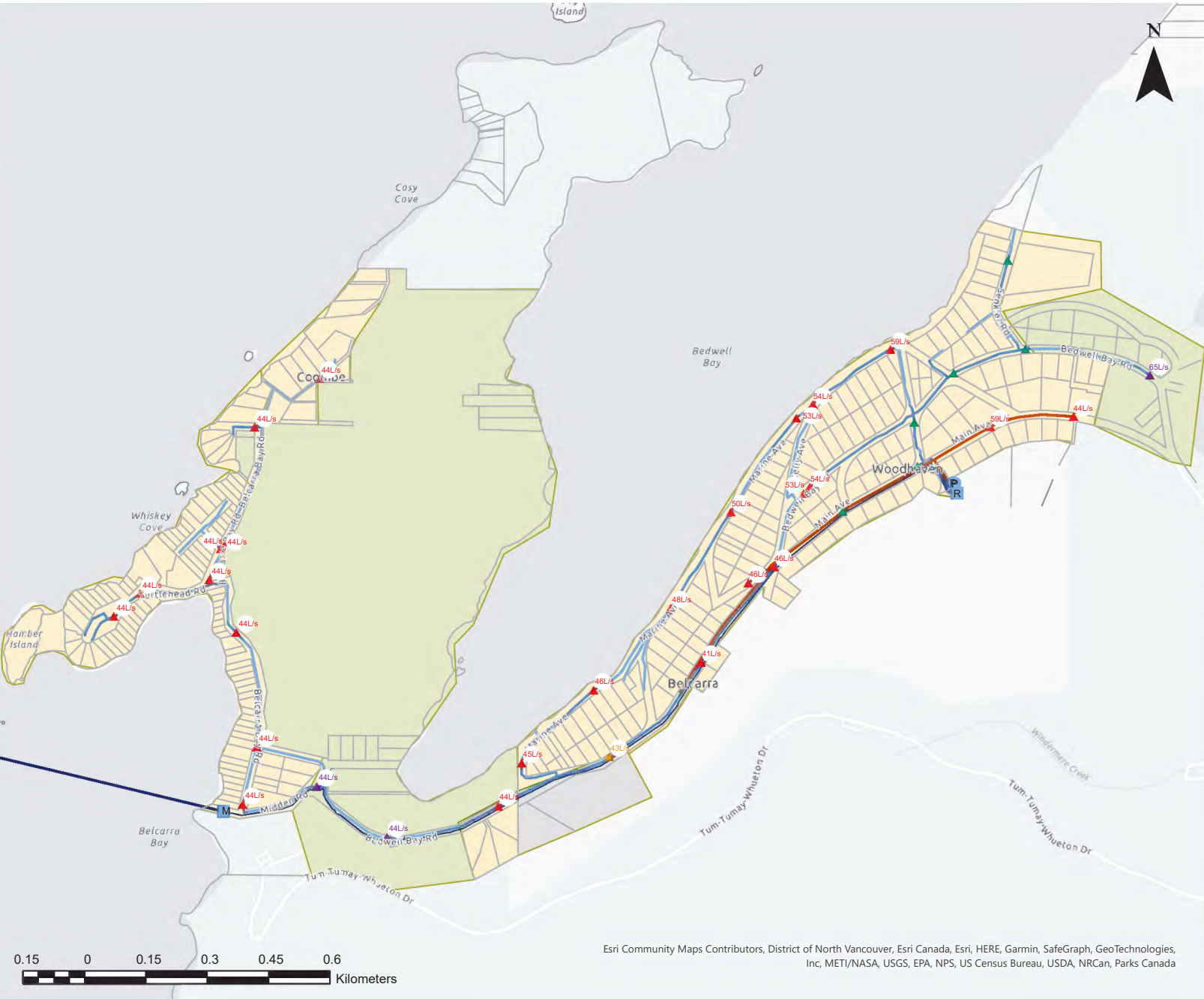
Fire flow analysis was conducted under MDD conditions, after assigning fire flow to hydrants as described in Section 3. The results of the fire flow analysis under MDD conditions are summarized on Figure 6, which illustrates the fire flow requirements throughout the system and identifies where deficiencies are occurring. Results from the fire flow analysis broken down by zone and deficiencies are summarized in Table 11.

Table 11: Demand Nodes with Deficient Fire Flow (MDD)

PRESSURE ZONE	NO. OF DEFICIENT NODES	% OF ZONE
Gravity (Zone 2)	27	84.4%
High Pressure (Zone 1)	2	66.7%
Total	29	82.9%

There are a total of 35 hydrants within the Belcarra distribution system, 88.6% of which require 60 L/s of fire flow, and the remaining 11.4% require 90 L/s of fire flow under MDD conditions. All of the nodes that require 90 L/s of fire flow are deficient and are located within Zone 2. A majority (86%) of the nodes that require 60 L/s of fire flow are deficient and can provide fire flows between 41 L/s – 59 L/s.

Under worst-case scenarios, when fire-fighting efforts overlap with peak summer consumption periods, the hydrants will still provide flows, however there would be an increased risk of cavitation and watermain breaks if residual pressures drop below 20 psi to provide those necessary fire flows. These deficiencies are a result of dead-end nodes and low flow to mid block hydrants.



Legend

- | | |
|---------------|-----------------------------|
| RS-1 | 200mm DI Gravity Main |
| P-1 | 150mm DI High Pressure Main |
| CI-1 | 200mm DI Supply Main |
| R-1 Hydrants | 2-200mm HDPE Supply |
| ▲ <60 L/s | Tatlow Reservoir |
| ▲ >60 L/s | Tatlow Pump Station |
| P-1 Hydrants | Midden Station |
| ▲ <90 L/s | |
| CI-1 Hydrants | |
| ▲ <90 L/s | |



Figure 5:

Fire Flows During Maximum Day Demand

Drawn: S. Gilani

Approved: M. Levin

Project: 211-09148-00

Date Printed: 2022-08-28 3:44 PM

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6.4 WATER AGE UNDER AVERAGE DAY DEMAND

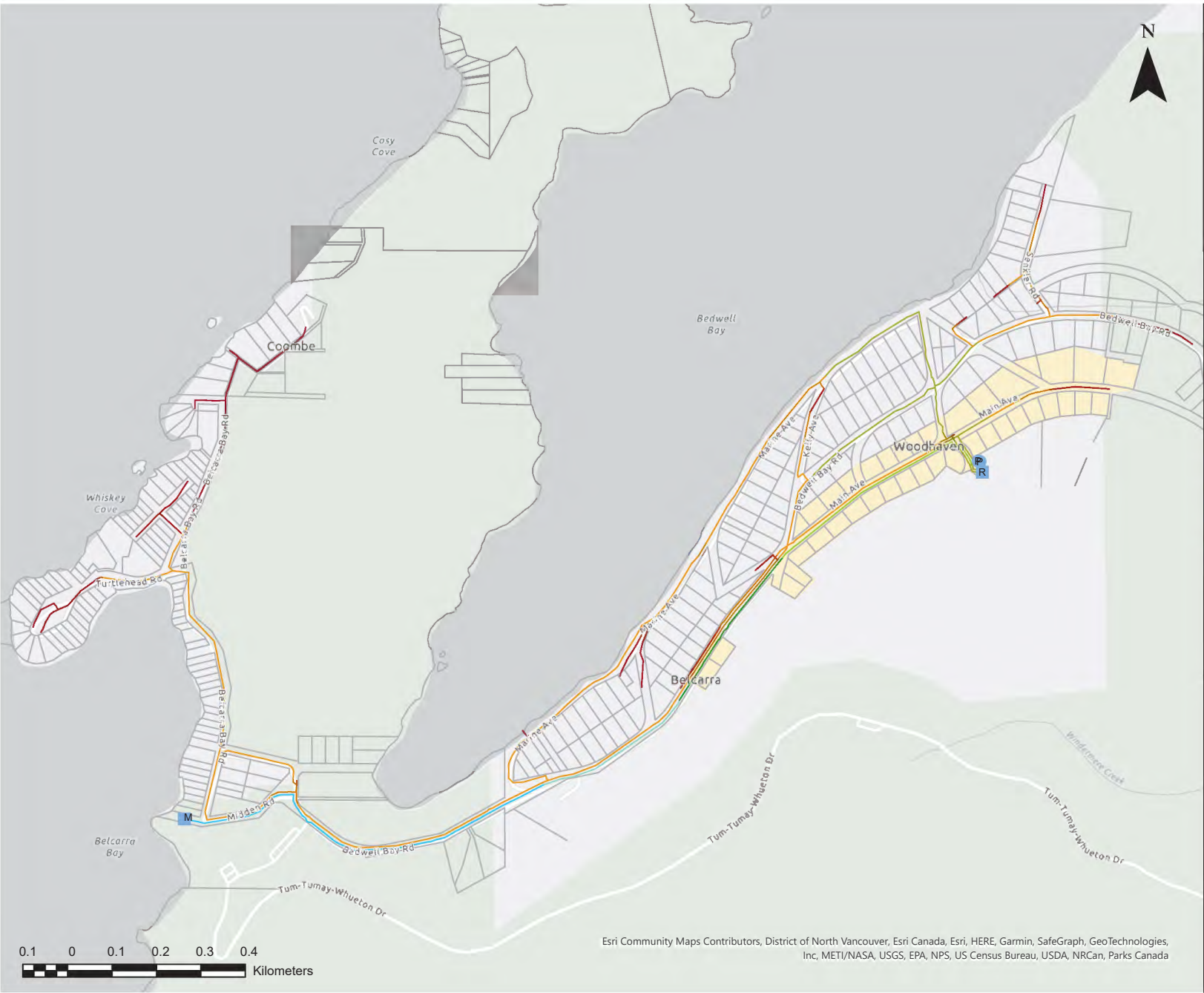
Water age refers to the time spent by a parcel of water in the network, to travel from the source (i.e., reservoir) to consumers. New water entering the network from reservoir enters with an age of zero. Various potential chemical, biological, and physical issues can arise from long retention times. These include disinfection by-products formation, microbial growth, sediment deposition, and colour changes (USEPA, 2002). Water age is a function primarily of water demand and system operation. As water demand decreases, the amount of time any given liter of water is resident in the distribution system increases. According to research papers by the USEPA (AWWA, 2015) and the Water Industry Database (AWWA and AWWARF, 1992), the average water age within a distribution system is 1.3 days with retention times less than 3 days being considered typically acceptable.

A water age analysis was conducted under ADD as it represents low demand conditions to conservatively assess the retention time within the Belcarra water distribution system. The results of the water age analysis are summarized on Figure 7, which illustrates the water age throughout the system. Results from the analysis broken down by zone and retention times are summarized in Table 12.

Table 12: Water Age During ADD

WATER AGE	HIGH PRESSURE (ZONE 1)	GRAVITY (ZONE 2)	% OF SYSTEM
<10 hours	0%	7.7%	7.0%
10 – 15 hours	0%	3.6%	3.2%
15 – 20 hours	0%	3.3%	3.0%
20 – 25 hours	0%	3.8%	3.5%
1 – 2 days	29.7%	14.3%	15.7%
2 – 3 days	59.5%	50.3%	51.1%
3 – 7 days	10.8%	17.0%	16.5%

As noted in Table 12, a majority (83.5%) of the system experiences a retention time of less than 3 days. The remaining 16.5% of pipes within the system account for all of the dead-ends which experience water age greater than 3 days.



Legend

- High Pressure Zone
- Water Age
- <10 hours
 - 10 - 15 hours
 - 15 - 20 hours
 - 20 - 25 hours
 - 1 - 2 days
 - 2 - 3 days
 - 3 - 7 days
- Tatlow Reservoir
- Tatlow Pump Station
- Midden Station



Figure 6:

Water Age During Average Day Demand

Drawn: S. Gilani

Approved: M. Levin

Project: 211-09148-00

Date Printed: 2022-09-02 10:02 AM

6.5 STORAGE CAPACITY ANALYSIS

Water storage reservoirs are located at specific elevations to establish pressure zones within the distribution system, and are used to balance and optimize supply and delivery of water. If properly sized, reservoirs will store water during low demand periods and supplement the source supply during peak hour demand. Typically, reservoirs are designed to refill every day and to have adequate storage capacity to provide for balancing storage, which is estimated as 25% of maximum day demand in the area serviced by the reservoir, fire storage based on the FUS recommended flows and durations listed in Table 3, and an allowance for emergency storage which is 25% of balancing and fire storage as summarized in Section 3 under Design Criteria.

Table 13 summarizes the storage reservoir volume calculation for the Tallow Reservoir. The fire storage required is governed by the highest fire flow and duration requirement in its service area, which is 90 L/s for 2 hours. However, a separate storage capacity analysis for a fire flow requirement of 60 L/s for 1.5 hours has also been included for comparative purposes, as 60 L/s is the predominant fire flow requirement in the Village. Lastly to note, although storage capacity calculations typically do not factor in any other supply sources (i.e., additional flows from pump stations, PRVs, etc.), the impact of the 20 L/s supply from the marine pipelines has been included for comparative purposes.

Table 13: Tatlow Reservoir Storage Capacity Analysis

VOLUME (ML)	SCENARIO 1	SCENARIO 2
	60 LPS AT 1.5 HRS FIRE FLOW REQUIRED	90 LPS AT 2 HRS FIRE FLOW REQUIRED
A – Fire Storage	0.32	0.65
B – Balancing Storage	0.18	0.18
C – Emergency Storage	0.13	0.21
A+B+C – Required Storage	0.63	1.03
Available Storage	0.27	0.27
Excess / Deficiency?	-0.36	-0.77
Excess / Deficiency with 20 L/s constant supply from Marine pipelines	-0.25	-0.62

As noted in Table 13, the above analysis indicates there is a storage volume deficiency in the Tatlow Reservoir with respect to meeting existing service needs, whether considering the maximum fire flow requirement of 90 L/s in the service area or a reduced 60 L/s requirement to meet minimum residential fire flow and duration requirements. The deficiencies are slightly ameliorated when considering a constant 20 L/s supply of source water from the marine pipelines.

7 SUMMARY AND RECOMMENDATIONS

WSP reviewed available existing information related to the water distribution system to develop the Village of Belcarra water model to represent the existing water network.

The DNV has been the primary supplier of potable water for the Village, and supplies water from Strathcona Road to Midden Station in Belcarra. The water from Midden Station is transported through a 200 mm DI main to the Tatlow Road Reservoir. Potable water from the Tatlow Road Reservoir is supplied to the two pressure zones with the Village via a 200mm DI gravity main and a 150 mm DI high pressure main.

The design life of the Tatlow Reservoir is estimated to be 50 years, however a detailed condition assessment is recommended to determine its current state and estimated remaining service life. WSP is currently in discussions with Village staff on a condition assessment plan taking into account the unique circumstances of the site (i.e. the difficult and steep terrain locally).

Watermain materials, diameters, junctions, elevations, and reservoir details were based on available record drawings, 5 m contour data, and the AutoCAD drawing developed by WSP in 2017 which illustrates the water system infrastructure. Watermain age (which is unknown for the network at this time) is a key parameter in assigning roughness coefficients; **it is recommended to investigate the pipe vintages to further refine the model.**

The demands were determined using the billing data received from the DNV and park meter data provided by the Village. The highest consumption was experienced during 2020, and as such this was used to establish Average Day Demand. Due to a lack of hourly and daily flows, global peaking factors of 2 and 4 were used for MDD/ADD and PHD/ADD, respectively, based on the Village's Subdivision and Development bylaw. **It is recommended that hourly and daily flow data be collected, and the model be updated in subsequent years to reflect actual peak consumption patterns.**

The high 2020 demand may potentially be considered an outlier due to COVID correlating to a higher water usage. **It is suggested that the Village continue to monitor annual consumption trends in the short-term to determine if 2020 was an outlier and if model demands can be adjusted down to a more representative year, or if it is worthwhile revising the per capita consumption rates in the Bylaw to reflect higher domestic usage.**

The model was successfully calibrated after conducting field testing, yielding less than 10% differences between field-recorded and model predicted values. **As noted during field testing in Section 5.3, some dead-end pipes within the system may experience potential tuberculation which should be confirmed by Village staff. If this is the case, these pipes should be monitored, cleaned, and replaced if needed.**

Using the calibrated model, a water system assessment was performed to evaluate the distribution system's ability to meet desired levels of service. Under ADD conditions, 7 nodes experienced pressure exceedances within Zone 2. All of these nodes are on the supply line which transports water from Midden Station to the Tatlow Reservoir. All of the nodes within Zone 1 were in compliance with the service pressure requirements under ADD conditions.

Under PHD conditions, there are 51 pressure deficient nodes within Zone 2. A majority of these pressure deficient nodes are on the supply line, with a few along Main Avenue and the area surrounding the Tatlow reservoir. All of the nodes within Zone 1 were in compliance with the service pressure requirements under PHD conditions.

Fire flow analysis was conducted under MDD conditions. All of the nodes that require 90 L/s of fire flow were deficient and were located within Zone 2. A majority (86%) of the nodes that require 60 L/s of fire flow were also deficient. Available fire flows typically range from 41 L/s to 59 L/s at present.

A water age analysis was conducted under ADD conditions. It was determined that a majority (83.5%) of the system experiences a retention time of less than 3 days, which is considered acceptable. The remaining pipes within the system account for all of the dead-ends which experience water age greater than 3 days.

A storage capacity analysis was conducted on the Tatlow Reservoir which has an existing storage capacity of 0.27 ML. It was determined that the Tatlow reservoir has a storage volume deficiency of 0.77 ML. Taking into account a constant 20 L/s supply of source water from the marine pipelines, the storage volume deficiency is reduced to 0.62 ML. The fire storage required is governed by the highest fire flow and duration requirement in its service area,

which is 90 L/s for 2 hours. A separate analysis assuming a 60 L/s fire flow requirement for 1.5 hours was conducted for comparative purposes, as 60 L/s is the predominant fire flow requirement in the Village; the storage volume deficiencies in this case is reduced to 0.25 ML and 0.36 ML, with and without the marine pipeline supply, respectively.

It is recommended that further modelling analysis should be conducted to determine possible upgrades required to improve the existing system. These upgrades may include the following:

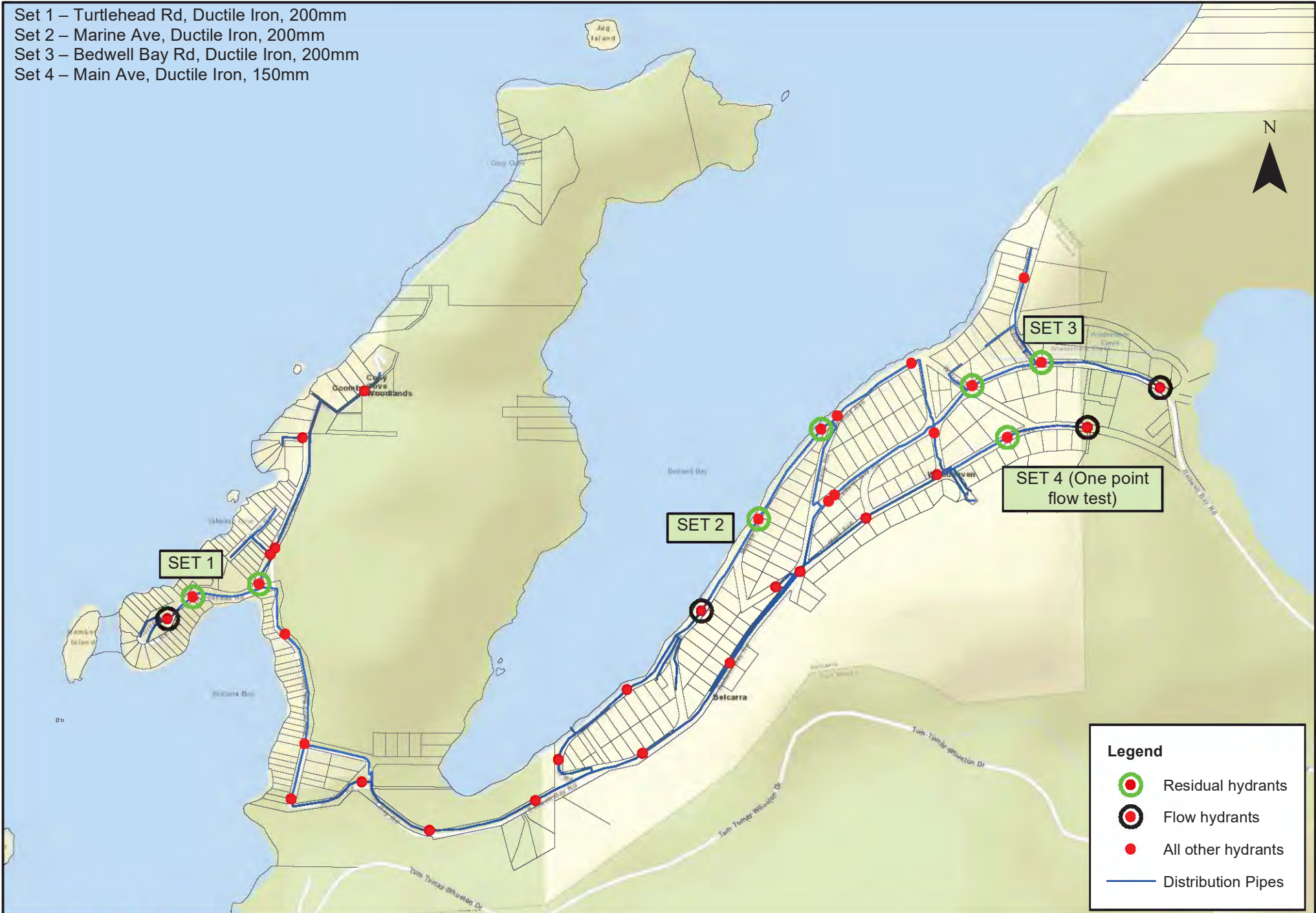
- Additional storage at the existing Tatlow Reservoir or at a higher elevation
- Creation of smaller pressure zones through pumping or PRVs
- Watermain looping
- Flushing programs

These potential upgrades may assist with addressing fire flow and service pressure deficiencies, increasing flows to dead end nodes, improving available storage capacity, and reducing water retention within the system.

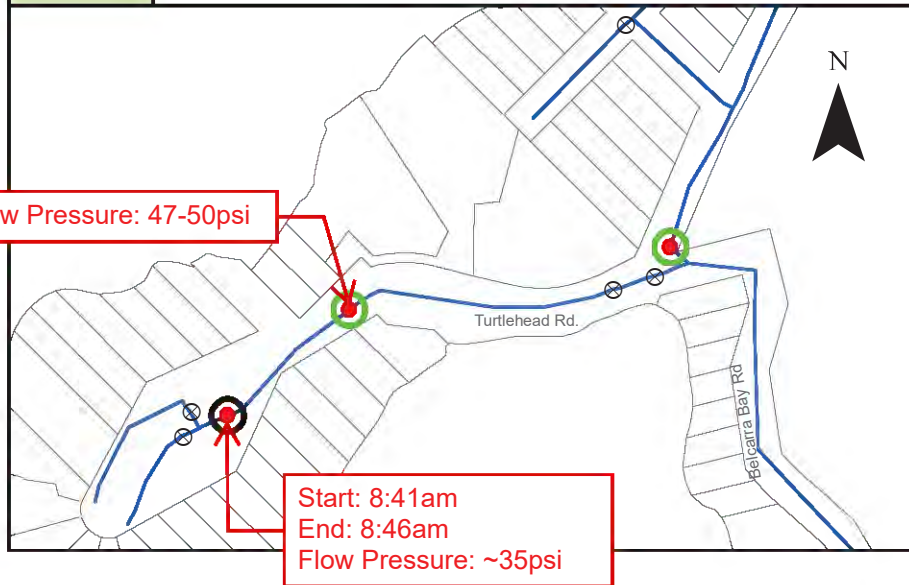
APPENDIX

A HYDRANT TESTING

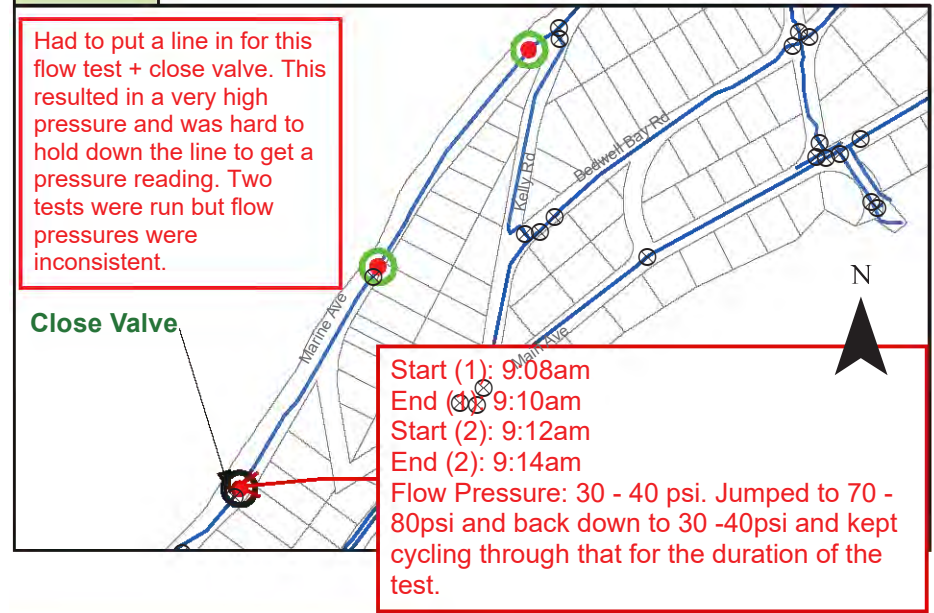
- Set 1 – Turtlehead Rd, Ductile Iron, 200mm
- Set 2 – Marine Ave, Ductile Iron, 200mm
- Set 3 – Bedwell Bay Rd, Ductile Iron, 200mm
- Set 4 – Main Ave, Ductile Iron, 150mm



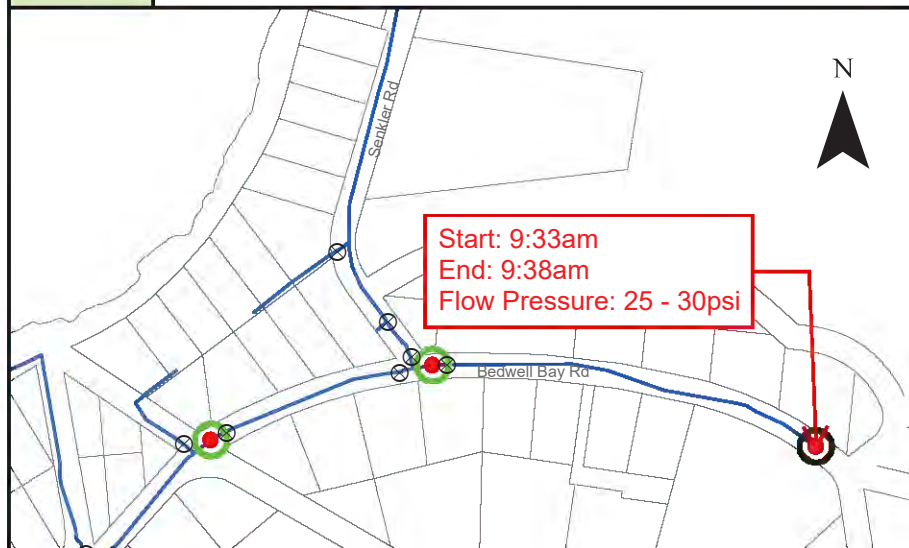
SET 1



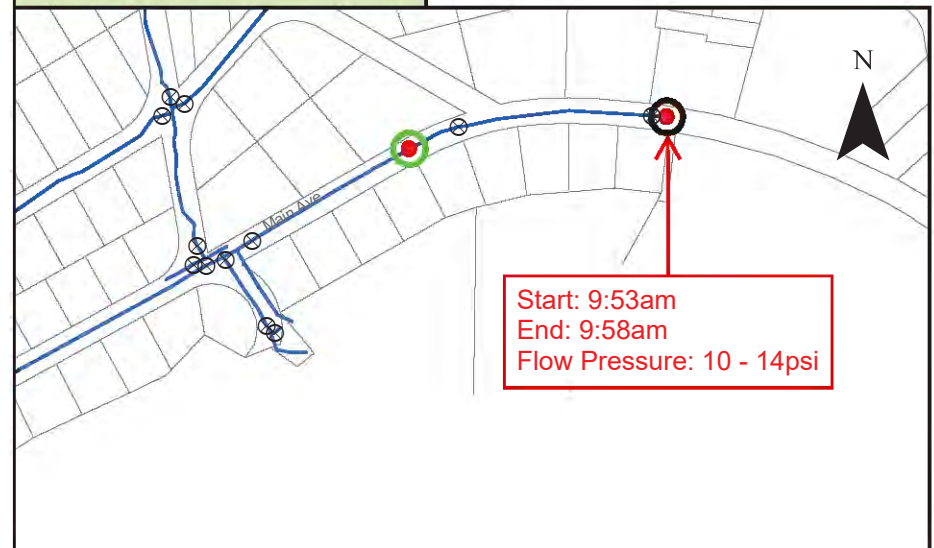
SET 2



SET 3



SET 4 (One point flow test)



North Vancouver Office, #210 - 889 Harbourside Drive
Tel (604) 990 4800 Fax (604) 990 4805
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VILLAGE OF
BELCARRA

Legend



Residual hydrants



Flow hydrants



Valves



Watermain (distribution)

Village of Belcarra C-Factor Test

Drawn By: Approved By:

SG

ML

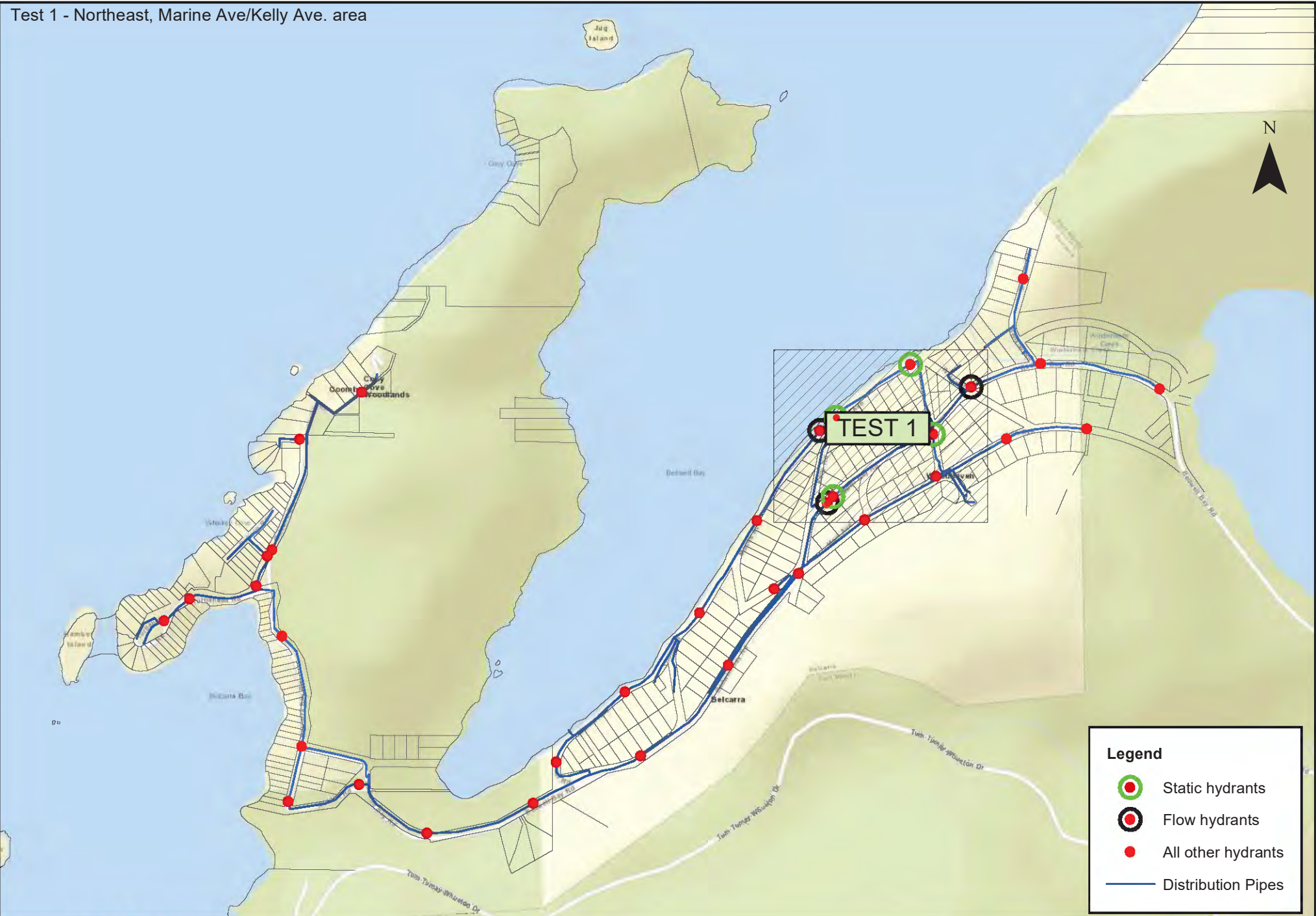
Scale

0 25 50 100 Meters

Revisions

Map No. 02 JUNE 2022

Project No: 211-09148-00



Legend

- Static hydrants
- Flow hydrants
- All other hydrants
- Distribution Pipes

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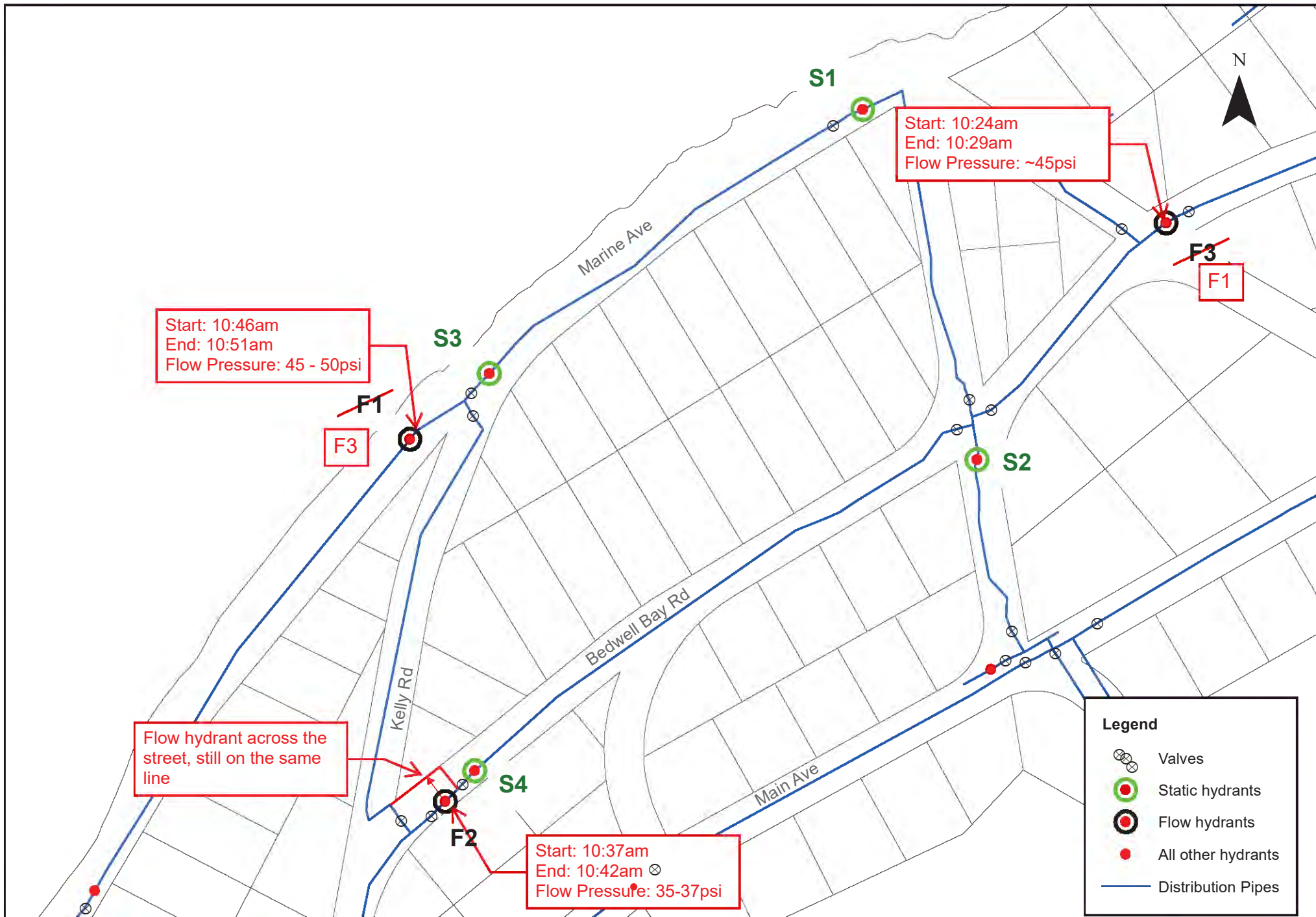
**VILLAGE OF
BELCARRA**

Village of Belcarra

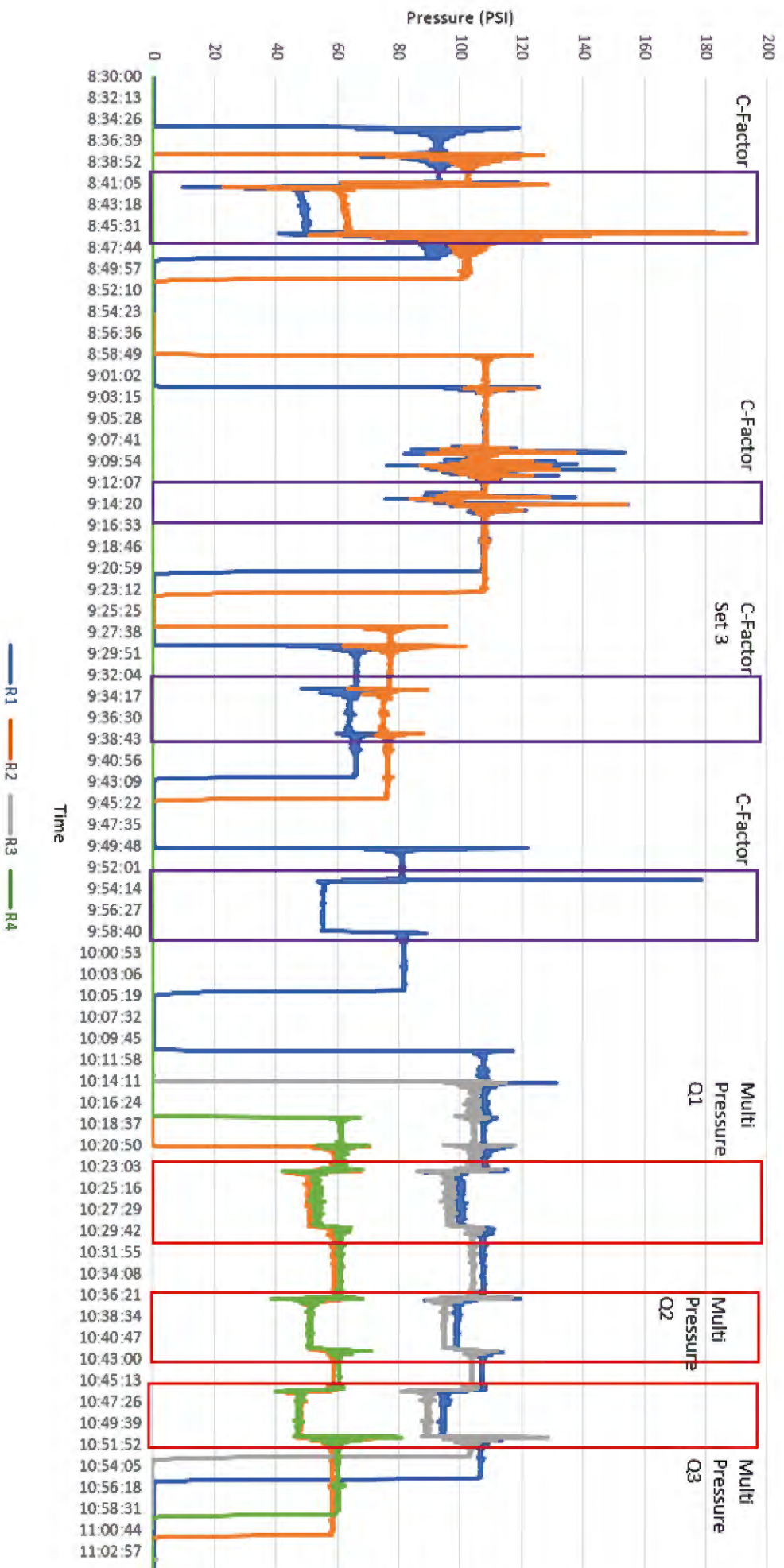
Multi-Pressure Hydrant Flow Test Overview

Source: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NOAA, Esri Japan, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Drawn By:	Approved By:	Scale
SG	ML	0 110 220 Meters
Project No: 211-09148-00		1:12,500 Map No. 02 June 2022



Belcarra Hydrant Testing July 20, 2022





VILLAGE OF BELCARRA
2023 Tax Rates Bylaw No. 610, 2023



A Bylaw to set Tax Rates for the Year 2023

WHEREAS, pursuant to Section 197 of the *Community Charter*, the Council must, before the 15th day of May in each year, establish tax rates for municipal revenue and for amounts collected for the year by means of rates established by the municipality to meet its taxing obligations in relation to another local government or other public body, based on the assessed value of taxable land and improvements;

NOW THEREFORE, the Council of the Village of Belcarra enacts as follows:

1. This Bylaw may be cited for all purposes as "Village of Belcarra 2023 Tax Rates Bylaw No. 610, 2023".
2. The following rates are hereby imposed and levied for the year 2023:
 - a. for general municipal purposes on the assessed value of land and improvements taxable for general municipal purposes, those rates appearing in column A of Schedule "A" attached hereto and forming part of this bylaw; and
 - b. for purposes of the Metro Vancouver Regional District, on the assessed value of land and improvements taxable for hospital purposes, those rates appearing in column B of Schedule "A" attached hereto and forming part of this bylaw.
3. If a portion of this bylaw is held invalid by a Court of competent jurisdiction, then the invalid portion must be severed and the remainder of this bylaw is deemed to have been adopted without the severed section, subsection, paragraph, subparagraph, clause or phrase.

READ A FIRST TIME on April 24, 2023

READ A SECOND TIME on April 24, 2023

READ A THIRD TIME on April 24, 2023

ADOPTED by the Council on

Jamie Ross
Mayor

Paula Richardson
Chief Administrative Officer

This is certified a true copy of
2023 Tax Rates Bylaw 610, 2023

Paula Richardson, Chief Administrative Officer

Village of Belcarra
Schedule "A" of Bylaw No. 610 - 2023
Tax Rates (Dollars of Tax per \$1,000 of Taxable Value)

Property Classes	A General Municipal Purposes	B Metro Vancouver Regional District Purposes
1 Residential	1.25034	0.46846
2 Utilities	4.37619	1.63961
3 Supportive Housing	1.25034	0.46846
4 Major Industry	4.25116	1.59276
5 Light Industry	4.25116	1.59276
6 Business/Other	3.06333	1.14773
7 Managed Forest Land	3.75102	1.40538
8 Recreation/Non-Profit	1.25034	0.46846
9 Farm	1.25034	0.46846



VILLAGE OF BELCARRA
5-Year (2023 – 2027) Financial Plan Bylaw
No. 606, 2023,
Amendment Bylaw No. 611, 2023



A bylaw to amend the 5-Year Financial Plan for the years 2023 – 2027 inclusive.

WHEREAS pursuant to Section 165 of the Community Charter, “Village of Belcarra 5-Year (2023 – 2027) Financial Plan Bylaw No. 606, 2023” was adopted on March 27, 2023; and

AND WHEREAS pursuant to Section 165 of the Community Charter, the financial plan may be amended by bylaw at any time.

NOW THEREFORE, the Council of the Village of Belcarra enacts as follows:

1. This Bylaw shall be cited for all purposes as the “Village of Belcarra 5-Year (2023 – 2027) Financial Plan Bylaw No. 606, 2023, Amendment Bylaw No. 611, 2023”.
2. “Village of Belcarra 5-Year (2023 – 2027) Financial Plan Bylaw No. 606, 2023” is hereby amended by deleting Schedule A – Financial Plan in its entirety and replacing it with Schedule A – Financial Plan attached to and forming part of this Bylaw.

READ A FIRST TIME on April 11, 2023

READ A SECOND TIME on April 11, 2023

READ A THIRD TIME on April 24, 2023

ADOPTED by the Council on

 Jamie Ross
 Mayor

 Paula Richardson
 Chief Administrative Officer

This is a certified a true copy of
 Village of Belcarra 5-Year (2023 – 2027) Financial
 Plan Bylaw No.606, 2023, Amendment Bylaw No. 611, 2023

 Chief Administrative Officer

Schedule A - Financial Plan

	2023	2024	2025	2026	2027
REVENUE					
Taxation (including grants in lieu)	(1,006,297)	(1,036,380)	(1,067,363)	(1,099,273)	(1,132,139)
Parcel taxes	(267,617)	(267,617)	(267,617)	(267,617)	(267,617)
Sale of services & regulatory fees	(685,699)	(746,355)	(813,326)	(887,294)	(969,009)
Government transfers	(529,119)	(537,677)	(502,279)	(519,477)	(776,167)
Investment income	(57,693)	(58,425)	(59,171)	(59,930)	(60,704)
Actuarial income	(44,814)	(50,547)	(56,482)	(62,623)	(68,980)
Total Revenue	(2,591,239)	(2,697,001)	(2,766,238)	(2,896,214)	(3,274,616)
EXPENSES					
General government & fiscal services	223,262	228,842	234,474	265,198	241,798
Administration & human resources	267,901	273,757	285,942	291,535	297,237
Information technology	40,636	41,478	42,347	43,243	44,166
Support services (engineering, finance & planning)	158,985	140,854	142,757	144,697	146,671
Building inspection & bylaw enforcement	87,334	89,057	90,813	92,605	94,432
Public works & transportation	255,585	250,905	255,063	268,331	272,825
Major road network (MRN)	168,196	170,403	173,628	176,923	179,683
Fire & emergency services	7,454	7,492	7,530	7,568	7,607
Waste & recycle depot (WARD)	187,873	192,246	198,155	204,252	209,690
Water system	514,922	529,209	555,788	579,713	605,853
Amortization	354,090	371,555	389,889	409,135	429,339
Total Expenses	2,266,238	2,295,798	2,376,386	2,483,200	2,529,301
ANNUAL SURPLUS	(325,001)	(401,203)	(389,852)	(413,014)	(745,315)
RESERVES, DEBT & CAPITAL					
Tangible capital assets	530,100	465,500	200,000	253,000	436,000
Amortization	(354,090)	(371,555)	(389,889)	(409,135)	(429,339)
Repayment of debt (principal & actuarial)	163,816	169,549	175,484	181,625	187,982
Transfers from reserves	(535,146)	(456,196)	(231,946)	(300,748)	(205,446)
Transfers to reserves	520,947	569,038	609,642	656,680	724,494
Transfer from appropriated surplus	(9,400)	-	-	-	-
Transfers from surplus	(17,726)	(1,663)	-	-	-
Transfers to surplus	26,500	26,530	26,561	31,592	31,624
Total Reserves, Debt & Capital	325,001	401,203	389,852	413,014	745,315
FINANCIAL PLAN BALANCE	-	-	-	-	-

April 26, 2023

File: 01-0375-20-26

By Email to: prichardson@belcarra.ca

Paula Richardson
Chief Administrative Officer
Village of Belcarra
4084 Bedwell Bay Road
Belcarra, BC V3H 4P8

Dear Ms. Richardson,

Re: Nomination to E-Comm Board of Directors – 2023-2024 Term

At the Closed Council meeting held on April 25, 2023, Port Moody Council passed the following resolution:

CC23/068

THAT the City of Port Moody nominate Port Moody Mayor Meghan Lahti and Port Coquitlam Councillor Nancy McCurrach to the E-Comm Board of Directors for the 2023-2024 term as recommended in the memo dated April 14, 2023, from the Legislative Services Division regarding E-Comm Board of Directors Designate – 2023-2024 Term;

AND THAT this resolution be released and forwarded to the City of Burnaby, City of Coquitlam, City of New Westminster, City of Port Coquitlam, Village of Belcarra, and E-Comm.

A copy of Corporate Policy – 01-0375-2021-01 – Nominations to E-Comm Board of Directors is enclosed for your information. This Policy:

- ensures fair and consistent rotation of representation among member municipalities;
- affirms the City of Port Moody's commitment to equity and gender parity on the E-Comm Board of Directors;
- provides clarity to all member municipalities on the City of Port Moody's position on endorsement of nominations; and
- allows municipalities to nominate a representative from a different municipality as they deem appropriate.

Per the attached Policy, the City of Port Moody nominates endorses the nomination made by the City of Port Coquitlam for the 2023 to 2024 term. If you require further information or clarification, please contact Stephanie Lam, City Clerk, by email at slam@portmoody.ca or by telephone at 604-469-4603.

Sincerely,



Tracey Takahashi
Deputy Corporate Officer

Enclosure

cc: Corporate Secretary, E-Comm 911
City Clerk, City of Burnaby
City Clerk, City of Coquitlam
City Clerk, City of New Westminster
City Clerk, City of Port Moody
Manager of Legislative Services & Corporate Initiatives, City of Port Coquitlam

Corporate Policy

100 Newport Drive, Port Moody, BC, V3H 5C3, Canada

Tel 604.469.4500 • Fax 604.469.4550 • www.portmoody.ca

Section:	Administration	01
Sub-Section:	External Committees, Commissions, Associations, and Boards	0375
Title:	Nominations to E-Comm Board of Directors	2021-01

Related Policies

Number	Title

Approvals

Approval Date: March 23, 2021	Resolution #: <u>CC21/067</u>
Amended:	Resolution #:
Amended:	Resolution #:
Amended:	Resolution #:

Corporate Policy Manual

Nominations to E-Comm Board of Directors

Background

As Shareholders of E-Comm Emergency Communications for British Columbia Inc., the City of Burnaby, City of Coquitlam, City of New Westminster, City of Port Coquitlam, City of Port Moody, and Village of Belcarra are collectively entitled to two seats on the E-Comm Board of Directors. Every municipality in the group must endorse the same two nominees in order for the nominees to be appointed to the E-Comm Board of Directors. This Policy sets out the process through which the City of Port Moody provides nominations and the endorsement of nominations to the E-Comm Board of Directors.

The Shares held by member municipalities of the Designated Group are as follows:

	Class A	Class B
City of Burnaby	1	0
City of Coquitlam	2	1
City of New Westminster	1	1
<i>New Westminster Police Board</i>	1	0
City of Port Coquitlam	2	1
City of Port Moody	1	1
<i>Port Moody Police Board</i>	1	0
Village of Belcarra	0	3

As the Village of Belcarra is not part of the E-Comm radio network, it does not hold Class A shares and has been excluded from representing the group.

Definitions

Designated Group refers to the Designated Group of Shareholders comprising the following member municipalities: City of Burnaby, City of Coquitlam, City of New Westminster, City of Port Coquitlam, City of Port Moody, and Village of Belcarra.

Nominating City refers to the City whose turn it is to nominate a Designate to the E-Comm Board of Directors according to the Nomination Schedule.

Nomination Schedule refers to the schedule set out in this Policy, which sets out the years during which each member municipality is expected to nominate a Designate to the E-Comm Board of Directors on a rotational basis among members of the Designated Group.

Nominee refers to the person nominated by the Nominating City.

Corporate Policy Manual

Nominations to E-Comm Board of Directors

Policy

1. Members of the Designated Group are entitled to nominate a representative for the E-Comm Board of Directors according to the Nomination Schedule.
2. Since the City of Port Moody is not privy to the decision process by which each Nominating City arrives at their decision on the Nominee, nor to the qualifications or particularities of the Nominee, this Corporate Policy confirms the City of Port Moody's automatic endorsement of the Nominee nominated by the Nominating City according to the Nomination Schedule.
3. The Nomination Schedule has been developed based on the practice of having each municipality with Class A shares taking turns serving as the E-Comm Board Member representing the Designated Group. Per E-Comm's recommendation for longer terms, the Nominating Cities for the two seats are changed once every four years, coinciding with four-year Council terms. The Nomination Schedule is as follows:

Years	Seat	Nominating City
2019-2022 (two years remaining on a four-year term)	Designated Group Seat 1	Coquitlam
	Designated Group Seat 2	Burnaby
2022-2026	Designated Group Seat 1	Port Coquitlam
	Designated Group Seat 2	Port Moody
2026-2030	Designated Group Seat 1	New Westminster
	Designated Group Seat 2	Coquitlam
2030-2034	Designated Group Seat 1	Burnaby
	Designated Group Seat 2	Port Coquitlam
2034-2038	Designated Group Seat 1	Port Moody
	Designated Group Seat 2	New Westminster
2038-2042	Designated Group Seat 1	Coquitlam
	Designated Group Seat 2	Burnaby

4. Where the Nominating City decides not to put forward a Nominee from its own Council, the Nominating City may nominate any member of any Council within the Designated Group. When a Nominating City nominates a representative from another municipality, the Nominating City is exercising its entitlement to nominate a representative; that entitlement is neither ceded, transferred, nor postponed.

Corporate Policy Manual

Nominations to E-Comm Board of Directors

5. In years where the City of Port Moody is the Nominating City, the Council of the City of Port Moody will nominate a representative by resolution based on the following considerations:
 - a) candidate interest and availability;
 - b) candidate's membership in an underrepresented group whose inclusion on the E-Comm Board would contribute to the Board's diversity and/or gender parity; and
 - c) any other consideration related to the candidate's suitability to represent the Designated Group on the E-Comm Board of Directors.
6. In years where the City of Port Moody is the Nominating City and the Council of the City of Port Moody opts not to put forward a Nominee from its own membership, Council shall solicit interest from municipalities in the Designated Group. The Council of the City of Port Moody will review the submissions of interest and pass a resolution to nominate a member of a Council within the Designated Group.

Monitoring/Authority

Changes to this policy require the approval of Council.

From: Meghan Lahti <MLahti@portmoody.ca>
Sent: Monday, May 1, 2023 3:30 PM
To: Connie Esposito <cesposito@belcarra.ca>
Subject: LMLGA Resolution R26 - Casino Revenue Sharing

Dear Belcarra Council:

On behalf of Port Moody Council, we are writing to ask for your support for [LMGA Resolution R26 – Casino Revenue Sharing in Regional Districts](#), page 22, at the upcoming conference May 3-5, 2023.

As you know, communities that host casinos or community gaming centres are eligible for 10% of net revenue is distributed to the host community, which was initially provided to offset any negative impacts from hosting a casino in a community. Past provincial responses to municipalities' requests for more equitable distribution of revenue suggest that host municipalities have not experienced any negative financial consequences.

An equitable revenue sharing policy can ensure that local governments have the necessary resources to continue to deliver quality services, adapt to climate change and repair critical infrastructure. In a time where municipalities are increasingly on the front lines of challenging social issues, such as the housing crisis, revenue sharing can provide another non-tax source of revenue, reducing the burden of taxation on residents.

In the fiscal year ending March 31, 2022, host communities in Metro Vancouver received approximately \$40 million, which was distributed amongst seven communities which are home to 74% of the region's population.

In a revenue sharing arrangement, based on FY2021/22 revenues, your community would receive an estimated **\$10,540.50**.

In addition to a share of the revenue from gaming activities, it should be noted that host municipalities also receive property tax revenue from casinos, unlike communities that host hospital facilities. While some gaming revenue may return to communities through community gaming grants, this is not guaranteed, relying on local non-profit organizations to apply for, and be successful in their grant applications.¹ Based on an analysis of gaming grants distributed in FY2021/22 with Metro Vancouver communities, \$58 million (85%) of community gaming grant money was distributed to organizations within communities that host casinos (home to 70% of regional population).

In highly integrated regions, such as Metro Vancouver or the Capital Regional District, equitable revenue sharing amongst all communities would create a level playing field. Residents from all communities' access and use amenities across the region, from hospitals to casinos to parks and revenue should be shared in an equitable manner that recognizes this. Equitable sharing of revenue from casinos will support non-hosts in enhancing the livability of their communities across the region.

We strongly advocate for regional casino revenue sharing and hope you will join us in voting for the resolution.

If you wish to discuss more, please reach out.

Regards,

Meghan Lahti

Mayor

City of Port Moody

Attachments

Letter to Minister Conroy

Councillor Agtarap Report to Council

Casino Revenue Key Facts



CITY OF PORT MOODY

OFFICE OF THE MAYOR

April 18, 2023

Email: FIN.Minister@gov.bc.ca

Honourable Katrine Conroy
Minister of Finance
PO Box 9048 Stn Prov Govt
Victoria, BC V8W 9E2

Honorable Minister Conroy,

We are writing to advocate for casino revenue sharing amongst municipalities within a region. An equitable revenue sharing policy can ensure that local governments have the necessary resources to continue to deliver quality services, adapt to climate change and repair critical infrastructure. In a time where municipalities are increasingly on the front lines of challenging social issues, such as the housing crisis, revenue sharing can provide another non-tax source of revenue, reducing the burden of taxation on residents.

Communities that host casinos or community gaming centres are eligible for a share of the net gaming income. As you know, currently, 10% of net revenue is distributed to the host community, which was initially provided to offset any negative impacts from hosting a casino in a community. Past provincial responses to municipalities' requests for more equitable distribution of revenue suggest that host municipalities have not experienced any negative financial consequences. Host municipalities are benefiting from additional associated economic benefits and can use the revenue they receive for locally determined priorities. It should be noted that host municipalities also receive property tax revenue from casinos, unlike communities that host hospital facilities.

In highly integrated regions, such as Metro Vancouver or the Capital Regional District, equitable revenue sharing amongst all communities would create a level playing field. Residents from all communities' access and use amenities across the region, from hospitals to casinos to parks and revenue should be shared in an equitable manner that recognizes this.

While some gaming revenue may return to communities through community gaming grants, this is not guaranteed, relying on local non-profit organizations to apply for, and be successful in their grant applications.¹ Based on an analysis of gaming grants distributed in FY2021/22 with Metro Vancouver communities, \$58 million (85%) of community gaming grant money was distributed to organizations within communities that host casinos (home to 70% of regional population).

¹ Numerous organizations have noted that applying for gaming grants is a process that presents its own barriers.

Equity is an important tenet of our society and the current system whereby host communities receive dedicated revenue does not support this principle within our communities. The allocation of the Growing Communities Fund is an excellent example of transparent and fair funding distribution amongst our communities.

We strongly advocate for regional casino revenue sharing. Equitable sharing of revenue from casinos will support non-hosts in enhancing the livability of their communities across the region. We urge you to consider implementing fair casino revenue sharing within our province with the goal of advancing equity across the region.

Warm Regards,

A handwritten signature in cursive script that reads "Meghan Lahti". The signature is written in black ink on a white background.

Mayor Meghan Lahti

Attachment(s): UBCM Resolution



Report to Council From the Office of Councillor Samantha Agtarap

Date: February 15, 2023

Subject: LMLGA Resolution: Casino Revenue Sharing in Metro Vancouver

Purpose

To provide information on casino revenue from Metro Vancouver casinos and gaming centres and propose revenue sharing amongst Metro Vancouver municipalities to use as a basis for a resolution at the Union of BC Municipalities.

Recommendation

THAT the report dated February 15, 2023 from the office of Councillor Samantha Agtarap regarding Casino Revenue Sharing in Metro Vancouver be received for information;

AND THAT Council advance the following resolution to LMLGA for the 2023 convention;

WHEREAS the original intent of solely sharing casino revenue with host communities was to offset the perceived and projected negative impacts of hosting a casino, and according to the Province, most communities have experienced minimal, if any, negative financial consequences as a result of hosting such a facility and are using the revenue they receive for other, locally determined priorities, and;

WHEREAS there has been a precedent set with the Town of View Royal for partial regional casino revenue sharing, and residents from all communities throughout a region contribute to the revenue of a casino but do not receive the benefits, and therefore this creates an inequitable distribution of funds which could and should benefit residents of the entire Regional District;

THEREFORE BE IT RESOLVED THAT the Province make the necessary legislative changes to ensure equitable distribution of casino revenue within Regional Districts.

Background

The Province of British Columbia uses net gaming revenue to support a variety of social and other programs, including health care services and programs. Communities that host casinos or community gaming centres are eligible for a share of the net gaming income.¹ Currently, 10% of net revenue is distributed to the host community. In the fiscal year ending March 31, 2022, host communities have received over \$1.5 billion since 1999. In the 2021/22 fiscal year, host communities across the province collected over \$66 million.² Prior to the pandemic, total revenue for the BC Lottery Corporation (BCLC) was approximately \$2.5 billion, representing a net income of \$1.3 billion (FY2019/20), and included both in-person gaming and electronic gaming revenue.³

Within Metro Vancouver Regional District, seven communities host casinos. These are:

- Grand Villa Casino, Burnaby;
- Hard Rock Casino, Coquitlam;
- Cascades Casino, Langley;
- Starlight Casino, New Westminster;
- Elements Casino, Surrey;
- River Rock Casino, Richmond; and
- Parq Casino and Hastings Racetrack⁴, Vancouver.

In a highly integrated region such as Metro Vancouver, residents of all cities access services and amenities across the region, including, but not limited to, parks, libraries, sports fields, recreation centres, hospitals, urgent and primary care centres and casinos (or community gaming centres). For this reason, net gaming revenue from casinos within the Metro Vancouver Regional District should be shared equitably amongst all member municipalities.⁵

Note: Cascades Casino Delta is excluded from this analysis as it opened in 2022 and therefore was not included in BC Lottery Corporation's latest annual report for the fiscal year ending March 31, 2022.

¹ Net gaming income is defined as gaming revenue (revenue after prizes) from casino games less site-specific costs, including fees payable by BCLC to the service provider and an allocation of BCLC's administrative and operating costs as determined. Service provider fees are attributed to the specific facility and vary by community. BCLC administrative and operating costs are attributed to each facility based on gaming revenue from the facility and therefore vary by community.

² In 2018/19, BC communities hosting casinos received approximately \$80 million.

³ In FY2021/22, BCLC collected \$421.4 million in eGaming revenue. This revenue is not included in the 10% shared revenue to host communities (BCLC 2020/21 Annual Service Report, page 18).

⁴ For the purposes of this discussion, Hastings Racetrack has been excluded from the discussion and subsequent calculations. In 2022, the Hastings Racetrack provided the City of Vancouver with \$690,000 in revenue.

⁵ Note: Cascades Casino Delta is excluded from this analysis as it opened in 2022 and therefore was not included in BC Lottery Corporation's latest annual report for the fiscal year ending March 31, 2022.

Discussion

In Metro Vancouver Regional District (MVRD), casino revenue is not shared amongst neighbouring governments but rather retained by the seven host communities (Burnaby, Coquitlam, Langley, New Westminster, Richmond, Surrey and Vancouver). Collectively, these communities received over \$40 million in the fiscal year ending March 31, 2022, while representing 70% of the regional population. Additionally, the revenue received by each host community from the gaming income is not proportionate to population (see Table 1), where Richmond receives 27% of the regional gaming revenue but is home to only 8% of the regional population.

Table 1: Population and revenue share

	Population (2021)	Revenue Share (F21/22)
Langley	1%	11%
Burnaby	9%	21%
Coquitlam	5%	15%
New Westminster	3%	9%
Vancouver	24%	11%
Richmond	8%	27%
Surrey	20%	6%
Port Moody	1%	0%

Originally, host gaming revenue was provided to offset the impacts of hosting a casino. However, the impacts are not limited to the host community, especially in highly integrated regions such as Metro Vancouver. Since 1999, nearly \$1 billion has been transferred to these seven municipalities while the remaining communities do not receive any direct revenue from regional casinos.

In 2001, a new casino opened in the Town of View Royal in Greater Victoria, population 7,200. This casino was intended to act as a regional casino and serve the communities of View Royal, Langford, Metchosin, Colwood, Esquimalt, Sooke and Highlands. As part of the agreement, View Royal agreed to pay a portion of the funds received from the Province to other local governments impacted by the casino. In 2020, View Royal disbursed 55% (\$482,000) of the revenue received from the Province to neighbouring governments named in the revenue sharing agreement, retaining the remaining 45% (\$394,000).⁶ Neighbouring governments receive their share of the revenue on a per capita basis. The District of Langford is responsible for the disbursement of these funds.

The BC Lottery Corporation disburses the remaining net income various accounts including \$139.8 million for community gaming grants which are intended to support non-profit

⁶ In 2020, casino revenues declined due to the pandemic and related closures. Prior to the pandemic, in the fiscal year 2018/19, 10% of casino revenues totalled \$4.6 million. View Royal's share was approximately \$2 million.

organizations for the delivery of on-going community programs and services.⁷ However, this does not guarantee that a share of gaming revenue will be used for non-host communities' benefit.

In 2008, Port Coquitlam brought resolution B119 to the UBCM to request the Province establish an equitable formula to share casino revenues with all BC local governments, without affecting the currently allocated revenue to host communities.⁸ However, the Province responded that nearly 100% of net gaming revenue was distributed to, or used to support citizens of BC. Furthermore, the Province's response states:

*"The current revenue sharing being undertaken with local governments hosting casino gaming was originally established to help those communities offset the infrastructure, social service and other costs related to hosting a gaming venue. By all accounts, **most communities have experienced minimal, if any, negative financial consequences** as a result of hosting such a facility and are using the revenue they receive for other, locally determined priorities."*

It should be noted that host communities not only receive a share of net gaming revenue, but also property tax income from casinos. While the revenue sharing was intended to offset infrastructure costs and other costs related to hosting a casino, the ability to receive property tax revenue assists host communities in covering infrastructure costs, while social costs are borne by the entire region, rather than only the host community. Additionally, the province notes that host communities have not experienced negative financial impacts related to hosting a gaming facility and are able to use the gaming revenue for other community determined purposes.

This arrangement appears inherently unfair to communities that do not host gaming facilities. While some gaming revenue may return to communities through community gaming grants, this is not guaranteed, relying on local non-profit organizations to apply for, and be successful in their grant applications.

In highly integrated regions, such as Metro Vancouver or the Capital Regional District, equitable revenue sharing amongst all communities creates a level playing field. Residents from all communities' access and use amenities across the region, from hospitals to casinos to parks and revenue should be shared in an equitable manner that recognizes this.

As an example, some communities such as Port Moody, host health care facilities like Eagle Ridge Hospital which serves the Tri-Cities yet receives no other benefit from the facility other than access to it for all residents. While hospitals pay for their utilities (water and sewer), they do not pay property tax nor share parking revenues, and therefore do not pay for the full infrastructure costs associated with hosting health care facilities.

⁷ BCLC, Net Income from gaming, [Where The Money Goes | BCLC](#), accessed 2023-01-01.

⁸ UBCM, [Lottery Corporation Revenue Sharing | Union of BC Municipalities \(ubcm.ca\)](#)

Moving forward

The next step is to bring a motion forward at the 2023 UBCM Conference to advocate for an equitable revenue sharing that recognizes the integrated nature of BC's most populous regions. Modelling the existing agreement of View Royal and its neighbours, there are multiple options for revenue sharing:

- Regionally pooled revenue with per capita distribution.
- Percentage retained by host, remainder pooled and distributed per capita.
- Provincially pooled revenue with per capita distribution.

The third option outlined above is the most equitable to all British Columbians and will eliminate situations where a host community with a smaller share of a regional population receives a significant portion of revenue. It is recognized that not every community will receive the same benefit under this model if they are currently host a casino or community gaming centre.

The figure below (Figure 1) shows the comparison of three scenarios as a percentage of revenue for MVRD, compared to the percentage of population (2021 census):

- Status quo
- Model A: Per capita distribution (revenue from seven casinos pooled then distributed)
- Model B: Host retention of 45% of revenues, per capita distribution amongst remaining communities

Under the status quo model (orange bar), five communities receive a greater proportion of revenue than their share of the population. Richmond is the most notable example, with 8% of the population and 27% of the revenue. Surrey and Vancouver are most disadvantaged in the status quo scenario, along with the other communities in the region that do not receive any direct gaming revenue.

Model A (grey bar) distributes the casino revenue on a per capita basis, with approximately \$14 allocated per resident (based on 2021/22 revenue, and 2021 census population). This results in significant decrease in funding for the five host communities that significantly benefited from the existing arrangements. For example, per capita revenue sharing would result in Langley losing \$5.6 million in funding while Surrey and Vancouver would gain over \$5 million each, annually. In this scenario, Port Moody would receive approximately \$490,000 annually.

Model B (yellow bar) is the middle ground where 45% of the casino revenue is retained by the host, with the remaining 55% pooled and distributed on a per capita basis amongst non-host communities in MVRD. This scenario is less desirable for Surrey and Vancouver as their casino revenues are a smaller share of the regional revenues, 6% and 11% respectively. In this scenario, Port Moody receives approximately \$270,000 annually.

For comparison, revenue sharing for all Metro Vancouver is included in Figure 2.

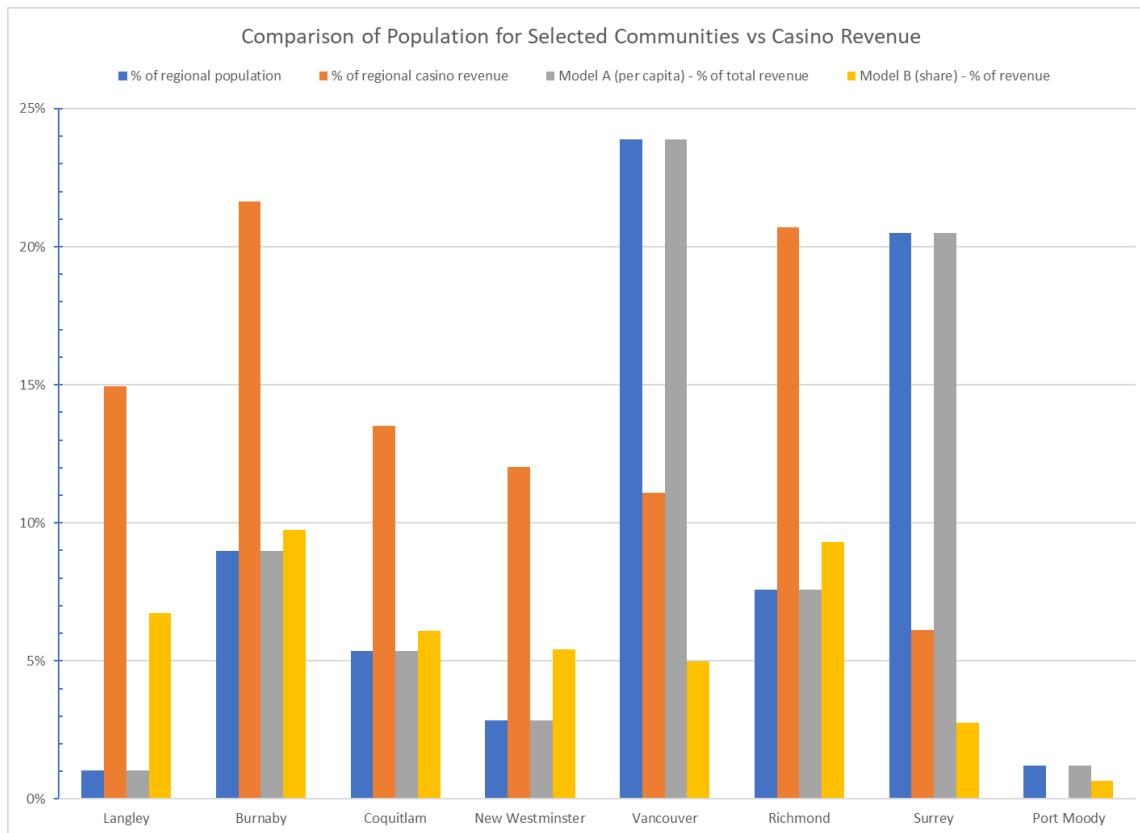


Figure 1: Comparison of Population for Selected Communities and Casino Revenue for Three Scenarios

Summary

It is time to revisit the revenue sharing model for BC communities to ensure equitable distribution of resources. By the Province's own admission, there have been minimal, if any, negative consequences, associated with hosting a casino or community gaming centre. The benefits far exceed any negative impacts and go beyond receiving a share of net gaming proceeds, including property taxes and the economic benefits associated with large employers (local employment, tourism, etc.). These benefits must be extended to all local governments, and by extension, their residents and fellow British Columbians.

As the federal and provincial governments continue to download responsibilities to local governments, municipalities continue to look for solutions to diversify their revenue sources beyond property taxes to ensure service level and infrastructure are maintained. Gaming revenue sharing is one revenue source the provincial government can easily provide without impacting provincial budgets.

Other Option(s)

THAT the report dated February 15, 2023 from Councillor Samantha Agtarap titled Casino Revenue Sharing in Metro Vancouver be received for information.

Reference

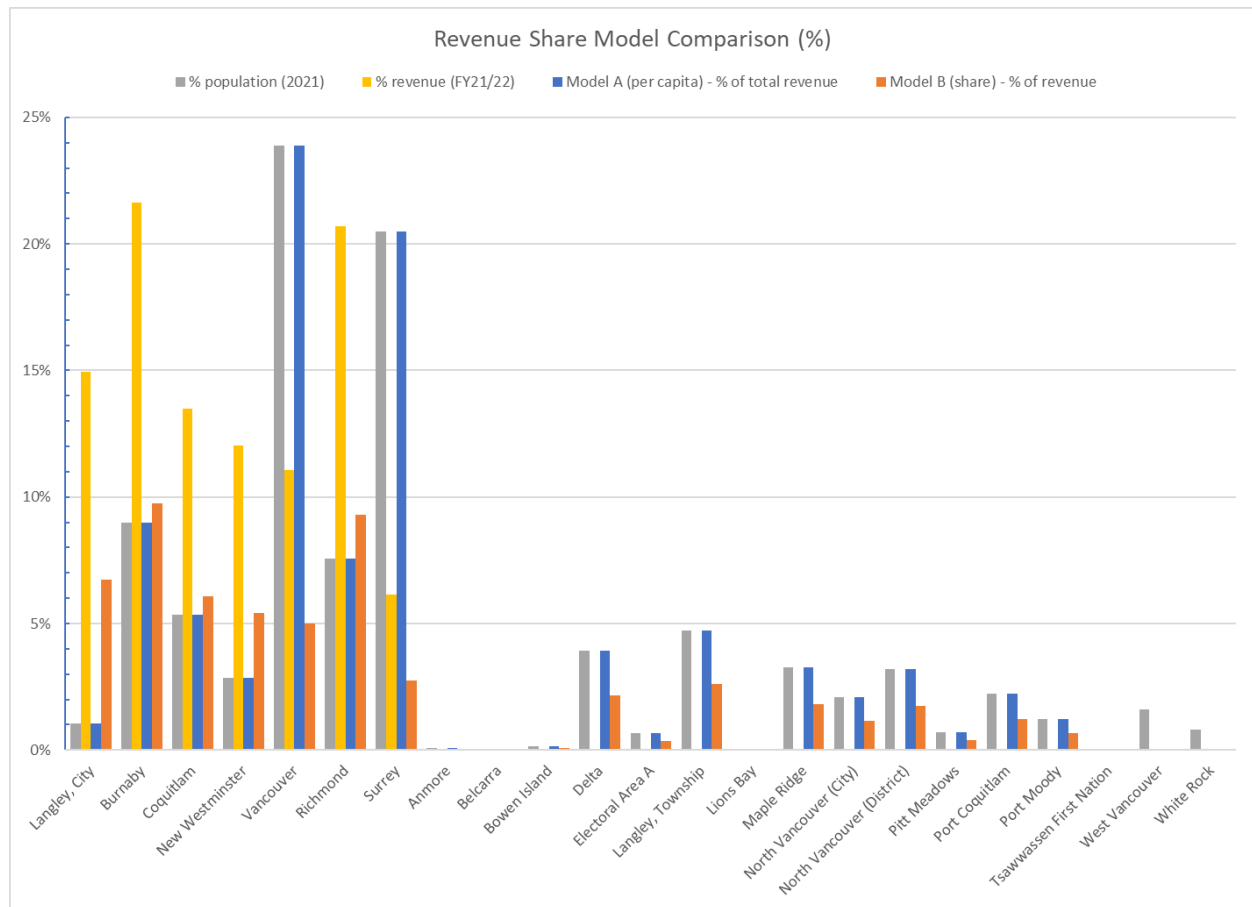


Figure 2: Revenue Sharing for all Metro Vancouver Municipalities

Casino Revenue

Key Facts

Since 1999, host municipalities across BC have received over \$1.5 billion.

- ▶ **In FY2021/22, host communities received over \$66 million, with approximately \$40 million received by seven Metro Vancouver municipalities.**
 - In late 2022, another casino opened in Delta, for a total of eight casinos in Metro Vancouver.
 - Burnaby received 22% of the revenue (\$8.7 million), while representing 9% of the population.
 - Richmond received 21% of the revenue (\$8.3 million), while representing 8% of the population.
- ▶ **Under regional per capita revenue sharing:**
 - Vancouver and Surrey would receive more casino revenue than they do now.
 - The remaining communities would receive less.
 - Communities without casinos would receive approximately 26% of the regional revenue. In FY2021/22, this would equate to \$10.5 million.
- ▶ **Casinos pay property taxes whereas other shared community amenities do not provide a source of income: hospitals, parks, etc.**
- ▶ **Community gaming grants provide another avenue of casino revenue sharing, though this is not equitably distributed.**
 - Casino communities represent approximately 74% of the population in Metro Vancouver.
 - In FY2021/22, \$68 million was distributed as community gaming grants to Metro Vancouver non-profits, with \$58 million (85%) received by non-profits in casino communities.
 - In FY2022/23, \$37 million was distributed as community gaming grants to Metro Vancouver non-profits, with almost \$31 million (83%) received by non-profits in casino communities.
- ▶ **Revenue sharing amongst local municipalities has a precedent, and currently exists in BC.**
 - Since 2001, the Town of View Royal (pop 7,200 in 2001) in the Capital Regional District has been revenue sharing with six neighbouring governments.
 - In this arrangement, the Town retains 55% of revenue received from the casino and disburses 45% on a per capita basis.

May 1st, 2023

Jamie Ross, Mayor
 Carolina Clark, Councillor
 Joe Elworthy, Councillor
 Janet Ruzycki, Councillor
 Liisa Wilder, Councillor
 Village of Belcarra

Dear Belcarra Mayor and Council,

Re: Maze gate on Watson Trail

We are writing to request that the maze gate on the top of Watson Trail be removed or widened.



We think there is a strong case for removal. The [BC Active Transportation guidelines](#) state that it is recommended to avoid the use of rigid bollards, maze gates, or other solid impediments in the pathway at points of entry unless there is a demonstrated history of motor vehicle encroachment, and/or a collision history. We do not know whether this is the case here.

If speed control is the desired outcome, the guidelines further state that the use of rigid bollards or maze gates for bicycle speed control is also not appropriate, as its slowing effect is by creation of a potential safety hazard to the bicycle users.

In its present form the gate certainly needs to be widened. At 31" / 79 centimeters wide, this gate falls far short of the 51" provincial recommendation for gaps at the entrance of trails intended for active transportation. This narrow gap adds unnecessary difficulty for cyclists of all ages and abilities to navigate

the trail. It also impedes cargo bikes, trail-a-bikes, handcycles, motorized mobility scooters, strollers and other forms of wheeled traffic.

We have had a lot of success with the City of Coquitlam in simply removing half of maze gates, leaving behind a single gate to communicate that motorized traffic does not belong on the trail. Could this be an option for this maze gate?

Kind regards,

Colin Fowler and Andrew Hartline
Co-Chairs, HUB Cycling Tri-Cities Local Committee
tri-cities@bikehub.ca



May 2, 2023
Our Ref. 129004

I am pleased to share with you information about the provincial government's StrongerBC: Future Ready Action Plan designed to meet the challenges of today, to make sure people in British Columbia are ready to succeed and grow our inclusive and sustainable economy now and into the future.

The Future Ready Action Plan will develop trained, skilled and talented people to fill the jobs of today and tomorrow. It is the BC government's commitment to ensuring everyone in the province can access the post-secondary skills and training they need to build good lives, while developing the talent and skills that businesses and employers need so we can drive our economy forward and deliver the services we all rely on.

As a key pillar of the StrongerBC Economic Plan launched in February 2022, the Future Ready Action Plan invests an additional \$480 million dollars over the next three years in targeted supports to a broad range of British Columbians.

The action plan is focussed on five pillars:

- Making post-secondary more affordable, accessible and relevant;
- Providing the innovation and skills needed to fill the jobs of tomorrow faster;
- Breaking down barriers so everyone can find a job that works for them;
- Addressing Indigenous People's workforce priorities; and
- Making it easier for people new to Canada to find a job in which they are trained.

I am grateful to those who shared feedback and insights during the StrongerBC: Future Ready Action Plan engagement sessions in May 2022. As a result of this collaborative process, I am confident the Action Plan will support British Columbians to acquire the skills they need to succeed in British Columbia's diverse and innovative economy. I am also confident that it will become easier for employers to find the talent and skills they need to sustain and grow their enterprises.


If you would like more information about the Action Plan and how it can benefit you, I encourage you to reach out to my office or participate in one of the roundtables we will be holding over the next few months.

... /2

- 2 -

The Future Ready Action Plan is an historic investment in people—because what helps people succeed in our economy, makes our economy succeed for people.

Sincerely,

A handwritten signature in black ink, appearing to read 'SR', with a stylized flourish at the end.

Honourable Selina Robinson
Minister

May 3, 2023

SENT VIA EMAIL: sarah.sidhu@ecomm911.ca

E-Comm 9-1-1
c/o Corporate Secretary
3301 East Pender Street
Vancouver, BC V5K 5J3

Dear: Ms. Sidhu

Re: Nomination to E-Comm Board of Directors – 2023-2024 Term

At the Closed Committee of Council meeting held on May, 2, 2023, Port Coquitlam Council passed the following resolution:

“That Committee of Council:

1. Support the nomination of Councillor McCurrach, City of Port Coquitlam, and Mayor Lahti, City of Port Moody, to the E-Comm Board of Directors for the 2023-2024 term; and
2. Authorize the Corporate Officer to forward a copy of the resolution to E-Comm, and the Cities of Burnaby, Coquitlam, New Westminster, Port Moody and the Village of Belcarra”.

If you require further information or clarification, please contact Kerri Wells, Manager Legislative Services & Corporate Initiatives by email at wellsk@portcoquitlam.ca or by telephone at 604-927-5413.

Sincerely,

Lisa Graham
Legislative Clerk

Cc Chief Administrative Officer, Village of Belcarra
via email: City Clerk, City of Burnaby
 City Clerk, City of Coquitlam
 City Clerk, City of New Westminster
 City Clerk, City of Port Moody