



Regular Council Meeting
 to be held at
City of Penticton Council Chambers
 171 Main Street, Penticton, B.C.
 To view the Council Meeting, visit www.penticton.ca

Tuesday, July 7, 2020
at 1:00 p.m.

1. Call Regular Council Meeting to Order

2. Application of rules of procedure

Recommendation: THAT open meetings of the City of Penticton be conducted in person and/or by electronic means allowing members of Council to attend electronically if necessary; AND THAT Council restrict public attendance at open meetings during the British Columbia provincial state of emergency in response to the COVID-19 pandemic as capacity in Council Chambers is limited when maintaining the physical distancing requirements; AND THAT Council ensure openness, transparency, accessibility and accountability by recording and streaming open meetings on the City's website.

3. Adoption of Agenda

4. Recess to Committee of the Whole

5. Reconvene the Regular Council Meeting

6. Adoption of Minutes:

6.1 Minutes of the June 16, 2020 Regular Council Meeting 1-5 Adopt

7. Consent Agenda:

Recommendation: THAT Council approve the Consent Agenda.

Consent Agenda: 6-16

1. Minutes of the June 16, 2020 Public Hearing Meeting;

Robinson 2. Safety and Security Advisory Committee Meeting Draft Minutes of June 15, 2020;

Bloomfield 3. Community Sustainability Advisory Committee Meeting Draft Minutes of June 17, 2020;

Bloomfield 4. Agriculture Advisory Committee Meeting Draft Minutes of June 17, 2020.

5. Release of Items from Closed Meeting:

THAT Council approve a \$2,000 cash grant for costs associated with insurance and an in-kind grant for outstanding city provided utility charges, to the Okanagan School of the Arts to facilitate the two month lease extension with School District 67 to allow for an orderly transition from the Shatford Centre and support the OSA in re-establishing its programming and contributions to a vibrant Penticton.

8. **Correspondence:**

- 8.1 RNL Investments Ltd. Village Square 17-18
Re: Compass House - 1706 Main Street
Staff Comments: Council can receive the correspondence into the record or direct staff to present options to the Safety and Security Advisory Committee.

9. **Staff Reports:**

- Firlotte 9.1 Drought Management Plan 19-293
Drew Lejbak and Paul Hague, Associated Environmental
Staff Recommendation: THAT Council approve the "City of Penticton Drought Management Plan" dated June 26, 2020 (Attachment A) as a guiding document.
- Moroziuk 9.2 Nanaimo Street Bridge and Penticton Creek 294-306
Staff Recommendation: THAT Council request the Penticton Fly Fishers to ask the Regional District of Okanagan Similkameen Board to extend the grant deadline for the South Okanagan Conservation Fund Grant for the design of Penticton Creek Reach 3A Upper / 3B to December 31, 2020;
AND THAT Council authorize staff to design Penticton Creek Reach 3A Upper / 3B with the existing Nanaimo Avenue Bridge removed to allow for the passage of the 1:200 Year Design Flow;
AND THAT the Nanaimo Avenue bridge remain in place until the construction of Penticton Creek Reach 3A Upper / 3B;
AND THAT an evaluation and costing of options, public consultation and development of a recommendation to address the removal of the Nanaimo Avenue Bridge be considered in the 2022 budget process;
AND FURTHER THAT the construction of Penticton Creek Reach 3A Upper / 3B including how to address the removal of the Nanaimo Avenue Bridge be considered in the 2024 Budget process.
- Laven/Kleb 9.3 Responsible Liquor Consumption in Public Places Pilot Results 307-316
Staff Recommendation: THAT Council receive into the record the findings from the "Responsible Liquor Consumption in Designated Public Places – Pilot Project";
AND THAT Council give first, second and third reading to "Liquor Consumption (Okanagan Beach east of Power Street, Rotary Park, Okanagan Lake Park and Marina Way Park) Bylaw No. 2020-26", a bylaw that permits responsible consumption of liquor in designated public places from July through October 15, 2020 from 12 p.m. to 8 p.m.;
AND THAT a Special Council meeting to adopt Bylaw No. 2020-26 be held on Wednesday, July 8 at 4:00 p.m.
- Kozak 9.4 Penticton Restart: Recreation & Culture Update 317-319
Staff Recommendation: THAT Council receive into the record this report and accompanying presentation entitled 'Penticton Restart: Recreation & Culture Update', dated July 7, 2020.
- Kemp 9.5 Economic Recovery Task Force 320-321
Staff Recommendation: THAT Council support the recommendation from the Economic Recovery Task Force to continue the COVID recovery work within the existing Council Advisory Committee structure;
AND THAT Council direct staff to amend the terms of reference for the Economic Prosperity and Development Services Advisory Committee (EPDSAC) to include COVID recovery as an area of focus for the Committee;
AND THAT Council thank the members of the Economic Recovery Task Force and invite any members not already on an advisory committee to apply.

Lockwood	9.6	Community Safety & Security Update <i>Staff Recommendation: THAT Council receive into the record the report dated July 7, 2020 titled "Community Safety & Security Update".</i>	322-324
Goodwin	9.7	Social Development Update <i>Staff Recommendation: THAT Council receive into the record the report dated July 7, 2020 titled "Social Development Update".</i>	325-328
Laven	9.8	Temporary Use Permit PL2019-8515 (Renewal) Re: 813 Westminster Avenue West <i>Staff Recommendation: THAT Council approve "Temporary Use Permit PL2019-8515 (Renewal)", a permit to allow the use of 'motor vehicle sales and rental' for Lot 1 District Lot 2 Group 7 Similkameen Division Yale (Formerly Yale-Lytton) District Plan 13891, located at 813 Westminster Ave West, for a three-year period; AND THAT staff be directed to issue "Temporary Use Permit PL2019-8515 (Renewal)".</i>	329-340
Laven	9.9	Zoning Amendment Bylaw No. 2020-27 Development Permit PL2020-8759 Re: 2475 Skaha Lake Road <i>Staff Recommendation: THAT "Zoning Amendment Bylaw No. 2020-27", a bylaw to rezone Lot 2 District Lot 116 Similkameen Division Yale District Plan 9227, located at 2475 Skaha Lake Road from CT1 (Tourist Commercial) to C7 (Service Commercial), be given first reading and be forwarded to the July 21, 2020 Public Hearing; AND THAT prior to adoption of "Zoning Amendment Bylaw No. 2020-27", a road dedication of 2.0m along the Skaha Lake Road frontage be registered with the Land Title Office; AND THAT Council, subject to approval of "Zoning Amendment Bylaw No. 2020-27", approve "Development Permit PL2020-8759" for 2475 Skaha Lake Road, a permit to allow for the construction of a motor vehicle sales and rental business.</i>	341-362
Laven	9.10	Development Variance Permit PL2020-8777 Re: 127 Acacia Crescent <i>Staff Recommendation: THAT Council approve "Development Variance Permit PL2020-8777" for Lot B District Lot 249 Similkameen Division Yale District Plan 36766, located at 127 Acacia Crescent, a permit to increase the maximum height of a retaining wall within a required yard from 1.2m to 1.68m; AND THAT Council direct staff to issue "Development Variance Permit PL2020-8777".</i>	363-373
Laven	9.11	Development Variance Permit PL2020-8767 Re: 642 Haywood Street <i>Staff Recommendation: THAT Council approve "Development Variance Permit PL2020-8767" for Lot 4 District Lot 202 Similkameen Division Yale District Plan 447, located at 642 Haywood Street, a permit to reduce the minimum rear yard for a principal building from 6.0m to 4.37m, to allow for the construction of a two-storey addition onto the existing single detached dwelling; AND THAT Council direct staff to issue "Development Variance Permit PL2020-8767".</i>	374-387
Laven	9.12	Development Variance Permit PL2020-8765 Re: 674 Haywood Street <i>Staff Recommendation: THAT Council approve "Development Variance Permit PL2020-8765" for That Part of Lot 7 Block 27 Outlined Red on Plan B5237; District Lot 202 Similkameen Division Yale District Plan 447, located at 674 Haywood Street, a permit to reduce the minimum rear yard setback for a principal building from 6.0m to 1.09m to allow for an addition on the single detached dwelling; AND THAT Council direct staff to issue "Development Variance Permit PL2020-8765".</i>	388-400

Laven 9.13 Development Variance Permit PL2020-8784 401-414
Re: 2696 and 2712 Skaha Lake Road
Staff Recommendation: THAT Council approve "Development Variance Permit PL2020-8784" for Lots 2 and 3, District Lot 116, Similkameen Division Yale District Plan 21541, located at 2696 and 2712 Skaha Lake Road, a permit to vary Section 5.6.1.1.1 of Zoning Bylaw 2017-08 to increase the permitted fence height along the front lot line from 1.2m to 1.8m.; AND THAT Council direct staff to issue "Development Variance Permit PL2020-8784".

10. **Bylaws and Permits:**

Laven 10.1 Zoning Amendment Bylaw No. 2020-14 415-418 Adopt
Development Permit PL2019-8680 419-427 Approve
Re: 154 Brunswick Street

Laven 10.2 Zoning Amendment Bylaw No. 2020-18 428-429 Adopt
Development Variance Permit PL2020-8741 430-432 Approve
Development Permit PL2020-8740 433-441 Approve
Re: 175 Brunswick Street

11. **Notice of Motion:**

11.1 Notice of Motion introduced by Mayor Vassilaki on March 3, 2020 (delay due to COVID-19):

THAT bylaw services operate on Sundays from spring to fall.

Staff Comment: On March 16, 2020 the motion was shared and endorsed by the Safety and Security Advisory Committee. Operating Bylaw Services on Sundays from July to September has an estimated cost of \$7000.

12. **Business Arising**

13. **Council Round Table**

14. **Public Question Period**

*If you would like to ask Council a question with respect to items that are on the current agenda, please email mayor@penticton.ca before the conclusion of the meeting. Questions will be read in the order they are received. Please limit each question to approximately 60 words or less and use appropriate language.

15. **Adjournment to a Closed Meeting:**

Resolution: THAT Council adjourn to a closed meeting of Council pursuant to the provisions of the Community Charter as follows: Section 90 (1)

(a) *personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality;*

(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.*

Regular Council Meeting¹
held at City of Penticton Council Chambers
171 Main Street, Penticton, B.C.

Tuesday, June 16, 2020
at 1:00 p.m.

Present: Mayor Vassilaki
Councillor Bloomfield
Councillor Kimberley
Councillor Regehr
Councillor Robinson
Councillor Sentes
Councillor Watt

Staff: Donny van Dyk, Chief Administrative Officer
Angie Collison, Corporate Officer
Jim Bauer, Chief Financial Officer
Blake Laven, Director of Development Services
Caitlyn Anderson, Deputy Corporate Officer

1. Call to Order

The Mayor called the Regular Council Meeting to order at 1:02 p.m.

2. Adoption of Agenda

170/2020

It was MOVED and SECONDED

THAT Council adopt the agenda for the Electronic Regular Council Meeting held on June 2, 2020 as amended to include item 5.2 – Proclamation “Pride Week”.

3. Adoption of Minutes:

3.1 Minutes of the June 2, 2020 Electronic Regular Meeting of Council

171/2020

It was MOVED and SECONDED

THAT Council adopt the minutes of the June 2, 2020 Electronic Regular Meeting of Council as presented.

CARRIED UNANIMOUSLY

¹ In accordance with the Province of BC Ministerial Order No. M139, the Council of the City of Penticton is participating in the meeting without public attendance and may adopt a bylaw on the same day as third reading.

4. Consent Agenda:

172/2020

It was MOVED and SECONDED

THAT Council approve the Consent Agenda:

1. Agriculture Advisory Committee Meeting Draft Minutes of May 20, 2020;
2. Penticton and Ellis Creek Restoration Select Committee Meeting Draft Minutes of May 22, 2020;
3. Safety and Security Advisory Committee Meeting Draft Minutes of May 25, 2020;
4. Parks and Recreation Advisory Committee Meeting Draft Minutes of June 1, 2020;
5. Economic Prosperity and Development Services Advisory Committee Meeting Draft Minutes of June 5, 2020.

CARRIED UNANIMOUSLY

5. Correspondence:

5.1 Cannabis Cottage, Spiritleaf and Greenery Cannabis Boutique Letter

173/2020

It was MOVED and SECONDED

THAT Council take no action at this time and receive into the record the correspondence dated May 27, 2020 from Cannabis Cottage, Spiritleaf and Greenery Cannabis Boutique.

CARRIED

Councillors Bloomfield and Watt, Opposed

5.2 Proclamation "Pride Week"

174/2020

It was MOVED and SECONDED

THAT Council proclaim June 22-26, 2020 as "Pride Week" in the City of Penticton.

CARRIED UNANIMOUSLY

6. Staff Reports:

6.1 2019 Annual Report

Submissions/Questions: nil

175/2020

It was MOVED and SECONDED

THAT Council receive into the record the 2019 Annual Report as circulated.

CARRIED UNANIMOUSLY

6.2 Statement of Financial Information

176/2020

It was MOVED and SECONDED

THAT Council approves the Statement of Financial Information for the fiscal year ending December 31, 2019.

CARRIED UNANIMOUSLY

6.3 Utilities Collections After BCUC Direction Expires

177/2020

It was MOVED and SECONDED

THAT Council direct staff to recommence disconnections of utilities for non-payment upon the expiry of the direction provided by the British Columbia Utilities Commission in a manner which prioritizes those accounts without payment for the longest period of time, splitting the disconnections over three sequential months.

CARRIED UNANIMOUSLY

- 6.4 Travel Penticton Society and Penticton and Wine Country Chamber of Commerce License to Use Agreement for the Jubilee Pavilion located at 185 Lakeshore Drive, Penticton

178/2020

It was MOVED and SECONDED

THAT Council approve an 18 month License to Use Agreement, for the Jubilee Pavilion building located at 185 Lakeshore Drive to Travel Penticton and the Penticton and Wine Country Chamber of Commerce, at a license rate of \$7,200.00 per year plus annual CPI adjustments;
AND FURTHER THAT Council authorize the Mayor and Corporate Officer to execute the Licence to Use Agreement.

CARRIED UNANIMOUSLY

- 6.5 Coyote Cruises Limited Partnership – License to Use Agreement
Re: 215 Riverside Drive

179/2020

It was MOVED and SECONDED

THAT Council approve the 5-year License to Use renewal agreement commencing on June 17, 2020 with Coyote Cruises Limited Partnership for the use of City land and building located at 215 Riverside Drive for the purpose of the operation of a food, rental concession and transportation service at a license rate of \$4,389.00 per year plus GST and annual CPI adjustments;
AND FURTHER THAT Council authorize Mayor and Corporate Officer to execute the Licence to Use Agreement.

CARRIED UNANIMOUSLY

- 6.6 Section 57 Notice on Title – Failure to obtain Building Permit
Re: 28, 32, 44, 66 and 78 Ellis Street

180/2020

It was MOVED and SECONDED

THAT Council resolve to place a Notice on Title under Section 57 of the *Community Charter* with respect to contravention of the City of Penticton Building Bylaw No. 2018-01 on Lots 9-13, Block 2, District Lot 202 SDYD, Plan 479, located at 28 32 44 66 and 78 Ellis Street (the Property), stating the following:

“Failure to obtain a building permit, which is a violation of City of Penticton Building Bylaw No.2018-01,

Further information about it may be inspected at the municipal hall.”

CARRIED UNANIMOUSLY

- 6.7 Secondary Wine Tasting Rooms

181/2020

It was MOVED and SECONDED

THAT Council send a letter to the Province of BC’s Liquor & Cannabis Regulation Branch recommending a change to the current winery/cider licensing approach and to advocate through UBCM and SILGA for allowing wine/cider manufacturers off-site tasting rooms where their products can be sampled and sold.

CARRIED UNANIMOUSLY

6.8 Official Community Plan Amendment – Community Engagement Process
Re: 877 (813, 825, 851) Westminster Avenue

182/2020

It was MOVED and SECONDED

THAT Council support the community engagement plan for the proposed Official Community Plan land use designation change from Tourist Commercial to Urban Residential for 813, 825, 851 and 877 Westminster Avenue;

AND THAT the applicant will be responsible for the Official Community Plan amendment fee.

CARRIED UNANIMOUSLY

7. Recess to a Closed Meeting:

183/2020

It was MOVED and SECONDED

THAT Council recess at 3:06 p.m. to a closed meeting of Council pursuant to the provisions of the *Community Charter* section 90 (1) as follows:

(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*;

90(2) (b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

CARRIED UNANIMOUSLY

8. Reconvene the Regular Council Meeting following the Public Hearing at 6:00 p.m.

Council reconvened the Regular Council Meeting at 6:11 p.m.

9. Bylaws and Permits:

9.1 Zoning Amendment Bylaw No. 2020-18
Re: 175 Brunswick Street

184/2020

It was MOVED and SECONDED

THAT Council give second and third reading to "Zoning Amendment Bylaw No. 2020-18".

CARRIED UNANIMOUSLY

9.2 Zoning Amendment Bylaw No. 2020-07
Development Permit PL2019-8674
Re: 1018, 1026 and 1034 Churchill Avenue

185/2020

It was MOVED and SECONDED

THAT Council adopt "Zoning Amendment Bylaw No. 2020-07";
AND THAT Council approve "Development Permit PL2019-8674".

CARRIED UNANIMOUSLY

10. Land Matters:

10.1 Zoning Amendment Bylaw No. 2019-26
Re: 965 Naramata Road

186/2020

It was MOVED and SECONDED

THAT Council close and abandon "Zoning Amendment Bylaw No. 2019-26", a bylaw to add the use 'Craft Brewery/Distillery', subject to a maximum gross floor area of 400 square meters, on a site-specific basis for 965 Naramata Road.

CARRIED UNANIMOUSLY

Councillor Regehr declared a conflict of interest as a resident of the neighbouring property and left the meeting at 6:17 p.m.

10.2 Development Permit PL2020-8768 (Amendment to Development Permit PL2019-8621)
Re: 88 Lakeshore Drive East

187/2020

It was MOVED and SECONDED

THAT Council approve Development Permit PL2020-8768, a permit that amends Development Permit 2019-8621, changing the colour panels originally proposed for a three unit apartment building on Lot 28, Block 1, District Lot 202, Similkameen Division Yale District, Plan 269, Except Plan B7924, located at 88 Lakeshore Drive East, with the condition that the red columns on the west facing wall be replaced with light grey or charcoal colour.

CARRIED

Councillors Robinson and Sentes, Opposed

Councillor Regehr returned to the meeting at 6:38 p.m.

11. Business Arising

12. Council Round Table:

188/2020

It was MOVED and SECONDED

THAT Council refer maintaining open public washrooms in light of the recent vandalism and inappropriate use to the Parks and Recreation Advisory Committee.

CARRIED UNANIMOUSLY

13. Public Question Period

14. Adjournment

189/2020

It was MOVED and SECONDED

THAT Council adjourn the Regular Council meeting held on Tuesday, June 16, 2020 at 6:50 p.m.

CARRIED UNANIMOUSLY

Certified correct:

Confirmed:

Angie Collison
Corporate Officer

John Vassilaki
Mayor

Public Hearing
held at City of Penticton, Council Chambers
171 Main Street, Penticton, B.C.

Tuesday, June 16, 2020
at 6:00 p.m.

Present: Mayor Vassilaki
Councillor Bloomfield
Councillor Kimberley
Councillor Regehr
Councillor Robinson
Councillor Sentes
Councillor Watt

Staff: Donny van Dyk, Chief Administrative Officer
Angie Collison, Corporate Officer
Blake Laven, Director of Development Services

1. Call to order

Mayor Vassilaki called the public hearing to order at 6:00 p.m. for Zoning Amendment Bylaw No. 2020-18.

The Corporate Officer read the opening statement and introduced the purpose of the bylaws. She then explained that the public hearing was being held to afford all persons who considered themselves affected by the proposed bylaws an opportunity to be heard before Council. She further indicated that the public hearing was advertised pursuant to the *Local Government Act*.

2. "Zoning Amendment Bylaw No. 2020-18" (175 Brunswick Street)

The purpose of "Zoning Amendment Bylaw No. 2020-18" is to amend Zoning Bylaw No. 2017-08 as follows:

Rezone Lot 8 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale-Lytton) District Plan 368, located at 175 Brunswick Street, from RD2 (Duplex Housing: Lane) to RM2 (Low Density Multiple Housing).

The applicant is proposing to construct two side-by-side duplexes on the subject property.

The Corporate Officer advised that four letters have been received since the printing of the agenda and distributed to Council.

DELEGATIONS

Mayor Vassilaki asked the public for the first time if anyone wished to speak to the application.

- Chris Schonke, applicant, property was a former nuisance property. Spoke with the owners to the east and west on either side. Two parking stalls for each unit.
- Derrick McGregor, own two properties on the same side of street, received a lot of notices regarding development in neighbourhood. Council recently approved apartment across the street from me that will have 75 units on corner with underground parking, will turn my street into a major thoroughfare. Parking is a serious issue that Council has total ignored. Consider landscaping on street, don't do away with it all.

Mayor Vassilaki asked the public for the second time if anyone wished to speak to the application.

- Jordan Shade, Backstreet Boulevard, spoke in support of the application, good product and home, on street parking is a concern.
- Lynn Kelsey, Oakville Street, live in area with Schonke homes, lovely neighbour to have through construction, spoke in support, concerns with future urban development and loss of landscaping and trees.

Mayor Vassilaki asked the public for the third and final time if anyone wished to speak to the application.

- No one spoke.

The public hearing for "Zoning Amendment Bylaw No. 2020-18" was terminated at 6:10 p.m. and no new information can be received on this matter.

Certified correct:

Confirmed:

Angie Collison
Corporate Officer

John Vassilaki
Mayor

Safety and Security Advisory Committee Meeting

held via Zoom
Monday, June 15, 2020
at 10:30 a.m.

- Present:** Adam Power, Member at Large
Daryl Clarke, Chamber of Commerce
Deirde Riley, Member at Large (*Vice Chair*)
Lynn Allin, Downtown Penticton Association
Matt Taylor, Member at Large (*Chair*)
Nicolette Rodriguez, Member at Large
- Council Liaisons:** Jake Kimberley, Councillor
Katie Robinson, Councillor
John Vassilaki, Mayor
- Staff:** Kerri Lockwood, Director, People and Safety Strategy
Adam Goodwin, Social Development Specialist
Tina Siebert, Bylaw Supervisor
Chris Forster, Deputy Fire Chief, Penticton Fire Department (*Left meeting at 11:41 a.m.*)
Staff-Sgt Kirsten Marshall, RCMP
Superintendent Brian Hunter, RCMP
Paula McKinnon, Legislative Assistant
- Regrets:** Cheryl Watts, Member at Large

1. **Call to Order**

The Safety and Security Advisory Committee was called to order by the Chair at 10:32 a.m.

2. **Adoption of Agenda**

It was MOVED and SECONDED

THAT the Safety and Security Advisory Committee adopt the agenda for the meeting held on June 15, 2020 as presented.

CARRIED UNANIMOUSLY

3. **Adoption of Minutes**

It was MOVED and SECONDED

THAT the Safety and Security Advisory Committee adopt the minutes of the May 25, 2020 meeting as presented.

CARRIED UNANIMOUSLY

4. **Business Arising from Prior Meetings**

5. **New Business**

5.1 Primary Service “Where Are We Now” Updates

The Bylaw Supervisor provided the following updates:

- Bylaw Enforcement Office at 284 Main Street opened today. Current hours are 9 a.m. to 12 p.m.
- Identified 16 hot spots throughout the City and patrolling them several times a day.
- Calls regarding COVID and the re-start requirements have decreased.
- Receiving mostly inquiries instead of complaints regarding the Responsible Liquor Alcohol Consumption Pilot Project while weather has been mild.
- Esplanade Park clean-out has been taking place a minimum of twice a week to remove garbage, sharps and stolen property.
- Bylaw Enforcement Department team members completed a one-day ATV course for upcoming patrol in more difficult terrain areas.

The Committee agreed to move to the next item and return to item 5.1 once the Deputy Fire Chief arrives.

5.2 Introduction and RCMP Update – Superintendent Hunter, RCMP

Superintendent Hunter provided the following updates:

- Staff-Sgt Kirsten Marshall will attend the meetings on a monthly basis on behalf of the RCMP. Superintendent Hunter will attend quarterly.
- Vision for the detachment is to create a very efficient police force while keeping in mind the available resources.
- “E-watch” began a few weeks ago and allows for more proactive police work during peak periods with two to four extra members working in addition to the watch that is on shift during those busy periods. Proactive police work includes surveillance on chronic offenders, foot patrols, drug work, etc.
- Extra members will be out during the summer season on Thursday, Friday and Saturday evenings to deal with the extra heavy case load.
- Fraudulent CERB claims are resulting in excess money within the community which is resulting in the following statistics based from a comparison of 2019 to 2020 (April 1 to June 1):
 - Overall crime is down 21%
 - Property Crime is down 22%
 - Break and enters into businesses is down 34%
 - Break and enters into residential is down 26%
- Highest reported number of drug overdose deaths has been reported in the province from the BC Coroner’s Service since it’s been declared an emergency in 2016.
- Judiciary back log of criminal offences. Crown Counsel has been asked to review files and drop cases.

Deputy Fire Chief, Chris Forster, entered the meeting at 10:46 a.m.

Mayor Vassilaki entered the meeting at 10:56 a.m.

Members at large inquired about the state of the current drug supply in the City, the E-Watch peak period policing concept, Industrial Park area patrols, member recruitment, levels of expectation versus reality regarding investigations with troublesome areas/addresses in the community, sharing useful vs. non-useful surveillance data and neighborhood watch programs.

Superintendent Hunter informed the Committee that a Town Hall meeting will be held in the future to inform and educate the Community with what the RCMP is up against.

5.1 Primary Service “Where Are We Now” Updates – Continued

The Deputy Fire Chief provided the following updates:

- Current largest project being worked on is the Esplanade Park. Facing budgetary constraints for treatment of the area in a timely manner, however provincial funding is available and the Fire Department is in the process of finalizing the grant funding requirements over the summer with the intention for treatment work to take place in the fall through a contractor.

A brief discussion ensued regarding the potential for volunteers to come forward to help fund the treatment process.

5.3 Industrial Park Crime Prevention Campaign Update – Kerri Lockwood, Director, People and Safety Strategy

The Director of People and Safety Strategy informed the Committee that an internal group has been created to work on the campaign consisting of Blake Laven, Director of Development Services, Tina Siebert, Bylaw Supervisor and JoAnne Kleb, Engagement Strategist.

An invitation was put out to the Committee for a member to voluntarily join the working group and report back to the Committee with updates. Daryl Clarke and Lynn Allin volunteered to join the working group on behalf of the Committee. By consensus, it was agreed that Daryl Clarke act as the primary representative on behalf of the Committee and Lynn Allin act as an additional representative.

7. **Next Meeting**

8. **Adjournment**

Prior to adjournment, the Director of People and Safety Strategy also provided the Committee with brief updates on the following items:

- Response to an inquiry submitted by a member at large regarding the Frisbee court: A number of calls have been received to address that area resulting in direction being provided to staff to cut the area by June 12 which has been completed.
- Informed Committee that Mr. William (Bill) Binfet has resigned from the Committee due to personal reasons.

The Chair provided the Committee with one last opportunity to ask any questions pertaining to the agenda items prior to adjourning.

A member at large inquired about identifying how to improve the service gap between unsupported housing and treatment programs to support homelessness and drug use in the Community. A brief

discussion ensued and it was decided that missing programming supports and who to lobby for support be added to a future agenda for further consideration on addressing the gap.

It was MOVED and SECONDED

THAT the Safety and Security Advisory Committee adjourn the meeting held on Monday, June 15, 2020 at 12:00 p.m.

CARRIED UNANIMOUSLY

Certified Correct:

Paula McKinnon
Legislative Assistant

Community Sustainability Advisory Committee Meeting

to be held via Zoom
Wednesday, June 17, 2020
at 9:00 a.m.

Present: Chris Allen, Member at Large (*Chair*)
Brad Dollevoet, Member at Large (*Vice Chair*)
Jacqueline Duncan, Interior Health
Margaret Holm, Member at Large
Nicolas Stulberg, Member at Large
Philip Hawkes, Fortis BC
Randy Boras, Member at Large

Council: Julius Bloomfield, Councillor (*Liaison*)

Staff: Blake Laven, Director of Development Services
Paula McKinnon, Legislative Assistant

Regrets: Brian Rippy, Okanagan College

1. **Call to Order**

The Community Sustainability Advisory Committee was called to order by the Chair at 9:00 a.m.

2. **Adoption of Agenda**

It was MOVED and SECONDED

THAT the Community Sustainability Advisory Committee adopt the agenda for the meeting held on June 17, 2020 as presented.

CARRIED UNANIMOUSLY

3. **Adoption of Minutes**

It was MOVED and SECONDED

THAT the Community Sustainability Advisory Committee adopt the minutes of the May 20, 2020 meeting as presented.

CARRIED UNANIMOUSLY

4. **New Business**

4.1 Sub Committee Recommendations Re: Community and Corporate Climate Action Plan Updates

The Chair presented to the Committee the Sub Committee's summary of comments regarding the Community and Corporate Climate Action Plans. Focus was given to the following areas during the review:

1. Background
2. Narrowing Scope of Work for the Community Action Plan
3. Narrowing Scope of Work for the Corporate Action Plan
4. Deliverables
5. Timeline

It was MOVED and SECONDED

THAT the Community Sustainability Advisory Committee support the Community Climate Action Plan and Corporate Climate Action Plan revision work plan as presented by the formed Sub Committee on June 17, 2020.

CARRIED UNANIMOUSLY

4.2 Review of CARIP Reporting and Reserves – Blake Laven, Director of Development Services & Phil Hawkes, Fortis BC

The Director of Development Services provided the Committee with a general overview of the City's Climate Action Revenue Incentive Program (CARIP). The Committee was informed that conditional grant money is provided by the Province to local governments that have signed on to the BC Climate Action Charter. The grant is equal to 100% of the carbon taxes that the City pays to support our operations (gas purchased to power fleet, energy used to heat/cool facilities, etc.). Eligibility requirements include working towards being carbon neutral in our operations, measure and report the Community's GHG emissions and commitment towards creating a complete and compact efficient community.

The Committee was also informed that the grant money acquired to date is \$432,000 which has not been utilized yet. The CARIP is reported out on each year as a requirement to receive the grant, however, reporting requirements have been waived for the year 2020 due to COVID-19.

Phil Hawkes, Fortis BC, shared his three observations with the Committee based on Mr. Laven's review of the CARIP as follows:

- With approximately \$50,000 coming in from the CARIP each year, are the funds left to grow to fund a larger future project or can the Committee make recommendation on how and when the funds could be used?
- Location of the CARIP reporting on the City's website is challenging to find, clearer communication of the reporting is needed.
- Wondering if there are GHG emission reductions not currently being accounted to not have to purchase so many offsets.

Discussions ensued regarding the observations shared including how the funds could be utilized through existing and new City initiatives (tree planting, electric/hybrid fleet vehicles, home retrofit programs, etc.), brainstorming and directing portions of the reserves into tangible

projects that can take place now such as helping with economic recovery, use of reserves towards Midgard recommendation regarding the generation study and battery powered peak shaving and the use of reserves to help promote a culture of sustainable thinking in the City.

The Committee generally agreed that the reserve funds should be put to yearly use and that a thorough review and plan is required on how to best utilize the reserve funds for the purpose that they are intended for. Further brainstorming and discussions are to be revisited at a future meeting while proceeding with the Climate Action Plans and evaluate projects from those as they come about.

4.3 Public Participation at Committee Meetings Update – Paula McKinnon, Legislative Assistant

The Legislative Assistant informed the Committee that Staff are currently in the process of creating a plan to allow for electronic public participation at Committee meetings again.

The Chair asked that a discussion regarding the website interface and how it could be improved to include forums for members of the public to submit comments and/or questions as another avenue for participation be added to the next agenda.

5. **Next Meeting**

The next Community Sustainability Advisory Committee is scheduled to be held on July 22, 2020 at 9:00 a.m. via Zoom.

6. **Adjournment**

The Community Sustainability Advisory Committee meeting held on Wednesday, June 17, 2020 adjourned at 10:28 a.m.

CARRIED UNANIMOUSLY

Certified Correct:

Paula McKinnon
Legislative Assistant

Agriculture Advisory Committee Meeting

To be held via Zoom
Wednesday, June 17, 2020
at 3:00 p.m.

Present: Rod King, Chair
Annelise Simonsen
Doug Mathias
Kristi Tatebe
Chris Holler
Paul Gardner
Jesse Chapman

Council: Julius Bloomfield, Councillor

Staff: Micheal Firlotte
Audrey Tanguay, Manager of Planning
Paula McKinnon, Legislative Assistant

Regrets: Darshan Jassar

Guests: Drew Lejbak, Associated Environmental
Paul Hague, Associated Environmental

1. **Call to Order**

The Agriculture Advisory Committee was called to order by the Chair at 3:04 p.m.

2. **Adoption of Agenda**

It was MOVED and SECONDED

THAT the Agriculture Advisory Committee adopt the agenda for the meeting held on June 17, 2020 as presented.

CARRIED UNANIMOUSLY

3. **Adoption of Minutes**

3.1 Minutes of the May 20, 2020 Agriculture Advisory Committee Meeting

It was MOVED and SECONDED

THAT the Agriculture Advisory Committee adopt the minutes of the May 20, 2020 meeting as presented.

CARRIED UNANIMOUSLY

4. **Business Arising from Prior Meetings**

5. **New Business**

5.1 City of Penticton Drought Management Plan – Micheal Firlotte, Water Quality Supervisor

Paul Gardner entered the meeting at 3:10 p.m.

The Water Quality Supervisor informed the Committee that the City of Penticton engaged Associated Environmental to develop a drought management plan to support the City moving forward with a consistent application of drought management decisions and responses, consistent drought stage declaration approach and align drought stages and Provincial drought levels.

Drew Lejbak and Paul Hague of Associated Environmental presented the developed Penticton Drought Management Plan to the Committee. The presentation outlined the following information:

- General introduction to the Drought Management Plan
- Current City water distribution plan
- Drought stage decision process
- Drought Response Plan
- Communication strategy approach for residential and agricultural water users
- Water management teams: Water Supply Management Team and Drought Management Team
- Review of Bylaw 2005-02

It was MOVED and SECONDED

THAT the Agriculture Advisory Committee recommends that Council support the City of Penticton Drought Management Plan as presented at the June 17, 2020 Committee meeting.

CARRIED UNANIMOUSLY

6. **Council Outcome**

7. **Next Meeting**

8. **Adjournment**

It was MOVED and SECONDED

THAT the Agriculture Advisory Committee adjourn the meeting held on June 17, 2020 at 4:00 p.m.

CARRIED UNANIMOUSLY

Certified Correct:

Paula McKinnon
Legislative Assistant

**RNL INVESTMENTS LTD
VILLAGE SQUARE
1636 Main Street
Penticton, BC V2A 5G8**

June 24, 2020

Dear Mayor Vassilaki and City of Penticton Council,

Re: Compass House – 1706 Main Street

After numerous meetings and discussions with the Mayor, the City Manager Mr. vanDyk, City By Laws, RCMP officers and Penticton Security about our on going and almost daily problems we have on our site at 1636 Main Street Village Square it has been clarified to me that in order to fix this nuisance emulating from the residents next door at Compass House that I request the City of Penticton to strengthen their nuisance bylaws that will with financial penalties move the compliance of the negative operation to the owners and management of Compass House. By improving your local laws and policies to penalize Landlord's or facility operators for the certain negative activity that occurs on our site and neighboring businesses.

If Compass House would hire and maintain on site Security 24/7 who did frequent patrols onto our site and neighborhood businesses this daily nuisance would be stopped. They need to assign staff to monitor the activity of its patrons in areas outside of their property. The rear chain link fence on Compass property has 8 cut open fence openings that are used for nightly visits outside of there monitored rooms and the result is frequent drugs, needles, mess, broken windows, fires and loitering on our front south corner area. Our local Security company moves there people off our property on a regular basis and after they return to Compass House, they soon return to carry on the drugs and other activities again.

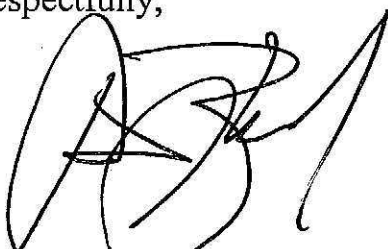
We have endured every since this project Compass House opened non-stop negative issues. In hind site, it should never have been approved at this location. Our tenants, their employees, our staff have complained regularly about the residents next door and their presence near our shops and businesses. On the business leasing side of this situation we have lost 3 long term Tenants and when we try showing our available empty space we are

inevitably confronted with the neighbors constantly visiting and hanging out by our mail box in groups for doing drugs.

I am asking that the Mayor, City Council, and City Management teamwork to resolve the negative dilemma that occurs frequently by improving and strengthening your good neighbour bylaw (and the relevant behavior section), also review, and implement your financial / ticketing portion contained in the municipal ticketing bylaw.

Thank you for your time and consideration,

Respectfully,

A handwritten signature in black ink, appearing to read 'Robert Loughheed', written over a large, faint circular stamp or watermark.

Robert Loughheed
President
RNL Investments Ltd
Village Square
1636 Main Street
Penticton, BC
V2A 5G8

Council Report

penticton.ca

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Micheal S. Firlotte, Water Quality Supervisor
Subject: **Drought Management Plan**

File No: 5620

Staff Recommendation

THAT Council approve the "City of Penticton Drought Management Plan" dated June 26, 2020 (Attachment A) as a guiding document.

Strategic priority objective

Mission: Penticton will serve its residents, businesses and visitors through good governance, partnership and the provision of effective and community focused services.

Background

In response to the likelihood of more frequent droughts, the City of Penticton (the City) engaged Associated Engineering to develop a Drought Management Plan (DMP) designed to:

- Meet federal, provincial, and local policy and regulatory requirements;
- Mitigate risks related to water supply shortages;
- Support future water-use planning;
- Guide drought forecasting;
- Advance the move toward regional consistency in drought-stage triggers, responses, and messages; and
- Optimize the environmental, financial, and community benefits provided by water conservation.

Rationale for a proactive DMP is reflected in numerous studies conducted for the City by Earthtech, Agua Consultants, and Associated Environmental Consultants Inc. between 2005 and 2020. These experts identified that increased water demands caused by population growth, coupled with climate change impacts on water availability, will require a concerted effort by the City to optimize water-use efficiency over time. Additional drivers for a DMP and corresponding communications strategy include provincial drought levels outlined in BC's 2018 Drought Response Plan, draft Okanagan Lake triggers developed by the Okanagan Basin Water Board (OBWB) in 2017, and outcomes from the Agricultural Water Status Communication Pilot project undertaken by Alliance Communications for OBWB in 2016/2017.

As recommended by the Province of BC's in its 2018 Dealing with Drought Handbook, the City has prepared a DMP to clearly define local drought stages, corresponding local responses, and strategies for communicating drought response information to all water users and partner institutions such as nearby municipalities, hospitals, and schools.

The effectiveness of the DMP and its complementary communications strategy will depend on the City's commitment to and capacity for creating and/or updating the needed tools to support strategy recommendations.

The main goals of the Drought Management Plan is to:

- Update and review the profile of City of Penticton water supply system, which includes the Okanagan Lake domestic supply, Penticton Creek domestic supply, Penticton Creek irrigation supply, and Ellis Creek irrigation supply.
- A list of the major water user sectors and identification of impacts of drought on each major user sector and on the economy in the city of Penticton service area.
- A systematic source to tap approach to forecasting drought conditions based on climate, demand, and water supply.
- A procedure for validating forecasts.
- A matrix of drought stages and appropriate responses for each provincial drought level.
- Recommended procedures and techniques for public communications to support water conservation and water management during forecasted drought conditions.
- Recommend amendment to City bylaws and water conservation strategy

The document has been reviewed by the City Engineer and the Manager of Public Works.

Part of the Drought Management Plan focuses on our two irrigation systems for our agriculture. City staff have reviewed the document with the Agriculture Advisory Committee on June 17th, 2020 with the following comments:

Drew Lejbak and Paul Hague of Associated Environmental presented the developed Penticton Drought Management Plan to the Agriculture Advisory Committee. The presentation outlined the following information:

- General introduction to the Drought Management Plan
- Current City water distribution plan
- Drought stage decision process
- Drought Response Plan
- Communication strategy approach for residential and agricultural water users
- Water management teams: Water Supply Management Team and Drought Management Team
- Review of Bylaw 2005-02

It was MOVED and SECONDED

THAT the Agriculture Advisory Committee recommends that Council support the City of Penticton Drought Management Plan as presented at the June 17, 2020 Committee meeting.

Financial implication

Hiring of Summer Water Conservation student for the 2021 season - \$11,080.00 under the OPR 177-04 budget.

Water Conservation program materials - \$4,000.00 under the OPR 177 -02 budget.

Analysis

The City and Associated Engineering have spent the last nine months developing a Drought Management Plan that will provide guidance to how to better manage our water resource in drought conditions. The document has undergone internal review and has been presented to the Agricultural Committee and is now ready for the consideration of Council.

There will be a future report accompanying this Council Report that will bring forward the proposed amendments to Irrigation, Sewer and Water Bylaw 2005-02.

Alternatively, Council could send the Drought Management Plan back to staff with specific direction for further work or they could elect not to adopt a Drought Management Plan.

Alternate recommendations

Alternate 1

THAT Council send the Drought Management Plan back to staff with specific direction for action.

Alternative 2

THAT Council elect not to adopt a Drought Management Plan.

Attachments

Attachment A – Drought Management Plan



Attachment B – Associated Engineering Drought Management Plan Power Point Presentation

Respectfully submitted,

Micheal S. Firlotte

Water Quality Supervisor

Approvals

<p>City Engineer</p> 	<p>General Manager of Infrastructure</p> 	<p>Chief Administrative Officer</p> <p>DvD</p>
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FINAL REPORT

City of Penticton

Drought Management Plan



JUNE 2020

A Carbon
Neutral
Company



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FAX: 250.545.3654
www.ae.ca | ISO 9001 & 14001 Certified

June 29, 2020
File: 2019-8437.000

Micheal Firlotte
Water Quality Supervisor
City of Penticton
171 Main Street
Penticton, BC V2A7K9

Re: PENTICTON DROUGHT MANAGEMENT PLAN - FINAL REPORT

Dear Mr. Firlotte:

Associated Environmental Consultants Inc. is pleased to provide the City of Penticton with this final report outlining the Penticton Drought Management Plan.

Our Project Team members contributed to the development of this report. All comments and opinions received from the City of Penticton on the draft report were considered.

If you have any questions about this report, please contact one of the undersigned at 250-545-3672

Yours truly,
Associated Environmental Consultants Inc.

Handwritten signature of Drew Lejbak.

Drew Lejbak, M.Sc.
Hydrologist

Handwritten signature of Paul Hague.

Signed on behalf of:
Paul Hague, B.Sc., RPF
Project Manager

dl

EXECUTIVE SUMMARY

1 OVERVIEW

The City of Penticton (the City) has developed this Drought Management Plan (DMP) as a tool to assist in ensuring that adequate water supplies are available under water shortage or drought conditions in the near term, as well as in the future considering population growth, changes in agricultural and municipal needs, and climate change. The City is committed to reviewing and updating the DMP every 3-5 years to update the DMP as required to account for any changes to water management operations and water conservation strategies.

2 WATER SUPPLY AND DROUGHT MANAGEMENT TEAMS

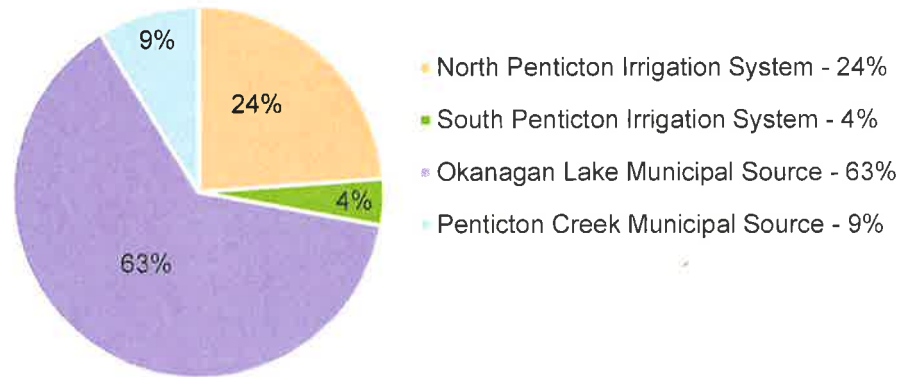
The City is required to provide water supply services to the City's distribution area (as outlined the City's Irrigation, Sewer, and Water Bylaw No. 2005-02). To meet these servicing needs, operations and maintenance of the City's water supply and treatment system is completed by the City's Designated Officer under the direction of Chief Administrative Officer and/or City Council. During times of drought, the City Manager, or any other person that the City Council designates, is responsible for implementing all stages of the DMP. This individual will coordinate with administrative and operations staff to comprise the City's Water Supply Management Team.

In addition, to help the City consider impacts to the local economy and community livelihoods during period of drought, a Drought Management Team is planned to be developed.

3 WATER SYSTEM PROFILE

The City relies on surface water for raw water supply for municipal (i.e., potable) and irrigation (i.e., non-potable) purposes. The City uses Penticton and Ellis Creeks and Okanagan Lake as water sources; all of which are subject to water licensing, runoff, and storage limitations. Water supplied from Penticton and Ellis Creeks is managed by the City, while the BC Ministry of Forests, Lands, and Natural Resource Operations, and Rural Development manages Okanagan Lake water levels to optimize water use and environmental needs. The City uses water from Okanagan Lake for municipal purposes, water from Penticton Creek for municipal and agricultural irrigation purposes, and water from Ellis Creek for agricultural irrigation purposes only. From a municipal water supply standpoint, on average, the City sources approximately 90% from Okanagan Lake and 10% from Penticton Creek through the water treatment plant (WTP).

A breakdown of the City's average total water use by system (for 2004-2018) is shown in the figure below and is generally considered representative of the total distribution of annual water use by the City.



System interconnections provide the City with the flexibility of meeting water demands by individual or through a combination of water supply sources. Interconnections that are in place are as follows:

- The City’s municipal water supply can be supplied by Okanagan Lake, and during times of water shortages, a combination of water from Okanagan Lake and Penticton Creek can be used to meet water demands.
- A pipe from the WTP can be used to support the South Penticton Irrigation System during times of water shortage, but the connection is not currently operational.
- Warren Avenue well has been declared as emergency backup well (or available during very dry periods) for the City’s municipal water supply.

4 DROUGHT STAGES AND COMMUNICATION PLAN

To support periods of drought, the City has established five drought stages: Normal, Stage 1 (Dry), Stage 2 (Very Dry), Stage 3 (Extremely Dry), Stage 4 (Emergency). Each stage is in reference to the volume of water available within the upland reservoirs and current and projected water demands, but the stages are applicable to the entire City’s distribution area. The stages form the basis for the DMP and the associated responses implemented (i.e., watering restrictions) through Bylaw No. 2005-02 and appropriate communication strategies.

In addition, since the City relies on Okanagan Lake as a primary water source for municipal water supply, the City has adopted the inclusion of the Okanagan Lake drought stage triggers as outlined by the OBWB (2019). The Okanagan Lake drought stage triggers are to help provide water suppliers and other large water users (using the mainstem lakes for supply) an understanding of their risk to water availability during times of drought. These drought triggers are not included within Bylaw 2005-02 but are still used by the City to make operational decisions for water restrictions, blending of water sources, and drought stage declarations.

The City’s drought stages are independent of the four Provincial Drought Levels: Level 1, Level 2, Level 3, and Level 4. The Provincial Drought Levels provide guidance to the City on the general water supply conditions within the region, but do not directly correlate to system operations, water restrictions, or reservoir management responses.

Following the above, communication of drought by the City is through public notification procedures. Once a change to drought stage has been triggered, specific public communication strategies and appropriate responses are implemented. Although not fully implemented at this time, the City is currently updating their drought management

communications approach for municipal and agricultural users following the new communication strategy developed to support this DMP.

5 DROUGHT STAGE DECISION PROCESS AND TRIGGERS

To determine the status of water supplies, the City's Water Supply Management Team (WSMT) meets formally and informally to review the current water supply status. The purpose of these meetings is to discuss the current state of water supplies (by water supply source and/or as a whole) and forecasted trends to develop an understanding of the potential for future shortages and to what level of severity (i.e., stage). These meetings also provide the opportunity to implement operational measures (e.g., regulating spill from the upland reservoirs to increase storage volumes) prior to the triggering (and declaration) of drought stages and associated responses.

The triggering (and declaration) of a drought stage involves complex considerations, as personal hardship, economic losses to the agricultural and industrial-commercial-institutional communities, damage to infrastructure such as parks, and lost revenue to the City may result because of the declaration. Thus, the WSMT will recommend the implementation of a stage in an informed manner with the understanding of the consequences.

To support the triggering of a drought stage, a decision tree is used by the City. The decision tree is a guide for decision-makers in weighing information and understanding the potential outcomes when deciding what water shortage action(s) to undertake. The decision tree is used by the WSMT to determine the status of water supplies at any point throughout the year, on a critical decision date, or forecasted for the near future. The decision tree was adopted from the Regional District of North Okanagan who have been using this decision tree since 2011 to support drought management decisions with the Greater Vernon Water distribution area.

The decision tree is used by the City to independently determine the water supply status of each water supply source (i.e., Penticton Creek, Ellis Creek, and Okanagan Lake). From there, the City determines if an individual source is experiencing different water supply conditions than the others. Using this approach, an individual drought stage may be declared by water supply system or for the entire City system.

Once a drought stage has been triggered, the WSMT continues to review storage volumes and other drought forecast parameters and recommend a change (or rescinding) of stage following the drought stage decision tree. When a drought stage change is triggered, the Drought Response Plan is enacted by the WSMT for the respective stage. The WSMT also engages with the Drought Management Team once a trigger (or impending declaration) has occurred to effectively communicate the drought stage status and potential future supply challenges.

6 DROUGHT AND EMERGENCY RESPONSE PLANS

The overall components of the City's drought stages and triggers are summarized within the drought response plan provided below. The drought response plan is the staged approach to water management during periods of drought through the identification and evaluation of factors that trigger a response. The City Manager or the City's Designated Officer is responsible for implementing all stages of the DMP, and therefore determining whether a response action is warranted. Response actions are those included within Bylaw No. 2005-02 (or as amended) that are focused on the reduction (and/or conservation) of water use during periods of drought. Alternatively, the City during periods of loss of supply or other emergencies, can invoke the Emergency Response Plan.

Item	Drought Stage				
	Normal Condition – No Drought	1 - Dry	2 – Very Dry	3 – Extremely Dry	4 – Emergency
Explanation of Water Supply Status	Defined by the ability to meet or exceed the average storage condition.	Stage 1 indicates an early drought condition. It is the first indication of potential water shortage.	Stage 2 represents prolonged periods of no rain and hot and dry weather and/or with below-average snowpack conditions. This represents moderate level of drought where water supply is becoming stressed.	Stage 3 represents severe drought conditions. This occurs when water supplies are experiencing a critical shortage or short-term loss of critical infrastructure.	Stage 4 is characterized by a loss of supply via loss of upland storage or Okanagan Lake supply through drought, or due to contamination, or loss of critical infrastructure.
Goal	Encouragement of water use efficiencies and promotion of drought awareness and preparedness. Meet fishery flow (or minimum operational flow) targets in Pentiction and/or Ellis Creeks.	Reduce municipal consumption by 10%. Meet fishery flow (or minimum operational flow) targets in Pentiction and/or Ellis Creeks.	Reduce municipal consumption by 20%. Meet fishery flow (or minimum operational flow) targets in Pentiction and/or Ellis Creeks.	Reduce consumption by 50%. Meet fishery flow (or minimum operational flow) targets in Pentiction and/or Ellis Creeks.	Reduce consumption by 90%. Maintain minimum water supply to maintain community health and basic needs. As best as possible meet fishery flow (or minimum operational flow) targets in Pentiction and/or Ellis Creeks.
Stage Triggers per Bylaw 2005-02	Upland storage volumes are >95% of storage capacity (based on time of year)	Upland storage volumes are 70-95% of storage capacity (based on time of year)	Upland storage volumes are 60-70% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be 90% of treatment capacity of the WTP and actual daily treated water demand is 5% above the five-year historic average.	Upland storage volumes are 60% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be >90% of treatment capacity of the WTP and actual daily treated water demand is 10% above the five-year historic average.	Upland storage volumes are 60% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be ≥95% of treatment capacity of the WTP and actual daily treated water demand is 10% above the five-year historic average.
Other Triggers per Decision Tree	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.
Okanagan Lake Drought Stage Triggers	1 st of the month elevation of Okanagan Lake is equal to or greater than the 1 st of the month target.	1 st of the month elevation of Okanagan Lake is lower than the 1 st of month target elevations and equal to or greater than the 20 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 20 th percentile 1 st of month elevation and greater than or equal to the 10 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 10 th percentile 1 st of month elevation and greater than or equal to the 5 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 5 th percentile 1 st of month elevation.
Provincial Drought Level ¹	Level 1	Level 2	Level 3	Level 3	Level 4
Regulation and Response	Alternating day watering schedule for outdoor water use to promote/ensure water conservation.	Water use restrictions are primarily focused on the reduction of residential outdoor and City Park water use. Agricultural water users encouraged to reduce water needs by matching irrigation with soil and crop types.	Implementation of a two-day a week residential sprinkler irrigation schedule, various reductions in City Park irrigation schedules, and a 10% reduction to golf course irrigation. Agricultural water users encouraged to reduce water use by decreasing (where possible) irrigated acreage or reducing irrigation to some lesser-value plants.	Residential sprinkler irrigation is restricted to a 1-day a week schedule and irrigation for City Parks, golf courses, and playing fields are restricted. Recreation (i.e., hot tubs, pools, and ponds) and commercial (i.e., car washes) outdoor water use restricted. Agricultural water users limited to irrigate only high-value perennial plants and to only irrigate at night.	Water supplies are limited to residential (indoor) use only, at the base (winter) demand rate (i.e., 12 ML/day). Elimination of residential, recreation (i.e., hot tubs, pools, and ponds), and commercial (i.e., car washes) outdoor water use. Agricultural water users restricted to irrigation for livestock and for high-value perennial plants only.
Communication	Normal levels of communication and education. Roll out best management and conservation practices.	Increased level of effort by the City – including communication and public education to understand actions necessary to reduce potential move to Stage 2.	High level of education and communication maintained.	High level of education and communication maintained.	City's Emergency Response Plan and Provincial Emergency Program invoked. High levels of communication and education maintained.
Enforcement	Normal	Increased enforcement and monitoring of large water users with warning issued if misuse is deemed to be occurring.	Lower tolerance for misuse and moderate fines issued.	Zero tolerance for misuse and moderate fines issued.	Zero tolerance for misuse and stiff fines issued.

Note:
 1. The provincial drought levels are independent of the drought stages used by the City but are aligned here only to provide guidance on general water supply conditions. The levels do not directly correlate to the City's system operations, water restrictions, and reservoir management.

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Figure 5-2	City of Penticton drought stage decision tree	5-4

1 INTRODUCTION

1.1 Overview

The following Drought Management Plan (DMP) was prepared at the request of the City of Penticton (hereafter referred to as the City) and builds upon a water management technical review and gap analysis completed for the City by Associated Environmental Consultants Inc. in 2018 (i.e., Associated 2018).

With water supply determined by rain, snowfall, and the storage capacity of reservoirs and aquifers, water shortages are a major concern to the City, which could become more pronounced in the future. During dry years, the City imposes conservation measures to help ensure that both human and environmental needs are met. These conservation measures are outlined within the City's Irrigation, Sewer, and Water Bylaw No. 2005-02 (Appendix A), which identifies procedures and actions to be implemented at various stages of drought and water availability (i.e., Stages 1, 2, 3, and 4) for their treated water source. Each of the identified stages outline specific triggers to help guide water restriction implementation. The triggers are based on projected demands, reservoir capacities, forecasted drought conditions, and emergency situations (e.g., power outages, treatment plant failure). Water restrictions for municipal irrigation supplies are reported by Bylaw No. 2005-02 to be at the discretion of the City based on irrigation systems present and projected water supplies.

As water demand increases in the future, the City may need to augment their surface withdrawals by increasing upland reservoir storage and management. Increasing water withdrawals and storage could impact environmental flow needs, downstream water licences, and water availability to all users. Balancing water supply and use, determining effects of future climate change, defining the role of water in land use and economic development, and protecting the ecological functions of water all depend on good scientific, socio-economic, and governance information. As a result, the City understands that a DMP is needed to balance the health of watersheds, water supplies during normal, dry, and wet years, and future development plans and growth.

To this end, the City has developed this DMP to allow for a more informed management plan during drought years for all water sources and infrastructure interconnections for the present and into the future. The goal of City's DMP is to ensure that adequate water supplies are available under drought conditions in the near term, as well as in the future, considering population growth, changes in agricultural practices, and climate change.

1.2 Components of the Drought Management Plan

The objective of the DMP is to provide the City with a decision-making framework to prepare, plan, communicate, and respond to situations of drought within their service area. To meet this objective, the DMP outlined herein is structured to be consistent with components of the template provided by MOE (2016) in *Dealing with Drought – A Handbook for Water Suppliers in BC* and Associated (2016) in *Building Drought Resilience in the Okanagan*, and draws upon the DMP developed by the Regional District of North Okanagan to support drought management decisions for the Greater Vernon Water distribution area.

The specific components of this DMP are as follows:

- Water Supply and Drought Management Teams (Section 2);
- Water System Profile (Section 3);
- Drought Stages and Communication Plan (Section 4);
- Drought Stage Decision Process (Section 5); and
- Drought and Emergency Response Plans (Section 6).

2 WATER SUPPLY AND DROUGHT MANAGEMENT TEAMS

The following section summarizes the water supply management team structure of the City, as well as the Drought Management Team that the City is proposing to implement to advise on water conservation strategies from a stakeholder and community perspective.

2.1 Water Supply Management Team

As outlined within Bylaw No. 2005-02, the City is mandated to provide for the supply, distribution, and use of treated and irrigation water, and the collection, conveyance, and discharge of sanitary sewage and storm drainage into or from the irrigation water, treated water, sanitary sewer, and storm sewer systems. The specific scope of services is summarized as follows:

- Establish, operate, maintain, and control an irrigation water system for the City;
- Establish, operate, maintain, and control a reclaimed water system for the City;
- Establish, operate, maintain, and control a treated water distribution system for the City;
- Establish a system of sewerage works for the collection, conveyance, and disposal of sewage and operate and maintain this system for the City; and
- Establish a system of storm water drainage from the impounding, conveyance, and discharging of surface and other waters, and operate and maintain this system for the City.

To meet these servicing needs, operations and maintenance of the City's water supply and treatment system is completed by the City's Designated Officer under the direction of Chief Administrative Officer and/or City Council. During times of drought, the City Manager, or any other person that the City Council designates, is responsible for implementing all stages of the DMP. This individual will coordinate with administrative and operations staff to comprise the City's Water Supply Management Team.

Note that for this version of the DMP, water conservation measures and drought stage triggers are outlined within Bylaw 2005-02. The City is currently assessing bylaw updates as another initiative and if/when those occur, the DMP will be updated accordingly.

2.2 Drought Management Team

To help the City consider impacts to the local economy and community livelihoods during periods of drought, a Drought Management Team (DMT) is proposed. The DMT is supported by City staff and the scheduling of meetings depends on the severity of the actual or impending water supply shortage. The specific roles of the DMT are to assist in the development of efficient water use strategies, inform the community on water supply levels, and provide feedback on the effect of water use restrictions on the community. The DMT includes representation from institutions, local businesses, agricultural producers, provincial government staff, as well as other local large water users and community members. The terms of reference for the DMT (including recommended team member representation) is provided in Appendix B and is consistent with that used by the Regional District of North Okanagan to support drought management decisions.

3 WATER SYSTEM PROFILE

The City relies on surface water for raw water supply for municipal (i.e., potable) and irrigation (i.e., non-potable) purposes. The City uses Penticton and Ellis Creeks and Okanagan Lake as water sources; all of which are subject to water licensing, runoff, and storage limitations. Water supplied from Penticton and Ellis Creeks is managed by the City, while the BC Ministry of Forests, Lands, and Natural Resource Operations, and Rural Development (FLNRORD) manages Okanagan Lake water levels to optimize water use and environmental needs. The City uses water from Okanagan Lake for municipal purposes, water from Penticton Creek for municipal and agricultural irrigation purposes, and water from Ellis Creek for agricultural irrigation purposes only. From a municipal water supply standpoint, on average between 2004 to 2018, the City sourced approximately 90% from Okanagan Lake and 10% from Penticton Creek through the water treatment plant (WTP).

A breakdown of the City's average total water use by system (for 2004-2018) is shown in Figure 3-1 and is generally considered representative of the total distribution of annual water use by the City.

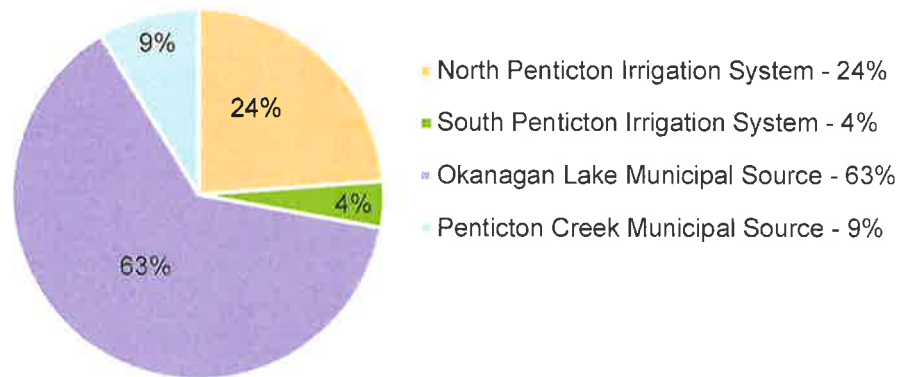


Figure 3-1 Summary of the City of Penticton's water use by water supply system (2004-2018)

The following sections provide an overview of the City's water sources, demand, and capital components.

3.1 Penticton Creek Water Supply System

3.1.1 Overview of System

Penticton Creek is a tributary to Okanagan Lake. The watershed is located to the northeast of Penticton within the Thompson Plateau of the Interior Plateau Physiographic Region. The total drainage area of the Penticton Creek watershed is 194 km² and elevations range from 342 metres above sea level (masl) to 2,154 masl. The Penticton #2 dam water intake defines the most downstream extent of the water supply source area for the City's Penticton Creek water supply (Figure 3-2). The contributing area to the Penticton #2 dam water intake is 175 km² and it is designated as a community watershed under the *Forest and Range Protection Act*. The Penticton #2 dam water intake is used to supply water to the WTP for direct municipal water distribution or for blending with the Okanagan Lake supply.



Approximately 3.5 km upstream of the Penticton #2 dam water intake, the City also operates the Campbell Mountain Diversion Dam (Figure 3-2). This dam is used to divert water through a 3 km tunnel to irrigate farms, orchards, and wineries along Naramata Road north of Penticton. This diversion is referred to as the North Penticton Irrigation System.

A portion of the City's municipal and North Penticton Irrigation System water supplies are provided by Greyback Reservoir and the contributing areas within the watershed between the reservoir and the intakes. The City's total annual licensed volume for Penticton Creek is 12,085 ML for municipal (6,670 ML) and agricultural irrigation (5,415 ML) water use purposes. The total licensed storage capacity for Greyback Reservoir is 11,693 ML (9,480 acre-feet) and the current (live) storage capacity for the reservoirs is 12,630 ML (10,239 acre-feet) (Canada-British Columbia Okanagan Basin Agreement 1974a). The City also holds an irrigation water licence on Howard Lake for 308 ML and storage licences for both Howard Lake (86 ML [70 acre-feet]) and Penticton Creek (62 ML [50 acre-feet]). Under the 'first-in-time, first-in-right' licensing system under the *Water Sustainability Act*, the City holds senior level water licences on Penticton Creek.

3.1.2 Hydrologic Regime

The Penticton Creek watershed lies in the Southern Thompson Plateau Hydrologic Zone #24 (Obedkoff 1998). Streams within this hydrologic zone are generally characterized by a snowmelt dominated peak rising in April or May and peaking sometime in May or June. Rain-on-snow events occasionally occur in this region enhancing winter streamflow and spring peaks. In addition, late fall rainstorms are common, recharging soil moisture heading into the winter and producing short duration peak streamflows. Low streamflows occur generally from the end of November to March, and in the hot summer months, with the lowest streamflows commonly occurring in January or February. The primary source of runoff for Penticton Creek during the spring period is from snowmelt from the upper 40% of the watershed (i.e., above 1,660 masl) (Urban Systems Ltd. 2013), while Winkler (2010) reported that streamflows within the summer and early fall are sustained by deep groundwater.

Streamflows within Penticton Creek are regulated by Greyback Reservoir, Campbell Mountain Diversion dam, and Penticton #2 dam. The Water Survey of Canada (WSC) historically monitored streamflows within Penticton Creek at the mouth (WSC Station No. 08NM118; Period of Record = 1950-1971) and the City has been monitoring streamflows at Nanaimo Avenue from 2004 to present. The location of each hydrometric station is included in Figure 3-2.

3.1.3 Reservoir Management and Storage Trends

Greyback Reservoir

Greyback Reservoir storage is managed by the City to ensure adequate water supplies are available to downstream users and aquatic resources. Under normal conditions, Greyback Reservoir is managed under two settings: (1) winter and (2) summer. The two settings are summarized by the City of Penticton (2014) as follows:

- Winter Setting (November 15 to April 15) – gate (i.e., 8" gate) is set to provide enough water within Penticton Creek for potable usage, WTP operations, and fall kokanee salmon spawning.
- Summer Setting (April 16 to November 14) – gate (i.e., 24" gate open and 8" gate closed, or 24" and 8" gates open proportionally) is set to provide enough water within Penticton Creek for potable and irrigation usage and WTP operations.

The City has no specific documented operational parameters defined during times of drought or water shortages – beyond the drought stage (water storage volume) definitions outlined Bylaw No. 2005-02. However, in general the City reviews projected storage targets for November and May (i.e., between 6,785 ML [5,500 acre-feet] and 7,400 ML

[6,000 acre-feet]) to support reservoirs operations (City of Penticton 2014). If the projected storage values for November are deemed to be met, the winter setting (above) is set, and if the projected storage values for May are deemed to be met, all gates are closed to fill the reservoir (City of Penticton 2014). If the storage values are not projected to be met, the City manages the reservoir releases to capitalize on all available water to help fill the reservoir (City of Penticton 2014).

Total reservoir storage volume for Greyback Reservoir has been monitored manually from 1980 to present. The annual storage reservoir pattern is illustrated in Figure 3-3.

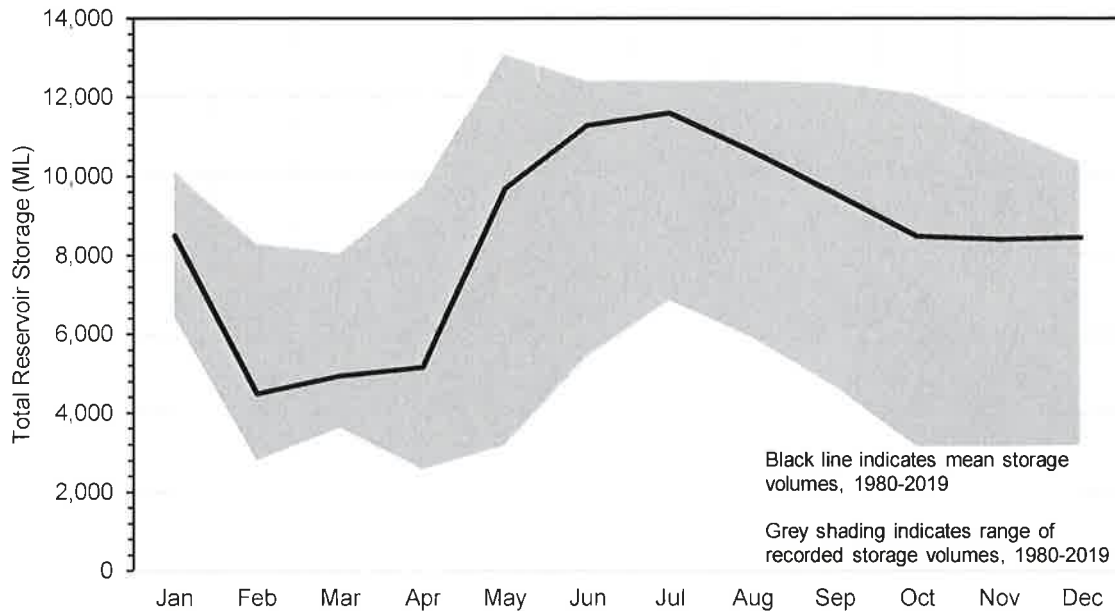


Figure 3-3 Summary of total reservoir storage volume for the Greyback Reservoir, 1980-2019

Referring to Figure 3-3, the general storage trends for Greyback Reservoir are as follows:

- Inflows into the reservoir generally begin between late March and early April, but can occur in early March, or be delayed until late April or early May. Inflows are largely related to the melting of the upland watershed snowpack.
- The reservoir reaches full storage capacity generally in June. Seasonal snowpacks within the upper portion of Penticton Creek watershed have generally melted by mid-May; therefore, rainfall supplements inflows to the reservoirs within the late spring periods.
- During July, August, and September, water is released from the reservoir to meet consumption requirements. Maximum consumption occurs from mid-July to mid-August and is related to the peak irrigation demands for the North Penticton Irrigation System.
- In late fall and winter, the reservoir is managed to meet WTP operations, which depend on the amount of water being used for municipal purposes during that period.

Campbell Mountain Diversion Dam

The Campbell Mountain Diversion dam supports the diversion of water through a tunnel to supply the North Penticton Irrigation System. The diversion is only operational during the agricultural irrigation season (i.e., April to September), but the diversion tunnel remains left in the loaded (i.e., full) position year-round, ready for operation at

any time. With a total storage capacity of 31 ML (25 acre-feet), the dam was designed as a flow through system, with water diverted as necessary and the remainder spilling to maintain streamflow. During periods of drought or reduced water supply, the volume diverted is managed based on City-implemented watering restrictions for any residential users (as outlined within Bylaw No. 2005-02) and/or through City recommended conservation measures for agricultural users.

The North Penticton Irrigation System services 308 parcels and each parcel is allocated an application rate based on soil type within the defined irrigable area at the property. The allocation rates vary between 0.13 – 0.18 L/s/ha, with a total irrigable area of 610 ha serviced by the North Penticton Irrigation System (Urban Systems Ltd. 2009). The North Penticton Irrigation System is currently not fully metered, but the City has an intermediate term plan to add meters to the system.

Penticton #2 Dam

The Penticton #2 dam was designed to support the diversion of water to the WTP. The diversion operates as required year-round based on the requirements of the WTP for blending of water from different sources and distribution purposes. With a total storage capacity of 71.5 ML (58 arce-feet), the dam was designed as a flow-through system, with water diverted as necessary and the remainder spilling to maintain streamflow. During periods of drought or reduced water supply, the volume of diversions is managed based on City-implemented watering restrictions outlined within Bylaw No. 2005-02.

3.1.4 Fishery Flow Release Targets

Currently there are no provincially regulated fishery flow requirements for Penticton Creek. However, the City has implemented a year-round minimum streamflow criterion of 0.231 m³/s (or 20 ML/day), which is monitored by the City's hydrometric station at Nanaimo Avenue.

The Okanagan Basin Water Board (OBWB) is currently leading an initiative within the Okanagan Basin for the establishment of Environmental Flow Needs (EFN) on several Okanagan tributaries. Penticton Creek is one of the identified tributaries and as such, future water management under normal and drought conditions may need to consider any EFN values that may be established.

3.1.5 Water Demand

The Campbell Mountain Diversion dam currently shares water licences with the Penticton #2 dam water intake. Thus, both diversions are licensed to withdraw 12,085 ML annually from Penticton Creek for irrigation and municipal purposes.

Based on City's diversion records, the total annual diversions for the North Penticton Irrigation System from 2004-2018 have ranged between approximately 1,133 ML (2018) and 3,462 ML (2012), with an average of approximately 2,390 ML. Since the Campbell Mountain Diversion is only used for agricultural irrigation purposes, water is typically only diverted between April and October. During that period, diversions during the months of July and August are the highest, with an average daily demand of 18 ML/day.

In addition, based on available records, the total annual Penticton Creek diversions for the WTP from 2009-2018 have ranged between approximately 257 ML (2009) and 1,841 ML (2011), with an average of approximately 975 ML. Water diversions vary throughout the year largely due to the WTPs blending of water with Okanagan Lake diversions; however, approximately 60% of the diverted water is used between April and September. During the summer months

(July and August), average daily diversions are 6.0 ML/day, while during the winter (November – February), average daily diversions are 2.1 ML/day.

3.2 Ellis Creek Water Supply System

3.2.1 System Overview

Ellis Creek is a tributary to the Okanagan River between Okanagan and Skaha Lakes (Figure 3-2). The watershed is located to the east of Penticton within the Thompson Plateau of the Interior Plateau Physiographic Region. The total drainage area of the Ellis Creek watershed is 158 km² and elevations range from 342 masl to 2,010 masl. The Ellis Creek Diversion dam water intake defines the most downstream extent of the water supply source area for the City's Ellis Creek water supply (Figure 3-2). The contributing area to the Ellis Creek Diversion dam water intake is 153 km² and it is designated as a community watershed under the *Forest and Range Protection Act*. The Ellis Creek Diversion dam water intake is used to supply irrigation water to the South Penticton Irrigation System.

The City's total annual licensed volume for Ellis Creek is 8,287 ML for municipal (5,727 ML) and agricultural irrigation (2,560 ML) water use purposes. The total licensed storage capacity for the Ellis #2 and #4 dams is 1,317 ML (1,068 acre-feet) and the current (live) storage capacity for the reservoirs is 1,254 ML (1,017 acre-feet). Although the City holds a municipal water licence for Ellis Creek, water is only used to support agricultural irrigation for the South Penticton Irrigation System. Under the 'first-in-time, first-in-right' licensing system under the *Water Sustainability Act*, the City holds senior level water licences on Ellis Creek.

3.2.2 Hydrologic Regime

Like Penticton Creek watershed, the Ellis Creek watershed also lies in the Southern Thompson Plateau Hydrologic Zone #24 (Obedkoff 1998). The general hydrologic regime of Ellis Creek watershed is consistent with Penticton Creek, as summarized in Section 3.1.2. The primary source of runoff for Ellis Creek during the spring period is from snowmelt. Streamflows within Ellis Creek are regulated by Ellis #2 and #4 dams and the Ellis Creek Diversion dam. The WSC has monitored streamflows within Ellis Creek near the mouth (WSC Station No. 08NM135; Period of Record = 1965-1979) and the City has monitored streamflows at Industrial Avenue from 2009 to present. The location of each hydrometric station is included in Figure 3-2.

3.2.3 Reservoir Management and Storage Trends

Ellis #2 Dam Reservoir

Ellis #2 Dam Reservoir is managed by the City to supplement water supplies at the Ellis Creek Diversion dam. The dam is only operational during the irrigation season (i.e., April to October) and is drained at the end of the season (i.e., late October). Normal operations of Ellis #2 dam as outlined by the City of Penticton (2014) include:

- Fall / Winter Setting (November to March) – gate (i.e., 18" [450 mm] gate) is set to empty the reservoir and to keep the reservoir empty during the fall and winter.
- Spring / Summer Setting (April to October) – gate (i.e., 18" [450 mm] gate) is closed in April to capture spring snowmelt runoff. The gate remains closed until late July or August for water releases downstream on a demand driven basis.

The total storage capacity of the Ellis #2 Dam Reservoir is 450 ML (365 acre-feet) and once the storage has been depleted, Ellis #4 Dam Reservoir is used to supplement water demands downstream. Total reservoir storage volume for Ellis #2 Dam Reservoir has been monitored manually by the City from 1998 to present. The annual storage reservoir pattern is illustrated in Figure 3-4.

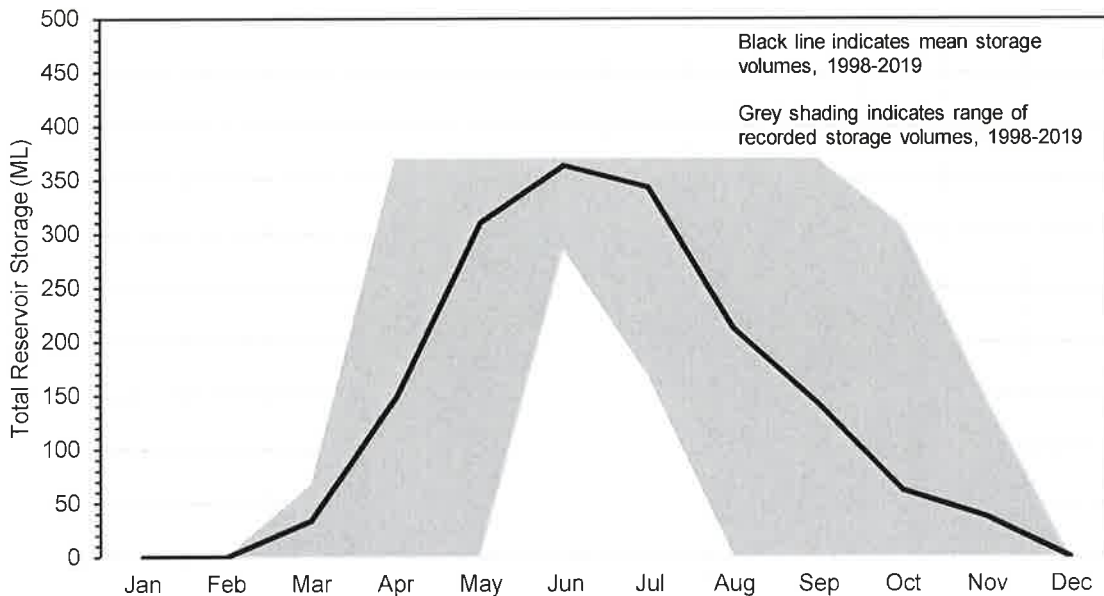


Figure 3-4 Summary of total reservoir storage volume for the Ellis #2 Dam Reservoir, 1998-2019

Referring to Figure 3-4, the general storage trends for Ellis #2 Dam Reservoir are as follows:

- Inflows into the reservoir generally begin between early April, but can occur in early March, or be delayed until late April or early May. Inflows are largely related to the melting of the upland watershed snowpack.
- The reservoir reaches full storage capacity generally in late April or May.
- During July, August, and September, water is released from the reservoir to meet downstream demand requirements. Maximum demand occurs from mid-July to mid-August and is related to the peak irrigation demands for the South Penticton Irrigation System.
- In late fall and winter, the reservoir is emptied.

Ellis #4 Dam Reservoir

Like Ellis #2 dam, Ellis #4 dam was designed to supplement water supplies at the Ellis Creek Diversion dam. The dam is also only operational during the irrigation season (i.e., April to October) and is drained at the end of the season (i.e., late October). Normal operations of Ellis #4 dam as outlined by the City of Penticton (2014) include:

- Fall / Winter Setting (November to March) – gate (i.e., 24" [600 mm] gate) is set to empty the reservoir and to keep the reservoir empty during the fall and winter.
- Spring / Summer Setting (April to October) – gate (i.e., 18" [450 mm] gate) is closed in April to capture spring snowmelt runoff. The gate remains closed until August or September for water releases downstream on a demand driven basis.

The total storage capacity of the Ellis #4 Dam Reservoir is 860 ML (697 acre-feet) and storage is generally not used until Ellis #2 Dam Reservoir has been emptied. Total reservoir storage volume for Ellis #4 dam reservoir has been monitored manually by the City from 1980 to 2019. The annual storage pattern is illustrated in Figure 3-5. The general storage trends for Ellis #4 Dam Reservoir are similar to Ellis #2 Dam Reservoir (Figure 3-4); however, reservoir inflows tend to begin earlier (i.e., March) and storage is maintained longer within the reservoir due to the City's use of Ellis #2 Dam Reservoir storage first to support downstream demands.

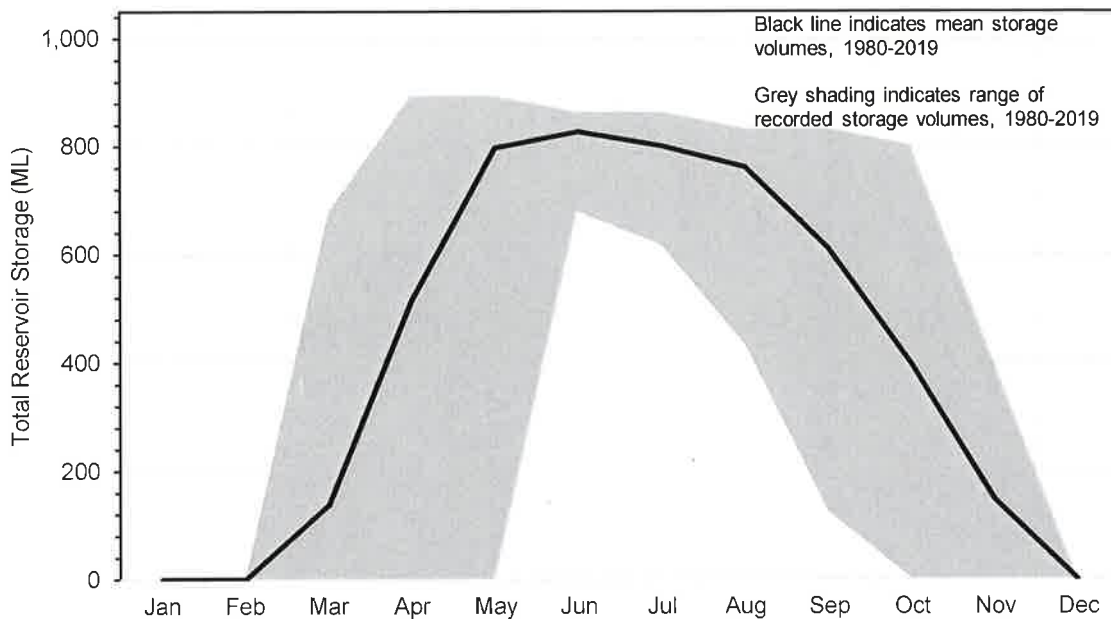


Figure 3-5 Summary of total reservoir storage volume for the Ellis #4 Dam Reservoir, 1980-2019

Ellis Creek Diversion Dam

The Ellis Creek Diversion dam was designed to support the diversion to the South Penticton Irrigation System. The diversion is only operational during the agricultural irrigation season (i.e., April to September). With a total storage capacity of 6 ML (5 acre-feet), the dam was designed as a flow through system, with water diverted as necessary and the remainder spilling to maintain streamflow. During periods of drought or reduced water supply, the volume of diversion is managed based on City implemented watering restrictions.

The South Penticton Irrigation System services 84 parcels and each parcel is allocated an application rate based on soil type within the defined irrigable area at the property. The allocation rates vary between 0.13 – 0.18 L/s/ha, with a total irrigable area of 122 ha serviced by the South Penticton Irrigation System (Urban Systems Ltd. 2009).

3.2.4 Fishery Flow Release Targets

Currently, there are provincially regulated fishery flow requirements for Ellis Creek as follows:

- January to August = 0.084 m³/s; and
- September to December = 0.126 m³/s.

The City ensures that the fishery flow requirements are met by monitoring streamflows at their Ellis Creek hydrometric station at Industrial Avenue.

3.2.5 Water Demand

Based on City's diversion records, the total annual diversions at the Ellis Creek Diversion dam (for the South Penticton Irrigation System) from 2004 to 2018 have ranged between approximately 248 ML (2011) and 886 ML (2017), with an average of approximately 474 ML. Since the Ellis Creek Diversion dam is only used for agricultural irrigation purposes, water is typically only diverted between April and October. During that period, diversions during the months of July and August are the highest with an average daily demand of 4.0 ML/day.



3.3 Okanagan Lake Water Supply System

3.3.1 System Overview

Okanagan Lake is a large valley bottom lake that is located to the north of the City, with a surface area of approximately 340 km². The total contributing area to Okanagan Lake covers approximately 6,090 km² which includes inflows from numerous tributaries, including Penticton Creek. The headwaters of Okanagan Lake are located within the Thompson Plateau of the Interior Plateau Physiographic Region. Okanagan Lake has a mean and maximum depth of 76 m and 242 m, respectively. The residence time of the lake is approximately 60 years (Canada-British Columbia Okanagan Basin Agreement 1974b). The City operates a single water intake on Okanagan Lake that is used to supply municipal water (Figure 3-2). The intake is located 1 km offshore and approximately 39 m below the water surface. All water pumped from Okanagan Lake is treated by the City's WTP.

The City's total annual licensed volume for Okanagan Lake is 13,805 ML for municipal (12,695 ML) and irrigation (1,110 ML) use purposes¹. Under the provincial 'first-in-time, first-in-right' licensing system, the City holds intermediate and senior level water licences on Okanagan Lake.

3.3.2 Hydrologic Regime

The contributing watershed to Okanagan Lake is in the Southern Thompson Plateau (Hydrologic Zone #17; subzone "b") and the Fraser Plateau (Hydrologic Zone #15; subzone "e") (Obedkoff 1998). Streams within these hydrologic zones are generally characterized by a snowmelt dominated peak rising in April or May and peaking sometime in May or June. Low flows occur generally from the end of November to March, and in the hot summer months, with the lowest flows commonly occurring in January or February.

The general water level trend for Okanagan Lake is summarized within the next section.

3.3.3 Reservoir Management and Storage Trends

Okanagan Lake water levels are managed by FLNRORD by releasing water into the Okanagan River and other mainstem lakes south of Penticton (Figure 3-2). Water levels within Okanagan Lake are managed as part of the Okanagan Lake Regulation System and follow water level and downstream streamflow release targets outlined by the Okanagan Basin Implementation Board (MOE 1982). The operating targets (i.e., month end water levels) are maintained by FLNRORD at the Okanagan Lake dam (Figure 3-2).

The operating targets were developed to balance economic development (e.g., flood control, water supply, lakeshore development, tourism), environmental quality (e.g., environmental flows for fish), and social betterment (OBWB 2019). Okanagan Lake is regulated to capture and store as much freshet volume as possible for use later in the year and under drought years FLNRORD closely monitors levels and streamflow releases to balance environmental and human needs (OBWB 2019). There is no formal drought operational procedure currently for Okanagan Lake; however, the OBWB (2019) have produced Okanagan Lake drought stage triggers for local water purveyors to consider for drought planning purposes (discussed further in Section 4.2).

¹ All West Bench Irrigation District water licences (i.e., one licence for 1,100 ML/yr for irrigation purposes and two licences for 1,359 ML/yr for waterworks purposes) transferred to the City have been superseded by the City's Okanagan Lake licence (i.e., Water Licence No. C130923).

Water levels within Okanagan Lake have been monitored (near Kelowna) by the WSC (Station No. 08NM083) and the annual pattern of lake inflows and releases from 1943-2018 is illustrated in Figure 3-6. Figure 3-6 also includes the month end water level operating targets used by FLNRORD to manage Okanagan Lake.

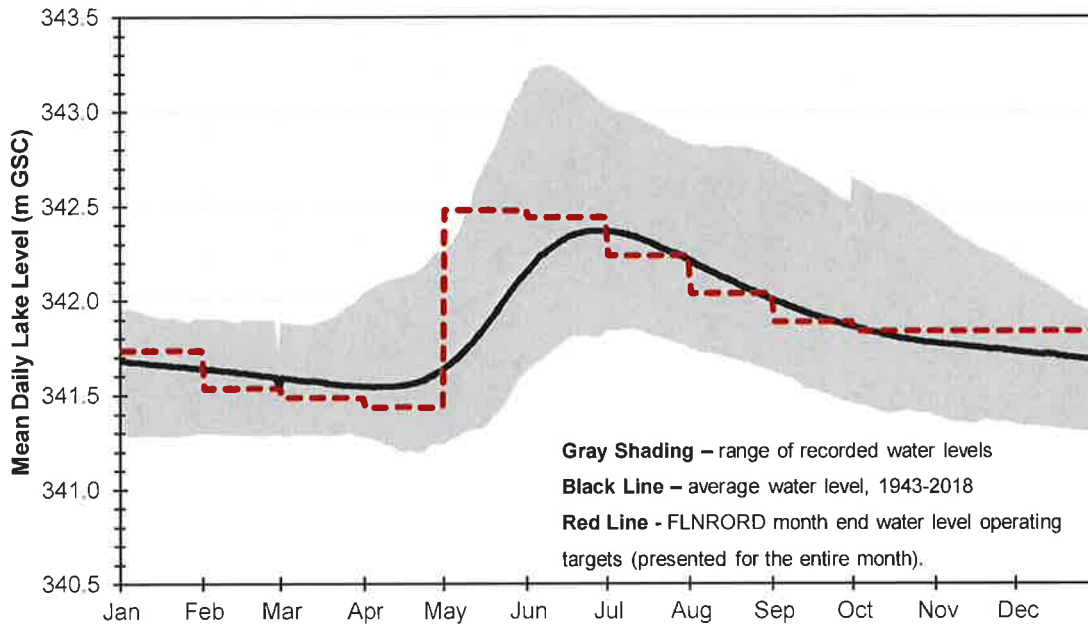


Figure 3-6 Summary of Okanagan Lake water levels (WSC Station No. 08NM083), 1943-2018

According to Figure 3-6, the general pattern of inflows and releases from Okanagan Lake are as follows:

- Inflows into the lake generally begin around mid-April, but can occur in March, or be delayed until early May. Inflows are largely related to the melting of the upland watershed snowpacks.
- The lake reaches its highest water levels generally between June and July. Seasonal snowpacks within the headwaters have generally melted by mid-May; therefore, rainfall supplements inflows into the lake within late spring periods.
- During July, August, and September, water is released from the lake to meet downstream consumption and fisheries flow requirements.

3.3.4 Fishery Flow Release

Minimum fishery flow releases from Okanagan Lake into the Okanagan River are governed by the Okanagan Fish Water Management Tool (FWMT). The FWMT provides in-depth information and models for making weekly water release decisions from Okanagan Lake dam that account for flood, drought, protection of sockeye salmon eggs in the Okanagan River and kokanee salmon eggs in the lake (ONA 2017). All releases from Okanagan Lake follow the FWMT tool guidelines and the releases are determined collaboratively by a FWMT Steering Committee that includes representatives from Okanagan Nation Alliance, Fisheries and Oceans Canada (DFO), and FLNRORD.

3.3.5 Water Demand

The Okanagan Lake water intake diverts raw water to the WTP through a 750 mm diameter transmission line. The design capacity of the WTP is 100 ML/day, although operationally the maximum for water from the Okanagan Lake water intake is 60 ML/day.

The Okanagan Lake intake is currently licensed to withdraw 13,805 ML annually from Okanagan Lake. Based on City diversion records, the total annual diversions from 2004 to 2018 have ranged between approximately 5,054 ML (2011) and 7,561 ML (2005), with an average of approximately 6,335 ML. However, the volume of water that is withdrawn annually from Okanagan Lake is also dependent on the volume of water from Penticton Creek that is blended at the WTP. Blending is completed by the City for maintenance of Okanagan Lake and Penticton Creek water intake infrastructure and for maintaining the best water chemistry for municipal residential water use. The City generally uses a 70% Okanagan Lake and 30% Penticton Creek blend.

Water diversion at the Okanagan Lake intake is consistent throughout the winter and increases between April and August in accordance with lawn and garden watering requirements (since there are no or very limited agricultural water use due to water license and system limitations). During the summer months (July and August), average daily water use is approximately 30 ML/day, while during the winter (November – February), average daily water use is 10 ML/day.

3.4 Groundwater Supply System

Groundwater is not a primary source of water for the City; however, it remains a viable emergency source. The City currently maintains one groundwater well: Warren Avenue Well (Figure 3-2). The well is located at a depth of 92.9 meters below ground surface (mbgs) within a confined and flowing artesian aquifer comprised of sands and gravels (City of Penticton 2017). The well was commissioned in 1984 to supplement water to the WTP during times of high summer water demands but use was discontinued in 1997 due to ongoing water quality problems (i.e., iron and manganese concentrations at and above aesthetic objectives, respectively) (AE 2004).

The annual groundwater supply by the Warren Avenue Well under average and selected drought return periods (e.g., 1:10-year, 1:20-year) is 2,350 ML (EarthTech and Agua Consulting Ltd. 2005). The pumping capacity for the Warren Avenue Well is 16 ML/day, but with treatment, the capacity is expected to be 13 ML/day, with a normal daily capacity of 11 ML/day.

3.5 System Interconnections

System interconnections provide the City with the flexibility of meeting water demands by individual or through a combination of water supply sources. Interconnection opportunities are particularly important for periods of drought or water supply shortages, as this builds redundancy and a more resilient system. Interconnections are also considered part of the City's emergency response plan during situations of loss of surface source.

A summary of the City's current system interconnection options are as follows:

- The City's municipal water supply can be supplied by Okanagan Lake, and during times of water shortages, a combination of water from Okanagan Lake and Penticton Creek can be used to meet water demands.
- An 8-inch (200 mm) pipe from the WTP can be used to support the South Penticton Irrigation System during times of water shortage, but the connection is not currently operational.
- Warren Avenue well has been declared as emergency backup well (or available during very dry periods) for the City's municipal water supply.

3.6 Current and Future Water Demands

3.6.1 Current Water Demands

As reported by City the Penticton (2017), there are 9,812 service connections, with approximately 381 agricultural connections. Sections 3.1.5, 3.2.5, and 3.3.5 provide a summary of water demand by water supply source, while the

total annual water demand within the City's distribution area has ranged between 8,511 ML to 11,152 ML (for the period 2004 to 2018). Approximately 72% of the total water used is for municipal purposes, while approximately 28% is used by agriculture. However, total municipal water demands are managed each year following the water schedules outlined within Bylaw No. 2005-02, while agricultural irrigation water demands supplied through the North and South Irrigation Systems are currently not limited by the City.

Over the same period as noted above, population has been increasing at a slow and steady pace. In addition, the City also supplies water to the West Bench Irrigation System (RDOS Area "F") on a bulk sales arrangement (City of Penticton 2017). However, even with these additions, annual water consumption has declined since 2006.

The total area available for agricultural purposes within the City's distribution area is 733 ha, but as of 2006 only 287 ha was being supplied with water (Urban Systems Ltd. 2009). Unit allocation rates are based on soil types within individual properties and range between 0.13 L/s/ha and 0.18 L/s/ha. Hence, the total water volume of allocation is 7,970 ML for the entire available area, while currently only 2,304 ML is being used (based on 2006 data) (Urban Systems Ltd. 2009).

A summary of the peak daily demand values for the City's various water sources is provided in Table 3-1 and the distribution of total water use by month is provided in Table 3-2.

Table 3-1 City of Penticton peak daily demand summary by water source

Water System	Flow Rate ^{1,2} (ML/day)			
	Average (ADD)	Base (BD)	Seasonal	Maximum (MDD)
North Penticton Irrigation System	N/A	N/A	11.2	34.0
Penticton WTP (Municipal)	19.7	12.0	25.1	48.6
South Penticton Irrigation System	N/A	N/A	2.2	12.5
Total (All Sources)	27.5	12.1	38.4	77.7

Notes:

1. Values based on 2004-2018 records by the City.
2. Average = average day demand (ADD); Base = base (winter) demand (BD); Seasonal = average irrigation season demand (April to October); Maximum = maximum day demand (MDD).

Table 3-2 Average City of Penticton monthly water demand from all sources

Month	Percent of Annual Demand ¹ (%)	Month	Percent of Annual Demand ¹ (%)
January	3.7	July	17.4
February	3.4	August	16.7
March	3.8	September	11.0
April	6.1	October	7.0
May	10.9	November	3.7
June	12.6	December	3.7

Note:

1. Values represent the 2004-2018 average diversion records by the City.

3.6.2 Future Water Demands

As outlined by EarthTech and Agua Consulting Inc. (2005), it is anticipated that municipal water demand would form the largest portion of increased future demands. In fact, the City's Concept Development Plan is projecting a growth rate of 2.5%. Therefore, to meet new service requirements, it is likely that the City will need to develop new infrastructure to meet this future demand and maintain the on-going operation for existing demand (EarthTech and Agua Consulting Inc. 2005). In addition, for long term sustainability, the increase in water demand must be significantly less than the rate of growth. Progress on reducing per capita water use has already been used by the City with densification, the price of water, education programs, and public concerns over global warming being attributed with driving this change (EarthTech and Agua Consulting Inc. 2005).

AECOM (2010) provides a summary of projected municipal water demands for 2025 and 2055 and the values are summarized in Table 3-3. For the City's irrigation systems, Urban Systems Ltd. (2009) estimated that under climate change alone, annual irrigation water demands could increase by 36% for both systems, while under a build-out scenario plus climate change, the annual irrigation water demands could increase by 138% for Penticton Creek and by 207% for Ellis Creek.

Table 3-3 Summary of projected municipal water demands for 2025 and 2055 (from AECOM 2010)

Year	Maximum Day Demand (ML/day)	Peak Hourly Demand (ML/hr)
2025	38	2.4
2055 ¹	90	5.6

Note:

2. Water demand values for 2055 considers a full build-out scenario.

Under future climate and water demand conditions, the City may need to look for options to support the meeting of future water supply needs. Specifically, increasing water supplies from Okanagan Lake, Penticton Creek, groundwater, and possibly expanding the supply from Ellis Creek have been identified, which may require new water licensing requirements.

4 DROUGHT STAGES AND COMMUNICATION PLAN

The following section provides a description of the existing drought stages implemented by the City and the BC provincial drought levels.

4.1 City of Penticton Drought Stages

The City established descriptions for drought stages in Bylaw 2005-02. Each stage was defined in reference to the volume of water available within the respective upland reservoirs (Section 3). More recently, the City has adopted the Okanagan Lake drought stage triggers recommended by OBWB (2019) to support management of the Okanagan Lake supply (described further in Section 4.2). The drought stages form the basis for the DMP and the associated responses implemented (i.e., watering restrictions) through Bylaw No. 2005-02 or as amended (Appendix A). The City's communication plan for each drought stage is as outlined in Section 4.4.

The drought stages summarized below can also apply to a localized water shortage situation resulting in similar reductions in supply availability due to limitations from infrastructure or an emergency incident. In addition, the City may implement restrictions on a single water supply source in the event of drought conditions that may affect an isolated portion of the system (i.e., Penticton or Ellis Creeks supply only). A summary of each drought stage is provided below.

Normal Condition – No Drought

Normal Conditions are defined by the upland reservoir storage condition, where storage volumes are sufficient to meet water supply needs at current and near-future levels of water demand. Upland storage volumes that are >95% storage capacity (based on time of year) are considered within normal operational ranges. The water conservation goals of this stage are to encourage water use efficiencies and promote water supply shortage awareness and preparedness. An alternating day sprinkler irrigation schedule for residential outdoor water use (i.e., a best practice for efficient sprinkler irrigation to encourage healthy plant growth) is established year-round during normal conditions.

Stage 1 – Dry

Stage 1 represent an early (or mild) drought condition and elevates the community awareness level for a first indication of a potential water supply shortage. Public communication informs on-going status, potential future shortages, and further water restrictions. This stage represents a condition where upland storage volumes are 70 to 95% of the total available storage capacity (based on time of year). Communication strategies focus on encouraging stewardship and voluntary conservation measures by the community. An increased level of enforcement and monitoring, particularly of large water users, occurs during this stage and warnings may be issued if misuse is deemed to be occurring.

Water conservation goals during this stage are to reduce total water use by 10% to reduce the potential to move to Stage 2. Water use restrictions implemented during this stage are primarily focused on the reduction of residential outdoor and City Park water use. For agricultural water users, the City requests that water use be reduced by matching irrigation with soil and crop types.

Stage 2 – Very Dry

Stage 2 represents conditions of prolonged periods of no rain and hot, dry weather, combined with below normal snowpack conditions. This stage is considered a time of moderate drought or when water supplies are becoming stressed. The upland storage volumes are 60 to 70% of the total available storage capacity (based on time of year) without any indication of recovery. The projected daily municipal water demand is to be 90% of treatment capacity of

the WTP and actual daily treated water demand is 5% above the five-year historic average. An increased level of communication, education, monitoring, and enforcement occurs at this stage with moderate fines issued and lower tolerance for water waste. Water conservation goals during this stage are to reduce total water use by 20% to reduce the potential to move to Stage 3. Water use restrictions implemented during this stage are focused on the reduction of residential outdoor, City Parks, and golf course water use.

Specifically, this stage implements a maximum of a two-day a week residential sprinkler irrigation schedule, various reductions in City Park irrigation schedules, and a 10% reduction to golf course irrigation. During this stage, the City encourages agricultural water users to reduce water use by decreasing (where possible) irrigated acreage or reducing irrigation to some lesser-value plants.

Stage 3 – Extremely Dry

Stage 3 represent extremely dry conditions. This stage is considered a time of extreme drought, when water supplies are at a critical shortage level. This stage represents the condition where the upland storage volumes are at 60% of the total available storage capacity (based on time of year) without any indication of recovery and/or, specifically for the Ellis Creek reservoirs, storage capacity is at minimum levels. The projected daily municipal water demand is to be >90% of treatment capacity of the WTP and actual daily treated water demand is 10% above the five-year historic average. A high level of communication, education, monitoring, and enforcement occurs at this stage with fines issued and zero tolerance for misuse permitted.

Water conservation goals during this stage are to reduce total water use by 50% to reduce the potential to move to Stage 4. Critical services for fire protection, household consumption, and sanitation are maintained at this stage; however, residential sprinkler irrigation is severely restricted to a 1-day a week schedule and irrigation for City Parks, golf courses, and playing fields are restricted. In addition, recreation (i.e., hot tubs, pools, and ponds) and commercial (i.e., car washes) outdoor water use restricted. During this stage, the City requires agricultural water users to irrigate only high-value perennial plants and to only irrigate at night.

Stage 4 – Emergency

Stage 4 is characterized by a loss of supply because of drought, contamination, or a loss of critical infrastructure. This stage represents the condition where the upland storage volumes are at 60% of the total available storage capacity (based on time of year) without any indication of recovery and/or, specifically for the Ellis Creek reservoirs, no water is available. The projected daily municipal water demand is to be $\geq 95\%$ of treatment capacity of the WTP.

During this stage, water supplies are limited to residential (indoor) use only; at the base (winter) demand rate (i.e., 12 ML/day). Water conservation goals during this stage are to reduce total water use by 90% through the elimination of residential, recreation (i.e., hot tubs, pools, and ponds), and commercial (i.e., car washes) outdoor water use. Also, the City restricts agricultural water use to livestock and for high-value perennial plants.

At this stage, fire protection services could be compromised. In addition, the City's Emergency Response Plan (Section 6) and Provincial Emergency Program would be invoked.

4.2 Okanagan Lake Drought Stage Triggers

The OBWB has an ongoing initiative to facilitate more consistent and coordinated drought planning and response in the Okanagan Basin by helping local water suppliers prepare drought plans that include a defensible decision-making framework for responding to drought conditions, particularly on the Okanagan mainstem lakes (OBWB 2019). As part of this process, the OBWB identified the need for the uniform adoption of drought stage triggers on the Okanagan

mainstem lakes to help provide water suppliers and other large water users (using the mainstem lakes for supply) an understanding of their risk to water availability during times of drought.

Accordingly, OBWB (2019) produced guidelines for drought stage triggers for the Okanagan mainstem lakes using end of month lake level elevations, since current and forecasted lake level elevations are used to determine water availability. The drought stage triggers are defined for five drought stages (i.e., non-drought, stage 1, stage 2, stage 3, stage 4). However, it must be noted that the drought stage triggers have not been adopted by FLNRORD as part of the Okanagan Lake Regulation System (at this time) but are instead provided to water suppliers to consider for inclusion within DMPs for a consistent and rational processes for drought response. Thus, since the City relies on Okanagan Lake as a primary water source for municipal water supply, the City has adopted the inclusion of the Okanagan Lake drought stage triggers. However, at this time, these drought triggers are not included within Bylaw 2005-02, but are still used by the City to make operational decisions for water restrictions, blending of water sources, and drought stage declarations.

The drought stage triggers for Okanagan Lake for July to November are summarized below (and schematically presented in Figure 4-1) using the lake level elevation information included within Table 4-1 (based on hydrometric records measured by WSC 08NM083 [Okanagan Lake at Kelowna]).

- Non-drought – Water suppliers would remain at their Normal stage (or no stage if they do not have a Normal stage in their bylaw) when the forecast or actual 1st of the month elevation of Okanagan Lake is equal to or greater than the 1st of the month target.
- Stage 1 (green) – The forecast or actual 1st of the month elevation of Okanagan Lake for each of the months July through November is lower than the 1st of month target elevations and equal to or greater than the 20th percentile 1st of month elevation.
- Stage 2 (yellow) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 20th percentile 1st of month elevation and greater than or equal to the 10th percentile 1st of month elevation.
- Stage 3 (orange) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 10th percentile 1st of month elevation and greater than or equal to the 5th percentile 1st of month elevation.
- Stage 4 (red) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 5th percentile 1st of month elevation.

Table 4-1 Okanagan Lake elevation (in metres GSC) on 1st of the month and selected statistics

Okanagan Lake Elevation Parameter	July	August	September	October	November
1 st of Month Target Elevation	342.440	342.240	342.040	341.890	341.840
20 th Percentile	342.227	342.097	341.950	341.796	341.681
10 th Percentile	342.046	341.929	341.802	341.655	341.575
5 th Percentile	341.981	341.981	341.667	341.511	341.421

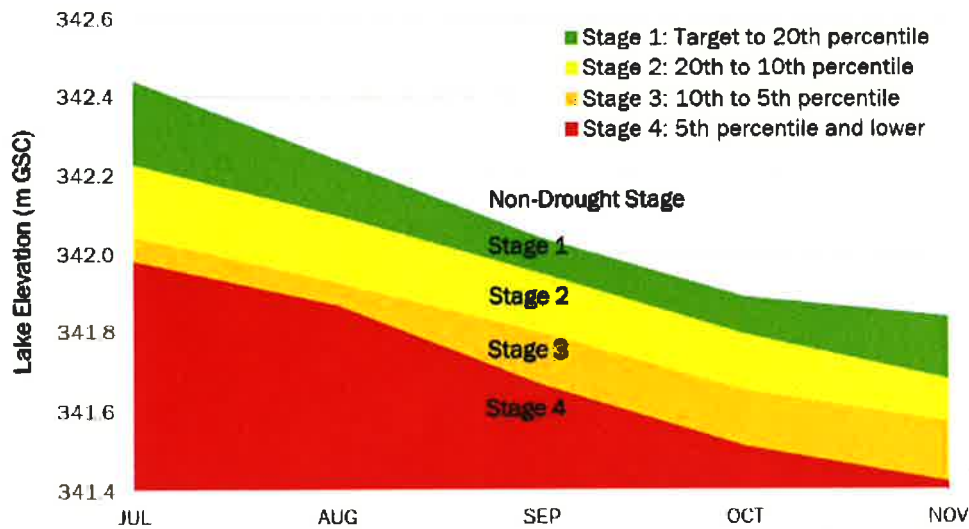


Figure 4-1 Summary of drought stage triggers (based on Okanagan Lake elevations on 1st of month) for Okanagan Lake (adapted from OBWB 2019)

Also, as outlined by OBWB (2019), water utilities/municipalities that use both upland and Okanagan Lake water sources (like the City) for supply purposes should have a detailed understanding of available water licensing on all water sources, and should ensure that they are flexible in their water use during times of drought. It is possible that during times of drought, upland water sources (with storage) could be used to maintain environmental flow needs within creeks (and/or other water supply needs), with the water not withdrawn until the water enters Okanagan Lake. This situation is still to be considered by the City and operational decisions would be dependent upon the severity of the drought.

4.3 Provincial Drought Levels

In striving for consistent drought response strategies across the BC, four provincial drought levels, each with specific objectives and suggested water use targets, have been established as part of the BC Drought Response Plan (MECCS 2018). The four-level drought classification system is used to determine the severity of drought conditions and the necessary steps required to avoid moving to a higher drought level and/or to move to a lower drought level. The plan also establishes triggers to identify levels of drought. The four drought levels are summarized in Table 4-2 and are declared by the Provincial Technical Drought Working Group (PTDWG).

Given that the BC Drought Response Plan relates to a regional watershed scale, it focuses on regional (watershed) triggers. Specifically, triggers are associated with regionally available information (e.g., snow water equivalent, streamflows) and are used to determine the level of drought regionally. Therefore, when provincial drought levels are in effect, they are general and not necessarily indicative of an individual water source and/or a watershed at a local scale.

Table 4-2 Summary of provincial drought levels (from MECCS 2018)

Level	Conditions	Significance	Objective
1 (Green)	Normal Conditions	There is sufficient water to meet human and ecosystem needs	Preparedness
2 (Yellow)	Dry Conditions	First indications of a potential water supply problem	Voluntary conservation
3 (Orange)	Very Dry Conditions	Potentially serious ecosystem or socio-economic impacts are possible	Voluntary conservation and restrictions
4 (Red)	Extremely Dry Conditions	Water supply insufficient to meet socio-economic and ecosystem needs	Voluntary conservation, restrictions and regulatory action as necessary

For the Penticton (and South Okanagan) region, the Thompson Okanagan Drought Response Team (TODRT) works with the PTDWG to declare drought levels for the Okanagan Basin, and conducts follow-up communications and recommends responses (as required) to local governments as outlined through the Thompson Okanagan Drought Response Implementation Plan (TODRIP) (MECCS 2018). The TODRIP is a guide for provincial staff and the TODRT to assess and respond to worsening drought conditions to help minimize the effects on both aquatic ecosystems and water users (MECCS 2018).

The provincial drought levels are independent of the drought stages used by the City. The provincial drought levels provide guidance to the City on the general water supply conditions within the region, but do not directly correlate to system operations, water restrictions, or reservoir management responses. Thus, the provincial drought levels are used as an informative tool only to support drought stage decision making by the City (Section 5).

4.4 Communication Plan

The BC Drought Response Plan (MECCS 2018) highlights the importance of a well-structured and clearly defined communication strategy between key parties for effective drought preparation and response. To date, communication of drought or water shortages by the City is through public notification procedures. Once a change to drought stage has been triggered, specific public communication strategies and appropriate responses are implemented. Although not fully implemented at this time, the City is currently updating their drought management communications approach for municipal and agricultural users following the communication strategy included in Appendix C.

The City also communicates with the public on the differences between City drought stages and provincial drought levels to ensure that the public is aware of the difference between the two different types of declarations.

5 DROUGHT STAGE DECISION PROCESS AND TRIGGERS

The following section outlines the City’s process for reviewing drought status, critical dates, and the decision process used to predict a potential drought and to trigger drought stage declarations. A trigger is defined as the final decision by the City to change a drought stage (as outlined within Bylaw No. 2005-02). An overview of the City’s drought stage decision process and parameters used is illustrated in Figure 5-1. This overall approach is consistent with that used by the Regional District of North Okanagan for water shortage planning (i.e., Associated 2017), who depend on similar water supply sources (i.e., upland reservoirs and large mainstem lake [Kalamalka Lake]) for municipal and agricultural water needs.

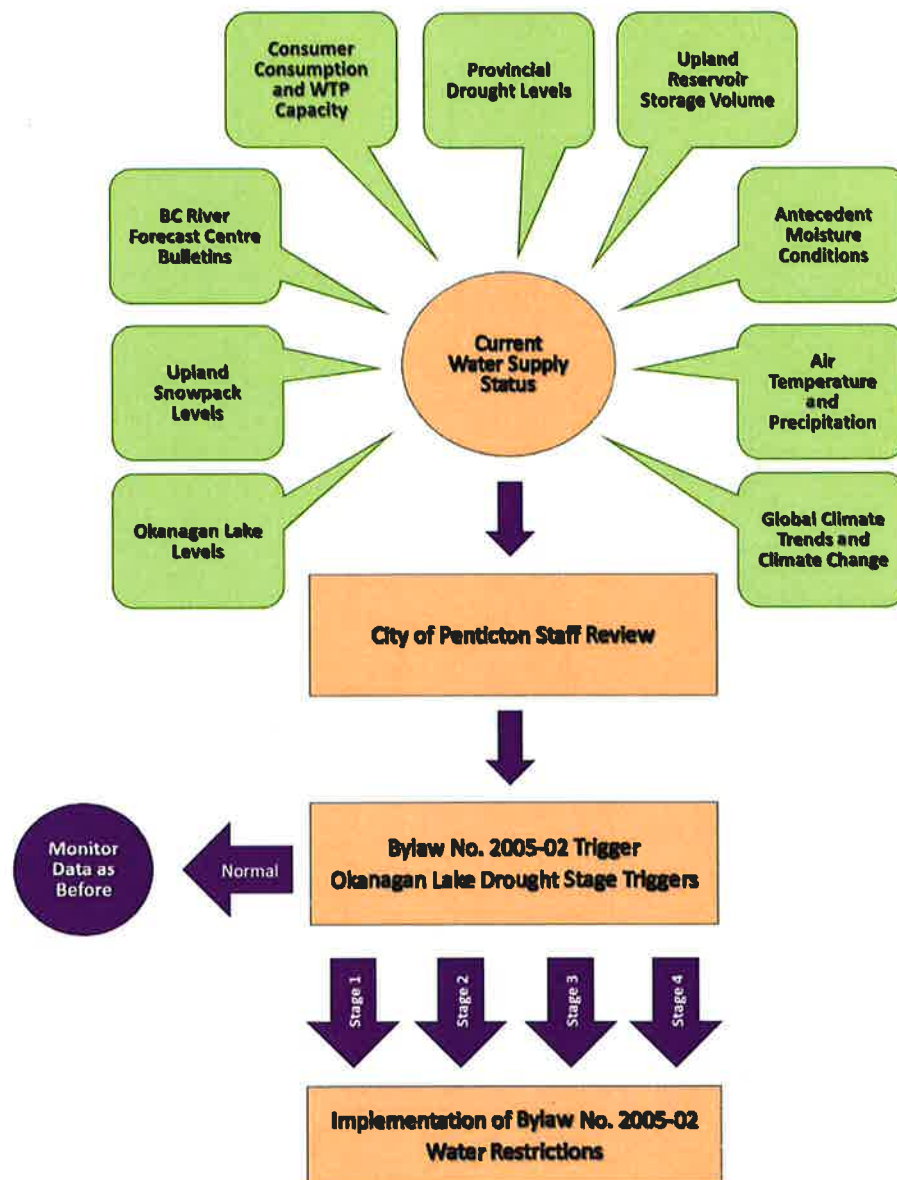


Figure 5-1 City of Penticton drought stage decision process

5.1 Meetings and Critical Dates

To determine the status of water supplies, the City's Water Supply Management Team (WSMT) (Section 2.1) meets formally and informally to review the current water supply status (see Figure 5-1). The purpose of these meetings is to discuss the current state of water supplies (by water supply source and/or as a whole) and forecasted trends to develop an understanding of the potential for future shortages and to what level of severity (i.e., stage). These meetings also provide the opportunity to implement operational measures (e.g., regulating spill from the upland reservoirs to increase storage volumes) prior to the triggering (and declaration) of drought stages and associated responses.

The triggering (and declaration) of a drought stage involves complex considerations, as personal hardship, economic losses to the agricultural and industrial-commercial-institutional communities, damage to infrastructure such as parks, and lost revenue to the City may result because of the declaration. Thus, the WSMT will recommend the implementation of a stage in an informed manner with the understanding of the consequences. This includes the consequences of having to rescind a declaration within a short timeframe.

While drought forecast parameters are monitored weekly to monthly, critical decision dates are used by the WSMT to assess the year's expected water supply status as follows:

- March 15th (or as close to as possible) – decisions on this date consider the current state of storage volumes, previous fall antecedent conditions (i.e., groundwater levels), BC River Forecast Centre water supply bulletins, weather forecasts, the City's municipal water demands projected and current compared to the WTP's capacity, fishery flow (or minimum operational flow) needs, as well as the current state of the snowpack within the headwaters of Penticton Creek watershed and regionally.
- April 15th and May 15th (or as close to as possible) – decisions on this date consider the current state of storage volumes, freshet predictions, BC River Forecast Centre water supply bulletins, weather forecasts, current and projected water demands and comparisons to WTP capacities and five-year averages, fishery flow (or minimum operational flow) needs, as well as the current state of the snowpack within the headwaters of Penticton Creek watershed and regionally.
- June 15th (or as close to as possible) – decisions on this date consider the current state of storage volumes, BC River Forecast Centre water supply and snowpack bulletins, weather forecasts, provincial drought levels, as well as current and projected water demands and comparisons to WTP capacities and five-year averages, and fishery flow (or minimum operational flow) needs.
- July 15th and August 15th (or as close as possible) – decisions on this date consider the current state of storage volumes, Okanagan Lake elevation, the volume of precipitation (in the form of rain) received in the region, summer air temperatures, weather forecasts, provincial drought levels, current and projected water demands and comparisons to WTP capacities and five-year averages, fishery flow (or minimum operational flow) needs.
- September 15th and October 15th (or as close as possible) – decisions on this date consider current state of storage volumes, Okanagan Lake elevation, the volume of precipitation (in the form of rain) received in the region, late summer and fall air temperatures, weather forecasts, provincial drought levels, current and projected water demands and comparisons to WTP capacities and five-year averages, fishery flow (or minimum operational flow) needs.
- For the period October to March – the City tracks reservoir water levels and the state of the snowpack with the headwaters of Penticton Creek watershed and regionally.

Once a drought stage has been triggered, the WSMT continues to review storage volumes and other drought forecast parameters and recommend a change (or rescinding) of stage following the drought stage decision tree (Section 5.2). When a drought stage change is triggered, the Drought Response Plan (Section 6.1) is enacted by the WSMT for the respective stage. The WSMT also engages with the DMT (Section 2.2) once a trigger (or impending declaration) has occurred to effectively communicate the drought stage status and potential future supply challenges.

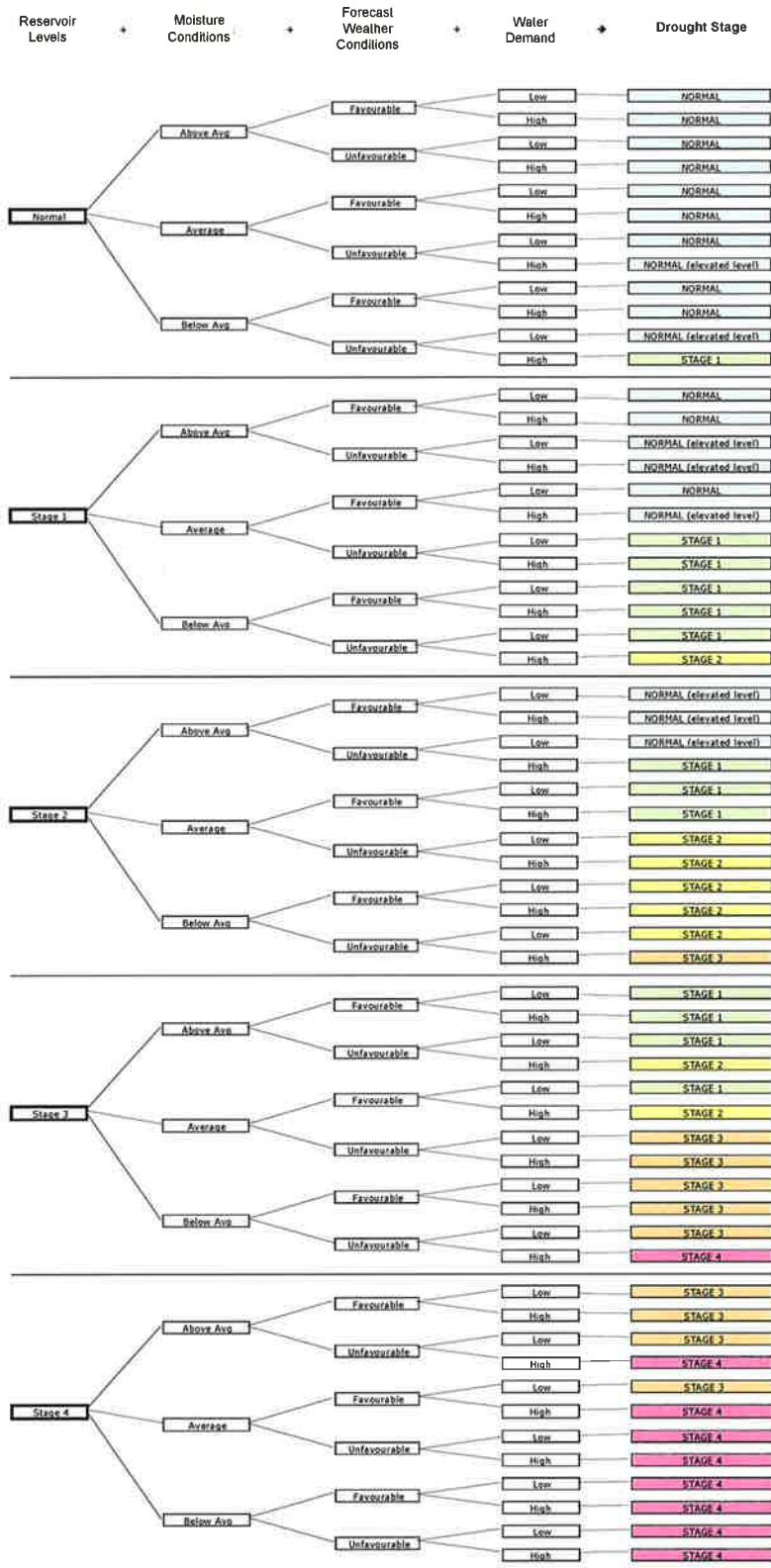
5.2 Decision Tree and Stage Triggering

To support the triggering of a drought stage, a decision tree is used by the City. The decision tree is a guide for decision-makers in weighing information and understanding the potential outcomes when deciding what water shortage action(s) to undertake. The decision tree is used by the WSMT to determine the status of water supplies at any point throughout the year, on a critical decision date, or forecasted for the near future. The decision tree is provided in Figure 5-2 and was adopted from the Regional District of North Okanagan who have been using this decision tree since 2011 to support drought management decisions with the Greater Vernon Water distribution area.

Of note, the decision tree is used by the City to independently determine the water supply status of each water supply source (i.e., Penticton Creek, Ellis Creek, and Okanagan Lake). From there, the City determines if an individual source is experiencing different water supply conditions than the others. Using this approach, an individual drought stage may be declared by water supply system or for the entire City system.

The following sequence of actions are used by the City to determine water supply status (and drought stage) by water supply source (and/or as a whole system) as follows:

1. Determine reservoir storage volumes for Greyback and Ellis #2 and #4 dam reservoirs with respect to the drought stage thresholds outlined within Bylaw No. 2005-02. Also, assess Okanagan Lake elevation in reference to respective 1st of month elevation targets and drought stage triggers (Section 4.2). Assess the ability to meet fishery flow (or minimum operational flow) requirements in Penticton and Ellis Creeks.
2. Assess upland moisture conditions for the respective month/period of interest. When snowpacks are present, determine whether upland snowpack storage is above average, average, or below average, using the BC River Forecast Centre snowpillow and snow course bulletins. When snowpacks are absent (or at minimal levels), determine whether total precipitation (in the form of rain to-date) is above normal, normal, or below normal, using available real-time Environment and Climate Change Canada (ECCC) climate station records. Also, supplement snowpack and/or precipitation status by considering provincial drought levels and available real-time streamflows (from Dennis Creek [WSC 08NM242], Two Forty-One Creek [WSC 08NM241], and Two Forty Creek [WSC 08NM240]) to help track early season melt periods, summer low flow periods, and fall transition periods. In addition, observe antecedent moisture conditions measured by FLNRORD Observation Well No. 387 (Figure 3-2) as part of the Upper Penticton Creek Watershed Experiment.
3. Assess forecasted weather conditions for the respective month/period of interest. Review (or consult) the BC River Forecast Centre bulletins (and provincial drought levels) to determine whether the water supply outlooks for the Penticton area (e.g., Okanagan Lake inflows) are considered favourable or unfavourable. Also, review ECCC short-term forecasts to determine forecasted air temperatures and precipitation.
4. Assess total water demand and comparison to WTP capacity. For critical decision dates, determine whether total water consumption is 5% and/or 10% above five-year averages and what projected water demands are in comparison to WTP treated capacity. Also, consider forecasted evapotranspiration and calculated soil moisture deficit values within the local region.



Following Figure 5-2, the triggering of a drought stage is based on drought forecast parameter values outlined in Appendix D. A trigger is considered the point at which a drought stage change is identified (i.e., change from Normal to Stage 1) following the decision tree process. A trigger is the resultant action (i.e., declaration and response measures) that is required based on the combination of all drought forecast parameters; a trigger is not specific to one forecast parameter alone (i.e., storage level). A trigger can also lead to the rescinding (i.e., moving from Stage 1 to Normal) of a stage declaration.

6 DROUGHT AND EMERGENCY RESPONSE PLANS

6.1 Drought Response Plan

The overall components of the City's drought stages (Section 4.1) and triggers (Section 5.2) are summarized within the drought response plan (Table 6-1). The drought response plan is the staged approach to water management during periods of drought through the identification and evaluation of factors that trigger a response.

As noted in Section 2.1, the City Manager or the City's Designated Officer is responsible for implementing all stages of the DMP, and therefore determining whether a response action is warranted. Response actions are those included within Bylaw No. 2005-02 (or as amended) that are focused on the reduction (and/or conservation) of water use during periods of drought (Appendix A). Alternatively, the City during periods of loss of supply or other emergencies, can invoke the Emergency Response Plan (Section 6.2).

The triggering (and declaration) of a drought stage is determined using a decision tree (Figure 5-2) and based on current and forecasted water supply conditions and current and projected water use. The City's decision process and associated communication plan (by stage) supporting the DMP are as described in Sections 5 and 4.4, respectively.

6.2 Emergency Response Plan

The City has developed an emergency response plan (ERP) that includes procedures to respond to a loss of water source. The ERP considers contamination of the Okanagan Lake and Penticton Creek water sources, as well as losses of Okanagan Lake raw water and treated water from the WTP. Following contamination or a loss of supply, the ERP outlines the procedures for the emergency supply of water, as well as the notification process to all water users. All other water management strategies during times of water shortages are included as part of the drought response plan (Section 6.1). The City's ERP is provided in Appendix E.

Table 6-1 City of Penticton drought response plan

Item	Drought Stage				
	Normal Condition – No Drought	1 - Dry	2 – Very Dry	3 – Extremely Dry	4 – Emergency
Explanation of Water Supply Status	Defined by the ability to meet or exceed the average storage condition.	Stage 1 indicates an early drought condition. It is the first indication of potential water shortage.	Stage 2 represents prolonged periods of no rain and hot and dry weather and/or with below-average snowpack conditions. This represents moderate level of drought where water supply is becoming stressed.	Stage 3 represents severe drought conditions. This occurs when water supplies are experiencing a critical shortage or short-term loss of critical infrastructure.	Stage 4 is characterized by a loss of supply via loss of upland storage or Okanagan Lake supply through drought, or due to contamination, or loss of critical infrastructure.
Goal	Encouragement of water use efficiencies and promotion of drought awareness and preparedness. Meet fishery flow (or minimum operational flow) targets in Penticton and/or Ellis Creeks.	Reduce municipal consumption by 10%. Meet fishery flow (or minimum operational flow) targets in Penticton and/or Ellis Creeks.	Reduce municipal consumption by 20%. Meet fishery flow (or minimum operational flow) targets in Penticton and/or Ellis Creeks.	Reduce consumption by 50%. Meet fishery flow (or minimum operational flow) targets in Penticton and/or Ellis Creeks.	Reduce consumption by 90%. Maintain minimum water supply to maintain community health and basic needs. As best as possible meet fishery flow (or minimum operational flow) targets in Penticton and/or Ellis Creeks.
Stage Triggers per Bylaw 2005-02	Upland storage volumes are >95% of storage capacity (based on time of year)	Upland storage volumes are 70-95% of storage capacity (based on time of year)	Upland storage volumes are 60-70% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be 90% of treatment capacity of the WTP and actual daily treated water demand is 5% above the five-year historic average.	Upland storage volumes are 60% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be >90% of treatment capacity of the WTP and actual daily treated water demand is 10% above the five-year historic average.	Upland storage volumes are 60% of storage capacity (based on time of year). Projected daily municipal water demand is estimated to be >95% of treatment capacity of the WTP and actual daily treated water demand is 10% above the five-year historic average.
Other Triggers per Decision Tree	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.	Status of local/regional snowpacks and streamflows, current and forecasted air temperature and precipitation, and regional water supply bulletins.
Okanagan Lake Drought Stage Triggers	1 st of the month elevation of Okanagan Lake is equal to or greater than the 1 st of the month target.	1 st of the month elevation of Okanagan Lake is lower than the 1 st of month target elevations and equal to or greater than the 20 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 20 th percentile 1 st of month elevation and greater than or equal to the 10 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 10 th percentile 1 st of month elevation and greater than or equal to the 5 th percentile 1 st of month elevation.	1 st of month elevation of Okanagan Lake is lower than the 5 th percentile 1 st of month elevation.
Provincial Drought Level ¹	Level 1	Level 2	Level 3	Level 3	Level 4
Regulation and Response	Alternating day watering schedule for outdoor water use to promote/ensure water conservation.	Water use restrictions are primarily focused on the reduction of residential outdoor and City Park water use. Agricultural water users encouraged to reduce water needs by matching irrigation with soil and crop types.	Implementation of a two-day a week residential sprinkler irrigation schedule, various reductions in City Park irrigation schedules, and a 10% reduction to golf course irrigation. Agricultural water users encouraged to reduce water use by decreasing (where possible) irrigated acreage or reducing irrigation to some lesser-value plants.	Residential sprinkler irrigation is restricted to a 1-day a week schedule and irrigation for City Parks, golf courses, and playing fields are restricted. Recreation (i.e., hot tubs, pools, and ponds) and commercial (i.e., car washes) outdoor water use restricted. Agricultural water users limited to irrigate only high-value perennial plants and to only irrigate at night.	Water supplies are limited to residential (indoor) use only; at the base (winter) demand rate (i.e., 12 ML/day). Elimination of residential, recreation (i.e., hot tubs, pools, and ponds), and commercial (i.e., car washes) outdoor water use. Agricultural water users restricted to irrigation for livestock and for high-value perennial plants only.
Communication	Normal levels of communication and education. Roll out best management and conservation practices.	Increased level of effort by the City – including communication and public education to understand actions necessary to reduce potential move to Stage 2.	High level of education and communication maintained.	High level of education and communication maintained.	City's Emergency Response Plan and Provincial Emergency Program invoked. High levels of communication and education maintained.
Enforcement	Normal	Increased enforcement and monitoring of large water users with warning issued if misuse is deemed to be occurring.	Lower tolerance for misuse and moderate fines issued.	Zero tolerance for misuse and moderate fines issued.	Zero tolerance for misuse and stiff fines issued.

Note:
 1. The provincial drought levels are independent of the drought stages used by the City but are aligned here only to provide guidance on general water supply conditions. The levels do not directly correlate to the City's system operations, water restrictions, and reservoir management.

REFERENCES

- AECOM Canada Ltd. (AECOM). 2010. Master Water Plan Addendum. Prepared for City of Penticton, June 2010.
- Associated Environmental Consultants Inc. (Associated). 2018. Drought Management Plan – Technical Assessment and Gap Analysis, Prepared for the City of Penticton, February 2018.
- Associated Environmental Consultants Inc. (Associated). 2017. Water Shortage Management Review for Greater Vernon Water. Prepared for the Regional District of North Okanagan, September 2017.
- Associated Environmental Consultants Inc. (Associated). 2016. Building Drought Resilience in the Okanagan – Phase 1: Gap Analysis and Recommendations. Prepared for the Okanagan Basin Water Board, January 2016.
- Associated Engineering (AE). 2004. Conceptual Design for Water Treatment at Warren Avenue Well – Technical Memorandum No. 2. Prepared for the City of Penticton, March 2004.
- BC Ministry of Environment and Climate Change Strategy (MECCS). 2018. British Columbia Drought Response Strategy. Inter-Agency Drought Working Group, June 2018.
- BC Ministry of Environment (MOE). 2016. Dealing with Drought – A Handbook for Water Suppliers in BC. Prepared for the Deputy Minister's Committee on Drought, updated July 2016.
- BC Ministry of Environment (MOE). 1982. Okanagan Basin Implementation Board - Summary Report on the Okanagan Basin Implementation Agreement, September 1982.
- Canada-British Columbia Okanagan Basin Agreement. 1974a. Water Quantity in the Okanagan Basin. Technical Supplement I to the Final Report. Office of the Study Director, March 1974.
- Canada-British Columbia Okanagan Basin Agreement. 1974b. Limnology of the Major Lakes in the Okanagan Basin. Technical Supplement V to the Final Report. March 1974.
- City of Penticton. 2017. Water Treatment Plant – Annual Report 2016. February 2017.
- City of Penticton. 2014. Dam Operation, Maintenance, Surveillance, and Emergency Action Plan. Revision H. December 2014.
- EarthTech and Aqua Consulting Inc. 2005. 2005 Water Study. Prepared for the City of Penticton, December 2005.
- Obedkoff, W. 1998. Streamflow in the Southern Interior Region. BC Ministry of Environment, Lands, and Parks, Water Inventory Section. December 1998.
- Okanagan Basin Water Board (OBWB). 2019. Drought Trigger Guidelines for Okanagan Mainstem Lakes and River. Prepared by the OBWB, May 2019.

Okanagan Nation Alliance (ONA). 2017. Fish Water Management Tool (FWMT) and Okanagan Lake Levels FAQ. <https://www.syilx.org/fish-water-management-tool-fwmt-okanagan-lake-levels-faq/>

Urban Systems Ltd. 2013. Penticton Creek Source Assessment. Prepared for City of Penticton, November 2013.

Urban Systems Ltd. 2009. Irrigation Master Plan. Prepared for City of Penticton, September 2009.

Winkler, R. 2010. Watershed Research Summary – Upper Penticton Creek. Streamline – Watershed Management Bulletin. 14(1): 24-25.

APPENDIX A - CITY OF PENTICTON IRRIGATION, SEWER, AND WATER BYLAW NO. 2005-02



This is a consolidated bylaw prepared by The Corporation of the City of Penticton for convenience only. The city does not warrant that the information contained in this consolidation is current. It is the responsibility of the person using this consolidation to ensure that it accurately reflects current bylaw provisions.

THE CORPORATION OF THE CITY OF PENTICTON

IRRIGATION, SEWER AND WATER BYLAW

NO. 2005-02

Consolidated for convenience only.

Amended by: Bylaw 2005-63 (Schedule G)
Amended by: Bylaw 2007-51 (Schedule F)
Amended by: Bylaw 2008-48
Amended by: Bylaw 2009-11 (Schedule E & G)
Amended by: Bylaw 2010-26 (Schedule E)
Amended by: Bylaw 2010-34 (Schedule E, F & G)
Amended by: Bylaw 2010-46- Mobile Home Park
Amended by: Bylaw 2012-5026 (Schedule G)
Amended by: Bylaw 2013-07 – Schedule F & G
Amended by: Bylaw 2013-37 (Schedule F & G)
Amended by: Bylaw 2014-27 (Schedule F)
Amended by: Bylaw 2015-05
Amended by Bylaw 2016-05 (Schedule G)

Irrigation, Sewer and Water Bylaw

THE CORPORATION OF THE CITY OF PENTICTON
BYLAW 2005-02

A BYLAW OF THE CORPORATION OF THE CITY OF
PENTICTON TO PROVIDE FOR THE SUPPLY, DISTRIBUTION AND USE
OF TREATED AND IRRIGATED WATER, AND THE COLLECTION
CONVEYANCE AND DISCHARGE OF SANITARY SEWAGE AND
STORM DRAINAGE INTO OR FROM THE IRRIGATION WATER,
TREATED WATER, SANITARY SEWER AND STORM SEWER
SYSTEMS OF THE CITY OF PENTICTON

WHEREAS pursuant to the Local Government Act and the Community Charter, Council is empowered to regulate and govern the distribution and use of treated and irrigation water and the collection, conveyance and discharge of sewage and drainage within the Municipality;

AND WHEREAS the City has adopted City of Penticton Waterworks Bylaw 2003-34 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS the City has adopted City of Penticton Irrigation Administration and Rates Bylaw 3626 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS the City has adopted City of Penticton Sewer Regulation Bylaw 3620 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS the City has adopted City of Penticton Boundaries of the Sewerage District Bylaw 3252 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS the City has adopted City of Penticton Conditions under which extensions to the Sewerage System Bylaw 2650 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS the City has adopted City of Penticton Domestic Water Extension Bylaw 1660 and any amendments hereto and now desires to amend that bylaw;

AND WHEREAS it is deemed expedient and in the public interest to:

1. Establish, operate, maintain and control an irrigation water system for the City of Penticton; and
2. Establish, operate, maintain and control a treated water distribution system for the City of Penticton; and
3. Establish a system of sewerage works for the collection, conveyance and disposal of sewage and to operate and maintain this system for the City of Penticton; and
4. Establish a storm water drainage system for the impounding, conveying and discharging of surface and other waters and to operate and maintain this system for the City of Penticton.

NOW THEREFORE the Municipal Council of The Corporation of The City of Penticton in open meeting assembled ENACTS as follows:

1. This bylaw may be cited for all purposes as the City of Penticton "Irrigation, Sewer and Water Bylaw 2005-02".
2. The City of Penticton Waterworks Bylaw 2003-34 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.
3. The City of Penticton Irrigation Administration and Rates Bylaw 3626 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.
4. The City of Penticton Sewer Regulation Bylaw 3620 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.
5. The City of Penticton Boundaries of the Sewerage District Bylaw 3252 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.
6. The City of Penticton Conditions under which extensions to the Sewerage System Bylaw 2650 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.
7. The City of Penticton Domestic Water Extension Bylaw 1660 and any amendments hereto is hereby repealed and replaced by Irrigation, Sewer and Water Bylaw 2005-02.

READ A FIRST time this 5th day of April, 2005.
 READ A SECOND time this 5th day of April, 2005.
 READ A THIRD time this 5th day of April, 2005.
 RECONSIDERED and FINALLY PASSED and ADOPTED
 This 18th day of April, 2005.

Original signed by

C. David Perry, Mayor

Original signed by

Leo den Boer, City Administrator

Certified a true copy of Bylaw No. 2005-02 as adopted.

Original signed by

Leo den Boer, City Administrator

SHORT TITLE

1. This bylaw may be cited as the "Irrigation, Sewer and Water Bylaw 2005-02".

DEFINITIONS

2. For the purposes of this bylaw and the schedules attached hereto, unless the context otherwise requires, the following definitions apply:
 - (a) "Adverse Effect" means impairment to the Utility, Sanitary Sewer System, Storm Sewer System, human health or safety, City Property or the environment.
 - (b) "Approved" means approved by the Designated Officer.
 - (c) "Backflow" means the reversal of the normal direction of water flow in either the City's water system, Owner's private service or the Owner's plumbing system.
 - (d) "Backflow Preventer" means a unit that prevents Backflow.
 - (e) "Best Available Demonstrated Technology (B.A.D.T.)" means treatment technology that is considered demonstrated based on usage in similar type applications and that is environmentally desirable based on its minimization of emissions through the application of best available technology in combination with good operating practices, where costs are not prohibitive considerations, and includes internal processing, operating, and use practices that maximize or enhance treatment technology performance.
 - (f) "British Columbia Building Code" means the British Columbia Building Code as amended from time to time.
 - (g) "Building" means a temporary or permanent structure used or intended for supporting or sheltering any use or occupancy.
 - (h) "Building Bylaw" means the City Building Bylaw 94 – 45 as amended from time to time.
 - (i) "Car Wash" means a Commercial or Industrial Building or structure containing facilities for washing motor vehicles, including tunnel car washes, coin operated automatic car washes and coin operated self-service car washes.
 - (j) "Chief Administrative Officer" means the Chief Administrative Officer of the City or an authorized representative.
 - (k) "City" means The Corporation of the City of Penticton.
 - (l) "City Engineer" means the City Engineer of the City or an authorized representative.
 - (m) "Clear Water Waste" means any water including water from the City's Treated Water System to which no Matter has been added.
 - (n) "Commercial" means any occupation, employment or enterprise that is carried on for profit by the Owner, lessee, or licensee.
 - (o) "Community Charter" means the Community Charter S.B.C. 203 c.26.

- (p) "Consumer" means any Person who could or does receive water from a City Irrigation Main or Treated Water Main adjacent to their Property, or discharges Waste Water into a City Sanitary Sewer Main adjacent to their Property or discharges Storm Water into a City Storm Sewer adjacent to their Property.
- (q) "Council" means the elected Council of the City.
- (r) "Cross Connection" means any actual or potential physical arrangement whereby the City's water supply is connected, directly or indirectly, with any non-potable or un-approved private water supply system, sewer drain, conduit, well, pool, on site irrigation system, storage Reservoir, plumbing Fixture, or any other device which contains, or may contain, contaminated water, liquid, gases, sewage, or other wastes, of unknown or unsafe quality which may be capable of imparting contamination to the City Treated Water Supply as a result of Backflow.
- (s) "Cross Connection Control Bylaw" means City Cross Connection Control Bylaw 93 – 24 as amended from time to time.
- (t) "Designated Officer" means an employee of the City or an authorized representative as designated in writing by the Chief Administrative Officer.
- (u) "Director of Development and Engineering Services" means the Director of Development and Engineering Services of the City or an authorized representative.
- (v) "Domestic" means for use within the home or dwelling place and does not include any Commercial, Industrial or Irrigation use.
- (w) "Environmental Management Act" means the Environmental Management Act of British Columbia, S.B.C. 2003 c. 53 and any amendments or regulations thereto.
- (x) "Fees and Charges Bylaw" means the City Fees and Charges Bylaw 2000 – 25 as amended from time to time.
- (y) "Fixture" means receptacle, appliance, apparatus or other device that discharges Sewage or Clear Water Waste and includes a floor drain.
- (z) "Industrial" means an occupation, employment or enterprise that is carried on for profit to: Process raw materials; manufacture or assemble semi finished or finished goods, products or equipment; cleaning servicing, repairing or testing of materials, goods and equipments associated with Industrial use; storage or shipping terminals; and distribution and sale of materials, bulk goods and equipment.
- (aa) "Infrastructure" means the Irrigation Water System, the Treated Water System, the Sanitary Sewer System and the Storm Sewer System or any combination thereof.
- (bb) "Irrigation" means the distribution of water from the Irrigation Water System or the Treated Water System to the surface or sub-surface of lawns, gardens, crops, orchards or other areas situated outside Buildings by pipes, hoses, sprinklers or any other method.
- (cc) "Irrigation Water Service" means the pipe used or intended to be used to conduct untreated Irrigation Water from the Irrigation Main to a Property.
- (dd) "Irrigation Main" means pipes and appurtenances installed in a Statutory Right of Way or easement registered in the Kamloops Land Title Office, road or otherwise for the transmission and distribution of untreated Irrigation Water.

- (ee) "Irrigation Roll" means a detailed list of Properties compiled by the Designated Officer of all Properties connected to the Irrigation Water System.
- (ff) "Irrigation Water System" means all Irrigation Water Mains, Irrigation Water Services, facilities, pump stations, Reservoirs, wells, water intakes and all associated appurtenances for untreated water of the City.
- (gg) "Irrigation Water" means untreated water for Irrigation purposes.
- (hh) "Irrigation Water Area" means the area as shown in Schedule "E" where Irrigation Water is available and charges are applicable.
- (ii) "Irrigation Water Service" means the pipe used or intended to be used to conduct Irrigation Water from the Irrigation Main to a Property.
- (jj) "Local Government Act" means the Local Government Act R.S.B.C. 1996 c. 323.
- (kk) "Matter" means any gaseous, liquid or solid substance.
- (ll) "Meters" means meters and other equipment or instruments used by the City or authorized by the City to be used to measure the amount of Treated Water or Irrigation Water consumed.
- (mm) "Oil and Grease Interceptor" means an in ground structure designed specifically to trap oil, grease and silt contained in Storm Water flows;
- (nn) "Over Strength Matter" means waste concentrations in excess of the concentrations specified in Schedule "D", and less than the concentrations specified in Schedule "C".
- (oo) "Over Strength Surcharge" means the charge per kilogram per cubic meter, as specified in the Fees and Charges Bylaw to be charged to a Consumer who releases Waste Water to the Sanitary Sewer System that exceeds the standards set in Schedule "D".
- (pp) "Owner" means the Person who has by law the management, control or custody of Property or use, and includes an authorized representative thereof.
- (qq) "Pathological Waste" means pathogenic or organisms that produce disease.
- (rr) "Permit to Discharge" means a permit issued by the Designated Officer that allows a Person to release Waste Water, Storm Water, Sub-surface Water or Clear-water Waste, in the form attached hereto as Schedule "A".
- (ss) "Person" means as defined in the Interpretation Act R.S.B.C. 1996 c.238 and any amendments thereto.
- (tt) "PH" means the expression of the acidity or basicity of a solution as defined and determined by the appropriate procedure described in Standard Methods;
- (uu) "Plumbing Device" means any type of plumbing apparatus, fitting, Fixture, piping, or hardware located in a dwelling place, Building or on private Property.
- (vv) "Premises" means a Building, an area of Property, including a lot or parcel of Property with or without Buildings.
- (ww) "Pre-Treatment" to use an Industrial or Commercial Waste Water treatment facility designed to remove sufficient pollutants from the Waste Water stream to allow compliance with the limits established in Schedule "C" or "D".

- (xx) "Private Service" means that portion of a Service located between the Property line and the Building or use being serviced.
- (yy) "Property" means a piece of real estate, a lot defined by Property Lines.
- (zz) "Property Line" means a line which defines the perimeter of Property which is legally defined by registered plan or description in the Kamloops Land Title Office.
- (aaa) "Release" means to directly or indirectly conduct Matter to the Sanitary Sewer System, Storm Sewer System, or any Water Course by spilling, discharging, depositing, abandoning, leaking, seeping, pouring, draining, emptying or by any other means.
- (bbb) "Remediation Site" means a site where a soil contaminant has been identified and has been, is being, or is planned to be removed or treated by remedial activity.
- (ccc) "Reservoir" means either a constructed, enclosed storage vessel for Treated Water or Irrigation Water or a natural, non enclosed impoundment area that utilizes natural topography and or a dam to retain untreated Water Irrigation or for future treatment.
- (ddd) "Restricted Waste" means waste concentrations in excess of the concentrations specified in Schedule "C".
- (eee) "Sanitary Sewer Area" the area as shown in Schedule "G" where Sanitary Sewer service is available and charges are applicable.
- (fff) "Sanitary Sewer Main" means a pipe or conduit installed in a Statutory Right of Way or easement registered in the Kamloops Land Title Office or otherwise that carries Waste Water, ground water, uncontaminated processor cooling water, but not Storm Water or Sub-Surface Water from foundation drains unless a Permit to Discharge has been issued.
- (ggg) "Sanitary Sewer Service" means the pipe used or intended to be used to conduct Waste Water, ground water, uncontaminated processor cooling water, but not Storm Water or Sub-Surface Water from foundation drains unless a Permit to Discharge has been issued, from a Property or Building to a Sanitary Sewer Main.
- (hhh) "Sanitary Sewer System" means all Sanitary Sewer Mains, Sanitary Sewer Services, sanitary lift stations, Waste Water treatment facilities, outfalls and all associated appurtenances of the City.
- (iii) "Septic System" means a septic tank, septic field, cesspool, Sanitary Sewage holding tank, sewage from recreational vehicles or sewage brought to a City facility by a truck.
- (iii) "Service" means either an Irrigation Water Service, Sanitary Sewer Service, Storm Sewer Service or Treated Water Service either separately or combined.
- (kkk) "Service Connection" means the installation of all pipes and appurtenances necessary to provide a Service or the connection of the Private Service to pipes owned by the City.
- (lll) "Service Failure or Interruption" means the failure or interruption of an Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service from working properly as a result of blockage, damage or freezing.
- (mmm) "Sewage" see definition for Waste Water.

- (nnn) "Shut Off" means an interruption in or discontinuance of the supply of water authorized by the City.
- (ooo) "Standard Methods" means the latest edition standard methods for examination of Water and Waste Water jointly prepared and published from time to time by the American Public Health Association, American Waterworks Association and the Water Environment Federation.
- (ppp) "Storm Sewer" means a pipe, conduit or ditch installed in a Statutory Right of Way or easement registered in the Kamloops Land Title Office road or otherwise for the collection and transmission of Storm Water, Sub-Surface Water from foundation drains and subject to the issuance of a Permit to Discharge Clear-Water Wastes.
- (qqq) "Storm Sewer Main" means a pipe or conduit installed in the Street that carries Storm Water, Sub-Surface Water from foundation drains or Clear-Water Wastes.
- (rrr) "Storm Sewer Service" means the pipe used or intended to be used to conduct Storm Water, Sub-Surface Water from foundation drains and subject to the issuance of a Permit to Discharge Clear-Water Wastes from a Property or Building to a Storm Sewer.
- (sss) "Storm Sewer System" means all Storm Sewer Mains, Storm Sewer Services, culverts, Storm Water lift stations, Storm Water management facilities, outfalls and all associated appurtenances of the City.
- (ttt) "Storm Water" means surface run-off water which is the result of natural precipitation.
- (uuu) "Street" shall include a road, lane, bridge, viaduct, Statutory Access Right of Way and any way open to the public use, but does not include a private right of way on private Property unless the contrary is expressed or unless such construction would be inconsistent with the context of this bylaw.
- (vvv) "Subdivision & Development Bylaw" means the City Subdivision & Development Bylaw 2004 – 81 as amended from time to time.
- (www) "Sub Surface Water" means water at a depth of not more than 15 meters beneath the surface of the ground and includes foundation drainage.
- (xxx) "Super Chlorinated Water" means water containing excessive amounts of chlorine as would result from disinfection of water mains.
- (yyy) "Termination" means the permanent Shut Off of an Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service.
- (zzz) "Traffic Bylaw" means the City Traffic Bylaw 94 – 39 as amended from time to time.
- (aaaa) "Treated Water" means water suitable for human consumption, that has been treated by a City treatment facility.
- (bbbb) "Treated Water Area" the area as shown in Schedule "F" where Treated Water is available and charges are applicable.
- (cccc) "Treated Water Main" means a pipe or conduit and appurtenances installed in a Statutory Right of Way or easement registered in the Kamloops Land Title Office, road or otherwise for the transmission and distribution of Treated Water.

- (dddd) "Treated Water Service" means the pipe used or intended to be used to conduct Treated Water from a Treated Water Main to a Property or Building.
- (eeee) "Treated Water System" means all Treated Water Mains, Treated Water Services, facilities, pump stations, Reservoirs, wells, water intakes, water treatment facilities and all associated appurtenances for Treated Water of the City.
- (ffff) "Treatment Capacity" is a measure of the amount of Treated Water the City can produce from its water treatment facilities.
- (gggg) "Turn On" means the authorization of water flow to a private Service by opening the required control valve.
- (hhhh) "Utility" means the Irrigation Water System, Treated Water System, Sanitary Sewer System and Storm Sewer System, owned and operated by the City.
- (iiii) "Waste Water" means the composite of waste and water carried wastes from residential, Commercial, Industrial or institutional Premises or any other source.
- (jjjj) "Water Course" means a natural or constructed, uncovered ditch, stream, creek, river, wetlands, lake or conduit in which un Treated Water moves or is located.
- (kkkk) "Zoning Bylaw" means the City Zoning Bylaw 87 – 65 as amended from time to time.

OPERATION OF THE UTILITY

- 3. The operation of the Utility shall be under the management and control of the Designated Officer.
- 4. The Designated Officer shall manage the Utility under the direction of the Chief Administrative Officer and/or Council.
- 5. The Designated Officer is authorized to Turn On and Shut Off water to any Consumer in accordance with this bylaw subject to the provision of advance notice except in the event of an emergency when notice may be given following Shut Off.

APPEAL PROCESS

6. Should any Person wish to appeal a decision made by the Designated Officer, pursuant to this bylaw they shall submit an appeal in writing to the Director of Development and Engineering Services within seven (7) days of the notification of the said decision. The Director of Development and Engineering Services shall within thirty (30) days of receipt of the said appeal render a decision in writing. The decision of the Director of Development and Engineering Services may be appealed in writing to the Chief Administrative Officer within seven (7) days, after notification thereof who shall within thirty (30) days of receipt render a decision in writing. The decision of Chief Administrative Officer shall be final.

GENERAL PROVISIONS AND RESTRICTIONS ON USE

7. No Person, except those authorized in writing by the Designated Officer, shall:
 - (a) Use, interfere with, obstruct or impede access to the Utility or any portion thereof in any manner;
 - (b) Drill, cut, connect, join, excavate, bury, disturb or otherwise interfere with the Utility;
 - (c) Operate any Utility valves, Service Connection valves or fire hydrants;
 - (d) Do anything that may cause the Treated Water System or the Irrigation Water System to become polluted or contaminated;
 - (e) Use the Treated Water or Irrigation Water pressure or flow to generate power; or
 - (f) Enter into any Utility Building or structure whether underground or above ground or any Utility Property whether fenced or not.
8. Private Treated Water Systems and private Sanitary Sewer Systems that supply water to or receive and treat Waste Water from more than one Property are not permitted.
9. No Person shall directly or indirectly cause, permit or allow the Release of water so that it runs to waste, whether by reason of leakage from underground piping, faulty plumbing, and improper Irrigation practices or otherwise unless the Release is being undertaken to drain a swimming pool or the Release is necessary to prevent the Irrigation Water Service or Treated Water Service from freezing.
10. No Person shall directly or indirectly Release or permit the Release of any Restricted Waste as specified in Schedule "C" to the Sanitary Sewer System or the Storm Sewer System.
11. No Person shall directly or indirectly Release or permit the Release of any Over Strength Matter as specified in Schedule "D" to the Sanitary Sewer System or the Storm Water Sewer System without a Permit To Discharge.
12. The Designated Officer may at such times and for such length of time as is considered necessary or advisable, regulate, restrict or prohibit Irrigation, car washing, pool filling, and any other form of water use including a total restriction of Treated Water and Irrigation Water use in order to reduce water usage during time of short supply.
13. The Designated Officer may at such times and for such length of time required restrict, or prohibit Irrigation Water use, sanitary and storm Sewage generation and Treated Water use or any other part or Fixture of the Utility to effect repairs.

14. The Designated Officer, upon reasonable notice, may inspect any Building or Premises: Provided with a Treated Water Service or Sanitary Sewer Service; provided with a Treated Water Meter or Irrigation Water Meter; where water reuse or recycling capability is provided or suspected to exist; where authorized Cross Connection control devices exist; where suspected unauthorized Cross Connection control devices exist; where backflow prevention devices exist or are suspected to exist; where sand traps, sumps, oil and grease traps or interceptors exist or are suspected to exist. At the request of the Designated Officer the Owner or proprietor of any business shall provide, to the reasonable satisfaction of the Designated Officer, proof that the requirements of this bylaw and the Cross Control Connection Bylaw are being met. In the event of non-compliance of a non-health threatening nature the Owner will have thirty (30) days to make the necessary modification and provide the necessary data with respect to such modification to the Designated Officer. If, after thirty (30) days the said modifications have not been completed in accordance with the requirements of this bylaw the Service to the Premises or Property may be Shut Off. In the case where the non-compliance is of a health threatening nature the Designated Officer may immediately Shut Off the Service to the Premises or Property.
15. The Designated Officer may, as a condition of connection to the Utility, inspect the Premises of any Person who applies to the City for a connection in order to determine if it is appropriate to permit a connection to such Premises and to determine whether such Premises comply with the bylaws of the City.
16. The Designated Officer may, inspect Premises in order to perform any test on piping or Fixtures in or on such Premises in order to determine whether this bylaw is being complied with, and in the event that such Owner fails or refuses to give such permission, Service to the Premises may be Shut Off upon fourteen (14) days written notice or such shorter period of time if the Designated Officer has reasonable grounds to believe that there may be a danger to public health.
17. If a Person requires a Utility connection to be Shut Off or turned on for their own purposes, the Person shall pay the amount specified in the Fees and Charges Bylaw.
18. The location of the Utility connection to a Property shall be in accordance with the Subdivision & Development Bylaw or as determined by the Designated Officer.
19. In the event it is possible to provide a Utility connection from more than one main the Designated Officer shall determine which main is to be used.

IRRIGATION WATER SYSTEM - General

20. The Irrigation Water Area is that area described in Schedule "E" of this bylaw.
21. The Irrigation Water System shall only be used to supply untreated Irrigation Water for the purposes of Irrigation, by the City for the purposes of fire protection and when supply conditions permit for the filling of water storage systems.

22. The City does not guarantee Irrigation Water pressure or continuous supply. The City reserves the right, at any time and all times, without notice, for whatever reason, to change the operating Irrigation Water pressure or Shut Off Irrigation Water. Neither the City, its elected officials, officers, employees, or agents shall be liable for any damage or other loss caused by changes in Irrigation Water pressure or Shutting Off of Irrigation Water or by reason of the Irrigation Water containing sediments, deposits, or other foreign Matter.
23. The Designated Officer may impose water conservation restrictions on users of the Irrigation Water System. The said restrictions may be done in consultation with the Owners taking into consideration crop type, point in the growth cycle, type of on-site Irrigation system employed and available and predicted Irrigation Water and Treated Water supply volume.
24. A Person who contravenes the water conservation restrictions referred to in Section 23 of this bylaw is guilty of an offence punishable on summary conviction and is liable to a fine of not less than \$50.00 for the first offence, \$100.00 on the second offence and if the offence is of a continuing nature to a fine not less than \$500.00 for each day the offence is continued.
25. Persons requiring a continuous and uninterrupted supply or constant pressure of Irrigation Water shall, at their own cost, provide such facilities as required to meet their objectives in a manner that does not have a negative impact on the Irrigation Water System or other users.
26. No Person shall sell, give, dispose or distribute Irrigation Water to any Person or Persons.
27. No Irrigation Water shall be provided to any Property except those:
 - (a) That are within the Irrigation Water Area as shown in Schedule "E"; and
 - (b) That are on the City Irrigation Roll or for which an application has been made in the prescribed form has been Approved by the Designated Officer.
28. The Designated Officer shall distribute all available Irrigation Water from the Irrigation Water System for Irrigation use as equitably as possible and is authorized to:
 - (a) Rotate the delivery of Irrigation Water to Properties with an Irrigation Water Service;
 - (b) Adjust delivery of Irrigation Water including Shutting Off the Irrigation Water Service to compensate for any previous excessive delivery or for any shortage in previous delivery to a Property as compared to the maximum rate of delivery per hectare and the amount of Irrigation Water available for distribution; and
 - (c) Determine the maximum rate of delivery per hectare.

IRRIGATION WATER SYSTEM – Service Connections

29. The provision of an Irrigation Water Service connection shall at all times be subject to the terms and conditions set out in this bylaw and the charges designated in the Fees and Charges Bylaw.
30. Irrigation Water Service connections shall not cross Property Lines between adjacent private Properties except by right of way easements registered in the Kamloops Land Title Office.
31. The Owner shall pay for: Any standard Meter installations; any unusual Meter installation design to the acceptance of the Designated officer; any Meter installations, Meter reading costs and Backflow prevention devices associated with Irrigation Water Service connections which cross Property Lines or enter or leave Buildings.

32. Application for an Irrigation Water Service connection shall be made to the Designated Officer in the prescribed form not less than sixty (60) working days prior to the Irrigation Water Service being required. The application shall describe the Property to which the Irrigation Water Service is required, the size of the Service requested, soil type, crop type and shall include a survey plan prepared by a British Columbia Land Surveyor which shows the location and total number of cultivable and irrigable hectares on the Property and all existing and any required right of way easements.
33. To be eligible for a connection to the Irrigation Water System the following conditions apply:
 - (a) The Property must be located in the area described in Schedule "E";
 - (b) There must be an Irrigation Main of sufficient size adjacent to the Property or an Irrigation Main of sufficient size accessible via a right of way easement registered in the Kamloops Land Title Office through an adjacent Property;
 - (c) The Irrigation Water System must be capable of providing water at an adequate pressure and flow rate to meet the Irrigation needs of the intended land use; and
 - (d) The connection must not prejudicially affect the prior rights of any of the parties to the use of the water intended to be conveyed and distributed by the connection.
34. Home site severances are exempt from the conditions referred to in Section 33 of this bylaw.
35. More than one connection to the Irrigation Water System per Property may be allowed subject to the written approval of the Designated Officer.
36. Applications to connect to the Irrigation Water System shall be reviewed by the Designated Officer, including any additional information that may be required and a report, which addresses the conditions of eligibility and the terms and conditions of this Bylaw, shall be generated.
37. If the Designated Officer, after reviewing and considering an application for connection to the Irrigation Water System, determines that an Irrigation Water Service connection is warranted the Designated Officer shall approve the connection, including setting the size of the service, subject to the Owner:
 - (a) Paying the City all costs of the installation of the connection and any Metering and reading devices;
 - (b) Providing any Statutory Rights of Way registered in the Kamloops Land Title Office with respect to the connection;
 - (c) Having more than one connection per Property, paying all additional City costs associated with the installation, maintenance and reading of any Metering devices; and
 - (d) Designing, arranging and paying for any unusual Meter or Meter installation which may be required to properly measure the Irrigation Water entering or leaving the Property. Design to be approved by the Designated Officer.
38. The connection, installation, alteration and termination of Irrigation Water from the main to a Property Line shall be undertaken only by the City at a point in time and location determined by the City.

39. Where an Owner has requested an Irrigation Water Service Termination the City shall shut Off the Irrigation Water supply and cap the Irrigation Water Service line at a point in time determined by the City.

TREATED WATER SYSTEM - General

40. The Treated Water Area is that area described in Schedule "F" of this bylaw.
41. The Treated Water System shall only be used to supply Treated Water to customers for purposes permitted in this bylaw subject to the following restrictions:
- (a) Properties in Area A of Schedule "F" shall only use Treated Water for Domestic purposes; and
 - (b) Properties in Area B of Schedule "F", with a connection to the Irrigation Water System, are prohibited from using Treated Water for Irrigation purposes.
42. The City does not guarantee Treated Water pressure, continuous supply or direction of Treated Water flow. The City reserves the right at any and all times, without notice, for whatever reason to change the operating pressure, to Shut Off Treated Water or to change the direction of flow. Neither the City, its elected officials, officers, employees, nor agents shall be liable for any damage or other loss caused by changes in water pressure, Shutting Off of Treated Water or change in direction of flow or by reason of the Treated Water containing sediments, deposits, or other foreign Matter.
43. The Designated Officer has the right to impose Treated Water restrictions on users of the Treated Water System as follows:
- (a) Stage 1
Restrictions:
 - i. Odd numbered Street addresses may irrigate on the odd numbered days of the month only. Even numbered Street addresses may irrigate on the even numbered days of the month only. Automatic Irrigation systems to be programmed to run between the hours of 2200 and 0400 only on the designated day. Manual Irrigation may occur between 1900 and 2200 and 0600 and 0800 hours only on the designated day. Properties zoned RSM – Mobile Home Park may use their respective unit numbers in place of the street address to determine odd or even for the purpose of this restriction.
 - ii. City Parks with a Level 1 water requirement designation may irrigate 3 to 5 days per week, except for hanging baskets which may be watered once per day.
 - iii. City Parks with a Level 2 water requirement designation may irrigate 2 to 3 days per week.
 - iv. City Parks with a Level 3 water requirement designation may irrigate 1 day per week.
- Triggers:
Restrictions to be employed between May 1 and August 31 unless otherwise imposed by the Designated Officer.

(b) Stage 2

Restrictions:

- i. Odd numbered Street addresses may irrigate on Saturday and Tuesday only. Even numbered Street addresses may irrigate on Sunday and Wednesday only. Automatic Irrigation systems to be programmed to run between the hours of 2200 and 0400 only on the designated day. Manual Irrigation may occur between 1900 and 2200 and 0600 and 0800 hours only on the designated day. Properties zoned RSM – Mobile Home Park may use their respective unit numbers in place of the street address to determine odd or even for the purpose of this restriction.
- ii. City Parks with a Level 1 water requirement designation may irrigate 3 days per week.
- iii. City Parks with a Level 2 water requirement designation may irrigate 2 days per week.
- iv. City Parks with a Level 3 water requirement designation may irrigate 1 day per week.
- v. Golf courses must reduce their total Irrigation water use by 10%.

Triggers:

Restrictions to be imposed at the discretion of the Designated Officer in consideration of but not limited to:

- i. Projected daily demand expected to reach 90% of Treatment Capacity.
- ii. Actual daily Treated Water demand 5% above the five (5) year historic average daily demand for the same day.
- iii. Water Reservoir levels at 60 – 70% capacity without any indication of recovery.
- iv. Failure or malfunction of a short term nature of the Treated Water System.
- v. Projected drought conditions from the Ministry of Water, Land and Air Protection.

(c) Stage 3

Restrictions:

- i. Odd numbered Street addresses may irrigate on Tuesday only. Even numbered Street addresses may irrigate on Wednesday only. Automatic Irrigation systems to be programmed to run between the hours of 2200 and 0200 only on the designated day. Manual Irrigation may occur between 2000 and 2300 hours only on the designated day. Properties zoned RSM – Mobile Home Park may use their respective unit numbers in place of the street address to determine odd or even for the purpose of this restriction.
- ii. City Parks with a Level 1 water requirement designation may irrigate 2 days per week.
- iii. City Parks with a Level 2 water requirement designation may irrigate 1 day per week.
- iv. City Parks with a Level 3 water requirement designation may irrigate 1 day per week.
- v. Golf courses must eliminate the use of automatic Irrigation systems and are restricted to hand sprinkling of greens and tees as required to maintain plant material with a hose equipped with a manual shut off.

- vi. No Irrigation of golf courses in the rough play areas, practice ranges and non-essential playing areas.
- vii. No Irrigation of playing fields, school yards and cemeteries other than one day a week.
- viii. No running of City water parks.
- ix. No filling or refilling of garden ponds, hot tubs and swimming pools.
- x. No operation or use of Commercial Car Washes unless carwash pressure reduced to less than 4,140 kpa (600psi).

Triggers:

Restrictions to be imposed at the discretion of the Designated Officer in consideration of but not limited to the following:

- i. Projected Treated Water demand to remain above 90% of Treatment Capacity
- ii. Actual daily Treated Water demand is 10% above the five (5) year historic average daily demand for the same day.
- iii. Water Reservoir levels at 60% capacity.
- iv. Failure or malfunction of a medium term nature of the Treated Water System.
- v. Projected prolonged drought conditions by the Ministry of Water, Land and Air Protection.

(d) Stage 4

Restrictions:

- i. No Irrigation permitted; of property other than those described in Section 43 (d) ii.
- ii. No Irrigation of golf courses, City parks, playing fields, school yards and cemeteries except where necessary to maintain plant material by the use of a hose equipped with a manual shut off.
- iii. No Irrigation of golf courses in the rough play areas, practice ranges and non-essential playing areas.
- iv. No filling or refilling of garden ponds, hot tubs and swimming pools.
- v. No running of City water parks.
- vi. No operation or use of Commercial Car Washes.

Triggers:

Restrictions to be imposed at the direction of the Designated Officer in consideration of but not limited to the following:

- i. Projected demand to remain above 95% of Treatment Capacity.
- ii. Failure or malfunction of a long term nature of the Treated Water System or Water Reservoirs used by the Utility.
- iii. Prolonged power outage.
- iv. Natural disaster that causes severe damage to the Treated Water System.

v. Natural disasters that require high volumes of Treated Water.

44. A Person who has just placed new sod or planted a newly seeded lawn may apply to the Designated Officer for a permit to water outside of the Treated Water use restrictions referenced in Section 43. The Designated Officer will consider the request and may issue a permit for the applicant to water outside of the Treated Water use restrictions for a period of 21 days. The permit, date of issue and ending date must be prominently displayed on the front lawn.
45. A Person who contravenes the water conservation restrictions contained in this bylaw is guilty of an offence punishable on summary conviction and is liable to fines as follows:
 - (a) Stage 1 Restriction violation - of not less than \$25.00 for the first offence, \$50.00 on the second offence and if the offence is of a continuing nature to a fine not less than \$500.00 for each day the offence is continued.
 - (b) Stage 2 Restriction violation - of not less than \$50.00 for the first offence, \$100.00 on the second offence and if the offence is of a continuing nature to a fine not less than \$500.00 for each day the offence is continued.
 - (c) Stage 3 Restriction violation - of not less than \$100.00 for the first offence, \$200.00 on the second offence and if the offence is of a continuing nature to a fine not less than \$500.00 for each day the offence is continued.
 - (d) Stage 4 Restriction violation - of not less than \$200.00 for the first offence, \$400.00 on the second offence and if the offence is of a continuing nature to a fine not less than \$500.00 for each day the offence is continued.
46. Persons requiring a continuous and uninterrupted supply, constant pressure or temperature of Treated Water, or having processes or equipment that require particularly clear or pure water shall, at their own cost, provide such facilities as required to meet their water quantity and quality objectives in a manner that does not have negatively impact upon the Treated Water System or other users.
47. No Person shall sell or distribute Treated Water unless the sale or distribution of Treated Water is by a landlord to a tenant or by a strata corporation to a member and that the charge to the tenant or member for Treated Water use does not exceed the amount charged by the City or unless the sale is in the form of bottled water or in the form of water for which you bring you own bottle or container and have it filled.

TREATED WATER SYSTEM – Cross Connections

48. No private water supply shall be connected to the Treated Water System unless it is authorized in writing by the Designated Officer and it is done in accordance with the Cross Connection Control Bylaw.
49. No Person shall cause, permit, or allow to remain connected to the Treated Water System any piping, Fixture, fitting, container, or other appliance which may cause water from a source other than the Treated Water System, or any other harmful deleterious liquid or substance, to enter the Treated Water System.
50. Where the City has reasonable grounds to believe unauthorized Cross Connection is in use the Designated Officer may enter onto the Property and any Buildings thereon for the purpose

of inspection and in the event that an unauthorized Cross Connection is identified the Designated Officer may:

- (a) Shut Off any Treated Water Service immediately;
 - (b) Issue written notice to the Owner to have such conditions corrected in accordance with this bylaw and or the Cross Connection Control Bylaw within a defined period of time; or
 - (c) Direct that an Approved Backflow Preventer be installed and maintained at the Owner's expense.
51. The design, selection, installation, maintenance, and field testing of Backflow Preventers shall comply with City Bylaws as amended from time to time and shall be as Approved by the Designated Officer.
52. All Backflow Preventers shall be installed so they are easily accessible for testing and maintenance and may be required to be installed on the customer's water piping at the sources of potential or actual contamination and/or on the Treated Water Service line.
53. No bypass, jumper, or other device shall be installed on the Treated Water Service line which may reduce the effectiveness of or circumvent any Backflow Preventers.
54. Backflow Preventers shall be field tested by a Certified Backflow Preventer Tester authorized by the Designated Officer at the Owner's cost, at the time of installation, thereafter annually, during repair, overhaul, relocation, cleaning or as required by the Designated Officer. Copies of the test results shall be submitted to the Designated Officer within forty eight (48) hours thereafter. In the event of test failure, the Owner shall have ninety-six (96) hours thereafter to correct the problem to the satisfaction of the Designated Officer.
55. Where an Owner fails to have a Backflow Preventer tested the Designated Officer may notify the Owner that the Backflow Preventer must be tested within ninety-six (96) hours of the Owner receiving notice.
56. Where the Owner fails to comply with a notice given by the Designated Officer, in accordance with this bylaw, the Designated Officer may cause the supply of the Treated Water Service to be Shut Off.
57. The Treated Water Service from the Treated Water System shall not be turned on at the curb stop for occupancy use until the private plumbing system has been Approved by the Designated Officer provided however temporary use of the Treated Water Service for construction purposes is permissible for a limited time provided the Designated Officer is satisfied that adequate provision is made to prevent Backflow into the Treated Water System.
58. The Designated Officer may enter Buildings or Premises provided with a Backflow prevention device or assembly for the purpose of inspection and testing.

TREATED WATER SYSTEM - Plumbing

59. No Consumer shall connect or allow to remain connected any apparatus, fitting or Fixture which may cause pressure surges, or any other disturbance which may, in the opinion of the Designated Officer, result in damage or enjoyment to any other Consumer of the Treated Water System or any damage to the Treated Water System.

60. The Designated Officer has the right of access to any Building or Premises supplied by the Treated Water System for the purposes of inspection and testing of plumbing devices.
61. All Plumbing Devices connected to the Utility shall conform to the British Columbia Building Code, the British Columbia Plumbing Code, the Cross Connection Control Bylaw and the Building Bylaw.

TREATED WATER SYSTEM - Hydrants

62. All new City hydrants or privately owned hydrants shall be installed in accordance with the Subdivision & Development Bylaw.
63. Hydrants installed on City owned water lines shall become the property of the City and the City shall have full responsibility and control over the maintenance and operation of such hydrants.
64. All existing and/or future hydrants installed on privately owned water lines shall be the property of the Owner and shall be maintained by and at the cost of the Owner on an annual basis to the satisfaction of the Designated Officer.
65. All existing privately owned hydrants on private Property shall not be removed or otherwise made unserviceable without the prior written authorization of the City.
66. The City shall be notified by the Owner immediately when any existing privately owned hydrant is determined to be in a condition that would render it unusable for fire suppression purposes.
67. All City and privately owned hydrants shall only be operated by City employees or those authorized to do so by the Designated Officer.
68. No Person shall obstruct free access to any hydrant. No vehicle, Building, fence, tree, shrub, snow pile or any other obstacle shall be placed within two (2) meters of any hydrant.
69. The use of City and privately owned hydrants for Irrigation purposes is prohibited.
70. Water from a City owned hydrant or un-metered water from a privately owned hydrant shall not be used for purposes other than fighting fires except as provided in Section 71 of this bylaw.
71. City owned hydrants may be used by employees of the City or by contractors for furnishing water for temporary water supply, Street cleaning, flushing sewers, Street repairs or any other purpose as Approved by the Designated Officer. Contractors shall apply to the Designated Officer in the prescribed manner and pay the fee as specified in the Fees and Charges Bylaw. All hydrant hookups require a Backflow Preventer assembly.

TREATED WATER SYSTEM – Service Connections

72. The provision of a Treated Water Service connection shall at all times be subject to the terms and conditions set out in this bylaw and the charges designated in the Fees and Charges Bylaw.
73. Treated Water Service connections shall not cross Property Lines between adjacent private properties except by right of way easements registered in the Kamloops Land Title Office.

74. The Owner shall design, arrange and pay for any unusual Meter or Meter installations, Meter reading costs and Backflow Preventer Devices which may be required to properly measure Treated Water entering or leaving the Property or Buildings.
75. A Property may have only one (1) Treated Water Service connection unless authorization is obtained from the Designated Officer who will consider the following in making a determination:
- (a) The reason an additional Treated Water Service connection is being requested.
 - (b) The impact of the additional Treated Water Service connection on the Property Owner or adjacent Property Owner.
 - (c) The impact of the additional Treated Water Service connection on the Treated Water System.
 - (d) Age and maintenance history of the Treated Water Service(s).
 - (e) The required capacity of the Treated Water Service connections combined or otherwise. **(Bylaw 2015-05)**
76. Application for a Treated Water Service connection shall be made to the Designated Officer in the prescribed form not less than fourteen (14) working days prior to the Service being required. The application shall indicate the Property to which the Treated Water Service connection is required, the size of the Service requested, the intended use of the Property and include a British Columbia Land Surveyor survey plan which shows all existing and any required statutory right of way or right of way easements.
77. In general the application for a Treated Water Service connection shall be followed by an application for a plumbing permit prior to making any connection between the pipes located in any Street and pipes located on private Property.
78. To be eligible for a connection to the Treated Water System the following conditions must apply:
- (a) The Property requesting a connection must be in the Treated Water Area, Schedule "F";
 - (b) The connection shall serve only one (1) Property unless the conditions as prescribed in Section 75 herein where upon it will be permissible to have up to a maximum of two (2) water connections to one (1) Property;
 - (c) The current capacity of the Treated Water System is capable of supporting the connection without having a negative impact on existing Consumers as determined by the Designated Officer;
 - (d) Properties within Area A of Schedule "F" of the Treated Water Area must have a minimum of 2.02 irrigable hectares on the Irrigation Roll;
 - (e) Properties within Area A of Schedule "F" of the Treated Water Area must have an Irrigation Water Service connection; and
 - (f) Properties within Area A of Schedule "F" of the Treated Water Area must use the Treated Water connection for Domestic purposes only.

79. Home site severances are exempt from the conditions noted in 78 of this bylaw.
80. To be eligible to maintain a connection to the Treated Water System in Area A of Schedule "F" the Treated Water is to be used only for Domestic purposes.
81. Applications for connection to the Treated Water System shall be reviewed by the Designated Officer, including any additional information that may be required and a report, which addresses the conditions for eligibility and the terms and conditions of this bylaw, shall be generated.
82. If the Designated Officer after reviewing and considering an application for connection to the Treated Water System determines that a connection is warranted the Designated Officer shall approve a connection, including setting the size of the connection, subject to the Owner:
 - (a) Paying the City all costs of the installation of the connection and any Metering or other reading devices;
 - (b) Providing any Statutory Right of Ways or right of way easements required for the connection;
 - (c) In the event of more than one connection paying all additional City costs associated with the installation, maintenance and reading of any additional Metering devices; and
 - (d) Designing, arranging and paying for any unusual Meter or Meter installation which may be required to properly measure Treated Water entering or leaving the Property. Design to be approved by the Designated Officer.
83. The connection, installation, alteration and termination of the Treated Water Service from the main to the Property Line shall be paid for by the Owner and undertaken only by the City at a point in time and location determined by the City.
84. Where an Owner has requested a Treated Water Service termination the City shall Shut Off the Treated Water Service and cap the Treated Water Service lines at a point in time determined by the City.
85. The Owner shall be responsible for the condition of the curb stop cap, curb stop stem and telescoping curb box. If the curb box is bent or the curb stop cap is buried by earth, rock, asphalt, concrete or for any other reason, the Owner shall pay the actual cost of locating, excavating, cutting and joining and all other work necessary to straighten the rod and stem, or to raise or lower the curb box to match existing grade.
86. Application for a temporary Treated Water Service shall be made in writing to the Designated Officer not less than fourteen (14) working days before the Treated Water Service is required, and in prescribed form. The provision of the temporary Treated Water Service shall be undertaken by the City and the Owner shall be responsible for the payment of all costs as set out in the Fees and Charges Bylaw.
87. Applications for the Shut Off or turn on of Utility connections shall be made in writing to the Designated Officer prior to 1000 hours to receive same day service and shall be in prescribed form. Application for Shut Off or turn on received after 1000 will be addressed on the next business day or on the next non work day subject to the payment of the appropriate fee. Applications for Shut Off will only be accepted from the Utility account holder or from the Property Owner if they certify that the Premises are no longer being occupied.

SANITARY SEWER SYSTEM – General

88. The Sanitary Sewer Area is that area depicted in Schedule “G” of this bylaw.
89. No Person shall release, or permit the release of, any Matter into the Sanitary Sewer System except:
- (a) Domestic Waste Water that complies with the requirements of this bylaw;
 - (b) Industrial/Commercial Waste Water that complies with the requirements of this bylaw;
 - (c) Over Strength Matter, as described in Schedule “D”, Storm Water, Clear-Water Waste, Sub-Surface Water from foundation drains, or other Matter where a Permit to Discharge has been issued by the Designated Officer;
 - (d) Swimming pool water.
90. Notwithstanding anything herein to the contrary no Person shall Release or permit the Release of any of the following into the Sanitary Sewer System:
- (a) Any waste, liquid or material classified as a ‘Hazardous Waste’ pursuant to the provisions of the Environmental Management Act and amendments thereto;
 - (b) Matter which, in the opinion of the Designated Officer, may cause:
 - i. A hazard to human health and that cannot be effectively mitigated by Waste Water treatment;
 - ii. A hazard to the environment;
 - iii. An adverse effect on the Sanitary Sewer System; or
 - iv. The Waste Water treatment plant, during normal operation, to be unable to meet the requirements of any other agency having jurisdiction over discharges to the receiving waters;
 - (c) Waste Water or Matter having:
 - i. A temperature greater than 65°C;
 - ii. A pH less than 5.5 or greater than 10.5;
 - iii. A Restricted Waste as described in Schedule “C”; or
 - iv. Been received from a Septic System unless it is discharged at an Approved City facility.
91. No Person shall Release or permit the Release of any of the following into the Sanitary Sewer System unless a Permit to Discharge has been issued by the Designated Officer:
- (a) Run-off from melt or natural precipitation;
 - (b) Storm Water;
 - (c) Clear Water Waste;
 - (d) Sub-Surface Water from foundation drains; or
 - (e) Over Strength Matter as described in Schedule “D”.
92. No Person shall dilute Waste Water for the purpose of avoiding the requirements of this bylaw.

93. Where a Person needs to or is releasing Waste Water that cannot meet the requirements of Sections 89 or 91 of this bylaw or where the volume of discharge of Waste Water is considered by the Designated Officer to be unusually high the Designated Officer may require a Permit to Discharge. Application for a Permit to Discharge, including all required test data, shall be made to the Designated Officer in the prescribed form and the required fees shall be paid as designated in the Fees and Charges Bylaw. The Designated Officer will review the application and determine whether to issue a Permit to Discharge. Conditions may be placed on the Permit to Discharge that may include the requirement for Pre-Treatment to a specified level, payment of an Over Strength Surcharge, flow regulation, monitoring or control manholes, testing and monitoring and may be subject to a negotiated fee for excessive quantities of Waste Water.
94. Where Best Available Demonstrated Technology ("B.A.D.T.") for a class of industry cannot meet the Restricted Waste or Over Strength Matter concentration levels set out in Schedules "C" or "D", the Designated Officer may, pursuant to the Permit to Discharge, authorize the concentration levels achievable through the use of B.A.D.T. for that class of industry as the concentration levels above which the Waste Water will be designated a Restricted Waste Water or Over Strength Matter.

SANITARY SEWER SYSTEM – On Site, Plumbing and Service Connection

95. Commercial garages, service stations, businesses that wash or lubricate motor vehicles, or businesses that wash aggregates or soils shall be provided with a readily accessible sand trap, sump and Oil and Grease Interceptors or traps located as close as possible to the source of the washing of aggregates or soils and they shall be maintained in good working order by the Owner. All interceptors shall have sand and silt removed from sand traps before materials occupy 25% of liquid depth. Accumulated oil and grease shall be skimmed off the surface of the interceptors and other sumps regularly to prevent accumulated oil and grease from escaping to the Sanitary Sewer. The design of such sand trap, sump and oil interceptor are to be Approved by the Designated Officer.
96. Cafe, restaurant, or other food service outlets shall be provided with readily accessible grease interceptor or trap located as close as possible to the source and they shall be maintained in good working order by the Owner. The design of such a grease trap or interceptor shall be Approved by the Designated Officer.
97. The Designated Officer shall have the right of access to any Building or Premises required to have a sand trap, sump, or oil and grease trap or interceptor for the purposes of inspection and testing.
98. The Designated Officer shall have the right to require that Backflow flapper type valves be installed in order to prevent homes from being flooded from a Sanitary Sewer back up.
99. All plumbing connected to the Utility shall conform to the British Columbia Plumbing Code, British Columbia Building Code and the Building Bylaw.
100. Where Sanitary Sewer volumes are highly variable the Designated Officer shall have the right to require that volume control devices be installed to equalize discharge volumes.
101. On all new Sanitary Sewer connections the Owner shall install a Sanitary Sewer Service inspection chamber and on Property zoned as Commercial and Industrial according to the Zoning Bylaw of the City. The Owner shall also install a monitoring point that meets the requirements of the Designated Officer.

102. Equipment necessary to comply with Sections 95, 96, 98, 100 and 101 of this bylaw shall be paid for, provided, maintained and operated by the Owner in a manner satisfactory to the Designated Officer.

SANITARY SEWER SYSTEM– Service Connections

103. The provision of a Sanitary Sewer Service connection shall at all times be subject to the terms and conditions set out in this bylaw and the charges designated in the Fees and Charges Bylaw.
104. Sanitary Sewer Service connections shall not cross Property Lines between adjacent private Properties except by Statutory Right of Ways or right of way easements registered in the Kamloops Land Title Office.
105. A Property may have only one (1) Sanitary Sewer Service connection unless authorization is obtained from the Designated Officer who will consider the following in making a determination:
- (a) The reason an additional Sanitary Sewer Service connection is being requested.
 - (b) The impact of the additional Sanitary Sewer Service connection on the Property Owner or adjacent Property Owner.
 - (c) The impact of the additional Sanitary Sewer Service connection on the Sanitary Sewer System.
 - (d) Age and maintenance history of the Sanitary Sewer Service(s).
 - (e) The required capacity of the Sanitary Sewer Service connections combined or otherwise. **(Bylaw 2015-05)**
106. The maximum number of Sanitary Sewer Service connections allowed to any Property pursuant to Section 105 of this bylaw is two (2).
107. Application for a Sanitary Sewer Service connection shall be made to the Designated Officer in the prescribed form not less than fourteen (14) days prior to the Sanitary Sewer Service connection being required. The application shall describe the Property to which the Sanitary Sewer Service connection is required, the size of the service requested the intended use of the Property and include a British Columbia Land Surveyor survey plan which shows all existing and any required Statutory Right of Ways or right of way easements.
108. In general the application for a Sanitary Sewer Service connection shall be followed by an application for a plumbing permit prior to making any connection between the pipes located in the Statutory Right of Way or right of way easement and pipes located on private Property.
109. To be eligible for a connection to the Sanitary Sewer System the following conditions must apply:
- (a) The Property requesting a connection must be in the Sanitary Sewer Area, Schedule "G";
 - (b) The connection shall serve only one (1) Property unless the conditions pursuant to Section 105 of this bylaw have been satisfied where upon it will be permissible to have up to a maximum of two (2) Sanitary Sewer Service connections; and

- (c) The current capacity of the Sanitary Sewer System is capable of supporting the connection without having a negative impact on existing Consumers as determined by the Designated Officer.
- 110. Applications for Sanitary Sewer Service connections shall be reviewed by the Designated Officer, including any additional information that may be required and a report, which addresses the conditions of eligibility and the terms and conditions of this bylaw, shall be generated.
- 111. If the Designated Officer after reviewing and considering the application for Sanitary Sewer Service connection determines that a connection is warranted the Designated Officer shall approve a connection, including setting the size of the connection, subject to the Owner:
 - (a) Paying the City all costs of the installation of the connection;
 - (b) Obtaining and meeting any requirements for a Permit to Discharge;
 - (c) Meeting any requirements for monitoring or control points, flow control, sand traps, Oil and Grease Interceptors; and
 - (d) Providing any Statutory Right of Ways or right of way easements required for the connection.
- 112. In the event that the Sanitary Sewer Service connection replaces an onsite septic tank located on the Property the sludge or deposits from the septic tank must be removed and the septic tank filled in with suitable fill material approved by the Designated Officer.
- 113. The connection, installation, alteration and Termination from the Sanitary Sewer Main to the Property Line shall be undertaken only by the City at a point in time and location determined by the City.
- 114. Where an Owner has requested a Sanitary Sewer Service Termination the City shall cap the Sanitary Sewer Service Line at a point in time determined by the City.

STORM SEWER SYSTEM – General

- 115. No Person shall Release or permit the Release of any Matter into the Storm Sewer System or any watercourse, except:
 - (a) Storm Water and run-off from melt of natural precipitation that complies with the requirements of this bylaw;
 - (b) Sub-Surface Water that complies with the requirements of this bylaw;
 - (c) Water resulting from Street cleaning and de-chlorinated hydrant flushing;
 - (d) Water resulting from fire extinguishing activities;
 - (e) Water resulting from garden and lawn maintenance;
 - (f) Water resulting from non-Commercial car washing;
 - (g) Sub-Surface Water, Storm Water or Clear-Water Waste from a remediation site for which a Permit to Discharge has been issued; or
 - (h) Dechlorinated swimming pool water.

116. No Person shall Release or permit the Release of any Matter of any type into the Storm Sewer System or any watercourse which may:
- (a) Result in a hazard to any Person, animal, Property or vegetation;
 - (b) Cause an adverse effect on the Storm Sewer System or Water Course;
 - (c) Be in excess of 30.0 mg/L above the background suspended solids of the downstream receiving environment during the months of May 15 to October 1, or 80.0 mg/L above the background suspended solids of the downstream receiving environment during the months of October to April;
 - (d) Originate from a Commercial Car Wash;
 - (e) Contain Waste Water;
 - (f) Contain Super Chlorinated Water;
 - (g) Contain Restricted Waste or Over Strength Matter as described in Schedules "C" or "D";
 - (h) Have come from a Septic System unless it is discharged at an Approved City facility.
117. No Person shall Release or permit the Release of any of the following into the Storm Sewer system unless a Permit to Discharge has been issued by the Designated Officer:
- (a) Anything having a temperature greater than 40 degrees Celsius;
 - (b) Anything having a pH less than 6.0 or greater than 9.0, except for rainwater; or
 - (c) Clear-Water Waste, or
 - (c) Sub-Surface Water, Storm Water or Clear-Water Waste originating from a Remediation Site.
118. No Person shall dilute Storm Water for the purpose of avoiding the requirements of this bylaw.
119. Where a Person needs to or is releasing Storm Water that does not meet the requirements of Section 115 or 117 of this bylaw, they shall apply to the Designated Officer in the prescribed form and pay the designated fee for a Permit to Discharge. The Designated Officer will review the application and may either issue or refuse the application. The Designated Officer may impose conditions on the Permit to Discharge including the requirement for pre-treatment to a specified level, flow regulation, monitoring and or control manholes, testing and monitoring.

STORM SEWER SYSTEM – On Site, Plumbing and Service Connection

120. Where Storm Sewer Service volumes are highly variable the Designated Officer may require that volume control devices be installed to equalize discharge volumes.
121. Commercial garages, service stations, businesses that wash or lubricate motor vehicles, or businesses that wash aggregates or soils, or businesses with large parking lots shall provide for readily accessible sand trap, sump and Oil and Grease Interceptors located as close as possible to the source or sources and they shall be maintained in good working order by the Owner. All interceptors shall have sand and silt removed from sand traps before materials occupy 25% of the liquid depth. Accumulated oil and grease shall be skimmed off the surface of the interceptors and other sumps regularly to prevent accumulated oil and

grease from escaping to the Storm Sewer System. The design of such sand trap, sump and oil interceptor are to be Approved by the Designated Officer.

STORM SEWER SYSTEM – Service Connections

122. The provision of a Storm Sewer Service connection shall at all times be subject to the terms and conditions set out in this bylaw and the charges designated in the Fees and Charges Bylaw.
123. A Property may have only one (1) Storm Sewer Service connection unless authorization is obtained from the Designated Officer who will consider the following in making a determination:
 - (a) The reason an additional Storm Sewer Service connection is being requested.
 - (b) The impact on the additional Storm Sewer Service connection on the Property Owner or adjacent Property Owner.
 - (c) The impact of the additional Storm Sewer Service connection on the Storm Sewer System.
 - (d) Age and maintenance history of the Storm Sewer Service(s).
 - (e) The required capacity of the Storm Sewer Service connections combined or otherwise. **(Bylaw 2015-05)**
124. The maximum number of Storm Sewer Service connections allowed to any Property pursuant to Section 123 of this bylaw, is two (2).
125. Storm Sewer Service connections shall not cross Property Lines between adjacent private Properties except by Statutory Rights of Way or right of way easements registered in the Kamloops Land Title Office.
126. Application for a Storm Sewer Service connection shall be made to the Designated Officer in the prescribed form not less than fourteen (14) working days prior to the Storm Sewer Service connection being required. The application shall describe the Property to which the Storm Sewer Service connection is required, the size of the Storm Sewer Service requested, the intended use of the Property and should include a British Columbia Land Surveyor survey plan which shows all existing and any required Statutory Right of Ways or right of way easements and any on-site Storm Water management Buildings.
127. In general the application for a Storm Sewer Service connection shall be followed by an application for a plumbing permit prior to making any connection between the pipes located in the Street and pipes located on private Property.
128. To be eligible for a connection to the Storm Sewer System the following conditions must apply:
 - (a) The connection shall only serve one (1) Property unless the conditions as set down in 123 of this bylaw apply where upon it will be permissible to have up to a maximum of two (2) Storm Sewer Service connections to one (1) Property; and
 - (b) The current capacity of the Storm Sewer System is capable of supporting the connection without having a negative impact on existing Consumers as determined by the Designated Officer.

129. Applications shall be reviewed by the Designated Officer, including any additional information that may be required for Storm Sewer Service connection and a report, which addresses the conditions of eligibility and the terms and conditions of this bylaw, shall be generated.
130. If the Designated Officer after reviewing and considering the application determines that a connection is warranted the Designated Officer shall approve the connection, including setting the size of the connection, subject to the Owner:
 - (a) Paying the City all costs of the installation of the connection;
 - (b) Obtaining and meeting any requirements for a Permit to Discharge;
 - (c) Meeting any requirements for monitoring or control points, flow control, sand traps, Oil and Grease Interceptors and traps; and
 - (d) Providing any Statutory Rights of Way or right of way easements required for the connection.
131. The connection, installation, alteration and Termination from the Storm Sewer Main to the Property Line shall be undertaken only by the City at a point in time and location determined by the City.
132. Where an Owner has requested a Storm Sewer Service Termination the City shall cap the Storm Sewer Service Lines at a point in time determined by the City.

PERMIT TO DISCHARGE

133. The Designated Officer, may require that a Permit To Discharge be obtained by a Person or class of Persons to allow a high volume discharge, the discharge of Over Strength Matter, the discharge of Restricted Wastes where Best Available Demonstrated Technology (B.A.D.T.) for that class of Person cannot meet Restricted Waste concentrations levels as set out in Schedule "C" of this bylaw, the discharge from Commercial garages, service stations, businesses that wash or lubricate motor vehicles, or businesses that wash aggregates or soils , or businesses with large parking lots. The Designated Officer may set such terms and conditions as the Designated Officer may deem necessary or appropriate for the protection of the Sanitary Sewer System, the Storm Sewer System, natural Water Coursels, human or animal health and safety, and the environment and without limiting the generality of the foregoing, may in the Permit To Discharge:
 - (a) Place limits and restrictions on the quantity, frequency of discharge and nature of the Waste permitted to be discharged;
 - (b) Levy an Over Strength Surcharge and or an excessive Waste Water quantity charge as prescribed in the Fees and Charges Bylaw, for each kilogram per cubic meter of constituent in the Waste Water released in excess of those specified in Schedule "D" but less than those identified as a Restricted Waste in Schedule "C";
 - (c) Allow the discharge of Over Strength Matter or Restricted Waste where concentration levels set in Schedule "C" and "D" of this bylaw cannot be achieved through the use of Best Available Demonstrated Technology (B.A.D.T.) for that class of industry;

- (d) Require the holder of a Permit To Discharge, at their expense repair, alter, remove or add works or construct new works to ensure that the discharge will comply with the Permit To Discharge and this bylaw;
 - (e) Require the holder of a Permit To Discharge, at their expense to monitor the Waste being discharged under the Permit To Discharge in the manner specified by the Designated Officer and to provide information concerning the discharge as requested by the Designated Officer, including, but not limited to, routine maintenance check dates, cleaning and Waste removal dates, and the means of disposal of accumulated Waste and residuals;
 - (f) Require the holder of a Permit To Discharge to submit to the Designated Officer details plans and operating procedures for all existing facilities installed on the Premises for the purpose of preventing accidental discharge; or
 - (g) Require the holder of a Permit to Discharge to take all measures to keep all equipment and facilities maintained and in good order as may be necessary to ensure compliance with the terms and conditions of the Permit To Discharge.
134. Notwithstanding anything herein to the contrary the Designated Officer may require a Person or any class of Persons to obtain a Permit To Discharge for the discharge of any non-Domestic Waste by that Person or class of Persons.
135. Upon receipt of notice under Section 134 of this bylaw the Person receiving the notice shall, within thirty (30) days, apply for a Permit to Discharge and provide to the Designated Officer such information relating to the discharge of non-domestic Waste by that Person as the Designated Officer may require.
136. The Designated Officer may revoke a Permit To Discharge for failure to comply with the terms and conditions of the Permit To Discharge or for failure to comply with this bylaw.
137. A Person who makes a discharge after having their Permit To Discharge revoked is guilty of an offence punishable on summary conviction and is liable to a fine not to exceed One Thousand Dollars (\$1,000.00) and if the offence is of a continuing nature to a fine not exceeding Five Hundred Dollars (\$500.00) for each day the offence is continued.

REPAIR OF SERVICE FAILURE OR INTERRUPTION OF SERVICE

138. Consumers shall have a duty of care to the City to maintain and use the Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service in the manner in which they were designed to be used.
139. Any Consumer experiencing a Service Failure or interruption of the Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service shall report forthwith the matter to the Designated Officer.
140. Consumers having a Service Failure or interruption of the Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service, the investigation and/or repair of which necessitates excavation within the Street shall, prior to the City taking any action, sign a work order with the City and the City shall carry out the said repair work. Alternatively, if

Approved by the Designated Officer, pursuant to Schedule "F" to the Traffic Bylaw, the Consumer may undertake to have the work completed by a third party.

141. The Consumer shall undertake repair work for Service Failure or interruption of the Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service on the Consumer's Property where it has been determined by the Designated Officer to be the fault of the City or the Consumer or due to natural causes.
142. Upon completion of the repair work by the City referred to in Section 140 of this bylaw the Designated Officer shall determine total costs and allocate them to the City or the Consumer as described in Section 144 of this bylaw. Should surface restoration not be possible until the following construction season, the calculation of total cost shall use the cost of surface restoration as estimated by the Designated Officer.

143. Upon completion of the repair work by the Consumer determined to be the fault of the City as referred to in Section 141 of this bylaw the Consumer shall submit an itemized invoice to the Designated Officer who will review and if appropriate approve payment of the invoice in accordance with Section 144 of this bylaw.
144. Responsibility for the cost of repair for any Service Failure or interruption in the Irrigation Water Service, Treated Water Service, Sanitary Sewer Service or Storm Sewer Service are as follows:
 - (a) The Consumer shall be responsible for all costs resulting from blockage, breakage, damage, and or failure between the Irrigation Water Main, Treated Water Main, Sanitary Sewer Main and or Storm Sewer Main and the Property Line that is caused by any action, inaction, misuse or negligence on the part of the Consumer as determined by the Designated Officer;
 - (b) The Consumer shall be responsible for all costs resulting from blockage, breakage, damage, and or failure between the Property Line and the foundation line;
 - (c) The Consumer shall be responsible for all costs resulting from a freeze up of the Irrigation Water Service or the Treated Water Service from the Property Line to the foundation line; and
 - (d) The City shall be responsible for all costs resulting from blockage, breakage, damage, and or failure between the Irrigation Water Main, Treated Water Main, Sanitary Sewer Main or Storm Sewer Main and the Property Line that was not a result of any action, inaction, misuse or negligence on the part of the Consumer as determined by the Designated Officer.

INFRASTRUCTURE EXTENSIONS OR UPGRADES

145. Application for Infrastructure extensions to serve any existing Property not currently served and not being subdivided or where service to existing Property is in a manner that does not meet the needs of the Owner the Owner may make application to the Designated Officer in the prescribed form to have an extension or upgrade constructed.
146. Applications for Infrastructure extensions or upgrades that are required for subdivision servicing shall be addressed pursuant to the Subdivision & Development Bylaw.
147. The application for Infrastructure extensions shall indicate the area where the extension or upgrade is required and state the reason the extension or upgrade is necessary.
148. Applications for Infrastructure or up-grade shall be reviewed by the Designated Officer, any additional information relating thereto and a report, which addresses the following items, shall be submitted to Council for their consideration:
 - (a) Whether the extension or upgrade generally is in the public interest;
 - (b) Whether the current Infrastructure is capable of supporting the extension or upgrade without having a negative impact on existing Consumers;
 - (c) Whether there are sufficient potential users to make use of such an extension or upgrade;
 - (d) The estimated cost of the extension or upgrade and financing options; and

- (e) Whether in the case of an extension or upgrade to the Irrigation Water System the connection prejudicially affects the prior rights of any of the parties to the use of the water intended to be conveyed and distributed by the connection.
149. After reviewing and considering the application and determining that an extension is warranted Council may authorize the extension on the terms and conditions that the Council considers advisable subject to the Owner or Owners and the City meeting all legislative requirements as set down in the relevant sections of the Local Government Act and the Community Charter and entering into any required agreements.

UNAUTHORISED RELEASES

150. Any Person who Releases or permits the unauthorized Release of any Matter set out in Section 90, 91, 116 or 117 of this bylaw into the Sanitary Sewer System, Storm Sewer System or any Water Course, immediately after becoming aware of the Release, shall notify the City and provide the following information:
- (a) Name of the Person owning or having had the possession of the Matter Released;
 - (b) Location of the Release;
 - (c) Name of Person reporting the Release and telephone number where that Person can be contacted;
 - (d) Time of the Release;
 - (e) Type of material Released and any known associated hazards;
 - (f) Volume of the material Released; and
 - (g) Corrective action being taken or anticipated to be taken to control the Release.
151. The Person who Released or permitted the unauthorized Release shall, as soon as the Person becomes aware or ought to have become aware of the Release, take all reasonable measures to:
- (a) Confine, remedy and repair the effects of the Released Matter; and
 - (b) Remove and dispose of the Matter in such a manner as to effect the maximum protection to human life, health and the Sanitary Sewer System, Storm Sewer System or watercourse.
152. The Person who Released or permitted the Release shall within fourteen (14) days following the unauthorized Release submit to the City a written report that details the following:
- (a) Date and time of the Release;
 - (b) Location of the point of the Release;
 - (c) Duration of the Release;
 - (d) Composition of the Release showing with respect to each substance its concentration and total quantity, and a description of the circumstances leading to the Release;
 - (e) Steps or procedures which were taken to minimize, control or stop the Release;
 - (f) A summary of the impairment, damage, or harm which occurred to any Person, Premises, or private drainage system; and

- (g) Any other information required by the City.
- 153. Any Person observing a Release of any Matter set out in Section 90, 91, 116 or 117 of this bylaw into the Sanitary Sewer System, Storm Sewer System or any Water Course shall notify the City forthwith and provide as much information on the Release as possible.
- 154. Every Person who directly or indirectly discharges Waste or substances produced, treated, handled or stored on Property other than residential Property into the Sanitary Sewer System shall, as a condition of that discharge:
 - (a) Provide and maintain facilities to prevent accidental discharge or discharge contrary to this bylaw or a Permit To Discharge. Facilities include but are not limited to spill containment facilities, recovery and neutralization facilities for substance which, if accidentally discharged, would constitute a Hazardous or Restricted Waste;
 - (b) Post and keep posted permanent signs in conspicuous locations on the Premises displaying the name, telephone number of the Person to call in the event of accidental discharge of Restricted Waste; and
 - (c) Inform employees who may cause or discover the discharge of Restricted Waste, of notification procedures set out in this bylaw.

WATER METERS

- 155. Save and except for dedicated fire lines all Properties, Buildings and devices connected to the Irrigation Water System and or Treated Water System shall have a water Meter, conduit, wiring and a remote register installed to the approval of the Designated Officer unless the Designated Officer determines that either a flat rate for water use would be more appropriate or unless the water line is a dedicated fire line. The water Meter or Meters shall be in the Building or in a Meter chamber or chambers and shall be sufficient to accurately determine the water flow.
- 156. Where unusual conditions such as but not limited to the following exist the Designated Officer may require one or more water Meters, remote readouts or Meter chambers:
 - (a) Any Property having more than one (1) Irrigation Water Service or Treated Water Service connection;
 - (b) Any situation where the water Service must cross private Property, other than the Owners to reach the Building being served; and
 - (c) Strata title properties, duplexes and mobile home parks.
- 157. The size of all Meters installed shall be determined by the Designated Officer and will not necessarily conform to the size of the service pipe installed but will be based on the estimated rate of consumption.
- 158. Water Meters, and remote registers shall be supplied, owned and maintained by the City and paid for by the Owner in accordance with the Fees and Charges Bylaw. Water Meter replacements required due to age or malfunction shall be paid for by the City.

159. Water Meters, wiring, conduit and remote registers shall be installed by the City at the expense of the Owner. The design of any unusual Water Meter installations must approved by the Designated Officer and shall be paid for by the Owner. Any Water Meter installations, Water Meter reading costs and Backflow prevention devices associated with Treated Water Service connections which cross Property Lines or enter or leave Buildings must be approved by the Designated Officer and shall be paid for by the Owner.
160. Water Meters shall be installed in accordance with the installation requirements as set by the Designated Officer.
161. Every Consumer shall provide adequate protection against freezing, heat, moisture damage and vandalism for any water Meter and remote register.
162. There shall be no branch lines or water consuming appliances affixed to the Treated Water line or the Irrigation Water line on the City's side of the water Meter except, with the approval of the Designated Officer or unless approved branch lines are for dedicated fire suppression systems.
163. If a Meter or by-pass seal is broken, the occupant of the Premises shall notify the Designated Officer within twenty-four (24) hours.
164. No Person shall remove, relocate or disconnect a water Meter, seals, or remote register without the written permission of the Designated Officer.
165. In the event that water Meter chambers are required the number and configuration of the Meter chambers shall be as determined by the Designated Officer. The Owner shall be responsible for all costs associated with the construction and maintenance of the Meter chambers.
166. The Designated Officer has the right of access to any Building or Premises provided with a water Meter for the purposes of obtaining Meter readings, performing inspections and carrying out maintenance and repairs.

PAYMENT AND COLLECTION OF ACCOUNTS

167. The City shall have the authority to charge Consumers and or the Owners for provision of Irrigation Water, Treated Water and Waste Water treatment pursuant to the following and as determined by the Designated Officer:
 - (a) Irrigation Water based on:
 - i. A per hectare charge for the number of irrigable hectares of the Consumer as shown on the Irrigation roll; and/or
 - ii. A volumetric charge based on the number of cubic meters of Irrigation Water used as measured by an Irrigation Water Meter; and/or
 - iii. A stand alone negotiated agreement.

At the time the City requires the installation of Irrigation Water Meters to measure Irrigation Water a sufficient notice and phase in period as determined by the Designated Officer will be provided.
 - (b) Treated Water based on:

- i. A volumetric charge of the number of cubic meters of Treated Water as measured by a Treated Water Meter; and/or
 - ii. A flat rate based on Service size; and/or
 - iii. A stand alone negotiated agreement.
- (c) Sanitary Sewage based on:
- i. A volumetric charge based on the number of cubic meters of Treated Water used as measured by a Treated Water Meter; and/or
 - ii. A flat rate based on Service size; and/or
 - iii. A Fixture charge; and/or
 - iv. A Sewage tax; and/or
 - v. A stand alone negotiated agreement.

At the time the City requires the use of a volume charge based on the number of cubic meters of Treated Water to measure Sanitary Sewage flow a sufficient notice and phase in period as determined by the Designated Officer will be provided.

168. There shall be paid, for all Irrigation Water and Treated Water supplied and Waste Water collected or service rendered for items listed in Schedule "B" the amounts set out in the Fees and Charges Bylaw.
169. Where Treated Water Mains or Sanitary Sewer Mains, in the areas described in Schedules "F" and "G" to this bylaw, have been provided by the City and are available for connection to private Property, upon six (6) months written notice, the minimum flat rate charge for Treated Water and Sanitary Sewage set out in the Fees and Charges Bylaw shall be paid by all Consumers whose Property is occupied for a purpose requiring the provision of sanitary facilities in accordance with the British Columbia Building Code, whether or not a private Treated Water Service or Sanitary Sewer Service connection has actually been made.
170. Subject to any other provisions of this bylaw, the Metered rates payable by a Consumer shall be determined by reference to the reading of the Meter connected to that Service.
171. In the event of a difference in reading between the remote register and the water Meter, the reading of the water Meter shall prevail.
172. If a Meter reading is disputed by either the City or a Consumer, the Meter shall be tested by a qualified Person designated by the City. If the Meter is found to be accurate within 98.5% to 101.5% of the water passing through the Meter, the expense of such test, as set out in the Fees and Charges Bylaw, shall be borne by the party disputing the reading. If the Meter is found not to be accurate within the said specified limits, it shall be repaired or replaced at the expense of the City.
173. If, upon testing a Meter, it is determined that the Meter has failed to properly record the flow of water, the Designated Officer shall estimate the flow of water and render a calculation utilizing such methods as are considered fair and equitable. The Consumer will then either be charged or refunded the difference and upon receipt of payment or refund all claims on account of the inaccurate Meter shall be deemed settled. No such settlement shall extend for a period beyond one (1) year prior to the test, and any refund shall be made only to the person who overpaid.

174. Accounts shall be rendered in respect of each Irrigation Water Service, Treated Water Service and Sanitary Sewer Service in the manner prescribed by the Designated Officer.
175. Where any Service charge is designated by reference to an hourly, daily or weekly rate, the charge for a lesser period of time shall, where possible, be calculated on a proportionate basis.
176. Should a Utility account remain unpaid for a period of thirty (30) days, the Service may be Shut Off following forty-eight (48) hours written notice. The Service supply to any such Person shall not be restored until such Person has paid the outstanding balance of the account to the satisfaction of the Designated Officer and has paid to the City the fee for reinstatement of Service as designated in the Fees and Charges Bylaw.
177. The Owner of Property shall be liable for all rates and fees chargeable or payable under this bylaw as provided for in provincial statutes and for any costs associated with the City having to undertake the repair of unsatisfactory work completed on the Owner's behalf by private contractors with respect to the Service. Any unpaid charges may be transferred to taxes of the benefiting Property in accordance with the Community Charter/Local Government Act.
178. The Meters of all Consumers shall be read, where practical, twice per year on or about May and September. In the event that any Meter cannot be read in accordance with normal practices, the Designated Officer shall estimate the flow of water and render an account utilizing such methods as are considered to be fair and equitable.
179. Should a Consumer have a concern with any fee or charge rendered pursuant to this bylaw they may send a letter to the Designated Officer setting out the nature and substantiating details of the concern. The Designated Officer will review the concern, provide a written response within thirty (30) days and take any action as may be necessary. Should the Consumer wish to appeal the decision of the Designated Officer they may send a letter to the Chief Administrative Officer within seven (7) days of receipt of the written response. The Chief Administrative Officer will review the matter and render a written decision in thirty (30) days and the decision of the Chief Administrative Officer shall be final and binding.

OFFENCES AND PENALTIES

180. Every person who violates any of the provisions of this bylaw or who suffers or permits any act or thing to be done in contravention of or in violation of the provisions of this bylaw, or who neglects to do or refrains from doing anything required to be done by any of the provisions of this bylaw, or who does any act which violates any of the provisions of this bylaw is guilty of any offence against this bylaw and liable to the penalties hereby imposed.
181. Each day that a violation is permitted to exist shall constitute a separate offence.
182. A Person who contravenes any provision of this bylaw for which no other penalty has been provided under this bylaw, is guilty of an offence punishable on summary conviction and is liable to a fine not exceeding Two Thousand Dollars (\$2,000.00) or to imprisonment for a term not exceeding six (6) months, or to both and if the offence is of a continuing nature to a fine not exceeding Five Hundred Dollars (\$500.00) for each day the offence is continued.
183. This Bylaw is designated as a Bylaw that may be enforced by means of Municipal Ticket Information under the Community Charter or a Bylaw Notice under the Local Government Bylaw Notice Enforcement Act.
184. The City may, in its discretion, terminate the supply of Irrigation Water or Treated Water after forty-eight (48) hours written notice of the contravention and proposed termination of Service

has been given by the City to the offending Person, and the said contravention has not within the forty-eight (48) hours been rectified for any or all of the following reasons:

- (a) Non payment of accounts for Irrigation Water, Treated Water, Sanitary Sewage or repair accounts;
 - (b) Violation of any regulation, restriction or prohibition with respect to Irrigation;
 - (c) The existence of a non health hazardous Cross-Connection;
 - (d) The existence of Plumbing Devices that have a negative effect, as determined by the Designated Officer, on the Irrigation Water System, Sanitary Sewer System, Storm Sewer System or Treated Water System;
 - (e) The existence of Plumbing Devices which leak or extract or add heat to the water system of the City;
 - (f) Defective Backflow prevention devices or assemblies that do not cause a health hazard;
 - (g) Alteration or bypass of a water Meter;
 - (h) Violation of any regulation, restriction or prohibition with respect to water use;
 - (i) Wasting of Irrigation Water or Treated Water;
 - (j) Use of water from a Treated Water Main in Area A of Schedule "F" for non-domestic purposes or Irrigation purposes;
 - (k) Disinfecting water Mains of the City;
 - (l) Unauthorized Release of Over Strength Matter to the Sanitary Sewer System or the Storm Sewer System;
 - (m) Non compliance with any provision of this bylaw;
 - (n) Maintaining, repairing, renovating, or operating the Utility under normal circumstances;
or
 - (o) For such other reasons as the Council may determine from time to time.
185. The City may, in its discretion, Shut Off or Terminate the supply of Irrigation Water or Treated Water without notice for any or all of the following reasons:
- (a) Balancing the delivery of Irrigation Water to the maximum delivery rate;
 - (b) Shortage of Irrigation Water or Treated Water;
 - (c) The existence of a health hazardous Cross-Connection;
 - (d) Defective Backflow prevention devices that cause a health hazard;
 - (e) Unauthorized Release of a Restricted Waste to the Sanitary Sewer System or Storm Sewer System;
 - (f) A request to discontinue Service;
 - (g) Maintaining, repairing, renovating, or operating the Utility under emergency conditions;
or
 - (h) For such other reasons as the Council may determine from time to time.

186. The Irrigation Water or Treated Water supply to any Person who has had his Irrigation Water or Treated Water Shut Off for any reason except for those reasons cited in Section 183(k), 183(n), 184 (a), 184(b), 184(f) and 184(g), of this bylaw shall not have their Service restored until such time as the problem has been corrected to the satisfaction of the Designated Officer and that Person has paid to the City the fee for reinstatement of Service as designated in the Fees and Charges Bylaw.
187. The invalidity of any section, clause, sentence or provision of this bylaw shall not affect the validity of any other part of this bylaw which can be given effect without such invalid part or parts.

GENERAL INTERPRETATIONS

188. Wherever the singular or the masculine is used in this bylaw, the same shall be deemed to include the plural or the feminine or the body politic or corporate where the context or the bylaw requires.

BYLAW SHALL PREVAIL

189. Where the provisions of this bylaw conflict with the provisions of any other bylaw of the City, the bylaw with the more stringent provisions in favor of the City shall prevail.

SCHEDULES

190. Schedules A, B, C, D, E, F and G are attached to and form an integral part of this bylaw.

COMING INTO FORCE

191. This bylaw shall come into full force and effect upon the final passing thereof.

**Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "A"**

SCHEDULE "A" – PERMIT TO DISCHARGE

PERMIT TO DISCHARGE No. _____

Pursuant to the City of Penticton Irrigation Sewer and Water Bylaw 2005 -02

(Consumer name and address; hereby referred to as the Permittee)

is hereby subject to the following Permit to Discharge terms, conditions and requirements.

TERMS, CONDITIONS AND REQUIREMENTS

SECTION ONE: GENERAL

1. Save and except as expressly authorized by the terms and conditions of this permit, the Permittee shall not Release Waste Water, Storm Water, Subsurface Water or Clear-Water that contravenes the Irrigation, Sewer and Water Bylaw 2005-02.
2. The Permittee shall not alter, add to, or in any other manner change the design or construction of the facility from the plans and specifications in the applications and authorized by permits or approvals issued by the City without the prior written authorization of the City Engineer.
3. All changes, additions and alterations must be submitted in written form to City Engineer for approval prior to construction.
4. Approval by the City of any design or specification of the facility shall not constitute or be interpreted as constituting a waiver of any terms or conditions of this Permit To Discharge or any amendment thereto, nor shall such approval otherwise relieve the Owner from full compliance with the terms and conditions of this Permit to Discharge, and the Irrigation, Sewer and Water Bylaw 2005 – 02.
5. The issuance of the Permit To Discharge does not convey any property rights in either real or personal property, or any exclusive privileges.
6. The terms and conditions of this Permit To Discharge are severable and if any term or condition of this Sanitary and Strom Sewer Discharge Permit or the application of any term or condition to any circumstances is held or invalid, the application of such term or condition to other circumstances and the remainder of this Permit shall not be affected thereby.
7. Issuance of this Permit To Discharge shall not relieve the Owner from liability arising from civil or criminal activities.

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "A"

8. The issuance of a Permit To Discharge shall not be defense in an enforcement action that it would not have been necessary to halt or reduce production in order to maintain compliance with the terms and conditions of this Permit.
9. The Permittee shall furnish test results to the City Engineer as indicated on the attached, Special Conditions within established time limitations, and include any other specific information which may be requested to assess compliance with this Permit to Discharge.
10. The Permittee shall pay the excessive Waste Water charges as indicated on the attached Special Conditions .
11. By signing this Permit To Discharge the Permittee authorizes the City Engineer to, without prior notice and without incurring liability for so doing, enter the plant or Premises of the Owner for the purpose of determining if the terms and conditions contained within this Permit To Discharge are in compliance.
12. All applications reports or information submitted to the City Engineer shall be signed and certified the Permittee if the Permittee is an incorporated company by an officer thereof who shall make the following certification:

"I certify that this document and all attachments were prepared under my direction or supervision and assure that qualified personnel properly gathered and evaluated the information submitted in accordance with the terms and conditions of the Irrigation, Sewer and Water 2005-02 and amendments and in accordance with sound Engineering and Environmental practices. Based on my inquiry of the Person or Persons who manage the system, or those Persons directly responsible for gathering the information, the information submitted is accurate and complete, to the best of my knowledge and belief. "
13. All records and information resulting from the monitoring required by this Permit To Discharge, including records of analysis performed, calibration and maintenance of monitoring equipment and recordings from continuous monitoring equipment, shall be retained for a minimum five (5) year period, or longer, if requested by the City Engineer.
14. Notwithstanding any terms, conditions or requirements of this Permit To Discharge, all terms and provisions of the Irrigation, Sewer and Water Bylaw 2005-02, as amended from time to time, must be complied with by the Owner at all times.

SECTION TWO: RELEASE AND MONITORING STANDARDS

15. All Release and monitoring standards are to follow those indicated in Irrigation, Sewer and Water Bylaw 2005-02 and as per the attached Special Conditions contained in this Permit To Discharge.

SECTION THREE: ANALYTICAL PROCEDURE

16. All analytical procedures are to be undertaken by a certified testing firm Approved by the City Engineer and are to be done in compliance with Standard Methods to identify the constituents indicated in Schedule "C" and "D" of Irrigation, Sewer and Water 2005-02, unless otherwise directed by the City Engineer.

SECTION FOUR: SPECIAL CONDITIONS

17. See attached, Special Conditions, if deemed necessary by the City Engineer due to extraordinary circumstances.

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "A"

SECTION FIVE: PERMIT EFFECTIVE AND EXPIRY DATES

This Permit To Discharge shall become effective on _____

This Permit To Discharge shall expire on _____

Signed at the City of Penticton, on _____, _____

Witness

Owner of the Premises

Witness

Proprietor of the Industry in Question

Authorized on behalf of The Corporation of the City of Penticton, on _____, _____

Witness

City Engineer

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "B"

SCHEDULE "B" - LIST OF FEES

The following forms a list of items for which fees will be levied in accordance with the rates specified in the Fees and Charges Bylaw:

1. Irrigation water based on an Irrigation water Meter reading ^{1,2}
2. Irrigation water based on an annual rate per irrigable hectare
3. Irrigation water based on a negotiated agreement ^{1,2}
4. Minimum Metered charge for Metered Irrigation water
5. Treated water based on a Treated Water Meter reading ^{1,2}
6. Treated water, flat rate based on the Treated Water Service size
7. Treated water based on a negotiated agreement ^{1,2}
8. Minimum Metered charge for Metered Treated Water
9. Minimum flat rate charge for Treated Water for un-connected properties
10. Sanitary sewer based on the Treated Water Meter reading ^{2,3}
11. Sanitary sewer, flat rate based on the Treated Water Service size ³
12. Sanitary sewer Fixture charge
13. Sanitary sewer tax
14. Sanitary sewer based on a negotiated agreement ^{2,3}
15. Minimum Metered charge for sanitary sewer
16. Minimum flat rate charge for Sanitary Sewer for un-connected properties
17. Additional charge for two Irrigation Services, Treated Water Services or Sanitary Sewer Services to one Property.
18. Sign on of a new customer
19. Special administration charges
20. Water and or sewer account transfer fee
21. Installation of an Irrigation Water Service, Treated Water Service, Sanitary Sewer Service and Storm Sewer Service
22. Termination of an Irrigation Water Service, Treated Water Service, Sanitary Sewer Service and Storm Sewer Service at the main
23. Irrigation water Service, Treated Water Service, Sanitary Sewer Service and Storm Sewer Service, Service calls
24. Reconnection fee
25. Shut off or turn on after normal business hours
26. Shut off or turn on during normal business hours
27. Thawing or clearing of a private Service after normal business hours

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "B"

28. Thawing or clearing of a private Service during normal business hours
29. Turn on for reinstatement after shut-off for non-payment after normal business hours
30. Turn on for reinstatement after shut-off for non-payment during normal business hours
31. Special water Meter reading
32. Water Meter and remote register
33. Water Meter testing or repair
34. Hydrant rental
35. Portable water Meter rental
36. Fire flow testing
37. Provision of temporary water
38. Permit to Discharge
39. Service inspection fee
40. Repair of Service Failure or Interruption
41. Evaluation of Restricted Wastes or Over Strength Matter
42. Over strength B.O.D. surcharge
43. Over strength C.O.D. surcharge
44. Over strength oil and grease surcharge
45. Over strength phosphorous surcharge
46. Over strength total suspended solids surcharge

NOTES ON FEES

- Note 1: A block rate structure that sets a different unit rate for different blocks of water use may be employed.
- Note 2: A minimum charge may be assessed.
- Note 3: May use a different unit rate depending on land use designations.
- General: The Designated Officer shall determine the type Metered or flat rate billing to be used.

Every Consumer who is not being charged on the basis of water Metered shall be charged in accordance with the Flat Rate fee or the Permit To Discharge.

Every Consumer whose consumption of water is being measured by a water Meter and who is being charged on the basis of that consumption shall pay for water supplied for the aggregate of amounts determined by the Metered Rate fee; however, in no case shall the total charge as calculated on a Metered basis be less than that which would be paid on the basis of the minimum monthly flat rate charge.

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "B"

For the purpose of this List of Fees, normal business hours shall be 7:00 a.m. to 3:15 p.m., Monday through Friday, except for statutory holidays. Services supplied outside of these times shall be subject to overtime charges.

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "C"

SCHEDULE "C" - RESTRICTED WASTES

The following are designated as Restricted Wastes when present in Waste Water, Storm Water or Sub-Surface Water being released to the sanitary sewerage system at a concentration in excess of the levels set out below.

B1 CONTAMINANTS

Substance	24 hr Composite (mg/L)	2 hr Composite (mg/L)	Grab bag (mg/L)
Biochemical oxygen demand (BOD)	500.0	1000.0	2000.0
Chemical oxygen demand (COD)	750.0	1500.0	3000.0
Total suspended solids (TSS)	600.0	1200.0	2400.0

B2 INORGANIC CONSTITUENTS

Substance	24 hr Composite (mg/L)	2 hr Composite (mg/L)	Grab bag (mg/L)
Aluminium	50.0	100.0	200.0
Arsenic	1.0	2.0	4.0
Boron	50.0	100.0	200.0
Cadmium	0.2	0.4	0.8
Chromium	4.0	8.0	13.0
Cobalt	5.0	10.0	20.0
Copper	2.0	4.0	8.0
Cyanide	1.0	2.0	4.0
Iron	10.0	20.0	40.0
Lead	1.0	2.0	4.0
Manganese	5.0	10.0	20.0
Mercury	0.05	0.1	0.2
Molybdenum	1.0	2.0	4.0
Nickel	2.0	4.0	8.0
Phenols	1.0	2.0	4.0
Phosphorus	12.5	25.0	50.0
Silver	1.0	2.0	4.0
Sulphate	1500.0	3000.0	6000.0
Sulphide	1.0	2.0	4.0
Tin	5.0	10.0	20.0
Zinc	3.0	6.0	12.0

Bylaw 2005-02 Irrigation, Sewer and Water Bylaw - Schedule "C"

B3 ORGANIC COMPOUNDS

1. B.E.T.X (benzene, ethyl, toluene, xylene) 1.00 mg/L
2. Fuels any amount
3. Carbon tetrachloride 0.20 mg/L
4. Chloroform 0.20 mg/L
5. Hydrocarbons 50.00 mg/L
6. Pathological waste any amount
7. PCB waste any amount
8. Pentachlorophenol 0.20 mg/L
9. Phenols 1.00 mg/L
10. Pesticides, insecticides, herbicides and fungicides any amount*
11. Special waste any amount
12. Radioactive material any amount**

NOTES

- * Pesticides, insecticides, herbicides and fungicides in the Storm Sewer emanating from trees or vegetation treated in accordance with the Pesticide Control Act, R.S.B.C., 1996 c. 360 and regulations are allowable.
- ** Radioactive material within such limits as are permitted by license issued by the Atomic Energy Control Board of Canada are allowable.

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "D"

SCHEDULE "D" - OVER STRENGTH MATTER

The following are designated as Over Strength Matter and are subject to a surcharge when present in Waste Water, storm water or Sub-Surface Water being Released to the Sanitary Sewer System at a concentration in excess of the levels set out below.

1. Biochemical oxygen demand (BOD) 300 mg/L
2. Chemical oxygen demand (COD) 600 mg/L*
3. Oil and grease 100 mg/L
4. Phosphorous 10 mg/L
5. Total suspended solids (TSS) 300 mg/L

NOTES

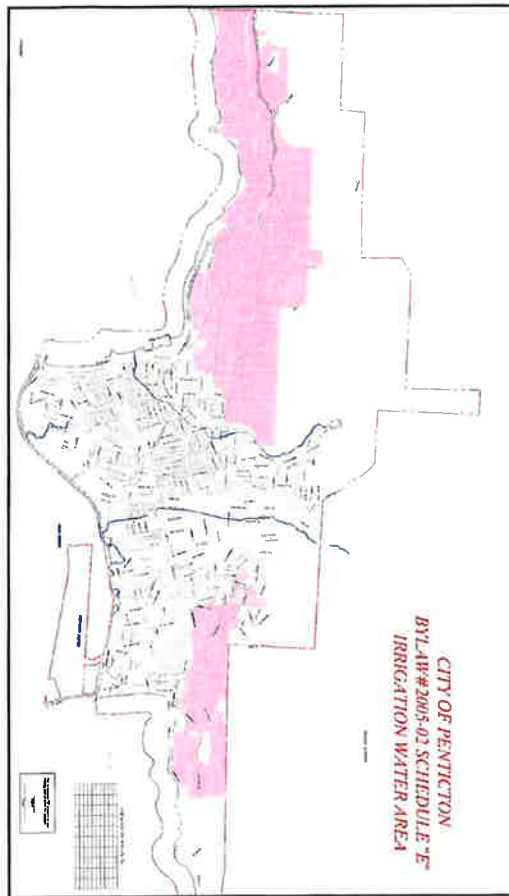
- * Or twice the B.O.D. concentration in the Waste Water, whichever is greater.

**Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "E"**

SCHEDULE "E" - IRRIGATION WATER AREA

Amended by Bylaw 2009-11

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "E"



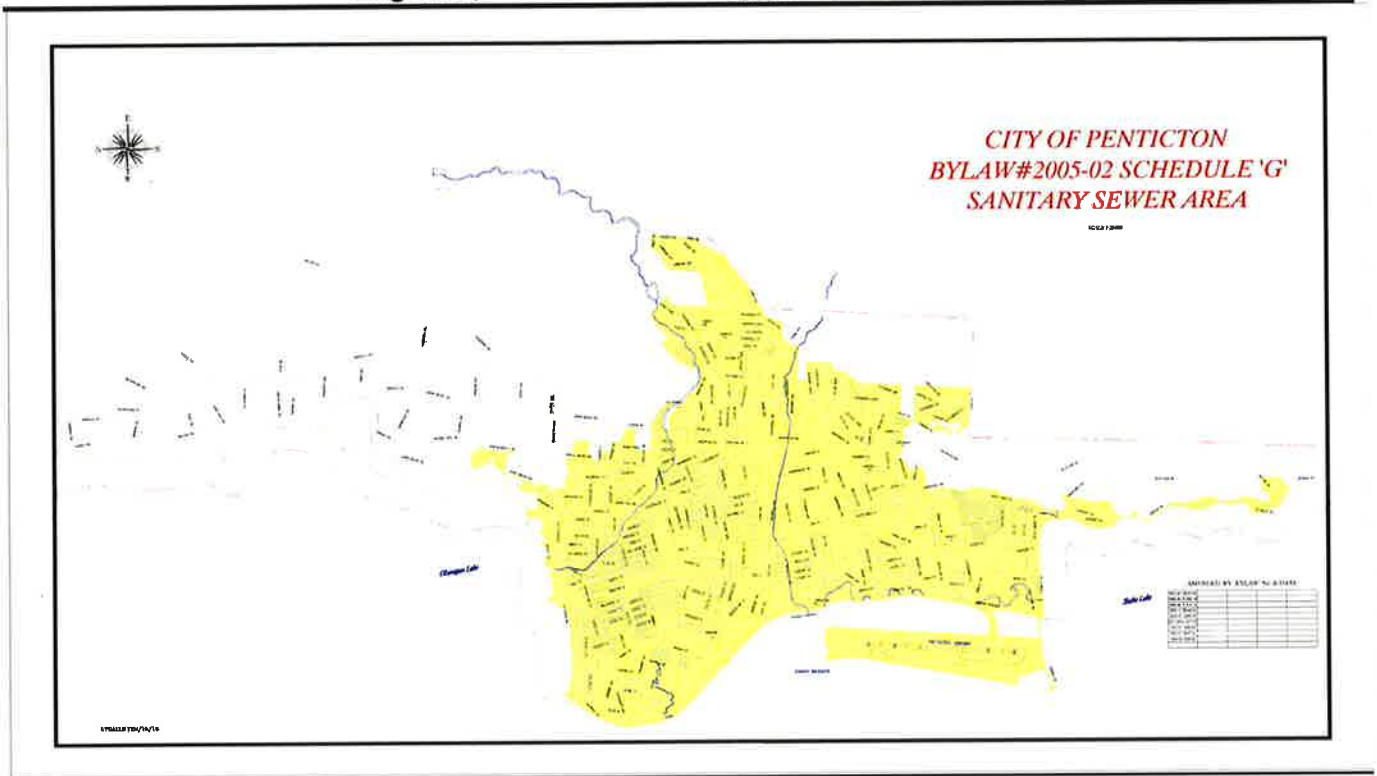
Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "F"

SCHEDULE "F" - TREATED WATER AREA

Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "G"

SCHEDULE "G" - SANITARY SEWER AREA

**Bylaw 2005-02
Irrigation, Sewer and Water Bylaw - Schedule "G"**



Schedule G

City of Penticton

APPENDIX B - DROUGHT MANAGEMENT TEAM - TERMS OF REFERENCE





MEMO

Date:	June 26, 2020	File:	2019-8437.000
To:	Mike Firlotte, City of Penticton	Page:	Page 1 of 5
From:	Drew Lejbak, M.Sc.		
Project:	Penticton Drought Management Plan		
Subject:	Drought Management Team - Terms of Reference		

1 INTRODUCTION

An important part of developing, implementing, and communicating a drought management plan (DMP) is to develop a community-based drought management team (DMT) where critical water supply and conservation decisions can be communicated and discussed to ensure that all water user groups understand any operational changes, water restrictions, and changes to drought stages to be applied.

MOE (2016)¹ identifies that the effective implementation of a DMP and drought practices requires a knowledgeable and informed DMT. Specifically, as outlined by MOE (2016), the responsibilities of a DMT should be as follows:

- Act as an advisory committee regarding water conservation and drought management recommendations.
- Compile data on water supplies and users.
- Coordinate communication efforts with various stakeholders.
- Provide information to the public and relevant organizations about water supplies.
- Encourage water conservation and appropriate responses to drought conditions.

Following the above, this document outlines a terms of reference (TOR) for the development of a Penticton DMT that includes the DMT purpose, membership composition and responsibilities, and recommended levels of commitment and meeting timelines.

Note that as part of drought management within the North Okanagan, the Regional District of North Okanagan (RDNO) developed a TOR for water shortage management (i.e., RDNO 2016)² and included it within their DMP. For this TOR, certain learnings and components of RDNO’s TOR were adopted herein (and approved for inclusion by RDNO [Miles, pers. comm., 2020])³.

2 DROUGHT MANAGEMENT TEAM – TERMS OF REFERENCE

The TOR is summarized in Table 2-1. The TOR is structured to provide a general understanding of the purpose, scope, membership, and communication/meeting requirements for successful implementation and application.

¹ BC Ministry of Environment (MOE). 2016. Dealing with Drought – A Handbook for Water Suppliers in BC. Deputy Ministers’ Committee on Drought.

² Regional District of North Okanagan (RDNO). 2016. Terms of Reference – Drought Stakeholder Working Group. May 2016.

³ Miles, J. Regional District of North Okanagan, Water Sustainability Coordinator. Personal communication with Drew Lejbak of Associated Environmental Consultants Inc., January 2020.



Memo To: Mike Firlotte, City of Penticton

June 26, 2020

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Table 2-1 Terms of reference for the development of a drought management team for the City of Penticton

Terms of Reference Component	Description
Purpose	<p>The role of the Drought Management Team (DMT) is to assist the City of Penticton staff in the development of efficient water use strategies, informing the community on water supply levels, and providing feedback on the effect of water use restrictions. Specially, members of the DMT will:</p> <ul style="list-style-type: none"> • Promote water sustainability and drought management accomplishments in the community and/or sectors they represent. • Provide knowledge and expertise to assist in promoting and/or informing/updating water management and drought planning decisions. • Communicate water management and/or drought response measures to the stakeholder or local government group they represent and to bring any relevant comments to the attention of the DMT and/or City of Penticton.
Scope	<p>The scope of the DMT is as follows:</p> <ul style="list-style-type: none"> • Review and understand the background information provided by City of Penticton staff, which includes current Provincial and local water supply / drought levels/stages and associated triggering factors used to determine Provincial drought levels and Penticton drought stages. • Provide input into communication strategies (e.g., bulletins, posters, websites, presentations) appropriate for the stakeholder or local government group they represent and/or public. • Act as a communication liaison to the stakeholder or local government group they represent and identify opportunities to learn from others in their sector outside of the local area. • Identify opportunities to improve water use and conservation with respect to the stakeholder or local government group they represent, as well as challenges that may delay or impair the implementation of drought response and water conservation strategies. • Provide the City of Penticton with a platform to discuss and/or provide feedback on new or updated water conservation, drought management, and/or drought response strategies.
Membership Responsibilities	<p>DMT members shall work together to satisfy the following roles and responsibilities:</p> <ul style="list-style-type: none"> • Act as a team member, with guidance and direction on team involvement provided by City of Penticton staff. • Commit to regular attendance at meetings and ensure that the City of Penticton has current contact information and is informed in a timely manner of any change in the ability to participate in the DMT.



Memo To: Mike Firlotte, City of Penticton

June 26, 2020

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- Be informed on the Drought Management Plan, drought stage triggers and associated drought response actions (e.g., water and irrigation bylaw, water restrictions, enforcement, communication strategy).
- Assist in communicating with various stakeholders and agencies on drought response efforts where applicable.
- Act in a respectful, collaborative, and compassionate manner, understanding that drought and drought responses may influence community groups in both positive and negative ways.

The DMT will encourage collaboration with the intent of working towards a common goal, committing to the process, and building stakeholder/public awareness and support for drought response strategies. Specifically, DMT member protocols are outlined as follows:

Member Protocol

- Members are encouraged to express their personal views in a respectful manner. Members are present to give a voice to the stakeholder or local government group they represent; however, members are equally expected to listen and understand the views of others.
- Members are encouraged to actively participate in team discussions and use their experience, education, and insight to speak about any issues or opportunities to be considered. It is expected that each member will have an equal opportunity to contribute, as well as respect the opinion of others.
- Members are encouraged to communicate about the process to others outside of the DMT, but may not speak on behalf of or in a manner that would create the impression that they are speaking for the City of Penticton or the DMT as a whole. Specifically, members are asked to present any information they are planning to publish to the media to the City of Penticton and the DMT, so that the respective parties are aware of any publications. In addition, any comments or opinions expressed by members of the DMT are to held confidential unless approved by the DMT and/or respective member.

The DMT should include expertise from the following areas to ensure that the City of Penticton is fully informed on any potential short or long-term impacts that may arise of the implementation of the drought management plan and corresponding drought response strategies:

Team Composition (General)

- Institutional water users dependent upon safe and reliable water supplies (e.g., hospitals, schools, health care facilities).
- High water needs business activities (e.g., landscaping, greenhouses, food and beverage production, manufacturing, car washes, recreational product sector [pools/spas]).



Memo To: Mike Firlotte, City of Penticton

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- Agriculture (e.g., BC Fruit Growers Association)
- Management of natural asset infrastructure (e.g., parks, recreational water features, school grounds).
- Economic development (e.g., Downtown Business Association).
- Environmental and sustainability (e.g., Penticton and Ellis Creeks Restoration Committees).
- Local government / relevant nearby water users (e.g., First Nations, Regional District of Okanagan-Similkameen).
- Provincial drought levels and Okanagan Lake management (e.g., BC Ministry of Forests, Lands, Natural Resource Operations, and Rural Development).

The ideal composition of the DMT will include representation from but not limited to:

- Penticton Regional Hospital (1)
- School District #67 (1)
- City of Penticton Municipal Operations (2)
- Parks and Recreation – City of Penticton and Regional District of Okanagan-Similkameen (2)
- Penticton Indian Band (1)
- BC Fruit Growers Association (1)
- BC Grape Growers Association (1)
- Hotel Association (1)
- Tourism Representative (1)
- Brewery / Food and Beverage Production Representative (1)
- Nursery, Garden Centre, or Turf Representative (1)
- Car Wash Representative (1)
- Water Stewardship – Provincial Representative (1)
- Community member at-large (1)

Team Composition (Specific)

In addition to the individual member composition, additional team composition will include:

- Chairperson – the DMT will be chaired by a City of Penticton staff member appointed by the City Manager. The chairperson will facilitate the meetings.
- Staff Support – the City of Penticton will provide staff support to the DMT with regard to the coordination of meetings and agendas in accordance with the goals of the Drought Management Plan and work plan approved by City Council. Staff will follow the communication plan for drought response and communicate with City Council, DMT, and the public. Staff will also complete formal reporting to City Council when needed.



Memo To: Mike Firlotte, City of Penticton
June 26, 2020

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The City of Penticton will advertise the opportunity to participate in the DMT annually. It is not expected that members will be voted in.

Members are asked to serve a two-year term and may continue to serve on the group until an alternate representative is found. The City of Penticton will communicate with the DMT as follows:

Term and General Meetings

- During normal water supply conditions (i.e., non-drought years), the City of Penticton will provide updates on water supply levels and water conservation recommendations in a timely manner by email and through regular updates posted on the municipal website.
- If the City of Penticton forecast a water supply shortage that may require the declaration of a higher drought stage, the DMT will be informed and may be asked to meet before or after a critical decision date as defined within the Drought Management Plan.
- During a drought, the DMT would meet as required.
- During a server drought, the DMT would meet no more than once per month.

Reporting

City of Penticton staff will record minutes and will use as necessary for reporting purposes.

Remuneration

Acting as a member of the DMT is voluntary. No remuneration will be provided by the City of Penticton.

Other

For clarity, these Terms of Reference do not delegate any authority or corporate powers to the DMT.

APPENDIX C - DROUGHT MANAGEMENT COMMUNICATIONS STRATEGY

Drought Management COMMUNICATIONS STRATEGY

JUNE 2020

Prepared for:



Prepared by:



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- Primary Contacts

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- Key Messages, Communication Channels for all Drought Stages
- Primary Contacts

7. APPENDICES 58

Appendix 1

Post-Pilot Evaluation: Agriculture Water Supply Status Communication Pilot

- Pilot Purveyor Feedback
- Pilot Producer Feedback
- Post-Pilot Recommendations

Appendix 2

RDOS & GVW 2018 Communication Plans

1. EXECUTIVE SUMMARY & FOUNDATIONAL RECOMMENDATIONS

In response to the likelihood of more frequent droughts, the City of Penticton (the City) is developing and implementing a Drought Management Plan (DMP) designed to:



- Meet federal, provincial, and local policy and regulatory requirements;
- Mitigate risks related to water supply shortages;
- Support future water-use planning;
- Guide drought forecasting;
- Advance the move toward regional consistency in drought-stage triggers, responses, and messages; and
- Optimize the environmental, financial, and community benefits provided by water conservation.

Rationale for a proactive DMP is reflected in numerous studies conducted for the City by Earthtech, Agua Consultants, and Associated Environmental Consultants Inc. between 2005 and 2020. These experts identified that increased water demands caused by population growth, coupled with climate change impacts on water availability, will require a concerted effort by the City to optimize water-use efficiency over time.

Additional drivers for a DMP and corresponding communications strategy include provincial drought levels outlined in BC's 2018 *Drought Response Plan*, draft Okanagan Lake triggers developed by the Okanagan Basin Water Board (OBWB) in 2017, and outcomes from the *Agricultural Water Status Communication Pilot* project undertaken by Alliance Communications for OBWB in 2016/2017.

WHY IS COMMUNICATION KEY?

While technical drought prevention and mitigation strategies and tools such as drought stage triggers, decision trees, and municipal policies are critical to the success of water conservation efforts, they will be only as successful as complementary outreach efforts are robust. To that end, purveyors should have strong commitments to, and capacities for, customized communication strategies, tools, and messages to support their DMPs.

For example, the Regional District of North Okanagan operating as Greater Vernon Water (GVW) and the Regional District of Okanagan Similkameen (RDOS) have both adopted communication plans that are key to public understanding and the success of their drought management efforts. Their communication plans also support a pledge among water purveyors to work toward consistent drought-stage messaging throughout the valley. (See Appendix 2 for GVW and RDOS communication plans.)

WHAT MAKES A GOOD COMMUNICATIONS STRATEGY?

In this *Drought Management Communications Strategy*, a proactive communications approach is outlined that:

- Reflects communication industry best practices;
- Aligns with the IAP2 Spectrum of Public Participation; and
- Applies risk communication and community-based social marketing values, tactics and tools.

The strategy also includes detailed guiding principles and other key considerations that will inform City efforts to build awareness and prompt behaviours that support short- and long-term water conservation.

WHAT MESSAGES ARE BEST?

As determined by communication industry best practices and findings from the *Agricultural Water Status Communications Pilot*, effective messages that prompt actual behaviour change are clear, simple, concise, and

compelling. They are also targeted for each intended audience and support the breadth of water users' communication needs and preferences.

WHAT COMMUNICATION TOOLS ARE BEST?

The optimal use of existing communication tools and channels will continue to help the City meet its drought management targets. These include branded campaigns, websites, electronic outreach, printed materials, signage, media, frontline City staff, and community partners. These should be updated to reflect current information and communication industry best practices, and then used strategically during various drought stages.

In keeping with emerging best practices for municipal outreach that supports all departments with timely messaging and emergency response capacity, the strategy urges the City to consider implementing a mass notification system that is customizable for individual subscribers' needs. This increasingly popular technology provides the best potential for increased reach and community buy-in. RDOS is using this technology successfully for a variety of purposes, including drought stage messaging.

WHAT CAN WE LEARN FROM EACH OTHER?

Also included in the strategy is an overview of lessons learned from the *Agriculture Water Supply Status Communications Pilot*. As a pilot participant, the City helped identify water purveyor benefits and barriers to effective communication, agricultural producer information wants and needs, and preferred drought stage messages and channels for information delivery.

Pilot outcomes led to the creation of key messages and preferred communication channels for purveyors that service agricultural customers. Key takeaways from the pilot were that:

- Growers respond most positively to clear, concise, compelling, and timely information that is targeted to their specific user group in a specific area; and
- Growers generally believe that the strategic use of mass notification technology (e.g., CivicReady) will ensure timely and reliable information.

It follows that succinct, targeted messaging delivered through a mass notification system, that is customizable for each subscriber, would also be well received and used extensively by residential and commercial users over time as they become aware of the opportunity for timely information.

HOW CAN THE CITY BE READY FOR THE NEXT DROUGHT?

Effectiveness of the DMP and its complementary communications strategy will depend on the City's commitment to and capacity for creating and/or updating the needed tools to support strategy recommendations. To that end, it is recommended that the City undertake the following foundational recommendations in preparation for any drought stage communication needed in the future. With these in place, staff can more efficiently respond in a timely manner as future drought impacts City water supplies.

Drought Management Communication Strategy

- Review this draft DMP Communication Strategy with input from City water management officials and communications staff.
- Revise and distribute the revised strategy as appropriate to key City officials for review and adoption.
- Decide who will be responsible for short-term foundational activities and/or long-term implementation.

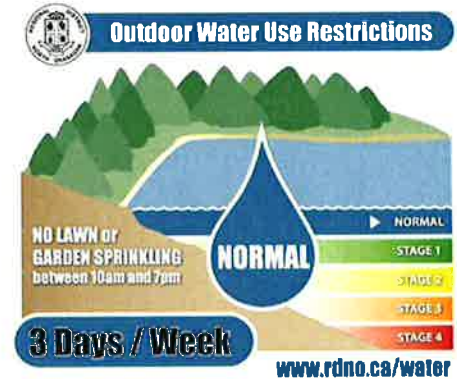
- Distribute key segments of the adopted strategy to appropriate City officials and key community stakeholders (e.g., members of the Drought Management Team, communications staff working for “sensitive” customers such as the hospital and school district, Penticton Indian Band).

Mass Notification System

- Check with other local governments that are using such a system (e.g., RDOS).
- Explore options for customizing sign-up and messaging for each water source.
- Explore options for use by all City departments, recognizing its potential to save money and time while significantly increasing reach and community buy-in.

Branded Campaigns

- Continue to use the Make Water Work and Okanagan WaterWise ads and graphics.
- Create City-specific ads/graphics for all water sources and drought stages using the ‘Water Supply Shortage’ graphics created by RDOS and GVW as models (see right).
- Use water conservation icons developed by GVW.
- Create a simple and adaptable ‘water conservation’ symbol for the City that can be used online and in all printed materials pertaining to water conservation.



Website

- Review RDOS, GVW, and OBWB websites to identify opportunities for shared information, photos, and graphics.
- Put Water Conservation page link on City home page.
- Update website to reflect recommendations in ‘WEBSITE’ section of this document.

Electronic Outreach

- Update/create detailed list of Drought Management Team members and other key stakeholders with contact information.
- Consider introducing email updates for water users who sign up for them.

Facebook & Twitter

- Stockpile photos and graphics for use on social media.
- Prepare posts in advance using Key Messages and Communications Channels information outlined later in the strategy.
- Identify potential “champions” and “experts” for stories on Facebook and website.

Printed Materials

- Prepare a catalogue of printed materials.
- Review materials and identify ones to be updated or replaced.
- Identify existing and potential opportunities for sharing drought-stage information in print and conduct a cost-benefit analysis between print and digital communication.
- Create digital print files for handouts pertaining to each water source and drought stage.
- Create digital print files for posters and door hangers needed during drought stages 3 and 4.

Signage

- Connect with OBWB about billboard messages and locations for 2020 and 2021.
- Connect with Province of BC to explore opportunities for use of digital highway signs.
- Create digital print files for drought stages 3 and 4 road signs and sandwich boards.

Local Media

- Create news release template using City's water conservation symbol.
- Identify a City spokesperson and familiarize him/her with the strategy.
- Introduce Drought Management Team and emphasize its role regarding drought communication (liaison between public and City).
- Meet with key media influencers to explore innovate ways to promote water conservation.

Frontline City Workers / Drought Stage Hotline

- Identify key frontline City workers who will need ongoing information and pertinent handouts.
- Explore introducing a City hotline to provide regular updates about drought stages and water restrictions.

Community Partners, Champions & Experts

- Identify potential community partners, champions, and experts and approach them about opportunities to help share the conservation message, especially during drought stages 2 and 3.

WHAT CAN THE CITY EXPECT?

Adopting the *Drought Management Communications Strategy* and implementing the abovementioned foundational recommendations will prepare the City well for its future drought outreach needs.

A well-oiled strategy supported by organized and passionate staff, proven messaging, preferred outreach tools, strong community partners, and an adequate budget will:

- Enable and encourage the behaviour changes needed by all users to collectively achieve community water conservation goals and targets ("The City can't do it alone!");
- Enable quick response to immediate water conservation requirements, as well as build awareness and buy-in for the need to preserve precious resources over time for future generations;
- Support the City's required responses to more stringent water conservation legislation and increasing customer demands for resource protection and outreach efforts that motivate water-use efficiency;
- Save staff time and money as staff continually refine the strategy and optimize the use of preferred delivery channels over time;
- Provide opportunities for collaboration and consistent messaging among Okanagan water purveyors; and
- Position the City as a leader in water conservation outreach throughout the Okanagan Basin and beyond.



It's also important to note that this strategy – and how it's refined over time in response to input from users about what's working and what could be improved – could help guide other City departments requiring comprehensive outreach for specific projects.

2. BACKGROUND INFORMATION

As recommended by the Province of BC's in its 2018 *Dealing with Drought Handbook*, the City is preparing a DMP to clearly define local drought stages, corresponding local responses, and strategies for communicating drought response information to all water users and partner institutions such as nearby municipalities, hospitals, and schools.

More specifically, the DMP will help the City:

- Meet federal, provincial, and local policy and regulatory requirements;
- Mitigate risks associated with water supply shortages;
- Support future water-use planning;
- Provide guidance on drought forecasting; and
- Optimize the environmental, financial, and community benefits of water conservation.



The success of the DMP relies on the City's ability to inform residential, commercial, and agricultural water users about needed water conservation behaviours.

For optimal effectiveness, the DMP will be integrated into other City plans, policies, bylaws, and best management practices.

CONTRIBUTING FACTORS & DROUGHT-STAGE TRIGGERS

The success of the DMP correlates directly with the City's ability to inform and inspire residential, commercial, and agricultural water users to adopt long-term water conservation measures as well as short-term drought response behaviours. To that end, this *Drought Management Communications Strategy* summarizes:

- City-specific water sources and user groups;
- Drought management recommendations from various consultants;
- Drought stage triggers such as provincial drought levels outlined in BC's 2018 *Drought Response Plan* and draft Okanagan Lake triggers developed by OBWB in 2017; and
- Outcomes from the *Agricultural Water Status Communication Pilot* project.

City of Penticton Water Sources & Users

The City has three water sources for residential, commercial, and agricultural use, all of which are subject to water licencing, runoff, and storage limitations. Given that the water systems were conceived and developed with water conservation being a long-term goal, the City is more resilient to drought than other BC communities.

The City services more than 9,000 connections, with close to 400 being for agriculture. Water from **Okanagan Lake** is used for domestic purposes (62% of total use). **Penticton Creek** water is used for domestic purposes (3% of use) and irrigation (28% of use). Penticton Creek water used for irrigation is distributed via the North Penticton Irrigation System. Water from **Ellis Creek** is used for irrigation only, and is distributed via the South Penticton Irrigation System (7% of use). System interconnections allow flexibility as needed.

The *Drought Management Communications Strategy* represents all water sources and users, and reflects the need for messages unique to each source and user group.

City of Penticton Drought Stages & Communication Guidelines

ITEM	NORMAL	STAGE Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
CoP SUPPLY STATUS	✓ Meet or exceed average storage condition.	✓ Indicates an early drought condition and potential water shortage	✓ Occurs during prolonged periods of no rain and hot/dry weather and/or below average snow pack ✓ Water supply is becoming stressed	✓ Severe drought conditions and critical water shortage	✓ No projected storage available to meet average daily demand ✓ Consumption levels represent minimum use
CoP REDUCTION GOALS & TARGETS	✓ No activation of DMP ✓ Normal staff levels and budgets	✓ Reduce consumption by 10% ✓ Measure consumption	✓ Reduce consumption by 20-30% ✓ Educate and actively find efficiencies. Immediately repair failed systems	✓ Reduce consumption by 50%	✓ Reduce consumption by 90% ✓ Maintain minimum water supply to maintain basic health and needs
CoP COMMUNICATION EFFORTS	✓ Normal communication and education ✓ Roll out BMPs and conservation practices	✓ Increased City effort including public education and communication regarding requested reductions and potential move to Stage 2	✓ High level of education and communication maintained	✓ High level of education and communication maintained	✓ Emergency Response Plan and EMBC invoked ✓ High levels of communication and education maintained
CoP ENFORCEMENT	✓ Normal	✓ Increased enforcement and monitoring of large users	✓ Lower tolerance ✓ Moderate fines issued	✓ Zero tolerance for abusers ✓ Moderate fines issued ✓ Use of provincial resources	✓ Zero tolerance for abusers

City of Penticton Water Restrictions

TYPE	NORMAL	STAGE Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
WHO	✓ Odd and even house number alternate	✓ Odd and even house number alternate	✓ Odd and even house number alternate	✓ Odd and even house number alternate	✓ Not permitted
MANUAL SPRINKLERS	✓ Alternate days of the month (6-8am and 5-10pm)	✓ 2 days/ week (6-8am and 7-10pm)	✓ 2 days/ week (7-10pm & 6-8am)	✓ 1 day/week (8-11pm)	
AUTOMATIC SPRINKLERS	✓ Alternate days of the month (10pm-4am)	✓ Alternate days of the month (10pm-4am)	✓ 2 days/ week (10pm-4am)	✓ 1 day/ week (10pm-2am)	

Consultants' Drought Management Recommendations

Studies undertaken for the City have outlined considerations that support the need for a strong communication strategy that enables and encourages water-saving behaviours for all water-user groups.

- EarthTech and Agua Consultants (2005) reported that water yields for Penticton Creek Watershed are projected to decrease 15% by 2050 and 30% by 2080.
- The *Drought Management Plan: Technical Assessment & Gap Analysis* developed by Associated Engineering in February 2018 highlighted information from EarthTech and Agua Consultants that “the increase in water demand must be significantly less than the [projected 2.5%] rate of growth... it is anticipated that domestic water demand would form the largest portion of increased future demands.” Given these projections, successful water conservation and water-use efficiencies during drought will be essential to reduce long-term demand.
- Associated (2018) reported that while the City can play a key role in ensuring that all water supplies are directed towards the highest and best use during high demand periods, there has been limited public education by the City about the *Irrigation, Sewer, and Water Bylaw No. 2005-02* over the past several years, which may be limiting its effectiveness.
- Associated (2020) completed a review of the City’s *Irrigation, Sewer, and Water Bylaw No. 2005-02* and emphasized that a DMP will only be as successful as the complementary communications strategy is strong. Although the City’s bylaw can create the requirement for water conservation measures, a meaningful and constructive strategy is needed to ensure users are aware of those requirements and have the motivation and tools needed to comply.
- Associated (2020) also reported that proactive rather than punitive messages are more likely to foster proactive behaviours. Customers will conserve water as requested and/or required rather than being efficient only when they are reprimanded with extra charges when they receive their bills.

In addition, City plans such as the *Official Community Plan* and *Emergency Response Plan* outline values and policies linked to livability and community safety and resilience, thereby setting the stage for a robust DMP and corresponding communications strategy.

Provincial Drought Levels

The Province of BC’s 2018 *Drought Response Plan* uses a four-level, watershed-specific classification system to identify drought triggers, determine the severity of drought conditions, and outline steps needed to avoid moving to a higher drought level.

LEVEL	CONDITIONS	SIGNIFICANCE	OBJECTIVE
1 (Green)	Normal	There is sufficient water to meet human and ecosystem needs	Preparedness
2 (Yellow)	Dry	First indicators of a potential water supply problem	Voluntary conservation
3 (Orange)	Very Dry	Potentially serious ecosystem or socio-economic impacts are possible	Voluntary conservation and restrictions
4 (Red)	Extremely Dry	Water supply insufficient to meet socio-economic and ecosystem needs	Voluntary conservation, restrictions and regulatory action as necessary

The provincial plan is focused at a watershed scale, using regional indicators such as snow water equivalents and stream flows. In the Okanagan, for example, the province uses data from 20 monitoring stations throughout the basin to determine drought conditions and projections. The province informs OBWB if a drought level will be declared in the Okanagan. OBWB then distributes that information to water users throughout the region, who are encouraged to contact their purveyors about any drought stages or restrictions.

Given that the region has various water sources and climatic conditions, this “averaged” approach doesn’t always provide information that’s consistent with water purveyors’ local conditions. In July 2015, for example, the Province declared a Level 3 drought for the Okanagan Basin when many purveyors had full reservoirs.

In the City’s 2020 *Irrigation, Sewer, and Water Bylaw No. 2005-02 Review*, Associated stated that, “Even though the reservoirs in Penticton and Ellis Creek watersheds may be at water levels above locally defined drought stages, the Province can still declare a drought level for the Okanagan Basin.”

The provincial levels do, however, provide valuable information for consideration. While the Associated review noted that developing local response measures using the provincial drought levels, especially those for irrigation, may not be appropriate, water purveyors can nonetheless use provincial data to inform local decisions. GVW, for example, uses the provincial levels as a guide when considering general water conditions, but do not directly correlate them with system operations, water restrictions, or reservoir management responses. RDOS includes provincial drought levels for consideration in its stage triggering process and communications plan. And the City, in its DMP, will include provincial drought levels for consideration during decisions about future local drought stages.

Okanagan Lake Drought Triggers

As reported by Associated in the City’s 2018 *Drought Management Plan: Technical Assessment and Gap Analysis*, “OBWB identified the need for the uniform adoption of drought stage triggers on the Okanagan mainstream lakes to help provide water suppliers and other large water users (using the mainstream lakes for supply) an understanding of their risk to water availability during times of drought.”

To that end, OBWB “recommended draft drought stage triggers for the Okanagan mainstream lakes using end of month lake level elevations,” as outlined below:

- **Non-Drought:** Water suppliers would remain at their Normal stage (or no stage if they do not have a Normal stage in their bylaw) when the forecast or actual 1st of the month elevation of Okanagan Lake is equal to or greater than the 1st of the month target.
- **Stage 1:** The forecast or actual 1st of the month elevation of Okanagan Lake for each of the months July through November is less than the 1st of month target elevations and equal to or greater than the 30th percentile 1st of month elevation.
- **Stage 2:** The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November are less than 30th percentile 1st of month elevation and greater than or equal to the 15th percentile 1st of month elevation.
- **Stage 3:** The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July to November are less than the 15th percentile 1st of month elevation and greater than or equal to the 5th percentile 1st of month elevation.
- **Stage 4:** The forecast or actual 1st of month elevation of Okanagan for each of the months July to November are lower than the 5th percentile 1st of month elevation.

Okanagan Lake Elevation Parameter	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
1 st Month of Target Elevation	342.44	342.24	342.04	341.89	341.84
30 th Percentile	342.286	342.170	341.968	341.808	341.715
15 th Percentile	342.158	342.029	341.865	341.749	341.656
5 th Percentile	341.981	341.869	341.667	341.511	341.421

The Associated review recommends the City “develop individual drought stage matrices for Okanagan Lake, Penticton Creek, and Ellis Cree, that consider provincial drought levels as part of its decision-making process. This will provide tools for fact-based decision-making at a local level where those directly using the water system can modify their water-use behaviour to try to meet water conservation targets/needs. Furthermore, it also helps water operators move from one stage to another with certainty. RDOS and RDNO have set a precedent by creating drought stage matrices for each water supply.”

OBWB Agriculture Water Supply Status Communications Pilot

Several influences, including climate change, are expected to further impact the availability of water in the Okanagan Basin, especially during times of drought. While water is a shared resource, agriculture accounts for the bulk of its use during summer months. Efficient water use by agricultural producers, therefore, is critical if target reductions are to be met. To respond appropriately, producers must receive timely and user-friendly messages from their purveyors about local conditions and associated water use restrictions.

To that end, the OBWB spearheaded the *Agriculture Water Supply Status Communications Pilot* project in 2016; pilot purveyors included the City and GVW. The project’s two primary objectives were to:

- Develop effective purveyor outreach materials and mechanisms for agriculture water users during drought; and
- Prepare standard guidelines and sample materials for communicating with agriculture water users.

Outreach materials and mechanisms were developed and tested with agricultural water users during the 2017 growing season.



The City participated in OBWB’s Agriculture Water Supply Status Communications Pilot. Outcomes and recommendations informed development of the Drought Management Communications Strategy.

Water Purveyor Barriers to Effective Communication

Initial pilot water purveyor research showed that common barriers to effective outreach include lack of human/financial resources for optimal outreach, inability to connect reliably with customers through existing channels, and lack of current contact information to enable texts/emails. The City also noted other barriers, including the perception of abundance (Okanagan Lake versus reality of limited resource), lack of awareness to support road sign use, and grower entitlement (systems were built for agriculture and should stay that way).

Agricultural Producer Information Needs & Preferences

Research showed that producers want more regular information from their purveyors about their water source, any changes in drought status and associated expectations, and site-specific allocation and consumption numbers to use as effective water management tools.

Producers unanimously called for drought status messaging that is clear, simple, concise, consistent, and compelling. They also felt that while messaging about the various stages of drought from their water purveyors is important, it is somewhat less effective without additional information about their allocation and consumption, and about potential water-use efficiency tactics and tools. Also, growers generally agreed that purveyors should

optimize the use of their existing mechanisms such as water bills, annual reports, turn-on/turn-off letters, newsletters, and websites to share regular information about their water sources and drought conditions.

The key finding was that growers generally believe that the strategic use of mass notification technology customizable for subscribers' phones, texts, and emails will ensure timely and reliable information delivery. It follows that using this technology for residential and commercial customers would also achieve the same goals.

Pilot Project Activities & Deliverables

Based on research findings, the following deliverables were created for each of the pilot water purveyors:

- Outreach checklists to outline educational activities, champions, and timelines;
- Key drought messaging to include in existing and future outreach materials;
- Drought-related web content for pilot water purveyors to ensure valley-wide consistency;
- Cut-and-paste content for use in existing and future materials such as letters, texts, emails, ads; and
- Electronic outreach enabled by the gathering of smart phone numbers and email addresses for agricultural water users serviced by the pilot water purveyors for use during the growing season between April and September 2017.

Post-Pilot Water Purveyor Feedback

A post-pilot evaluation was conducted with GVW and the City. As noted in the OBWB's project evaluation, both pilot water purveyors were enthused by the pilot project, felt it was successful, and were keen to continue to offer (and expand) e-alert communications to their agricultural water users i.

"... both water purveyors were pleased "to be able to do something in 15 minutes that usually takes days". They also liked the immediacy of the messages when using the e-alert system versus previous methods that had long time lags..."

Pilot Water Purveyor

Post-Pilot Agricultural Producer Feedback

A post-pilot evaluation was conducted with a small sample of producer participants, chosen at random.

All producer participants contacted in the evaluation were keen to continue to subscribe to e-alert communications from their water purveyor and overall, were very positive about the pilot project. Producers heard about the project from a variety of sources, which reinforces the need for a broad outreach campaign that includes the water purveyors' common communication methods.

When asked about message frequency, given the conditions in 2017 (low risk for drought, good water supply), all producers felt that the message frequency (approximately one message every 3-4 weeks) was appropriate. If drought risk was elevated, then all producers supported more frequent messaging.

It was recommended by both a water purveyor and producer to have an 'emergency alert' feature to differentiate between regular messaging and 'crisis' or 'very important' messaging. The producer evaluations informed the recommendations section.

Post-Pilot Recommendations

Detailed recommendations for outreach, sign-up, human resources, key messages, mechanisms, and timing can be found in Appendix 1.

Post-Pilot Next Steps

The pilot confirmed that both water purveyors and agricultural producers support improved systems for getting consistent and time-sensitive information from providers to producers through an electronic alert system. As reported in the final pilot report prepared by OBWB:

Water purveyor and producer feedback confirm both positive results from the pilot project and enthusiasm to continue with e-alerts in the 2018 growing season. It would be desirable to expand reach within the two original pilot areas, and to grow the pilot project to include additional water purveyors in the Okanagan region. This will require additional funding to ensure there is a support person to work with water purveyors to train them, encourage communications, and assist with content creation.

It would also be beneficial to undertake an expanded second phase of piloting to further test the messaging during another production season, since weather and water supply vulnerabilities can change dramatically from one season to the next. The OBWB committed to hosting the e-alert software until February 2019, which makes a compelling case for continuing the e-alerts pilot in some capacity.

3. COMMUNICATIONS STRATEGY: Approach, Principles & Considerations

OUTREACH APPROACH

The outreach approach needed to support the City’s DMP:

- Represents all water sources and user groups;
- Reflects communication industry best practices while recognizing the City’s unique needs and resources;
- Corresponds to the ‘Inform’ option on the Spectrum of Public Participation developed by the International Association for Public Participation;
- Upholds risk communication principles to ensure citizens’ right to know about situations that affect them, their properties, and the community;
- Supports community-based social marketing and other behaviour change tactics and tools;
- Reinforces existing City communications staff, tools, technologies, and timelines;
- Supports and/or augment the City’s existing Agriculture Water Supply Status Outreach Project;
- Provides clear, simple, concise, consistent, and compelling messaging frequently to all water users about the need for ongoing water conservation and water-use efficiency during times of drought;
- Uses a variety of messages and mediums to meet water users’ specific communication needs and preferences;
- Ensures consistency with and provides links to Okanagan water purveyors with progressive outreach campaigns; and
- Builds productive and lasting relationships between the City and its residential, commercial, industrial, and agricultural water users.



Graphics such as this one developed by GVW can be customized for use by the City of Penticton. This reduces costs and supports regional message consistency.

What follows are methodologies, principles, and practices that have guided development of this strategy.

Industry Best Practices

Communication/outreach tactics and tools are evolving rapidly due to changing cultural norms, advancing technologies, and the public’s increasing demands for pertinent and timely information from service providers such as local governments. However, best practices still call for outreach targeted to specific audiences at appropriate times through preferred channels, and refined as needed to improve subsequent outreach efforts.

Key to meaningful and productive communication outcomes in today’s complex information-sharing environment (especially if widespread behaviour change is the required outcome), is the use of:

- Real-time technologies such as mass notification systems that can be customized for each water user’s wants and needs;
- Widely used digital technologies such as social media;



5 Components of Effective Community Communication

- Highly visible, location-specific information tools such as road signage and sandwich boards; and
- Public input on strategy effectiveness via inclusion on the Drought Management Team.

IAP2 Spectrum of Public Participation

The International Association of Public Participation (IAP2) developed the Spectrum of Public Participation to recommend the level of public information/engagement needed by local governments for specific projects. The spectrum is quickly becoming an international standard.

As shown below, every communications/engagement exercise should be designed and delivered with a specific goal and associated promise to the people being communicated with.

	INFORM 	CONSULT 	INVOLVE 	COLLABORATE 	EMPOWER 
GOAL	To provide balanced and objective information in a timely manner.	To obtain feedback on analysis, issues, alternatives and decisions.	To work with the public to make sure that concerns and aspirations are considered and understood.	To partner with the public in each aspect of the decision-making.	To place final decision-making in the hands of the public.
PROMISE	"We will keep you informed"	"We will listen to and acknowledge your concerns."	"We will work with you to ensure your concerns and aspirations are directly reflected in the decisions made."	"We will look to you for advice and innovation and incorporate this in decisions as much as possible."	"We will implement what you decide."

Although overall drought-stage communication falls within the 'INFORM' category shown above ("to provide balanced and objective information in a timely manner"), there is also an opportunity to consult with water users about the effectiveness of the City's drought stage communication strategies, messages, and channels through the Drought Management Team.

Led by the City with representatives from local governments, institutions, trade and tourism associations, business and agricultural groups, and the public, the Drought Management Team will help guide, coordinate, monitor, and enhance communications with key stakeholders and the public during times of drought.

Risk Communication

In times of community vulnerability, residents and businesses rely on clear, concise, and up-to-date information from their local government or other service providers. In keeping with 'risk communication' principles defined by the U.S. Environmental Protection Agency on its website, residents "have a right to know about potential hazards to their person, property, or community."

Scholars define risk communication as a science-based approach for communicating effectively in situations of high stress, high concern, or controversy. It requires that local governments/service providers:

- Accept and involve the public as a legitimate partner;
- Plan carefully and evaluate performance;
- Listen to your audience(s);
- Be honest, frank and open;
- Coordinate and collaborate with other credible sources;

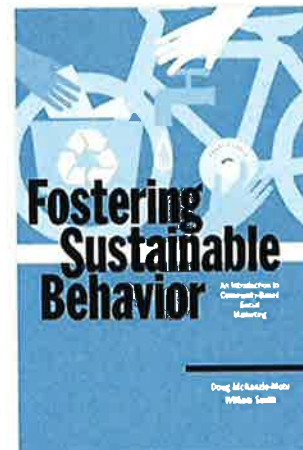
- Meet the needs of the media; and
- Speak clearly and with compassion.

These risk communication principles have been woven throughout the strategy.

Community-Based Social Marketing

“The cornerstone of sustainable and healthy communities is behaviour change,” says Doug McKenzie-Mohr, the brains behind community-based social marketing (CBSM) and author of *Fostering Sustainable Behaviour*. In this case, sustainability requires that residential, commercial, and agricultural water users adopt behaviours that support long-term water conservation and short-term water-use efficiency in response to drought conditions.

This strategy incorporates CBSM tactics for uncovering the benefits of and barriers to behaviour change and reflects CBSM practices for stronger community buy-in. As outlined in the book, these tactics include the use of ‘commitment’, ‘prompts’, ‘norms’, ‘communication’, and ‘incentives’, which have helped many communities improve waste reduction, energy efficiency, and water conservation.



COMMITMENT: From Good Intentions to Actions

‘Commitment’ occurs when people agree to adopt a certain behaviour. As McKenzie-Mohr explains in his book, “people who commit to certain behaviours are more likely to adopt the behaviour they agree to.”

Commitment works because people come to see themselves more positively and want to act consistently. In the case of water conservation, they might pledge to heighten their lawnmowers or check their automatic irrigation system for leaks, as requested by their local water purveyor.

OBWB’s Make Water Work campaign exemplifies how using online pledges can inspire basin-wide water conservation behaviours.

According to McKenzie-Mohr, the following factors should be considered when developing a campaign using ‘commitment’:

- ‘Commitment’ can range from mild to strong depending on the strategies used. A commitment made publicly, for example, is more powerful than a promise made to yourself. And a commitment in writing is more binding than a verbal guarantee.
- Group ‘commitment’ can be very effective, especially when community leaders are involved. In the City’s case, a block leader could distribute handouts to his neighbours during a Stage 3 drought, asking them to adhere to water restrictions. Key to the success of this approach, however, is that ‘commitment’ must be freely volunteered, not coerced. Using existing points of contact such as community groups and neighbourhood associations can also expedite a program based on ‘commitment’.

YOU CAN HELP REDUCE WATER WASTE

PLEDGE 1	PLEDGE 2	PLEDGE 3	PLEDGE 4	PLEDGE 5	PLEDGE 6
<p style="text-align: center;">I PLEDGE TO ONLY WATER MY LAWN BETWEEN DUSK AND DAWN</p> <p style="text-align: center;">Water should be put to work during the coolest part of the day to prevent evaporation. Put water on the night shift! A good rule of thumb is between 10pm and 6am.</p> <p style="text-align: center;">Check with your local water utility for watering restrictions in your community.</p>					

PROMPTS: Remembering to Act Sustainably

Our water conservation efforts are often sidetracked by a common human trait: forgetfulness. The use of prompts can counteract our absentmindedness and help to establish new habits.

As described in *Fostering Sustainable Behaviors*, “A prompt is a visual or auditory aid which reminds us to carry out an activity that we might otherwise forget. The purpose of a prompt is not to change attitudes or increase motivation, but to simply remind us to engage in an action that we are already predisposed to do.”

Prompts can promote one-time acts such as installing a low-flow shower head or repetitive behaviours such as running a dishwasher only when it’s full. To be most effective, prompts must be located as close as possible to the desired behaviour (e.g., a “Wash Only When Full!” sticker on your dishwasher).

To be most effective, prompts should be noticeable, simple, and colourful. Cartoons and/or lighthearted graphics are often used to get people’s attention in nonthreatening ways. Examples of water conservation prompts from the book include asking homeowners for permission to place a tag on the outside water faucet reminding them of odd/even watering, and arranging with local retailers to attach decals to lawnmowers asking users to raise the cutting height.

Given the City’s focus on irrigation during drought, perhaps prompts that remind people of watering restrictions would be most helpful (e.g., door hangers left in certain neighbourhoods that are served by a particularly vulnerable water source).

Combining the use of ‘commitment’ and ‘prompts’ could also be effective in times of drought. Block leaders, for example, could visit their neighbours and promote buy-in to water restrictions and suggested water-use efficiency hints.

NORMS: Building Community Support

Social norms are the behaviours expected of people from certain groups, communities, or cultures. These norms can be useful and often create the foundation of “correct” behaviors. To achieve a more sustainable future, we must develop new social norms, either through compliance or conformity.

With compliance, as noted in *Fostering Sustainable Behaviour*, “individuals alter their behaviour to receive a reward, to provoke a favourable reaction from others, or to avoid being punished. The change in behaviour occurs not because the person believes the behaviour is “the right thing to do,” but rather because there is a tangible consequence for not doing the behaviour. Compliance tactics, such as bottle deposits or charging user fees for waste disposal, are effective as long as the rewards or punishments are in place.”

In contrast, “conformity that occurs due to individuals observing the behaviour of others in order to determine how they should behave can have long-lasting effects.” Wherever possible, behaviour change efforts should communicate what are acceptable behaviours.

To be effective over the long term, norms must be visible (e.g., behaviour practiced by community leaders), explicit (e.g., promote a specific normative behaviour), and internalized by people and organizations (e.g., “this is how I/we should behave”).

Three examples of using 'norms':

1. The same community leader mentioned in the 'commitment' and 'prompt' sections can set a good example for his neighbours every time he adheres to water restrictions and/or chooses to replace his lawn with drought-tolerant shrubs and plants.
2. The water purveyor that uses utility bills to compare customers' water consumption with that of their neighbours. Water wasters will gradually become aware of what water savers are doing and mirror their practices.
3. The homeowner who lets his lawn go brown over the summer, thereby influencing his neighbours to the same the following year.

COMMUNICATION: Creating Effective Messages

As outlined in the Outreach Approach section, industry best practices call for messages that are targeted to specific audiences at appropriate times through preferred channels, and refined as needed to improve subsequent outreach efforts.

In keeping with CBSM practices, messages created for the purpose of community-wide behaviour change should also be delivered by an organization such as the City that is considered legitimate/credible by the target audience. If you must deliver a threatening message, include suggestions about actions people should take to achieve the required action. Keep your messages simple and vivid so that people remember the requested actions, and how and when to do them. Where time and/or space allow, integrate community goals in messaging. And model actions as a water purveyor that you would like people to engage in.

INCENTIVES: Enhancing Motivation to Act

Whether financial or otherwise, incentives can provide the motivation some people need to adopt new behaviours or more consistently engage in existing behaviours. As outlined in *Fostering Sustainable Behaviours*, incentives should be highly visible and easily accessible to the target audience. They should also reward and be closely paired with the desired behaviour (e.g., saving money on a utility bill for using less water).

Takeaways from Agriculture Water Supply Status Communication Pilot

Findings from the comprehensive research conducted for the pilot project, and reactions to the targeted messages and mechanisms used by the pilot water purveyors to inform pilot producers, are invaluable in the development of the City's Communications Strategy.

While agricultural targets, messages, and distribution channels differ from those ideally needed for residential and commercial water users, there are numerous alignments such as preferences for clear, simple, concise, compelling, and timely messaging delivered through real-time digital channels, particularly those that can be customized for each recipient.

BARRIERS Common to Communication with Residential, Commercial & Agricultural Users

Four barriers identified by the City for agricultural users can also be found in communication with residential and commercial users.

- Lack of human/financial resources for optimal outreach;
- Inability to connect reliably and productively with customers through existing channels;
- Lack of current contact information to enable texts/emails; and
- The perception of abundance (Okanagan Lake versus reality of limited resource).

RECOMMENDATIONS Common to Communication with Residential, Commercial & Agricultural Users

For all target audiences there is a fundamental need to communicate specific, timely messages through appropriate and popular channels as frequently as needed to ensure market saturation. As discovered during project research and pilot evaluation, there is a need for:



- Targeted and funded internal systems and staff to ensure the City's effective, efficient, and timely use of strategy tools;
- Directed messages that promote proactive/protection responses rather than reactive/punitive ones; and
- Improved digital mechanisms for information delivery (e.g., CivicReady and targeted Facebook posts).

STRATEGY GUIDING PRINCIPLES

The following guiding principles are inherent to, and have guided preparation of, the strategy.

- Water sources are long-term resources to be protected rather than short-term commodities to be wasted.
- Water management plans, policies, projects, programs, and partnerships ultimately affect important activities such as food production, emergency response, climate resilience, environmental protection, community planning, recreational opportunities, and economic interests.
- Increasingly stringent legislation and citizen expectations require local governments/water utilities to more aggressively protect and manage limited water resources. Neither governments nor utilities can do this in isolation; they require buy-in and behaviour change from all water users.
- Collaboration among water purveyors advances regional consistency and prevents the duplication of human and financial resources. To that end, the strategy builds on drought responses and successful outreach tactics, tools, and graphics developed by the OBWB, RDOS, and GVW.
- Provincial drought levels and Okanagan Lake triggers will be considered while making decisions about local drought stages.
- Diverse groups of water users serviced by the South Irrigation System (Ellis Creek), North Irrigation System (Penticton Creek), and Municipal System (Okanagan Lake/Penticton Creek) must have targeted communication based on their individual conditions and drought response requirements.
- Stage- and audience-specific messaging will focus on proactive, preventive measures rather than reactive, retroactive measures.
- The City will use communication tools that can reach people in remote areas who may not have reliable Internet/cell reception.
- The City will inform water users of any bylaw changes before and after they are adopted.

OTHER KEY CONSIDERATIONS

While the City's *Irrigation, Sewer, and Water Bylaw No. 2005-02* includes basic communication guidelines, the City is committed to enhanced communication that will help conserve water over the long-term and foster short-term water efficiency during times of drought.

The considerations listed below highlight the need for, and influence the development of, a meaningful and productive *Drought Management Communications Strategy*.



- The United Nations, with input from countries around the world, developed a set of 17 Sustainable Development Goals (SDGs) to unite global stakeholders in the move toward a better and more sustainable future for everyone. These goals are being increasingly explored and adopted in countries around the world at the national, regional, and local levels. Many goals apply directly to improved resource protection and management policies at all scales.
- Advancing communication technologies provide relatively low-cost opportunities for providers to inform users in timely and user-friendly ways. However, they also build expectations among users for more reliable and frequent reporting, especially during times of community vulnerability. This requires staff who are trained in digital communications and enabled to provide timely responses.
- Most providers prefer voluntary to mandatory compliance. To achieve the level of voluntary compliance needed to meet reduction targets, especially during times of serious drought, the provider must commit to a robust communication strategy supported by human and financial resources and strategic partnerships.
- Citizens have come to expect targeted and regular communication from and consultation with their local governments. While this can strain elected officials and staff, public interest and participation in community issues can provide win-win outcomes in the short and long terms. During drought, for example, users who conserve water can not only save money and feel good about themselves; they also set a great example for their friends and neighbours, who might then adopt and maintain more sustainable habits over time.
- Local governments/utilities can also be positive role models. For example, when citizens see their provider is watering efficiently, they are more likely to adopt conservation behaviours themselves. The reverse is also true, but to a greater degree. If the provider waters sidewalks during the hottest time of the day, or when it's raining, citizens will likely resist being more sustainable.
- Irrigation technologies and tools continually evolve, meaning that water users from all groups are potentially better able to monitor and reduce outdoor consumption.
- Proactive communities in drought-prone areas are paying their customers to switch from lawns to drought-resistant landscaping.

4. COMMUNICATIONS STRATEGY: Recommended Tools & Guidelines for Use

Upon reviewing existing City, RDOS, and GVW communication tools and measuring their probable effectiveness against industry best practices and risk communication and community-based social marketing principles and practices, the following tools are recommended to support the City's *Drought Management Communication Strategy*. While some already exist, and need updating or enhancing, others could be added to optimize targeted reach and, therefore, compliance with City drought stage requirements.

MASS NOTIFICATION SYSTEM

Digital mass notification systems are used by municipalities everywhere to provide free routine community updates and emergency information for residents who subscribe to the service.

The RDOS, for example, uses CivicReady to ensure its citizens are "safe, informed and involved in their communities." Subscribers customize their notification preferences once signed up. Communications can be received by email, text and/or phone, and are guaranteed to be fast, reliable, and secure.

In addition to sharing information about drought stages and required responses, the RDOS uses the notification system to inform subscribers about community goings on such as emergencies and events, curbside garbage and recycling, land-use applications and changes, regional recreation, and regional sewer and water systems. The City could benefit equally from a system designed specifically for its needs.

RECOMMENDATION: To understand and implement a mass notification system that would simplify and magnify community reach, the City could:

- Connect with OBWB directly about the its experience with CivicReady;
- Explore options with input from departments that could also use the service;
- Explore options for customizing sign-up and messaging for water users from each source;
- Select the option that best meets the City's administrative, informational, operational, and financial needs;
- Install and test the system using a pilot project with various City residents and commercial and institutional (ICI) users; and
- Refine and launch the system with support from multiple City communication channels.

BRANDED CAMPAIGNS

Successful branded water efficiency campaigns have already been developed by OBWB and other water purveyors. To ensure regional consistency, and prevent the costly duplication of human and financial resources, these campaigns are being used to help meet the City's needs.

Make Water Work



This education and outreach campaign is an OBWB initiative delivered in partnership with its Okanagan WaterWise program and local governments/water purveyors throughout the Okanagan. Launched in 2013,

its aim is to reduce outdoor residential irrigation, which accounts for 24% of all Okanagan water use during the hot summer months. This consistent and professional campaign is widely promoted through a variety of communication



channels (e.g., billboards, bus shelters, rack cards, Facebook ads, radio spots) and regularly features pledge campaigns, contests, challenges, and success stories to foster buy-in for water-use efficiency. Specific promotional messages can be seen on local government websites (including the City's).

RECOMMENDATION: To optimize the educational benefits and outcomes of this established and OBWB-funded campaign, the City could:

- Work more proactively with OBWB to keep campaign information current;
- Share campaign information through other channels such as Facebook; and
- Use prepared Make Water Work messages, ads, and graphics in notices through a mass notification system.

GVW & RDOS Outdoor Water-Use Restriction Messages & Graphics

GVW created water-use graphics for each drought stage that were then customized by RDOS to meet its needs. These graphics were well-received by pilot producers in the *Agriculture Water Supply Status Communications Pilot*, who found them to be informative as well as user-friendly. And RDOS finds them easy to use in multiple applications.



RECOMMENDATION: To benefit from existing messaging and graphics that are already being used successfully by GVW and RDOS, the City could:

- Hire the designer who created the graphics to customize them for use by the City in mass digital notifications, on its website, and through local print and digital media news providers.

Water-Use Efficiency Icons Developed for GVW

GVW hired a designer to create icons representing a variety of water conservation tools and activities. These icons can be used throughout the valley to help provide consistent messaging.

RECOMMENDATION: To build on the design work already undertaken, the City could use the icons in digital and print application, as appropriate.



Water Conservation Symbol/Graphic for City Use in all Applications

Given the number of water conservation messages, materials, and mediums, the City might benefit from having a simple symbol or graphic that appears whenever water conservation is the focus of attention.

RECOMMENDATION: To ensure a consistent, recognizable focus on water conservation, the City could:

- Hire a designer to create a simple icon or graphic like the one at right to be used online and in all water-related emails, social media, and printed materials. The icon could appear on the home page as a link to the Water Conservation page.



WEBSITES (CoP, RDOS, GVW, OBWB)

In today's fast-paced digital world, citizens rely on up-to-date information from their governing bodies and service providers. In the case of drought, for example, a water user should expect to easily find information on the water purveyor's website that is current, clear, simple, concise, compelling, and beneficial. A good website:

- Outlines the cause of the problem;
- States clearly what is expected of water users in response to the problem;
- Uses titles and/or buttons strategically to quickly take readers to the required information;
- Uses a combination of punchy text and compelling photos/graphics; and
- Provides links to further information.

A review of City, RDOS, GVW, and OBWB websites showed the following:

City of Penticton's Website

The City's website hosts information about outdoor Water Conservation on the Public Works page under Water Treatment. This makes water conservation information difficult to find. There is no page for Water Restrictions.

The Water Conservation page currently features 2019 Drought Bulletins, drought stage water restriction information, some efficiency tips, and Make Water Work graphics from OBWB. The page also provides links to OBWB, the Make Water Work campaign, and Okanagan Xeriscape Association. Also, under Water Treatment is a page devoted to Water Consumption, primarily about indoor water use.

RDOS Website

Information on the RDOS website is more accessible, with a 'Water System' icon on the home page that takes viewers easily to links in the left-hand column for Water Conservation and Water Restrictions. The Water Conservation page provides comprehensive information for indoor and outdoor water use. Indoor water use efficiency tips are presented for each room; outdoor tips focus on irrigation as well as plant selection, soil health, and the use of mulch.

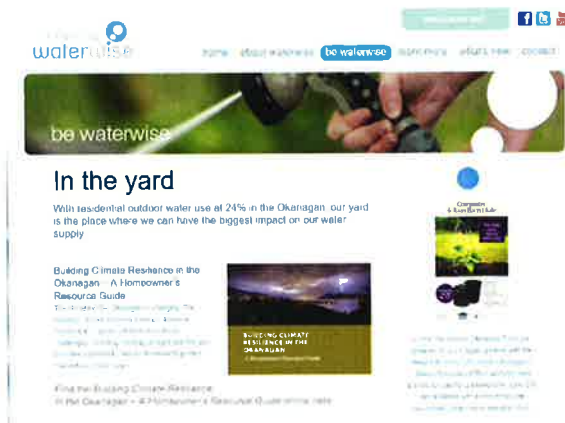
GVW Website

A GVW icon appears on the RDNO's home page, from which viewers can easily find Water Conservation and Water Restrictions in the column on the left. The Water Conservation page doesn't include as much conservation information as the RDOS page, but there are links to numerous helpful websites and fact sheets.

OBWB Website

The OBWB website provides links to other sites featuring conservation and water restriction information. Key among these are the Make Water Work and Okanagan WaterWise sites.

The Make Water Work site promotes specific campaigns. It provides information in short punchy chunks enhanced by large, high-quality photos. The Okanagan WaterWise site provides information on water conservation at home, in the yard, in nature, and at businesses and schools. It’s a welcoming site, with a good blend of text, photos, graphics, videos, and plenty of links for more information.



RECOMMENDATION: To benefit from industry best practices and work that has already been undertaken by other providers, the City could:

- Review other water purveyors’ water conservation web pages to identify how the City’s could be improved;
- Create an outline showing the residential Water Conservation sections (‘Indoor’ and ‘Outdoor’) and segments (‘Indoor’ tips by room / ‘Outdoor’ tips by irrigation equipment type);
- Develop a section for agricultural users and/or a link to agricultural irrigation resources;
- Find the needed text, photos, graphics, videos, and links from other water purveyors’ web pages and request permission to use them;
- Upload the City-specific water conservation icon recommended previously to the home page that would link viewers directly to the Water Conservation page;
- Continue to feature Make Water Work and Okanagan WaterWise info and graphics, as appropriate;
- Celebrate targets met by residential, commercial, and agricultural users;
- Celebrate specific users who are proactively conserving water; and
- Keep information current, especially during times of drought.

ELECTRONIC OUTREACH

Electronic outreach, aside from that tied to a mass notification system, appears to be fairly consistent throughout the province. A brief review of various regional districts and water purveyors showed they typically use a blend of popular digital tools such as email, Facebook, Twitter, YouTube, and Instagram. All sites checked use Facebook, some use Twitter, and a few use Instagram. For electronic outreach to be successful, it must be supported with human and financial resources that ensure quality information and regular updates.

Email Outreach to Key Stakeholders

Water purveyors typically have a list of important water management stakeholders who need to be informed as conditions change and specific responses are required. These might be divided into sections outlining contact information for nearby jurisdictions and water purveyors; “sensitive” users such as hospitals and other medical facilities; and universities, colleges, schools, and daycares. Local media contacts will also be included.

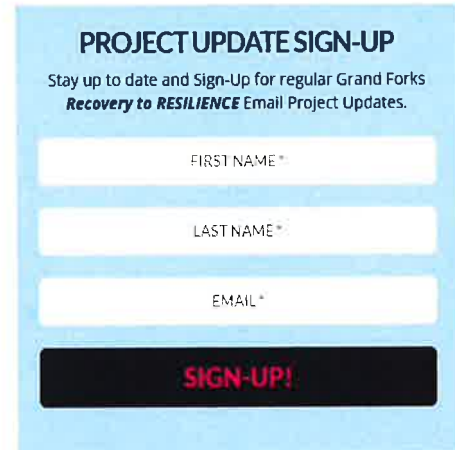
RECOMMENDATION: To enable timely and user-friendly email information that engages the Drought Management Team and key community stakeholders, the City could:

- Encourage pertinent departments to update and share their lists of community stakeholders who require information in real-time as drought stages unfold;
- Appoint a person(s) to compile contact information and create a master email list with specific stakeholder groups clearly defined; and
- Distribute drought stage information via email to stakeholders as outlined in the Key Message and Communication Channel sections.

Email Updates for Water Users

Some water purveyors also invite water users to sign up for ongoing emails that are sent periodically to inform subscribers about general services or specific projects, campaigns, or water management requests or requirements. This approach supports water users who prefer email to other forms of communication, or who are intimidated by other digital tools.

To be effective, the invite icon, button, or graphic should be located in a prominent place on the home page or Water Conservation page (see Grand Forks example at right).



RECOMMENDATION: To support water users who prefer receiving information via email, the City could:

- Create a prominent, sign-up link, button, or graphic to ensure easy access and encourage sign-up;
- Prepare a plan that outlines why and when project updates will be created and distributed;
- Create a layout and flexible format for the update that works well on all devices;
- Appoint person to create updates and ensure timely distribution to subscribers;
- Publicize the opportunity for sign-up through existing City channels;
- Distribute drought stage information via email to subscribers as outlined through Key Messages and Communication Channels.

Facebook & Twitter

The effective, efficient, and timely use of social media by local government can be a gamechanger. In addition to saving time and money, tools such as Facebook and Twitter enable immediate communication during times of crisis. And, over the long term, social media builds trust between government officials and key community audiences.

The City has good Facebook and Twitter feeds that could be used effectively during times of drought.

RECOMMENDATION: To build on the proven popularity and expansive use of these digital tools, the City could:

- Use the previously recommended City-specific symbol to identify a focus on water conservation;
- Use quality, compelling photos and captions to promote water use efficiency throughout the year;
- Use Drought Stage graphics and captions for 'Normal' stage and other stages, as needed;

- Include links to websites, web pages, and videos to provide greater educational opportunities;
- Create posts in advance using Key Messages and Communication Channels information;
- Use Hootsuite or similar social media scheduling technology to pre-schedule posts;
- Celebrate targets met by residential, commercial, and agricultural users; and
- Share stories about specific users who are proactively conserving water;

YouTube

While the City doesn't have a YouTube channel, it does provide video links when sharing information on its website. The strategic use of YouTube videos pertaining to water conservation techniques can be very helpful for people who prefer to receive information that way. Accessing existing how-to videos is practical and affordable, while creating City-specific videos would be more time-consuming and expensive.

RECOMMENDATION: To support the addition of educational opportunities provided by existing how-to videos about water conservation, the City could:

- Peruse other water purveyors' websites and social media feeds for appropriate videos;
- Use and/or provide links to pertinent videos found on trade organization and/or water conservation sites; and
- Consider creating its own source-specific and/or user-specific videos featuring local water users for use on the City's website and in social media.

PRINTED MATERIALS

Before the introduction and evolution of electronic outreach technologies, printed materials were used widely by water purveyors wanting to connect with their customers. While digital tools provide many benefits (e.g., real-time targeted messaging, no printing costs, few distribution costs), the use of printed materials is still recommended in certain situations. To ensure consistency of messaging, all printed materials could exhibit the water conservation symbol recommended earlier.

The following are printed materials currently used by the City to build drought-stage awareness:

Letters are used to inform the City's high-use institutional or ICI customers and to warn repeat water-use offenders.

City News Utility Newsletter

provides monthly opportunities for information about water-use efficiency. These should be made available at City facilities and events and/or distributed by Canada Post unaddressed AdMail



or within local newspapers. PDFs of the newsletters are uploaded to the website and/or promoted social media with links to the PDF.

OBWB's Okanagan Drought Bulletins are issued when the province announces drought stages. These are typically distributed by OBWB, but the City features them on its Water Conservation page. The City can use the information to help water users understand the differences between provincial and City drought stages and responses.

Utility bill inserts enable targeted information as water supply information unfolds, and are helpful in that water users typically open their bills. Information should be clear, simple, concise, colourful, and compelling, with specific calls to action (e.g., check your automatic irrigation system for leaks and positioning, reduce water use 20% by adhering to water-use restrictions). Photos and captions of proactive water users will also help to shift attitudes and behaviours.

Brochures/Handouts are distributed through City facilities and events. They could also be delivered to institutional facilities (e.g., hospital, schools), and water-related businesses (e.g., garden centres, irrigation installers). They are sometimes useful for sharing general information in high-traffic areas, but aren't good tools for sharing information that changes regularly.

Posters created by the City could be used at City facilities and events and/or at institutional facilities such as hospitals, schools, and Interior Health offices. They can also be posted at water-related businesses during the hot summer months (e.g., garden centres, irrigation stores).

Door hangars can be great tools during more serious drought stages. While labour intensive, distribution of the hangars can be undertaken by sports teams, school groups, and others in exchange for a donation.

RECOMMENDATION: To optimize the effectiveness of, and the investment in, printed materials, the City could:

- Conduct an analysis of whether money invested in print materials could be better spent on digital messaging;
- Create a catalogue of existing printed materials and identify gaps;
- Create a list of needed materials and prepare digital files for easy access during drought (e.g., handouts referring to each drought stage);
- Ensure consistency in symbols, icons, messaging, layouts, and colours throughout all materials;
- Identify and contact potential community partners (e.g., water-related businesses) that could share City information during times of drought, and create a master contact list;
- Appoint someone to ensure the *City News Utility Newsletter*, brochures/handouts, and posters are available at City facilities and events, institutional facilities such as hospitals and schools, and water-related businesses served by the City water utility.

SIGNAGE

Road signage can be digital or printed and mounted, depending on availability. Again, their effectiveness depends on targeted locations (e.g., four-way stop in a dry neighbourhood), simple messaging, and a highly visible URL where people can go for more information.

Sandwich boards can be used successfully at City facilities and events. They can also work well to inform targeted groups at specific locations during times of drought. As with billboards, messaging must be concise and layout simple and colourful. For example, sandwich boards could be positioned in high schools or outside grocery stores or liquor stores during Stage 3 restrictions. They could display the Stage 3 Water Supply Shortage graphic and/or a call to reduce daily demand by a certain number of megalitres. They should include a URL where people can go for more information.



Billboards attract attention, especially if messaging is concise, and layout is simple and colourful. The Make Water Work billboards exemplify effective billboard use.

RECOMMENDATION: To optimize the effectiveness of, and the investment in, signage, the City could:

- Collaborate with OBWB to ensure messaging and placement that best meet the City's needs;
- Collaborate with Province of BC to access digital highway signs in the area;
- Use stage-related messaging and graphics on signage whenever possible; and
- Position signs where they are noticeable but not too distracting (in the case of road signs).

LOCAL MEDIA

The relationship a local government/water purveyor has with its local media can make or break a campaign. This is particularly worrisome when the community stakes are high, such as during Stage 4 water restrictions.

The City currently works with local media in the delivery of:

- News releases (for articles in print and digital formats);
- Paid advertising (for notices of drought responses in print and digital formats); and
- Public service announcements regarding drought stages and required responses.

RECOMMENDATION: To optimize the effectiveness of, and the investment in, media coverage, the City could:

- Collaborate with OBWB to prevent the duplication of human and/or financial resources;
- Use the City's water conservation icon recommended earlier, along with stage-related messaging and graphics whenever possible;
- Identify a water conservation spokesperson who will be quoted in media releases (e.g., Mayor, department head, communications officer, member of the Drought Management Team);
- Ensure media contact list is updated regularly and includes industry media sources;
- Work with the media to develop ideas for contests, challenges, etc.; and
- Work with media to showcase goals met and proactive water users.

FRONTLINE STAFF & DROUGHT STAGE HOTLINE

Frontline City staff are an invaluable resource during times of drought. These include, but are not limited to, communication officers, reception staff at all City facilities, on-the-ground utility workers, bylaw officers, and summer students. To optimize the effect these employees can have, it's important that they're kept in the loop about drought stages and provided with stage-specific handouts for distribution as they do their work. The use of bylaw officers and summer students can be particularly helpful, especially during drought stages 3 and 4.

A **Drought Stage Hotline** could provide water users with real-time info about drought stages and associated water restrictions. Information would have to be updated regularly (in some cases daily) to reflect ongoing changes in drought and the required response.

PARTNER INDIVIDUALS & ORGANIZATIONS

Community "partners" are key stakeholders who will influence, implement, monitor, and/or enforce water conservation behaviours. These could be nearby jurisdictions, local institutions, neighbourhood/area associations, garden clubs, irrigation-related businesses, and the media. Perhaps there's a local entrepreneur who offers a generous discount on highly efficient irrigation equipment and/or drought-tolerant plants, and then hosts free workshops on how to build and maintain a xeriscape garden.

Community “champions” – whether they be elected officials, entrepreneurs, hockey players, media influencers, or the determined neighbour who lives next door – are valuable in the fight for behaviour change to protect resources. These are the folks who do the hard help change social norms over time.

In this case, for example, a Block Parent might be passionate about water conservation in his neighbourhood. He approaches the City about getting several Stage 2 handouts that he can drop off to every household on his block.

Community “experts” help legitimize the City’s requests for improved water conservation. For example, a popular local garden expert could talk on radio or TV about water conservation and the need for good soil and mulch. An irrigation expert could share techniques for optimizing the efficiency of automatic sprinkler systems. These people could be interviewed by the local media, or could voice radio ads and Public Service Announcements, and the City’s water conservation hotline.

RECOMMENDATION: To optimize community participation and to help change social norms, the City could:

- Identify key community partners, champions, and experts to help support City messaging in all drought stages, but particularly in Stage 2 and Stage 3;
- Meet with partners, champions, and experts to explore their passion for water conservation and the messages they’re most enthusiastic about; and
- Use meeting outcomes to create interview questions and write brief stories for use on the City website, the *City News Utility Newsletter*, email updates for water users, and social media.

5. COMMUNICATION STRATEGY: Recommended Foundational Activities

The effectiveness of the DMP and its Communications Strategy will depend on the City's commitment and capacity to create the needed tools to support strategy recommendations. To that end, the following is recommended to build a strong foundation upon which future drought communications can be build:

Communication Strategy

- Review this Drought Management Communication Strategy with input from City water management officials and communications staff.
- Revise and distribute strategy as appropriate to key City officials for adoption.
- Decide who will be responsible for short-term preparation activities and/or long-term implementation.
- Distribute key segments of the adopted strategy to appropriate City officials and key community stakeholders (e.g., members of the Drought Management Team ,communications staff working for "sensitive" customers such as the hospital and school district, Penticton Indian Band).



Mass Notification System

- Check with other local governments that are using such a system (e.g., RDOS).
- Explore options for use by all City departments, recognizing its potential to save money and time while significantly increasing reach.

Branded Campaigns

- Continue to use the Make Water Work and Okanagan WaterWise ads and graphics.
- Create City-specific graphics for all drought stages using the ones created by RDOS and GVW as models.
- Use water conservation icons developed by GVW.
- Create a simple and adaptable Water Conservation symbol for the City that can be used online and in all printed materials pertaining to water conservation.

Website

- Review RDOS, GVW, and OBWB websites to identify opportunities for shared information, photos, and graphics.
- Put Water Conservation page link on City home page.
- Update website to reflect recommendations in 'WEBSITE' section if this document.

Electronic Outreach

- Update/create detailed list of key stakeholders with contact information.
- Consider development of email updates for water users .

Facebook & Twitter

- Stockpile photos and graphics for use on social media.
- Prepare posts in advance using Key Messages and Communications Channels information.
- Identify potential “champions” for stories on Facebook and website.

Printed Materials

- Prepare a catalogue of printed materials.
- Review materials and identify ones to be updated or replaced.
- Identify existing and potential opportunities for sharing drought-stage information in print and conduct a cost-benefit analysis between print and digital communication.
- Create digital print files for handouts pertaining to each drought stage.
- Create digital print files for posters and door hangers needed during drought stages 3 and 4.

Signage

- Connect with OBWB about billboard messages and locations for 2020 and 2021.
- Connect with Province of BC to explore opportunities for use of digital highway signs.
- Create digital print files for drought stages 3 and 4 road signs and sandwich boards.

Local Media

- Create news release template using City’s water conservation symbol.
- Identify a City spokesperson and familiarize him/her with the strategy.
- Introduce Drought Management Team and emphasize its role regarding drought communication (liaison between public and City).
- Meet with key media influencers to explore innovate ways to promote water conservation.

Frontline City Workers / Drought Stage Hotline

- Identify key frontline City workers who will need ongoing information and pertinent handouts.
- Explore introducing a City hotline to provide regular updates about drought stages and water restrictions.

Community Partners, Champions & Experts

- Identify potential community partners, champions, and experts and approach them about opportunities to help share the conservation message, especially during drought stages 2 and 3.

6. COMMUNICATION STRATEGY: Key Messages & Communication Channels

Residential & Commercial Water Users

'NORMAL' MESSAGES (for residential/commercial)

Sample 'NORMAL' messages for use on website and in emails, email updates, and news releases

City reports NORMAL conditions, but encourages water-use efficiency

- The City of Penticton's reservoir levels are normal for this time of year. Still, all water customers are encouraged to use water efficiently.
- To reduce water use, customers can:
 - Comply with 'Normal' **RESIDENTIAL/COMMERCIAL** water restrictions:
 - **Who:** Odd and even house number alternate
 - **Manual Sprinklers:** Alternate days of the months (6-8am and 5-10pm)
 - **Automatic Sprinklers:** Alternate days of the month (10pm-4am)
 - Repair irrigation leaks
 - Check automatic systems for wastage (e.g., check position of nozzles)
 - Program automatic systems for optimal efficiency
 - Water lawns only one inch per week
 - Water early and late in the day
 - Replace existing lawn and gardens with drought-tolerant plants

Sample 'NORMAL' mass notification system messages / PTA text

TEXT #1

WATER SUPPLY UPDATE: Water levels are 'Normal', but it's still important to save water by following the City's odd/even address water restrictions. Learn more at www.penticton.ca (linked to water conservation page).

FOLLOW-UP TEXTS

WATER SUPPLY UPDATE: The City's water levels are 'Normal' for this time of year. Still, we encourage you to save water by fixing irrigation leaks and checking automatic system nozzles and programming. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

WATER SUPPLY UPDATE: Reservoir levels as 'Normal' for this time of year, but the City asks you to save water by irrigating early or late in the day to prevent evaporation. For water restrictions and other tips visit www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

'NORMAL' COMMUNICATION CHANNELS (for residential/commercial)

DEFINITION	Normal
SUPPLY STATUS & TRIGGER FACTORS	Normal Status is defined by the average storage condition. Storage volumes within the 95% confidence limit of average are considered to be within normal limits.
COMMUNICATIONS & EDUCATION	<p>Provide residential and commercial water users with ongoing communication and education about the City's naturally dry watershed. Encourage water-use efficiencies. Promote drought awareness and preparedness. Refer to Key Messages above.</p> <p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Use 'Normal' drought stage graphic. ✓ Invite sign-up for mass notification system and water conservation email updates. ✓ Continue to use Make Water Work and Okanagan WaterWise information and graphics, and change periodically. ✓ Include information about watersheds, water supplies, drought forecasts, water-use efficiency, and water conservation tactics and tools on Water Conservation page. ✓ Include links to other sources of information. ✓ Upload a video to the Water Conservation page, and change video periodically. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send a text and/or email in the spring including a link to information about water storage levels, snowpack, and other important information. <p>ELECTRONIC & PERSONAL OUTREACH</p> <p>Water Conservation Email Updates</p> <ul style="list-style-type: none"> ✓ Prepare and distribute water conservation email updates from May to September. ✓ Include information about 'Normal' water restrictions; general water efficiency tools, tips, and links; and local residential and commercial success stories. <p>Facebook, Twitter & YouTube</p> <ul style="list-style-type: none"> ✓ Post regular reminders about 'Normal' water restrictions using compelling photos and captions. ✓ Link to YouTube water conservation videos. <p>Bylaw Staff and/or Summer Student</p> <ul style="list-style-type: none"> ✓ Distribute handouts/door hangers to users who aren't following restrictions. <p>PRINTED MATERIALS</p> <ul style="list-style-type: none"> ✓ Include 'Normal' water restrictions and general efficiency tips in <i>City News Utility Newsletter</i> and bill inserts. ✓ Create handout that outlines 'Normal' water restrictions and associated water conservation tips and links. Distribute to City facilities and hand out at City events. <p>LOCAL MEDIA</p> <ul style="list-style-type: none"> ✓ Run PSAs informing users of 'Normal' water restrictions and why it's important to conserve water year-round.



EVENTS

- ✓ Hand out printed materials at appropriate City and community events.
- ✓ Host events for specific groups to build awareness about water conservation (e.g., schools, gardening groups, irrigation installers).

'STAGE 1' MESSAGES (for residential/commercial)

Sample Stage 1 messages for use with website, emails, email updates, and news releases

City reports below-normal reservoir levels and dry conditions / Reduce water use by 10%

- Conditions are dry and reservoir levels are below normal for this time of year.
- In response to this mild Stage drought, all customers are asked to reduce water use by 10%.
- Conserving water now will reduce chance of moving to higher drought stages.
- To reduce water use by 10%, customers are asked to:
 - Comply with drought Stage **RESIDENTIAL/COMMERCIAL** water restrictions:
 - **Who:** Odd and even house number alternate
 - **Manual Sprinklers:** 2 days/week (6am-8am and 7-10pm)
 - **Automatic Sprinklers:** Alternate days of the month (10pm-4am)
 - Repair irrigation leaks
 - Replace damaged or inefficient irrigation equipment
 - Check automatic systems for wastage (e.g., check position of nozzles)
 - Program automatic systems for optimal efficiency
 - Water early and late in the day
 - Water lawns only one inch per week
 - Replace existing lawn and gardens with drought-tolerant plants
- Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

Sample Stage 1 mass notification system messages / PSA text

TEXT #1:

WATER SUPPLY UPDATE: Conditions are dry and City's reservoir levels are below normal for this time of year. In response to this Stage drought, please reduce water use by 10%. It's important to comply with water restrictions and repair or replace inefficient irrigation equipment. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing a mild, Stage drought, with reservoir levels being __% of normal for this time of year. To cut water use by 10%, the City's asks that you follow water restrictions and repair or replace inefficient irrigation equipment. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

WATER SUPPLY UPDATE: In response to our continued dry conditions and below-normal reservoir levels for this time of year), the City reiterates the need to cut water use by 10%. Please respect to water restrictions and repair or replace inefficient irrigation equipment. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

'STAGE 1' COMMUNICATION CHANNELS (for residential/commercial)

DEFINITION	Dry / Mild Drought
SUPPLY STATUS & TRIGGER FACTORS	Average water storage available. Strive to maintain, not exceed, average summer usage. Ongoing water conservation education and water use efficiency needed.
DROUGHT REGULATIONS	Voluntary reductions of 10%
COMMUNICATION & EDUCATION	<p>Provide water users with targeted communication about the mild drought status and their role in responding to voluntary reduction measures. Refer to Key Messages above.</p> <p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Use a drought Stage 1 graphic on the Water Conservation page. ✓ Indicate water restrictions and consumption targets. ✓ Invite sign-up for mass notification system and water conservation email updates. ✓ Continue to use Make Water Work and Okanagan WaterWise information and graphics, and change periodically. ✓ Include links to information about watersheds, water supplies, drought forecasts, water efficiency, and water conservation tactics/tools on Water Conservation page. ✓ Include links to other sources of conservation information. ✓ Upload a video pertaining to water efficient irrigation tools and tips <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send texts and/or emails twice monthly during drought Stage to remind users of water restrictions and the need to repair or replace faulty or inefficient irrigation equipment. Include links to Water Conservation webpage and other good sources. <p>ELECTRONIC & PERSONAL OUTREACH</p> <p><i>Water Conservation Email Updates</i></p> <ul style="list-style-type: none"> ✓ Distribute twice-monthly water conservation email updates from May to September. ✓ Include information about Stage 1 water restrictions; general water efficiency tools, tips, and links; and local residential and ICI success stories. <p><i>Facebook, Twitter & YouTube</i></p> <ul style="list-style-type: none"> ✓ Post regular reminders about drought Stage 1 water restrictions using photos and captions. ✓ Link to sources of good information and YouTube videos. <p><i>Bylaw Staff and/or Summer Student</i></p> <ul style="list-style-type: none"> ✓ Distribute Stage 1 handouts to people who aren't following restrictions.

PRINTED MATERIALS

- ✓ Include drought Stage water restrictions and general efficiency tips in *City News* utility newsletter and bill inserts.
- ✓ Print Stage 1 handouts for distribution to City facilities and events.

LOCAL MEDIA

- ✓ Distribute news release introducing Stage 1 reservoir levels, water restrictions, and consumption targets to all local media on list.
- ✓ Run additional PSAs informing users of Stage 1 water restrictions and quick tips on repairing and/or replacing faulty or inefficient irrigation equipment.

EVENTS

- ✓ Hand out printed materials at appropriate City and community events.
- ✓ Host events for specific groups to build awareness about water conservation (e.g., schools, gardening groups, irrigation installers).

'STAGE 2' MESSAGES (for residential/commercial)

Sample Stage 2 messages for use with website, emails, email updates, and news releases

City reports low reservoir levels and very dry conditions / Reduce water use by 20%

- Conditions are very dry and reservoir levels are below normal for this time of year.
- This moderate drought Stage 2 requires that all customers reduce water use by 20%.
- The City is implementing strategies and targets to ensure existing supplies last.
- Conserving water now will reduce chance of moving to higher drought stages.
- To reduce water use by 20%, customers are asked to:
 - Comply with drought Stage 2 **RESIDENTIAL/COMMERCIAL** water restrictions;
 - **Who:** Odd and even house number alternate
 - **Manual Sprinklers:** 2 days/week (6am-8am and 7-10pm)
 - **Automatic Sprinklers:** 2 days/week (10pm-4am)
 - Help meet City conservation targets:
 - Yesterday's water use was 105 ML; our goal for today is 95ML.
 - Hand-water wherever possible
 - Ensure automatic watering systems are leak-free and properly programmed
 - Water early and late in the day
 - Replace existing lawn and gardens with good soil and drought-tolerant plants
- We recognize there may be hardships, and thank you for your conservation efforts.
- Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

Sample STAGE 2 mass notification system messages / PSA text

TEXT #1:

WATER SUPPLY UPDATE: Water reservoir levels are below normal for this time of year and very dry conditions are being reported. In response to this Stage 2 drought, the City requires you to reduce outdoor water use by 20%. Respect water restrictions and minimize irrigation where possible. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you for being water efficient!

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: Reservoir levels are still low for this time of year and conditions are very dry. During this Stage 2 drought, please cut water use by 20%. Follow water restrictions and minimize irrigation wherever possible. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you in advance for saving water and stay tuned for more important information!

WATER SUPPLY UPDATE: We're still experiencing a moderate drought that requires you to cut outdoor water use by 20%. Respect water restrictions and hand-water wherever possible. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you in advance for being part of the solution. Stay tuned for more important information!

'STAGE 2' COMMUNICATION CHANNELS (for residential/commercial)

DEFINITION	Very Dry / Moderate Drought
SUPPLY STATUS & TRIGGER FACTORS	Drought Stage 2 status occurs during prolonged periods of no rain and hot/dry weather, and/or with below-average snowpack conditions. This represents a moderate level of drought when the water supply is becoming stressed. Water restrictions are needed to sufficiently reduce demand.
DROUGHT REGULATIONS	Voluntary reductions of 20%
COMMUNICATION & EDUCATION	Provide water users with targeted communication about the moderate drought status and their role in responding to mandatory reduction measures. Refer to Key Messages above.
	<p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Use a drought Stage 2 graphic on the Water Conservation page. ✓ Indicate water restrictions and consumption targets. ✓ Invite sign-up for mass notification system and water conservation email updates. ✓ Feature brief stories with photos of residential and commercial water conservation "champions" and "experts". ✓ Continue to use Make Water Work and Okanagan WaterWise information and graphics, and change periodically. ✓ Include links to information about watersheds, water supplies, drought forecasts, water-use efficiency, and water conservation tactics and tools on Water Conservation page. ✓ Include links to other sources of conservation information. ✓ Upload a video pertaining to water efficient irrigation tools and tips

MASS NOTIFICATION SYSTEM

- ✓ Send texts and/or emails twice monthly during Stage 2 response to remind users of water restrictions and the need to repair or replace faulty or inefficient irrigation equipment. Include links to Water Conservation webpage and other sources of good information.

LETTERS

- ✓ Send letters to high-use customers alerting them of Stage 2 conditions and the need for them to reduce use significantly to prevent the move to Stage 3 restrictions

ELECTRONIC & PERSONAL OUTREACH

Emails to Key Stakeholders

- ✓ Distribute email to specific groups of key stakeholders explaining the drought stage and the required responses needed to prevent the move to Stage 3.

Water Conservation Email Updates

- ✓ Prepare and distribute weekly water conservation email updates during Stage 2.
- ✓ Use Drought Stage 2 graphic.
- ✓ Include information about Stage 2 water restrictions; general water efficiency tools, tips, and links; and local residential and commercial success stories.

Facebook, Twitter & YouTube

- ✓ Post weekly reminders about Stage 2 water restrictions using photos and captions.
- ✓ Use Drought Stage 2 graphic.
- ✓ Link to sources of good information and YouTube videos.

Bylaw Staff and/or Summer Student

- ✓ Distribute Stage 2 handouts to people who aren't following restrictions.

PRINTED MATERIALS

- ✓ Include Drought Stage 2 graphic, water restrictions, and general efficiency tips in *City News Utility Newsletter* and bill inserts.
- ✓ Print and distribute Stage 2 handouts to City facilities and events, and share with key community stakeholders (e.g., water-related businesses)

LOCAL MEDIA

- ✓ Distribute media release introducing Stage 2 reservoir levels, water restrictions, and consumption targets.
- ✓ Run additional PSAs and paid advertising informing users of Stage 2 water restrictions and quick tips on further minimizing irrigation (e.g., by hand-watering).

EVENTS

- ✓ Hand out printed materials at appropriate City and community events.
- ✓ Host events for specific groups to build awareness about water conservation (e.g., schools, gardening groups, irrigation installers).

FRONTLINE STAFF

- ✓ Ensure frontline staff are familiar with Stage 2 water restrictions.



WATER CONSERVATION HOTLINE

- ✓ Record weekly messages to provide callers with information about reservoir levels, water restrictions and consumption targets.

'STAGE 3' MESSAGES (for residential/commercial)

Sample Stage 3 messages for use with website, emails, email updates, and news releases

City reports very low reservoir levels and extremely dry conditions / Reduce water use by 50%

- Conditions are extremely dry and reservoir levels are very low.
- Peak flows must be reduced by 50% to maintain critical supply levels.
- During Stage 3 drought, all customers are required to reduce water use by 50%.
- Mandatory water restrictions apply, and lack of compliance will result in fines.
- Conserving water now may prevent us from moving to emergency conditions.
- Certain water users have been prioritized for overall community benefit.
- To reduce water use by 50%, customers are asked to:
 - Comply with drought Stage 3 **RESIDENTIAL/COMMERCIAL** water restrictions:
 - **Who:** Odd and even house number alternate
 - **Manual Sprinklers:** 1 day/week (8-11pm)
 - **Automatic Sprinklers:** 1 day/week (10pm-2am)
 - Help meet required conservation targets:
 - Yesterday's water use was 85 ML; our goal for today is 80 ML.
- We recognize there may be hardships, and thank you for your conservation efforts.
- Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

Sample Stage 3 mass notification system messages / PSA text

TEXT #1:

WATER SUPPLY UPDATE: Reservoir levels are very low, and conditions are EXTREMELY DRY. The City requires you to reduce water use by 50%. Lack of compliance will result in fines. Follow Stage 3 water restrictions and hand-water wherever possible. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you in advance for your water efficiency efforts!

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing a severe drought and very low reservoir levels. You are required to cut water use by 50%. Lack of compliance with Stage 3 water restrictions will result in fines. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you for saving water!

WATER SUPPLY UPDATE: Severe drought conditions and very low reservoir levels require a Stage 3 drought response. You are required to cut water use by 50%. Lack of compliance with water restrictions will result in

finer. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca. Thank you for being water efficient!

'STAGE 3' COMMUNICATION CHANNELS (for residential/commercial)

DEFINITION	Severe Drought
SUPPLY STATUS & TRIGGER FACTORS	Drought Stage 3 status represents severe drought conditions, when water supplies are experiencing a critical shortage.
DROUGHT REGULATIONS	Mandatory water use reductions of 50%
COMMUNICATION & EDUCATION	Provide water users with targeted communication about the severe drought status and their role in responding to mandatory reduction measures. Refer to Key Messages above.
	<p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Use Drought Stage 3 graphic on home page. ✓ Indicate water restrictions and consumption targets. ✓ Indicate bylaw enforcement activities and fines for lack of compliance. ✓ Report out on current versus required consumption data and targets. ✓ Invite sign-up for mass notification system and water conservation email updates. ✓ Feature brief stories with photos of residential and commercial water conservation “champions” and “experts”. ✓ Continue to use Make Water Work and Okanagan WaterWise information and graphics, and change periodically. ✓ Include links to information about watersheds, water supplies, drought forecasts, water-use efficiency, and water conservation tactics and tools on Water Conservation page. ✓ Include links to other sources of conservation information. ✓ Upload a video pertaining to water efficient irrigation tools and tips <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send texts and/or emails weekly during Stage 3 response to remind users of water restrictions and consumption targets. ✓ Include links to Water Conservation webpage and other sources of good water-use efficiency information. <p>PHONE CALLS</p> <ul style="list-style-type: none"> ✓ Connect with relevant key stakeholders to discuss required actions. ✓ Phone top users to discuss their response to Stage 3 conditions and restrictions.

ELECTRONIC & PERSONAL OUTREACH

Emails to Key Stakeholders

- ✓ Distribute email to specific groups of key stakeholders not connected with by phone explaining the drought stage and the required responses needed to prevent the move to Stage 4.

Water Conservation Email Updates

- ✓ Prepare and distribute weekly water conservation email updates during Stage 3.
- ✓ Include information about Stage 3 water restrictions; general water efficiency tools, tips, and links; and local residential and commercial success stories.

Facebook, Twitter & YouTube

- ✓ Use Drought Stage 3 graphic.
- ✓ Clearly indicate bylaw enforcement activities and fines for lack of compliance.
- ✓ Report out on current versus required consumption data and targets.
- ✓ Link to sources of good information and YouTube videos.

Bylaw Staff and/or Summer Student

- ✓ Distribute Stage 3 handouts/door hangars/fines to people who aren't following restrictions.

PRINTED MATERIALS

- ✓ Include Stage 3 water restrictions and consumption targets in *City News Utility Newsletter* and bill inserts.
- ✓ Print and distribute Stage 3 handouts to City facilities and events, and share with key community stakeholders (e.g., hospitals, schools, water-related businesses).
- ✓ Create posters that can be distributed to City facilities, institutions, and water-related businesses.
- ✓ Create door hangers that can be distributed to highly affected areas by community groups, students, etc.

SIGNAGE

- ✓ Position Stage 3 road signage at key locations throughout the City.
- ✓ Work with local institutions (e.g., banks) to use their digital signs for messaging.

LOCAL MEDIA

- ✓ Distribute media release outlining Stage 3 reservoir levels, water restrictions, and consumption targets to all contacts on media list.
- ✓ Run additional PSAs and paid advertising informing users of Stage 3 water restrictions and consumption targets.
- ✓ Request on-air opportunities for City spokesperson to solicit community support.
- ✓ Approach local garden expert to voice PSAs.



EVENTS

- ✓ Give presentations and provide handouts at appropriate City and community events.

FRONTLINE STAFF

- ✓ Involve City staff and stakeholders responsible for Emergency Response Plan.
- ✓ Ensure frontline and bylaw enforcement staff are familiar with Stage 4 water restrictions and related fines.

WATER CONSERVATION HOTLINE

- ✓ Record daily messages to provide callers with information about reservoir levels, water restrictions and consumption targets.

'STAGE 4' MESSAGES (for residential/commercial)

Sample Stage 4 messages for use with website, emails, email updates, and news releases

CITY REPORTS EMERGENCY CONDITIONS

- **No outdoor water use is permitted.**
- Peak flows must be reduced by 90% to maintain critical supply levels.
- Water is spared for consumptive, health, and sanitary purposes only.
- During Stage 4 drought, all customers are required to reduce water use by 90%.
- Mandatory water restrictions apply, and lack of compliance will result in fines.
- Certain water users have been prioritized for overall community benefit.
- We recognize there may be hardships, and thank you for your conservation efforts.
- Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

Sample Stage 4 Civic Ready text messages

TEXT #1:

WATER SUPPLY UPDATE: The City of Penticton reports EMERGENCY WATER CONDITIONS. We must reduce water use by 90%, meaning no outdoor irrigation is permitted. We recognize this is difficult, and certainly appreciate your conservation efforts. Learn more about this Stage 4 drought at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing EMERGENCY CONDITIONS, meaning consumption must be reduced by 90%. To that end, outdoor watering is not permitted, and lack of compliance will result in fines. We recognize this is difficult, and certainly appreciate your conservation efforts during this Stage 4 drought. Learn more at www.penticton.ca (linked to water conservation page), www.okwaterwise.ca or www.makewaterwork.ca.

'STAGE 4' COMMUNICATION CHANNELS (for residential/commercial)

DEFINITION	Loss of Supply
SUPPLY STATUS & TRIGGER FACTORS	Strict water restrictions are needed to maintain critical supplies. Represents an emergency loss of supply during which water is spared for consumptive, health, and sanitary purposes only.
DROUGHT REGULATIONS	Mandatory water use reduction of 90% (no outside watering)
COMMUNICATION & EDUCATION	Provide water users with targeted communication about the EMERGENCY CONDITIONS and their role in responding to mandatory reduction measures. Refer to Key Messages above.
	<p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Use Drought Stage 4 graphic on home page. ✓ Clearly indicate irrigation ban and consumption targets. ✓ Clearly indicate bylaw enforcement activities and fines for lack of compliance. ✓ Invite sign-up for mass notification system and water conservation email updates. ✓ Feature brief stories with photos of residential and commercial water conservation "champions" and experts. ✓ Continue to use Make Water Work and Okanagan WaterWise information and graphics, and change periodically. ✓ Include links to other sources of conservation information. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send texts and/or emails twice weekly during Stage 4 response to remind users of irrigation ban and consumption targets. ✓ Include links to Water Conservation webpage and other sources of good water-use efficiency information. <p>PHONE CALLS</p> <ul style="list-style-type: none"> ✓ Continue to connect with relevant key stakeholders to discuss required actions. ✓ Phone top users to discuss their response to Stage 4 conditions and restrictions. <p>ELECTRONIC & PERSONAL OUTREACH</p> <p><i>Emails to Key Stakeholders</i></p> <ul style="list-style-type: none"> ✓ Distribute email to specific groups of key stakeholders not connected with by phone explaining the Stage 4 emergency and their required responses. <p><i>Water Conservation Email Updates</i></p> <ul style="list-style-type: none"> ✓ Prepare and distribute twice-weekly Stage 4 water conservation updates. ✓ Include info about reservoir levels, irrigation ban, and consumption targets. ✓ Clearly indicate bylaw enforcement activities and fines for lack of compliance.

Facebook, Twitter & YouTube

- ✓ Use Stage 4 graphic.
- ✓ Include information about reservoir levels, irrigation ban, and consumption targets.
- ✓ Clearly indicate bylaw enforcement activities and fines for lack of compliance.
- ✓ Link to sources of good information and YouTube videos.

Bylaw Staff and/or Summer Student

- ✓ Distribute Stage 4 door hangars / fines to people who aren't following restrictions.

PRINTED MATERIALS

- ✓ Include Stage 4 water restrictions and consumption targets in *City News Utility Newsletter* and bill inserts.
- ✓ Print and distribute Stage 4 handouts to City facilities and events, and share with key community stakeholders (e.g., hospitals, schools, water-related businesses).
- ✓ Create and distribute Stage 4 posters to City facilities, institutions, and water-related businesses.
- ✓ Distribute door hangers to the wider community.

SIGNAGE

- ✓ Position Stage 4 road signage at key locations throughout the City.
- ✓ Position Stage 4 sandwich boards at places where people visit or congregate (e.g., outside grocery stores).
- ✓ Work with local institutions (e.g., banks) to use their digital signs for messaging.

LOCAL MEDIA

- ✓ Distribute media releases, as often as needed, outlining Stage 4 reservoir levels, water restrictions, and consumption targets to all contacts on media list.
- ✓ Run additional PSAs and paid advertising informing users of Stage 4 water restrictions and consumption targets.
- ✓ Request frequent on-air opportunities for City spokesperson to solicit community support.

EVENTS

- ✓ Give presentations and have handouts at City and community events.

FRONTLINE STAFF

- ✓ Involve City staff and stakeholders responsible for Emergency Response Plan
- ✓ Ensure frontline and bylaw enforcement staff are familiar with Stage 4 water restrictions and related fines.

WATER CONSERVATION HOTLINE

- ✓ Record daily messages to provide callers with information about reservoir levels, water restrictions and consumption targets.

COMMUNICATION CONTACTS (for residential/commercial)

	Organization/ Department	Contact Person	Email Address	Phone
Province of BC				
OBWB				
Nearby Jurisdictions				
Local Institutions				
Community Groups				
Irrigation Businesses				
Local & Provincial Media				

Agricultural Water Users

'NORMAL' MESSAGES (for agriculture)

Sample 'normal' message for use with website, emails, news releases, etc.

City reports normal conditions, but encourages water-use efficiency

- The City of Penticton's reservoir levels are normal for this time of year. Still, all water customers are encouraged to use water efficiently. Agricultural customers can reduce water use by applying these water-use efficiency measures:
 - Fix irrigation system leaks, check nozzles for uniformity, and program your system to match crop, soil, and climate conditions.
 - Improve irrigation scheduling techniques by using [Farmwest](#), soil moisture measurements, and BC's [Irrigation Scheduling Calculator](#). Knowing how to schedule during non-drought conditions will help you adapt during drought.
 - Use a qualified contractor (IIABC Certified Designer) to evaluate system performance and make improvements, if possible. CIDs can be found at: www.irrigationbc.com/irrigation/certifications/search/.
 - Consider a new irrigation system if your existing system is inefficient.

Sample 'normal' text messages

WATER SUPPLY UPDATE: The City of Penticton's reservoir levels are within the normal range (___%) for this time of year. We encourage you to make water-use efficiency a priority by fixing leaks and checking nozzles and programming. Learn more at www.obwb.ca/ag.

WATER SUPPLY UPDATE: The City of Penticton reports normal conditions with average reservoir levels (___% for this time of year). It's still important to use water efficiently, so please fix leaks and check nozzles and programming. Learn more at www.obwb.ca/ag.

WATER SUPPLY UPDATE: Although reservoir levels are average for this time of year (___%), the City of Penticton encourages you to use water efficiently by fixing leaks and checking nozzles and programming. Learn more at www.obwb.ca/ag.

'NORMAL' COMMUNICATION CHANNELS (for agriculture)

DEFINITION	Normal
SUPPLY STATUS & TRIGGER FACTORS	Normal Status is defined by the average storage condition. Storage volumes within the 95% confidence limit of average are considered to be within normal limits. Storage volumes within the Normal Water Supply Status are sufficient to meet supply at current levels of demand.
DROUGHT REGULATIONS & RESPONSE	TBD
COMMUNICATIONS & EDUCATION	<p>Provide agricultural water users with ongoing communication and education about GVW's naturally dry watershed. Encourage water-use efficiencies. Promote drought awareness and preparedness. Refer to Key Messages document.</p> <p>WEBSITES</p> <ul style="list-style-type: none"> ✓ Include agriculturally related information about watersheds, water supplies, drought forecasts, water-use efficiency, and water conservation tactics and tools on RDNO website. <p>LETTERS / REPORTS</p> <p><i>Spring Turn-On Letter</i></p> <ul style="list-style-type: none"> ✓ Include current information about water storage levels, snow pack, and drought forecasts. ✓ Promote 'sign-up' for electronic outreach. <p><i>Fall Turn-Off Letter</i></p> <ul style="list-style-type: none"> ✓ Include current information about water storage levels, overall consumption, and trends related to agricultural water use. ✓ Promote 'sign-up' for electronic outreach. ✓ Message about how many users signed up for the electronic outreach, comments about the pilot project. <p>ELECTRONIC OUTREACH</p> <ul style="list-style-type: none"> ✓ Send a text and/or email in the spring including a link to information about water storage levels, snow pack, and other water-related predictions. ✓ Send monthly posts including links to water-use efficiency and conservation tactics/tools. <p>PARTNER ORGANIZATIONS</p> <ul style="list-style-type: none"> ✓ N/A

'STAGE 1' MESSAGES (for agriculture)

Sample Stage 1 message for use with website, emails, news releases, etc.

City reports below-normal reservoir levels and dry conditions

- The City of Penticton reports that conditions are dry and reservoir levels are below normal for this time of year (__%). Agricultural customers can reduce water use by applying these water-use efficiency measures:
 - Install soil moisture monitoring equipment to minimize water leaching due to overirrigation.
 - Fix irrigation system leaks, check nozzles for uniformity, and program your system to match crop, soil, and climate conditions.
 - Improve irrigation scheduling techniques by using [Farmwest](#), soil moisture measurements, and BC's [Irrigation Scheduling Calculator](#). Knowing how to schedule during non-drought conditions will help you adapt during drought.
 - Use a qualified contractor (IIABC Certified Designer) to evaluate system performance and make improvements, if possible. CIDs can be found at: www.irrigationbc.com/irrigation/certifications/search/.
 - Consider a new irrigation system if your existing system is inefficient.

Sample Stage 1 text messages

TEXT #1:

WATER SUPPLY UPDATE: Conditions are dry, and the City of Penticton's reservoir levels are below normal for this time of year (__%). In response to this mild drought, please reduce water use by matching irrigation with soil and crop types, and installing soil moisture monitoring equipment. Learn more at www.obwb.ca/ag.

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing a mild drought, with reservoir levels being __% of normal for this time of year. The City asks that you cut water use by matching irrigation with soil and crop types, and installing soil moisture monitoring equipment. Learn more at www.obwb.ca/ag.

WATER SUPPLY UPDATE: Mild drought conditions continue, and the City's reservoir levels are at (__%) of normal. Please reduce water use by matching irrigation with soil and crop types, and installing soil moisture monitoring equipment. Learn more at www.obwb.ca/ag.

WATER SUPPLY UPDATE: In response to our continued dry conditions and below-normal reservoir levels (__% for this time of year) please cut water use by matching irrigation with soil and crop types, and installing soil moisture monitoring equipment. Learn more here www.obwb.ca/ag.

'STAGE 1' COMMUNICATION CHANNELS (for agriculture)

DEFINITION	Mild Drought
SUPPLY STATUS & TRIGGER FACTORS	TBD
DROUGHT REGULATIONS & RESPONSE	Voluntary reductions TBD
COMMUNICATION & EDUCATION	<p>Provide agricultural water users with targeted communication about the mild drought status and their role in responding to voluntary reduction measures. Refer to Key Messages document.</p> <p>WEBSITES</p> <ul style="list-style-type: none"> ✓ Include agriculture-specific Stage 1 information, and links to water-use efficiency and conservation information, on utility website. <p>LETTERS / REPORTS</p> <p><i>Stage 1 Letter (with 'Important Water Supply Information Inside' on envelope)</i></p> <ul style="list-style-type: none"> ✓ Include information about Stage 1 drought conditions, water storage levels, and <u>voluntary</u> water-use efficiency and conservation measures. ✓ Promote 'sign-up' for electronic outreach. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send <u>twice-monthly</u> texts and/or emails with links to information about Stage 1 drought conditions, water storage levels, and water-use efficiency and conservation measures. <p>PARTNER ORGANIZATIONS</p> <ul style="list-style-type: none"> ✓ Send a news release about Stage 1 conditions and appropriate responses to industry associations for inclusion in their eNewsletters, Facebook posts, etc. (e.g., BCFGGA, BCGGA). ✓ Provide BC Tree Fruit Cooperative field representatives with Stage 1 information to share with their clients/contacts. <p>LOCAL MEDIA</p> <ul style="list-style-type: none"> ✓ Include Stage 1 information in existing print and broadcast ads/editorials. ✓ Share success stories about progressive agricultural users who have reduced water use.

'STAGE 2' MESSAGES (for agriculture)

Sample Stage 2 message for use with website, emails, news releases, etc.

City reports low reservoir levels and very dry conditions

- The City of Penticton reports that conditions are very dry and reservoir levels are below normal (___% for this time of year). In response to this moderate drought, all water users are required to reduce water consumption. Agricultural customers can reduce water use by applying these water-use efficiency measures:
 - Minimize irrigation where possible by decreasing irrigated acreage, or reducing irrigation to some lesser-value plants.
 - Visit this web page for tips on managing crops during drought:
<http://waterbucket.ca/aw/2010/03/03/drought-factsheets-and-publications/>.
 - Install soil moisture monitoring equipment to minimize water leaching due to overirrigation.
 - Fix irrigation system leaks, check nozzles for uniformity, and program your system to match crop, soil, and climate conditions.
 - Improve irrigation scheduling techniques by using [Farmwest](#), soil moisture measurements, and BC's [Irrigation Scheduling Calculator](#). Knowing how to schedule during non-drought conditions will help you adapt during drought.
 - Use a qualified contractor (IIABC Certified Designer) to evaluate system performance and make improvements, if possible. CIDs can be found at:
www.irrigationbc.com/irrigation/certifications/search/.
 - Consider a new irrigation system if your existing system is inefficient.

Sample Stage 2 text messages

TEXT #1:

WATER SUPPLY UPDATE: The City of Penticton's reservoir levels are below normal for this time of year (___%), and very dry conditions are being reported. In response to this moderate drought, the City requires you to reduce water use by minimizing irrigation where possible. Learn more at www.obwb.ca/ag. Thank you for being water efficient!

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: Reservoir levels are low for this time of year at (___%) and conditions are very dry. During this moderate drought, please cut water use by minimizing irrigation where possible. Learn how here www.obwb.ca/ag. Thank you in advance for your water efficiency efforts!

WATER SUPPLY UPDATE: We're still experiencing a moderate drought with low reservoir levels (___% of normal for this time of year). Please reduce water use by minimizing irrigation wherever possible. Learn how here www.obwb.ca/ag. Thank you for being water efficient!

WATER SUPPLY UPDATE: In response to our low reservoir levels and continued moderate drought, please reduce water use. Learn how here www.obwb.ca/ag. Thank you in advance for your water efficiency efforts!

'STAGE 2' COMMUNICATION CHANNELS (for agriculture)

DEFINITION	Moderate Drought
SUPPLY STATUS & TRIGGER FACTORS	Stage 2 Status occurs during prolonged periods of no rain and hot/dry weather, and/or with below average snow pack conditions. This represents a moderate level of drought when the water supply is becoming stressed.
DROUGHT REGULATIONS & RESPONSE	Mandatory reductions TBD
COMMUNICATION & EDUCATION	<p>Provide agricultural water users with targeted communication about the moderate drought status and their role in responding to required reduction measures. Refer to Key Messages document.</p> <p>WEBSITES</p> <ul style="list-style-type: none"> ✓ Include agriculture specific Stage 2 information, and links to water-use efficiency and conservation information, on RDOS and City of Penticton websites. <p>LETTERS / REPORTS</p> <p><i>Stage 2 Letter (with 'Important Water Supply Status Information' on envelope)</i></p> <ul style="list-style-type: none"> ✓ Include information about Stage 2 drought conditions, water storage levels, and <u>required</u> water-use efficiency and conservation measures. ✓ Promote 'sign-up' for electronic outreach. ✓ Directly contact high water-use customers and ask for support in curbing consumption. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send <u>weekly</u> texts and/or emails with links to information about Stage 2 drought conditions, water storage levels, AgConnect, and water-use efficiency and conservation measures. <p>PARTNER ORGANIZATIONS</p> <ul style="list-style-type: none"> ✓ Send a news release about Stage 2 conditions and appropriate responses to industry associations for inclusion in their eNewsletters, Facebook posts, etc. (e.g., BCFGGA, BCGGA). ✓ Provide BC Tree Fruit Cooperative field representatives with Stage 2 information to share with their clients/contacts. ✓ Provide local agricultural facilities (e.g., packing houses) and stores (e.g., Growers Supply) with handouts about Stage 2 drought conditions and required responses. <p>LOCAL MEDIA</p> <ul style="list-style-type: none"> ✓ Include a call for reduced water use by agricultural water users in print/broadcast ads. ✓ Communicate likelihood/risk of needing to increase to a higher stage. Avoid worse restrictions by taking steps now to be more efficient water users. Set goals such as: "Reduce consumption by 20%" or "Today's Water Use Goal: 95 ML / Yesterday's Water Use: 104 ML." Recognize that restrictions may cause some hardship, and that certain water uses must be prioritized for the good of the community. Efforts made now will save water in long term. ✓ Request and/or buy editorial coverage to support advertising (e.g., share success stories about progressive agricultural users who have reduced water use).

'STAGE 3' MESSAGES (for agriculture)

Sample Stage 3 messages for use with website, emails, news releases, etc.

City reports very low reservoir levels and extremely dry conditions

- City of Penticton reports extremely dry conditions and reservoir levels that are well below normal (__% for this time of year). In response to this severe drought, agricultural water users are required to reduce use:
 - Irrigate only high-value perennial plants to keep them alive.
 - Irrigate only at night.
 - Use soil moisture sensors to ensure irrigation applied is minimal to keep plants alive. Soil moisture should be kept close to 50% of field capacity.
 - Monitor irrigation using meter readings or accurately recording irrigation events and timing.
 - Review the documents at this web link that provide tips on managing crops during drought:
<http://waterbucket.ca/aw/2010/03/03/drought-factsheets-and-publications/>

Sample Stage 3 text messages

TEXT #1:

WATER SUPPLY UPDATE: Reservoir levels are very low for this time of year (__% of normal) and conditions are EXTREMELY DRY. The City requires you to reduce water use by irrigating only high-value perennial plants to keep them alive. Learn how here www.obwb.ca/ag. Thank you in advance for your water efficiency efforts!

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing a severe drought and very low reservoir levels (__% of normal). You are required to cut water use by irrigating only high-value perennial plants to keep them alive. Learn how here www.obwb.ca/ag. Thank you for being water efficient!

WATER SUPPLY UPDATE: Because of very low reservoir levels (__% of normal) and continuing dry conditions, all water users must reduce water use significantly. Visit www.obwb.ca/ag to learn how agricultural users can do their part. Thank you in advance for your water efficiency efforts!

WATER SUPPLY UPDATE: Severe drought conditions and very low reservoir levels (__% of normal) continue. You are required to cut water use by irrigating only high-value perennial plants to keep them alive. Learn how here www.obwb.ca/ag. Thank you for being water efficient!

'STAGE 3' COMMUNICATION CHANNELS (for agriculture)

DEFINITION	Severe Drought
SUPPLY STATUS & TRIGGER FACTORS	Stage 3 Status represents severe drought conditions, when water supplies are experiencing a critical shortage.
GOAL	Reduce agricultural water use by 50%.
DROUGHT REGULATIONS & RESPONSE	Mandatory reductions (50% of maximum allocation)
COMMUNICATION & EDUCATION	<p>Provide agricultural water users with targeted communication about the severe drought status and their role in responding to required reduction measures. Refer to Key Messages document.</p> <p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Include agriculture-specific Stage 3 information, and links to water-use efficiency and conservation information City Water Conservation page. ✓ Report out on current vs. required consumption data. <p>LETTERS / REPORTS</p> <p><i>Stage 3 Letter (with 'Important Drought Status Information Inside' on envelope)</i></p> <ul style="list-style-type: none"> ✓ Include information about Stage 3 drought conditions, water storage levels, and <u>required</u> water-use efficiency and conservation measures. ✓ Promote 'sign-up' for electronic outreach. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send <u>twice-weekly</u> texts and/or emails with a link to information about Stage 3 drought conditions, water storage levels, and water-use efficiency and conservation measures. <p>PARTNER ORGANIZATIONS</p> <ul style="list-style-type: none"> ✓ Send a news release about Stage 3 conditions and appropriate responses to industry associations for inclusion in their eNewsletters, Facebook posts, etc. (e.g., BCFGGA, BCGGA). ✓ Request that BC Tree Fruit Cooperative field representatives email their contacts with Stage 3 information. ✓ Provide local agricultural facilities (e.g., packing houses) and stores (e.g., Growers Supply) with handouts about Stage 3 drought conditions and required responses. ✓ Share success stories about progressive agricultural users who have reduced water use. <p>LOCAL MEDIA</p> <ul style="list-style-type: none"> ✓ Include a call to agricultural water users in print and broadcast ads. ✓ Request and/or buy editorial space to support advertising (e.g., share information about the seriousness of the drought, and the role agricultural water users play in meeting the challenge).

'STAGE 4' MESSAGES (for agriculture)

Sample Stage 4 messages for use with website, emails, news releases, etc.

CITY REPORTS EMERGENCY CONDITIONS:

No outdoor water use except for livestock and to keep perennial plants alive

The City reports EMERGENCY CONDITIONS, with reservoirs at ___% of normal for this time of year. Water can be used only for livestock and to keep perennial plants alive. Learn more at www.obwb.ca/ag. Review the documents at this web link that provide tips on managing crops during drought:
<http://waterbucket.ca/aw/2010/03/03/drought-factsheets-and-publications/>

Sample Stage 4 text messages

TEXT #1:

WATER SUPPLY UPDATE: The City of Penticton reports EMERGENCY CONDITIONS, with reservoirs at ___% of normal for this time of year. Water can be used only for livestock and to keep perennial plants alive. Learn more at www.obwb.ca/ag. Thank you for being water efficient!

FOLLOW-UP TEXTS:

WATER SUPPLY UPDATE: We're still experiencing EMERGENCY CONDITIONS, with reservoir levels being ___% of normal. Water can be used only for livestock and to keep perennial plants alive. Learn more at www.obwb.ca/ag. Thank you in advance for your water efficiency efforts!

WATER SUPPLY UPDATE: Emergency conditions continue, with reservoir levels being ___% of normal. Water can be used only for livestock and to maintain perennial plants. Learn more at www.obwb.ca/ag. Thank you in advance for being water efficient!

WATER SUPPLY UPDATE: We're still experiencing EMERGENCY CONDITIONS. Water can be used only for livestock and to keep perennial plans alive. Learn more at www.obwb.ca/ag. Thank you for being water efficient!

'STAGE 4' COMMUNICATION CHANNELS (for agriculture)

DEFINITION	Loss of Supply
SUPPLY STATUS & TRIGGER FACTORS	Defined in DMP.
DROUGHT REGULATIONS & RESPONSE	Mandatory reduction (no outside watering except for livestock and to maintain perennial fruit trees).
COMMUNICATION & EDUCATION	<p>Provide agricultural water users with targeted communication about the emergency status and their required response. Refer to Key Messages document.</p> <p>WEBSITE</p> <ul style="list-style-type: none"> ✓ Include agriculture-specific Stage 4 information. <p>LETTERS / REPORTS</p> <p><i>Stage 4 Letter (with 'EMERGENCY INFORMATION INSIDE' on envelope)</i></p> <ul style="list-style-type: none"> ✓ Include information about Stage 4 emergency conditions and the prohibition of outdoor water use. ✓ Promote 'sign-up' for electronic outreach. <p>MASS NOTIFICATION SYSTEM</p> <ul style="list-style-type: none"> ✓ Send <u>twice-weekly</u> texts and/or emails links to information about Stage 4 drought conditions, the required prohibition of outdoor water use except for livestock and to maintain perennial fruit trees, and associated fines, turn-offs, etc. <p>PARTNER ORGANIZATIONS</p> <ul style="list-style-type: none"> ✓ Send a news release about Stage 4 conditions and appropriate responses to industry associations for inclusion in their eNewsletters, Facebook posts, etc. (e.g., BCFGGA, BCGGA). ✓ Request that BC Tree Fruit Cooperative field representatives email their contacts with Stage 4 information. ✓ Provide local agricultural facilities (e.g., packing houses) and stores (e.g., Growers Supply) with handouts about Stage 4 drought conditions and required responses. <p>LOCAL MEDIA</p> <ul style="list-style-type: none"> ✓ Include a call to agricultural water users in print and broadcast ads. ✓ Buy editorial space to support advertising (e.g., the price both residential and agricultural users will pay during the emergency).

COMMUNICATION CONTACTS (for agriculture)

LOCAL MEDIA	Castanet	Colin Dacre	colin@castanet.net	778-646-2001
	Penticton Herald	Joe Fries	joe.fries@pentictonherald.ca	250-492-4002
	Global News		viewercontactokanagan@globalnews.ca	1-888-762-4535
	New Country 100.7		news@1075kiss.com	250-545-5901
	CBC Daybreak South	Marion Barschel		250-861-3781
	CBC Radio West	Josh Page	radiowest@cbc.ca	2250-861-3781
INDUSTRY ORGANIZATIONS	BC Fruit Growers' Association	Bunvir Nijjer	bnijjer@bcfga.ca	250-762-5526 (ext 4)
	BC Grape Growers' Association	Tyrion Miskell	bcga@grapegrowers.bc.ca	250-767-2597
	BC Association of Farmers Markets	Heather O-Hara	Heather.ohara@bcfarmersmarket.org	604-734-9797
	BC Cattlemen's Association	Kevin Boon	bccattle@cattlemen.bc.ca	250- 573-3611
	BC Forage Council	Sheri Schweb	bcfc@bcforagecouncil.com	250-255-9065
BCTF CO-OP FIELD STAFF	North Okanagan	Tony DiMaria	tdimaria@bctree.com	250-545-3322
LOCAL RETAIL OUTLETS	Growers Supply	Justin Hadley	Justin.hadley@growerssupply.bc.com	250-545-1278

7. APPENDICES

1. POST-PILOT EVALUATION (Agriculture Water Supply Status Outreach Project)

Pilot Purveyor Feedback

A post-pilot evaluation was conducted with Greater Vernon Water (GVW) and the City of Penticton. As noted in the OBWB's project evaluation, both pilot water purveyors were enthused by the pilot project, felt it was successful, and were keen to continue to offer (and expand) e-alert communications to their agricultural water users in 2018. Here are pertinent excerpts from the report:

The purveyors found that communication with agricultural water users was historically much more cumbersome (e.g., mail-outs, direct phone calls) and both water purveyors were pleased "to be able to do something in 15 minutes that usually takes days". They also liked the immediacy of the messages when using the e-alert system versus previous methods that had long time lags (e.g., letters in the mail). This sentiment that was echoed by producers who participated in the pilot. When asked what they thought was the biggest success of the pilot project, they answered, "That we got a functional alert set up. We have talked about trying e-alerts before, but it is too difficult and time consuming to set-up on our own."

"... both water purveyors were pleased "to be able to do something in 15 minutes that usually takes days". They also liked the immediacy of the messages when using the e-alert system vs. previous methods that had long time lags..."

They also said that, "Having OBWB spearhead this project was key to its success" and, "The Civic Ready platform seemed to be really useful, everything went out without a hitch. It was very simple to use."

In addition to the value of having OBWB host the e-alert software for all participating water purveyors (rather than have each water purveyor host it individually), similar synergies were found with the www.obwb.ca/agpage that was set up as a universal resource page. GVW directed users to their own website where users could access their AgConnect information, along with other water-use conservation tips, but the City of Penticton had no such resource page and found that being able to link to the obwb.ca/ag page was very helpful since they did not have capacity to set-up and manage their own resource page.

We expect that many other Okanagan water purveyors have similar limitations and will find it economical and efficient to use the shared page (which can also continue to be expanded and improved over time). Both purveyors also felt that having OBWB play a supporting Human Resource role (e.g., helping to craft messages, troubleshoot software) was invaluable. "It was great to have OBWB to bounce ideas off. Having support is key."

It was also felt that increasing the reach of the pilot to other water purveyors would be beneficial in promoting sign-up since then the purveyors could work more effectively through pan-Okanagan industry organizations. Most water purveyors would require support for outreach and would "like to work with OBWB on outreach (to sign people up), since we don't have the network to get this information out on our own."

There were some early glitches in getting the software platform set-up (unrelated to sending out messages), but once those were remedied, the software was reported as "easy to use" by both water

purveyors. Both purveyors said they would continue to use the current software if the project continues and reported feeling 'very confident' about sending messages out without assistance.

The purveyors had several constructive comments on the Key Messaging document that will help to improve the messaging for a future pilot. Some key feedback was that "it was useful, but perhaps a bit too prescriptive" and "it was a good template, but required a lot of tweaking. Without it, it would have taken a lot longer to create messages."

The Outreach Checklist document was a "nice background document to keep you on track and a good trigger for what information you should be sending out at what time". It was suggested to update the Outreach Checklist with trigger points (for messages) based on the purveyors' drought plans.

Pilot Producer Feedback

A post-pilot evaluation was conducted with a small sample of producer participants, chosen at random. The following summary appears in the project evaluation:

All producer participants contacted in the evaluation were keen to continue to subscribe to e-alert communications from their purveyor and overall, were very positive about the pilot project.

Producers heard about the pilot project from a variety of sources from mailed letters and water utility statements to purveyor websites and community meetings. This reinforces the need for a broad outreach campaign that includes the purveyors' common communication methods. All producers stated (in some way) that they were enticed to sign-up to find out more about their water consumption and local water restrictions and to 'keep on top of things'.

When asked about message frequency, given the conditions in 2017 (low risk for drought, good water supply), all producers felt that the message frequency (approximately one message every 3-4 weeks) was appropriate. If drought risk was elevated, then all producers supported more frequent messaging.

It was recommended by both a water purveyor and producer to have an 'emergency alert' feature to differentiate between regular messaging and 'crisis' or 'very important' messaging. The producer evaluations informed the recommendations section.

"My experience over the years is that there's never enough communication. For the most part, producers pay attention. They want to help. They understand."

POST-PILOT RECOMMENDATIONS

Outreach/ Sign-Up

- Develop a 'sign-up promotion checklist' for new purveyor participants to support them in developing their promotional plans to encourage registration.
- Include a web-link to the sign-up page as many places as possible (e.g., purveyor website, water bills).
- Add a 'sign-up' link to obwb.ca/ag page.
- Start outreach in the late winter/early spring, before the production season gets too busy.

SIGN UP for the City of Penticton's new WATER SUPPLY ALERTS for agricultural customers!

The City of Penticton, in partnership with the Okanagan Basin Water Board, is piloting an email and text alert system for agricultural water customers that will:

- ◆ Deliver ongoing information about your water supply
- ◆ Alert you when water reductions are required during times of drought

Signing up is as easy as 1,2,3!

1. Visit www.obwb.ca/alerts
2. Enter your cell phone number and/or email address
3. Receive water supply status and drought stage alerts from the City of Penticton

To learn more, contact:
Public Works
250-490-2946
public.works@penticton.ca

- Encourage sign-up through all existing outreach efforts throughout the year (e.g., road-side signage, newspaper, radio).
- Develop a media campaign to profile producer participants from 2017 and promote through local agriculture channels.
- Consider consolidating the sign-up page with the obwb.ca/ag resource page.

Human Resources (Water Purveyors)

- Ensure water purveyors have identified and trained dedicated person to send out communications and that they understand the time commitment required to craft and send out messages (e.g., approximate time commitment per message is from 3-4 hours or person season is 30-40 hours for 10 messages).

Human Resources (OBWB)

- Provide a dedicated person (seasonal, part-time to full time depending on number of purveyors using system) to refine Communications Checklist and Key Messaging document and to support purveyors with message crafting, timing of specific messages (e.g., when province moves to a new drought stage) and software trouble-shooting throughout the pilot www.obwb.ca/ag (online resource page).

www.obwb.ca (online resource page)

- Develop additional content for the online resource page (obwb.ca/ag) that correlates to messaging in e-alerts.
- Add a feature to obwb.ca/ag to 'look-up' restrictions in your purveyor area. (NOTE: Make Water Work website has a link to search for water restriction stage).

Key Messaging Document & Outreach Checklist

- Encourage purveyors to have a drought management plan to help guide messaging and then link Outreach Checklist to the drought management plan by having it trigger outgoing communication.
- Add content to Key Messaging Document and Outreach Checklist for when the province calls Drought Levels 2, 3, and 4.
- Include messaging/trigger for when purveyor is considering moving to a new restriction stage (provide advance warning).
- Include messages/timeline for general 'water related content' such as water turn-on/turn-off dates.
- Revise content to be less prescriptive and include more bullets (easier to cut and paste what is needed).
- Include shorter text (e.g. bullets) to make crafting text messages easier.
- Work with water purveyor to undertake a debrief each year to assess the documents and update the documents as needed.
- Establish a 'vetting and approvals' process for messages to ensure there are not unnecessary delays in sending messages out (e.g., have management approve the key messaging).
- Differentiate normal/regular messaging from 'emergency' or 'change-in-status' messaging to ensure the important messages are seen by producers.
- Document and outreach checklist in advance, or set-up approvals process similar to press releases, etc.

Software

- Create a short 'user reference guide' to help with orientation of new purveyors, and as a reference.

User Experience

- Add some administrative information (e.g., how to change your user preferences) to end of messages.

- Ensure the first few words of the title of the text message/email includes an identifying feature (e.g., GVW Water Supply Alert) so user recognizes who sender is.
- Email was the most popular choice, but could pilot a primary email/emergency text option.
- Include pertinent information about local water that may affect consumption rates (e.g. water pressure).

2. RDOS Drought Stage Communications Plan 2018

PURVEYOR CONSIDERATIONS	NORMAL	STAGE Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
RDOS EXPLANATION OF SUPPLY STATUS	<ul style="list-style-type: none"> ✓ Average water storage available ✓ Ongoing water conservation education and efficient water use ✓ Strive to maintain, not exceed, average summer usage 	<ul style="list-style-type: none"> ✓ Drought in early stage where there is heightened awareness by the community ✓ Potential increased drought conditions may mean earlier info to public ✓ Reduce impact to customers with early warning 	<ul style="list-style-type: none"> ✓ Represents low water supply conditions for local area ✓ Water-use restrictions are needed to sufficiently reduce water demand ✓ If triggered by drought, represents moderate drought conditions 	<ul style="list-style-type: none"> ✓ Represents very low water supply conditions ✓ Water-use restrictions are needed to maintain supplies during a period of critical shortage ✓ If triggered by drought, represents severe drought conditions for local area 	<ul style="list-style-type: none"> ✓ Strict water restrictions are needed to maintain critical supplies ✓ Represents an emergency loss of supply during which water is spared for consumptive and sanitary purposes only
RDOS REDUCTION GOALS & TARGETS	<ul style="list-style-type: none"> ✓ Promote demand management initiatives to support long-term water-use efficiency 	<ul style="list-style-type: none"> ✓ Reduce consumption by 10% ✓ Implement short- and long-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce consumption by 20-30% ✓ Implement short-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce total and peak flows by 50% to maintain critical supply levels ✓ Implement short-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce total and peak flows by 90% to maintain critical supply levels ✓ Maintain minimum supplies needed to support basic community health and sanitation
RDOS PUBLIC MESSAGING	<ul style="list-style-type: none"> ✓ Communicate 'Normal' year-round restrictions online and at public events, but focus message on how people should use water, not why they can't use it ✓ Promote that lawns need only one inch of water per week (e.g., Make Water Work) ✓ Focus education efforts on minimizing outdoor water use to avoid higher drought stages 	<ul style="list-style-type: none"> ✓ Reduce consumption by 10% ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Ensure strategies do not create undo economic hardship ✓ Increase awareness of what is causing supply situation (e.g., drought, infrastructure) ✓ Say that efforts made now to change behaviour may save money over time ✓ Communicate risk/likelihood of needing to move to Stage 2 	<ul style="list-style-type: none"> ✓ Reduce consumption by 20% ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Recognize hardship and appreciate community efforts to save water ✓ Increase awareness of what is causing supply situation and what must be done if drought worsens ✓ Communicate risk/likelihood of needing to move to Stage 3 	<ul style="list-style-type: none"> ✓ Reduce consumption by 50% ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Recognize that certain water users have to be prioritized for community benefit ✓ Recognize hardship and appreciate community efforts to conserve water ✓ Increase awareness of what is causing supply situation and what must be done if drought worsens ✓ Communicate risk/likelihood of needing to move to Stage 4 	<ul style="list-style-type: none"> ✓ Community Emergency / Reduce consumption by 90% ✓ Recognize that certain water users must be prioritized for community benefit ✓ Work with PEP, if needed, to coordinate and ensure users are aware of emergency supply options to ensure basic/hygiene needs met ✓ Recognize hardship and appreciate community efforts to conserve water ✓ Increase awareness of what is causing supply situation

3.

PURVEYOR CONSIDERATIONS	NORMAL	STAGE Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
RDOS COMMUNICATION CHANNELS	<ul style="list-style-type: none"> ✓ Use CivicReady first-of-the-year message, annual spring mailer, and messaging in relevant water system newsletters ✓ Publish educational materials targeted to high water-use activities ✓ Seek opportunities to promote water efficiency through public events, speaking engagements, children’s activities 	<p>Pre-Stage Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected), local media <p>Stage Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected), signboards on roadside, inserts in utility bills or mailers if able ✓ Publish educational materials targeted to high-use activities online and via media and public events ✓ Continue to seek opportunities for public events through events 	<ul style="list-style-type: none"> ✓ Target efforts at high (inefficient) water users within major water use sectors, based on metered use data analysis <p>Pre-Stage Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected) <p>Stage 2 Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected), signboards on roadside, inserts in utility bills or mailers if able ✓ Increase frequency of media and PSAs ✓ Investigate using Use Stage 2 ‘Water Supply Shortage’ graphic for billboards, sandwich boards, road signage ✓ Ensure frontline staff can answer all questions from the public ✓ Continue to seek opportunities for public events through events 	<ul style="list-style-type: none"> ✓ Target efforts at major water users (use largest % of supply) if identifiable, and communicate priorities for use <p>Pre-Stage Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected) <p>Stage 3 Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected), signboards on roadside, inserts in utility bills or mailers if able, local media ✓ Increase frequency of media and PSAs ✓ Implement signage as listed under Stage 2 with updated information ✓ Ensure frontline staff can answer all questions ✓ Investigate alternative water sources to supplement short-term supply and message out as required ✓ Continue to seek opportunities for public events through events 	<ul style="list-style-type: none"> ✓ Meet users with critical needs (e.g., medical facilities and patients, hotels) and assess supply options <p>Pre-Stage Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected) <p>Stage 4 Warning</p> <ul style="list-style-type: none"> ✓ Use CivicReady, Facebook, RDOS website (in water systems affected), signboards on roadside, inserts in utility bills or mailers if able, local media, direct contact, door to door ✓ Increase frequency of media and PSAs ✓ Update signage information ✓ Ensure frontline staff can answer all questions from the public ✓ Continue to seek opportunities for public events through events
RDOS COMMUNICATION WITH MUNICIPAL, PURVEYOR, AND INSTITUTIONAL PARTNERS		<ul style="list-style-type: none"> ✓ Meet with staff from partner municipalities and purveyors to investigate concerns and discuss drought responses and implementing restrictions for public facilities 	<ul style="list-style-type: none"> ✓ Continue to work with partners to implement restrictions in public facilities and discuss options if drought worsens ✓ Contact school districts, Interior Health, etc. to encourage public education (media releases) and/or signs to note their actions 	<ul style="list-style-type: none"> ✓ Continue to work with partners to ensure they are implementing restrictions in public facilities and message out ✓ Contact school districts, Interior Health, etc. again to encourage more aggressive public education (media releases) and/or signs to publicize their actions 	<ul style="list-style-type: none"> ✓ Continue to work with partners regarding further responses should conditions worsen
RDOS ENFORCEMENT		<ul style="list-style-type: none"> ✓ Increase enforcement activities (time allotted to staff for monitoring and complaint response) 	<ul style="list-style-type: none"> ✓ Increase enforcement activities (time allotted to staff for monitoring and complaint response) 	<ul style="list-style-type: none"> ✓ Increase enforcement activities (time allotted to staff for monitoring and complaint response) 	<ul style="list-style-type: none"> ✓ Increase enforcement activities (time allotted to staff for monitoring and complaint response)

GVW Drought Stage Communications Plan 2018

PURVEYOR CONSIDERATIONS	NORMAL	STAGE 1 Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
GVW EXPLANATION OF SUPPLY STATUS	<ul style="list-style-type: none"> ✓ Average water storage available ✓ Ongoing water conservation education and efficient water use ✓ Strive to maintain, not exceed, average summer usage 	<ul style="list-style-type: none"> ✓ Drought in early stage where there is heightened awareness by the community ✓ Potential increased drought conditions may mean earlier info to public ✓ Reduce impact to customers with early warning 	<ul style="list-style-type: none"> ✓ Represents low water supply conditions for local area ✓ Water-use restrictions are needed to sufficiently reduce water demand ✓ If triggered by drought, represents moderate drought conditions 	<ul style="list-style-type: none"> ✓ Represents very low water supply conditions ✓ Water-use restrictions are needed to maintain supplies during a period of critical shortage ✓ If triggered by drought, represents severe drought conditions for local area 	<ul style="list-style-type: none"> ✓ Strict water restrictions are needed to maintain critical supplies ✓ Represents an emergency loss of supply during which water is spared for consumptive and sanitary purposes only
GVW REDUCTION GOALS & TARGETS	<ul style="list-style-type: none"> ✓ Promote demand management initiatives to support long-term water-use efficiency 	<ul style="list-style-type: none"> ✓ Reduce consumption by 10% ✓ Implement short- and long-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce consumption by 20-30% ✓ Implement short-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce total and peak flows by 50% to maintain critical supply levels ✓ Implement short-term strategies to ensure existing supplies last and do not further decrease to an unsustainable level 	<ul style="list-style-type: none"> ✓ Reduce total and peak flows by 90% to maintain critical supply levels ✓ Maintain minimum supplies needed to support basic community health and sanitation
GVW PUBLIC MESSAGING	<ul style="list-style-type: none"> ✓ Customers should strive to be efficient ✓ Communicate 'Normal' year-round restrictions online and at public events, but focus message on how people should use water, not why they can't use it ✓ Promote that lawns need only one inch of water per week (e.g., Make Water Work) ✓ Focus education efforts on minimizing outdoor water use to avoid higher drought stages 	<ul style="list-style-type: none"> ✓ Reduce consumption by 10% Focus residential/ commercial educational efforts on minimizing outdoor water use ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Ensure strategies do not create undo economic hardships ✓ Increase awareness of what is causing supply situation (e.g., drought, infrastructure) ✓ Communicate risk/ likelihood of needing to move to Stage 2 	<ul style="list-style-type: none"> ✓ Reduce consumption by 20% / "Yesterday's water use was 105 mega litres; today's water use goals is 95 megalitres" ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Recognize hardship and appreciate community efforts to save water ✓ Increase awareness of what is causing supply situation and what must be done if drought worsens ✓ Communicate risk/ likelihood of needing to move to Stage 3 	<ul style="list-style-type: none"> ✓ Reduce consumption by 50% / "Yesterday's water use was 84 mega litres; today's water use goals is 80 megalitres" ✓ Recognize that certain water users have to be prioritized for community benefit ✓ Avoid worse restrictions, and save money over time, by taking steps now to be water efficient ✓ Recognize hardship and appreciate community efforts to conserve water ✓ Increase awareness of what is causing supply situation and what must be done if drought worsens ✓ Communicate risk/ likelihood of needing to move to Stage 4 	<ul style="list-style-type: none"> ✓ Community Emergency / Reduce consumption by 90% ✓ Recognize that certain water uses must be prioritized for community benefit ✓ Work with PEP, if needed, to coordinate and ensure users are aware of emergency supply options to ensure basic/hygiene needs met ✓ Recognize hardship and appreciate community efforts to conserve water

PURVEYOR CONSIDERATIONS	NORMAL	STAGE Dry (Mild)	STAGE 2: Very Dry (Moderate)	STAGE 3 Extremely Dry (Severe)	STAGE 4 Emergency (Loss of Supply)
GVW COMMUNICATION CHANNELS	<ul style="list-style-type: none"> ✓ Publish educational materials targeted to high water-use activities online and via media, public events ✓ Use Normal 'Water Supply Shortage' graphic online ✓ Seek opportunities to promote water efficiency through public events, speaking engagements, children's activities 	<ul style="list-style-type: none"> ✓ Implement and communicate Stage restrictions online and through local media ✓ Publish educational materials targeted to high users online and vial media and events ✓ Use Stage Water Supply Shortage graphic online and for notices, newsletters, etc. ✓ Continue to seek opportunities for public events through events 	<ul style="list-style-type: none"> ✓ Implement and communicate Stage 2 restrictions online and through local media ✓ Increase frequency of media and PSAs ✓ Target efforts at high water-users within major water-use sectors, based on metered data analysis ✓ Contact high water-use customers by letter about restriction status and required actions under bylaw ✓ Use Stage 2 Water Supply Shortage graphic online and for notices, newsletters, etc. / Explore posting it in public locations (e.g., billboard, roadside signs, digital signs, sandwich boards) 	<ul style="list-style-type: none"> ✓ Implement and communicate Stage 3 restrictions online and through local media ✓ Increase frequency of media and PSAs ✓ Target efforts at major water users (use largest % of supply) if identifiable, and communicate priorities for use ✓ Target 'sensitive' customers such as hospitals ✓ Use Stage 3 Water Supply Shortage graphic online and for notices, newsletters, etc. / Implement signage as listed under Stage 2 with updated information ✓ Investigate alternative water sources to supplement short-term supply and message out as required 	<ul style="list-style-type: none"> ✓ Implement and communicate Stage 3 restrictions online and through local media ✓ Contact high water-users regarding bylaw restrictions ✓ Increase frequency of media and PSAs ✓ Advertise to public options for short-term supplemental supply sources to meet basic needs ✓ Use Stage 4 Water Supply Shortage graphic online and for notices, newsletters, etc. ✓ Update signage with new information
GVW COMMUNICATION WTH MUNICIPAL, PURVEYOR, AND INSTITUTIONAL PARTNERS		<ul style="list-style-type: none"> ✓ Meet with staff from partner municipalities and purveyors to investigate concerns and discuss drought responses and implementing restrictions for public facilities 	<ul style="list-style-type: none"> ✓ Continue to work with partners to implement restrictions in public facilities and discuss options if drought worsens ✓ Contact school districts, Interior Health, etc. to encourage public education (media releases) and/or signs to note their actions 	<ul style="list-style-type: none"> ✓ Continue to work with partners to ensure they are implementing restrictions in public facilities and message out ✓ Contact school districts, Interior Health, etc. again to encourage more aggressive public education (media releases) and/or signs to publicize their actions 	<ul style="list-style-type: none"> ✓ Meet with all partners to ensure compliance ✓ Meet users with critical needs (e.g., medical facilities and patients, hotels) and assess supply options ✓ Continue to work with partners regarding further responses should conditions worsen
GVW ENFORCEMENT	<ul style="list-style-type: none"> ✓ If available, summer student will aid in restriction complaint response, otherwise will be part of regular staff duties 	<ul style="list-style-type: none"> ✓ Increase time allotted to summer student monitoring and complaint response 	<ul style="list-style-type: none"> ✓ Increase enforcement efforts by hiring second student 	<ul style="list-style-type: none"> ✓ Seek assistance from municipal bylaw enforcement staff 	<ul style="list-style-type: none"> ✓ Increase efforts with help from bylaw staff

City of Penticton

APPENDIX D - DROUGHT FORECASTING PARAMETERS AND APPROACH



APPENDIX D

City of Penticton

Drought Forecasting Parameters and Approach



JUNE 2020

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1 INTRODUCTION

This appendix provides a summary of the forecast parameters used by the City of Penticton (the City) to assess water supply status, as well as to support the use of the proposed drought stage decision tree (i.e., Figure 5-2 included within the main Penticton Drought Management Plan report [Associated 2020]). The structure of this drought forecasting parameters and approach document is consistent with the headings included within the City's drought stage decision tree. The current parameters outlined herein for the City are generally consistent with that used by the Regional District of North Okanagan to support drought management decisions for the Greater Vernon Water distribution area using their decision tree.

2 RESERVOIR LEVELS

The storage volumes within the Greyback Reservoir for Penticton Creek and Ellis #2 and #4 Dam Reservoirs for Ellis Creek, and Okanagan Lake water levels are considered the primary drought forecast parameters for the City's three water supply sources (i.e., Penticton and Ellis Creeks and Okanagan Lake). The following sections summarize the information sources available for each of the upland reservoirs and Okanagan Lake whose associated levels are used by the City uses to make water availability decisions.

2.1 Greyback Reservoir

Greyback Reservoir is a reservoir located in the headwaters of Penticton Creek watershed and the reservoir is managed by the City to ensure adequate water supplies are available to downstream users (i.e., North Penticton Irrigation System users, the water treatment plant [WTP]) and aquatic resources. Under normal conditions, Greyback Reservoir is managed under two settings: (1) winter and (2) summer. The two settings are summarized by the City of Penticton (2014) as follows:

- Winter Setting (November 15 to April 15) – gate (i.e., 8" gate) is set to provide enough water within Penticton Creek for potable usage, WTP operations, and fall Kokanee Salmon spawning.
- Summer Setting (April 16 to November 14) – gate (i.e., 24" gate open and 8" gate closed, or 24" and 8" gates open proportionally) is set to provide enough water within Penticton Creek for potable and irrigation usage and WTP operations.

The City has no specific documented operational parameters defined during times of drought (City of Penticton 2014). However, the City reviews projected storage targets for November and May (i.e., between 6,785 ML [5,500 acre-feet] and 7,400 ML [6,000 acre-feet]) to support reservoirs operations. If the projected storage values for November are deemed to be met, the Winter Setting is established, and if the projected storage values for May are deemed to be met, all gates are closed to fill the reservoir. If the storage values are not projected to be met, the City manages the reservoir releases to capitalize on all available water to help fill the reservoir.

Total reservoir storage volume for Greyback Reservoir is monitored manually by the City on selected dates throughout the year and records are available from 1980 to present (Figure 2-1). The respective drought stage is then identified using the drought stage storage diagram (Figure 2-1). The Greyback Reservoir drought stage storage ranges are in reference to the respective drought stage volumes as outlined within the City's Irrigation, Sewer, and Water Bylaw No. 2005-02. The stage storage ranges represent a percentage of the total storage available at a specific point in the year (Figure 2-1). The stage storage ranges have been derived using data from 1980-2019.

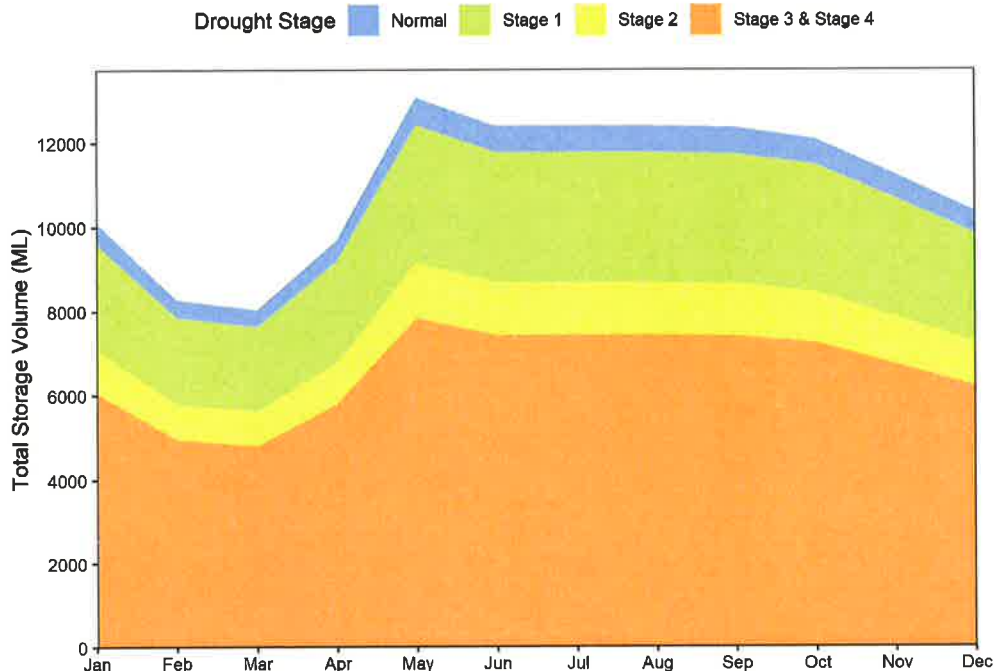


Figure 2-1 Drought stage ranges defined for Greyback Reservoir following Bylaw 2005-02

2.2 Ellis #2 and #4 Dam Reservoirs

The City's Ellis Creek water supply is managed by natural watershed runoff and two headwater dams as follows:

- Ellis #2 Dam Reservoir – sub-watershed area of approximately 6.2 km² that collects water from South Ellis Creek. The outlet of Ellis #2 dam supplies the controlled release to Ellis Creek Diversion dam.
- Ellis #4 Dam Reservoir – sub-watershed area of 48.0 km² that collects water from Ellis Creek. The outlet of Ellis #4 dam also supplies controlled release to Ellis Creek Diversion dam.

The Ellis Creek reservoirs are managed by the City to ensure adequate Ellis Creek water supplies are available to downstream users (i.e., South Penticton Irrigation System users) and aquatic resources. A summary of the management of each reservoir and associated drought stages are provided in more detail below.

2.2.1 Ellis #2 Dam Reservoir

Ellis #2 Dam Reservoir is managed by the City to supplement water supplies at the Ellis Creek Diversion dam. The reservoir is only operational during the irrigation season (i.e., April to October) and is drained at the end of the season (i.e., late October). Normal operations of Ellis #2 dam as outlined by the City of Penticton (2014) include:

- Fall / Winter Setting (November to March) – gate (i.e., 18" [450 mm] gate) is set to empty the reservoir and to keep the reservoir empty during the fall and winter.
- Spring / Summer Setting (April to October) – gate (i.e., 18" [450 mm] gate) is closed in April to capture spring snowmelt runoff. Gate remains closed until late July or August, then water is released downstream on a demand driven basis.

The total storage capacity of the Ellis #2 Dam Reservoir is 450 ML (365 acre-feet) and once the storage has been depleted, Ellis #4 Dam Reservoir is used to supplement water demands downstream. There are no specific operations during times of drought or water shortages documented by the City of Penticton (2014) for Ellis #2 Dam. However, the City meets annually in March to review snowpack information and historical streamflows to determine the gate setting for the upcoming snowmelt period.

Total reservoir storage volume for Ellis #2 Dam Reservoir is monitored manually by the City on selected dates throughout the year and records are available from 1998 to 2019 (Figure 2-2). The respective drought stage is then identified using the drought stage storage diagram (i.e., Figure 2-2). The drought stage storage ranges are in reference to the respective drought stage volumes as outlined within the Bylaw No. 2005-02. The stage storage ranges were derived using data from 1998-2019.

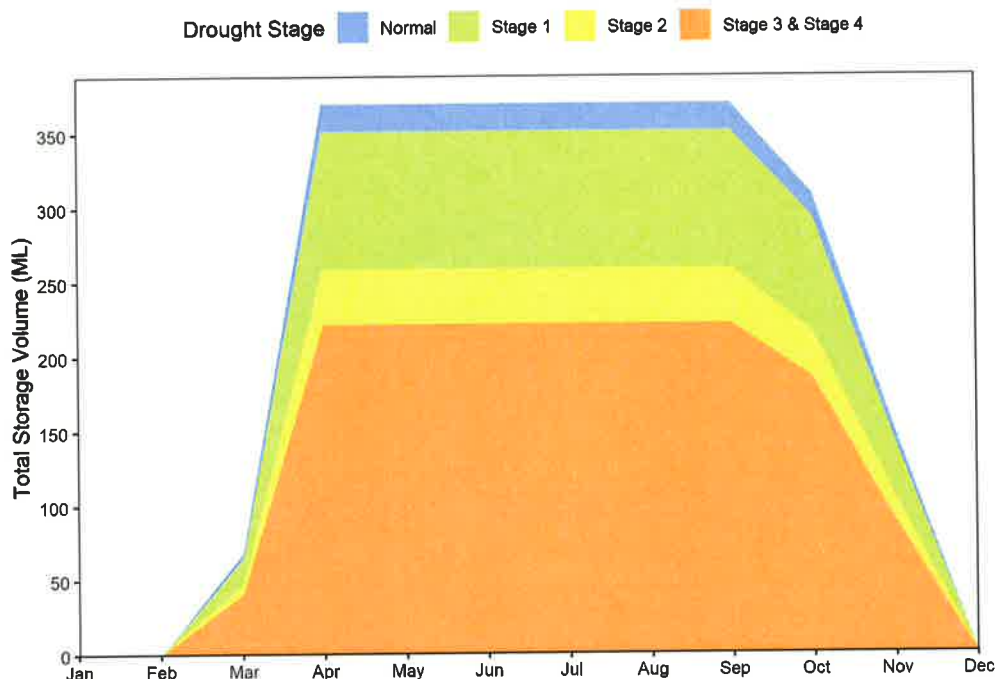


Figure 2-2 Drought stage ranges defined for Ellis #2 Dam Reservoir following Bylaw 2005-02

2.2.2 Ellis #4 Dam Reservoir

Ellis #4 Dam Reservoir supplements water supplies at the Ellis Creek Diversion dam. Similar to Ellis #2 Dam Reservoir, the Ellis #4 Dam Reservoir is only operational during the irrigation season (i.e., April to October) and is drained at the end of the season (i.e., late October). Normal operations of Ellis #4 Dam as outlined by the City of Penticton (2014) include:

- Fall / Winter Setting (November to March) – gate (i.e., 24" [600 mm] gate) is set to empty the reservoir and to keep the reservoir empty during the fall and winter.
- Spring / Summer Setting (April to October) – gate (i.e., 18" [450 mm] gate) is closed in April to capture spring snowmelt runoff. Gate remains closed until August or September, then water is released downstream on a demand driven basis.

The total storage capacity of the Ellis #4 Dam Reservoir is 860 ML (697 acre-feet) and storage is generally not used until Ellis #2 Dam Reservoir has been emptied. There are no specific operational adjustments during times of drought or water shortages documented by the City of Penticton (2014) for Ellis #4 Dam. However, the City meets annually in March to review snowpack information and historical streamflows to determine the gate setting for the upcoming snowmelt period.

Total reservoir storage volume for Ellis #4 Dam Reservoir is monitored manually by the City and records are available from 1980 to present (Figure 2-3). The respective drought stage is then identified using the drought stage storage diagram (i.e., Figure 2-3). The drought stage storage ranges are in reference to the respective drought stage volumes as outlined within the Bylaw No. 2005-02. The stage storage ranges were derived using data from 1980-2019.

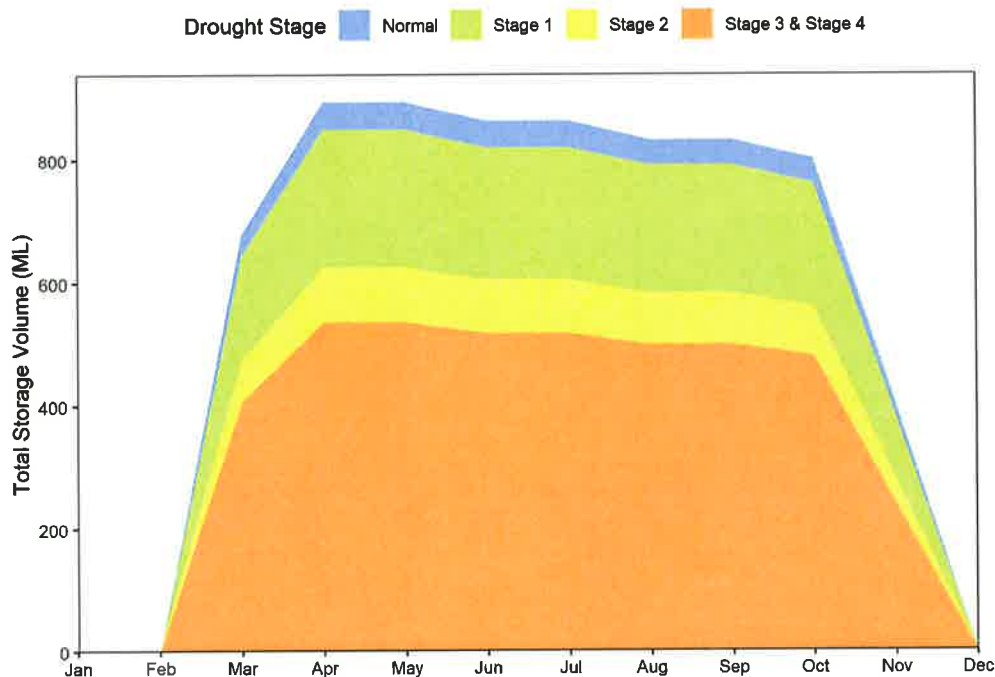


Figure 2-3 Drought stage ranges defined for Ellis #4 Dam Reservoir following Bylaw 2005-02

2.2.3 Okanagan Lake

The OBWB (2019) produced guidelines for drought stage triggers for the Okanagan mainstem lakes using end of month lake level elevations, since current and forecasted lake level elevations are used to determine water availability. The drought stage triggers are defined for five drought stages (i.e., non-drought, stage 1, stage 2, stage 3, stage 4). These drought stage triggers have not been adopted by the BC Ministry of Forest, Lands, Natural Resource Operations, and Rural Development as part of the Okanagan Lake Regulation System (at this time) but are instead provided for water suppliers to consider for inclusions within drought management plans for a consistent and rational processes for drought response. Thus, since the City relies on Okanagan Lake as a primary water source for municipal water supply, the City has adopted the inclusion of the Okanagan Lake drought stage triggers.

The drought stage triggers for Okanagan Lake for July to November are summarized below (and schematically presented in Figure 2-4) using the lake level elevation information included within Table 2-1 (based on hydrometric records measured by the Water Survey of Canada (WSC) 08NM083 [Okanagan Lake at Kelowna]).

- Non-drought – Water suppliers would remain at their Normal stage (or no stage if they do not have a Normal stage in their bylaw) when the forecast or actual 1st of the month elevation of Okanagan Lake is equal to or greater than the 1st of the month target.
- Stage 1 (green) – The forecast or actual 1st of the month elevation of Okanagan Lake for each of the months July through November is lower than the 1st of month target elevations and equal to or greater than the 20th percentile 1st of month elevation.
- Stage 2 (yellow) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 20th percentile 1st of month elevation and greater than or equal to the 10th percentile 1st of month elevation.
- Stage 3 (orange) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 10th percentile 1st of month elevation and greater than or equal to the 5th percentile 1st of month elevation.
- Stage 4 (red) – The forecast or actual 1st of month elevation of Okanagan Lake for each of the months July through November is lower than the 5th percentile 1st of month elevation.

Table 2-1 Okanagan Lake elevation (in metres GSC) on 1st of the month and selected statistics

Okanagan Lake Elevation Parameter	July	August	September	October	November
1 st of Month Target Elevation	342.440	342.240	342.040	341.890	341.840
20 th Percentile	342.227	342.097	341.950	341.796	341.681
10 th Percentile	342.046	341.929	341.802	341.655	341.575
5 th Percentile	341.981	341.981	341.667	341.511	341.421

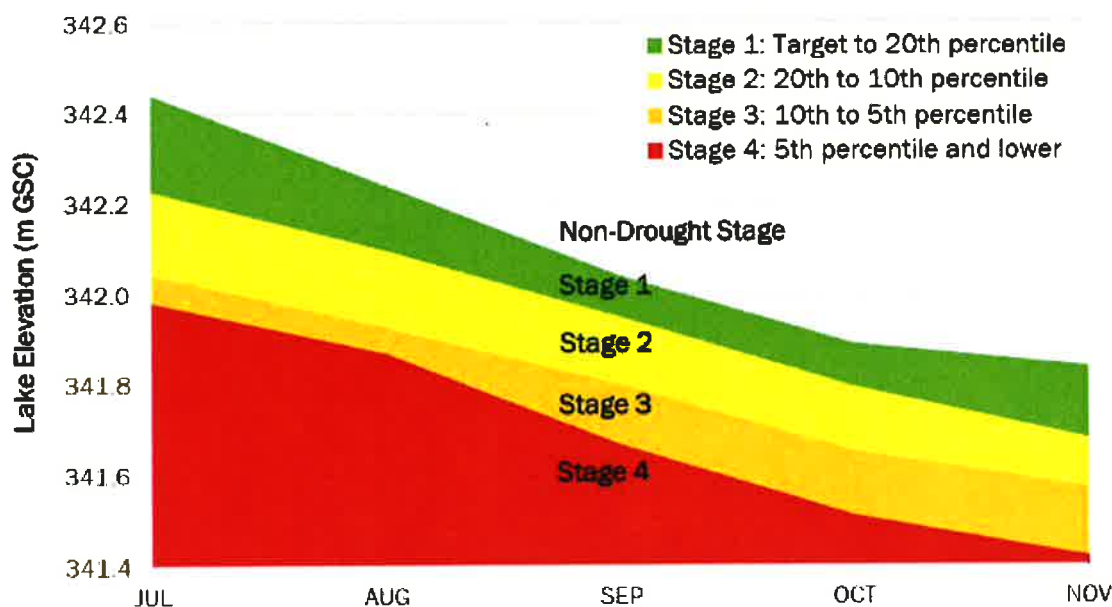


Figure 2-4 Summary of drought stage triggers (based on Okanagan Lake elevations on 1st of month) for Okanagan Lake (adapted from OBWB 2019)

3 MOISTURE CONDITIONS

The annual winter snowpack drives the hydrologic regime of the Penticton and Ellis Creek watersheds, so variability in snowpack accumulation and melt can be dominant factors. Snow accumulation, expressed as snow water equivalent (SWE), represents stored water that is later released into the upland reservoirs. This information is considered a primary drought shortage forecast parameter for the City's distribution areas in the early spring months. In addition, spring and summer precipitation is important to understand inputs to upland reservoirs. The following sections summarize the information sources the City uses to assess the moisture conditions within the local region and Penticton and Ellis Creek watersheds.

3.1 Snowpack Conditions

To support drought decisions, the City uses information available from snowpillows and snow courses managed by the BC River Forecast Centre. Specifically, a snowpillow at Greyback Reservoir (2F08P) is used by the City to support the identification of the times of peak snowpack development and early stages of snowmelt. Similarly, other nearby snowpillows (i.e., Trout Creek [West] – 2F01AP) and snow courses (i.e., Vasuex Creek – 2F20) are also reviewed to understand/confirm local regional conditions. These snowpillow and course sites have longer term records available and usually have snow still present by May 1st. The BC River Forecast Centre releases snow course survey information as bulletins in January (1st), February (1st), March (1st), April (1st), May (1st and 15th), and June (1st and 15th). This snowpack information is used to support drought forecasting by providing additional insights into snowpack variability within the general upland areas of Penticton and Ellis Creek watersheds.

For the City's March 15th critical decision date, the average (2017-2020) SWE for the Greyback Reservoir snowpillow (2F08P) is 238 mm and the averages (1980-2010) for Trout Creek (West) (2F01AP) and Vasuex Creek (2F20) are 196

mm and 113 mm, respectively. To support decision making using the City's drought stage decision tree, above average (SWE > 80% normal), average (SWE = 65% - 80% normal), and below average (SWE < 65% normal) conditions at these sites are as outlined by FLNRO (2016).

Lastly, the BC River Forecast Centre also provides Basin Snow Water Index values for larger regional areas within their bulletins, in reference to normal (average) climate conditions. The information published for the Okanagan is relevant to the City and is used as supplemental information to the BC River Forecast Centre's site-specific values.

3.2 Local Streamflow Conditions

Three real-time WSC hydrometric stations are active within the Penticton Creek watershed as follows:

- Dennis Creek near 1780 metre contour (WSC No. 08NM242; Period of Record = 1985-present);
- Two Forty-One Creek near Penticton (WSC No. 08NM241; Period of Record = 1983-present); and
- Two Forty Creek near Penticton (WSC No. 08NM240; Period of Record = 1983-present).

These stations are all located within the upland watershed area of Greyback Reservoir or immediately downstream and provide a direct understanding of runoff timing and volume. More than 30 years of record are available at each of these locations, so their hydrographs are used by the City to help track early season melt periods, summer low flow periods, and fall transition periods.

In addition to the WSC hydrometric stations, the City operates hydrometric stations on Penticton Creek (at Nanaimo Ave.) and on Ellis Creek (at Industrial Ave.). These hydrometric stations are not specially used by the City for drought decision making – instead they are used to confirm that fishery flow requirements are met and maintained within the respective creeks.

3.3 Precipitation Conditions

To support drought decision making when the upland snowpack has generally melted, the City uses spring and summer precipitation measured at Environment Canada's Penticton A climate station (Station No. 1126146) to provide a rough indication of precipitation inputs to the upland reservoirs. A summary of monthly total precipitation (in the form of rain) for the Penticton A climate station is provided Table 3-1. The total precipitation (in the form of rain) for the spring and summer in comparison to normal (average) conditions is used to inform the drought stage decision tree when snowpacks are no longer present. Specifically, for the June 15th critical decision date, total precipitation for the month of June up to June 15th (Table 3-1) is used to support the drought decision process. Based on available information, the total precipitation by June 15th, represents approximately 50% of the total monthly volume.

For decision tree and forecasting purposes, "above average" is defined when monthly or seasonal precipitation (in the form of rain) results indicate total precipitation is >80% of average, "average" occurs when total precipitation is between 51% to 80% of average, and "below average" occurs when total precipitation is <50% of average. The percentage division (above) is consistent with the divisions used by FLNRO (2016) to support provincial drought level monitoring.

In addition to the information included within Table 3-1, the City also reviews more recent period precipitation averages (e.g., 10-year) in comparison to the June 15th (and other months) results to ensure that current climate variabilities are considered in the drought decision process.

Table 3-1 Summary of total rainfall volumes for Penticton A climate station

Total Rainfall (mm)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12.6	14.0	20.3	25.4	39.3	46.3	28.7	28.3	24.6	26.0	21.8	11.4

Note:

1. Based on climate normal data (1981-2010) published by Environment Canada and Climate Change.

3.4 Antecedent Moisture Conditions

Previous fall (i.e., September to November) antecedent soil moisture and groundwater conditions can influence interannual runoff variability. To this end, a qualitative understanding of previous fall antecedent conditions is important for early spring water supply forecasting and reservoir operations. The City currently does not monitor soil moisture or groundwater conditions within Penticton or Ellis Creek watersheds; however, FLNRORD operates a groundwater observation well within Penticton Creek watershed (No. 387). This well was installed in 2008 to monitor upland recharge and effects of climate change. The well is installed in a bedrock aquifer to a depth of 30 mbgs and groundwater levels are available in real-time. The well is included as part of the Upper Penticton Creek Watershed Experiment.

The City uses Observation Well No. 387 as an additional information source to guide upland reservoir operations in the spring to understand where groundwater levels are in comparison to previous wet and dry reservoir inflow years.

4 FORECASTED WEATHER CONDITIONS

4.1 BC River Forecast Centre – Water Supply Bulletins

In addition to the Basin Snow Water Index values (Section 3.1), Okanagan Lake runoff volume and in-season inflow forecasts are included within BC River Forecast Centre bulletins. The forecasts are provided for respective months, generally March, April, and/or May to June, July, and September. The forecasts are in reference to normal (average) climate conditions. The Okanagan Lake forecast in conjunction with the real-time Okanagan Lake water levels are a critical drought stage indicator for the City.

The runoff volume and in-season inflow forecasts are used to support mainly the March 15th to June 15th critical decision dates. A decision is made by the City at each critical decision date (or anytime when using the drought stage decision tree) as to whether the forecasted values are considered "favourable" or "unfavourable". Favourable conditions are considered when the forecasted values are >80% of normal (average), while unfavourable conditions are considered when forecasted values are <80% of normal (average). The division between favourable and unfavourable conditions still needs to be confirmed operationally; however, the City is implementing this approach as a preliminary decision support option.

4.2 Provincial Drought Levels

As part of striving for consistent drought response strategies across the BC, four provincial drought levels each with specific objectives and suggested water use targets have been established as part of the BC Drought Response Plan (MECCS 2018). The four-level drought classification system is used to determine the severity of drought conditions and the necessary steps required to avoid moving to a higher drought level and/or to move to a lower drought level. The four drought levels are summarized in Table 4-1.

Table 4-1 Summary of Provincial Drought Levels (from MECCS 2018)

Level	Conditions	Significance	Objective
1 (Green)	Normal Conditions	There is sufficient water to meet human and ecosystem needs	Preparedness
2 (Yellow)	Dry Conditions	First indications of a potential water supply problem	Voluntary conservation
3 (Orange)	Very Dry Conditions	Potentially serious ecosystem or socio-economic impacts are possible	Voluntary conservation and restrictions
4 (Red)	Extremely Dry Conditions	Water supply insufficient to meet socio-economic and ecosystem needs	Voluntary conservation, restrictions and regulatory action as necessary

The provincial drought levels are independent of the drought stages used by the City. However, the provincial drought levels provide guidance to the City on the general water supply conditions within the region, but do not directly correlate to system operations, water restrictions, or reservoir management responses. Thus, the provincial drought levels are used as an informative tool only to support drought stage decision making.

4.3 Air Temperature and Precipitation Forecasts

Forecasted air temperatures and precipitation (by Environment Canada and Climate Change) are used to support reservoir management and operational forecasting. Air temperature and precipitation are also monitored at the Penticton A climate station (Section 3.3).

The real-time air temperature information, as well as forecasted weather (and air temperatures) are also used to support water demand management and decisions (Section 5). Average mean daily air temperature and total precipitation forecasts are used to assess evapotranspiration potential and soil moisture deficits (Section 5.2), which dictate plant water demands and thereby customer demands for irrigation water. Air temperature records, on the other hand, are used to assess how much evaporation was experienced in the previous weeks/months, which may increase water demands.

Air temperature and precipitation forecasts are used qualitatively within the decision tree by considering the current status of water supplies, reviewing the air temperature and precipitation forecasts, and then identifying whether the weather conditions look favourable or unfavourable.

4.4 Global Climate Trends and Climate Change

Based on the available climate change information by the Pacific Climate Impacts Consortium (PCIC), the following is the current understanding of the general climate and hydrologic trends predicted for the Okanagan-Similkameen area:

- The climate is predicted to warm, with air temperatures increasing in both the summer and winter periods.

- Annual precipitation is predicted to increase. Summer precipitation is likely to decrease and winter precipitation is likely to increase.
- Snowpacks are projected to increase at higher elevations, but reduce at lower elevations.
- Snowmelt is projected to occur earlier with meltwater runoff expected to decrease due to more rain generated runoff throughout the winter.
- Late fall, winter and early spring streamflows are projected to be greater; while late spring, summer, and early fall streamflows are projected to decrease.
- The magnitude of extreme peak streamflows is projected to increase.

Understanding that climate change is not a specific (known) variable or value that can be specifically accounted for within immediate term monthly water supply forecasting, the City uses projected changes to streamflow timing, reservoir refilling, and water demand as guidelines to confirm that current reservoir operation practices and the drought forecast parameters (and threshold values) continue to be accurate for the present and into the future.

5 WATER DEMAND

5.1 Customer Consumption (Demand)

Total water consumption (demand) and diversion for each water source are recorded by the City and are useful forecast parameters in the decision tree process. This information supports the use of the drought stage decision tree by determining if the total water consumed to-date is considered "high" or "low". In addition, total water consumption is also used by the City as a drought stage trigger by comparing total water demand to the WTP capacity. Specifically, for critical decision dates, the City determines whether total water consumption is 5% and/or 10% above five-year averages and what projected water demands are in comparison to WTP treated capacity. The total cumulative water demand for the period 2000 to 2018 is illustrated in Figure 5-1, including the most recent five-year average (2014-2018).

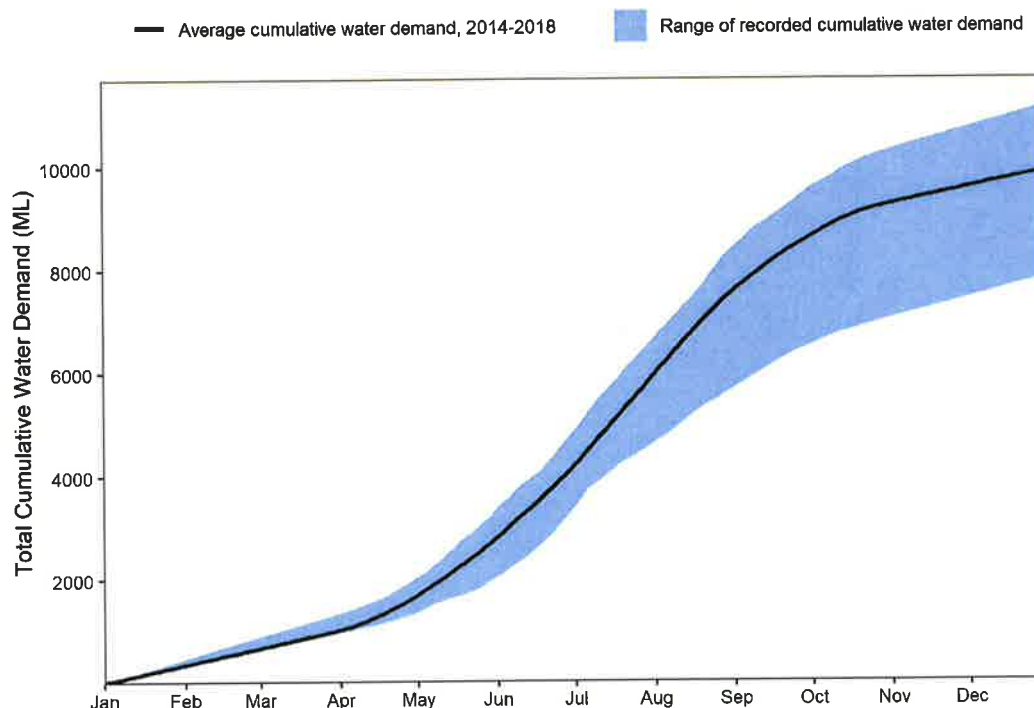


Figure 5-1 City of Penticton annual cumulative water demand, 2000-2018

5.2 Evapotranspiration Forecasts and Soil Moisture Deficit

Farmwest¹ provides climate information to farmers and irrigators in BC and includes climate stations that report evapotranspiration (ET) for irrigation scheduling, growing degree days, air temperature, precipitation, soil moisture deficit, as well as five-day weather forecasts. The Farmwest climate station network is updated daily to provide the most current information possible and includes the following climate stations in the City’s distribution area:

- Penticton Airport GS; and
- Penticton Airport EC.

The City uses the forecasted ET values, as well as calculated soil moisture deficits² (since the date of irrigation water up) to support water management decisions to estimate the required irrigation demand (i.e., high or low) for the North and South Penticton Irrigation Systems in the near-term period.

6 SUMMARY

This appendix provides a summary of the forecast parameters used by the City to assess water supply status, as well as to support the use of the proposed drought stage decision tree (i.e., Figure 5-2 included within the main Penticton Drought Management Plan report [Associated 2020]). Refinements or additions to the forecast parameters will occur

¹ <http://www.farmwest.com/>

² Soil moisture deficit is the difference between measured ET and effective precipitation. It represents the amount of water removed (or added) to the soil since a reference date (i.e., start of irrigation when soils are at field capacity).

City of Penticton

by the City if or when new information sources are made available and/or operational changes are applied to the upland reservoirs.

City of Penticton

REFERENCES

Associated Environmental Consultants Inc. (Associated). 2020. City of Penticton – Drought Management Plan. Prepared for the City of Penticton, June 2020.

BC Ministry of Environment and Climate Change Strategy (MECCS). 2018. British Columbia Drought Response Strategy. Inter-Agency Drought Working Group, June 2018.

BC Ministry of Forests, Lands, and Natural Resource Operations (FLNRO). 2016. Thompson Okanagan Region – Drought Response Implementation Plan. Prepared by the Thompson Okanagan Drought Response Team, July 2016.

City of Penticton. 2014. Dam Operation, Maintenance, Surveillance, and Emergency Action Plan. Revision H. December 2014.

Okanagan Basin Water Board (OBWB). 2019. Drought Trigger Guidelines for Okanagan Mainstem Lakes and River. Prepared by the OBWB, May 2019.

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APPENDIX E - CITY OF PENTICTON EMERGENCY RESPONSE PLAN



Water Treatment Plant Emergency Response Plan 2018



City of Penticton Water Treatment Plant Emergency Response Plan- REVISED June 1, 2018

File available:

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Emergency Response Plans Water Treatment\2018\2018
Emergency Response Plan.docx

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Emergency planning

An Emergency Response Kit for bacteriological contamination is located in the Water Treatment Plant Supervisors office. It contains the following:

- *8 Clip boards*
- *8 tape dispensers*
- *Pens and pencils*
- *Notepad*
- *Position logs*
- *Blank templates – notices*
- *Blank templates – news releases*

Procedures for customer notification

In the event of an emergency that requires a boil advisory or a no use advisory, water consumers that are at high risk will be contacted directly by telephone in the following order:

Interior Health IHA Judi Ekkert	1-866-457-5648 for non-business hours 1-250-469-7070 Ext 12274 cell 1-250-808-3444 Secretary 1 - (250) 469-7061
Penticton Regional Hospital	250-492-4000 Press 0 for receptionist and Contact Emergency Department. If after hours ask for the Nursing Supervisor.
Penticton School District	250-770-7700
Private Schools in Penticton	See attached list
Adult Care Facilities	See attached list

Please note that more than one person must be involved in contacting the following parties and all are of high priority.

All other consumers will be contacted through the City's website at www.penticton.ca social media channels (and through proactive media relations with outlets like radio, newspaper, TV and internet news sites. This will be conducted according to communications protocol (Page 10).

City Staff Emergency Contact List

Name	Position	Work extension	Home Phone	Cell
	Water Quality Supervisor	2564		
Brian Edge	WTP Senior Operator			
Alistair Wardlaw	WTP Senior Operator			
Don Mortimer	WTP Operator			
Rob Phillips	WTP Operator			
	WTP Operator			
Alf Wewetzer	Operations Electrician			
Jennifer Barber	Cross-Connection Control			
Mitch Morozuik	General Manager Infrastructure	2407		
Ian Chapman	City Engineer	2532		
Andrew Jakubeit	Mayor City of Penticton	2403		
Phillip Copper	Communications Officer	2583		
Len Robson	Public Works Manager	2543		
Shawn Filice	Electric Utility Manager	2537		
John Fenske	Works Superintendent	2542		
Ron Johnson	Foreman Utilities	2545		
Brent Baskott	Works	2544		
Dave Best	Foreman, Meters, Dams, Irrigation	2548		
Jayson Stevens	Foreman, Electric	2541		
	GIS Mapping	2490		
Wayne Hindley	Fleet Maintenance Supervisor	2546		
Randy Craig	Waste Water Supervisor	2559		
Gary Marsden	WWTP Operator 3			
David Cichowski	Electrician WWTP	3433		
Derek McCaughey	WWTP Millwright	3438		

City Standby Contact List

Department	Phone	Fax	Cell
Water Treatment Plant			
Wastewater Treatment Plant			
Works Division & Standby			
Electrical Department			
Electrical Standby			
Dispatch Non-Emergency			

Interior Health Contact Info

During Business Hours Contact:

Judi Ekkert, Environmental Health Officer

505 Doyle Street, Kelowna BC V1Y0C5

Office (250- 469-7070 ext 12274

Cell (250) 808-3444

Judi.ekkert@interiorhealth.ca

After Business Hours Contact:

Interior Health after Hours on call Emergency

Contact 1- (866)-457-5648

Emergency Contacts Log

Emergency Contacts and Log - PRIORITY					
Organization	Contact	Details / hours	Phone	Called (Date/time)	Follow-up required?
City of Penticton	See staff directory	See directory			
Interior Health	Judi Ekkert	Water Quality Technical Specialist – business hours			
	On-call medical health officer	After-hours			
Emergency Dispatch Kelowna	On-call	24/7			
RDOS					
School District 67 (contact Board Office or maintenance staff directly to notify affected schools. Fax conditions to Board Office.)	Board office	8 a.m. – 4 p.m.			
	Doug Gorak	Maintenance			
	Clay Apps	Maintenance			
	Brian Slocom	Maintenance			
Private schools	Andrea Tremblay	Concordia Lutheran 2800 South Main St.			
	Bernie Hopley	Holy Cross Elementary			
	Karl Boehmer	Penticton Community Christian School			
	W. Smith	Seventh Day Adventist			
Intermediate care	King's Court	66 Okanagan Ave			
	Braemore Lodge	2402 South Main			
	PDCRS	252 Conklin St.			
	Haven Hill	415 Haven Hill Rd.			
		110 Murray Dr.			
	Chesnut Place	453 Winnipeg St.			
	PDSCL	125 Phoenix Ave			
		168 Kirkpatrick Ave.			

Water testing laboratories

Name	Work Phone	Fax	After-hours phone #
Caro Environmental Kelowna			
Exova Vancouver			
Maxxam Analytics Vancouver			

Provincial and federal government, contacts

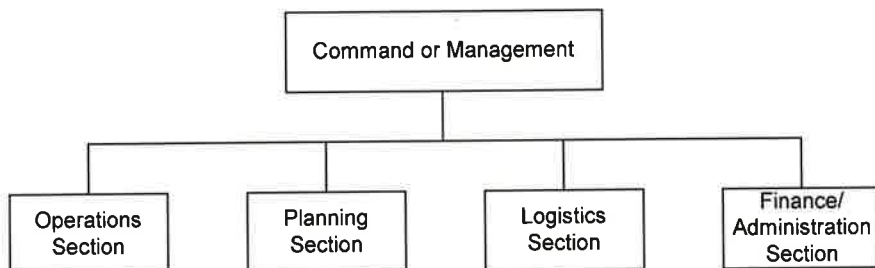
Name	Phone	Fax
Fisheries		
Environment		
Forestry		
Ministry of Transportation – General office		
Ministry of Transportation – Argo Road Maintenance		

Emergency resources – RCMP / Fire / PEP Contacts

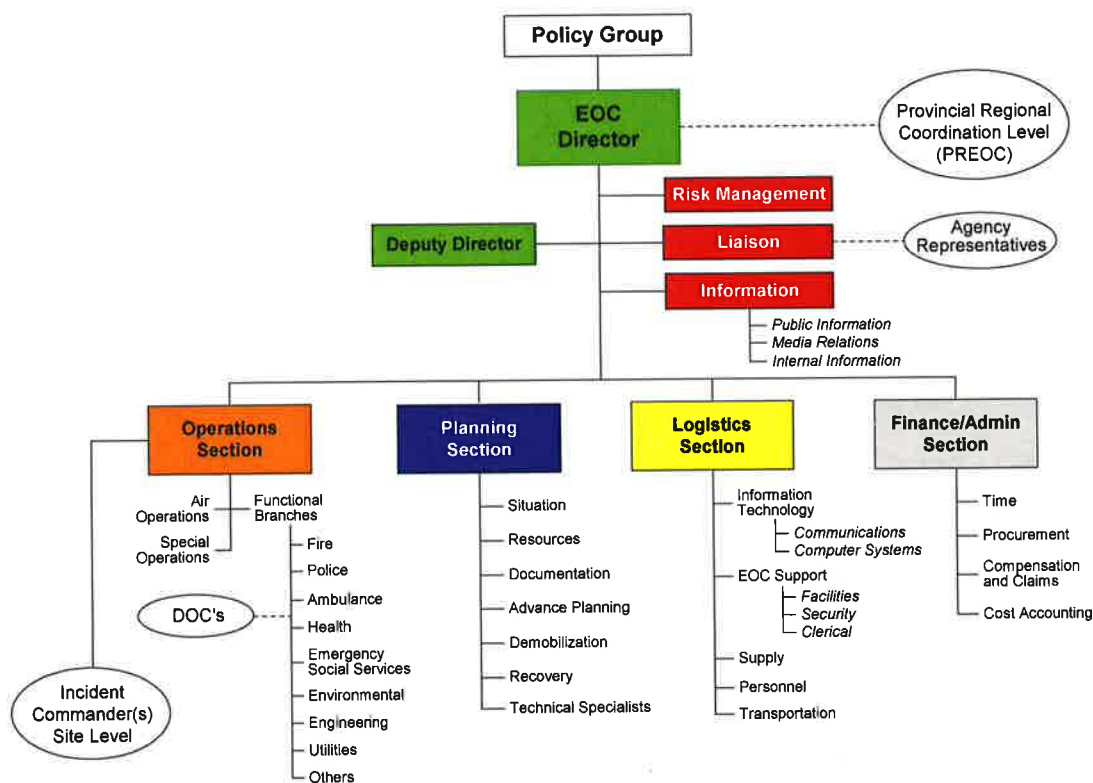
Name		Work Phone #
R.C.M.P.	Office	
Fire Department	Office	
	Dispatch in Kelowna	
P.E.P.	Call Kelowna Dispatch	
P.E.P.	Spill notification any volume!	

Communications protocol

The City of Penticton utilizes the British Columbia Emergency Response Management System (BCERMS) in response to major emergencies and disasters. In the event of a water quality incident that requires public notification, the same “incident command system” will be employed for decision making and approvals:



When activated for a large or complex emergency event, the Emergency Operations Centre (EOC) is the location where key management decisions are made for the local authority in support of the site response. When fully expanded, the EOC consists of the following functions:



The Information Officer/Communications Officer is the coordination point for all public information, media relations, and internal and external communication pertaining to the emergency event. This includes the supervision of any support personnel, emergency call centre and media centre staff.

More specifically, the Communications Officer is responsible for:

Ensuring that the public within the affected area receive complete, accurate and consistent information about life-safety issues, and response and recovery activities
Ensuring that the local authority has suitable capacity to receive and address enquiries from the public
Developing and providing local authority personnel with relevant and accurate event information
Writing and coordinating news releases with officials representing other responding agencies or authorities
Maintaining positive media relations
Facilitating news conferences and media briefings
Monitoring and correcting media broadcasts to ensure accuracy

Spokesperson

The City of Penticton's Media Relations Protocol Policy 133/2014 Sec. 6 for crisis and emergency issues refers to the City's ERP for instruction. Spokesperson designations are divided according to the duty at hand:
Operational updates: The Communications Officer shall act as the City Manager's designate in the event public notification around water quality events. Message approvals must be obtained prior to public notification process, as outlined below.

Press conference/media events: the Mayor/Acting Mayor are recognized as the spokespersons for the City.

Approvals

All public notification templates around water quality events should be approved annually as part of the City of Penticton's Water Treatment Plant Emergency Response Plan. Once in the midst of a water quality event, the following steps should be taken to collect and approve incident-specific messages for dissemination:

Manager responding to the incident should notify City Manager and Communications Officer of potential for public notification as soon as risk/situation has been identified.

Communications Officer collects information required to fill in notification templates.

Communications strategy should be developed involving the following tools as necessary:

Hard copy – in-person notification, signage

Digital – website, social media

Media – radio, TV, newspaper, online

Communications – telephone contacts for public

Drafts should be circulated to the Manager responsible for the incident and/or the Water Treatment Plant (if not already engaged) for approval.

Once approved, public notification should be sent to the City Manager for final approval and briefing of Council.

Communications strategy should be executed.

Contamination of potable water system

Possible Indicators: Positive coliform test results, customer complaints of unusual taste or odour, Water Break - Possible cross-connection.

Notify management. Water Quality Supervisor, Cross Connection Control Coordinator, Public Works Manager, Works Superintendent, City Engineer and General Manager of Infrastructure.

City works staff will be required to assist with flushing or isolation of water sources and the Cross-Connection Control Program Coordinator is available to investigate if a cross connection is suspected.

Immediately isolate the contaminated area if known. Take additional bacterial samples in the area. Attempt to flush the contaminated area by drawing clean water towards the contaminated area and flushing it to waste. Additional samples must be taken if there is any chance of a chemical contamination. This will require specialized sampling techniques and bottles to ensure proper preservation of the sample. This should be done in consultation with an accredited lab.

Management will:
Notify the Interior Health.

After consulting with Interior Health, management will issue the appropriate public safety notice, in accordance to the risk assessment matrix and definitions below.

Initiate communications protocol to deliver messages to the public (Communications Officer).

WTP staff will immediately collect a minimum of 1 sample from the site of suspected contamination and 3 from the surrounding area. A minimum of 4 samples shall be sent to an accredited laboratory for analysis. Depending on the suspected contamination cause and results of initial testing, further testing requirements will be determined by discussion with Interior Health.

Continue sampling the suspected area and pressure zone involved until water quality parameters are back to normal and in consultation with Interior Health it is decided that the system is safe and the water advisories or orders may be rescinded.

Bacteriological tests must be performed by an accredited lab such as Caro Labs and may be supplemented by water quality staff using the Idexx Colilert 24-hour system. Tests performed using the Colilert test will provide results within 24 hours and will show the presence of total coliforms or E.coli bacteria. Immediately notify the Interior Health when additional test results are available. Discuss the location and results of the testing and the need for further action such as flushing or additional chlorination.

If possible, flushing shall be performed after the site has been re-sampled and deemed to be contamination free, and staff should be looking for any possible cross-connections.

Sampling procedures:

The water quality division samples several times per week for total coliforms and E. coli in the water distribution system. These tests are performed at various locations throughout the city. A minimum of 35 tests per month are performed to ensure the water is safe. The Water Quality Division also sends a minimum of 5 samples per week to an accredited laboratory for coliform tests as required by Interior Health.

Risk assessment matrix examples of different contamination

Examples of Different Hazards	Hazard Category 5 High	Hazard Category 4 Moderate High	Hazard Category 3 Moderate	Hazard Category 2 Moderate Low No Premise	Hazard Category 1 Low, Premise Isolation
	Ecoli / Fecal Bacteriological	Reduced Pressure Known Back Siphonage	Home Owner CC no isolation device	Appliance CC (dishwasher to ice machine)	Appliance (dishwasher to ice machine)
	Chemical Contamination		Home Owner Irrigation CC	Thermal Expansion	Thermal Expansion
	Industrial Process Contamination			Hot water / cold water heating cooling	Hot water / cold water heating cooling
	Hydro Carbon Gasoline or Oil				
	Pesticide				

Colour Matrix to Identify Isolation Requirements

Category 5					
Category 4					
Category 3					
Category 2					
Category 1					
Use category, time line and source of contamination to determine risk colour	Start Time Of Contamination Unknown, Source is Unknown	Start Time Of Contamination < 2 Hours Source is Unknown	Start Time of Contamination < 1 Hour Source is Unknown	Start Time of Contamination < 1 Hour Source is Known	Contamination Source Known and Contained One Location Premise Isolation in place

From the colour matrix a protocol for incident isolation can be developed. Please note that this is a reference only and that every case should be fully reviewed to determine level of action.

Incident Isolation Matrix

Every Incident should be evaluated separately and the response plan adjusted accordingly

Things to consider in formulating your response are:

- Direction of flow
- Turbidity and chlorine residual of samples collected in the area
- Pressure monitoring

Risk Level increases as Hazard Level Increases	Level 5 Most Serious	Entire Pressure Zone	10 Blocks in all directions from incident	6 Blocks in all directions from incident	4 Blocks in all directions from incident	0 Blocks in all directions from incident
	Hazard Level 4	Entire Pressure Zone	8 Blocks in all directions from incident	4 Blocks in all directions from incident	2 Blocks in all directions from incident	0 Blocks in all directions from incident
	Hazard Level 3 Moderate Serious	6 Blocks in all directions from incident	6 Blocks in all directions from incident	3 Blocks in all directions from incident	2 Blocks in all directions from incident	0 Blocks in all directions from incident
	Hazard Level 2	4 Blocks in all directions from incident	4 Blocks in all directions from incident	2 Blocks in all directions from incident	1 Block in all directions from incident	0 Blocks in all directions from incident
	Hazard Level 1 Least Serious	2 Blocks in all directions from incident	2 Blocks in all directions from incident	1 Blocks in all directions from incident	1 Block in all directions from incident	0 Blocks in all directions from incident
	Timeline and Contamination Source	Start Time Of Contamination Unknown, Source Unknown	Start Time Of Contamination < 2 Hours Source Unknown	Start Time of Contamination < 1 Hour Source Known or Unknown	Start Time of Contamination < 1 Hour Source Known	Contamination Source Known and Contained One Location Premise Isolation

Advisory Definitions

Water Quality Advisory

A water quality advisory is the lowest-level notification. A water quality advisory is used in situations where the general public health threat is modest. Additional actions can be taken by individuals wishing to reduce the risks if the customer feels they are necessary. Examples of people who may need extra precautions:

- People with weakened immune systems
- People over 65 years
- Children under 2 years
- People with chronic illnesses
- People wishing additional protection

Boil Water Notice

A boil water notice is used in situations where the public health threat is significant and the nature of the threat is one that can be effectively addressed by boiling the water.

Water supply systems may remain on a boil water advisory for an extended period of time due to a substantial concern about the system's treatment equipment or distribution infrastructure. Infrastructure changes are usually quite costly and require lengthy planning before they can become operational.

If you have a home filter system, you may still need to boil your water, depending on the particular threat to your water supply. Consult with your drinking water officer/contact for guidance.

Do Not Use Water Notice

A do not use water notice is the highest-level notification. It is used in situations where a significant public health threat exists and the threat cannot be adequately addressed through a water quality advisory or boil water notice.

**All notices are located in the RMS system at the following location.
They can be adjusted accordingly and mass printed as required.**

[\\citysan1\data\city\RMS\7000-7699 PROTECTIVE SERVICES\7130 Emergency Measures - General\7130-03 Emergency Operations\EOC & Preparation Plan\EOC\EOC ORGANIZATION\Management\Information Officer\Incident type\Water quality](#)

ADVISORY TEMPLATES – WATER QUALITY ADVISORY

Notice to be distributed to affected property owners re: water quality advisory.



Water Quality Advisory

penticton.ca

WATER QUALITY ADVISORY

Date issued: MONTH, DD, YYYY

Area affected by advisory: GENERAL DESCRIPTION

Boundaries: Boundaries of the area affected include:

- East of STREET and west of STREET
- North of STREET and south of STREET

Reason for water quality advisory: DESCRIBE INCIDENT WITH SPECIFICS

Who may need extra precautions:

- People with weakened immune systems
- People over 65 years
- Children under 2 years
- People with chronic illnesses
- People wishing additional protection

Instructions for individuals requiring additional precautions: Water intended for consumption should be brought to a hard boil for a minimum of one minute, and then allowed to cool before consumption.

General info: Check on your elderly family, friends and neighbours to ensure they are aware of the water quality advisory, and if they should take extra precautions.

Duration of notice: The water quality advisory will be in effect until the City of Penticton and interior Health deem the water safe to drink.

Updates: Up-to-date information is available on the City's website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.

Your primary contact: 250-490-XXXX

Alternate contact: 250-490-XXXX

News release to distributed to media re: water quality advisory.



News Release

penticton.ca

Water quality advisory for **WHERE**

Month DAY, 2015

Penticton – As a public health precaution, the City of Penticton has issued a water quality advisory for residents in the **WHATAREA** that require additional precautions to boil their drinking water for at least one minute before drinking.

WHAT HAPPENED-INCLUDE SPECIFICS OF NATURE OF INCIDENT. The precautionary boil water advisory applies to the municipal water supply for the **WHAT** area managed by the City of Penticton; and the boundaries of the area affected include:

- East of **STREET** and west of **STREET**
- North of **STREET** and south of **STREET**

This does not affect residences **WHERE** and other water systems managed by the City of Penticton. Crews are working to rectify the situation. Further sampling and testing is currently being conducted in the system.

What is a water quality advisory?

A water quality advisory is the lowest-level notification. A water quality advisory is used in situations where the general public health threat is modest. Additional precautions can be taken by individuals wishing to reduce the risks if the customer feels they are necessary.

Who may need extra precautions

- People with weakened immune systems
- People over 65 years
- Children under 2 years
- People with chronic illnesses
- People wishing additional protection

Precautionary instructions

Residents are advised to bring their water to a rapid, rolling boil for at least one minute prior to using it for domestic purposes, including drinking, making infant formula and juices, cooking, brushing teeth, washing raw foods and making ice. Alternatively, residents may use bottled water.

Duration

The water quality advisory will be in effect until the City of Penticton and Interior Health deems the water safe to drink.


Updates

Up-to-date information is available on the City's website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.


RMS: [Water Quality Documents and Templates](#)

TEMPLATES – BOIL WATER NOTICE

Notice to be distributed to affected property owners re: boil water notice.



Boil Water Notice

penticton.ca

BOIL WATER NOTICE

Date issued: MONTH, DD, YYYY

Area affected by notice: GENERAL DESCRIPTION

Boundaries: Boundaries of the area affected include:

- East of STREET and west of STREET
- North of STREET and south of STREET

Reason for boil water advisory: DESCRIBE INCIDENT WITH SPECIFICS

Definition: A boil water notice is used in situations where the public health threat is significant and the nature of the threat is one that can be effectively addressed by boiling the water.

Instructions: All water intended for consumption should be brought to a hard boil for a minimum of one minute, and then allowed to cool before consumption.

General info: Check on your elderly family, friends and neighbours to ensure they are aware of the boil water notice restrictions, if they apply.

Duration of notice: The boil water notice will be in effect until the City of Penticton and Interior Health deem the water safe to drink.

Updates: Up-to-date information is available on the City's website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.

Your primary contact:	250-490-XXXX
Alternate contact	250-490-XXXX

RMS: [Water Quality Documents and Templates](#)

News release to distribute to media re: boil water notice.



News Release

penticton.ca

Boil water notice for **WHERE**

Month DAY, 2014

Penticton – To ensure public health, the City of Penticton is advising residents in the **WHATAREA** to boil their drinking water for at least one minute before drinking.

WHAT HAPPENED-REASSURING STATEMENT: Further sampling and testing is currently being conducted in the system **WHERE**. Crews are aware of the situation and working to resolve the matter as quickly as possible.

The boil water advisory notice to the municipal water supply for the **WHAT** area managed by the City of Penticton; and the boundaries of the area affected include:

- East of **STREET** and west of **STREET**
- North of **STREET** and south of **STREET**

This does not affect residences **WHERE** and other water systems managed by the City of Penticton.

What is a boil water notice?

A boil water notice is used in situations where the public health threat is significant and the nature of the threat is one that can be effectively addressed by boiling the water.

Water supply systems may remain on a boil water advisory for an extended period of time due to a substantial concern about the system's treatment equipment or distribution infrastructure. Infrastructure changes are usually quite costly and require lengthy planning before they can become operational.

If you have a home filter system, you may still need to boil your water, depending on the particular threat to your water supply. Consult with your drinking water officer/contact for guidance.

Instructions

Residents must bring their water to a rapid, rolling boil for at least one minute prior to using it for domestic purposes, including drinking, making infant formula and juices, cooking, brushing teeth, washing raw foods and making ice. Alternatively, residents may use bottled water.

Duration

The boil water notice will be in effect until the City of Penticton and Interior Health deems the water safe to drink.


Updates

Up-to-date information is available on the City's website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.

RMS: [Water Quality Documents and Templates](#)

TEMPLATES – DO NOT USE WATER NOTICE

Notice to be distributed to affected property owners re: do not use water notice.



Do Not Use Water

penticton.ca

DO NOT USE WATER NOTICE

Date issued: MONTH, DD, YYYY

Area affected by notice: GENERAL DESCRIPTION

Boundaries: Boundaries of the area affected include:

- East of STREET and west of STREET
- North of STREET and south of STREET

Reason for do not use: DESCRIBE INCIDENT WITH SPECIFICS

Definition: A “do not use water” notice is the highest-level notification. It is used in situations where a significant public health threat exists and the threat cannot be adequately addressed through a water quality advisory or boil water notice.

Instructions: Due to the potential for contamination, water must not be used for domestic purposes and may only be used for flushing toilets. During this period, the water must not be used for drinking, cooking, bathing or any other purpose other than flushing toilets.

General info: Check on your elderly family, friends and neighbours to ensure they are aware of the do not use water restrictions, should they apply to them.

Duration of notice: This “do not use water” notice will be in effect until the City of Penticton and Interior Health deem the water safe.

Updates: Up-to-date information is available on the City’s website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.

Your primary contact:	250-490-XXXX
Alternate contact	250-490-XXXX

RMS: [Water Quality Documents and Templates](#)

News release to distribute to media re: boil water notice.



News Release



"Do not use water" notice for **WHERE**

Month DAY, 20XX

Penticton – To ensure public health, the City of Penticton is advising residents in the **WHAT** area that domestic water use has been suspended.

WHAT HAPPENED-INCLUDE SPECIFICS OF NATURE OF INCIDENT. The precautionary boil water advisory applies to the municipal water supply for the **WHAT** area managed by the City of Penticton; and the boundaries of the area affected include:

- East of **STREET** and west of **STREET**
- North of **STREET** and south of **STREET**

Crews are working to rectify the situation. Further sampling and testing is currently being conducted in the system.

What is a "do not use water" notice?

A "do not use water" notice is the highest-level notification. It is used in situations where a significant public health threat exists and the threat cannot be adequately addressed through a water quality advisory or boil water notice.

Instructions

Due to the potential for contamination, water must not be used for domestic purposes and **may only be used for flushing toilets**. During this period, the water must not be used for drinking, cooking, bathing or any other purpose other than flushing toilets.

Duration

This advisory will remain in effect until the City of Penticton and Interior Health deem the water safe for the public.



Updates

Up-to-date information is available on the City's website, www.penticton.ca. Residents who do not have computer access should listen to local radio stations for updates.

RMS: [Water Quality Documents and Templates](#)

TEMPLATES – NOTICE LIFTED

Notice to be distributed to affected property owners re: lifting of given advisory/notice.



Boil Water Notice

Lifted

Month DD, YYYY

The City of Penticton in consultation with Interior Health has lifted the boil water notice effective 2:30 pm, February 5, 2015.


Following daily testing and regular monitoring of the system since the notice was put in place on Date, the City and Interior Health are confident that the water quality of the system is now safely within drinking water guidelines.

"QUOTE," said Penticton Mayor WHO.


The City understands the impact that this notice had on the users of the system and appreciates the support received by the community. We apologize for any inconvenience this may have caused.

RMS: [Water Quality Documents and Templates](#)

News release to distribute to media re: lifting of given advisory/notice.



News Release



Boil water notice lifted

Month DAY, 2015

Penticton – The City of Penticton and Interior Health have lifted the boil water notice effective **WHEN**.

Following daily testing and regular monitoring of the system since the notice was put in place on **DATE**, the City and Interior Health are confident that the water quality of the system is now safely within drinking water guidelines.

"QUOTE," said Penticton Mayor **WHO**.

The City understands the impact that this notice had on the users of the system and appreciates the support received by the community.

-30-

Contact:
Simone Blais
Communications Officer
250-490-2583
simone.blais@penticton.ca

RMS: [Water Quality Documents and Templates](#)

FAQ to distribute to affected property owners re: lifting of given advisory or notice, and questions they may encounter as part of this process.



**Frequently asked questions:
what to do after a drinking water advisory has been lifted**

When I turn on the faucet, the water sputters. Why?

You have air in your lines. Turn on your tap slowly and run the water until the sputtering stops.

The water is discolored. What should I do?

Flush your water pipe by running the water until it is clear.

Do not wash clothes if the water is discolored. Wait until the water runs clear at the tap. Wash a load of dark clothes first.

Why does my water have a strong smell?

The smell is likely chlorine. Often, water systems will increase chlorine levels to disinfect the pipes.

What should I do if my water pressure is low?

Check the faucet screens for trapped particles. Remove the screens and clean out any particles. Put the screens back on the faucet.

Do I need to clean out my faucets?

Yes. You should flush your faucets after the drinking water advisory.

- Turn on the main water valve.
- Turn on the cold water tap at all faucets and run the water until you feel a change in temperature (i.e. the water gets noticeably colder). This may take several minutes. Begin with the faucet that is highest up in your home or building and then open the other faucets one at a time moving from the highest floor to the lowest.

Do I need to clean appliances?

Yes. Read the owner's manual for directions to clean appliances such as water softeners and filter

My refrigerator has a water dispenser/ice maker. Do I need to clean them?

Yes. Water dispensers and ice makers are connected to your water line. You need to flush and clean them.

Follow the directions in the owner's manual or:

- Change the filter cartridges.
- Throw out ice.
- Flush the water dispenser for 3 to 5 minutes.
- Run the ice maker for 1 hour.
- Throw out all the ice.
- Wash and sanitize bin areas.

Do I need to do something for the water softener?

Yes. You may need to run through a regeneration cycle. Follow the directions in the owner's manual.

I have a water treatment unit for the house. Does it need special care?

Yes. Change the filter cartridges. Some units need disinfecting. Follow the directions in the unit's owner's manual.

RMS: [Water Quality Documents and Templates](#)

Power failure at the Water Treatment Plant

Possible Indicators: Alarm notification in plant or from Barnet Dialer.

The Water Treatment Plant has two 350 kW generator that are capable of supplying more than the full electrical load of the facility. The generators are tested monthly to insure they are operating properly, and are maintained by the Fleet Maintenance Division and WTP staff of the City of Penticton.

If there is an interruption of electrical service the generator starts automatically in approximately 5 seconds. The plant will continue to operate normally through any power outage or power fluctuation with the exception of the DAF. The DAF will have to be restarted manually. All computer and PLC systems are connected to an uninterruptible power supply (UPS) that has approximately one hour of service time. All instrumentation and computer systems have surge suppression system.

If there is a major power outage that affects the Lake raw water intake, the plant will shut down if operating 100 % Lake. If the plant is in a blend mode the Creek will continue to operate. There is an 850 KW standby generator located at the Lake Pump Station that will start automatically. The operator will have to configure the pump selection for generator power (Reminder that a maximum of 2 large pumps can be run on generator). Pumps 1 – 4 must be operated in hand when on generator. Pumps 5 and 6 can be run in auto.

DAF Startup

Possible Indicators: Alarm notification in plant or from Barnet Dialer.

To startup the DAF system once it has been off for a period of time the following procedure should be followed. If the saturator tank is empty, the first procedure is to fill the tank to the operating level. This can be done with one recycle pump on hand. Shut the pump off at approx. 100 mm as it will continue to fill until the end point of + - 300 mm.

Once the tank is at an acceptable level, you can start the air compressor and allow the pressure to come up to 80 psi.

The operator will then have to decide what the header configuration will be and setup the recycle pumps accordingly. The small header is designed for a flow of 0 – 20 MLd, the larger header is designed for a flow of 20 – 40 MLd and both headers are required for flows above 40 MLd (see table below)

Place the DAF in service

The air inlet valve will open.

After the inlet valve has opened, the operator can place the inlet valve into manual mode.

This will prevent the valve from hunting.

Once the level and flow has sorted itself out, switch the valve back to auto.

Enable all relevant alarms.

Header Selection	Flow through DAF Basin	Number of recycle pumps
8 "	< 25 MLd	1
10"	> 25 MLd < 40 MLd	2
Both 8" and 10"	> 40 MLd	2

Anything throughput greater than the 8" header requires two (2) recycle pumps.

48 MLd has been tested on each DAF, if you need more than 48 MLd you must run 2 DAF basins.

Water Treatment Plant PLC failure

WTP staff has experience with simulated and real PLC failures and have been trained in how to re-start the plant in manual mode.

The PLC system consists of a hot standby so that more than 1 PLC would have to fail before the plant would operate without automated control. However, if the UPS system fails which is possible, all PLC control would be lost! This type of failure has occurred at a flow rate of 49MLD in the summer, and the plant came to a complete stop. Operators must be very careful to ensure that when responding to alarms that the information displayed on the computer screen is updating as with a full PLC failure the screens look normal but do not update.

The following is a description of a simulated failure test:

One PLC was powered down using the power switch, and then the last unit was also powered off. When the last unit was powered down the Creek and Lake influent valves immediately went to the closed position. This stopped all water flowing into the plant. The Polymer, PAC, and Chlorine systems all shutdown. The filter effluent modulating valves also went to the closed position on any filters that were previously online. The flash and rapid mixers and all the flocculation drives also shutdown. After a period of five minutes the Barnett received an alarm indicating loss of communication from the Fire Hall to the water treatment plant. This was indicated by the alarm PENT COM showing at the Fire Hall computer. The lake pump No. 5 had been running in automatic, this pump shutdown after a five-minute loss of communication.

The plant performed exactly as it should and testing it had no detrimental effect as the plant shutdown in a similar manner to normal shutdown. If the plant had failed like this it would then require operators to restart it in hand mode. This type of test may be performed approximately one to two times a year. Listed below is the procedure to follow when the plant is then started in automatic using the normal PLC function.

To reset the PLC:

Power down the PLC using breaker # 61 the pushbutton breaker is located in the top left hand corner of the main PLC cabinet. Also check the remote I/O panel in the chemical area for the same Ourbus Error. It can be cleared using breaker L5.

Restarting or running the Water Treatment Plant in hand mode

When the PLC system is not working the computers may still show information that appears to be fine. All computers should be turned off as they will be totally inaccurate and may give a false sense of security. The plant may be started completely in hand using the procedure listed below:

Determine the desired sources and flow from each source. If running the lake system, determine which pump will operate and at what flow level. One person must go to the Lake pump station to start pumps as required as there will be no control from the WTP. Two operators will be required at the plant to run in hand mode. One to operate the chemical systems and one to operate mixers, flocculators, and open filter influent, and effluent valves. If there is a problem getting help then one person could start the chemical systems and then have the person start only one pump at the Lake. Once flow has started then the mixers and filters could be started.

When trying to get assistance consider assistance from the WWTP or Works if no additional assistance is available from WTP staff.

Determine the coagulant dosage, polymer dosage, and chlorine dosage. Calculate the required chemical feed rates for the desired flow. If you are blending determine the feed rate for the final combined flow even though on start-up the lake will initially be the first to run. It is not a problem to have an extra chemical feed for a short duration. The easiest operation will likely be 100% lake.

Source Water	PAC	Poly	Mid Floc Poly
9 MLd lake	10 mg/L (47 mls/min)	2.0 mg/L (12.5 mls/min- 2.5 strokes/min)	
18 Mld lake	10 mg/L (94 mls/min)	2.0 mg/L (25 mls/min – 5 strokes/min)	
27 MLd lake	10 mg/L (141 mls/min)	2.0 mg/L (37.5 mls/min – 7.5 strokes/min)	

Blended Source Water 70/30			PAC	Front End Poly	Mid Floc Poly
Lake	Creek	Total			
5 MLd	2.0 MLd	7 MLd	25 mg/L	2.0 mg/L	0.4 mg/L
9 MLd	4.0 MLd	13 MLd	25 mg/L	2.0 mg/L	0.4 mg/L
14 MLd	6.0 MLd	20 MLd	25 mg/L	2.0 mg/L	0.4 mg/L

Determine the number of filters that are required for the combined flow, and have the approximate set points determined for that flow. Typically a start level of approximately 7 percent open as marked on the valves will work well with 3 filters on-line at a flow of approx. 18 MLD.

The lake source is the easiest source to run in hand mode.

The Lake main influent Rotork valve must be opened manually before any Lake pump is started. Both the Lake and Creek main influent valves are in confined spaces and they must be ventilated for a minimum of 3 minutes before entering.

The flash mixers and flocculation drives must all be started from the main motor control center in the electrical room. Simply place the switches to the hand position and they will start immediately. There is no problem in starting the mixers several minutes prior to starting water flow.

Once the mixers are all running the polymer and coagulant systems can be ready for start and the correct chemical feed rate can be adjusted manually and then turn the system off until the Lake pump and flow is confirmed. The pump in the Alum room must be placed in hand and the speed increased or decreased to give the desired flow rate on the flow meter. The stroke length could also be adjusted if required.

The polymer feed system must be placed in the hand mode and the desired frequency in strokes per minute selected. The chlorine system can be started once the filters start to discharge water.

When the chemical systems are operating properly the pump at the lake may be started. The Rotork influent valve could be adjusted to throttle a little to give the correct flow. If only pump No. 5 is operating, the valve can be opened to be a 50 percent position and the pump will only produce 9 MLD. Once the lake flow has stabilized the Creek influent valve can then be placed in hand and set to the required position to give the desired flow rate.

For a 50% blend and a Creek flow rate of 8.5 MLD set the valve to approx. 12 percent open. Ensure that the flow has stabilized and have an operator manually set the new desired chemical feed rates for all systems. If there is a failure of electronic systems, a draw down or fill up test may be required.

Prior to starting the Lake pump and Creek flow an operator must be prepared to manually operate the effluent filter valves for the required filters. These must be operated very smoothly. For a total flow of approximately 17 MLD three filters must be used with an approximate opening of seven percent. Two filters could also handle a flow of 18 MLD. There would be no digital indication of any setpoint and this can only be determined by experience. Any filter that is required to operate must have the influent gate lowered. Any filter that was previously online prior to shutdown should remain in the opened position.

As soon as there is flow into the plant the chlorination system must be turned on for the appropriate system. Normally filter effluent will be chlorinated. Base the chlorine dose on the combined plant influent.

As there will not be any alarm systems, operational checks must be constantly made of the chemical feed systems, flow rates and most important filter levels. The most difficult part of this procedure is keeping the filters at a reasonable level of between 70 and 97 percent. The best approach is to only adjust the valves a small amount and wait to see a change, as it is very easy to over correct.

If a flow adjustment is required this could be done using the influent modulating valves for a small change, or by starting another Lake Pump and adjusting the Creek flow as required. If this is done a new chemical feed rate calculation will be required.

The plant effluent and chlorine levels can be checked down in the meter chamber. The clearwell level and all filter levels can be read using the ultrasonic units at each source. The on-line 1720 turbidity meters may also be read at each local unit. No information on the computer is reliable or in anyway accurate. The computer simply reports the last levels prior to shut down of the PLC.

Plant Restart in Automatic by PLC

When the PLC has been powered down there is a chance that there may be some communication errors. Check the primary PLC and Standby and ensure that the remote I/O module in the main electrical control room does not have an Ourbus Error. If it does, simply power down the module only using breaker # 61 the pushbutton breaker is located in the top left hand corner of the main PLC cabinet. Also check the remote I/O panel in the chemical area for the same Ourbus Error. It can be cleared using breaker L5. When the system is shut down and is then powered back up, several registers change and this requires changes to be made using Wonderware Viewer. Listed below are the following areas that need to be checked:

All alarm enable/disable toggle switches on the enable/disable pages will switch to the enable mode and will show as green. An operator must switch alarms that are not required to be enabled to the disable mode. Note the plant may not run in auto as a previously disabled alarm may now cause a plant shutdown. Simply disable all alarms that are not normally enabled and reset prior to proceeding to Auto control.

Switch alarms not required to be enabled to disable mode.

The lake pumps will all revert to the off position on the lake set point screen. Normally all of the pumps should be placed in the automatic mode.

Turn Lake pumps back to auto.

The PAC screen will default to the blocked mode where each train has the blue blocking window over the set-points. You must login as emergency to gain control of the upper right red button. Simply toggle it to green and the set-points for that train can then be set. The following points must be set: Pacing control must be set for the correct source. The correct flow meter, and pump must be selected and the main on/off switch for the correct train must be turned on and will then show as green. The user select pick points should not change for any chemical system but check all of them.

Set alum pump pacing control for the correct source.
Choose the correct flow meter.
Choose the correct pax pump.
Select input screen to on (green).

The pressure reducing station will revert to automatic mode, which will then set the pressure by automatic set-points. Select a desired pressure if you want to hold water in the clearwell or fill Duncan Ave.

All of the filters will go to the offline position. Any filters that are required must be placed online. The water source toggle for Creek/Lake will indicate none. These must be selected for each filter and the clarifier.

Place required filters online.

The plant will have gone from automatic mode to showing hand. To restart the plant select the required pumps on the auto page and then select auto. Once auto has been selected the desired operating level is chosen by highlighting the small red box on the left-hand side of the auto page. All of our tests have indicated that the rest of the set-points, such as levels for starting, stopping, chemical dosages (except alum) etc. will all revert to the previous values when the plant was running in automatic. All set-points should still be thoroughly checked to ensure proper plant operation.

Select correct lake pumps to online on the auto page.
Select auto on the auto button.
Select desired start level by picking red box on left.

All chemical system flows must be proved out by draw down test.

Filter washing in hand mode

Filters may be washed completely by PLC control when in automatic mode or also in hand mode. The procedure below describes how to proceed with a filter wash in hand mode.

Determine which filter is to be washed, and which filter is to be placed online prior to the washing procedure. Placing a filter online in hand mode requires opening of the influent gate, and control of the filter effluent-modulating valve. Once the filter level has stabilized the filter that is to be washed may be taken off line by closing the influent gate and allowing the filter to drain down to approximately 12 percent level using the previously open effluent valve. As the filter level drops it may require the effluent valve to be opened slightly. Constant checking should be done to ensure that the level is not dropping too quickly and there is no chance of a turbidity problem.

When the filter is at the desired level of approximately 12 percent the effluent valve must be closed by hand. At this time one blower is placed in hand, and both backwash water pumps are placed in hand on the main electrical floor. The blower number must be noted so it can be started on hand down in the blower room. The preferred method is to first start the selected blower on hand and then immediately have an operator manually open the air inlet valve on the selected filter to be washed. One person could do this procedure by first opening the air inlet valve at the appropriate filter, and then quickly starting the selected blower.

The blower should start normally and provide airflow to the filter. After the desired time of approximately 300 seconds the air wash can be terminated by simultaneously stopping the blower and closing the air valve to the filter. Once this system is off the next step is to wash the filter using the back wash water pumps.

This procedure requires two persons. The filter back wash inlet valves can be opened on the appropriate filter and one backwash pump can be started. Once the pump has reached operating speed an operator is required to open the backwash modulating valve in the blower room to the marks shown on the valve indicator. Once the valve is in this position the next pump can be started right away. Both pumps must be operated for the required time of approximately 500 seconds. Sulphur Dioxide must be controlled by hand during the overflow of backwash water. One operator must open the chem-line valve in the pipe gallery for backwash SO₂ and another operator must run the sulphonator on hand in the sulphonator room. An approximate dose of 1.5 mg/L will require 180 lbs. per day at a high wash rate of 650 L/Sec.

Once the filter is clean, one pump must be shut down and the backwash modulating valve throttled slightly to the one pump position marked on the indicator. An operator is then required on the main floor to close the gullet valve by hand. Once the gullet has filled to the required level the modulating valve in the blower room can be slowly closed, and at the same time another operator can close the main back wash valve on the filter.

There is no problem dead heading the pump for approximately 30 seconds while the operator is closing the valve and preparing to shut down the pump. The filter must then be wasted on hand for approximately 60 seconds at maximum open on the wasting valve. During this time the influent gate is opened. Once the filter has been wasted all valves and motors must be placed back in auto.

Coagulation failure (PAX18) Water Treatment Plant

If an alarm is received and not responded to within approximately five minutes the plant will automatically shut down. This will prevent a large amount of water that is inadequately treated being processed through the system. Before the plant is started a spare pump must be put online, or the problem must be repaired. Reasons for a decreasing coagulation chemical could be due to pump failure or a blockage in the line. A spare chemical line is available in the PAC room and it can be used to directly apply coagulation chemicals to the flash tanks. This type of procedure will require assistance and additional help should be summoned immediately. It is possible to manually feed coagulant to the flash mixer while the repair is being made or a new line is connected.

Depending on how the plant was operating prior to the coagulant failure it may require switching process trains or leaving an existing process train alone and starting a new process. The water that has been partially treated may have to be drained which can take a significant amount of time. In this case it would be best to either use a different source, or simply switch to an empty process train and then commence treatment. If the amount of time that the coagulant feed was off was small and is known, then additional coagulant may be added to the floc tanks and mixed in.

Information should be available on the computer trends to determine how long the process was compromised. This will allow an operator to determine if the filters will operate correctly, or if they have operated with too low a coagulant dosage for an excessive period of time. The filters that have not received adequately treated water may not perform well even when the dose is increased. Experienced operators will be able to determine whether new filters are required or whether the existing ones will operate properly once the coagulation dosage is corrected. Information from particle counters will be invaluable in determining how well the process is responding. Filters may be operated to waste for a short period of time until the effluent quality improves. This may be the best option if there are no available clean filters.

Changes to water treatment plant dosages can take up to 12 hours to show an effect. Changes should be made carefully and to only one parameter at a time to ensure that the problem is not compounded. In this type of situation it is certainly worth running the plant in a single source mode that is easily treated and has treatment protocols fully established, such as 100% Lake water.

Failure of coagulation aid polymer system at Water Treatment Plant

The water treatment plant utilizes a cationic polymer at a dose of approximately 1.5 –2.5 mg/l to improve the coagulation process. If this polymer fails to pump, the coagulation process will be compromised. This may result in a minor change in turbidity and filter performance, or may result in inadequately treated water and very poor filter performance. If the coagulant has been off for an extended period of time the water in the process train may have to be drained and the process restarted again. It may be possible to remedy the problem by slightly increasing the dosage of poly aluminium chloride until the process has stabilized.

Disinfection failure at the Water Treatment Plant

Possible Indicators: Alarm from the Barnett dialer, System Tests or Customer Complaints.

The Water Treatment Plant has 4 online chlorine residual analyzers. All of these systems are tied to process alarms and will report a direct alarm to the water treatment plant should chlorine deviate above or below predetermined safe operating levels. Two residual chlorine analyzers are installed just after the chlorination injection point and just prior to water entering the clear well. If the chlorine system fails then there is adequate warning before the residual in the clear well will drop. This allows water treatment plant staff enough time to cut the flow through the clear well and allow for supplementary chlorination before water leaves the plant. There are total of five chlorinators at the water treatment plant. Three of the units can be used for chlorination post filtration and 1 unit can be used to boost the chlorine level just before water leaves the plant. It is a simple procedure to switch over to use one of the standby systems.

If the post filtration chlorination system fails then the plant will be shut down in approximately 10 minutes. This will prevent inadequately chlorinated water from entering the clear well. The water within the clear well will continue to pass-through into the distribution system, but if the plant is shut down early enough the residual should not decrease. It is imperative that water treatment plant staff carefully analyze any chlorination problems and get the system back online safely, and as soon as possible. If there is a major failure and the chlorine storage and chlorinator rooms or equipment cannot be put back in service a spare ejector assembly and chlorinator valve is stored in the electrical storage area. This unit can be used in the pipe gallery to feed chlorine from a spare tonner shipped from the WWTP or other local user.

Any work on the chlorine system requires a minimum of two trained operators. Spare equipment and supplies are available at the water treatment plant for virtually any required repair. It is extremely unlikely that low chlorine residual would be present in the water leaving the treatment plant because of the dual alarm features. However, if the water leaving the treatment plant has a low or no residual the following procedure will be followed:

If the chlorine residual is above 0.4 mg/l then supplemental chlorination will be added to the water directly leaving the plant. This will still provide adequate contact time and a boil water advisory should not be required. If the chlorine level is lower than 0.4 mg per litre but greater than 0.2 mg/l then in consultation with Interior Health a boil water advisory may be issued. If the chlorine level is less than 0.2 mg per litre leaving the plant and it has been for some period of time then the City of Penticton has the authority to issue a boil water advisory without consultation with the Interior Health Authority.

Management will notify Interior Health Authority, the media and critical and sensitive consumers. A water sampling program will be undertaken on water leaving the water treatment plant and at various points within the distribution system. These points will be chosen based on their location in relationship to water leaving the plant and detention time in the system. The chlorination system shall be repaired or the problem rectified immediately and the free chlorine residual will be increased to a minimum of approximately 1.5 mg per litre for a 24-hour period. The boil water advisory will be lifted only after consultation with Interior Health Authority. If a boil water advisory is called, flushing shall commence immediately from the water treatment plant towards the distribution system. Distribution reservoirs shall be monitored to ensure they have adequate free chlorine residual. If they do not have a satisfactory residual then supplemental chlorination may be required.

Emergency chlorination for Water Treatment Plant

Chlorine can be fed via a separate independent line from the outside of the plant by the pipe gallery access door to the chlorine panel in the pipe gallery. Spare polyethylene tubing is available and spare union adapters are available which allow for chlorine gas to be fed to the chlorine panel in the pipe gallery. A spare tonne container of chlorine would be required to be delivered from the RDOS or other chlorine user in the area. A spare vacuum regulator would be installed on the tonner.

The spare chlorine equipment is located on the storage shelf upstairs. This equipment was rebuilt and tested in the spring of 2011.

A second alternative for disinfection would be to transfer 12% hypo from the waste water plant to the water plant. This could be done with 20 litre pails initially while arrangements are made to transfer a couple of 1000 litre totes with the yards hiab truck. The calculation for mls per minute is:

$MLD \times \text{dose} = \text{kg's of 100\% chlorine} / 0.12 = \text{litres of 12\% per day.}$

Divide the litters per day by (24 x 60) to get litres / minute

Multiply this number by 1000 to get mls/min

Flow	Dosage required	Mls of 12% / minute	Litres / hour	Litres / Day
9 Mld	2 mg/L	104 mls/min	6.2	150
18 MLd	2 mg/L	208 mls/min	12.4	298
27 MLd	2 mg/L	312 mls/min	18.7	449
36 MLd	2 mg/L	416 mls/min	25	600

Hypo could be added at the following locations.

- Filter discharge
- Clear well hatches
- Meter chamber

Chlorine emergency procedures:

These procedures apply to the following types of chlorine related emergencies:

Chlorine leak develops during routine tonner change and cannot be corrected using “Leak Procedures during Tonner Change”.

Chlorine container damaged during unloading.

Chlorine monitor activated alarm.

Automatic shut off valves are installed on ton cylinders to close cylinder valves in the event of a piping leak.

Auto shut off valves will not aid in a leak originating at a pressure relief point.

This includes alarms that occur after hours that are received by standby personnel. If a chlorine alarm has been received at the Water Treatment Plant, WTP staff should check the SCADA system to determine the concentration of the leak. If the chlorine leak is determined to be severe Kelowna Fire Dispatch should be called to notify Penticton Fire to attend and a supervisor/foreman must be contacted immediately. Two fully trained staff in Chlorine Leak Response should respond to the WTP. If the required number of trained staff is not available to safely correct a leak situation, staff should consider alternatives such as temporary gas injection or liquid bleach injection. Both of these options are detailed on page 28 of this plan.

Water Treatment Staff and the Fire Department will meet at the upper plant gate. Ideally 2 fully trained WTP staff members will don full PPE if required and 2 trained fire staff that also has full PPE will be available for backup. Fire Department staff that also has full PPE will be available to provide any decontamination required.

Do not open any chlorine room doors or enter any chlorine buildings.

Approach the location cautiously and note the wind direction. Extreme caution must be used if the wind direction is from the plant to the gate.

If chlorine gas can be smelled in the open air outside the WTP leave the area. Staff may use Fire Department SCBA Equipment to enter the main control room to determine the alarm location from the computer system. If the control area is safe meet with the Fire Department in the administration control room and then plan to sample the area that shows the alarm. Never proceed directly to the chlorine area. Always meet at the administration area and attempt to determine the area of the leak and the concentration from the computer system. WTP staff is trained to measure the Chlorine level using the Gastec system. (See page 9-16). Do not attempt to turn on the exhaust ventilation.

Fully trained Water Treatment Plant employees may only enter an atmosphere containing chlorine if: the following conditions are met:

Chlorine Level PPM	Staff Required	Respiratory Protection	Protective Suits
<5PPM	2 Trained wearing PPE and 1 for Communications	S.C.B.A. ONLY	None but wearing neoprene gloves
>5PPM < 10 PPM	2 Trained wearing PPE and 1 for Communications	S.C.B.A. ONLY	Kappler Blue Protective Coverall and neoprene gloves
>10 PPM	4 Trained staff wearing PPE, and 1	S.C.B.A. ONLY	Kappler Level A RESPONDER ONLY

	Communications		
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If there is any doubt as to the accuracy of the reading always assume the highest value. Above 5 PPM and less than 10 PPM fully trained staff from the WTP and Fire Dept. shall use S.C.B.A's. and Kappler blue protective coveralls with neoprene gloves. Fire Department personnel shall act as backup for the response.

Self-Contained Breathing Apparatus and Level A Kappler Responder suits shall be worn by trained WTP and or Fire Dept. staff responding to leaks or entering a building with an unknown chlorine level. 2 staff from the Fire Dept. shall act as backup rescue.

If the chlorine level is less than 25 PPM the tonner valve may be turned off and the chlorine slowly vented from the room using the local exhaust ventilation system. If the chlorine is shut off the plant must be shut down to ensure no untreated water enters the clearwell. If the chlorine level in the room is greater than 25 PPM then the Ministry of Environment and RCMP must be notified. The tonner valve may be turned off by fully trained personnel with Level A suits and S.C.B.A but the room should not be vented until instructions are received from the Ministry of Environment in consultation with the Fire Department. An evacuation may be required for residents in the area.

It is normal that 2 tonners are turned on with 1 feeding directly and the other 1 on standby. Any tonner that is in the room could be leaking, and should be checked after all valves have been closed. Trying to find a leak at his stage will be quite difficult as the whole area may show as a white cloud using ammonia vapor. It is better to first get all valves off then leave the room and return later when the chlorine has been vented.

Once all tonner valves are off the room should be evacuated until the chlorine level returns to a lower level. (less than 5 PPM). The plant must be shut down, as without chlorination, water should not be processed. It is important to get the system working again but operations should not be rushed nor can safety be sacrificed. Depending on the time of year and levels of reservoirs etc. the down time will vary. Re-enter the room wearing an S.C.B.A. and have a backup person stationed at the door. If the leak is clearly identified to be coming from one tonner valve assembly and it has stopped with the valve closed, keep that tonner off-line and attempt to use the other one. The regulator can then be removed and inspected. A new lead washer should be installed and the regulator could be tested. If there is any evidence that the regulator is leaking immediately take it out of service and replace it with a spare unit.

If the leak is in the chlorinator room it can only be on the vacuum side of the system as there is no chlorine pressure in this part of the system. There are 5 chlorinators in the room and any one or more could be leaking. If the system is leaking the vacuum will drop and may not be adequate to allow the regulators to open. Use the same precautions PPE and procedures as described above for turning off the chlorine regulators, and venting the room.

Once the room returns to a lower chlorine level (less than 5PPM) enter with appropriate PPE with a backup person at the door. Attempt to see where the leak was coming from. Ammonia vapor may not show any leak as the chlorine may have dissipated.

If the leak is found try to isolate the problem and use the spare chlorinator if available. The most critical chlorination system is the filter effluent, as it is required to give an adequate contact time in the clear well. Run the spare chlorinator to feed the filter effluent feed.

Chlorine leaks in the pipe gallery or other areas of the Water Treatment Plant

The pipe gallery could have a chlorine leak if the ejector failed or piping broke. There is a chlorine alarm in the pipe gallery by the service water pumps, and this unit can provide a digital readout on the computer. The chlorine gas lines are operated via vacuum only and present a low risk but highly chlorinated water and gas could be emitted from the piping if the piping was severely damaged. Wearing PPE Measure the chlorine level using the Gastec system. Open the door from the shop to the pipe gallery and lower the probe to the floor of the pipe gallery. The pipe gallery can be vented using the standard air handling unit but it does not provide the same air removal as the chlorine exhaust systems in the chlorine rooms. There is also an exhaust fan located in the bottom of the meter chamber. The piping system can be purged of chlorine by turning off the gas feed in the chlorine storage room and allowing room air into the system. If the chlorinator is operated manually then air will displace the chlorine.

If a leak developed in the plant piping it could be isolated as described above and purged if the leaking area was temporarily sealed to allow air to purge the pipe. The plant would have to be run using a temporary gas feed directly to the pipe gallery or possibly on a hypochlorite feed to the pipe gallery.

Disposal of Damaged Containers

No attempt shall be made to repair damaged Chlorine containers. Upon discovery of a damaged container or after using a container repair kit, the Plant Supervisor or Foreman must be notified. The Supervisor or Foreman will contact the Chlorine supplier's emergency team and make arrangements for permanent repair or removal of the container

Sulphur Dioxide Emergency Procedures

Under Review- see standard operating procedures manual for full Sulphur Dioxide program details.

PROGRAM DETAILS

Personal Protective Equipment PPE

Respiratory Protection:

3M full-face respirator equipped with 6002 cartridges. To be carried whenever entering a Sulphur Dioxide room, and to be worn whenever changing cylinders or when any exposure to Sulphur Dioxide is possible.

The table lists required protection that must be worn when dealing with Sulphur Dioxide that has been released to any work area.

Sulphur Dioxide Level PPM	Staff Required	Respiratory Protection	Protective Suits
<5PPM	2 Trained wearing PPE and 1 for Communications	S.C.B.A. ONLY	None but wearing neoprene gloves
>5PPM < 10 PPM	2 Trained wearing PPE and 1 for Communications	S.C.B.A. ONLY	Kappler Blue Protective Coverall and neoprene gloves
>10 PPM	2 Trained WTP wearing PPE, and 1 for Communications, and 2 Firehall wearing PPE.	S.C.B.A. ONLY	Kappler Level A RESPONDER ONLY

Protective Clothing:

When operating Sulphur Dioxide valves that are pressurized, or changing cylinders, gloves and coveralls or other protective clothing are recommended to prevent the skin from becoming frozen by contact with any liquid Sulphur Dioxide, or from contact with very cold vessels and equipment. An eyewash and quick drench shower should be provided within the immediate work area for emergency use where there is any possibility of exposure to liquids that are extremely cold or rapidly evaporating.

Sulphur Dioxide Room Entry Procedures

Entry to the Sulphur Dioxide storage room and chlorinator room is from the outside of the plant and through the Chlorine Vestibule. The Chlorine Vestibule is not considered fully isolated from both Chlorine and Sulphur Dioxide rooms, and must not be used as a safe area in the event of any Sulphur Dioxide or Chlorine leak.

Anyone entering the Sulphur Dioxide sulphonator and storage room or chlorinator room must carry a 3M full-face respirator equipped with 6002 cartridges. One person may operate vacuum valves, but must not turn on pressurized Sulphur Dioxide cylinder valves or perform maintenance on equipment that could in any way cause exposure to Sulphur Dioxide.

Intrusion into Water Treatment Plant

The WTP has an intrusion alarm system that will alert the on call operator in the event of an intrusion. The operator can call South Okanagan Security and have them attend on-site. The on-call employee shall wait outside the upper main gate for the security company to arrive. The Water Treatment Plant is fully monitored via video surveillance. A review of the surveillance system should be conducted to determine if an actual intrusion occurred.

The intrusion alarm should show the location of any entry. The WTP and security staff members shall make a thorough inspection of the WTP looking for any evidence of tampering. The WTP security camera system can be viewed to determine if any areas were penetrated. If there is no evidence of any persons actually entering the building the alarm can be reset.

If there is evidence of persons entering the building then the video log must be searched and a supervisor contacted. Try to determine if any system tampering occurred. If there is no evidence whatsoever of tampering then the plant can continue to operate normally without any alert or flushing.

If there is evidence that tampering occurred but that nothing was added to the tanks then the system could continue to operate as long as the process was not compromised. If there is any evidence that a product or substance was added to the water then the system must be shut down and drained. Prior to draining obtain samples of water from all the tanks or filters that could have been contaminated. If one train is off-line then the other train may be started and the tanks flushed prior to going on-line. If there is clear evidence that the product could not have reached the clear well then a filter may be washed and placed on-line. Notify IHA immediately and prepare to notify the public that a do not use order is in effect if the contamination could have reached the distribution system.

If there is a gross contamination of the plant then the entire system may require flushing and testing. The clear well could be isolated to allow only one chamber to be cleaned at a time. Water can be directed into the Clear well from the Penticton Ave. PRV via a 1650 pressure zone valve in the station. Water can also be obtained from fire hydrants on-site to allow for flushing.

Draining tanks, filters, and or clear well chambers will most probably cause the water system reservoirs to drain before the cleaning can be completed. Depending on the time of the year there may be no way to keep the system operating. This is not a desirable situation because any loss of pressure caused by an empty reservoir can allow back-siphonage to occur from any cross-connections.

Fire at the Water Treatment Plant

Pull the fire alarm to notify all staff.

Dial 9-1-1 and report the emergency. Give the following information:

Advise as to nature of emergency

Do you require Police/Fire/Ambulance

Give exact name and address of building (Water Treatment Plant 1900 Penticton Ave.).

Give your name, department and phone number at your location

Hang up only when told to do so.

All Employees are to muster at the main gate, and your supervisor will conduct a head count.

Once all employees are accounted for the fire department may require the power supply be disconnected.(City Utilities)

Bomb threat at Water Treatment Plant

Persons Receiving A Bomb Threat Should:

Remain Calm.

Record the time.

Record all details of the threat.

Try to keep the caller on the line to find out:

Location of the bomb;

The time the bomb is set to go off;

Why the bomb was set;

The type of bomb;

Any other information.

Phone 9-1-1 and report the details of the threat and await instructions:

Do not panic, immediately contact your supervisor. This information will be passed on to those responsible.

Earthquake affecting Water Treatment Plant

Falling objects (pictures things in cupboards and shelves, ceiling tile and fixtures, furniture, file cabinets and bookshelves.

Swinging doors and broken windows.

Possible fires (from broken natural gas lines, electrical short circuits, or other causes).

Electrical shock hazards, be aware of potential damage to electrical equipment.

During The Earthquake

Take cover underneath a desk or table. Protect your Head and Neck. Count slowly to 60.

Face away from objects, which could fall on you.

Stay where you are – Do not run outside. Falling debris may cause injury.

If outdoors, stay in an open area. Do not enter the building.

After The Earthquake

Wait 60 seconds after shaking stops then go to a predetermined safe area - avoid glass and equipment.

Be prepared for aftershocks. Do not return to your area until authorized.

DO NOT TRY TO USE THE TELEPHONES except to report fires or medical emergencies. (Even if they do still work, they will be needed for emergency communications).

Power failure at Lakeshore Pump Station

Possible Indicators: Alarm notification in plant or from Barnet Dialer. Failure of flow from Lake.

The Okanagan Lake Pump Station pumps raw water from Okanagan Lake approximately 5 km with a rise in elevation of approximately 116 meters (400 ft). There are four 400 horsepower vertical turbine pumps, one 250 horsepower vertical turbine pump and one 125 horsepower vertical turbine at the station. There is a backup power generator installed at the Lake station that is capable of supplying **power to operate two large pumps** if there is a power outage. This unit will auto start although the operator will be required to select the pump configuration they require.

The procedure for starting the lake pump station on generator power is:

The generator will auto start, but large pumps will not run until manually selected.

The operator should go to the lake pump screen and select all the pumps to the off mode.

On the auto page pick a line and remove all the pumps from that line.

Reset the alarm and start the plant as if you were on utility power on the line that you removed the pumps from. The line will highlight in yellow indicating that you are requesting that level. If you are in blend mode the creek valve will start to open.

The lake valve (very important) will start to open make sure it does.

Go back to the lake pump on/off selection and choose 1 large pump to start in hand.

Once the pump starts you will have lake and creek flow into the plant. Check that the chemicals are dosing properly.

Operator may have to adjust the DAF outlet valve on hand to accommodate the inrush of flow.

Remember that the generator can only run two (2) large pumps. This should be sufficient in summer months if you top this up with a blend. (75/25)

The Lake station utilizes twin 750 KVA transformers. If one unit fails the other one should be capable of operating two of the large pumps. The City Electrical Division and WTP Electrician shall determine the best way to safely operate pumps if a transformer failure occurs. Spare 575 V motor starter fuses are kept at the station. The City Electrical Division also stocks spare 750 KVA transformers.

If communications are lost between the Lake and the water treatment plant the Lake station will shut down after a timeout of 5 minutes.

If there is a high demand for water and the Lake generator cannot supply power (generator fail), staff should immediately trim the pressure at the Penticton Avenue PRV to conserve water in the plant clearwell. Staff should attempt to contact the Water Treatment Electrician. The plant can operate in a 100 percent Creek mode through the DAF process. Depending on the time of year and the plant configuration it may take a large amount of time to switch the plant over to operate in a 100 percent Creek mode. Prior experience has shown that caustic is required for flocculation at a dose of approximately 10 mg/l.

If the Lake station will be without power for several hours (due to gen failure and utility power failure) and system demands are more than 25 MLD, staff should seriously consider operating the Creek at 100%. Previous summer dosages have been in the range of 50 mg/l pax, 2.0 mg/l floc aid and 10 mg/l caustic.

If the power outage will be prolonged and the Creek cannot supply the demand a supervisor should be contacted and the local radio stations advised to put out a notice for residents to conserve water immediately. Phone numbers provided at the tab section of the ERP.

Staff may also call out City Works personnel to assist in going door to door advising consumers to cease all outdoor use of water and conserve as much as possible. This measure should only be applied when system demands are high and greater than available production from alternate sources. This measure has been used in the past due to severe mechanical failure and did result in significant reduction in water demand.

Low 1420 Duncan Reservoir level

Possible Indicators: Alarm notification in plant or from dialer.
Failure of pumps or no flow from station, or falling reservoir.

The Duncan Avenue Pump Station has three 200 horsepower vertical turbine pumps. If the reservoir alarms with a high level indication, operators should evaluate the set point levels of the altitude valves. In a no power situation the valves will stay at their last percentage of open. If set points are correct, the likely problem will be the valve(s) (rotork actuators over the bank). Manual operations of these valves may be required. This is a confined space and two staff members are required with all confined safety gear and confined space procedures.

The Duncan reservoir has a maximum capacity of approximately 5.9 million liters. The lower part of the reservoir is sloped therefore once the level drops below approximately 75 percent the level indicator is not accurate for the reservoir volume. The attached graph shows the corrected reservoir volume for any level. The 1420 Duncan Reservoir has a concrete lid that can only be removed with a boom truck, crane or loader. The reservoir level can be obtained visually by going into the small well house building near the main Duncan Pump Station and looking at a clear plastic tube on the south wall. This tube has a float in it that will float to the actual water level in the reservoir.

The reservoir is equipped with an altitude control valve system that consists of a 400-mm one-way check valve that always allows water to flow from the reservoir down the hill to the distribution system but this pipe does not allow water into the reservoir. Water can only travel up the pipe and into the reservoir through one or both of the Rotork actuated 250 or 300 mm valves that are located in the underground vault just north of the station. During a power outage both of these valves will fail to their last known position. Staff can take the Honda generator to the station and plug it into the panel located in the pump room. This will supply power to the PLC panel and the rotork valves. Both of these valves can also be operated by hand if need be. It is possible that the valve position indicator could be incorrect under certain conditions. A field check may be required if the indicator does not seem to be reading true. This vault is a confined space and is listed in the confined space inventory. All safety procedures must be followed before entry and while working in any confined space.

The Duncan Avenue reservoir also contains a pressure relief connection through a 150 mm Clayton relief valve from the 1650 pressures zone. This valve has been operated in the past to allow water to flow from the 1650 pressure zone to the 1420 reservoir. This valve can supply approximately 13MLD from the 1650 or 1620 pressures zone. It has been used with Creek water from the Randolph Road chlorinator in the past, but would require health approval during an emergency, and require the Randolph system to be re-connected and unlocked. This connection will only be used in an extreme emergency where water was required for firefighting and no other system was available. It would also require a boil order notification if connected to the Randolph Road system.

The Duncan Avenue, 1650 pumps will shut down when the reservoir reaches the predetermined low reservoir level alarm. This alarm may be set to a lower-level, reset and the pumps should then restart. In the event of low-level the first thing to do is to try and limit the amount of water that is required for the 1820 zone and also look at the available water in the 1620 reservoir.

Power failure at 1650 Ridgedale Reservoir 1820 Pump Station

Possible Indicators: Alarm notification in plant or from dialer of Failure of pumps or no flow from the station, or falling reservoir level.

The 1820 pressure zone has a 1.1ML reservoir on Carmi Rd. and a 0.5ML reservoir at Gordon Ave. The 2020 pressure zone has a 1.5 ML reservoir located at the corner of Joy Road and Carmi Ave. All are supplied by pumping from the 1650 reservoir located at the extreme East end of Ridgedale Avenue. The pump station contains four 125 horsepower vertical turbine pumping units. There is backup power at the station via a 350 kW diesel power plant capable of running two (2) pumps only.

In the event of a prolonged power outage (failure of both city power and diesel power plant fail) the 1820 reservoir located on Carmi Avenue, the Gordon Avenue reservoir and the Joy Road reservoir will drop in level. Staff should monitor the level by visual observation if required.

If the outage will be prolonged a supervisor should be contacted and local radio stations advised to put out a notice for residents to conserve water immediately.

In the event that the control systems were not functioning properly or reliably, the water treatment plant and the distribution system would have to be operated manually. Staff has experience in operating the plant without automatic control.

Ridgedale / Sendero pump stations is located at the top of Ridgedale Ave. and is equipped with a diesel generator to supply electrical power to pump to the next zone. Without electrical power and generator power failed, the upper reservoirs would become depleted in approximately 8 to 24 hours in the winter or only 1-4 hours in the summer, depending on demand.

In the past the city has used a fire truck-pumping unit to transfer water from a lower zone or 200 feet to the next pressure zone. This could be done while a water main was out of service and provided a flow that would be more than adequate for a winter demands, or in the summer if the public were notified that an Emergency condition exists.

The truck and hose can be disinfected by introducing a bleach solution into the hose and pushing it through the truck tank and pump. To fill the 1650 and 1620 reservoirs a fire truck can be located on Grandview St. with a 100mm pumper port line connected to fire hydrant 426A on Vancouver Ave. pumping to fire hydrant 426B on Grandview St. The approximate distance between hydrants is 100 M.

To fill the 1820 reservoir a fire truck can be located on Carmi Ave. with a 100mm pumper port line connected to fire hydrant 566A on Carmi Ave. west of Columbia St. pumping to fire hydrant 566B located on Carmi Ave. east of Columbia St.. The total distance between hydrants is approximately 110 M.

It is proposed to first fill up the 1650 system then pump out of that zone to the 1820. Depending on the output and the demand the filling cycle will have to be varied.

Reservoir levels and telemetry will not be available so staff will have to visually inspect each reservoir on a regular basis of approximately every 2 to 6 hours. The altitude valve for the 1420 reservoir will not function as it

is electrically operated. It should be left open by hand then the pressure at the Penticton Ave. PRV should be set by hand to just under 13 P.S.I. to just start to fill the reservoir.

The automatic Clayton valve located at the south of the Yards near the SPCA will not function and the manual bypass will have to be opened by hand if it was not open when the power failed. There is no 1620 altitude valve control so the valve by the SPCA will have to be closed manually to prevent an overflow condition. The 1620 Evergreen Reservoir should not be filled above 90 % The bypass valves for the Dog Pound Vault are standard 300mm gate valves that are operated using a standard 8 foot valve key.

Rupture or damage of lake raw water pipeline

Possible Indicators: Loss of normal pressure or flow from Lake Pump station Excessively high turbidity in raw lake water.

The Lake raw water pipeline begins as an underwater intake approximately 900 meters north of the pump station building in approximately 39 meters of water. If the intake pipe was damaged underwater it could still be used as a raw water intake as long as there was not a problem of clogging pump intake screens. Some adjustment to the water treatment process would be required but the plant could still operate on Lake Water.

If the dedicated pipeline from the lake pump station is damaged or broken the water treatment plant will not be able to receive water from the Lake intake. City Works are responsible for maintaining and repairing the raw water pipeline from the pump station to the treatment plant. Works staff would be called to assess the damage and provide an estimate of when the pipeline would be back in service.

Repair couplings and spare pipe is available at the yards. Any repair will typically take a minimum of four hours so staff should make plans to operate the plant without a Lake water source.

If the lake intake will be suspended for a prolonged period the plant will have to be setup for 100% Creek, the rule of thumb for creek operation is to run a dose of pax18 at 2x the true colour with 10 mg/L of caustic to boost the alkalinity to allow coagulation, 2.0 mg/L frontend poly, 1.0 mg/L mid poly and 2 mg/L caustic into the clearwell for pH adjustment. A supervisor should be contacted and the local radio stations advised to put out a notice for residents to conserve water immediately if high demands are occurring.

For Reference previous 100% Creek chemical dosages:

Date:	PAC dosage mg/L	Front Poly Dosage mg/L	Coagulation caustic dosage mg/L	Mid Poly Dosage mg/L	Clearwell caustic dosage mg/L	Creek Apparent Colour	Creek True Colour
Jan28/14 jar	35	3	10	1.0	2	36	31
Dec 2013	55	2	10	1.0	2	36	31
Sept 2009	47	2	10	1.0	2	45	35
May 2014 jar	65	4	10	1			
June 2014 jar	55	2	10	1	2	81	66

Consider raising the mid poly if you can't get floc to form.

Calculation for caustic dosage:

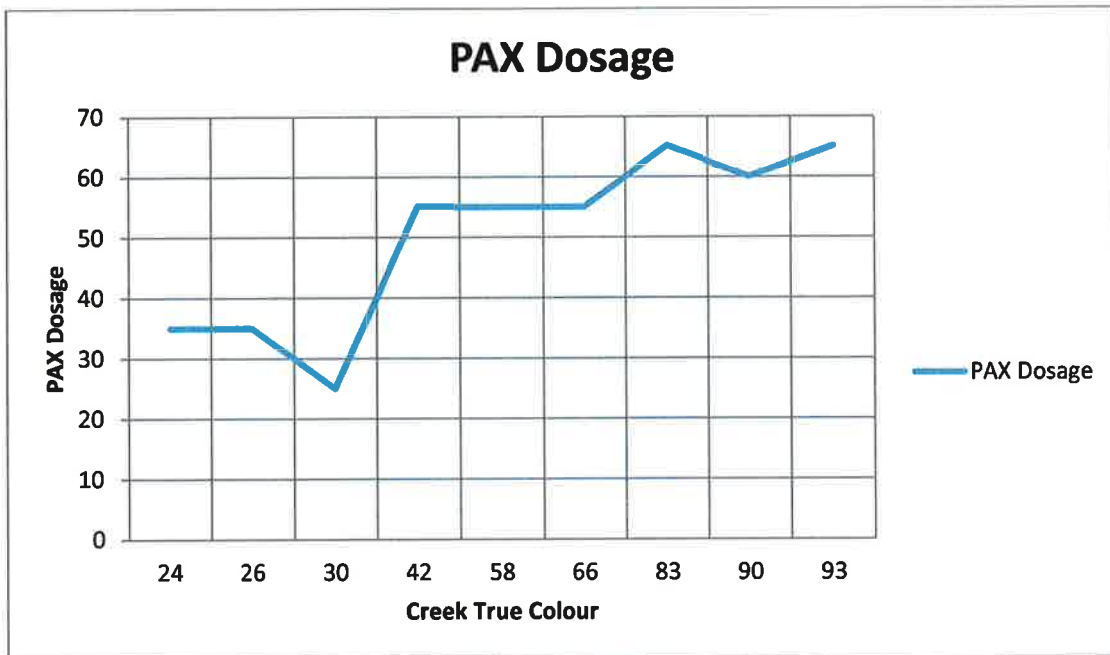
$Q \times \text{mg/L dose} = \text{kg's of 100\% product}$

If caustic is 25% multiply by 4

Divide total kg of caustic by S.G. (1.3 for 25% and 1.5 for 50%) to get L per day

Divide liters per day by 24 to get liters per hour, multiply by 1000 to get mls per hour

Divide by 60 to get mls. per minute.



Rupture or damage of treated water distribution pipelines

Possible Indicators: Loss of normal pressure or flow and/or turbidity in treated water.

Treated water from the treatment plant is conveyed through a 700 mm steel pipeline that connects to the Penticton Avenue PRV station. The pressure is then reduced through twin 300 mm roll seal valves or twin clayton valves. If the pipeline connecting the plant and the PRV is damaged or ruptured treated water cannot flow into the distribution system or to any of the reservoirs. This is a very serious situation as the plant would be unable to supply any treated water to any part of the city.

City works maintains and repairs all distribution pipelines within the city. As the pipe is steel it could be welded in emergency. The pipe is heavily coated with tar, which makes cutting and welding more difficult. However, welding may be the best solution in an emergency.

An emergency branch connection from the Lake pump station could be connected to pump un-treated water directly into the distribution system. This would be highly complicated and would result in excessive pressure in the treated distribution mains unless the pressure was limited using the raw lake RollSeal valve as a pressure relief system. The pumps produce from 178 to 300 P.S.I. so a major change would have to be made to the RollSeal relief valve. There is no chlorination equipment setup or ready to connect for this system and it would take considerable time to have this done. Interior Health engineers and inspectors would have to be advised prior to this connection being made as without adequate chlorination a boil order will be required with this connection.

To attach the connection, the pipe would have to be excavated immediately to the south of where the pipeline exits the building and connects to the 600-mm butterfly valve.

As-built drawings are available showing the location and configuration required for this connection. This tie-in would only be a last resort in an extreme emergency as it would take considerable time to connect using Robar type couplings and because there would not be any disinfection.

Other distribution treated water pipelines could fail within the city however; there is usually the ability to bypass water from adjacent pipelines. Each particular water line break would have to be assessed at the time and city works would provide the best possible repairs and bypasses as required.

If the cause of a loss of pressure or flow cannot be located, crews should start to isolate individual items within the pressure zone in particular dump valves and pipelines that cross the creeks. All creek crossings should be assessed early in the investigation as any issues are hard to see and will likely go unreported.

Spills of chemicals or sewage in Okanagan Lake or Penticton Creek

Possible Indicators: Alert from the R.C.M.P. or Ministry of Environment Ministry of Highways, Fire Hall dispatch or from the public.

Management will notify Interior Health and with their consultation will proceed to issue water advisory notices, notify the media, and notify critical and sensitive consumers. A boil advisory would only be issued for bacteriological contamination. Chemical contamination may require a complete non-consuming or non-contact advisory. (No drinking, washing, bathing or food contact)

Extensive sampling of the water source shall be performed to determine the nature and extent of the contamination. Bacterial samples shall be taken and sent to an accredited lab and will also be tested at the WTP. Additional samples must be taken if there is any chance of a chemical contamination. This will require specialized sampling techniques and bottles to ensure proper preservation of the sample. This should be done in consultation with an accredited lab.

Contamination of Penticton Creek water source

The Creek intake must be shut down as soon as a contamination issue has been identified or that there has been potential contamination of the Creek source from a chemical or sewage spill or discharge upstream of the intake. The Water Treatment plant must then operate on 100% Lake Water. The Creek system could only be placed back in service after a series of tests for chemical contamination or gross bacteriological contamination are negative. Note: There will always be a background bacteriological contamination in the raw Creek water. See previous section for sampling information.

If the contamination could have possibly reached the water treatment plant then the plant must be shut down and a determination made as to how far the contamination travelled within the water treatment plant. It may be that it is impossible to determine the extent of contamination at the treatment plant. In this case the whole process train to the Creek was operating on must be considered to be contaminated. There is also a possibility depending on the time of the contamination that it has passed through the treatment facilities into the clear well.

Flushing the clear well would be extremely difficult, as water is required to backwash filters. If the contaminated source was only operating on a set number filters then the other filters in the system that were not online may be considered to be safe. The clear well can be isolated and individual chambers may be drained. This would allow the un-contaminated source such as the Lake in this case to produce water on a separate train on un-contaminated filters. This water can then be used to flush the clear well and produce enough water to allow the plant to resume production. This will be a lengthy process and will require severe water restrictions if reservoir levels are to remain at reasonable levels. This is a very serious situation and will require a full complement of staff and assistance from the public in conserving water while the system is flushed.

It is critical that the Water Treatment Plant staff be made aware of any potential contamination of the Creek water supply. This point must be stressed to all City departments and related agencies.

Contamination of Okanagan Lake source

It would be very difficult to determine if a contamination of Okanagan Lake could actually work its way into the intake pipe. The response will have to be measured against the severity and nature of the contamination. If the risk is high and there is a possibility that it could reach the intake it would be best to approach any such contamination with caution and shut down the intake until tests show the area is free of contamination. The pump station could be operated in a wasting mode such that no water was being drawn into the water treatment plant, but was recycling back to the Lake. This would allow for water to be sampled over a lengthy period of time to determine if further action is warranted. Depending on the time of year and the system demands the WTP can be operated on 100 percent Creek water until the Lake source is proved to be safe.

Procedure to follow if the contaminant has already entered the Lake intake:

Immediately shut down the water treatment plant and Lake pump station. Try to determine when the contamination occurred. Calculate the time that it would take any water entering the Lake system to arrive at the water treatment plant. It is possible that because of the great distance involved water from the Lake may not have yet reached the water treatment plant. These calculations should be reviewed with the Interior Health Public Health Engineer to ensure that water has not reached the plant. If water has reached the plant and has entered the process the whole water treatment plant may have to be drained and restarted using an alternate water source. Any filters or part of the process train that was not online with the contaminated source may be used with the alternate source. If the contamination has reached the clear well then the clean process train may be used to flush the clear well and allow the plant to proceed back online once the flushing process is considered adequate.

This is a very serious situation and will require a large drop in water consumption to prevent reservoirs running dry.

If the contamination has been isolated to one treatment train only, and has not entered the clear well or filters then that section of the process must be shut down and the plant could operate on the other process train. Samples shall be taken from all sections of the system to determine the extent of contamination. Because test results will not be available for several days caution must be exercised and contamination must be assumed if it cannot be proven otherwise.

If the outage will be prolonged and the Creek cannot supply the demand a supervisor should be contacted and the local radio stations advised to put out a notice for residents to conserve water immediately.

It is critical that the Water Treatment Plant staff be made aware of any potential contamination of the Lake water supply. This point must be stressed to all City departments and related agencies.

Building Description – Water Treatment Plant, 1900 Penticton Ave.

There is one chlorine storage room located at the plant which may contain from 2 to 4 ton containers, and one chlorinator room which houses 5 automatic chlorinator valves. The gas feed system uses direct tonner mount vacuum regulators that minimize the opportunity for leaks of chlorine under pressure. Once past the regulator, all piping is vacuum only.

The chlorine is fed under vacuum to the pre-chlorinator station in the chemical alley area just north of the chlorine room. The chance of a leak here is very remote and there is no sensor for an alarm in this area. The pipe gallery is where the chlorine ejectors are located for the filter influent, filter effluent, and post chlorinators. The chance of a leak is also remote in this area but this area has a chlorine monitor located on the floor level by the chemical booster pumps.

In the event of any leak detected by a chlorine monitor, the automatic valve shut off system will be activated. The purpose of these shut offs is to limit the source of the leak. A leak could potentially be coming from the valve thread or temperature relief plug. In this case the automatic valve shut off would not limit the source.

Emergency Wash

An emergency wash facility capable of continuous flushing of potable water must be available in the metering room (i.e. within 5 seconds walking distance). Both the eyewash and the emergency body wash must be capable of a continuous flow for a minimum of 15 minutes. The emergency wash facilities must be installed, signed, tested and workers trained in accordance with WCB Regulation 5.85 to 5.96.

The Chlorine Vestibule has a continuous flow eyewash and emergency drench shower.

Container Repair Kits

The WTP has an "A kit 150 lb cylinders" and a "B kit tonner cylinders" on-site, the proper gasket set must be used for SO₂ or Cl, this must be determined when using the "A kit". Both gasket sets are in the box. If kits are to be applied, 2 fully trained WTP staff members along with 2 backup staff will attempt to stop the leak by applying the appropriate kit. If there is any type of leak that is caused by a faulty valve or damaged cylinder the Plant Supervisor or Water Treatment Plant Senior Operator will contact the Chlorine supplier's emergency team immediately and inform them of the situation and update them on the status of the leak.

Any leak will require that PEP, Fire Department and Police be notified.

Labour Dispute

In the event of a labour dispute between the City of Penticton and CUPE local 608, the Department Manager (Ian Chapman) should be immediately contacted. An operational plan to address the Water Treatment Plant during a labour dispute was developed in 2011. This plan will be reviewed and updated as required. The plan is maintained by the City Manager's Office and will not be detailed in this document.

Employee Emergency Procedures

This information is intended to assist the City of Penticton employees to respond to emergency situations, which may occur on City of Penticton premises.

Emergencies, disasters, incidents and injuries can occur any time and without warning, but their effects can be minimized if proper emergency procedures are established and followed. Being prepared physically as well as psychologically to handle emergencies is an individual as well as an organizational responsibility.

Ensure that you familiarize yourself with the emergency procedures specific to your position.

Emergency First Aid

In the event of an INJURY, SERIOUS ILLNESS OR INCIDENT requiring emergency first aid, you should:

Contact the FIRST AID PERSON

- Briefly describe injury/illness/accident
- State location

CONTROL SCENE

- Protect yourself and injured party
- Protect the scene to prevent additional incidents/injuries.

First Aid Person to ASSESS PATIENT and instruct personnel to call 9-1-1 for ambulance if required.

CALL 9-1-1

- Describe nature of injury/illness/incident
- State location

A WCB Level 1 first aid kit and blanket is located in the lab along with a basic first aid kit for minor aid.

AED – Automated External Defibrillator

The water plant has been dedicated as an AED Responder site. The AED is located on the shelf next to the first aid kit. The AED kit should be used if a potential cardiac arrest situation arises. The victim must be unresponsive and not breathing effectively for AED use to be indicated. Follow instructions as per book plan and on board instructions provided by the unit.

This procedure has been drafted to ensure that employees know how to respond in the event of the following incidents: in the event of a:

Fire, explosion, etc.	FIRE
Traffic incidents	POLICE/AMBULANCE
Bomb Threats	POLICE
Chemical Spills	FIRE
Serious Injury	Ambulance

Telephone Numbers – Non Emergency Numbers

Police	(250) 492-4300
Fire	(250) 490-2305
Ambulance	(250) 490-8337
PEP	1-800-663-3456 24HR

Chemical Spill Procedures and Precautions

Emergency spill procedures have been established for all City of Penticton facilities. Familiarize yourself with these procedures.

If an explosion hazard, fire hazard, and/or extreme ventilation hazard exists:

Pull the fire alarm and evacuate all people; all staff is aware to meet at the backwash pond for a head count.

Immediately call 9-1-1 from a safe location; use cell phone if direct line is inaccessible.

Contact your supervisor;

Attempt clean-up only if more than one trained person is available;

Use the proper spill control materials and personal protective equipment.

Notify RCMP

Contact Provincial Emergency Program PEP 1-800-663-3456 24HR contact. PEP must be called regardless of the quantity of any spill.

Remember Life safety is No. 1. Protect yourself and others. Render assistance to the injured without delay.

Know and understand the chemical spill control and clean-up procedures.

Know the location of the Material Safety Data Sheet and refer to it as required.

Always use the provided Personal Protective Equipment.

Report serious spills immediately. Dial 9-1-1 and contact your supervisor. Supervisor will contact PEP

Each chemical area has a built in containment sump that is capable of holding more than the full tank volume should there be a spill or leak. Do not immediately plan to stop or try to control the leak. As in doing so you may suffer extreme chemical burns to the eyes or skin.

When a leak or spill is first detected immediately leave the chemical area and notify the shift supervisor or working partner if on weekends. Immediately secure the area so that someone will not enter the spill area. Install the magnetic Danger Do Not Enter signs.

If a leak is more than a slow drip or trickle it must be treated as a major leak and attempts must be made to secure the area and immediately contact a supervisor. Remember that the sump area is designed to contain the spill. Pumps may be turned off at the breaker panels in the chemical area without entering the chemical rooms.

ONLY ATTEMPT TO TURN OFF THE TANK VALVE IF FULL PROTECTION IS USED, A MINIMUM OF TWO PERSONS ARE AVAILABLE AND THE TANK VALVE IS ACCESSIBLE WITHOUT ANY DANGER TO THE PERSON TURNING IT OFF. ALWAYS TRY TO CONTACT A SUPERVISOR FIRST.

If a supervisor is not available and the spill is major contact Brenntag, they supply the Caustic, Chlorine and Sulfur Dioxide and will be able to give advice on possible control measures. PAC is supplied by Kemira and contacts are located on the MSDS sheets in the event of a major spill. Do not initiate a supplier spill recovery within the building unless approved by a supervisor. In many cases the product may be reused by using alternate pumps and temporary tanks.

If the leak is minor such as a drip or slow trickle the leak may be stopped as long as two persons are available. Follow the procedure below:

Wear full protective equipment. Splash proof eye protection, face shield, boots, gloves and neoprene suit. Ensure that a backup worker is available with the same full protection.

Turn off the chemical pumps if safe to do so.

Turn off the main chemical feed and isolate the leaking line if possible. Lock out any lines that are required to remain off.

Carefully drain off any accumulated solutions in the leaking line. With Caustic DO NOT ATTEMPT TO FLUSH WITH WATER! Water is safe with Lime or Alum.

Attempt to repair the broken section only if necessary. Bypassing the leaking circuit or pump is a preferred temporary plan. Ensure that the defective section is locked out and tagged as out of service due to leak.

Minor amounts of spilled PAC or Lime may be washed down to the sump and then pumped away to the sewer. Extreme caution must be exercised whenever working with Caustic as it is highly corrosive to skin, and metals and produces great heat and may boil or splatter when mixed with water. Caustic will react violently when in contact with some metals. When in contact with aluminum it produces excessive heat and hydrogen gas! Very small amounts of Caustic, less than one half litre on the floor may be gently hosed to the sump with a large amount of dilution water. Any larger quantities must be left and the supplier Brenntag must be contacted for specific instructions. In some circumstances the products may be carefully pumped into a smaller portable special chemical tank and then disposed of by a special waste handler.

Parking Lot Chemical Spills

If a spill or leak occurs while unloading a tank truck the following procedure must be followed:

Notify tanker operator so they can shut off if possible.

Notify plant supervisor and if safe to do so turn off loading valve in the chemical room.

If the spill is major call the Fire Hall for assistance and City Yards request a loader backhoe and a dump truck loaded with sand or gravel material to contain the spill.

Notify Provincial Emergency Program. 1-800-663-3456 24 hour phone number.

(PEP MUST BE NOTIFIED OF ANY SPILL REGARDLESS OF SIZE)

Notify the Police Department

Notify Ministry of Environment.

Once the tanker valve and plant valves are closed the spill should be contained to the hose alone.

Ensure that the area is blocked off so that vehicles or persons can't come in contact with the spill.

Disinfection of Water Storage Facilities

Disinfection method for storage facilities will depend on the amount of time that you have for allowance of chlorine contact time with the effected process. AWWA Standard for Disinfection of Water-Storage Facilities clearly states materials, facility preparation, and application of disinfectant to interior surfaces of facilities, and sampling and testing for the presence of Coliform bacteria. The City of Penticton recognizes and uses this standard.

All new storage facilities shall be disinfected before they are placed in service. All storage facilities taken out of service for inspecting, repairing, painting, cleaning, or other activity that might lead to contamination of water shall be disinfected before they are returned to service.

The City of Penticton uses chlorination method 2 or chlorination method 3 as set forth in the AWWA Standard. The difference of methods will depend on time restraints for chlorine contact.

12% hypo chlorite is usually kept at the Water Treatment Plant. If product is not available, it can be sourced from ZEP located at 681 Pacific Crescent Penticton B.C. phone 493-8222.

If the facility can be disinfected and held for the 24 hours, method 3 will be used. (Refer to the AWWA Standard for Disinfection of Water Storage Facilities).

If the facility cannot be disinfected and held for 24 hours, method 2 will be the protocol. (Refer to AWWA Standard for Disinfection of Water-Storage Facilities).

The above noted standard is included at the end of this Emergency Plan.



Backflow Incident Report Form

Please forward all information to Cross Connection Control Program Coordinator.
Contact numbers: 250-490-2562 or 250-809-4037.

Reporting Agency: _____ Report Date: _____

Reported By: _____ Title: _____

Mail Address: _____ City: _____

Province: British Columbia Postal Code: _____ Phone: () - _____

Date of Incident: _____ Time of Occurrence: _____

General Locations (Street etc.) _____

Backflow originated from:

Name of premises: _____

Street address: _____ City: _____

Contact person: _____ Phone: () - _____

Type of business: _____

Description of contaminants: (attach chemical analysis or MSDS if available)

Distribution of contaminants:

Contained within customer's premise: Yes: _____ No: _____

Number of persons affected: _____

Page 2 of 6

Effect of contamination:

Illness reported: _____

Physical irritation reported: _____

Cross Connection source of contamination (boiler, chemical pump, irrigation system etc.):

Cause of backflow (main break, fire flow, peak demand etc.):

Corrective action taken to restore water quality (main flushing, disinfection etc.)

Corrective action ordered to eliminate or protect from cross connection (backflow preventer, location,etc):

Previous cross connection assessment of premise:

Date: _____ By: _____

Type of Backflow Preventer Isolating Premise:

RPBA: _____ RPDA: _____ DCVA: _____ DCDA: _____ AG: _____

Date and Results of Latest Test of Assembly: _____

Notification of Interior Health Authority:

Date: _____ Time: _____ Person Notified: _____

Attach sheets with additional information, sketches, and/or media information and forward to:

- i. Cross Connection Control Program Coordinator, fax 250-490-2561
- ii. Interior Health Authority

iii. BCWWA web site <http://www.bcwwa.org/cccc/incidences/report.php>

Page 3 of 6

Backflow is a serious matter which must be documented and addressed immediately. This Incident Report Form is to be completed in its entirety for all actual and suspected backflow occurrences.

To report a suspected or actual backflow incident, please call 250-492-7202 (24 hour emergency number) and 250-490-2562 (Cross Connection Control Coordinator) immediately.

Facility Information

Date of incident: mm/dd/yy	Time of incident: am/pm
Facility name and address:	Facility owner and address:
Phone number: ()	Phone Number: ()
Premises type: <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Institutional <input type="checkbox"/> Agricultural	
Most recent survey prior to incident? (mm/dd/yy) Never <input type="checkbox"/>	
Hazard level: <input type="checkbox"/> low <input type="checkbox"/> mod <input type="checkbox"/> high	
Comments:	

2.0 Existing backflow preventer information. Please attach additional details, sketches, etc.

Type of Premises Isolation installed? <input type="checkbox"/> RPBA <input type="checkbox"/> DCVA <input type="checkbox"/> DuCV <input type="checkbox"/> None
Note the following details of the Backflow Preventer upstream of backflow incident (if installed) Make: _____ Size: _____ Date installed: _____ Model: _____ Last test date: _____ S/n: _____ Name and Co of last tester: _____
Installation status: <input type="checkbox"/> CSA Approved <input type="checkbox"/> Improperly plumbed or maintained <input type="checkbox"/> Bypass around assembly not isolated <input type="checkbox"/> Obvious alterations to BFP or plumbing since last survey Explain:
Did existing BFP fail to prevent backflow? Y/N, explain in detail including sketch on reverse if applicable
Other unprotected hazards identified at facility:
Fixture isolation throughout? Y/N and identify assemblies and hazard as well as physical location of assemblies

3.0 Backflow incident information. Please attach additional details, sketches, etc.

How was the backflow discovered? (check all that apply)	
Direct observation..... <input type="checkbox"/>	Water quality complaint <input type="checkbox"/>
Meter running backwards..... <input type="checkbox"/>	Illness/injury complaint..... <input type="checkbox"/>
Water use decrease <input type="checkbox"/>	Result of Investigation..... <input type="checkbox"/>
Disinfectant residual monitoring.... <input type="checkbox"/>	Other (describe in detail)..... <input type="checkbox"/>
Water quality monitoring..... <input type="checkbox"/>	
Incident reported to CCC Coordinator by (Name, Company Name, Address and Phone number): Please attach business card	
Contaminant Type: <input type="checkbox"/> chemical <input type="checkbox"/> physical <input type="checkbox"/> microbiological	
Describe name, colour, odour, etc of contaminant/pollutant. Please attach MSDS, if available:	
Contaminant contained within <input type="checkbox"/> premises <input type="checkbox"/> zone <input type="checkbox"/> entered distribution system <input type="checkbox"/> unknown Comments:	
Source and location of contaminant or fixture type (i.e. boiler, irrigation, process water):	
Type of backflow: <input type="checkbox"/> Backpressure <input type="checkbox"/> Back siphonage <input type="checkbox"/> unknown	

4.0 Administrative. Please attach additional details, sketches, etc.

Distribution system status at time of break (i.e. main break, firefighting, etc)	
Estimated number of water services affected:	Estimated population affected or at risk:
Number of illnesses reported: _____	Resurvey post backflow incident? Y/N Date mm/dd/yy _____
Form forwarded to: <input type="checkbox"/> Internally <input type="checkbox"/> Interior Health Other: _____	
Please ensure all documentation is forwarded to CCC Coordinator, including pictures, sketches, etc. Comments: <input type="checkbox"/> Additional information attached	
I certify that the information provided in this Backflow Incident Report is complete and accurate to the best of my knowledge:	
Name: Print Name:	Date: Phone
CCC Program Coordinator name and title (please print. Also attach current business card):	
CCC Program Coordinator contact number:	
Signature:	Date: mm/dd/yy

CROSS CONNECTION CHECK LIST

CROSS CONNECTION CHECKLIST (Page 1 of 2)

(To be completed & submitted to Development Services with applications for building or plumbing permit and a copy faxed to Cross Connection Control Coordinator at 250- 490-2561)

Building name: _____ Permit #

Address of Building: _____ Postal Code: _____

Description of building and uses: _____ Contact Phone #: () _____

This checklist must be completed by the Project Engineer on record or by the Project Registered Plumber where an Engineer is not involved and must be submitted prior to issuing a Building or Plumbing Permit.

In order to provide complete protection for the public water supply, and the individual consumer's potable water system within a building or property, the Plumbing Engineer or Registered Plumber must indicate all required isolation against backflow of both the Public and Private potable water systems.

PREMISES ISOLATION

See CSA B64.10-07 Table B1 and Table B2

Generally required where a potential or actual cross connection involving solids, liquids, gases, bacteria, etc. can cause a health hazard or contamination, etc. from property to the potable water supply.

Description of Premises ie. Paint factory.	Description of Hazard/ isolation ie chemical	Degree of Hazard ie high	Selected Device Assembly ie RPBA	Location of Device/ Assembly ie. Mechanical room, SW of ...
		Hi or mod or lo		
		Hi or mod or lo		

ZONE ISOLATION

See CSA B64.10-07, Table B1 and Table B2

Generally required for irrigation systems, sprinkler systems, laboratories or other areas where parts of the potable system are non-potable or may cause a health hazard or contamination, etc. of the potable water supply within a facility.

Description of Zone ie irrigation	Description of Hazard ie bacteria, solids...	Degree of Hazard ie moderate	Selected Device/ Assembly ie DCVA	Location of Device/ Assembly ie mechanical room, SW of...
		Hi or mod or lo		
		Hi or mod or lo		
		Hi or mod or lo		

CROSS CONNECTION CHECKLIST (Page 2 of 2)

(to be completed & submitted to Regulatory Services with applications for building or plumbing permit and a copy forwarded to Cross Connection Control Program Coordinator by fax 250-490-2561)

Building name: _____

INDIVIDUAL PROTECTION

See CSA B64.10-07 Table B1

Generally required on fixtures where an actual or potential cross connection involving potable water becoming contaminated or polluted with solids, liquids, gas or bacteria may occur. i.e. Hose bibs, commercial dishwashers, etc. within a facility.

Description of Individual Fixture ie boiler	Description of Hazard ie chemical feed	Degree of Hazard ie High	Selected Device/ Assembly ie RPBA	Location of Device/ Assembly ie 2 nd floor, near
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		
		Hi or med or lo		

A. The above backflow protection devices/assemblies are included in the design of the potable water system(s) for the referenced building.

Completed by: _____ Date: _____

Signature of Project Engineer or
Registered Plumber

Print Name _____ Address _____

City/Postal Code _____

Company _____ Phone # _____ Cell # _____

Approved by CCCC _____

Date _____

Certified Backflow Tester's List

This is a partial list, offered for your convenience only.
These testers are not endorsed by the City.

Please ensure all testers have current Business License and Certified Backflow Tester Card.

For additional information contact Cross Connection Control Coordinator at
250-490-2562 or Carolyn.Stewart@Penticton.ca
Prepared September 22, 2011.

Accurate Fire Protection Services Ltd.	Kelowna	250-717-6614
Bradley Fire Protection & Backflow Services	Kelowna	250-878-6106
Britech HVAC	Penticton	250 809 6210
Edwards Fire Protection	Kelowna	250-860-3991
G&G Fire Protection	Kelowna	250-979-1616
Integrated Fire Protection Ltd.	Kelowna	250-765-3482
Integrity Plumbing and Gas Ltd	Penticton	250-488-0074
Jones Morgan Enterprises Ltd.	Kaleden	250-490-1002
Linton Plumbing & Heating	Naramata	250-462-5449
Marc's Backflow Prev & Testing	Penticton	250-490-5013
Mavco Plumbing & Heating	Penticton	250-493-7956
OK Check Valve Testing & Service	Penticton	250-493-5237
Okanagan Fire Protection	Kelowna	250-765-0660
Pacific Western Fire Protection	Kelowna	250-769-2242
Quality First Plumbing & Heating Serv	Penticton	250-493-8886
Southern Mechanical Services	Penticton	250-809-5388
Tri-Wik Fire Protection	Kelowna	250-868-2311
Trilar Fire Protection	Summerland	250-462-4144

**AWWA STANDARD
FOR
DISINFECTION OF WATER-STORAGE FACILITIES AWWA STANDARD**

Effective date: Aug. 1, 2002.

First edition approved by AWWA Board of Directors June 15, 1980.

This edition approved Jan. 20, 2002.

Approved by American National Standards Institute Inc., May 21, 2002.

ANL

AMERICAN WATER WORKS ASSOCIATION

6666 West Quincy Avenue, Denver, Colorado 80235

www.awwa.org

Sec. 4.1 Materials and Cleaning

4.1.1 Materials entering tank. All scaffolding, planks, tools, rags, and other materials not part of the structural or operating facilities of the tank shall be removed. Then the surfaces of the walls, floor, and operating facilities of the storage facility shall be cleaned thoroughly using a high-pressure water jet, sweeping, scrubbing, or equally effective means. An water, dirt, and foreign material accumulated in this cleaning operation shall be discharged from the storage facility or otherwise removed.

4.1.2 Other materials. Following the cleaning operation, the vent screen, overflow screen, and any other screened openings shall be checked and put in satisfactory condition to prevent birds, insects, and other possible contaminants from entering the facility. Any material required to be in the operating storage facility after the cleaning procedure has been completed shall be clean and sanitary when placed in the facility. In these instances, care shall be taken to minimize the introduction of dirt or other foreign material. (For example, placing a layer of limestone granules on the unpainted bottom of the storage facility to prevent corrosion.)

Sec. 4.2 Forms of Chlorine for Disinfection

The forms of chlorine that may be used in the disinfecting operations are liquid chlorine, sodium hypochlorite solution, and calcium hypochlorite granules or tablets.

4.2.1 Liquid chlorine. Liquid chlorine conforming to ANSI/AWWA B301 contains 100 percent available chlorine and is packaged in steel containers usually of 100-1b, 150-1b, or 1-ton (45.4-kg, 68.0-kg, or 907.2-kg) net chlorine weight. Liquid chlorine shall be used only (1) in combination with appropriate gas-flow chlorinators and ejectors to provide a controlled high-concentration solution feed to the water to be chlorinated; (2) under the direct supervision of a person who is familiar with chlorine's physiological, chemical, and physical properties, and who is trained and equipped to handle any emergency that may arise; and (3) when appropriate safety practices are observed to protect working personnel and the public.

4.2.2 Sodium hypochlorite. Sodium hypochlorite conforming to ANSI/AWWA B300 is available in liquid form in glass, rubber-lined, or plastic containers typically ranging in size from 1 qt (0.95 L) to 5 gal (18.92 L). Containers of 30 gal (113.6 L) or larger may be available in some areas. Sodium hypochlorite contains approximately 5 percent to 15 percent available chlorine by volume, and care must be taken to control storage conditions and length of storage to minimize its deterioration.

4.2.3 Calcium hypochlorite. Calcium hypochlorite conforming to ANSI/AWWA B300 is available in granular form or in small tablets and contains approximately 65 percent available chlorine by weight. The material should be stored in a cool, dry, dark environment to minimize its deterioration.

Sec. 4.3 Methods of Chlorination

Three methods of chlorination are explained in this standard. Typically, only one method will be used for a given storage-facility disinfection, but combinations of the methods may be used. The three methods are (1) chlorination of the full storage facility such that, at the end of the appropriate retention period, the water will have a free chlorine residual of not less than 10 mg/L; (2) spraying or painting of all storage facility water-contact surfaces with a solution of 200-mg/L available chlorine; and (3) a two-step process of chlorinating the bottom portion of the storage facility with 50-mg/L available chlorine followed by filling to overflow and maintaining a free chlorine residual of at least 2 mg/L for 24 hr.

4.3.1 Chlorination method 1. The water-storage facility shall be filled to the overflow level with potable water to which enough chlorine is added to provide a free chlorine residual in the full facility of not less than 10 mg/L at the end of the appropriate 6-hr or 24-hr period, as described in Sec. 4.3.1.4. The chlorine, either as calcium hypochlorite, sodium hypochlorite, or liquid chlorine, shall be introduced into the water as described hereafter.

4.3.1.1 Liquid-chlorine use. Liquid chlorine shall be introduced into the water filling the storage facility in such a way as to give a uniform chlorine concentration during the entire filling operation. Portable chlorination equipment shall be carefully operated and shall include a liquid-chlorine cylinder, gas-flow chlorinator, chlorine ejector, safety equipment, and an appropriate solution tube to inject the high-concentration chlorine solution into the filling water. The solution tube shall be inserted through an appropriate valve located on the inlet pipe and near the storage facility such that the chlorine solution will mix readily with the inflowing water.

4.3.1.2 Sodium hypochlorite use. Sodium hypochlorite shall be added to the water entering the storage facility by means of a chemical-feed pump or shall be applied by hand-pouring into the storage facility and allowing the inflowing water to provide the desired mixing.

4.3.1.2.1 When a chemical-feed pump is used, the concentrated chlorine solution shall be pumped through an appropriate solution tube so as to inject the high-concentration chlorine solution at a rate that will give a uniform chlorine concentration in the filling water. The solution tube shall be inserted through an appropriate valve located on the inlet pipe and near the storage facility, or through an appropriate valve located on the storage facility such that the chlorine solution will mix readily with the filling water.

4.3.1.2.2 When the sodium hypochlorite is poured into the storage facility, the filling of the storage facility shall begin immediately thereafter or as soon as any removed manhole covers can be closed. The sodium hypochlorite may be poured through the cleanout or inspection manhole in the lower course or level of the storage facility, in the riser pipe of an elevated tank, or through the roof manhole. The sodium hypochlorite shall be poured into the water in the storage facility when the water is not more than 3 ft (0.9 m) in depth, nor less than 1 ft (0.3 m) in depth or as close thereto as manhole locations permit.

4.3.1.3 Calcium hypochlorite use. Calcium hypochlorite granules or tablets broken or crushed to sizes not larger than 1/4-in. (6.4-mm) maximum dimension may be poured or carried into the storage facility through the cleanout or inspection manhole in the lower course or level of the storage facility, into the riser pipe of an elevated tank, or through the roof manhole. The granules or tablet particles shall be placed in the storage facility before flowing water into it. The granules or tablets shall be located so that the inflowing water will ensure a current of water circulating through the calcium hypochlorite, dissolving it during the filling operation. The calcium hypochlorite shall be placed only on dry surfaces unless adequate precautions are taken to provide ventilation or protective breathing equipment.

4.3.1.4 Retention period. After the storage facility has been filled with the disinfecting water, it shall stand full as follows: (1) for a period of not less than 6 hr when the water entering the storage facility has been chlorinated uniformly by gas-feed equipment or chemical pump, or (2) for a period of not less than 24 hr when the storage facility has been filled with water that has been mixed with sodium hypochlorite or calcium hypochlorite within the storage facility as described in Sec. 4.3.1.2 and 4.3.1.3.

4.3.1.5 Handling of disinfection water. After the retention period stated in Sec. 4.3.1.4, the free chlorine residual in the storage facility shall be reduced to a concentration appropriate for distribution by completely draining the storage facility and refilling with potable water, or by a combination of additional holding time and blending with potable water having a low chlorine concentration. When an appropriate chlorine concentration is reached and subjected to satisfactory bacteriological testing and acceptable aesthetic quality, the water may be delivered to the distribution system.

4.3.1.5.1 The environment into which the chlorinated water is to be discharged shall be inspected, and if there is any likelihood that the chlorinated discharge will cause damage, then a reducing agent shall be applied to the water to be wasted to thoroughly neutralize the chlorine residual in the water. Federal, state, or local environmental regulations may require special provisions or permits prior to disposal of highly chlorinated water. The proper authorities should be contacted prior to disposal of highly chlorinated water.

4.3.2 Chlorination method 2. A solution of 200-mg/L available chlorine shall be applied directly to the surfaces of all parts of the storage facility that would be in contact with water when the storage facility is full to the overflow elevation.

4.3.2.1 Method of application. The chlorine solution may be applied with suitable brushes or spray equipment. The solution shall thoroughly coat all surfaces to be treated, including the inlet and outlet piping, and shall be applied to any separate drain piping such that it will have available chlorine of not less than 10 mg/L when filled with water. Overflow piping need not be disinfected.

4.3.2.2 Retention. The disinfected surfaces shall remain in contact with the strong chlorine solution for at least 30 min, after which potable water shall be admitted, the drain piping purged of the 10-mg/L chlorinated water, and the storage facility then filled to its overflow level. Following this procedure and subject to satisfactory bacteriological testing and acceptable aesthetic quality, the water may be delivered to the distribution system.

200 PPM Cl solution can be made in the following manner.

12% 120000 mg/L

V1 is 12% hypo
C1 is the conc. Of your stock hypo
V2 is the volume that you are making up
C2 is the conc. Of the finished volume

V1	*	C1	=	V2	*	C2
		120000	=	1000		200

= 1.667 liters of 12%

You need to add 1.667 liters of 12 % hypo to your tank

4.3.3 Chlorination method 3. Water and chlorine shall be added to the storage facility in amounts such that the solution will initially contain 50 mg/L available chlorine and will fill approximately 5 percent of the total storage volume. This solution shall be held in the storage facility for a period of not less than 6 hr. The storage facility shall then be filled to the overflow level by flowing potable water into the highly chlorinated water. It shall be held full for a period of not less than 24 hr. All highly chlorinated water shall then be purged from the drain piping. Following this procedure and subject to satisfactory bacteriological testing the facility may be placed back online.



Associated
Environmental

- 281 -



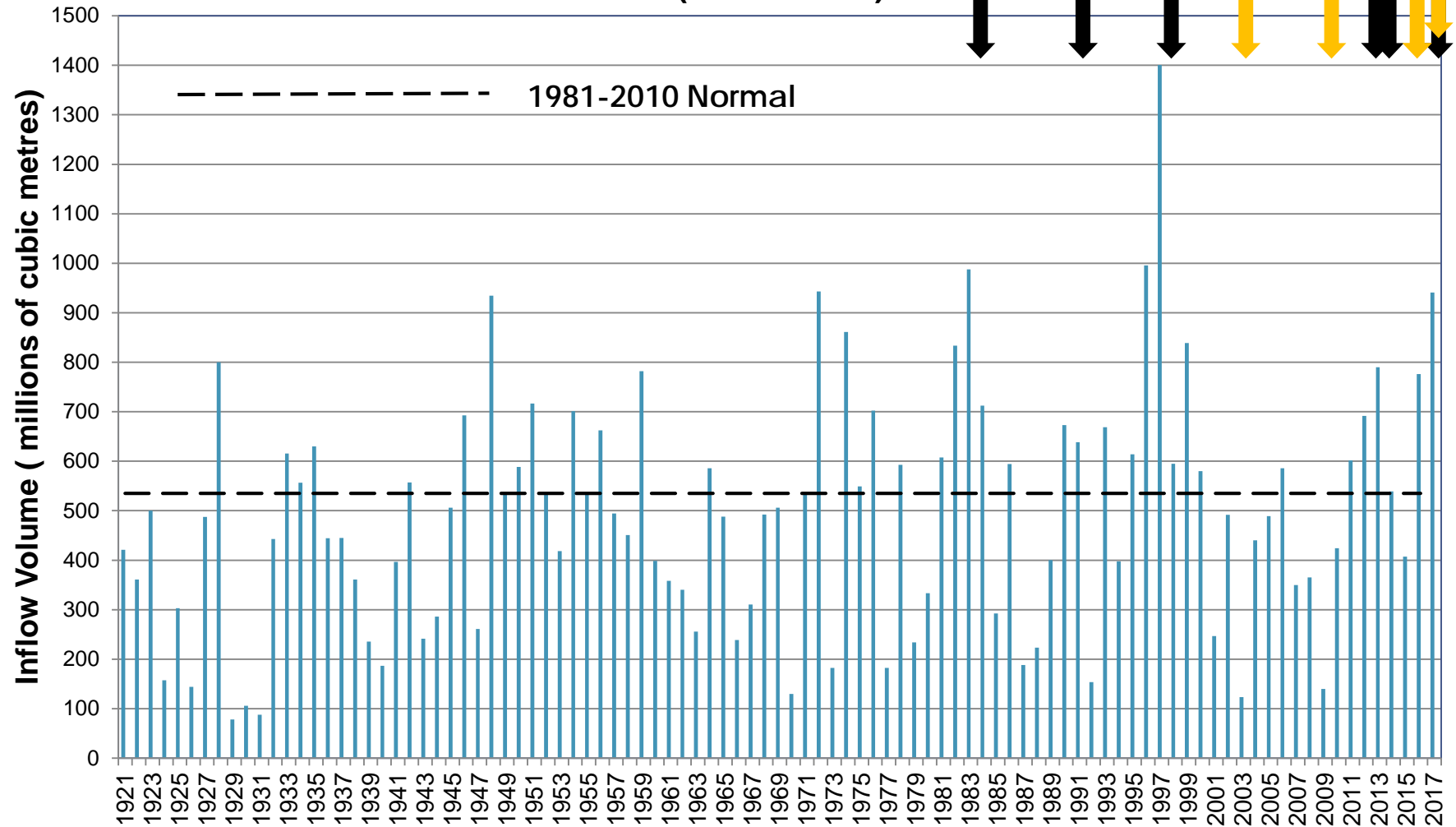
Penticton – Drought Management Plan

Drew Lejbak, M.Sc.
Paul Hague, B.Sc., RPF

July 7, 2020

OVERVIEW OF THE NEED FOR DROUGHT PLANNING IN THE OKANAGAN REGION

Okanagan Lake - Annual Net Inflow Volume (1921 - 2017)



Source: BC River Forecast Centre; BC Ministry of Forests, Lands, Natural Resource Operations, and Rural

Development



- Unpredictable water supply/streamflows
- Variability between drought (↓), normal, and high water/flood (↓) conditions
- Water management carefully considered
- Climate Change concerns

DROUGHTS ARE HAPPENING AND WILL CONTINUE



Penticton Drought Management Plan

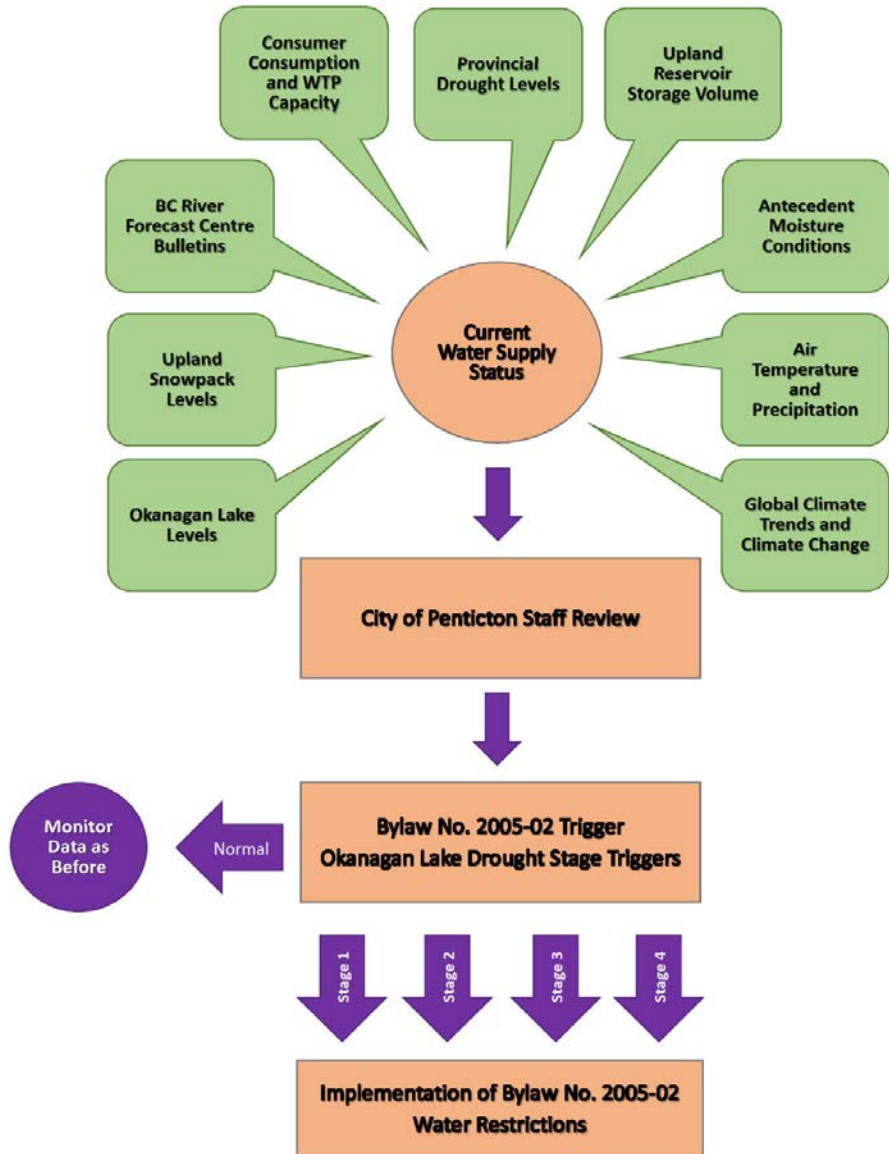
Penticton Drought Management Plan

- **The City identified that a DMP was needed for:**
 - **Consistent application of drought management decisions and responses**
 - **Consistent Drought Stage declaration approach**
 - **Drought stages following Bylaw 2005-02**
 - **Align Drought Stages and Provincial Drought Levels**
- **DMP developed following OBWB guidance for drought planning consistency across the Okanagan**

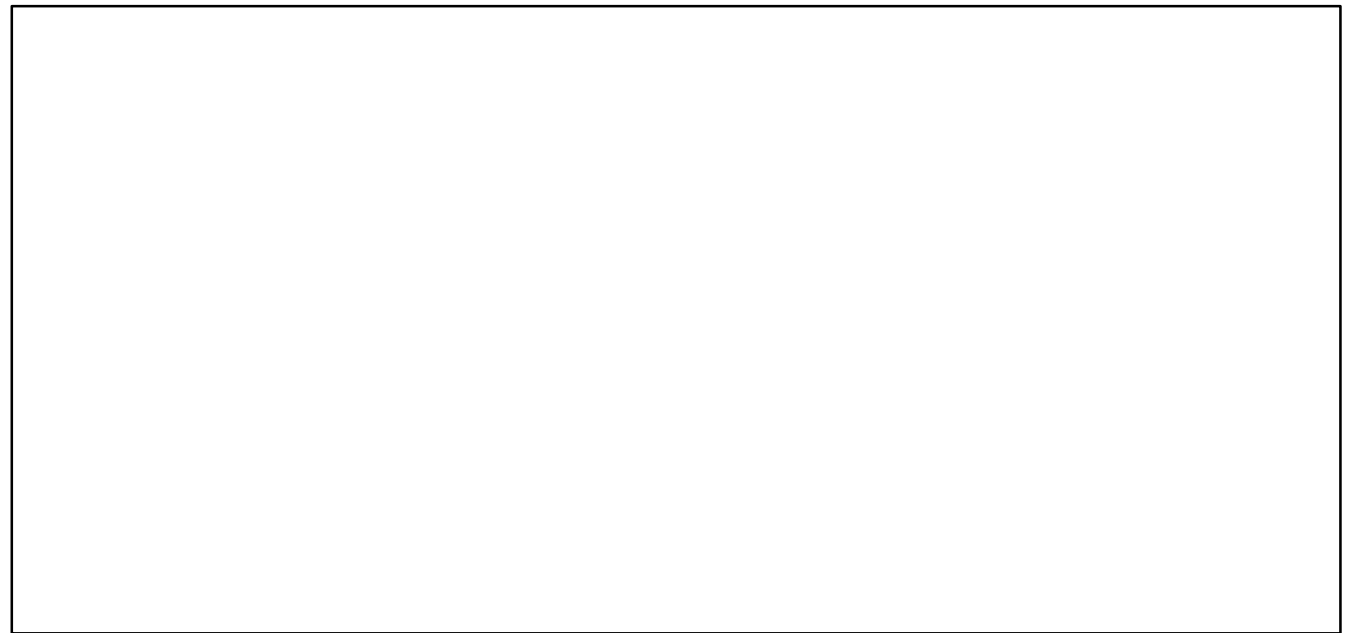
Basin



Drought Stage Decision Process



- Decision tree used to support management decisions



Drought Response Plan

- **Drought Stages (from Bylaw 2005-02)**
 - Stage 1 - 4
- **Water Conservation Plan**
 - Water restrictions
- **Triggers**
- **Communication**
- **Enforcement**



Communication Strategy

- New communication approach for residential and agricultural water users
 - Agricultural communication builds upon the Agriculture Water Supply Status Communications Pilot

RDOS Outdoor Water Use Restrictions
OKANAGAN-SIMILKAMEEN

REDUCE USE 10%

STAGE 1

SPRINKLERS
AUTOMATIC: 12:01am - 6am
MANUAL: 6-10am & 6-10pm

2 Days / Week

www.rdos.bc.ca/restrictions

RDOS Outdoor Water Use Restrictions
OKANAGAN-SIMILKAMEEN

REDUCE USE 90%

STAGE 4

CRITICAL WATER SHORTAGE

No Outdoor Use

www.rdos.bc.ca/restrictions

CITY OF Penticton AGRICULTURAL Water Supply Update

Stage 1 Stage 2 Stage 3 Stage 4

Water supply is LOW and conditions are VERY DRY

Use a soil moisture monitoring device to determine when to irrigate and do not irrigate during hot or windy periods of the day.

www.obwb.ca/ag

CITY OF Penticton AGRICULTURAL Water Supply Update

Stage 1 Stage 2 Stage 3 Stage 4

Conditions are NORMAL

Fix leaks, check nozzles for wear and sediment, and improve irrigation scheduling techniques.

www.obwb.ca/ag

CITY OF Penticton AGRICULTURAL Water Supply Update

Stage 1 Stage 2 Stage 3 Stage 4

Water supply is VERY LOW and conditions are EXTREMELY DRY

Irrigate only high-value perennial plants to maintain health.



Water Management Teams

- **Water Supply Management Team**
 - City staff – decision makers on water management and drought declarations
 - Application of the communication strategy

- **Drought Management Team**
 - Includes representation by all major water users
 - Supports community involvement in drought planning



SUMMARY

Summary

- **Recent and historic events have identified the need for drought planning in Penticton**
- **Projected changes to streamflows and increased droughts for the Okanagan**
- **Penticton Drought Management Plan developed to help Penticton become more resilient**





Questions & Answers

Drew Lejbak: lejbakd@ae.ca or 250-826-9486

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Mitch Moroziuk, General Manager of Infrastructure
Subject: **Nanaimo Street Bridge and Penticton Creek**

File No: 5605-20

Recommendation:

THAT Council request the Penticton Fly Fishers to ask the Regional District of Okanagan Similkameen Board to extend the grant deadline for the South Okanagan Conservation Fund Grant for the design of Penticton Creek Reach 3A Upper / 3B to December 31, 2020;

AND THAT Council authorize staff to design Penticton Creek Reach 3A Upper / 3B with the existing Nanaimo Avenue Bridge removed to allow for the passage of the 1:200 Year Design Flow;

AND THAT the Nanaimo Avenue bridge remain in place until the construction of Penticton Creek Reach 3A Upper / 3B;

AND THAT an evaluation and costing of options, public consultation and development of a recommendation to address the removal of the Nanaimo Avenue Bridge be considered in the 2022 budget process;

AND FURTHER THAT the construction of Penticton Creek Reach 3A Upper / 3B including how to address the removal of the Nanaimo Avenue Bridge be considered in the 2024 Budget process.

Strategic priority objective

Asset and Amenity Management: The City of Penticton will ensure the services we provide to our residents and visitors are reliable and cost effective by proactively investing into our natural and built assets.

Background

The Penticton Fly Fishers, in partnership with the City of Penticton, received a grant in 2019 from the South Okanagan Conservation Society Fund for \$159,000 for the detail design of Penticton Creek Reach 3A Upper / 3B. Stantec Engineering was hired in 2019 to complete detail design of the project. One of the significant issues to be addressed was freeboard from the bottom of the Nanaimo Avenue Bridge to the water level under design flow conditions. Figure 1 shows the location of the Nanaimo Avenue Bridge.



Figure 1

The 2017 Mould Engineering Penticton Creek Master Plan indicates that the clearance to the bottom of the Nanaimo Avenue Bridge under design flow conditions is not sufficient to meet the Dike Design and Construction Guide: Best Management Practices for British Columbia. The Master Plan further states that consideration be given to replacing the existing bridge with a pedestrian bridge.

Stantec also examined the bridge during the detail design phase. They confirmed that the water level will in fact be 0.29m above the bottom of the bridge meaning the moving water will push directly on the side of the bridge girders and debris will have no way to pass under the bridge.

Stantec evaluated two scenarios to address this issue using several factors. The options evaluated were:

- Scenario 1 - Leave the Nanaimo Avenue Bridge in place.
- Scenario 2 - Remove the Nanaimo Avenue Bridge.

The evaluation factors included:

- Flood Risk (Stantec)
 - Scenario 1 does not allow for the passage of the 1:200 year design flow, the water level is 0.29m above the low point on the bridge. Flowing water will push directly on the side of the bridge and there is no ability for debris to pass under the bridge. The freeboard under the bridge does not meet the standards set out in the Transportation Association of Canada Guide to Bridge Hydraulics and Canadian Highway and Bridge Design Code.
 - Scenario 2 eliminates any issue with clearance under the bridge during design flows, allows for debris passage, allows for widening of the creek and an increase in freeboard on the right bank.
- Hydraulics for Fish Passage (Stantec)
 - Scenario 1 and Scenario 2 do not have significant differences in velocity and depth under fish flow conditions.
- Fish Habitat (Stantec)
 - Scenario 2 provides an opportunity to create 140 m² of new fish habitat.
- Transportation Implications (Peter A Truch and Penticton Fire Chief)
 - Scenario 2 will remove the existing road/pedestrian bridge but there are three alternate creek crossings: Vancouver Avenue, Ellis Street and Eckhart Avenue. The traffic rerouting will require the addition of a left turn lane at Pickering Street / Haven hill Road. No significant impacts to vehicular traffic is expected.

- Scenario 2 will remove a direct link to downtown for pedestrian and cyclists. The construction of a bike / walkway on both sides of the creek should be considered during detail design. Stantec has determined that the existing bike / walkway on the west side will remain but that it is not possible to install a bike / walkway on the east side without further discussion with adjacent property owners and perhaps land acquisition. Alternatively pedestrians and cyclists could use either the Wade Avenue pedestrian bridge 335m to the southeast; or the Ellis Street Bridge 407m to the northwest. Figure 2 shows the location of the alternate crossing points and the routes to get there.



Figure 2

- Scenario 2 will increase emergency response time by about 32 – 35 seconds. The Penticton Fire Chief looked at this and he has indicated that they can make it work if the bridge is removed.
- It was concluded that no significant adverse impacts would be created if the City chooses to remove the Nanaimo Avenue Bridge. Ideally, active transportation routes would be in place paralleling the creek on both sides before the bridge is removed; however, it is not imperative in order for the bridge to be removed.
- Constructability of Reach 3A Upper and 3B Channel Works (Stantec)
 - Scenario 1 will require the contractor to work around the bridge. This will introduce challenge with respect to clearance for equipment, laydown areas and site access. The contractor will also be required to tie the channel bank works into the vertical bridge abutments and wing walls. These are challenges but contractors can overcome them.
 - Scenario 2 will involve some additional work removing the bridge but will allow significantly more constructability benefit.
- Cost Considerations (Stantec and Watson Engineering)
 - Scenario 2 will see cost implications resulting from removal of the bridge estimated at \$61,000.
 - Scenario 1 will see the City having to incur future costs to replace the timber deck, bull rails and asphalt and put in place a code compliant railing in 5 to 10 years at an estimated cost of \$200,000 to \$250,000.

The evaluation factors were scored and a weighting factor applied, the results are presented in Table 1.

Evaluation Factors	Weight	Scenario 1 Bridge to Remain		Scenario 2 Bridge Removed	
		Score	Weighted Score	Score	Weighted Score
Flood Risk	30	1	30	5	150
Hydraulics for Fish Passage	5	3	15	3	15
Fish Habitat	5	1	5	4	20
Transportation Implications	5	3	15	3	15
Constructability	10	2	20	4	40
Cost Considerations	10	4	40	2	20
TOTAL			125		260

Table 1

The conclusion is that Scenario 2 bridge removal is more desirable (260) than Scenario 1 leaving the bridge in place (125).

The grant provided by the South Okanagan Conservation Fund was extended in December of 2019 by the Regional District of Okanagan Similkameen Board at request of the partners. The approved extension carries a condition to complete the design by June 20, 2020. The Penticton Fly Fishers / City of Penticton require an additional extension to of the grant deadline to December 31, 2020. The Regional District of Okanagan Similkameen Board will consider this request on July 16, 2020. In order to complete the detailed design and tender documents Stantec needs instructions from the City with respect to how to address the Nanaimo Avenue Bridge.

The analysis done to date indicates that the more desirable solution is to remove the bridge. This will then allow Reach 3A Upper / 3B to meet the 1:200 design flow, will eliminate the risks associated with inadequate clearance under the bridge, will improve free board on the right bank, will add habitat and will have no significant impacts on the transportation system. This will come at a slightly increased cost, \$61,000 to remove the bridge but will eliminate future bridge repair costs of \$200,000 to \$250,000.

The recommended approach is to see Reach 3A Upper / 3B designed with no bridge in place. The bridge would remain until Reach 3A Upper / 3B is built, estimated 2024. The removal of the bridge will be addressed in 2022 and would involve public consultation and further work to evaluate the following alternatives:

- Remove the bridge and not replace it; or
- Remove the bridge and replace it with a road / pedestrian bridge that is higher to meet freeboard requirements; or
- Remove the bridge and replace it with a pedestrian bridge that is higher to meet freeboard requirements.

Once this process is complete, any required adjustments can be made to the detailed design and a project budget will be brought forward for consideration in the 2024 budget cycle.

Financial Implication

The estimated cost to reconstruct Reach 3A Upper and 3B is \$3,350,000 excluding any bridgework. The City has a \$750,000 UBCM Structural Flood Mitigation Grant for the construction. The remainder of the funding will come either from additional grants or other sources yet to be determined. This project will be considered during the 2024 budget process.

City needs to fulfill our obligations to the Penticton Fly Fishers, as a partner, under the South Okanagan Conservation Fund Grant and complete the detail design. In order to accomplish that Stantec needs direction with respect to how to address the Nanaimo Avenue Bridge. The work done by Stantec indicates that the best course of action is to complete design of the creek based on the bridge being removed and determine if and how the bridge will be replaced prior to creek construction. The proposed time line would see design completed in 2020, a decision made on how to address the bridge in 2022 and construction of the creek in 2024 pending budget approval.

Alternatively, Council could request the Penticton Fly Fishers to ask the Regional District of Okanagan Similkameen Board to extend the grant completion deadline to mid-2021 and ask staff to bring forward a budget amendment to determine if and how the Nanaimo Avenue Bridge would be replaced. This alternative would see the completion of design delayed and would require a grant extension deadline from June 2020 to June of 2021. In addition, there would be no change to the proposed construction date of 2024.

Alternate recommendations

Alternate 1

THAT Council request the Penticton Fly Fishers to ask the Regional District of Okanagan Similkameen Board to extend the grant deadline for the South Okanagan Conservation Fund Grant for the design of Penticton Creek Reach 3A Upper / 3B to June 30, 2021;

AND THAT Staff bring a budget amendment forward to evaluate if and how to address the replacement of the Nanaimo Avenue Bridget;




AND THAT once a decision on how to address the bridge is made Stantec be instructed to complete detail design.

Attachments

Attachment 1 – 2020 06 24 Stantec Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment Report.

Respectfully submitted,

Mitch Moroziuk P.Eng. MBA
General Manager of Infrastructure

<p>CFO</p> 	<p>Fire Chief</p> 	<p>CAO</p> 
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Attachment 1

2020 06 24 Stantec Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment Report.



Memo

To:	Mitch Moroziuk, P.Eng. General Manager of Infrastructure City of Penticton	From:	Joe Kennedy, P.Ag. Project Manager Stantec Consulting
File:	123221408	Date:	June 24, 2020

Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

This memo provides an assessment of the Nanaimo Bridge crossing Penticton Creek in Penticton, B.C. The City of Penticton is considering two future scenarios for the bridge:

Scenario 1: Bridge to Remain – This scenario considers the bridge to remain as is and the Reach 3A Upper and 3B channel works are to tie-in to the upstream end of the bridge and abutments.

Scenario 2: Bridge Removal – This scenario includes removal of the bridge and abutments as part of the Reach 3A Upper and 3B channel works. The banks would be graded back to increase the hydraulic capacity of the area while the Reach 3A Upper and 3B works would extend downstream of the bridge to create a smooth tie-in to previously completed channel restoration works.

Both scenarios assume that the proposed Reach 3A Upper and 3B works (upstream of the Nanaimo Bridge) as presented to the Committee on March 11, 2020 are to be constructed, regardless of the bridge.

It is important to note that the Penticton Creek Master Plan (Mould Engineering 2017¹) indicated that the existing bridge does not have adequate freeboard for the 200-year maximum instantaneous flood. Stantec is in the process of developing the pre-design for the Reach 3A Upper and 3B channel works.

The two scenarios have been assessed based on the impacts to hydraulics for flood risk, impacts to hydraulics for fish passage / habitat, constructability implications and Stantec’s opinion of capital cost (Class D) of the works.

2.0 IMPACTS TO HYDRAULICS FOR FLOOD RISK

Stantec has modelled the impacts of Scenario 1 and 2 with respect to flood risk using HEC-RAS 1-dimensional modelling.

Scenario 1 includes the bridge as it is in its existing state. The bridge has a span width of 10 m, a low chord elevation of 350.539 m and vertical abutments. Scenario 2 considers that the bridge has been removed and minimum 2H:1V side slopes extending back to the existing top of bank. The channel width at the top of bank under this scenario would be approximately 19 m wide.

The Transportation Association of Canada (TAC 2001) Guide to Bridge Hydraulics and Canadian Highway and Bridge Design Code (CSA 2019) were referenced to identify the 200-year peak instantaneous flow as the design flow event. Table 1 illustrates the hydraulic modelling results of the 200-year maximum instantaneous flood (60 m³/s) under both above noted scenarios.

Under Scenario 1, the water surface level at river station 62 (upstream extent) is 0.29 m above the low chord of the bridge (ie. the flood waters are hitting the bridge). The model assumes clear flow conditions only, there

¹ Mould Engineering, 2017, Penticton Creek Master Plan. Penticton: City of Penticton, BC. Available at: <https://www.penticton.ca/assets/City-Hall/Master-Plans/2017-12-11-PCRI%20Master%20Plan%20Final%20Report.pdf>

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June 24, 2020

Mitch Moroziuk, P.Eng. General Manager of Infrastructure

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Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

is an additional risk of debris causing blockage of the area under the bridge that exacerbates the risk of flooding cause by the existing bridge.

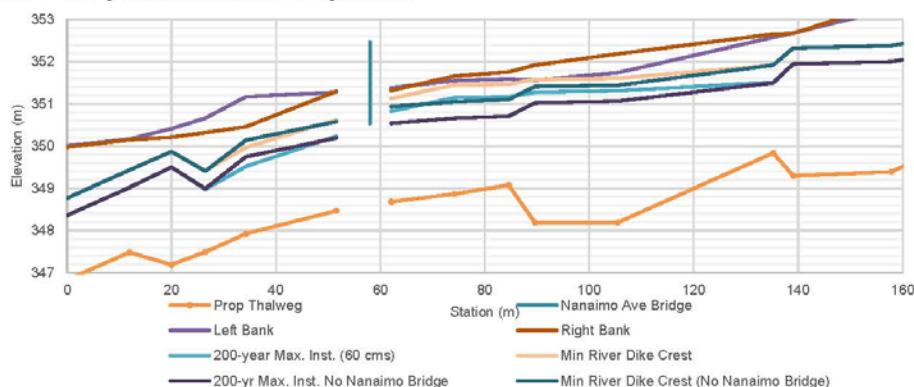
If the bridge is removed, as proposed in Scenario 2, the water surface level is lowered by a maximum of 0.49 m at a location 12 m upstream from the bridge (Figure 1). The impacts of the bridge removal extend 83 m upstream of the bridge. There is an 0.23 m increase in the water surface levels 18 m downstream of the bridge as a result of the bridge removal. This is caused by the flow changes from supercritical flow under Scenario 1 (shallow and fast) to subcritical flow under Scenario 2 (deeper and slower). When the bridge is removed, the flow does not enter this supercritical state at that location.

Table 1 - 200-year Max. Inst. Flood Modelling Results

River Station	Water Surface Elevation (m)		
	Scenario 1 – Bridge to Remain	Scenario 2 – Bridge Removal	Difference
139	351.95	351.95	0.00
135	351.51	351.50	-0.01
105	351.31	351.07	-0.24
90	351.28	351.03	-0.25
85	351.17	350.71	-0.46
74	351.15	350.66	-0.49
62	350.83	350.54	-0.29
52	Existing Nanaimo Bridge Location		
52	350.23	350.19	-0.04
34	349.52	349.75	+0.23
26	348.98	348.99	+0.01
20	349.50	349.50	0.00

The implications of the bridge removal are best illustrated in graphical format. The above noted water levels have been plotted on Figure 1. The minimum dike crest elevations for each of the scenarios and the existing top of banks are also plotted on this figure.

Figure 1 - 200-year Max. Inst. Flood Hydraulics



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Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

Removal of the bridge eliminates debris jamming hazard and the resulting hydraulic forces on the bridge deck. Furthermore, the freeboard is increased immediately upstream from the bridge (where the flood risk was identified as the highest according to the existing conditions hydraulic model).

The existing bridge under existing channel conditions and proposed channel conditions is not capable of passing the design flood event with adequate clearance. The removal of the bridge would mitigate this flood risk. Alternatively, flood mitigation measures (i.e. dike or flood wall construction) would be required here to address the hazards if the bridge remains.

Conclusion: The removal of the bridge (Scenario 2) removes the existing flood risk that the bridge poses to the community and increases the freeboard along the critical right channel bank upstream from the bridge by up to 0.49 m as compared to leaving the bridge in place (Scenario 1).

3.0 IMPACTS TO HYDRAULICS FOR FISH HABITAT / PASSAGE

From a fish habitat perspective, Scenario 2 allows for the creation of fish habitat where the current bridge is located while Scenario 1 does not. The area of fish habitat that could be created under Scenario 2 is approximately 140 m².

To determine the fish passage differences, Stantec has modelled the impacts of Scenario 1 and 2 with respect to flood risk using HEC-RAS 1-dimensional modelling. The modelling considered the average channel velocity and water depth for the following flows:

- March, April, May Mean Flows – 2.11 m³/s
- June, July Mean Flows – 1.72 m³/s
- August to October Mean Flows – 0.39 m³/s
- Annual Mean Flows – 1.00 m³/s
- Extreme Low Flows – 0.23 m³/s

The results indicated that the two options do not have significant differences (<0.05 m/s in velocity and <0.02 m in depth) for the two scenarios.

Conclusion: Scenario 2 offers some fish habitat benefits as compared to Scenario 1. There is no significant differences between the two scenarios from a fish passage perspective.

4.0 TRANSPORTATION IMPLICATIONS

A review of the transportation implications of the removal of the Nanaimo Avenue E bridge was completed by Peter A. Truch in January 2020. This section provides a summary of the findings of that report. Four risks were identified resulting from removal of the bridge:

1. Adverse effects of additional vehicles on alternate routes
2. Impact to volume of active modes
3. Increased emergency response times
4. Decreased emergency egress options

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Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

A figure from the report is provided in Appendix A highlighting some of the key transportation items in the area.

Adverse effects of additional vehicles on alternate routes

Following removal of the bridge, there are three alternative creek crossings: Vancouver Avenue, Ellis Street, and Eckhardt Avenue. A review was conducted looking at the implications of 100% of Nanaimo Avenue trips being rerouted to a single alternate bridge. After analysis of the three scenarios, only the intersection of Pickering Street / Haven Hill Road reported performance issues and these were localized to only the rerouted traffic and were mitigated through addition of a left turn lane. No significant impacts to vehicular traffic is expected with removal of the bridge.

Impact to volume of active modes

Removal of the bridge will remove a direct link to the downtown for some users. According to Peter Truch, (2020)², active transportation modes are less inconvenienced/rerouted by a closure of the Nanaimo Avenue bridge as there are alternative creek crossings one block north and south of Nanaimo Avenue. The recommendations from the Truch report include continuing a multi-use corridor on the south side of Penticton Creek from Nanaimo Avenue to Wade Avenue, and a pedestrian corridor on the north side between Ellis St and Wade Avenue E. These options will require further assessment as both may require working with private landowners to facilitate if they cannot be incorporated into the creek redevelopment right-of-way.

Increased emergency response time

With removal of the bridge, there is an area east of the creek, see Appendix A, that is expected to experience a 32-35 second increase in fire services response time from Station 201 (the nearest station). Expected police and EMS response time impacts range from no impact to up to 35 seconds. The Truch report³ stated that this is not a significant enough increase to warrant keeping the crossing open. Further consultation with City of Penticton Fire Chief Larry Atkinson⁴ confirmed that the increased response times could be managed by the department and would not prevent the removal of the Nanaimo Bridge.

Decreased emergency egress options

The number of existing alternate emergency egress points is sufficient and that the loss of one does not have a significant impact on emergency evacuation.

Conclusion: Considering the analysis summarized above, the conclusions in the Truch report are that no significant adverse impacts will be created if the City chooses to remove the Nanaimo Avenue

² Peter Truch, 2020. Nanaimo Ave E Bridge Removal over Penticton Creek - Transportation Review. Prepared for the City of Penticton. January 28, 2020.

³ Peter Truch, 2020. Nanaimo Ave E Bridge Removal over Penticton Creek - Transportation Review. Prepared for the City of Penticton. January 28, 2020.

⁴ L. Watkinson, City of Penticton Fire Chief (2020). 2020 01 20 Nanaimo Avenue Bridge Closure PFD Comment. Email communication between the City of Penticton Fire Chief (Larry Watkinson and the City of Penticton (Mitch Moroziuk). January 20, 2020.

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Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

bridge. Ideally, active transportation routes would be in place paralleling the creek on both sides before the bridge is removed, however it is not imperative in order for the bridge to be removed.

5.0 CONSTRUCTABILITY IMPLICATIONS

From a constructability perspective, the two scenarios yield some differences. Note that this section of the assessment only considers the constructability of the two scenarios, it does not consider the construction cost of the two scenarios. The construction costs are analyzed in Section 5.0.

Under Scenario 1, the contractor will be required to work around the bridge while leaving it in place and avoiding damaging it. This will introduce challenges with respect to clearance for equipment, laydown areas and site access locations. In addition, the contractor will be required to tie the channel bank works into the vertical bridge abutments and wingwalls. These challenges can be overcome and many contractors are experienced with these types of site constraints.

Scenario 2 involves the removal of the bridge. This will involve some additional work of removing and disposing of the bridge structure and concrete abutments but will allow significantly more constructability benefits. Once the bridge is removed, the contractor can use the bridge approaches as laydown and/or access areas and the equipment can move more freely to construct the proposed works. Stantec expects that the time required to remove the bridge would be less than the time spent to construct the transition features, tying the proposed channel into the existing bridge. In addition, the contractor would not have to tie the channel bank works into the bridge abutments, instead, they would only have to tie the channel into the downstream channel works. This exercise would be simpler and faster in Scenario 2 as compared to Scenario 1.

Conclusion: Scenario 2 significantly improves the constructability of the proposed channel works as compared to Scenario 1.

6.0 COST CONSIDERATIONS

Stantec has considered the probable costs associated with removing the bridge (Scenario 2) and presented our findings in Table 2. The construction costs shown are additions or subtractions to those expected for Scenario 1. The costs are considered a preliminary in nature and therefore align with a Class D (+/-50%) opinion of probable cost. A complete opinion of probable cost for the Reach 3A and 3B restoration works is to be prepared in preliminary design.

Table 2 - Opinion of Probable Cost Implications for Scenario 2

Item	Scenario 2 Costs Implications
Mobilization and laydown	(\$ 5,000) ¹
Construction access (specifically upstream of Nanaimo Street bridge)	(\$ 5,000) ¹
Demolition and removal of the bridge structure and abutments	\$ 30,000
Asphalt roadway and concrete curb removal	\$ 4,000 ²
Increased channel works (riprap erosion protection and bed and bank tie-ins)	\$ 40,000 ³
Channel work efficiencies (elimination of grouting requirement at tie-in to concrete structure)	(\$ 15,000)

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June 24, 2020

Mitch Moroziuk, P.Eng. General Manager of Infrastructure

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Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

Upland works (sidewalk, curb, landscaping, barricades and signs)	\$ 12,000 ⁴
Total	\$ 61,000
Notes:	
<ol style="list-style-type: none"> 1. Assuming Nanaimo Ave may be closed to provide laydown area and bridge embankment may be used to access channel. 2. Assuming ~80m² of asphalt and ~15m of curbing to be removed. 3. Assuming an additional 10m of riprap channel to fill the void left by the bridge crossing. 4. Assuming ~15m of curbing, sidewalk and landscaping strip to connect pathway on south side in addition to 6 concrete barricades and two traffic signs to delineate road closure. 	

Stantec has also considered the potential maintenance horizons identified by Watson Engineering in their recent condition survey report of Nanaimo Avenue Bridge completed in February 18, 2020 and associated costs identified in subsequent email correspondence received by the City on February 20, 2020. In summary, the report found that the City is likely to incur between \$200,000 - \$250,000 in maintenance fees in the next 5-10 years to replace the existing laminated timber bridge deck presuming that the concrete abutments and steel girders are unchanged and the existing steel guard is reused. Furthermore, large cost maintenance items such as the steel girders would be required within the 25-year time span.

Conclusion: Scenario 1 is the least cost alternative in the short term. However, Scenario 2 is more efficient use of capital funds by eliminating a minimum of \$200,000 - \$250,000 in maintenance costs to the bridge structure while maximizing machine time onsite to accomplish the bridge removal with one mobilization by the contractor.

7.0 SCENARIO COMPARISON SUMMARY

Table 3 illustrates a summary of the considerations for the two scenarios. Each cell has been colored in green (desirable), white (neutral), or red (less desirable).

Table 3 – Visual Comparison of the Scenarios

Consideration	Scenario 1 – Bridge To Remain	Scenario 2 – Bridge Removal
Flood Risk	The bridge does not have adequate clearance and poses a risk to the community during a flood event.	Removal of the bridge reduces the potential of flood hazards to the community.
Hydraulics for Fish Passage	The differences between these two scenarios are not significant.	
Fish Habitat	The existing bridge does not provide fish habitat benefits.	Removal of the bridge offers the opportunity for fish habitat benefits.
Transportation Implications	The differences between these two scenarios are not significant.	
Constructability of Reach 3A Upper and 3B Channel Works	The bridge creates a constructability constraint that the contractor must work around to complete the channel works.	Removal of the bridge improves the constructability of the channel works.
Cost Considerations	The cost of leaving the bridge in place and the Reach 3A and 3B contractor working around it is expected to be less than the cost of removing it.	The cost of removal of the bridge is greater than leaving it in place.

Design with community in mind

June 24, 2020
 Mitch Moroziuk, P.Eng. General Manager of Infrastructure
 Page 7 of 8

Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

Table 4 illustrates an assessment of the two options based on a weighted scoring system for each of the considerations described in this document. Stantec’s team has assigned a weight that reflects our assumption of the City’s value for each consideration. Each consideration is then scored on a scale 1 (least desirable) to 5 (most desirable). The scores are multiplied together then added for each scenario. The scenario with the highest sum reflects Stantec’s assessment of the most desirable scenario. The sum of each scenario has also been divided by the maximum score (325) to yield a desirability percentage with 100% being the maximum desirable possible, 50% being neutral and 0% being least desirable possible.

Table 4 – Numerical Comparison of Scenarios

Consideration	Weight	Scenario 1 Bridge To Remain		Scenario 2 Bridge Removal	
		Score	Weighted Score	Score	Weighted Score
Flood Risk	30 points	1	30	5	150
Hydraulics for Fish Passage	5 points	3	15	3	15
Fish Habitat	5 points	1	5	4	20
Transportation Implications	5 points	3	15	3	15
Constructability of Reach 3A Upper and 3B Channel Works	10 points	2	20	4	40
Cost Considerations	10 points	4	40	2	20
Sum		Total Score = 125 Desirability Percentage = 38%		Total Score = 260 Desirability Percentage = 80%	

8.0 OVERALL CONCLUSION

Scenario 2 offers flood mitigation benefits and fish habitat benefits while Scenario 1 is a lower cost option at this time. There is no significant difference between the two scenarios with respect to fish passage or transportation considerations. The visual and numerical comparison of the scenarios suggests that Scenario 2 – Bridge Removal is more desirable than Scenario 1 – Bridge to Remain. It should also be noted that based on the hydraulics, condition of the bridge and ongoing discussions with regulators, receiving regulatory approvals for Scenario 1 (leaving the bridge in place) would be difficult.

The Nanaimo Avenue Bridge fails to convey the 200-year design flow event and we anticipate flows to contact the structure when considering clear flows only. Compounding the debris accumulation on the bridge has the potential to damage the structure and flood the surrounding neighborhood. Stantec, recommends removing the bridge.

With the recommended removal of the Nanaimo bridge there are several future options for the City to consider:

- Remove the bridge and leave this area without a crossing
- Add a new pedestrian bridge (now or in the future)
- Add a new Vehicle bridge (now or in the future)

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June 24, 2020

Mitch Moroziuk, P.Eng. General Manager of Infrastructure

Page 8 of 8

Reference: Penticton Creek Reach 3A Upper and Reach 3B – Nanaimo Bridge Assessment

These future options would require public consultation, and these options would be considered through this process.

We trust this assessment meets your current needs, if you have any questions or concerns, please contact the undersigned.

Stantec Consulting Ltd.


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Design with community in mind

Council Report

penticton.ca

Date: July 7, 2020 **File No:** 6750-20/projects
To: Donny van Dyk, Chief Administrative Officer
From: Blake Laven, Director Development Services - JoAnne Kleb, Engagement Strategist

Subject: Responsible Liquor Consumption in Public Places Pilot Results

Staff Recommendation

THAT Council receive into the record the findings from the “Responsible Liquor Consumption in Designated Public Places – Pilot Project”;

AND THAT Council give first, second and third reading to “Liquor Consumption (Okanagan Beach east of Power Street, Rotary Park, Okanagan Lake Park and Marina Way Park) Bylaw No. 2020-26”, a bylaw that permits responsible consumption of liquor in designated public places from July through October 15, 2020 from 12 p.m. to 8 p.m.;

AND THAT a Special Council meeting to adopt Bylaw No. 2020-26 be held on Wednesday, July 8 at 4:00 p.m.

Strategic priority objective

- **Vision:** A vibrant, innovative, healthy waterfront city focused on sustainability, community and economic opportunity.

Background

City Council on June 2, 2020 passed a bylaw allowing for the responsible consumption of alcohol in select public parks as a pilot program. This initiative was put in place to support the local food and beverage industry whose seating capacities were significantly reduced during the COVID-19 physical distancing measures and to give citizens the opportunity to meet and gather in an outdoor setting where the spread of COVID is much less likely and physical distancing is easier to achieve. The pilot ran from June 3 through July 4 on select parks and beaches along the Okanagan Waterfront.

Results Overview

Feedback from stakeholders and the general public was received during the pilot. Overall, the initiative has seen a high level of public support, relatively favorable media coverage and few incidences of abuse. Because of this, staff are recommending the continuation of the program into an implementation phase, which will see the program run through until mid-October with continuing consultation with key stakeholders and a more comprehensive recommendation this fall on future years.

The following is a summary of the results. A full report is provided in Attachment A:

- The survey conducted on shapeyourcitypenticton.ca generated 1,270 responses. The findings showed support for the program (71% of those randomly selected to complete a survey either strongly supported (42%) or somewhat supported (29%) allowing alcohol consumption in designated public places). The results also showed strong support for the locations chosen. There was also significant support for a similar allowance at Skaha Lake Park.
- Respondents who supported the initiative appreciated being treated like adults, felt it was long overdue and would add to their enjoyment of the beaches and parks.
- Those who were unsure or did not support the program expressed concern about enforcement, glass on the beach, underage drinking, and other forms of misconduct. They also questioned allowing alcohol in a family setting, whether the program *would* actually support local business and if it was needed given people already drink discretely. A summary of the survey results and the complete findings can be viewed at: <https://www.shapeyourcitypenticton.ca/admin/projects/pilot-project-liquor-consumption-in-public-places>.
- Despite poor weather, the survey results showed many participants had clear positions on legal public space alcohol consumption prior to completing the survey as 82% of the participants in the random survey indicated their opinion did not change as a result of the pilot. The poor weather may however have impacted other parts of the pilot, including greater certainty on the potential for litter or public disturbances.
- RCMP and Bylaw reported a few incidents but indicated the types of calls received are not uncommon and may or may not be associated with the pilot project.
- Parks staff monitored the parks for changes in waste and damage to amenities. No additional need for maintenance or care in the pilot locations or changes to waste and recycling were observed. It was identified that additional recycling receptacles should be located in pilot areas.
- Events staff identified the need to consider the City's major events in the implementation of the bylaw. Some of the events are alcohol free to encourage a family environment. Many are also run by charitable organizations that rely on alcohol sales for revenue. Liquor licenses and fenced areas are also required to ensure no underage drinking and to help with crowd control. While no major events are planned for the 2020 summer, should this initiative continue on into more normal years, this potential conflict will need to be addressed. Consultation with event organizers will be on going.
- Interior Health expressed concern that permitting alcohol consumption in designated public spaces may increase the harms associated with alcohol and augment COVID-19 transmission and that the policy sends a message that normalizes alcohol drinking and promotes a culture of consumption.

Other BC Municipalities

Penticton is not the only community to consider and implement this initiative. Both North Vancouver and Port Coquitlam have adopted bylaws allowing liquor consumption in public areas. Both jurisdictions however, have more expansive / permissive pilots than Penticton. For example, both run right through the whole summer, ending in October. Both include many more public spaces than Penticton, including neighbourhood parks in residential areas, ball fields, parks with children's play equipment (Port Coquitlam only), and civic plazas and in the case of North Vancouver 5 blocks of sidewalk along Lonsdale Avenue, a busy commercial street featuring many bars and restaurants. Finally, both bylaws run from dawn to dusk, in contrast to Penticton's initiative which includes the hours of 12:00PM to 8:00PM.

Other municipalities are considering similar programs (Vancouver, Saanich) and some municipalities have considered and not proceeded.

Financial implication

This initiative is largely a legislative change, not resulting in any direct costs, other than some incidental costs (signage, recycling receptacles etc.) (< \$2,500). The pilot program survey was conducted by City staff utilizing our existing survey and engagement systems, resulting in only staff time as an expense.

Next steps

Should Council support Staff's recommendation, staff will begin implementation of the initiative by updating signs in the parks with the new dates and continue to communicate out information and respond to inquiries as well as monitor for any issues. Further consultation with key stakeholder groups including major event organizers will also be undertaken to ensure any outstanding items are addressed. No formal survey or collection of feedback from the community is anticipated. The initiative will continue to be promoted through the Love your Local Penticton campaign.

Analysis

The use of public parks and open space for alcohol consumption, outside of regulated events, while common in some jurisdictions is a new occurrence for BC. While the pilot program has been relatively successful, any longer term changes in this regard should be considered carefully balancing public health and safety with the economic and well-being benefits of loosening regulations on alcohol consumption.

Staff are recommending that the results of the pilot program be received and that the Council pass a bylaw extending the program through to the end of the summer. This will give staff, Council and the community the opportunity to fully understand the impacts of this change and make decisions on what a similar initiative could look like going forward.

Alternate recommendations

The results of the survey showed strong overall support for the program and support for other locations to be included. For example, one quarter of survey respondents supported the inclusion of Skaha Lake Park. Other areas were also discussed, such as Gyro Park, SS Sicamous Park and others, but with less favorable results. Given these results Council may wish to include additional areas in an extended program. If this is the case, Council should consider alternative 1 and give staff direction on which areas to include.

Alternatively, Council may wish to see the initiative come to an end as food and beverage establishments are now allowed greater capacity and the next stages of recovery from COVID are beginning. If that is the case, Council should consider alternative 2.

Alternative 1:

THAT Council receive the engagement results into the public record;

AND THAT Council give staff direction to come back with a revised bylaw adding additional public spaces.

Alternative 2:

THAT Council receive the engagement results into the public record.

Attachments

Attachment A: Engagement results of the “Responsible Liquor Consumption in Designated Public Places – Pilot Project”

Attachment B: “Liquor Consumption (Okanagan Beach east of Power Street, Rotary Park, Okanagan Lake Park and Marina Way Park) Bylaw No. 2020-26”

Respectfully submitted,

Blake Laven, MCIP, RPP
Director Development Services

JoAnne Kleb,
Engagement Specialist

Concurrence

Chief Administrative
Officer

DyD

Attachment A

Engagement results of the “Responsible Liquor Consumption in Designated Public Places – Pilot Project”



Responsible Liquor Consumption in Designated Public Places
Pilot Project Findings



The impact of the pilot project was monitored in several ways including files generated by the RCMP, phone calls and violations issued to Bylaw, observations by Parks and other departments, correspondence to Council, as well as feedback from key stakeholders and the community. The following is a summary of the findings of these activities:

Participation

- Staff believe that participation in the pilot was affected by rainy weather and the restrictions to travel and gatherings associated with COVID-19.

Bylaw

- Bylaw conducted foot patrols regularly throughout the project. No violations were issued during the majority of these patrols. One violation was issued during the pilot at the beach for disorderly conduct. Several phone inquiries were made to the See Something Say Something line but no problems were reported.

RCMP

- The RCMP generated several files over the course of the pilot. These files included a washroom fire, theft of a backpack, suspicious drug activity, three disturbances, two fights involving arrests, an impaired driver drinking at the beach and reports of people throwing beer cans into the water. The RCMP indicated these types of files are not uncommon and may or may not be associated with the pilot project.

Parks

- Staff monitored the parks for changes in waste and damage to amenities. No additional need for maintenance or care in the pilot locations or changes to waste and recycling were observed.

Events

- Staff identified the need to consider the City’s major events in the development of the bylaw. Some of the events are alcohol free to encourage a family environment. Many are also run by charitable organizations that rely on alcohol sales for revenue. Liquor licenses and fenced areas are also required to ensure no underage drinking and to help with crowd control. It is recommended to consult further with the event organizers regarding this bylaw.

Stakeholders

The City received several correspondence from key stakeholder groups expressing their position on the bylaw which are summarized here:

- ICBC offer communications support to help remind drivers to get home safe after enjoying a drink in of Penticton’s parks.

- Interior Health expressed concern that permitting alcohol consumption in designated public spaces may increase the harms associated with alcohol and augment COVID-19 transmission and that the policy sends a message that normalizes alcohol drinking and promotes a culture of consumption.
- Due to timing of the pilot and Parks and Recreation Advisory Committee (PRAC) meetings, staff were not able to meet with the committee prior to posting this report. Members of PRAC who did provide feedback were mostly supportive indicating that most people are responsible. Some expressed concern over the timing of the pilot, the inequity of treatment of people with substance abuse problems, and prioritizing the bylaw over other parks activities. There was also a suggestion that the fines for non-compliance be substantial and that businesses should be creative in their marketing activities. The bylaw will also be discussed by PRAC at their meeting on July 6.
- The Campaign for real Ale South Okanagan and a group of seven Penticton breweries sent letters expressing their full support for allowing people to responsibly consume alcohol in public places.

Council Correspondence

- Approximately 30 citizens provided their feedback to Council through emails or letters. In about 2/3 of the messages, citizens expressed their opposition to the initiative.

Community Feedback

The City conducted a survey to enable citizens to formally provide feedback on what they observed during the pilot as well as to share their views of the bylaw. Two methods were used to conduct the survey. The first was a voluntary survey that could be completed at the shapeyourcitypenticton.ca website. Paper copies were also available at City Hall. Recognizing that voluntary surveys are subject to bias, the City also conducted a random sample survey of the shapeyourcitypenticton.ca database. This is a new method of gauging public opinion that is now possible due to the size and characteristics of the database. The key findings of both surveys are provided below. A complete report as well as full results are available at shapeyourcitypenticton.ca.

- The survey was conducted between June 10 and 24 to allow for analysis of the data in preparation for the July 7 Council meeting.
- A total of 1,270 responses were received. The voluntary survey received 866 responses and the random sample received 404. A minimum of 356 responses were needed for the random sample to have a margin of error of +/- 5% and a confidence rating of 95%.
- Participation in the voluntary survey was slightly younger than the random sample with 23% of participants falling in the 19-39 age group compared to 19% for the random sample which is consistent with our population. The random sample saw a slightly higher participation in the 40 to 64 age range with 52% of participants compared to 49% in the voluntary. Participation by the 65+ age group was consistent for both surveys and aligned with Penticton's population (29%). No results were received or encouraged from the under 19 age group.
- Participants are frequent parks users with over 90% regularly visiting one or more of the pilot location. Okanagan Lake Park and Okanagan Beach were the most regularly visited by participants.

Observations during the pilot project

- Participants were invited to share their observations of the pilot project in advance of completing the forms. 88% of the voluntary participants visited the pilot locations before filling out the form compared to 79% of the random sample participants.
- The majority selected either Okanagan Lake Park or Okanagan Beach to provide their comments. Nearly half visited their location once or twice, the remaining half visited their locations three or more times since the pilot project started. About half of the participants did see individuals consuming alcohol during their visits and 76% of the voluntary participants and 81% of the random participants observed that the individuals consuming alcohol were behaving responsibly.

Views about the timeframe

- In addition to gathering feedback about what participants observed, the surveys also gathered feedback about participants' views of the bylaw. Participants were asked their views about the timeframe of the pilot. 73% of the voluntary participants and 83% of the random participants support this timeframe or support it with conditions. Comments about the timeframe were split between some thinking too long and some thinking too short. Those that felt it was too long expressed concern about allowing drinking during the day when families will be at the beach and questions about how it will be enforced. Comments about the timeframe not being long enough suggested that 8 pm is too early especially in the summer and perhaps they could be better aligned with restaurant hours.

Views about locations

- Participants were asked which locations included in the pilot do they agree with allowing alcohol consumption. 17% of the random sample and 26% of the voluntary participants do not agree with any of the locations. For the remaining participants, support was very high for all of the locations included in the pilot. When asked if any locations were missed, about half of the participants provided responses and half of these suggested Skaha Lake Park. Other locations were also suggested but not in large numbers. Some of these locations include Gyro, Sicamous, and the Channel as well as sports fields.

Views about the bylaw

- Participants were asked to describe their opinion of allowing alcohol consumption in designated public places. 68% of the voluntary participants and 71% of the random sample strongly or somewhat support the intent of the bylaw.

Views about the pilot project

- As this was one of the first pilot projects conducted in recent years, the survey also asked participants whether or not the pilot project influenced their views about responsible consumption of alcohol in designated public spaces. For most of the participants, their opinion did not change as a result of the pilot. 75% of voluntary participants and 82% of random participants indicated their views stayed the same.

Other comments or concerns

Participants were given the opportunity to voice any comments or concerns that were not addressed in the questions. The following is a sample of some of the most common comments that were considered in the preparation of this report.

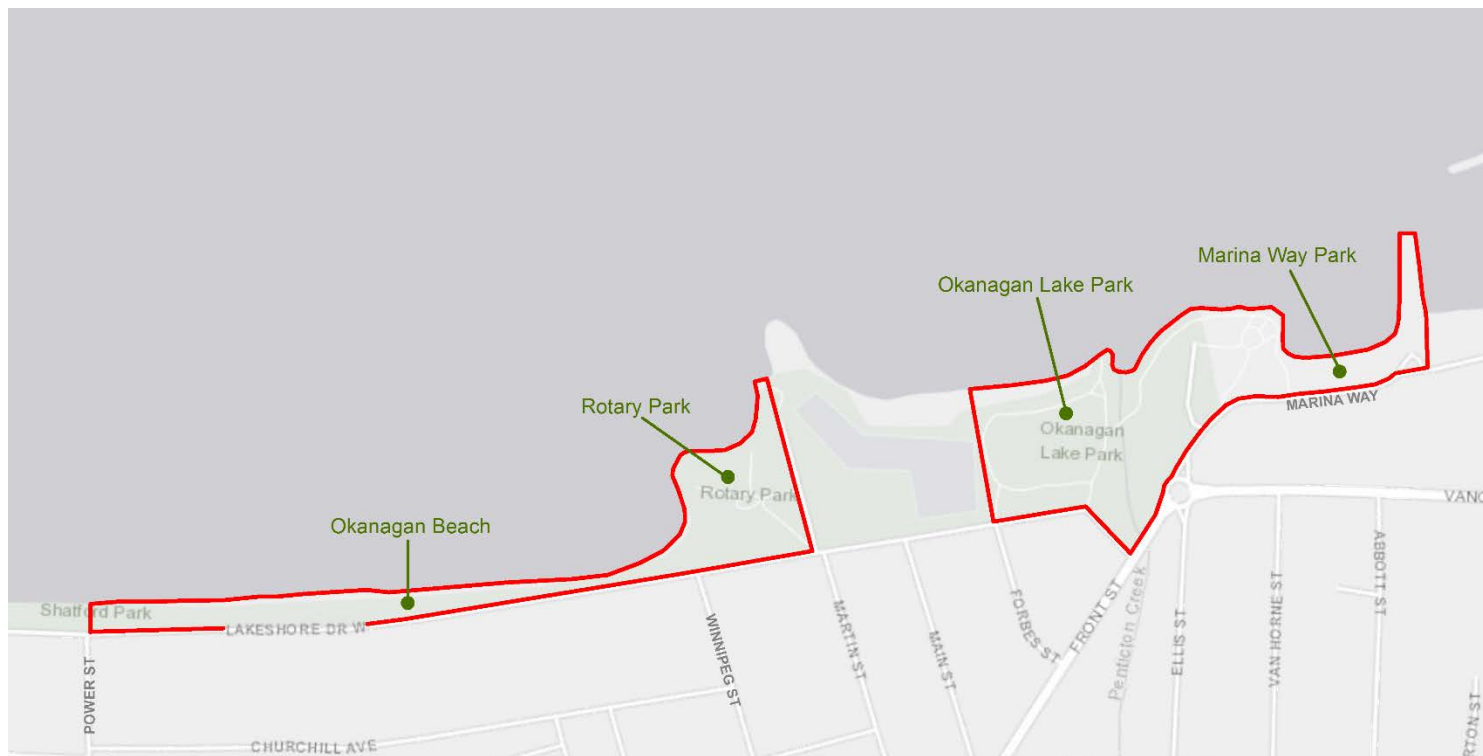
+	+/-	-
<ul style="list-style-type: none"> • Treat adults like adults • Long overdue • Absolutely delightful to have wine on the beach with dinner • Join Europe 	<ul style="list-style-type: none"> • Needs more enforcement • Review again after the pandemic • Pilot not reflection of normal activity • Concerned about locations frequented by children • Make stronger connection for local business • People already drink discretely 	<ul style="list-style-type: none"> • Won't support local business • Glass on the beach • Drinking and driving • Other crime • Burden on RCMP • Increased public urination and fights • More cans and bottles

Random Sample vs. Voluntary

The intent of conducting a random sample is to try to minimize the bias that may be present in the voluntary results. The City has been experimenting with conducting random samples of the shapeyourcitypenticton.ca database in recent months. The database has over 5,000 active users who joined to participate in a wide range of initiatives.

To conduct this method, 1,780 active users were randomly selected to participate. They were issued an email with instructions and a link to a separate survey. A minimum of 356 responses were needed for the results to be accurate within plus-or-minus 5% at a 95% confidence level. This threshold was met with over 400 responses. The results gathered suggest there is a slight bias both for and against the bylaw in the voluntary survey results. They show noticeably stronger support (49%) and opposition (21%) to the bylaw when compared with the random results which showed less support (42%) and opposition (13%). Because the difference between the results exceeds the 5% margin of error, it suggests a bias may be present.

As we further develop this methodology, the City will be able to more easily gather a representative understanding of public opinion on a wide range of issues.



City of Penticton – Schedule ‘A’

Liquor Consumption (Okanagan Beach east of Power Street, Rotary Park, Okanagan Lake Park and Marina Way Park) Bylaw No. 2020-26

Date: _____

Corporate Officer: _____

Council Report

penticton.ca

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Bregje Kozak, Director of Recreation & Facilities
Subject: **Penticton Restart: Recreation & Culture Update**

File No:

Staff Recommendation

THAT Council receive into the record this report and accompanying presentation entitled 'Penticton Restart: Recreation & Culture Update', dated July 7, 2020.

Strategic priority objective

Mission: Penticton will serve its residents, businesses and visitors through good governance, partnership and the provision of effective and community focused services.

Background

On March 16, 2020, the City of Penticton closed down its recreational and cultural facilities due to the emerging COVID-19 pandemic. Since the initial closure of facilities, much progress has been made in the fight against COVID-19. British Columbia's quick response and phased re-start approach has proven to be successful, and we are now officially in Phase 3 of the BC Restart Plan.

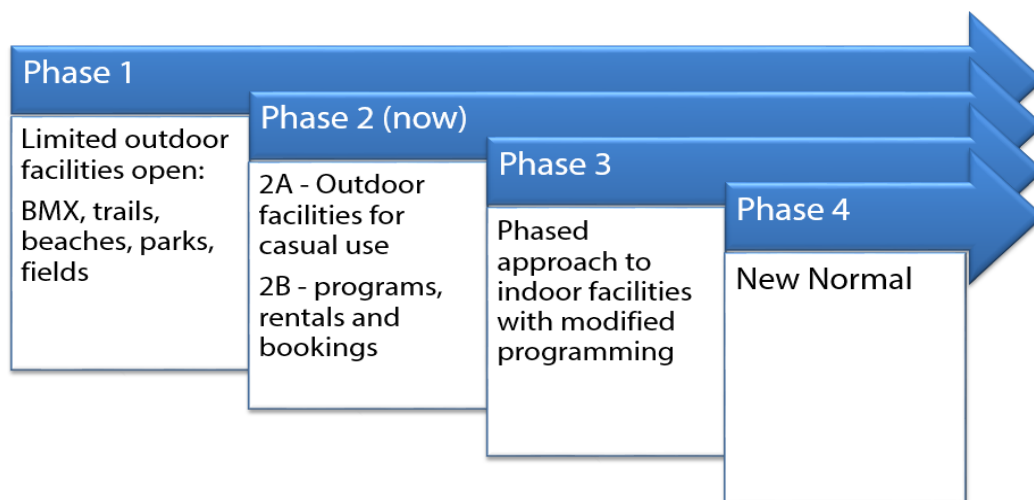
One of the sectors hit the hardest during this pandemic is the provision of recreational and cultural services, delivered through BC's Recreation and Parks sector. This sector focuses on two primary foundations:

- The health and well-being of individuals – physically, mentally, emotionally and creatively; and
- The health and well-being of communities – connecting people, including the most isolated, and helping them feel a part of something larger.

Never before has this mandate been more clearly valued and needed, and never before has this sector's role been more important. As people reach out for social connections, physical activity and general respite from self-isolation, we are seeing an increasing desire and demand to return to recreation and physical activity. This is true for Penticton as well. We have received countless emails, letters and messages with the communities' desires to return to outdoor activities and play, and to open up our indoor facilities including our arenas, fitness rooms, recreation programs and our pool.

Phase 2 of the Penticton Restart plan included opening all of our outdoor facilities for casual use, and is now slowly progressing to allow programs, bookings and rentals. We are working closely with local sports groups and organizations to allow some level of 'return to play' in our outdoor facilities.

Aligned with the BC Restart Plan, the City of Penticton has now moved into Phase 3 of our Recreation and Culture re-start plans, which will allow us to work towards further opening of our indoor facilities, with restrictions.



Re-opening will take time and will vary from site to site and service areas. How we deliver our services will require new and evolving practices and operations that will impact how our residents use our facilities now and into the future. As community safety is always our top priority, we will continue to take a slow, progressive approach to our re-opening plans ensuring that we meet all regulatory requirements of WorksafeBC, BCRPA, viaSport, Lifesaving Society and the Province.

The Council presentation will provide updates on services being offered and re-opening target dates for our main indoor recreational facilities including:

- Arenas
- Penticton Library
- Penticton Museum & Archives
- Cleland Theatre
- Community Centre (and related programming)

Financial implication

The intent for the phased re-opening approach is to provide high value, efficient services as a priority. Bookings, rentals and contracts are following the current fees and charges by-law and will continue to do so. However, some of the services, particularly at the community centre (pool and fitness room) will require a temporary fee amendment, to reflect the drastic change of service level from that contemplated in the fees and charges by-law. Staff will be coming back to Council at the July 21 meeting with further details and to request a temporary COVID-19 fees and charges amendment.

Analysis

Recreation and cultural services are highly desired in our community. With the extended closure of our facilities, there is a lot of demand and desire to get back to activities that stimulate us physically, mentally, emotionally and creatively. The devastating effects of the pandemic have changed how recreation will be delivered, now and into the future.

Just like BC's approach, we are planning a slow, phased re-opening approach for our indoor facilities. Each phase will be carefully planned, assessed and monitored prior to moving onto subsequent phases, with community safety always being the top priority.

Attachments

Attachment A – Penticton Re-start, Recreation & Culture Update (powerpoint presentation)

Respectfully submitted,

Bregje Kozak
Director, Recreation & Facilities

Concurrence

Chief Administrative Officer DvD

Penticton Re-opening Recreation & Culture Update

July 7, 2020



Penticton Re-opening Plan

Recreation/Culture/Entertainment

- One of the greatest areas of impact for municipalities
- Focusses on two primary foundations:
 - Health and well being of individuals
 - Health and well being of communities
- People are reaching out for physical activity, social connections and respite from self-isolation
- Seeing a lot of demand for opening of our facilities
- Re-opening will take time and will vary from site to site and service areas
- Will require new and evolving practices and operations



Phase 1

Limited outdoor facilities open:
BMX, trails, beaches, parks, fields

Phase 2

2A - Outdoor facilities for casual use
2B - programs, rentals and bookings

Phase 3 (now)

Phased approach to indoor facilities with modified programming

Phase 4

New Normal



Current Status

Outdoor Facilities:

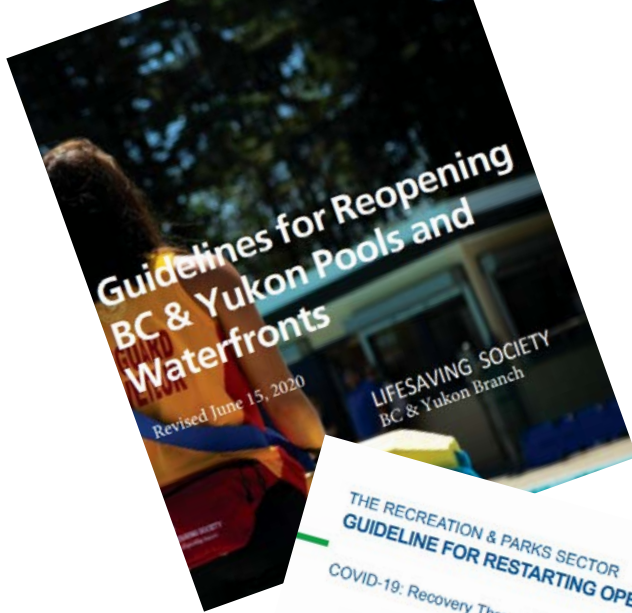
- Outdoor courts, parks, sports fields including casual use and group bookings
- Playgrounds, outdoor equipment and splash pads

Indoor Rentals/Facilities:

- Arena rentals currently available for select user groups
- Cleland Theatre – no bookings for the remainder of the year
- Penticton Library, online programming and circulation, anticipate August re-opening
- Museum & Archives – currently closed, anticipate August re-opening
- Community Centre – programs (including drop in sports), fitness room, pool and general public access



Community Centre



Community Centre:

Challenges:

- Building layout (multi-use facility)
- Capacity and volume
- Controlled public access
- Staff resourcing and efficiencies
- Financial considerations
- New operational policies & procedures
- Staff training & certifications
- 'Uncharted Territory'



Community Centre Programs

July & August

- Summer Day Camps (6-12 yrs)
- Summer Bugs (3-5 yrs)
- Youth Park Ambassadors
- Youth Skate Camps (6-13 yrs) and private skateboard lessons

September to December

- Bugaboo University
- Select group fitness classes (Zumba, Tai Chi/Chi Gong, Chair Yoga, etc)
- Select wellness programming
- Pre-Covid core programs such as childminding, gymboree, drop-in sports, public skating programs likely will not run



Community Centre – Fitness Room



Community Centre – Fitness Room

	Pre-Covid	Post-Covid
Patrons/day	250-300	60/day
Operating hours	7 days per week 15 hrs/day M-F, 12 hrs/day Sat & Sun 99 hours/week	Monday – Friday 8 hrs/day (5 x 1.25 hr time slots) 40 hours/week
Capacity	No appointments, general public access, no capacity limits	12 patrons per timeslot Reservation and payment online in advance
Service Levels	Personal training services available	No personal training No change rooms One fee, all memberships on hold
Staffing	No requirement for monitoring	Dedicated fitness room attendant

Community Centre – Fitness Room

Phased approach to increases in service levels:

- Increase daily operating hours, add weekends
- Increase capacity numbers per time slot
- Revert back to original single ticket admission fees (age based)
- Resume subsidy program or introduce new subsidy program
- Resume personal training and orientations
- Resume memberships – if appropriate service levels and access warrants



Community Centre – Pool



Community Centre – Pool

	Pre-Covid	Post-Covid
Patrons/day	1000/day	Work up to 140/day
Operating hours	7 days per week 15 hrs/day M-F 12 hrs/day Sat & Sun 96 hours/week	Monday – Friday 8 hrs/day 40 hours/week (timeslots)
Capacity	General public access, programs or drop-in, large pool capacities	No general public access. Booking system in place. Reservation and payment online in advance
Service Levels	Full service	Limited – drastically reduced services Change room access is permitted
Staffing	Full levels	No Reception/cashiers Reduced lifeguard staff due to reduced capacity

Community Centre – Pool

Stage 1 (anticipate sometime in August)

- Test groups
- Swim clubs
- Lifeguard Training
- By appt. only, one person per lane
- Limited leisure pool and main pool only (no hot areas)
- No slide or swing rope
- Not open on weekends



Stage 2

- Organized group rentals
- Increase operational hours
- Evaluate ability to increase capacity
- Evaluate opening of hot areas (hot tub, sauna, steam room)

Stage 3 & 4

- Add lower risk programming (ie. Private or semi-private swim lessons and Aquafit)
- Red Cross lessons of higher levels
- Continual expansion of operational hours and programs
- Increase capacity
- Resume to 'new normal'

Next Steps

- Continue working on the detailed plans
- Prepare infrastructure to support re-opening (facility assessments, booking software, building modifications)
- Monitor staging and adjust as needed
- Continue to follow new or changing direction from the Province and regulatory authorities
- Fee amendment request to Council on July 21
- Communication with user groups, public and Council



Staff Recommendation

THAT Council receive into the record this report and accompanying presentation entitled 'Penticton Restart: Recreation & Culture Update', dated July 7, 2020.



Council Report

penticton.ca

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Andrew Kemp, Economic Development Specialist

File No: 6750-20

Subject: Economic Recovery Task Force

Staff Recommendation

THAT Council support the recommendation from the Economic Recovery Task Force to continue the COVID recovery work within the existing Council Advisory Committee structure;

AND THAT Council direct staff to amend the terms of reference for the Economic Prosperity and Development Services Advisory Committee (EPDSAC) to include COVID recovery as an area of focus for the Committee;

AND THAT Council thank the members of the Economic Recovery Task Force and invite any members not already on an advisory committee to apply.

Strategic priority objective

Vision: A vibrant, innovative, healthy waterfront city focused on sustainability, community and economic opportunity.

Background

In response to the COVID-19 pandemic, the Economic Development Department convened an Economic Recovery Task Force. The Task Force was made up of key local businesses and community leaders with the intent of advising the City on potential policy changes and financial assistance ideas to provide relief to the community and assist in recovery from the pandemic over the short and medium term. Given the nature of the pandemic and the inability for normal advisory committee business to occur, the task force was seen as an effective way to have business and resident input in to the City's decision making process during the time of crisis.

The Task Force met twelve times from March until June and provided several recommendations that were all supported by and implemented by Council and staff.

At the last meeting of the Task Force, it was acknowledged that the pandemic and its economic impacts are far from over. The Task Force made, as a final recommendation the City, to continue the work within the existing Council advisory committee structure. Several of the Task Force participants are already on various

committee and those that don't have expressed a willingness to join any committee tasked with continuing on with the recovery efforts.

Analysis and Financial Implications

The Economic Recovery Task Force proved to be an effective way for the business community to provide input into the City's relief and recovery efforts. The Task Force provided valuable insights and feedback on many ideas and helped Penticton come through the worst periods of the pandemic in a strong position for recovery.

Now that the immediate response needs for the business community have been addressed and the City's Committees' have re-started, the discussion regarding the long term economic recovery related to Covid-19 can continue within the City's existing advisory committee structure.

Staff are also recommending that Council publically acknowledge the efforts and hours that were volunteered by the Task Force members.

Task Force Contributors

Frank Conci	Mark Mellisen	Eric Corneau	Andy Oakes
Diane Kereluk	Judy Richards	Lynn Allin	Jim Cressman
John Skinner	Larry Olsen	Katya Irwin	Lee Agur
Thom Tischik	Jonathan Bains	Charles Cornell	

Respectfully submitted,

Andrew Kemp
Economic Development Specialist

Concurrence

Director of Development Services <i>BL</i>	Chief Administrative Officer DyD
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Council Report

penticton.ca

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Kerri Lockwood, Director, People & Community Safety Strategy
Subject: **Community Safety & Security Update**

File No:

Staff Recommendation

THAT Council receive into the record the report dated July 7, 2020, titled "Community Safety & Security Update".

Background

At the outset of their term, Community Safety was identified as one of Council's top 3 priorities. Efforts continue to be undertaken to respond to this priority, with highlights provided herein.

Strategic priority objective

Community Safety: The City of Penticton will support a safe, secure and healthy community.

Overviews

Safety & Security Advisory Committee

At the regular meeting of Council held on September 17, 2019, Council approved the 2019 - 2022 Terms of Reference for the Safety and Security Advisory Committee.

The Committee held its first meeting in December 2019 and continued to affirm Members at Large until February 2020. At the Committee meeting held on January 20, 2020, the Chair was elected and the first full meeting with all voting members was held on February 24th.

At the March 16th meeting, the Committee endorsed the Mayor's March 3, 2020, notice of motion to increase Bylaw Enforcement services from April to September on Sundays at a budget increase of approximately \$30,000.

At the May 25th meeting, the Committee voted to support the work plan for the creation of a Crime Prevention Campaign for Penticton's Industrial Park. And at the June 15th meeting, the Committee agreed by consensus to have two (2) Members at Large act as the primary representatives on behalf of the Committee to work with City of Penticton staff on the Industrial Park Crime Prevention Campaign.

Bylaw

The new Bylaw Office opened to the public on June 15th. Present hours of operation are from 9am to 12pm.

At the end of June, Bylaw was actively monitoring eighteen (18) “hot spots”. These are primarily City property locations (e.g. parks), but a few are private sites. Monitoring consists of actively patrolling several times per day to reduce social nuisance behaviours and bylaw violations.

ATV Training took place the week of June 8th. Four (4) Bylaw Officers participated. The intent of the ATV training was to provide Bylaw Officers with an additional means of accessing difficult locations where we have problems and want to be able to conduct high visibility patrols to ensure the safety and security of the public and cleanliness of our parks and trails.

The city currently has 2 functioning ATVs shared between Parks and Works. At present, the Bylaw Department will share the two (2) City-owned ATVs with the Parks and Public Works departments.

The hiring of the Social Development Specialist role provided a partnership opportunity for Bylaw. From the outset of Adam Goodwin’s arrival in April, weekly meetings have taken place to discuss addiction, crime, homelessness, and mental illness occurring in the City and to share ideas to create inroads with the social service agencies and vulnerable sector of our Community.

RCMP Support

In the 2020 Budget, a Digital Media Field Triage/Informatics (DMFT) Support role was sought by the RCMP. Council heard about the requirement for this position to support the Detachment with the many IT initiatives being installed by the modernization of the Force and to increase solve rates for crimes involving digital media. This work was being performed by regular RCMP members on overtime.

This position was filled internally by a member of the Information Technology Department at the City.

The RCMP Detachment remains closed to the public. However, the public can speak with an Occurrence/Information Officer by using the phone located outside the front doors. Finger printing and criminal record checks continue by appointment.

Community Safety Steering Committee (internal)

At the end of 2019, an internal Community Safety Steering Committee was created to bring together Bylaw, RCMP, Fire, Health & Safety and Communications. At present, this group meets monthly to discuss matters occurring in the City and to coordinate safety and security measures.

The Committee’s Operating Terms include (among others):

- To Facilitate regular communication and cooperation between the City’s front-line community safety resources
- To identify and share ideas to the mutual benefit of members
- To elevate the City’s emergency notification process through aligning front-line community safety resources
- To provide regular updates to Council that share the work done/being done by the CSSC that is aimed at responding to the Council Priority of Community Safety

Engaging the Judiciary – Virtual Meeting

On June 25th, a letter was sent to the four (4) sitting judges working at the Provincial Court of British Columbia in Penticton. The judges have been invited to participate in a virtual meeting with Mayor and Council. This will be an opportunity for Council to engage with judges to gain a better understanding for local conditions and how Council can better work with the judiciary on community safety issues going forward. A date for the meeting has not been set.

Respectfully submitted,

Kerri Lockwood,
Director, People & Community Safety Strategy

Concurrence

<p>Officer In Charge Penticton South Okanagan Similkameen Regional RCMP Detachment</p> <p><i>B M H</i></p>	<p>Chief Administrative Officer</p> <p>DyD</p>
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Council Report

penticton.ca

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Adam Goodwin, Social Development Specialist

File No: 5080-01

Subject: Social Development Update

Staff Recommendation

THAT Council receive into the record the report dated July 7, 2020 titled "Social Development Update".

Strategic priority objective

- **Vision:** A vibrant, innovative, healthy waterfront city focused on sustainability, community and economic opportunity.
- **Mission:** Penticton will serve its residents, businesses and visitors through good governance, partnership and the provision of effective and community focused services.
- **Community Safety:** The City of Penticton will support a safe, secure and healthy community.

Background

During the 2020 budget process, City Council approved the creation of the Social Development Specialist role, with the intent of having a dedicated staff member focused on improving the social infrastructure of the community. The position was filled on April 7, 2020 and initially reporting directly to the Emergency Operations Centre to support the COVID-19 pandemic response. It has since begun broadening focus on non-emergency related matters. This is the role's first update to City Council.

Emergency Operations Centre

With the support of other governments and partners, the Social Development Specialist's main responsibilities in April and May 2020 were related to the functioning of the City's Emergency Operations Centre (EOC). As the Social Services Officer, and Liaison Officer – BC Housing and Interior Health, the role helped the City respond to numerous requests and advocacy for support, with some immediate successes. For example, rather than housing the City's vulnerable population in congregate encampments as in other cities and requested by Interior Health, the role advocated and worked with other local agencies to house individuals in motels and for supports to focus on ending the individual's experience with homelessness. This has led to the shift of many to more stable housing options, who otherwise would likely be homeless.

Another project the role focused on was senior's isolation during the pandemic. Data suggested that some older adults were experiencing increased vulnerability due to the COVID-19 pandemic (e.g., increase in social isolation, difficulty getting healthy food). In response, the role was able to facilitate some capacity building to support the Penticton Seniors' Community Action Committee's initiatives for BC Seniors Week (e.g., virtual tea).

Working in the crisis mode created by the pandemic has accelerated the integration of the role into the community and fast-tracked the relationship building critical to the role. To continue seeing some of the outcomes achieved during the COVID-19 pandemic, the role will continue to advocate for a coordinated community response and ensuring investments are closely aligned to the community's social goals.

Upcoming Work Plan

Over the coming weeks, the Social Development Specialist will continue to transition from an EOC focus to be more aligned with the work plan discussed during the 2020 budget. This work includes:

- Project managing six different consultants and projects (all with external funding): 1) age friendly assessment; 2) child care assessment; 3) meaningful daily activities through employment; 4) Edmonton Avenue child care project; 5) food system; and, 6) youth homelessness (in partnership with the Foundry).
- Public and internal communication and education, including the development of a social development webpage hosted on the City's website (penticton.ca).
- Regular action planning with the Director, People and Community Safety Strategy and Bylaw Services Supervisor around addiction, crime, homelessness, and mental illness. For example, meetings have been requested with various components of the federal and provincial justice systems. This includes with the federal and provincial Crown Counsels, justices from the courts, and corrections/remand. Furthermore, actions are identified when businesses contact the City with concerns about loitering, or substance use debris/sharps on their property.
- Representing the City's position on the following committees/groups: 100 More Homes; Built for Zero Canada; City of Penticton's Safety and Security Advisory Committee; Community Action Team; local government primary care engagement workshops; and Regional District of Okanagan-Similkameen regional childcare planning.
- Representing the City's position with the following partners (semi-regularly scheduled meetings): BC Housing, federal government and partner groups, Interior Health, Province, and RCMP.
- Emerging opportunities (e.g., working with the Penticton Industrial Development Association on community safety and well-being).

Social Well-Being Indicators

As a part of the role's work, social well-being indicators will be monitored to measure progress and performance of social infrastructure and will be periodically shared with Council. These indicators will include information on education, health, housing, poverty, and social connection. The information is consolidated from various sources (e.g., Community Data Program, community partners, governments, not-for-profit agencies). The most current table is attached to this report as Attachment A.

Staff recommendation

There are many initiatives in progress in Penticton that will contribute to positive social well-being. Taking a coordinated and strategic approach will increase the likelihood that the community's social goals will be achieved. It is recommended that Council receive this report for information.

Attachments

Attachment A - Social Well-Being Indicators

Respectfully submitted,

Adam Goodwin
Social Development Specialist

Concurrence

Director, Development Services <i>BL</i>	Director, People and Community Safety Strategy <i>KL</i>	Chief Administrative Officer DyD
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Attachment A
Social Well-Being Indicators

Goal	Data / Trends	Notes
Education (early childhood)	Approximately half of pre-COVID spaces are open, of which most are full	Early childhood education. Updated data will be available through the child care assessment currently in progress.
Health and Basic Needs	Over 1,000 clients per year in out-patient programs	Substance Use Addiction Treatment
	Pentictonites have access to 26 in-patient treatment programs	
Housing	40	Number of individuals experiencing unsheltered homelessness*
Poverty	8.3%	Of families with children aged 0 to 5 years with a couple
	41.4%	Of families with children aged 0 to 5 years with a lone male parent
	76.7%	Of families with children aged 0 to 5 years with a lone female parent
Social Connection	15% increase	Requests for supports among older adults during COVID
	Technology-supported increases	Reports of some older adults feeling more connected (less isolated) due to technology

*From the 2018 Point in Time Homeless Count.



Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Nicole Capewell, Planner 1
Address: 813 Westminster Ave West

Subject: Temporary Use Permit PL2019-8515 (Renewal)

File No: RMS/813 Westminster Ave W

Staff Recommendation

THAT Council approve “Temporary Use Permit PL2019-8515 (Renewal)”, a permit to allow the use of ‘motor vehicle sales and rental’ for Lot 1 District Lot 2 Group 7 Similkameen Division Yale (Formerly Yale-Lytton) District Plan 13891, located at 813 Westminster Ave West, for a three-year period;

AND THAT staff be directed to issue “Temporary Use Permit PL2019-8515 (Renewal)”.

Strategic Priority Objective

Mission: Penticton will serve its residents, businesses and visitors through good governance, partnership and the provision of effective and community focused services.

Proposal

The applicant is requesting a three-year renewal to Temporary Use Permit PL2019-8515, to allow for ‘motor vehicle sales and rental’ to operate on the subject property until 2023. Temporary Use Permit PL2019-8515 was originally issued by Council in May 2019.

Background

The subject property is zoned C8 (Vehicle Service Station) and designated by the City’s Official Community Plan as ‘Tourist Commercial’. The subject property is one of three lots that form part of the El Rancho Hotel Site. The proposed use will be situated on the 1,200m² parcel in the southeast corner of the site, which comprises the eastern half of the existing commercial building. Surrounding properties are a mix of residential, tourist commercial, commercial and public zones.



Figure 1 - Property Location Map

In June 2018, City Council approved Temporary Use Permit PL2018-8268 on the subject property to permit 'motor vehicle sales and rental' for a one-year period. This permit was set to expire on June 5, 2019. As a condition of this original permit, multiple driveway crossings were closed to enhance safety on the site.

In May 2019, a subsequent Temporary Use Permit PL2019-8515 was approved by City Council to continue to allow 'motor vehicle sales and rental' for another one-year period. This Temporary Use Permit was issued with an expiration date of June 5, 2020.

The applicant is now requesting a renewal of Temporary Use Permit PL2019-8515 for a three-year period. The extension will allow for the continued use of 'motor vehicle sales and rental' on the site, allowing the vehicle rental business to remain in operation.

Technical Review

The previous temporary use permits were reviewed by the City's Technical Planning Committee. As part of the process, it was identified that two of the driveways to the property should be closed to address safety concerns. Concrete curbs were installed to satisfy the requirements (Attachment 'C'). No other technical items were identified. If changes to the existing building are proposed, a building permit and development permit may be required.

Analysis

When considering an application for a temporary use permit, the Official Community Plan has established a set of guidelines for Council and staff to assess each request based on:

1. Compatibility with its Land Use Designation
2. Minimizing conflict with adjacent land uses
3. Avoiding impacts on environmentally-sensitive areas
4. Not creating a significant increase in the level of demand for services
5. Not permanently altering the site where it is located

Staff do not feel that the proposal is in conflict with any of the items listed above. No bylaw complaints have been received regarding the operation of the car rental business in the past two years of operation. The car rental use is more desirable than an empty building and lot. The property is a corner lot with adequate separation from adjacent uses. The continued temporary use will not permanently alter the site in any way.

Further, a proposal was introduced to Council on June 16, 2020, which indicates an opportunity for site development of the properties which make up the El Rancho Hotel site, including the subject property. Given that the site is being reviewed for further development, staff consider allowing the temporary use to continue for a three-year period would allow adequate time for public engagement on this proposal.

For the reasons listed above, it is recommended that Council support the issuance of a permit for a three-year period. Upon expiration of the three-year permit renewal, the property would be required to apply for a new temporary use permit, where staff would re-assess the development potential of the property before recommending approval for any further temporary use permits.

Alternate Recommendations

Council may feel that motor vehicle sales and rental is not a desirable use for this location, even on a temporary basis. If this is the case, Council should deny the Application. Alternatively, Council may consider that a three-year permit is not reasonable and chose to approve the permit for a lesser time period.

1. THAT Council approve "Temporary Use Permit PL2019-8515 (Renewal)" for a two-year period.
2. THAT Council approve "Temporary Use Permit PL2019-8515 (Renewal)" for a one-year period.
3. THAT Council deny "Temporary Use Permit PL2019-8515 (Renewal)".

Attachments

- Attachment A – Zoning Map
- Attachment B – Official Community Plan Map
- Attachment C – Photos of Subject Property
- Attachment D – Site Plan
- Attachment E – Letter of Intent

Respectfully submitted,

Nicole Capewell
Planner 1

Concurrence

Director <i>BL</i>	Chief Administrative Officer DvD
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Attachment A – Zoning Map



813 Westminster Ave West

Zoning Map



Legend

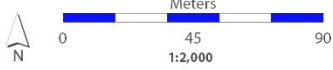
- Subject Parcel
- Parcel

Zoning

- R2 - Small Lot Residential
- RSM - Mobile Home Park Housing
- RD2 - Duplex Housing: Lane
- RM2 - Low Density Multiple Housing
- RM3 - Medium Density Multiple Housing
- RM4 - High Density Multiple Housing
- C3 - Mixed Use Commercial
- C7 - Service Commercial
- C8 - Vehicle Service Station
- CT1 - Tourist Commercial
- P1 - Public Assembly
- P2 - Parks and Recreation

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Monday, June 22, 2020
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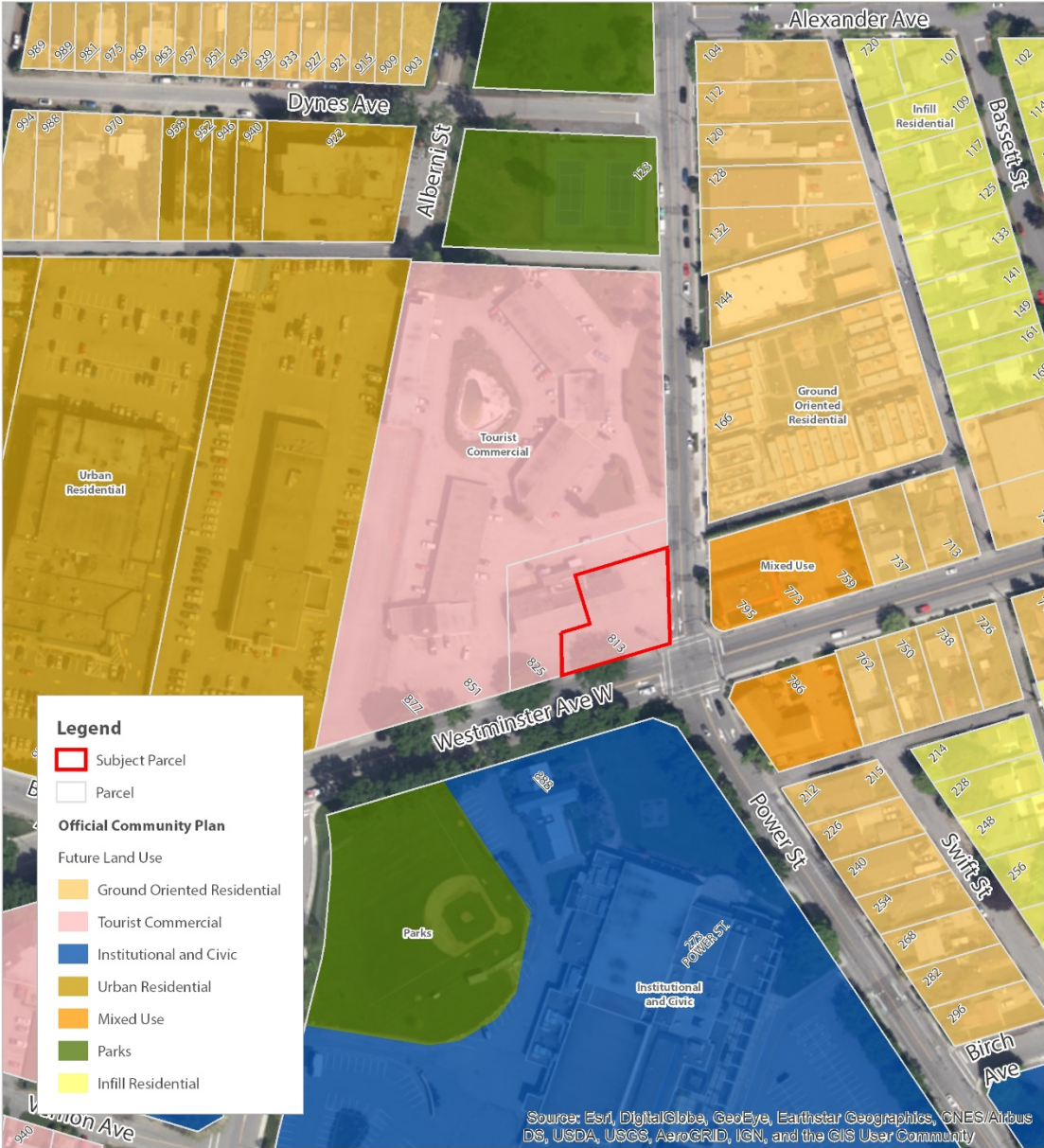
penticton.ca

Attachment B – Official Community Plan Map

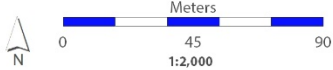


813 Westminster Ave West

Official Community Plan Future Land Use Map



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Monday, June 22, 2020
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Attachment C – Photos of Subject Property



Figure 2 - South View (from Westminster Ave W)



Figure 3 - Northeast View (from Power Street)



Figure 4 - Southwest View (from Westminster Ave W)



Figure 5 - South View (looking along Power Street)

Attachment D – Site Plan



Attachment E – Letter of Intent

Lindenhome Inc
2565 Whitworth Road,
West Kelowna, BC V4T 2K5
Tel 250-768-2565 Fax 250-768-2525
ds@mspiwest.com

June 16, 2020

Nicole Capewell
City of Penticton
Planning Department
171 Main Street
Penticton, BC V2A 5A9

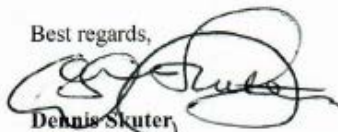
Dear Ms. Capewell,

I would like to apply for a Temporary Use Permit for 813 Westminster Ave. W., Penticton, BC. We are applying for a temporary use of this address for three (3) years as a car rental and lease agency. There will be no structural changes done to the buildings and the company will be using the building as well as the parking lot on the corner of Westminster Ave. and Power St.

A three (3) year extension is needed for this property based on the timeline needed to complete the OCP review and potential amendment, re-zoning application and development permitting that is needed before the redevelopment project can begin. This will also allow for stable use of the frontage property with a business that is inline with the needs of the adjacent Trade & Convention Center use until the redevelopment construction begins.

Any further information that is required can be obtained by using the email address above.

Best regards,



Dennis Skuter
PRESIDENT

Temporary Use Permit

Permit Number: TUP PL2019-8515 (Renewal)

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 1 District Lot 2 Group 7 Similkameen Division Yale (Formerly Yale-Lytton)
District Plan 13891
 - Civic: 813 Westminster Avenue West
 - PID: 009-140-263
3. This permit has been issued in accordance with Section 493 of the *Local Government Act*, to allow for the temporary use of the above noted lands for "motor vehicle sales and rental" as shown in the plans attached in Schedule 'A'.

General Conditions

4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 497 of the *Local Government Act*, this permit shall expire on **July 7, 2023**.
6. **This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

Angela Collison
Corporate Officer

DRAFT



813 Westminster Avenue West

Temporary Use Permit Area

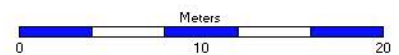


Legend

- TUP Area
- Parcels

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 May-11-18
 11:05:41 AM



Council Report

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Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Steven Collyer, Planner 1
Address: 2475 Skaha Lake Road

File No: RMS/2475 Skaha Lake Road

**Subject: Zoning Amendment Bylaw No. 2020-27
Development Permit PL2020-8759**

Staff Recommendation

THAT "Zoning Amendment Bylaw No. 2020-27", a bylaw to rezone Lot 2 District Lot 116 Similkameen Division Yale District Plan 9227, located at 2475 Skaha Lake Road from CT1 (Tourist Commercial) to C7 (Service Commercial), be given first reading and be forwarded to the July 21, 2020 Public Hearing;

AND THAT prior to adoption of "Zoning Amendment Bylaw No. 2020-27", a road dedication of 2.0m along the Skaha Lake Road frontage be registered with the Land Title Office;

AND THAT Council, subject to approval of "Zoning Amendment Bylaw No. 2020-27", approve "Development Permit PL2020-8759" for 2475 Skaha Lake Road, a permit to allow for the construction of a motor vehicle sales and rental business.

Strategic Priority Objective

Community Design: The City of Penticton will attract, promote and support sustainable growth and development congruent with the community's vision for the future.

Proposal

The applicant is proposing to construct a used car dealership associated with Penticton Toyota on the subject property. In order for the proposed development to proceed, the site needs to be rezoned from CT1 (Tourist Commercial) to C7 (Service Commercial) to permit the use 'motor vehicle sales and rental'. A Development Permit is also required as the use is considered within the Commercial and Mixed Use Development Permit Area.

Background

The subject property is located on the west side of Skaha Lake Road, directly adjacent to Pentiction Toyota (Figure 1). The subject property contains the Jubilee Motel, consisting of two buildings which are both proposed to be demolished.

The property is currently zoned CT1 (Tourist Commercial) and designated 'Commercial' by the Official Community Plan (OCP). The property is located in a primarily commercial area consisting of a mix of retail and service uses along the Skaha Lake Road corridor. Across the rear lane to the west is a low density residential neighbourhood.

The proposed development is associated with the Pentiction Toyota dealership adjacent to the north. A recent addition and building updates on that property have been completed within the last three years, and now the applicants are proposing to construct a motor vehicle sales and rental business on the subject property. The proposed use will be operated in conjunction with the Pentiction Toyota dealership (Attachment 'E').



Figure 1 - Location Map

Financial Implication

The City is responsible for the surveying and legal costs of taking the identified road widening, with no cost for the land itself.

Technical Review

This application was reviewed by the City's Technical Planning Committee (TPC). The TPC identified the requirement for a 2.0m road widening along the Skaha Lake Road frontage. Staff have included this requirement as a condition of the rezoning. Additional discussion and resulting comments were provided to the applicant regarding the landscaping and site features such as the secure bicycle parking area, which the applicant has addressed on updated plans. The Building Department provided BC Building Code requirements to the applicant for information when proceeding to the construction phase, and outlined that demolition permits will be required for the existing buildings on the property.

Development Statistics

The following table outlines how the proposed development meets the applicable Zoning Bylaw regulations:

	C7 Zone Requirement	Provided on Plans
Minimum Lot Width:	20 m	50.42 m
Minimum Lot Area:	650 m ²	3,066 m ²
Maximum Lot Coverage:	50%	14%

Vehicle Parking:	8 spaces (1 space per 50m ² net floor area)	10 spaces – including 2 small car spaces and 1 accessible space
Required Setbacks		
Front Yard:	4.5 m	29.5 m
Side Yard (north):	0 m	3.0 m
Side Yard (south):	4.5 m	+/- 18 m
Rear Yard (lane):	0 m	3.8 m
Maximum Building Height	12 m	9.6 m

Analysis

Rezoning

The OCP designation for the property is 'Commercial'. This land use designation supports a range of commercial uses including office, retail, goods and services (Figure 2). The proposed rezoning to C7 and development of a motor vehicle sales and rental business is consistent with the 'Commercial' land use designation.

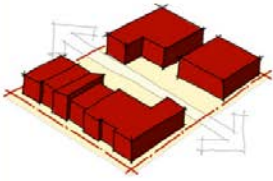
Land Use	Description	Building Type(s)	Uses	Height / Density	Zone(s)
 <p>Commercial</p>	Areas with a wide range of commercial uses including office, retail, goods and services.	<ul style="list-style-type: none"> Commercial (retail/office/service) buildings and mixed-use buildings (in specific areas, residential units limited to the second floor and above) 	<ul style="list-style-type: none"> Retail, Service Office Restaurant Grocery Store Residential (in specific zones) 	<ul style="list-style-type: none"> varies by zone 	<ul style="list-style-type: none"> C1 C3 C4 C7 C8

Figure 2 - Excerpt of Land Use Designations table from OCP.

Staff note that the proposed rezoning will allow for development that conforms to the following OCP Policies:

- OCP Policy 4.2.3.8 Require adequate levels of secure bike parking in new multi-family, mixed-use and commercial development.
- OCP Policy 4.2.6.5 Ensure developments in commercial, high-density residential and mixed-use areas are designed with adequate loading zones and access for goods delivery.
- OCP Policy 4.3.2.1 Encourage high quality commercial development by applying Development Permit Area Guidelines, updating and enforcing regulatory bylaws, and fostering initiatives that improve the quality and infrastructure of commercial areas.
- OCP Policy 4.3.5.3 Work with the business community and partners to increase capacity for business succession.

Staff consider the proposed use to be consistent with the adjacent motor vehicle sales and rental use (Penticton Toyota). The development is in keeping with the commercial nature of the Skaha Lake Road corridor and allows an expansion of an existing business in the City.

Given that there is adequate policy through the OCP to support the development, staff recommend that Council give First Reading of "Zoning Amendment Bylaw No. 2020-27" and forward it to the July 21, 2020 Public Hearing.

Development Permit

The proposed development is considered within the Commercial and Mixed Use Development Permit Area, which is intended to support high quality urban design and appropriate redevelopment of commercial areas. Unlike many commercial uses, the proposed use is auto-oriented and the design guidelines were reviewed with this in mind. Staff have completed an analysis of how the proposed development conforms to the development permit guidelines (Attachment 'D'). As shown within the analysis, the plans are aligned with the intent of the Commercial and Mixed Use Development Permit Area. The applicant has also provided an analysis of the development permit area guidelines with their submission (Attachment 'F').



Figure 3: Designer's rendering of proposed new building

The proposed development has been designed with the OCP policies and guidelines in mind and achieves the design objectives for this commercial area of the City. The proposed use is in keeping with the use on the adjacent property. As such, staff recommend that Council consider approval of Development Permit DP PL2020-8759, subject to the adoption of the rezoning.

Alternate Recommendation

Council may consider that the proposed rezoning is not suitable or desirable for this property. If this is the case, Council should deny first reading of Zoning Amendment Bylaw No. 2020-27.

1. THAT Council deny first reading of "Zoning Amendment Bylaw No. 2020-27" and deny "Development Permit PL2020-8759".

Attachments

- Attachment A – Zoning Map
- Attachment B – Official Community Plan Map
- Attachment C – Images of Subject Property
- Attachment D – Development Permit Analysis (staff)
- Attachment E – Letter of Intent
- Attachment F – Development Permit Analysis (applicant)
- Attachment G – Draft Development Permit PL2020-8759
- Attachment H – Zoning Amendment Bylaw No. 2020-27

Respectfully submitted,

Steven Collyer, MCIP, RPP
Planner 1

Concurrence

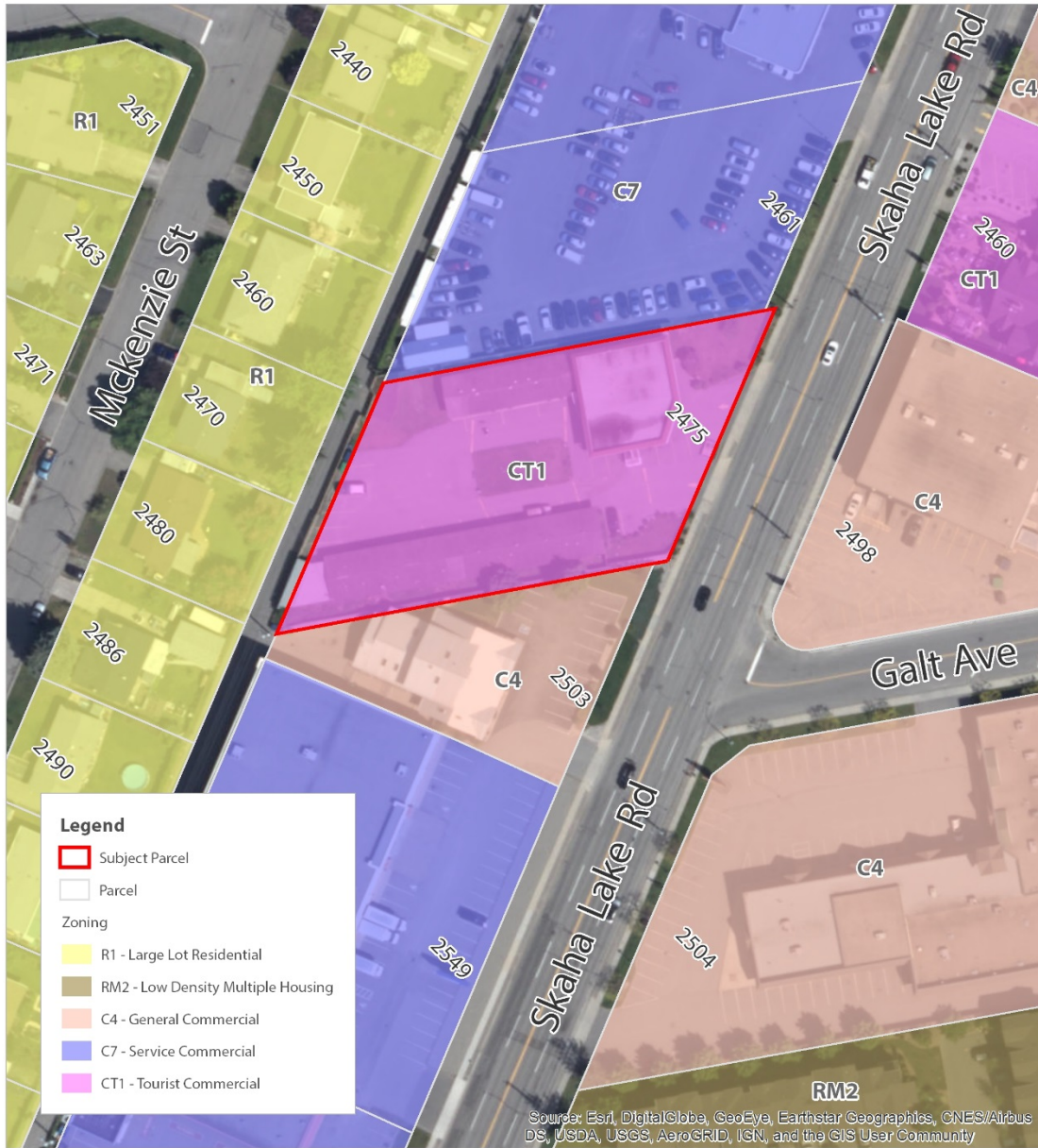
Director <i>BL</i>	Chief Administrative Officer DyD
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Attachment A – Zoning Map



2475 Skaha Lake Road

Zoning Map



Legend

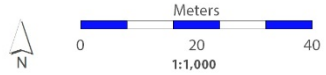
- Subject Parcel
- Parcel

Zoning

- R1 - Large Lot Residential
- RM2 - Low Density Multiple Housing
- C4 - General Commercial
- C7 - Service Commercial
- CT1 - Tourist Commercial

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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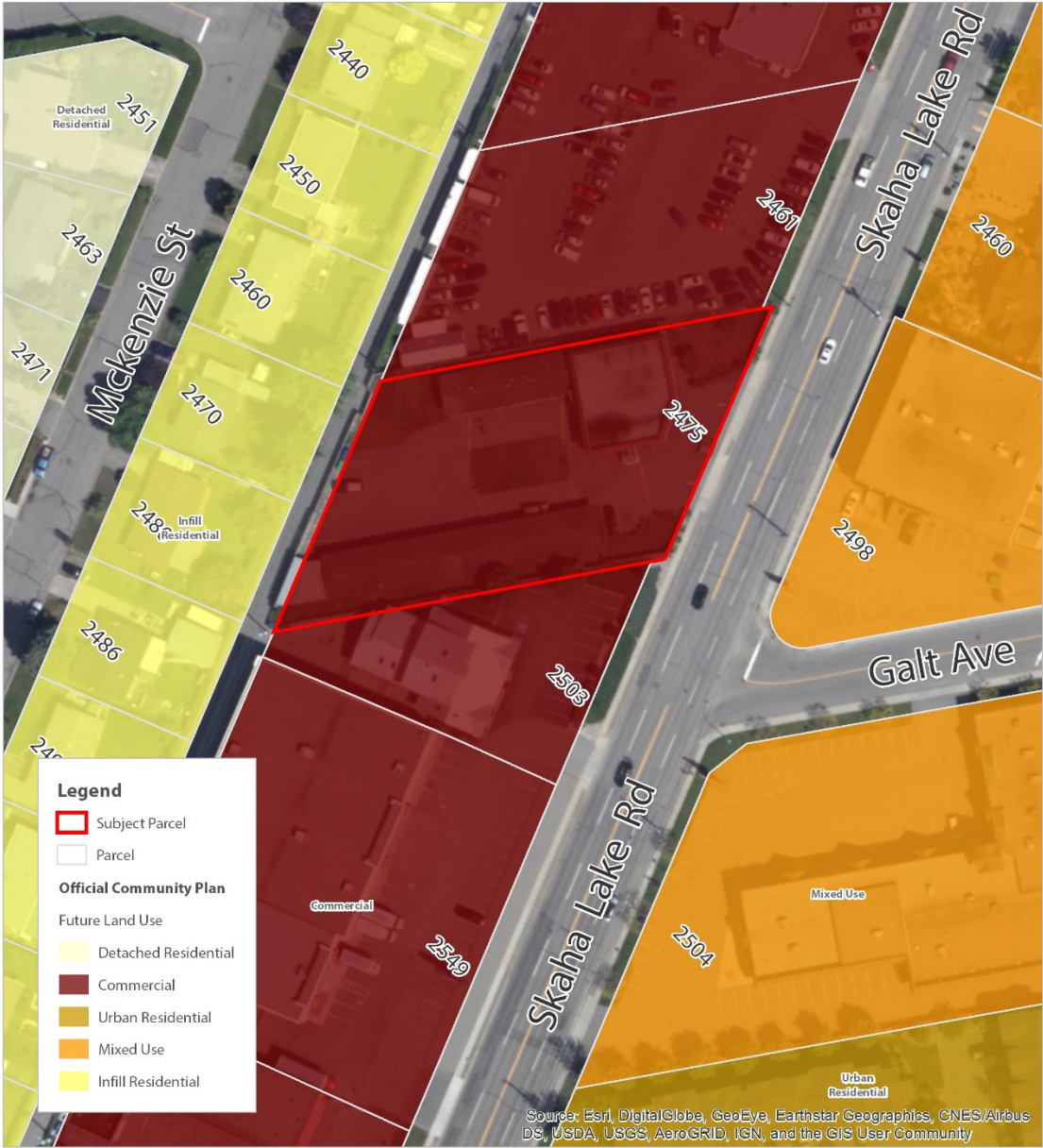
May-05-20
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Attachment B – Official Community Plan Map

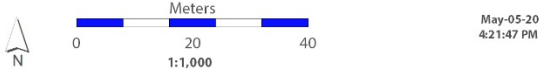


2475 Skaha Lake Road

Official Community Plan Map



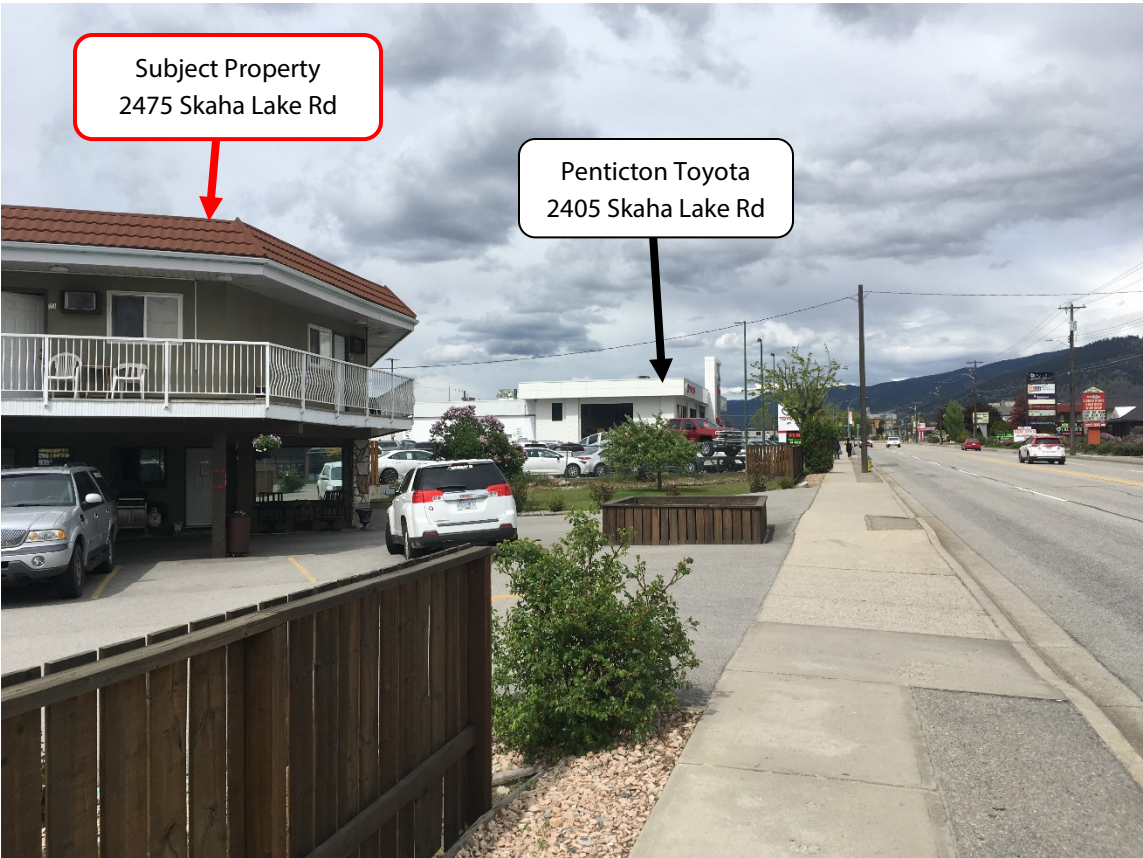
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May-05-20
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Attachment C – Images of Subject Property





Attachment D – Development Permit Analysis (staff)

Development Permit Analysis

The proposed development is located within the Commercial and Mixed Use Development Permit Area. The following analysis demonstrates how the proposal is aligned with the applicable design guidelines.

Guideline G1 Prior to site design, analysis shall be undertaken to identify significant on-site and off-site opportunities and constraints, including built and natural elements (e.g., structures, slopes and drainage, significant landscape features, etc.).

- The applicants have undertaken analysis of the site to assess whether the existing buildings could be reconfigured and converted for the proposed use. As outlined in the Letter of Intent, it was determined that conversion was not viable. The applicant is planning to share services with the existing Penticton Toyota property, including garbage collection. Existing perimeter fencing will remain and minimal site grading is anticipated.

Guideline G20 Designs should respond to Penticton’s setting and climate [...]

- The east facing windows on the front of the building provide passive solar light into the building, while the west façade has minimal windows to keep the interior cool during the afternoon sun. In addition, the white exterior of the building reduces the heat absorption effect.

Guideline G28 Entries should be visible and clearly identifiable from the fronting public street.

- The primary entrance is clearly visible from Skaha Lake Road. The building is designed to face the street with the orientation of large windows and business signage on the east façade.

Guideline G35 Tree planting [...]

- Five (5) trees are proposed along the Skaha Lake Road frontage in addition to a landscaping strip. The trees will be planted within the private property and provided with irrigation.

Guideline G38 Screening & Buffering

- The landscaping strip along the Skaha Lake Road side assist with buffering the parking area from the street. As a condition of the development permit, the applicant will provide landscaping on the islands in the parking lot to further reduce the visual impact of surface parking.

Guideline G42 Hardscapes [...]

- The light-coloured exterior finishing on the building assists with reducing the heat island effect.

Guideline G54 Mechanical/utility cabinets and transformer pads (units) shall be located at the rear of the property, behind the building.

- The proposed electrical transformer is located at the rear of the property. This location is adjacent to the lane to provide the City with easy access while also being out of public view from the street.

Guideline G58 Garbage/recycling areas and other similar structures should be located out of public view in areas that mitigate noise impacts and which do not conflict with pedestrian traffic.

- Garbage and recycling will be kept inside the proposed building. The applicant has indicated that collection will be associated with Penticton Toyota to the north, and handled by a private contractor.

Guideline G63 All plans should show intended fencing.

- Existing fencing is proposed to remain around the property. A new gate will be added along the rear property line to provide vehicle access to and from the lane.

Guideline CM10 Visual connection to the store interior maintained through at least 75% glazing along the primary store frontage. Windows shall be transparent and clear of obstructions (e.g., posters, decorative decals, reflective and highly tinted glass, etc.) looking onto display materials and/or active uses.

- The new building features large windows facing the street. This design allows for views from the street into the office and customer delivery area.

Guideline CM21 A signage and lighting program for commercial developments should be designed, with signs, lighting, and weather protection architecturally integrated from the outset. The signage and lighting plan should be provided with the Development Permit application.

- Signage on the proposed building is located to face primarily to the east, towards Skaha Lake Road, with a small sign on the south façade.

Attachment E – Letter of Intent



April 23, 2020

Giroux Design Group Inc.
214-18006 Bentley Rd.
Summerland, BC V0H 1Z3

City of Penticton
171 Main Street
Penticton, BC V2A 5A9

Re: 2475 Skaha Lake Rd. Rezoning & Development Permit Application

To City of Penticton Planning Department,

This letter is regarding the proposed rezoning and development of the property located at 2475 Skaha Lake Road. The property is currently zoned CT1 (Tourist Commercial) and is the location of the Jubilee Motel, an older single storey motel with a two storey office and residence at the front. The motel is in need of major renovations and does not contribute to the City's need for short term or vacation accommodations in a significant way. Original discussions with the owners involved renovating the existing buildings for use as a car sales office, however inspection of the buildings showed them to be in need of major and costly repair, so the plan was changed to demolish and rebuild.

The proposal is to rezone the property to C7 (Service Commercial) to allow for the construction of a new motor vehicle sales centre. This new building will be part of the neighbouring Toyota Car Dealership and will become the sales building and lot for their used vehicle sales. The location of the property is ideal as it allows the two dealerships to share services in an efficient way.

Thank you for considering our proposal.

Best regards,

A handwritten signature in black ink, appearing to read 'Tony Giroux', is written over a light blue horizontal line.

Tony Giroux **ASTTBC.RBD**
Owner/Registered Building Designer
Giroux Design Group Inc.

Attachment F – Development Permit Analysis (applicant)

2475 SKAHA LAKE ROAD: DEVELOPMENT PERMIT ANALYSIS

PEDESTRIAN CONNECTIVITY

The development is on a major road with pedestrian sidewalks on the street. The property will be graded to a gradual slope and will allow for easy access from the city sidewalk to the sales lot and sales building.

PARKING

Uncovered parking for staff and clients is conveniently located close to the sales building with drive-up access to the entry doors and service doors of the building.

DESIGN FOR CLIMATE

The building faces east and south east to Skaha Lake Road. The street facing side of the building is mostly glass, which will take advantage of the morning sun and winter sun exposure, whereas the other building faces are solid wall which will provide relief from the afternoon, evening and summer sun exposures. This will be a benefit for heating and cooling of the building while also providing an open and inviting showroom and work environment. The high ceilings and glass will give the interior of the building the feeling of being outside.

ORIENTATION & MASSING

As the building is part of the Toyota branded sales centres, it has been designed to conform to the Toyota standards for their dealership buildings. The glass walls facing Skaha Lake Road provide an inviting and fresh look to the building, and will complement the neighbouring commercial properties. The building is set back on the property to allow for sales vehicles to be parked in front of the building, with enough clearance behind the building to allow for access to the detailing and service bays. The building is a modest sized two storey building with attractive signage and colors that will not impose on the neighbouring properties. The building will be a major improvement to the neighbourhood as it will replace a tired and run down building with poor street appeal.

LANDSCAPING (ENHANCING THE URBAN FOREST)

A 3.0 meter landscape buffer runs along the front of the property and will tie into the City boulevard along Skaha Lake Road. The City's grass boulevard will be blended with the small portions of grass around the five new trees planted along the boulevard. The trees selected will match the trees planted along the existing Toyota dealership and will allow some cohesion between the landscaping of the two properties. Additionally the planting beds between the trees contain a mixture of ornamental grasses and plants that are drought resistant yet attractive. Along the parking lot side of the boulevard a 0.6 m strip of 2" river rock is provided to prevent the boulevard plantings and grass from being damaged by parked vehicles or customer foot traffic, while providing an attractive separation from the parking to the grass and plants.

WASTE MANAGEMENT

Garbage and recycling will be collected in a roll out bin or dumpster to be collected from the lane side as required.

FENCES

The south property line (facing Lindsay Veterinary Hospital) has an existing 6' wood privacy fence that provides adequate screening to the neighbouring property. Where a small retaining wall may be required along this property line, the existing fence will be preserved or replaced as required to maintain the screening. The west property line (along the lane) has an existing chain link fence that will be maintained or repaired as required, and a new 6.6 m vehicle gate will be added to allow access to the lane as needed. The north property line (facing Penticton Toyota) has an existing chain link fence that will remain and be repaired or replaced as required.

We believe the proposed project will fit nicely into the neighbourhood and will allow Penticton Toyota to expand it's business in the most efficient way.

Thank you for considering our proposal.

Best regards,



Tony Giroux **ASTTBC.RBD**
Owner/Registered Building Designer
Giroux Design Group Inc.

Development Permit

Permit Number: DP PL2020-8759

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 2 District Lot 116 Similkameen Division Yale District Plan 9227
 - Civic: 2475 Skaha Lake Road
 - PID: 003-217-183
3. This permit has been issued in accordance with Section 489 of the *Local Government Act*, to permit the construction of a motor vehicle sales and rental business as shown in the plans attached in Schedule 'A'.
4. In accordance with Section 502 of the *Local Government Act* a deposit or irrevocable letter of credit, in the amount of \$_____ must be deposited prior to, or in conjunction with, an application for a building permit for the development authorized by this permit. The City may apply all or part of the above-noted security in accordance with Section 502 of the *Local Government Act*, to undertake works or other activities required to:
 - a. correct an unsafe condition that has resulted from a contravention of this permit,
 - b. satisfy the landscaping requirements of this permit as shown in Schedule 'A' or otherwise required by this permit, or
 - c. repair damage to the natural environment that has resulted from a contravention of this permit.
5. The holder of this permit shall be eligible for a refund of the security described under Condition 4 only if:
 - a. The permit has lapsed as described under Condition 8, or
 - b. A completion certificate has been issued by the Building Inspection Department and the Director of Development Services is satisfied that the conditions of this permit have been met.
6. Upon completion of the development authorized by this permit, an application for release of securities (Landscape Inspection & Refund Request) must be submitted to the Planning Department. Staff may carry out inspections of the development to ensure the conditions of this permit have been met. Inspection fees may be withheld from the security in accordance with the City of Penticton Fees and Charges Bylaw (as amended from time to time).

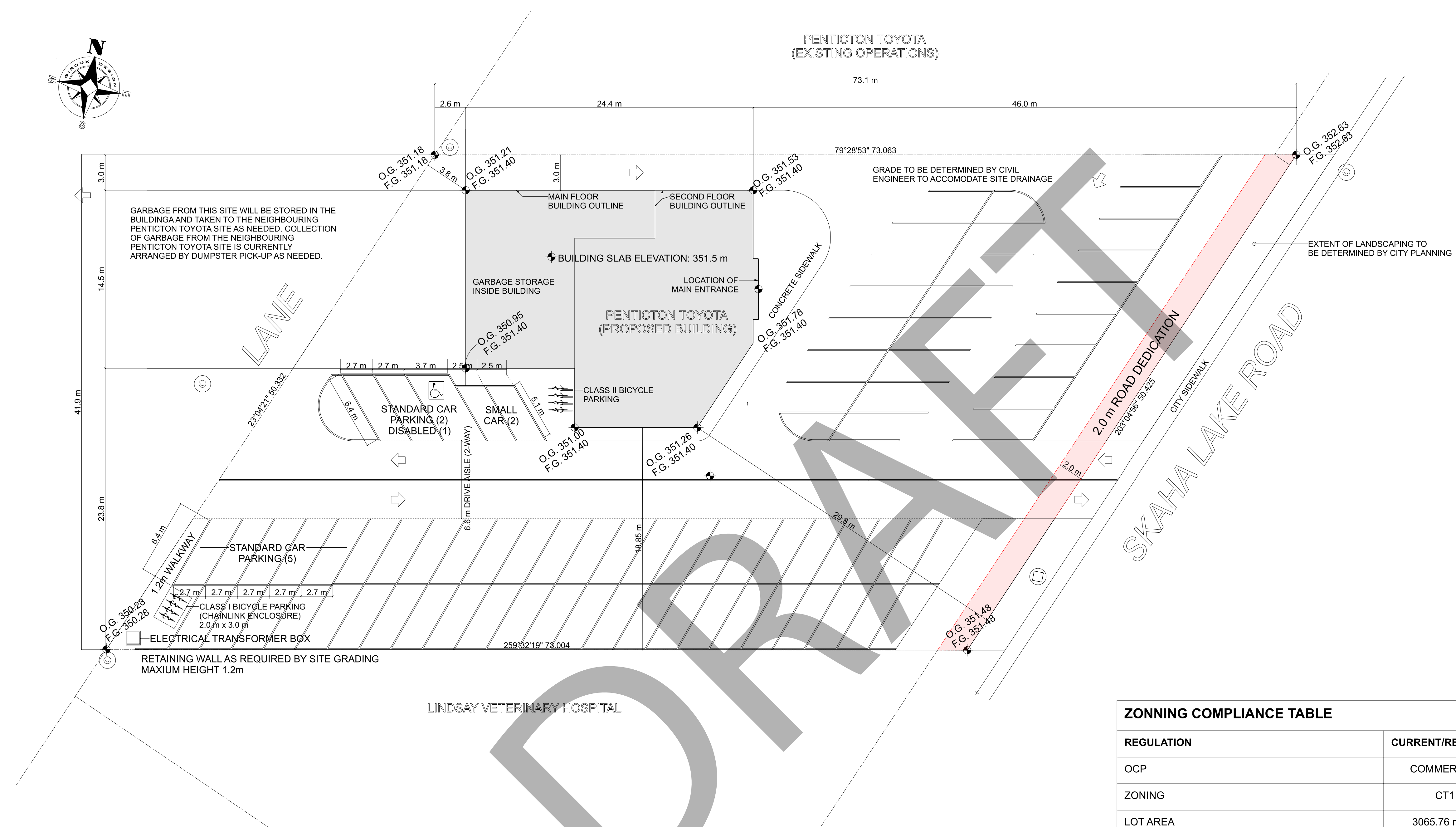
General Conditions

7. In accordance with Official Community Plan 2019-08, Design Guideline G38, the applicant shall provide landscaping on the islands in the parking lot.
8. In accordance with Section 501(2) of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
9. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
- 10. This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
11. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
12. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the _____ day of _____, 2020.

Issued this _____ day of _____, 2020.

Angela Collison
Corporate Officer



SITE PLAN
 SCALE: 1:200
 CIVIC ADDRESS: 2475 SKAHA LAKE ROAD, PENTICTON, BC
 LEGAL DESCRIPTION: LOT 2, DL 116, SDYD, PLAN 9227
 P.I.D.: 003-217-183

ZONING COMPLIANCE TABLE			
REGULATION	CURRENT/REQUIRED	PROVIDED ON PLANS	AMENMENT REQUIRED
OCP	COMMERCIAL	COMMERCIAL	NO
ZONING	CT1	C7	YES
LOT AREA	3065.76 m.sq.	3065.76 m.sq.	N/A
MAXIMUM LOT COVERAGE	50% (1532.88 m.sq.)	14% (425.95 m.sq.)	NO
MAXIMUM DENSITY	N/A	N/A	N/A
MAXIMUM HEIGHT	12 m	9.6 m	NO
MINIMUM FRONT YARD (EAST)	4.5 m	28.15 m	NO
MINIMUM INTERIOR SIDE YARD (NORTH & SOUTH)	0.0 m AND 4.5 m	3.0 m AND 18.81 m	NO
MINIMUM REAR YARD (WEST)	0.0 m	4.7 m	NO
PARKING SPACES (1 PER 50 m.sq.)	10	10 (8 + 2 SMALL CAR)	NO
BICYCLE PARKING (CLASS I)	4	4	NO
BICYCLE PARKING (CLASS II)	4	4	NO

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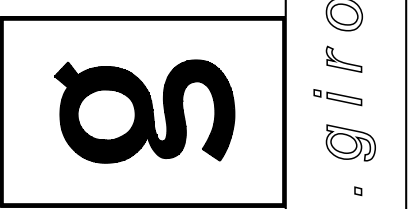
PENTICTON TOYOTA
 USED VEHICLE SALES CENTRE
 1475 SKAHA LAKE RD.
 PENTICTON, BC

DESIGN BY: JMG/JAG DATE: 6/05/20
 DRAWN BY: JMG/JAG REVISED:

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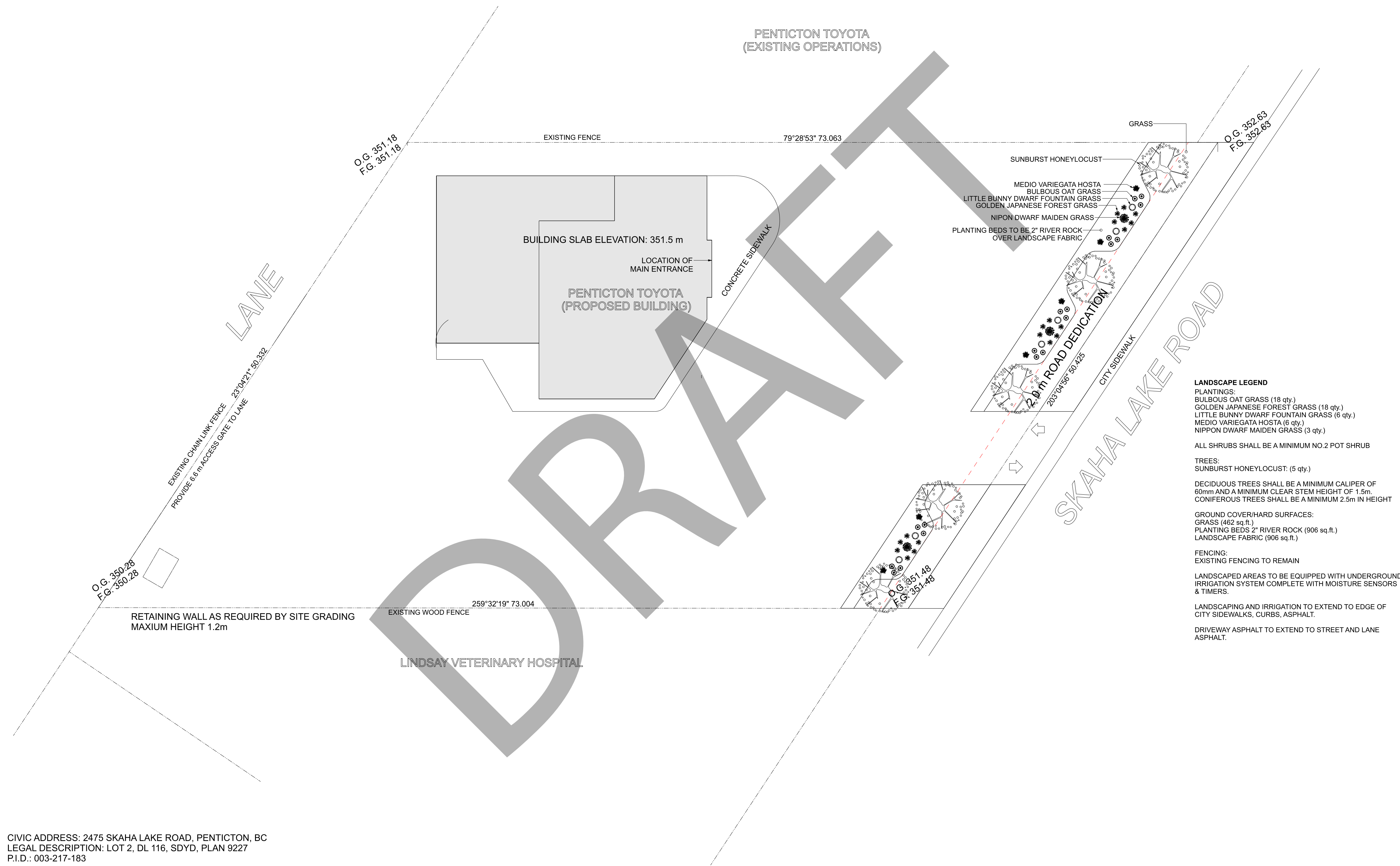


PLAN NO.
WP-5629

SHEET NO.
A1

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Proposed Site Plan



LANDSCAPE LEGEND

PLANTINGS:
 BULBOUS OAT GRASS (18 qty.)
 GOLDEN JAPANESE FOREST GRASS (18 qty.)
 LITTLE BUNNY DWARF FOUNTAIN GRASS (6 qty.)
 MEDIO VARIEGATA HOSTA (6 qty.)
 NIPPON DWARF MAIDEN GRASS (3 qty.)

ALL SHRUBS SHALL BE A MINIMUM NO.2 POT SHRUB

TREES:
 SUNBURST HONEYLOCUST: (5 qty.)

DECIDUOUS TREES SHALL BE A MINIMUM CALIPER OF 60mm AND A MINIMUM CLEAR STEM HEIGHT OF 1.5m.
 CONIFEROUS TREES SHALL BE A MINIMUM 2.5m IN HEIGHT

GROUND COVER/HARD SURFACES:
 GRASS (462 sq.ft.)
 PLANTING BEDS 2" RIVER ROCK (906 sq.ft.)
 LANDSCAPE FABRIC (906 sq.ft.)

FENCING:
 EXISTING FENCING TO REMAIN

LANDSCAPED AREAS TO BE EQUIPPED WITH UNDERGROUND IRRIGATION SYSTEM COMPLETE WITH MOISTURE SENSORS & TIMERS.

LANDSCAPING AND IRRIGATION TO EXTEND TO EDGE OF CITY SIDEWALKS, CURBS, ASPHALT.

DRIVEWAY ASPHALT TO EXTEND TO STREET AND LANE ASPHALT.

CIVIC ADDRESS: 2475 SKAHA LAKE ROAD, PENTICTON, BC
 LEGAL DESCRIPTION: LOT 2, DL 116, SDYD, PLAN 9227
 P.I.D.: 003-217-183

LANDSCAPE PLAN
 SCALE: 1:200

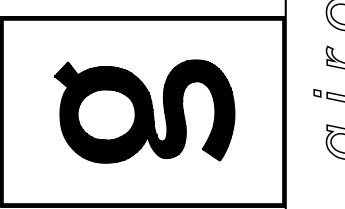
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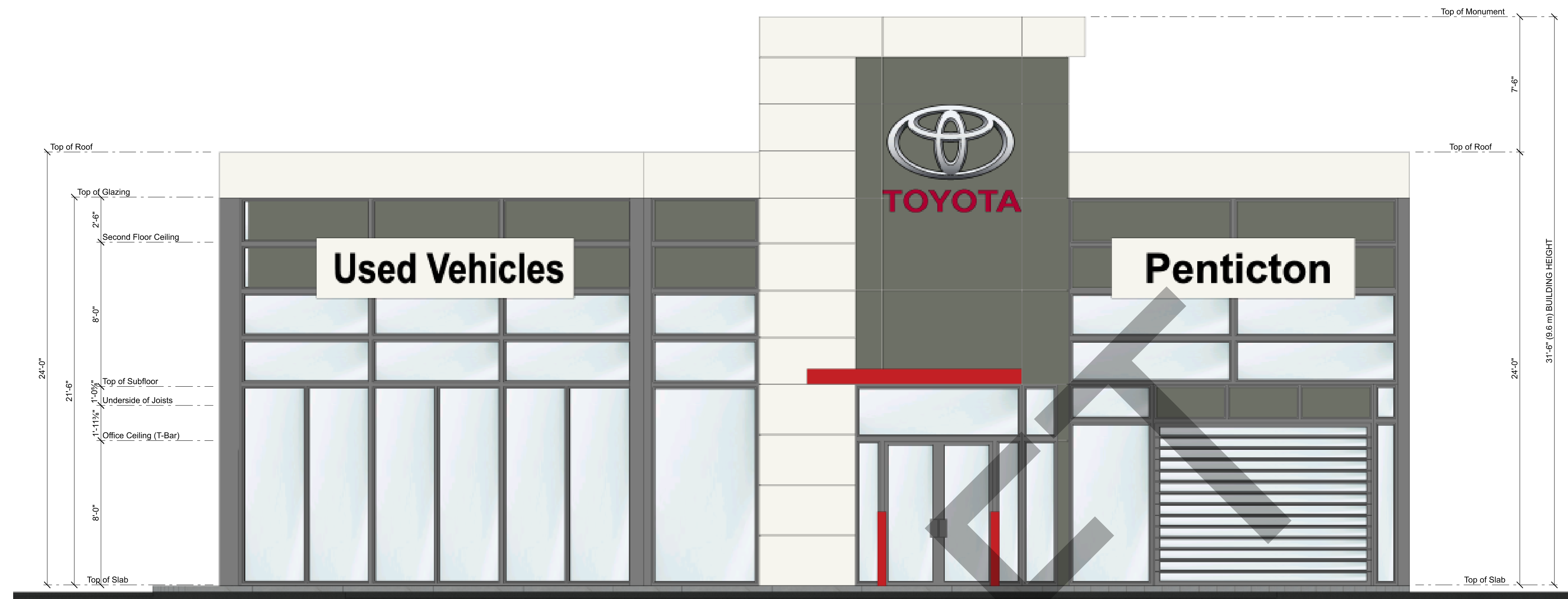
PLAN NO.
WP-5629

SHEET NO.
A3

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Landscape Plan

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FRONT ELEVATION (FACING EAST TO SKAHA LAKE ROAD)
SCALE: 1/4" = 1'-0"



RIGHT ELEVATION (FACING NORTH TO PENTICTON TOYOTA)
SCALE: 1/4" = 1'-0"

PENTICTON TOYOTA
USED VEHICLE SALES CENTRE
1475 SKAHA LAKE RD.
PENTICTON, BC

DESIGN BY: JMG/JAG DATE: 06/20
DRAWN BY: JMG/JAG REVISED:

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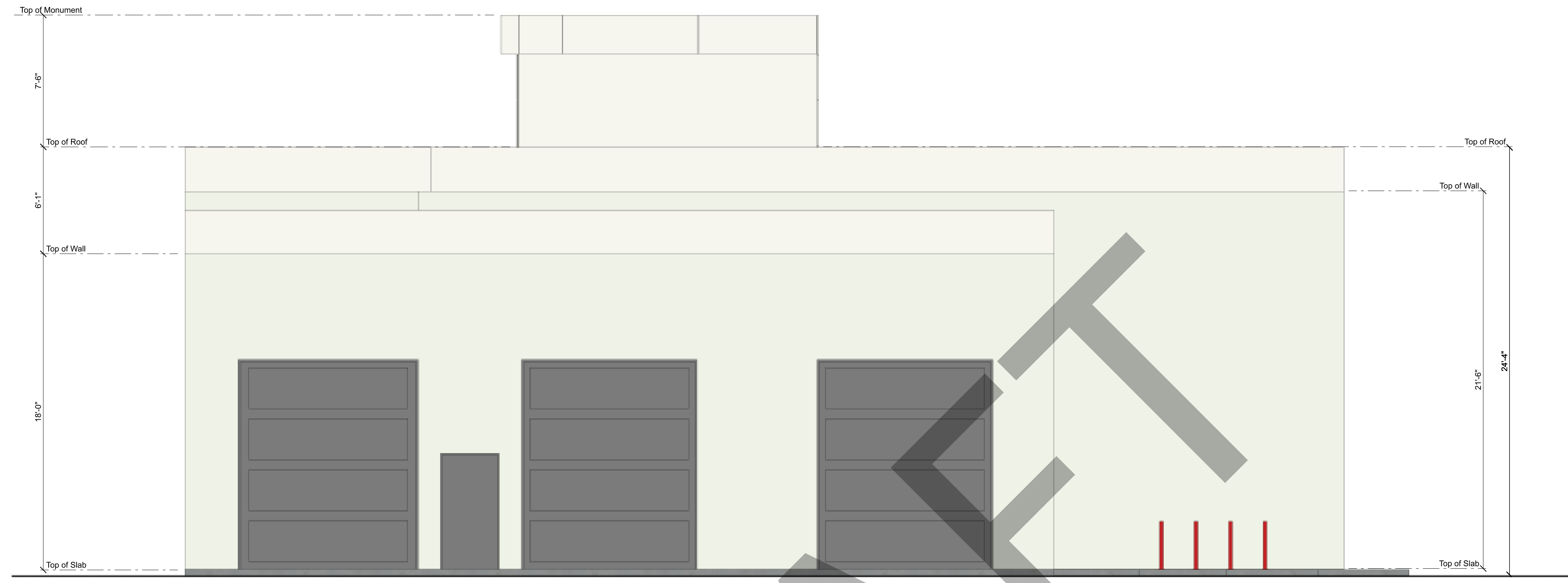


PLAN NO.
WP-5629

SHEET NO.
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Exterior Elevations (Front & Right)



REAR ELEVATION (FACING WEST TO LANE)
SCALE: 1/4" = 1'-0"



LEFT ELEVATION (FACING SOUTH TO LINDSAY VETERINARY CLINIC)
SCALE: 1/4" = 1'-0"

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Exterior Elevations (Rear & Left)

PENTICTON TOYOTA
USED VEHICLE SALES CENTRE
1475 SKAHA LAKE RD.
PENTICTON, BC

DESIGN BY: JMG/JAG DATE: 6/25/20
DRAWN BY: JMG/JAG REVISED:

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PLAN NO.
WP-5629

SHEET NO.
A7

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Bylaw No. 2020-27

A Bylaw to Amend Zoning Bylaw 2017-08

WHEREAS the Council of the City of Penticton has adopted a Zoning Bylaw pursuant the *Local Government Act*;

AND WHEREAS the Council of the City of Penticton wishes to amend Zoning Bylaw 2017-08;

NOW THEREFORE BE IT RESOLVED that the Municipal Council of the City of Penticton, in open meeting assembled, hereby ENACTS AS FOLLOWS:

1. **Title:**

This bylaw may be cited for all purposes as "Zoning Amendment Bylaw No. 2020-27".

2. **Amendment:**

2.1 Zoning Bylaw No. 2017-08 is hereby amended as follows:

Rezone Lot 2 District Lot 116 Similkameen Division Yale District Plan 9227, located 2475 Skaha Lake Road from CT1 (Tourist Commercial) to C7 (Service Commercial).

2.2 Schedule 'A' attached hereto forms part of this bylaw.

READ A FIRST time this	day of	, 2020
A PUBLIC HEARING was held this	day of	, 2020
READ A SECOND time this	day of	, 2020
READ A THIRD time this	day of	, 2020
ADOPTED this	day of	, 2020

Notice of intention to proceed with this bylaw was published on the __ day of ____, 2020 and the __ day of ____, 2020 in the Penticton Herald newspaper, pursuant to Section 94 of the *Community Charter*.

John Vassilaki, Mayor

Angie Collison, Corporate Officer

Rezone
2475 Skaha Lake Rd
From CT1 (Tourist Commercial)
To C7 (Service Commercial)



City of Penticton – Schedule ‘A’

Zoning Amendment Bylaw No. 2020-27

Date: _____

Corporate Officer: _____

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Nicole Capewell, Planner 1
Address: 127 Acacia Crescent
Subject: **Development Variance Permit PL2020-8777**

File No: RMS/127 Acacia Cres

Staff Recommendation

THAT Council approve “Development Variance Permit PL2020-8777” for Lot B District Lot 249 Similkameen Division Yale District Plan 36766, located at 127 Acacia Crescent, a permit to increase the maximum height of a retaining wall within a required yard from 1.2m to 1.68m;

AND THAT Council direct staff to issue “Development Variance Permit PL2020-8777”.

Strategic Priority Objective

Community Design: The City of Penticton will attract, promote and support sustainable growth and development congruent with the community’s vision for the future.

Proposal

The applicant is proposing to construct a retaining wall along the western property line. The retaining wall will be within the required side yard setback and have a maximum height of 1.68m. The applicant has applied for a variance as the proposed height exceeds the 1.2m maximum height permitted by the Zoning Bylaw. The retaining wall is proposed to allow for grades to be finished on the subject property and neighbouring property at 123 Acacia Crescent as construction is nearly complete for new single detached dwellings on each property.

Background

The subject property currently has a new single detached dwelling under construction and is nearing the final stages of development. A single detached dwelling is also under construction on the adjacent property at 123 Acacia Crescent.



Figure 1 - Property Location Map

Through the construction process, a significant grading change has occurred along the shared property line. As indicated in the applicant's letter of intent (Attachment 'C'), extensive discussions have taken place between both property owners, and they have failed to agree on a grading scheme. As a result, the property owner at 127 Acacia Crescent is requesting a variance to allow for a retaining wall with a height of 1.68m on their property next to the shared property line to account for the grade changes between the lots. The property owner of 123 Acacia Crescent has provided a letter of support (Attachment 'D') for the variance request, as they also have an interest in seeing the grade changes resolved through the use of a retaining wall.

Technical Review

This application was reviewed by the Technical Planning Committee. The retaining wall requires a Building Permit prior to construction. As such, Building Code requirements have been identified to the applicant and will be addressed as part of the building permit process.

Analysis

When considering a variance to a City bylaw, staff encourages Council to consider if there is a hardship on the property that makes following the bylaw difficult or impossible, whether approval of the variance would cause a negative impact on neighbouring properties, and if the variance request is reasonable. The applicant is requesting to increase the height of a retaining wall within a required yard from 1.2m to 1.68m.



Figure 2 - 2017 Image of Properties (showing previous structures)

Staff have reviewed the application and are recommending approval based on the following:

1. The neighbour most impacted by this variance request has provided a letter of support to staff.

The retaining wall will be constructed completely on 127 Acacia Crescent, along the western property line that is shared with 123 Acacia Crescent. This property would be the most impacted, as they are on the low side of the retaining wall. This neighbour has provided a letter of support, as they share an interest in resolving the grade change that exists between 123 and 127 Acacia Crescent as a result of new construction on both properties.

- 2. The requested variance is considered minor in nature.

The requested variance is asking for an increase of 0.48m (approx. 1'7") to the allowable height of a retaining wall within a required yard setback. Staff consider this to be a minor variance to the height of a retaining wall and do not anticipate any negative impacts on property owners in the surrounding area.

Staff consider the request to increase the maximum height of a retaining wall within a required yard from 1.2m to 1.68m reasonable in this instance. As such, staff are recommending that Council approve the Development Variance Permit and direct staff to issue the permit.

Alternate Recommendation

Council may feel that the variance request is unreasonable. If this is the case, Council should deny the Development Variance Permit. This would require both property owners to continue discussing possible solutions to the grade change that currently exists between the properties. Staff are not recommending this option, as in staff's opinion the variance request is reasonable.

- 1. THAT Council deny "Development Variance Permit PL2020-8777".

Attachments

- Attachment A – Zoning Map of Subject Property
- Attachment B – Official Community Plan Map of Subject Property
- Attachment C – Letter of Intent
- Attachment D – Letter of Support (123 Acacia Crescent)
- Attachment E – Image of Location of Proposed Retaining Wall
- Attachment F – Draft Development Variance Permit PL2020-8777

Respectfully submitted,

Nicole Capewell
Planner 1

Concurrence

Director <i>BL</i>	Chief Administrative Officer DvD
----------------------------------	---

Attachment A – Zoning Map of Subject Property

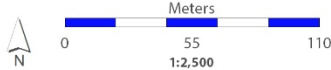


127 Acacia Crescent

Zoning Map



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Thursday, June 4, 2020
2:15:59 PM

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Attachment B – Official Community Plan Map of Subject Property

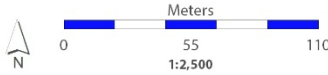


127 Acacia Crescent

Official Community Plan Map



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Thursday, June 4, 2020
2:15:12 PM



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Attachment C – Letter of Intent

May 26, 2020
City of Penticton
Development Services
171 Main Street
Penticton, BC
V2A 5A9

Letter of Intent 127 Acacia Crescent Retaining Wall Variance

A retaining wall at or near the property line separating 123 Acacia and 127 Acacia is required to complete construction on both lots. Extensive negotiations have failed to produce a mutually agreed upon grading scheme for both properties, and the property owner of 127 Acacia Crescent seeks a variance so they can build a retaining wall and complete construction in a timely manner.

A variance is required because a retaining wall built exclusively on 127 Acacia Crescent needs to be 1.68m (5' 6") out-of-ground in order to accommodate the final grade of 123 Acacia Crescent. Final grade at 123 Acacia is roughly 0.6 to 0.9 meters lower than expected (when building permits for both properties were issued), so the original retaining wall designed for 127 Acacia is no longer feasible. This revised design has been sealed by a professional structural engineer, will be covered under its own BCBC schedule B-C, and has been submitted as part of building permit BP011489.

Attachment D – Letter of Support (123 Acacia Crescent)

April 30th, 2020

Allen and Jocelyn Beckingham

123 Acacia Cr. Penticton, BC. V2A7L2

Re: Retaining wall between properties

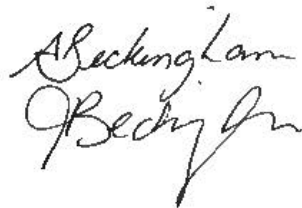
To: City of Penticton (Development Engineering Approval Staff),

Please accept this letter as our acknowledgement and approval of the creation of a retaining wall between our property and the property adjacent (127 Acacia Cr.). We have reviewed the drawings provided by Radec Group Construction and appreciate this process being expedited on behalf of the Piggins family.

Please feel free to contact us directly or to speak with our General Contractor, Joe Wackerbauer should any questions arise.

Thanks, Allen and Jocelyn

██████████ - Allen
██████████ - Joe



Attachment E – Image of Location of Proposed Retaining Wall



Development Variance Permit

Permit Number: DVP PL2020-8777

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot B District Lot 249 Similkameen Division Yale District Plan 36766
 - Civic: 127 Acacia Crescent
 - PID: 004-286-961
3. This permit has been issued in accordance with Section 498 of the *Local Government Act*, to vary the following sections of Zoning Bylaw 2017-08 to allow for the construction of a retaining wall, as shown in the plans attached in Schedule 'A':
 - a. Section 5.6.2.1: to increase the maximum height of a retaining wall within a required yard from 1.2m to 1.68m.

General Conditions

4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
- 6. This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

Angela Collison
Corporate Officer

DRAFT

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Steven Collyer, Planner 1
Address: 642 Haywood Street
Subject: **Development Variance Permit PL2020-8767**

File No: RMS/642 Haywood Street

Staff Recommendation

THAT Council approve “Development Variance Permit PL2020-8767” for Lot 4 District Lot 202 Similkameen Division Yale District Plan 447, located at 642 Haywood Street, a permit to reduce the minimum rear yard for a principal building from 6.0m to 4.37m, to allow for the construction of a two-storey addition onto the existing single detached dwelling;

AND THAT Council direct staff to issue “Development Variance Permit PL2020-8767”.

Strategic Priority Objective

Community Design: The City of Penticton will attract, promote and support sustainable growth and development congruent with the community’s vision for the future.

Proposal

The applicant is proposing to construct a two-storey addition onto the back of the existing single detached dwelling, replacing an existing carport. In order to proceed with the proposed addition, a variance has been requested to reduce the required rear yard setback from 6.0m to 4.37m. As such, this Development Variance Permit application has come forward.

Background

The subject property is located on the east side of Haywood Street, between Eckhardt Avenue East and White Avenue East (Figure 1). The property is zoned RD2 (Duplex Housing: Lane) and is designated ‘Infill Residential’ by the Official Community Plan (OCP). The property contains a single detached dwelling with vehicle



Figure 1 - Location Map

access provided from the rear lane. The rear lane dead ends to the north of this property, and connects with Haywood Street near the KVR trail to the south.

The proposed addition is in the same location as an existing carport (Attachment 'D'). The carport is proposed to be demolished. The addition will include a family room on the main floor, and a master bedroom with an ensuite on the second floor. A deck is proposed to project off the south side of the addition, with steps down to provide a connection to the rear yard and the parking space. Although the addition will have the same setback as the carport it replaces, the new construction requires a variance in order to proceed as new development is subject to the current Zoning Bylaw regulations.

Technical Review

This application was reviewed by the Technical Planning Committee. Staff worked with the applicant to determine a parking configuration on the property which meets City requirements. Building Code requirements for the proposed addition have been provided to the applicant.

Development Statistics

The following table outlines how the proposed development meets the applicable Zoning Bylaw regulations:

	R2 Zone Requirement (applicable to single detached dwellings in the RD2 Zone)	Provided on Plans (single detached dwelling with addition)
Minimum Lot Width:	13 m	14.02 m
Minimum Lot Area:	390 m ²	427.35 m ²
Maximum Lot Coverage:	40%	32%
Vehicle Parking:	2 spaces (1 existing) *	1 parking space
Required Setbacks		
Front Yard (Haywood Street):	4.5 m	6.91 m
Side Yard (north):	1.5 m	1.5 m
Side Yard (south):	1.5 m	4.57 m
Rear Yard (lane):	6.0 m	4.37 m – Variance Requested
Maximum Building Height	10.5 m	7.43 m
Other Information:	* Staff recognize the existing non-conforming number of parking spaces on this property. As such, one parking space is required on-site as opposed to two.	

Analysis

When considering a variance to a City bylaw, staff encourages Council to consider if there is a hardship on the property that makes following the bylaw difficult or impossible, if approval of the variance would cause a negative impact on neighbouring properties, and if the variance request is reasonable.

Staff have reviewed the application and are recommending approval based on the following reasons:

1. The proposed addition is in the same location as the existing carport, which limits the impact of the proposed addition.

The impact of the proposed addition is reduced because it is located in the same place as the carport, which has existed on the property for many years. This area of the property is already developed and the addition will not extend the building further to the rear lot line than the current situation.

2. The addition has been designed to preserve the privacy of neighbouring properties.

No windows are proposed on the north side of the addition where the building is closest to the neighbouring property (1.5m). Larger windows are located on the eastern elevation and face towards the rear lane. On the south façade, the addition is farther from the property line (4.57m) than on the north side and the windows are notably smaller on this façade than the side facing the lane.

3. No development is located on the opposite side of the lane.

The intent of the rear yard setback provision is to provide adequate private amenity space for property owners and to maintain sufficient separation between homes sharing a rear lot line. In this case, there are no dwellings or developed lots behind the subject property. If there were, there may be potential impacts on those rear neighbours from reducing the required rear yard setback, but that is not the case in this instance. The plans show amenity space in the rear yard is maintained with a proposed deck and open space, in addition to the parking pad.

4. The requested variance is considered minor in nature.

The proposed addition is 1.63m (5'4") closer to the rear property line than the minimum required 6.0m setback set out in the Zoning Bylaw. All other zoning provisions are met through the proposed development, as shown on the development statistics table. Other properties along this lane have detached garages which are located closer to the lane than this proposed addition, meaning it will not appear as the closest structure to the laneway once built (Attachment 'C').

The proposed addition is in keeping with the residential character of the existing neighbourhood and maintains the intent of the Infill Residential land use designation. In addition, the proposed development is aligned with the following OCP policy:

OCP Policy	Work with the development community – architects, designers and builders – to create
4.1.4.1	new residential developments that are attractive, high-quality, energy efficient, appropriately scale and respectful of their context.

Staff consider the request to reduce the rear yard setback from 6.0m to 4.37m is reasonable in this instance. As such, staff are recommending that Council approve the Development Variance Permit and direct staff to issue the permit.

Alternate Recommendation

Council may feel that the variance request is unreasonable. If this is the case, Council should deny the Development Variance Permit. This would require the applicant to amend their plans to come up with a design which meets the Zoning Bylaw regulations. Staff are recommending against this option, as in staff's opinion the variance request is reasonable.

1. THAT Council deny "Development Variance Permit PL2020-8767"

Attachments

- Attachment A – Zoning Map of Subject Property
- Attachment B – Official Community Plan Map of Subject Property
- Attachment C – Images of Subject Property
- Attachment D – Letter of Intent
- Attachment E – Draft Development Variance Permit PL2020-8767

Respectfully submitted,

Steven Collyer, MCIP, RPP
Planner 1

Concurrence

Director <i>BL</i>	Chief Administrative Officer DyD
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Attachment A – Zoning Map of Subject Property



642 Haywood Street

Zoning Map



Legend

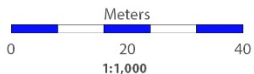
- Subject Parcel
- Parcel

Zoning

- R2 - Small Lot Residential
- RD1 - Duplex Housing
- RD2 - Duplex Housing: Lane
- RM2 - Low Density Multiple Housing
- P2 - Parks and Recreation

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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May-11-20
11:14:52 AM



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Attachment B – Official Community Plan Map of Subject Property

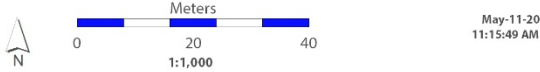


642 Haywood Street

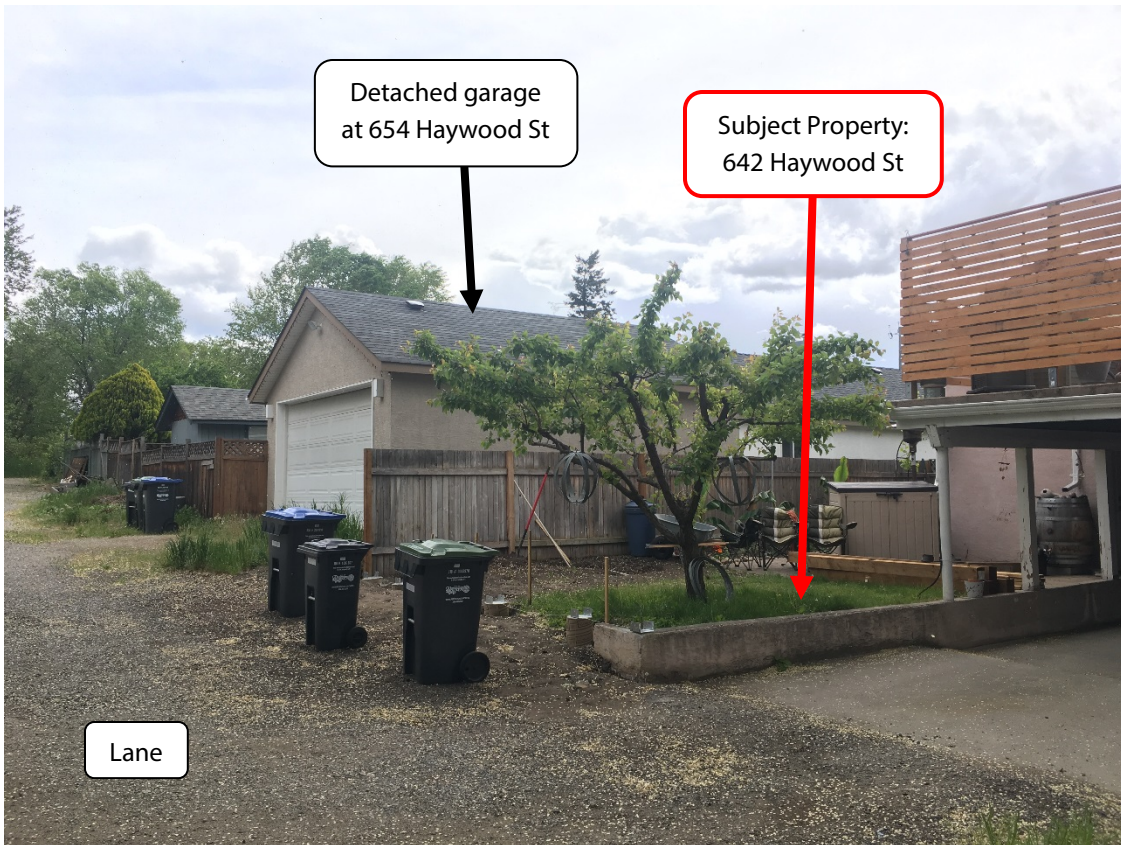
Official Community Plan Map

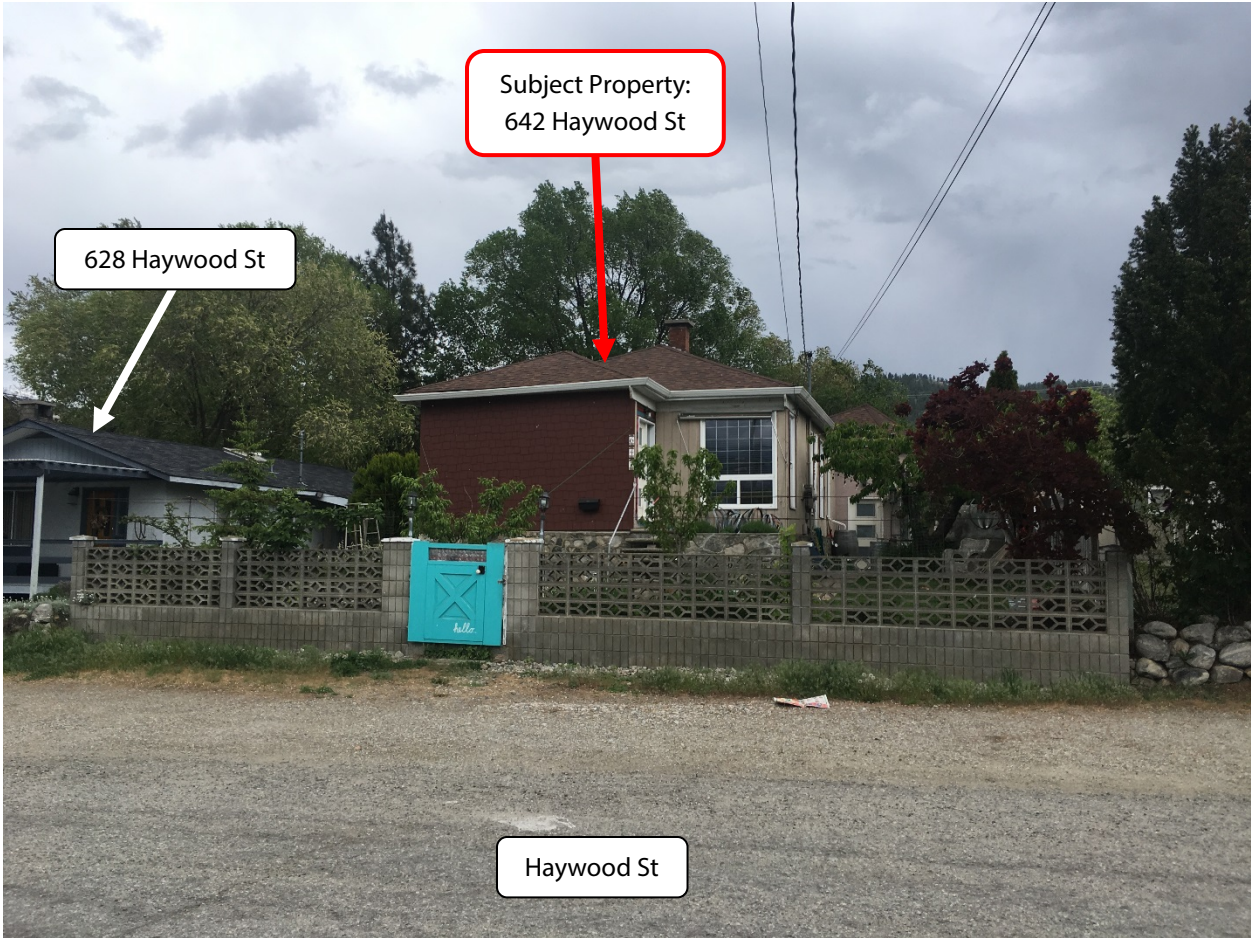


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Attachment C – Images of Subject Property





Attachment D – Letter of Intent

Catherine Davison
642 Haywood St
Penticton BC V2A 4W7

7 May 2020

To Mayor and Council,

This letter of intent is in support of my application for a variance to the rear yard set-back of

642 Haywood St, Lot 4 Blk 27 DL 202 SDYD PLAN 447

The intention is to remove the existing rear carport, and deck of 387 sq feet and build a 2 story addition, (387 square ft on each level, proposed building height 7.43m), on the existing foot print of the removed structure.

My current home is built on RD2 zoned lot (with R2 zoning regulations applying). The rear set back regulations is at 6.0m to lane. There is an existing lane with Government Street directly adjacent. The current structure (attached carport) comes to the set back at 4.37metres. I would like to apply for a reduction in the rear setback from 6.0 to 4.37m.

In relation to this application I would ask the city to consider is:

- (1) the addition will be sitting on the existing footprint of the current structure on the lot
- (2) the rear set back abuts an alley, with no housing on the opposite side and thus creates no undue burden on any rear neighbouring property
- (3) the proposed style and structure of the new addition will greatly enhance the current property, new siding and finishing will be included on the existing house
- (4) the proposed project would be an improvement to the neighborhood and result in an overall increase in property value and tax base created by improvement.

In consultation with the City of Penticton planning department it was communicated that the one existing parking stall was sufficient on my plan.

Thank you for your consideration.

Respectfully submitted



Catherine Davison

Development Variance Permit

Permit Number: DVP PL2020-8767

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 4 Block 27 District Lot 202 Similkameen Division Yale District Plan 447
 - Civic: 642 Haywood Street
 - PID: 012-318-515
3. This permit has been issued in accordance with Section 498 of the *Local Government Act*, to vary the following sections of Zoning Bylaw 2017-08 to allow for the construction of an addition onto the existing single detached dwelling, as shown in the plans attached in Schedule 'A':
 - a. Section 10.2.2.7.i: to reduce the required rear yard for a principal building from 6.0m to 4.37m.

General Conditions

4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
6. **This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

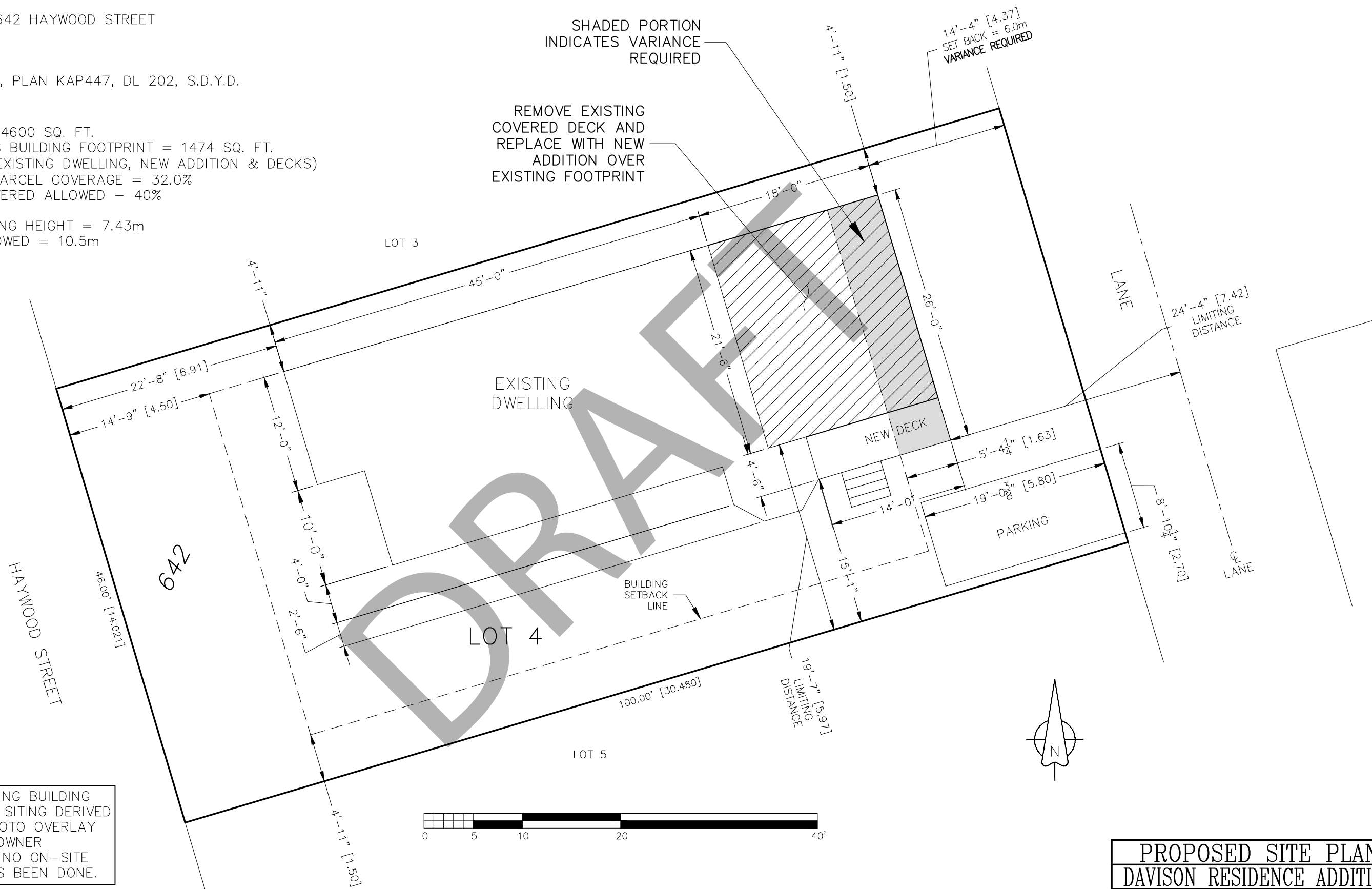
Angela Collison
Corporate Officer

DRAFT

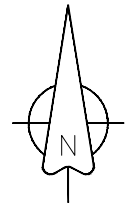
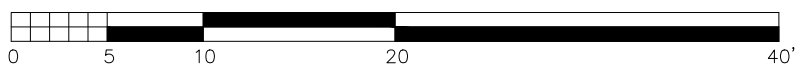
CIVIC ADDRESS: 642 HAYWOOD STREET
FOLIO: 06754-000
PID: 012-318-515
LOT 4, BLOCK 27, PLAN KAP447, DL 202, S.D.Y.D.

ZONING RD2
PARCEL AREA = 4600 SQ. FT.
PROPOSED GROSS BUILDING FOOTPRINT = 1474 SQ. FT.
(COMBINED EXISTING DWELLING, NEW ADDITION & DECKS)
PROPOSED NET PARCEL COVERAGE = 32.0%
MAX PARCEL COVERED ALLOWED - 40%

PROPOSED BUILDING HEIGHT = 7.43m
MAX HEIGHT ALLOWED = 10.5m



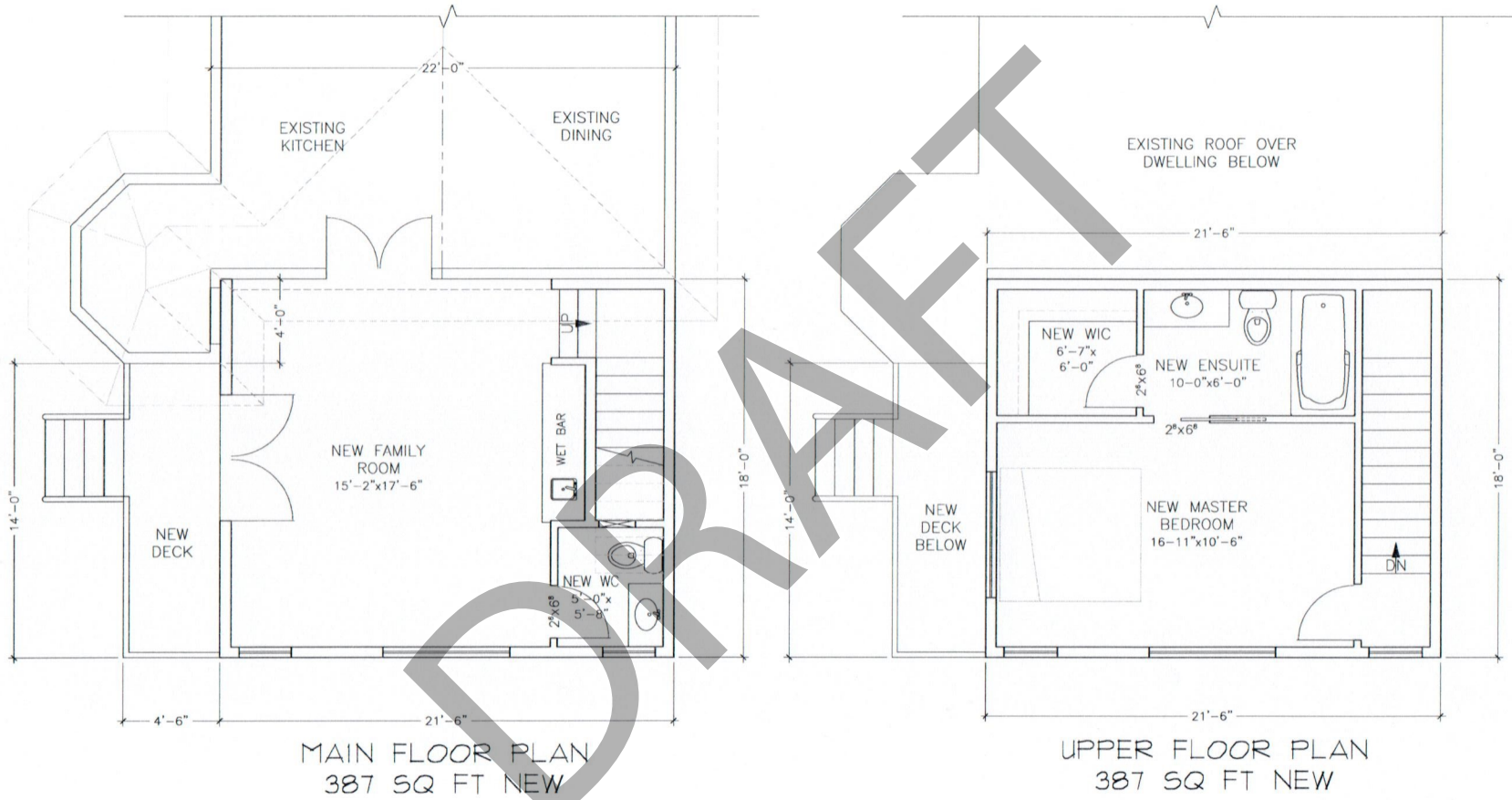
NOTE: ALL EXISTING BUILDING DIMENSIONS AND SITING DERIVED FROM AERIAL PHOTO OVERLAY COMBINED WITH OWNER PROVIDED DATA. NO ON-SITE VERIFICATION HAS BEEN DONE.



ISSUED FOR VARIANCE APPLICATION

AZTECH DRAFTING SERVICES
496 Van Horne St. Penticton, B.C.
Phone: 250-492-3344 e-mail: service@aztechdrafting.com

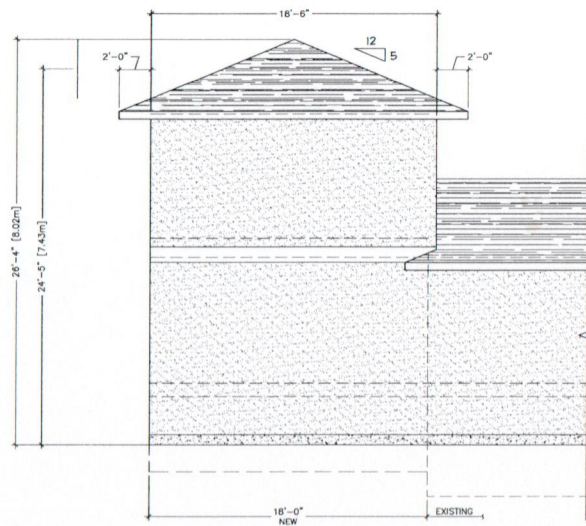
PROPOSED SITE PLAN	
DAVISON RESIDENCE ADDITION	
642 HAYWOOD STREET PENTICTON BC	
DRAWN BY: MBW	DATE: JUN 16/20
DESIGN BY:	PROJECT No.: 201910
CHK'D BY:	FILE No.:
SCALE: 1"=10'	SHEET No: Page 3 of 5 3



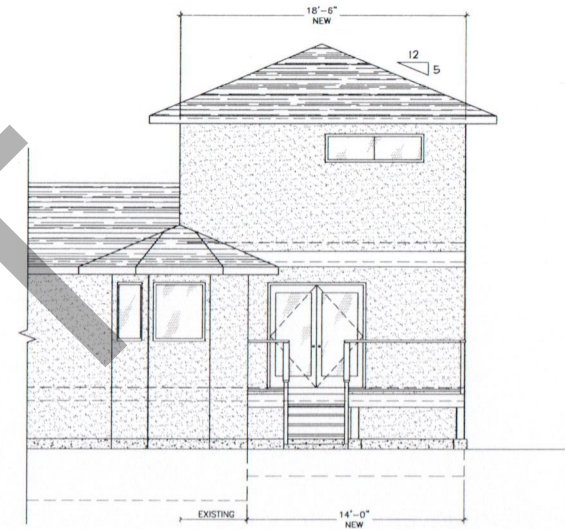
PROPOSED FLOOR PLANS
DAVISON RESIDENCE ADDITION
642 HAYWOOD STREET
PENTICTON BC

AZTECH DRAFTING SERVICES
496 Van Horne St. Penticton, B.C.
Phone: 250-492-3344 e-mail: service@aztechdrafting.com

DRAWN BY: MBW	DATE: MAY 7/20
DESIGN BY:	PROJECT No.: 201910
CHK'D BY:	FILE No.:
SCALE: 3/16"=1'	SHEET No.: 2 OF 3

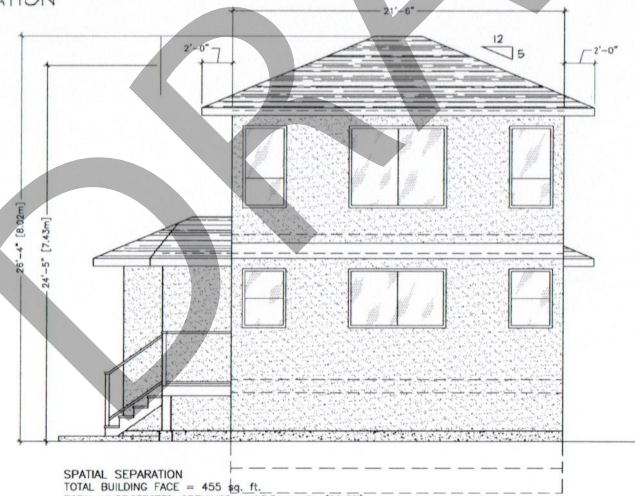


NORTH ELEVATION



SOUTH ELEVATION

SPATIAL SEPARATION
 TOTAL NEW BUILDING FACE = 330 sq. ft.
 TOTAL NEW UNPROTECTED OPENINGS =
 49 sq. ft. (14.8%)
 LIMITING DISTANCE = 5.97 m
 ALLOWABLE OPENINGS = 69%



EAST ELEVATION

SPATIAL SEPARATION
 TOTAL BUILDING FACE = 455 sq. ft.
 TOTAL UNPROTECTED OPENINGS = 93.5 sq. ft. (20.5%)
 LIMITING DISTANCE = 7.42 m
 ALLOWABLE OPENINGS = 73%

PROPOSED FLOOR PLANS	
DAVISON RESIDENCE ADDITION	
642 HAYWOOD STREET PENTICTON BC	
DRAWN BY: MEW	DATE: MAY 7/20
DESIGN BY:	PROJECT No.: 201910
CHK'D BY:	FILE No.:
SCALE: 1/8"=1'	SHEET No.: 3 OF 3

AZTECH DRAFTING SERVICES
 496 Van Horne St. Penticton, B.C.
 Phone: 250-492-3344 e-mail: service@aztechdrafting.com

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Steven Collyer, Planner 1
Address: 674 Haywood Street

File No: RMS/674 Haywood Street

Subject: Development Variance Permit PL2020-8765

Staff Recommendation

THAT Council approve “Development Variance Permit PL2020-8765” for That Part of Lot 7 Block 27 Outlined Red on Plan B5237; District Lot 202 Similkameen Division Yale District Plan 447, located at 674 Haywood Street, a permit to reduce the minimum rear yard setback for a principal building from 6.0m to 1.09m to allow for an addition on the single detached dwelling;

AND THAT Council direct staff to issue “Development Variance Permit PL2020-8765”.

Strategic Priority Objective

Community Design: The City of Penticton will attract, promote and support sustainable growth and development congruent with the community’s vision for the future.

Proposal

The applicant is proposing to construct a 6.9m² (74.5ft²) mudroom addition onto the southeast corner of the existing single detached dwelling. Due to the proximity of the rear property line, the applicant has requested that the required rear yard setback be reduced from 6.0m to 1.09m in order to proceed with the proposed construction. As such, this Development Variance Permit application has come forward.

Background

The subject property is located on the east side of Haywood Street, north of Eckhardt Avenue East and adjacent to the KVR trail (Figure 1). The subject property is zoned RD2 (Duplex Housing: Lane) and is designated ‘Infill Residential’ by the Official



Figure 1 - Location Map

Community Plan (OCP). The property contains a single detached dwelling, as such the R2 (Small Lot Residential) zoning regulations apply.

The property is located in a primarily residential area, consisting of a mix of single detached dwellings and duplexes on Haywood Street. The KVR trail runs diagonally across the lane from this property (Figure 2). The existing building is approximately 2.24m from the rear property line as a result of its diagonal orientation.

As shown in the photos (Attachment 'C'), construction of the proposed addition began without the benefit of a building permit. A stop work order was issued and the applicant was required to obtain proper permits for the addition, including addressing the deficient rear yard setback through this Development Variance Permit application.

Technical Review

This application was reviewed by the Technical Planning Committee. The applicants were advised of the City policy regarding encroachments onto City-owned land. The policy advises no further encroachments onto public parkland and the removal of existing encroachments where appropriate. The committee recommended the applicant amend the design of the addition and stairs in relation to the rear property line. The applicant has reduced the width of the stairs on the updated plan to maintain access around the structure from within the property lines. If the variance request is approved, the applicant will continue to work with the Building Department to achieve permits for the addition.

Development Statistics

The following table outlines how the proposed development meets the applicable Zoning Bylaw regulations:

	R2 Zone Requirement (applicable to single detached dwellings in the RD2 Zone)	Provided on Plans
Minimum Lot Width:	13 m	14.02 m
Minimum Lot Area:	390 m ²	283 m ² *
Maximum Lot Coverage:	40%	Approx. 30%
Vehicle Parking:	2 spaces	No change
Required Setbacks		
Front Yard (Haywood Street):	4.5 m	7.4 m
Side Yard (north):	1.5 m	1.53 m
Side Yard (south):	1.5 m	2.8 m
Rear Yard (lane):	6.0 m	1.09 m – Variance Requested
Maximum Building Height	10.5 m	Less than existing building
Other Information:	* The minimum lot area requirement applies to the creation of new lots through subdivision, and does not apply to existing lots.	

Analysis

When considering a variance to a City bylaw, staff encourages Council to consider if there is a hardship on the property that makes following the bylaw difficult or impossible, whether approval of the variance would cause a negative impact on neighbouring properties, and if the variance request is reasonable.

The proposed development maintains the residential character of the existing neighbourhood and maintains the intent of the Infill Residential land use designation. In addition, the proposed works are aligned with the following OCP policy:

OCP Policy 4.1.4.1	Work with the development community – architects, designers and builders – to create new residential developments that are attractive, high-quality, energy efficient, appropriately scale and respectful of their context.
-----------------------	---

Staff have reviewed the application and are recommending approval for the following reasons:

1. The existing single detached dwelling has a deficient rear yard setback due to the lot configuration.

The rear property line cuts diagonally across the property. Adjacent to the rear property line is a City-owned parcel which contains a rear lane to access properties to the north. Across from the lane is the KVR trail with a treed buffer on either side (Figure 2). This unique lot configuration results in the rear property line already being close to the single detached dwelling at a 2.24m setback. While the proposed addition will result in a rear setback of 1.09m, this has a reduced impact because the building is already much closer to this property line than the required 6.0m Zoning Bylaw requirement.



Figure 2 - Lane and Trail Locations

2. There are no rear neighbours opposite the lane which could be impacted by a reduced rear yard setback.

The intent of the rear yard setback provision is both to provide adequate private amenity space for property owners and to maintain sufficient separation between homes sharing a rear lot line. In this case, there are no dwellings or developed lots behind the subject property. If there were, there may be potential impacts on those rear neighbours from reducing the required rear yard setback, but that is not the case in this instance.

3. The proposed addition and requested variance are considered minor in nature.

The size of the proposed addition and the difference between the existing and proposed rear yard setbacks are both considered minor in nature. The overall character of the property will remain the

same, and there are no negative impacts to neighbours anticipated as a result of the variance or of the proposed construction.

Staff consider the request to reduce the minimum rear yard setback from 6.0m to 1.09m reasonable in this instance. As such, staff are recommending that Council approve the Development Variance Permit and direct staff to issue the permit.

Alternate Recommendations

Council may feel that the variance request is unreasonable. If this is the case, Council should deny the Development Variance Permit. This would require the applicant to amend their plans to come up with a design which meets the Zoning Bylaw regulations. Staff are recommending against this option, as in staff’s opinion the variance request is reasonable.

- 1. THAT Council deny “Development Variance Permit PL2020-8765”.

Attachments

- Attachment A – Zoning Map of Subject Property
- Attachment B – Official Community Plan Map of Subject Property
- Attachment C – Images of Subject Property
- Attachment D – Letter of Intent
- Attachment E – Draft Development Variance Permit PL2020-8765

Respectfully submitted,

Steven Collyer, MCIP, RPP
Planner 1

Concurrence

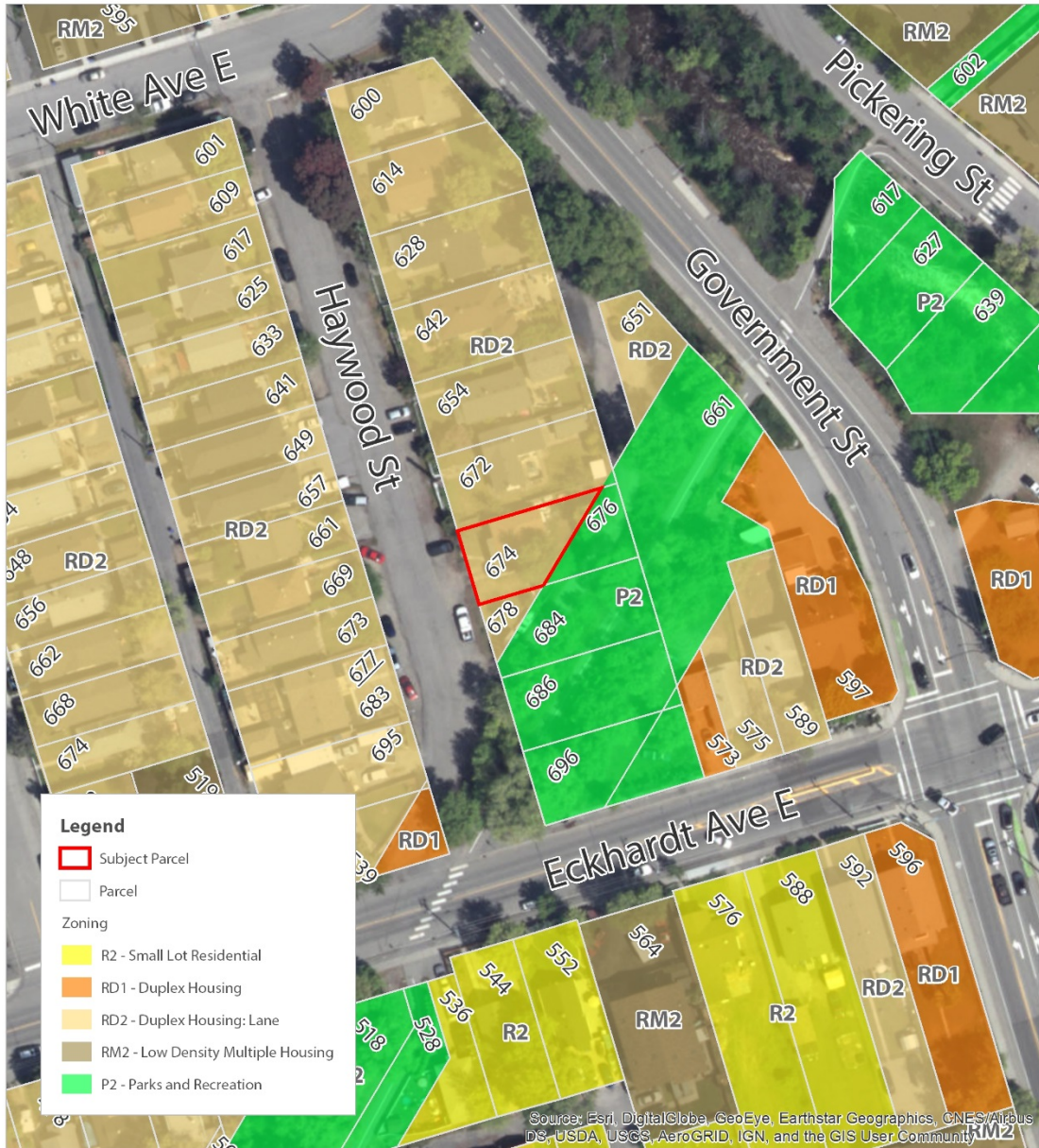
<p>Director</p> <p><i>BL</i></p>	<p>Chief Administrative Officer</p> <p>DyD</p>
---	---

Attachment A – Zoning Map of Subject Property



674 Haywood Street

Zoning Map



Legend

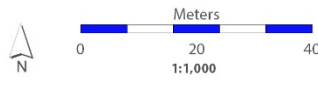
- Subject Parcel
- Parcel

Zoning

- R2 - Small Lot Residential
- RD1 - Duplex Housing
- RD2 - Duplex Housing: Lane
- RM2 - Low Density Multiple Housing
- P2 - Parks and Recreation

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Terms of Use: The City of Penticton is a depository of public information in both printed and digital form. The source, accuracy and completeness of this information varies. As a result, the City does not warrant in any way the mapping information including the accuracy or suitability thereof. The user of this information does so at their own risk and should not rely upon the information without independent verification as to the accuracy or suitability thereof.



May-11-20
11:18:50 AM



Attachment B – Official Community Plan Map of Subject Property



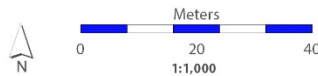
674 Haywood Street

Official Community Plan Map



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Terms of Use: The City of Penticton is a depository of public information in both printed and digital form. The source, accuracy and completeness of this information varies. As a result, the City does not warrant in any way the mapping information including the accuracy or suitability thereof. The user of this information does so at their own risk and should not rely upon the information without independent verification as to the accuracy or suitability thereof.



May-11-20
11:19:55 AM

penticton.ca

Attachment C – Images of Subject Property





Attachment D – Letter of Intent

RA HICKSON DESIGN SERVICES

City of Penticton
171 Main Street
Penticton, BC. V2A 5A9

May 8, 2020

Dear Sirs:

We are proposing to build a 74.5 sq. ft. Mudroom off the Southeast corner of the building at the rear entrance. The variance requested is to revise the allowable distance to the rear property from 6.0 m to 1.09 m, which would be the closest distance to the property line from the Southeast corner of the proposed Mudroom. Due to the lot being revised, in the past, to accommodate the KVR trail system, the building is already within the 6.0 m required rear setback. In order to build any addition to this building we would be forced to ask for a variance, since the lot was cut apart like it was for the trail system.

Thank you.

Sincerely,

Roger Hickson

RA HICKSON DESIGN SERVICES

Development Variance Permit

Permit Number: DVP PL2020-8765

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: That Part of Lot 7 Block 27 Outlined Red on Plan B5237; District Lot 202 Similkameen Division Yale District Plan 447
 - Civic: 674 Haywood Street
 - PID: 004-496-400
3. This permit has been issued in accordance with Section 498 of the *Local Government Act*, to vary the following sections of Zoning Bylaw 2017-08 to allow for the construction of an addition onto the existing single detached dwelling, as shown in the plans attached in Schedule 'A':
 - a. Section 10.2.2.7: to reduce the required rear yard setback from 6.0m to 1.09m.

General Conditions

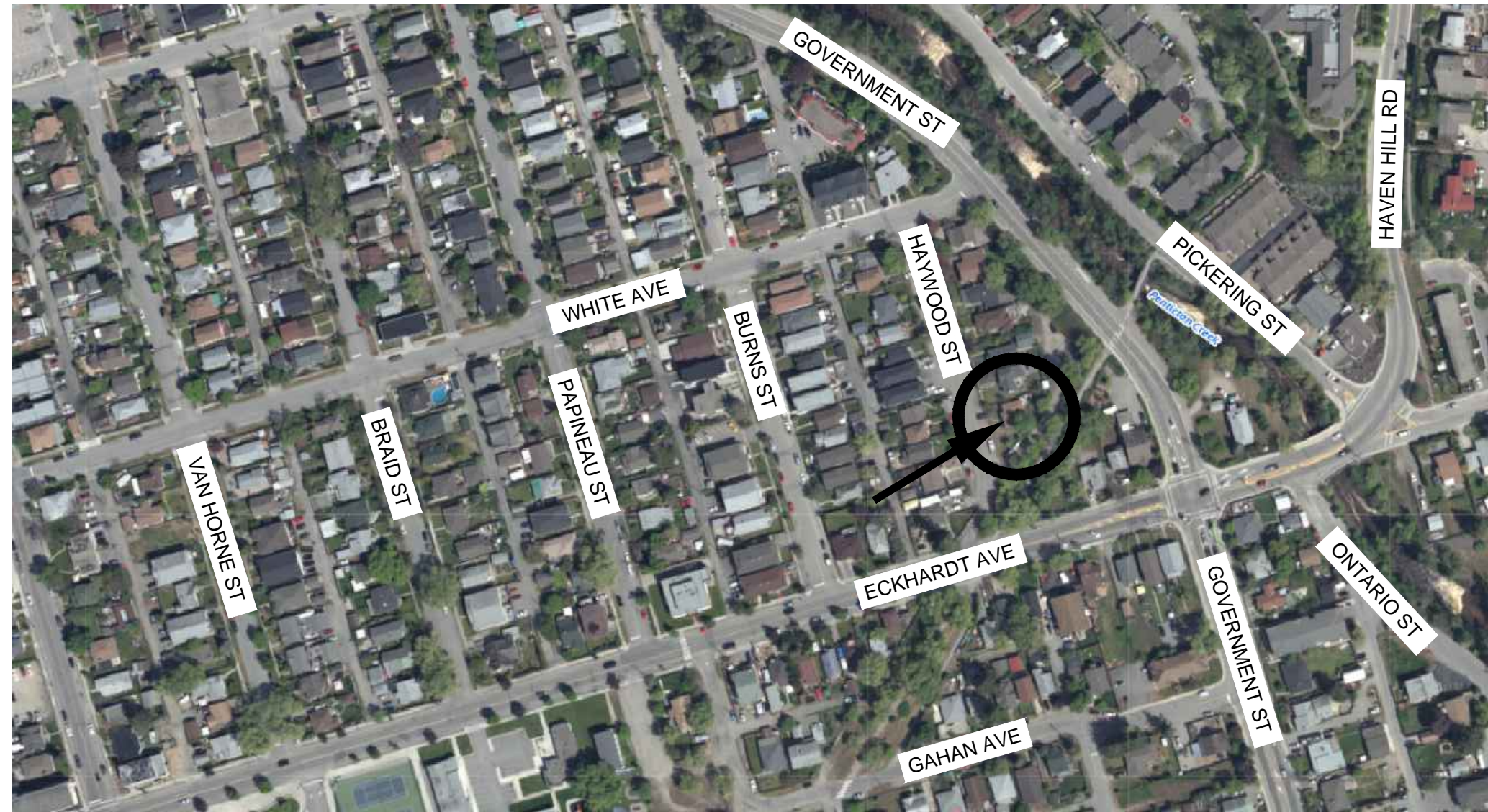
4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
- 6. This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

Angela Collison
Corporate Officer

DRAFT



1 LOCATION PLAN
A1 SCALE: NTS

LEGAL ADDRESS: - LOT 7, PART OF LOT 7 BLOCK 27 OUTLINED RED ON PLAN B5237; DISTRICT LOT 202 SIMLKAMEEN DIVISION YALE DISTRICT PLAN KAP447

CIVIC ADDRESS: - 674 HAYWOOD STREET, PENTICTON, BC

P.I.D. NUMBER: 004-496-400

ZONED: - RD2-DUPLEX HOUSING

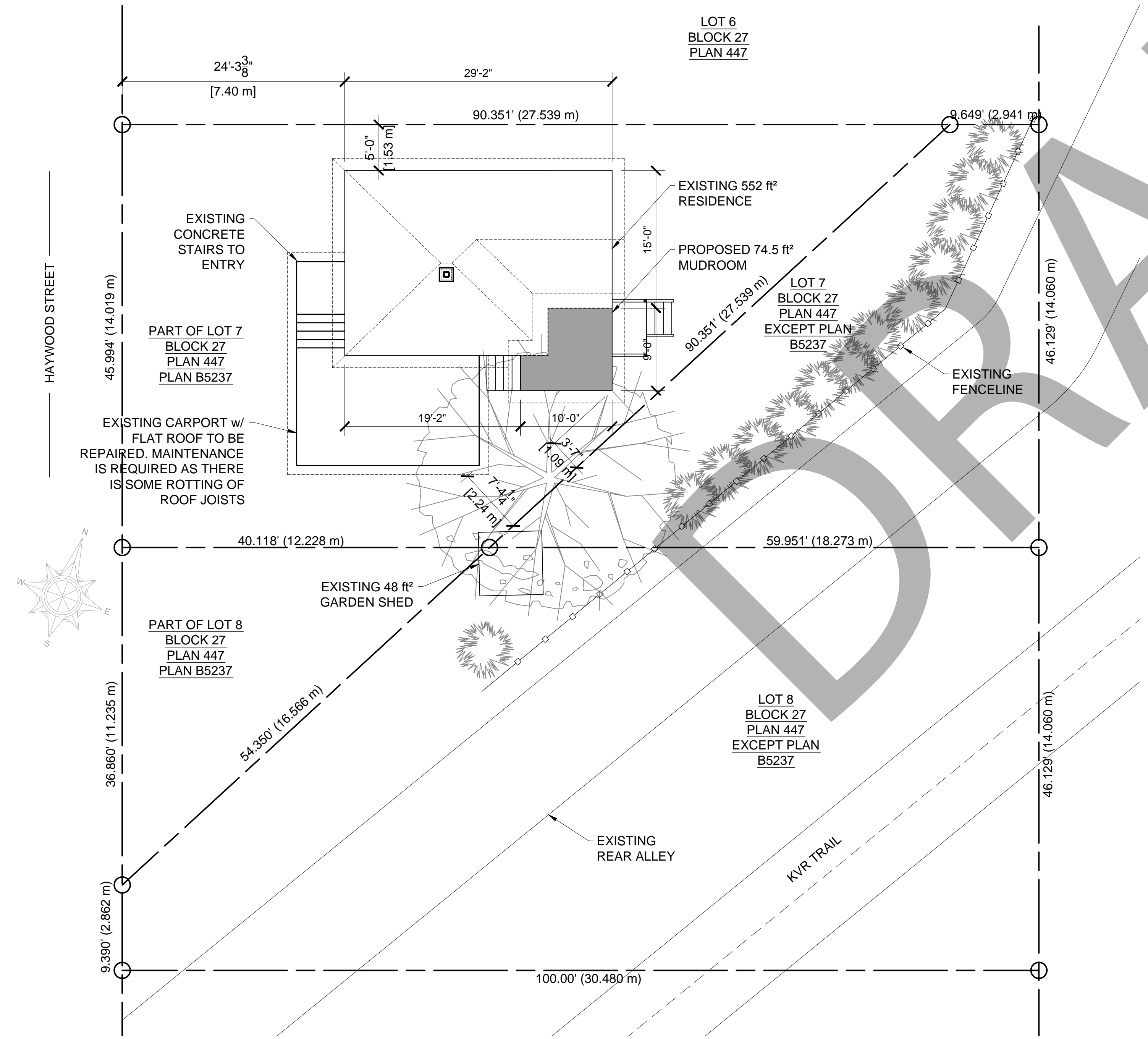
SETBACKS: (ACCESSORY BLDG.)	SETBACK	PROPOSED
- FRONT YARD:	4.5 m	4.5 m
- REAR YARD:	6.0 m	1.09 m
- SIDE YARD (INTERIOR):	1.5 m	1.5 m
- SIDE YARD (EXTERIOR):	3.0 m	n/a

- WE ARE APPLYING FOR A VARIANCE FOR THE REAR YARD SETBACK FROM 6.0 m TO 1.09 m

BUILDING AREA: - 552 FT² (51.28 m²) + NEW PROPOSED ADDITION OF 74.5 FT² (6.92 m²) = 626.5 FT² (58.2 m²)

DRAWING LIST:

A1 - SITE AND LOCATION PLANS
A2 - FLOORPLAN, BUILDING SECTION AND ELEVATIONS



2 SITE PLAN
A1 SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
- 1 ALL WORK SHALL CONFORM TO THE STANDARDS OF THE 2018 BRITISH COLUMBIA BUILDING CODE, SPECIFICALLY SECTION 9, ALL LOCAL CODES, BYLAWS AND AMMENDMENTS.
 - 2 DO NOT SCALE DRAWINGS. DIMENSIONS ALWAYS TAKE PRECEDENCE.
 - 3 THE GENERAL CONTRACTOR SHALL VERIFY ALL DATUMS, DIMENSIONS AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ANY ERRORS, OMISSIONS OR DISCREPANCIES TO BE DISCUSSED WITH RA HICKSON DESIGN SERVICES LTD.
 - 4 THESE DRAWINGS ARE THE EXCLUSIVE PROPERTY OF RA HICKSON DESIGN SERVICES LTD. AND CANNOT BE REPRODUCED WITHOUT THE EXPRESSED WRITTEN CONSENT OF RA HICKSON DESIGN SERVICES LTD.
 - 5 ALL WORK TO BE PERFORMED TO CURRENT GOOD TRADE PRACTICE STANDARDS BY WORKMEN SKILLED IN THEIR TRADES.
 - 6 ALL MATERIALS TO BE OF GOOD QUALITY, PROPERLY TRANSPORTED, STORED, AND PROTECTED.
 - 7 ALL EXTERIOR DIMENSIONS TAKEN FROM OUTSIDE FACE OF SHEATHING OR EXTERIOR FACE OF CONCRETE, UNLESS NOTED OTHERWISE. (U.N.O.)
 - 8 ALL FOOTINGS TO BEAR ON UNDISTURBED NATIVE SOIL (OR BEDROCK) AND EXTEND A MINIMUM OF 18" BELOW GRADE. BEARING SOIL TO BE INSPECTED BY ENGINEER BEFORE PROCEEDING WITH FORMWORK.
 - 9 ANCHOR POSTS TO FOOTINGS TO RESIST UPLIFT. SECURE SILL PLATES TO FOUNDATION WALLS WITH 1/2"Ø x 10" GALVANIZED ANCHOR BOLTS 8'-0" O.C. (TYPICAL).
 - 10 ALL WOOD MEMBERS IN CONTACT WITH CONCRETE, TO BE PROTECTED WITH #45 D.P.C. OR SILL GASKET PLATE.
 - 11 PROVIDE A MINIMUM OF 8" CLEARANCE BETWEEN SOIL AND ANY WOOD MEMBERS (NON PRESSURE-TREATED).
 - 12 ALL EXTERIOR WALLS TO BE 2x6 AND ALL INTERIOR WALLS TO BE 2x4 U.N.O.
 - 13 ALL LOAD BEARING COLUMNS TO BE AT LEAST EQUAL IN WIDTH TO BEAMS AND MADE OF SOLID LUMBER OR LAMINATED STUDS.
 - 14 USE DOUBLE JOISTS UNDER PARTITIONS PARALLEL TO JOISTS.
 - 15 WHEN USING DIMENSIONAL LUMBER, PROVIDE MINIMUM 2x2 CROSS BRACING OR SOLID BLOCKING BETWEEN JOISTS AND RAFTERS @ 7'-0" O.C. MAXIMUM, MINIMUM ONE ROW. FOLLOW 'I' JOIST MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHEN USING 'I' JOIST MATERIAL FOR JOISTS OR RAFTERS. PROVIDE ALUMINUM FLASHINGS OVER ALL EXTERIOR OPENINGS.
 - 16 CAULK AND SEAL ALL EXTERIOR OPENINGS.
 - 17 GLASS IN WINDOWS AND DOORS TO BE DOUBLE GLAZED, LOW E (MINIMUM).
 - 18 WINDOW FRAMES TO BE THERMALLY BROKEN.
 - 19 GLASS SIDELIGHTS AND WINDOWS WITHIN 36" OF DOOR LOCKS ARE TO BE SAFETY GLASS.
 - 20 GLASS SIDELIGHTS GREATER THAN 20" IN WIDTH (THAT COULD BE MISTAKEN FOR DOORS) ARE TO BE SAFETY GLASS.
 - 21 GLASS IN WINDOWS LESS THAN 8" FROM FLOOR IS TO BE SAFETY GLASS.
 - 22 VENTILATION REQUIREMENTS TO CONFORM TO 2018 B.C. BUILDING CODE 9.36.

no.	date	revision
1	Apr 27, 2020	Issued For Building Permit
2	Jun 5, 2020	Reduced Size of Rear Stair & Deck

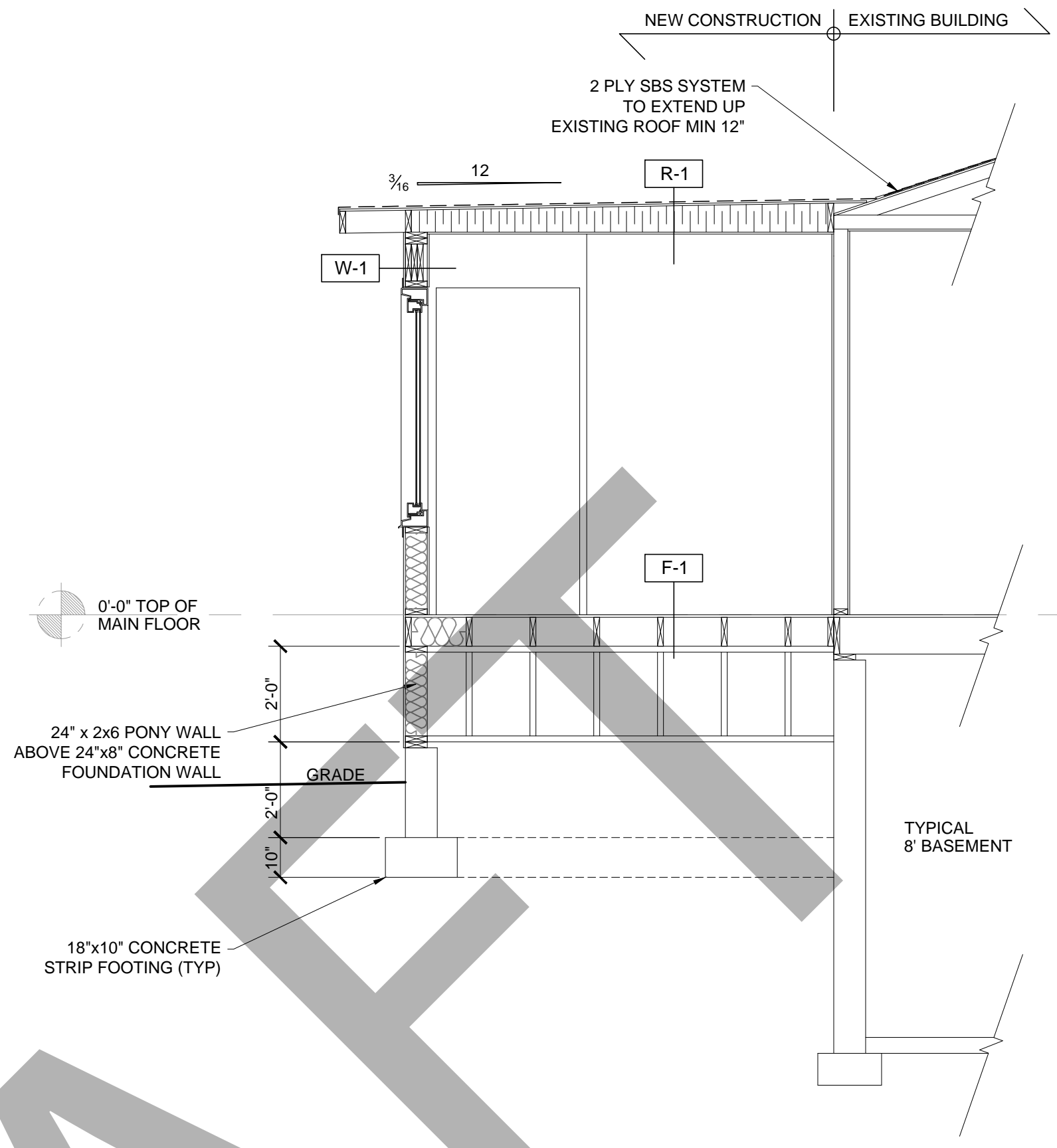
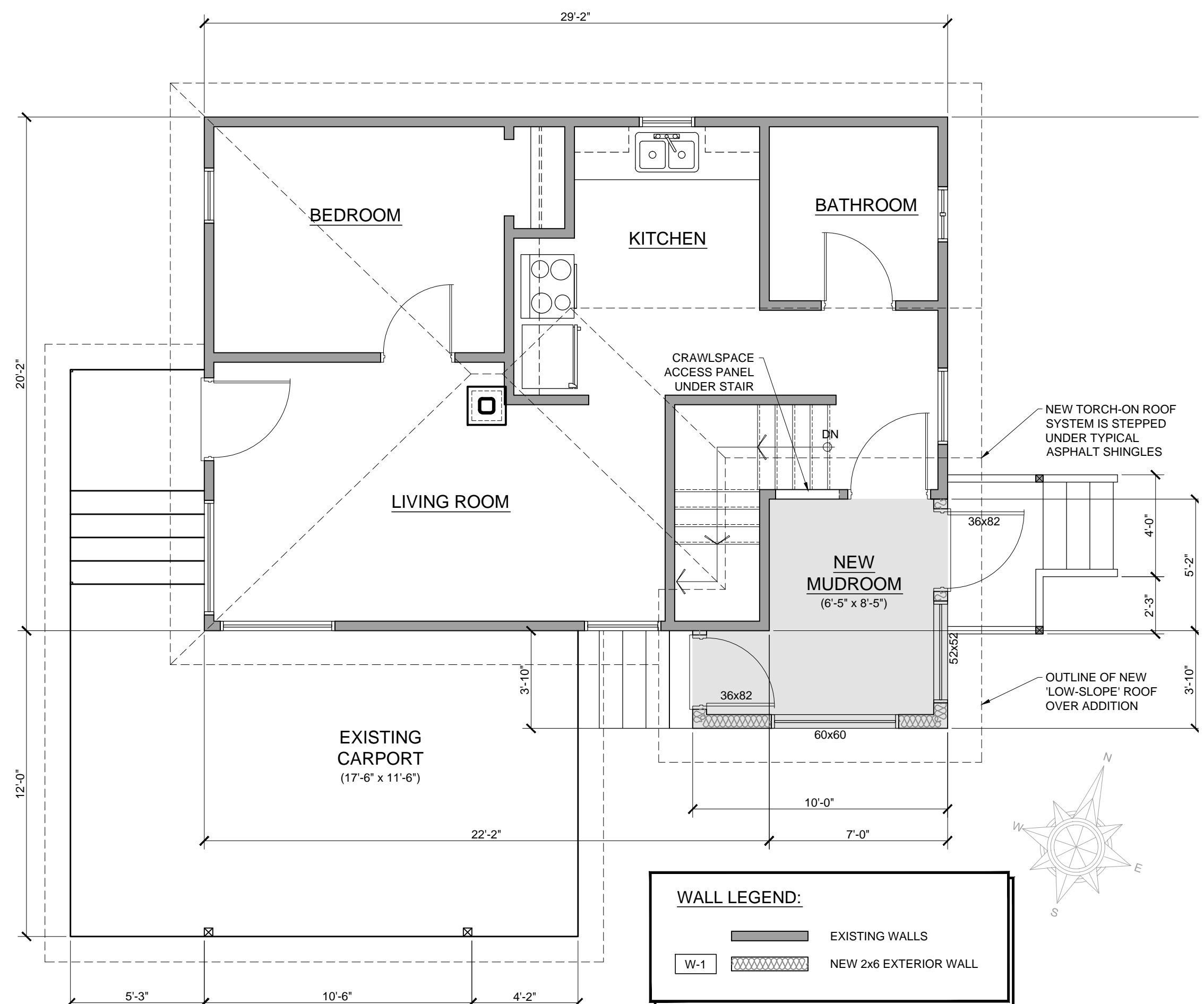
RA HICKSON DESIGN SERVICES
167 BRACEWELL DR.
PENTICTON, BC V2A 6X1
(250) 493-2438 tel
(250) 489-2165 cell
rahickson@shaw.ca

Project title
674 HAYWOOD STREET
PROPOSED MUDROOM ADDITION

Dwg. title
SITE PLAN

dr: R.A.H. date: Apr 20, 2020
ch: R.A.H. scale: 1/4" = 1'-0"

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A1

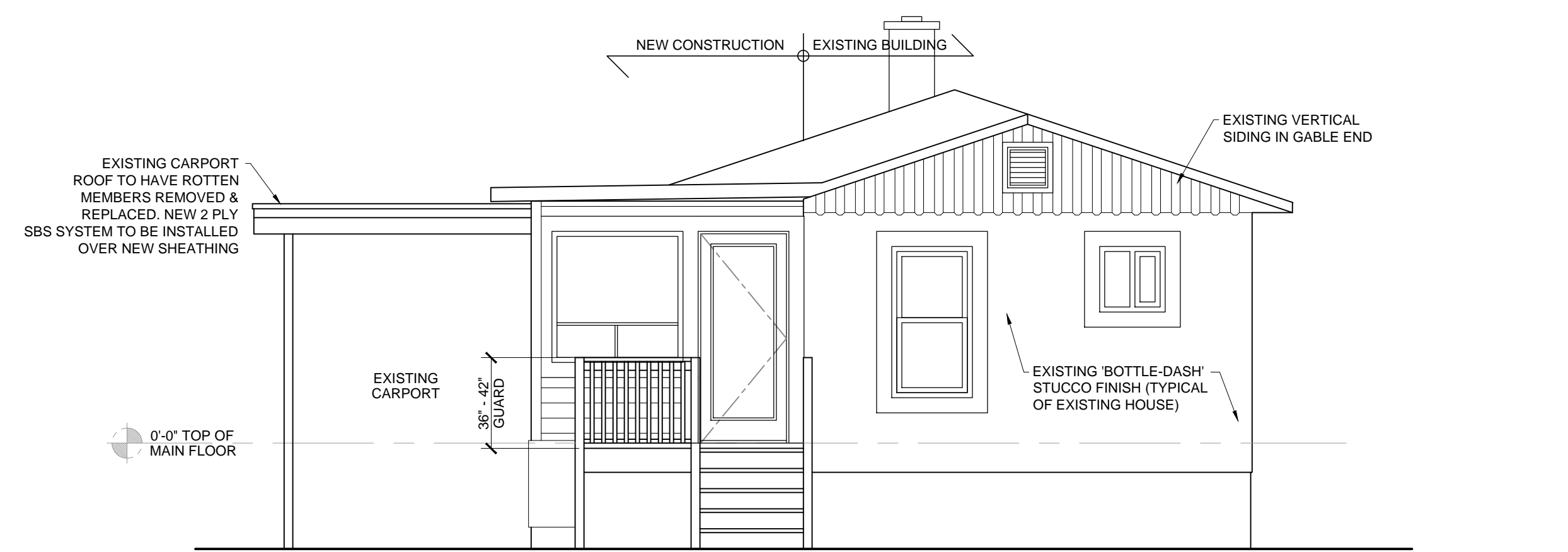
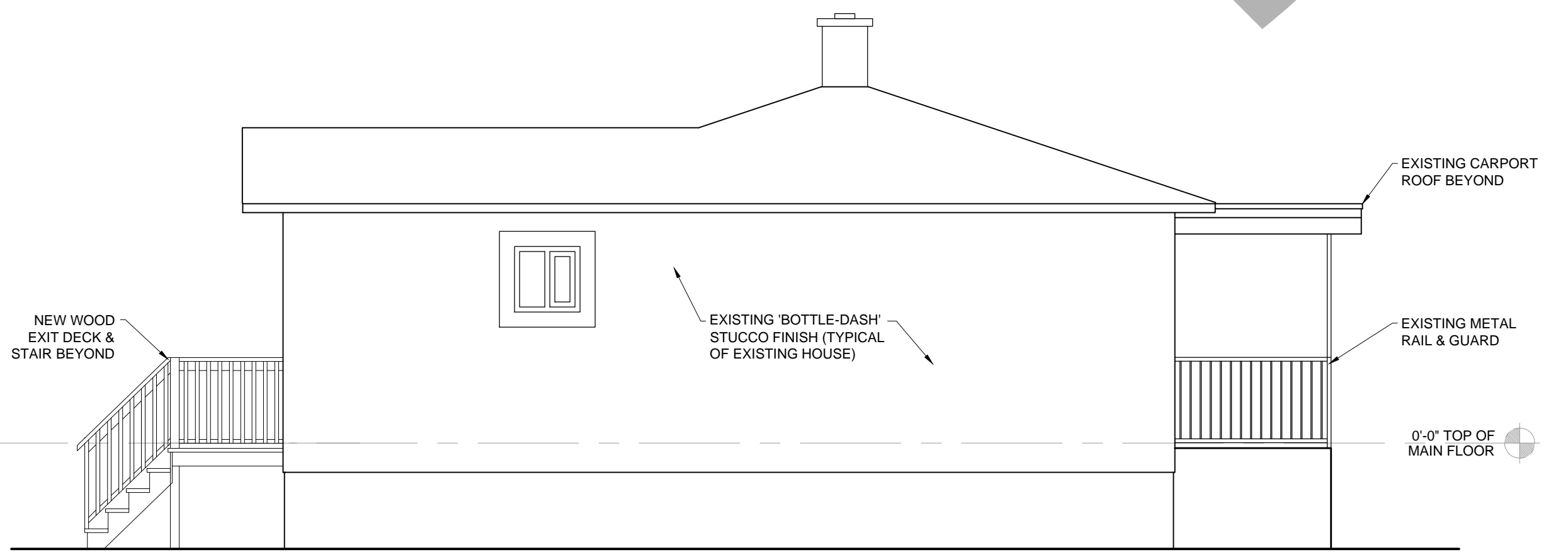
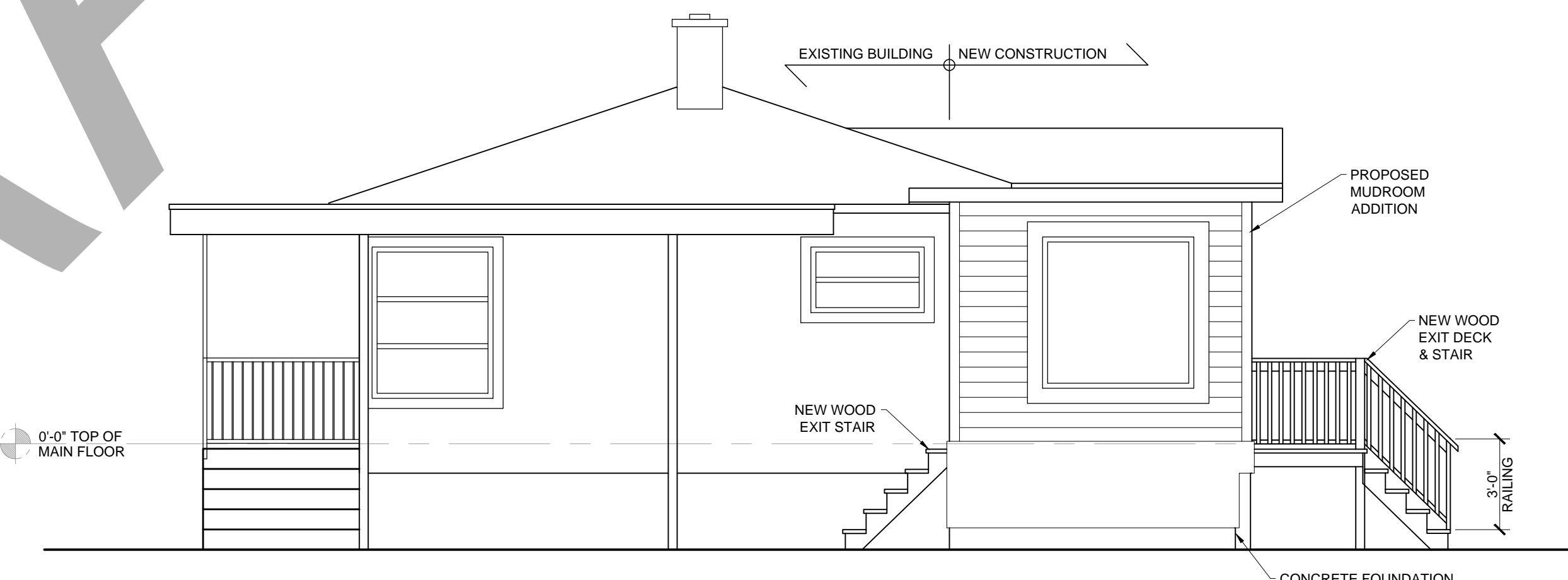
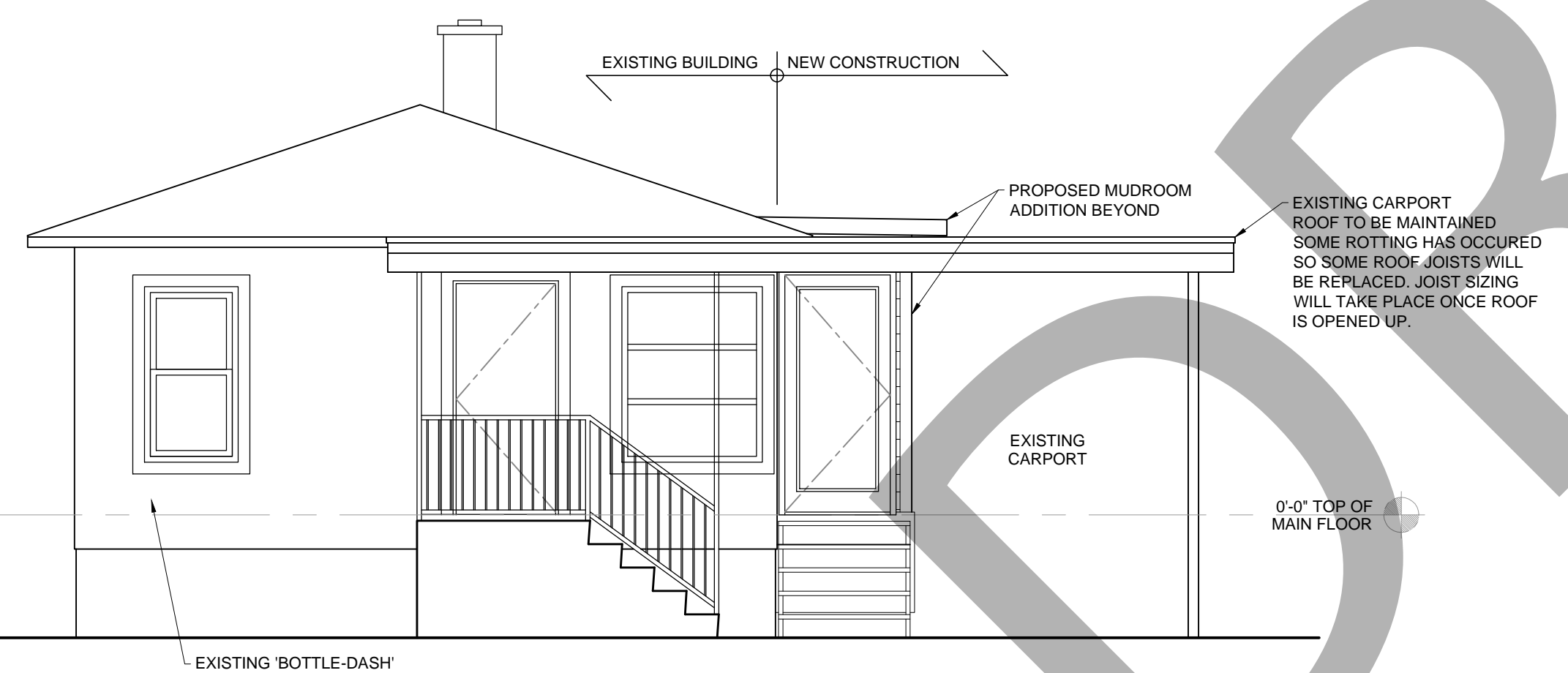


CONSTRUCTION ASSEMBLIES:

R-1	RSI-VALUES:	MAIN ROOF CONSTRUCTION:
	0.03	OUTSIDE AIR FILM
	0.00	2 PLY SBS MEMBRANE SYSTEM
	0.11	1/2" SHEATHING
	0.0	2x8 RAFTERS @ 24" o.c.
	4.58	MIN 6.5" SPRAY FOAM INSULATION R-32.5
	0.0	6 MIL POLY VAPOUR BARRIER
	0.08	5/8" TYPE 'X' GYPSUM WALL BOARD
	0.12	INSIDE AIR FILM
	4.92 >	4.67 FOR CATHEDRAL CEILINGS

W-1	RSI-VALUES:	EXTERIOR WALL CONSTRUCTION:
	0.03	OUTSIDE AIR FILM
	0.03	HARDIBOARD HORIZONTAL SIDING
	0.0	2 LAYERS 30 MIN BUILDING PAPER
	0.11	1/2" SHEATHING
	2.81	2x6 STUDS @ 16" o.c.
	0.11	R-20 MINERAL WOOL INSULATION
	0.0	1/2" SHEATHING
	0.0	6 MIL POLY VAPOUR BARRIER
	0.08	1/2" GYPSUM WALL BOARD
	0.12	INSIDE AIR FILM
	3.29 >	3.08 FOR WALLS

F-1	RSI-VALUES:	MAIN FLOOR CONSTRUCTION:
	0.12	INSIDE AIR FILM
	0.0	FINISH FLOORING
	0.11	5/8" T&G PLYWOOD SUBFLOOR
	0.0	2x8 FLOOR JOISTS @ 16" o.c.
	4.51	R-32 BATT INSULATION
	0.12	INSIDE AIR FILM
	4.75 >	4.67 FOR FLOORS OVER UNHEATED SPACE



no.	date	revision
1	Apr 27, 2020	Issued For Building Permit
2	Jun 5, 2020	Reduced Size of Rear Stair & Deck

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 167 BRACEWELL DR.
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 (250) 493-2438 tel
 (250) 486-2165 cell
 rahickson@shaw.ca

Project title	674 HAYWOOD STREET
Dwg. title	FLOOR PLAN, ELEVATIONS AND BUILDING SECTION
dr:	R.A.H. date: Apr 20, 2020
ch:	R.A.H. scale: 1/4" = 1'-0"
COPYRIGHT	© 2020 RAHICKSON DESIGN SERVICES INC. ALL RIGHTS RESERVED. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION FROM THE ENGINEER.
sheet no.	A2

Date: July 7, 2020
To: Donny van Dyk, Chief Administrative Officer
From: Steven Collyer, Planner 1
Address: 2696 and 2712 Skaha Lake Road
Subject: **Development Variance Permit PL2020-8784**

File No: RMS/2696 Skaha Lake Road

Staff Recommendation

THAT Council approve “Development Variance Permit PL2020-8784” for Lots 2 and 3, District Lot 116, Similkameen Division Yale District Plan 21541, located at 2696 and 2712 Skaha Lake Road, a permit to vary Section 5.6.1.1.1 of Zoning Bylaw 2017-08 to increase the permitted fence height along the front lot line from 1.2m to 1.8m,;

AND THAT Council direct staff to issue “Development Variance Permit PL2020-8784”.

Strategic Priority Objective

Community Safety: The City of Penticton will support a safe, secure and healthy community.

Community Design: The City of Penticton will attract, promote and support sustainable growth and development congruent with the community’s vision for the future.

Proposal

The applicant is proposing to increase the height of the existing fence along Skaha Lake Road. This fence is located in the front yard setback of both properties, and in order to increase the height of the fence from 1.2m to 1.8m a variance is required. As such, the applicant has submitted this Development Variance Permit application.

Background

The subject properties are part of the Dauphin Manufactured Home Park (Figure 1). The mobile home park consists of several



Figure 1 - Location Map

separate properties and this application is for those parcels located adjacent to Skaha Lake Road. The subject properties are zoned RSM (Mobile Home Park Housing) and are designated 'Urban Residential' by the Official Community Plan (OCP). Nearby uses include Fairhaven Supportive Housing to the north, commercial uses across Skaha Lake Road to the west, and motel uses to the south.

The applicant has described challenges with the current fence along Skaha Lake Road (Attachment 'A'). They describe instances where people have trespassed over the existing fence and into the mobile home park. The intent of increasing the height of the fence is to deter trespassers by both the increased height and topper material which would make it more difficult to overcome. The applicant has included photos of the existing fence, renderings of the proposed topper to increase the height, and an example of another fence on their property where the topper has already been installed in their Letter of Intent (Attachment 'A').

Technical Review

This application was reviewed by the Technical Planning Committee. No concerns with the proposal were raised by the committee.

Analysis

When considering a variance to a City bylaw, staff encourages Council to consider if there is a hardship on the property that makes following the bylaw difficult or impossible, whether approval of the variance would cause a negative impact on neighbouring properties, and if the variance request is reasonable.

Section 5.6 of Zoning Bylaw 2017-08 outlines the various permitted fence heights in Penticton:

Maximum Fence Height	Location
1.2m (4ft.)	Within the front yard setback
1.8m (6ft.)	Behind the front yard setback Within the side or rear yard setback
2.4m (8ft.)	If situated adjacent to a controlled access highway Within an agricultural or industrial zone

Staff have reviewed the application and are recommending support for the following reasons:

1. This lot line functions more as a rear lot line than as a front lot line.

The subject properties form part of the larger Dauphin Manufactured Home Park and the park's primary access is from Dauphin Avenue. However, the subject properties are separate parcels and given this, their only street frontage is along Skaha Lake Road, making this their 'front lot line' as per the Zoning Bylaw definition. The intent of limiting fence heights to 1.2m within the front yard setback is to maintain clear sightlines between the street and the front of the building/main entrance. This allows for increased engagement with the street and improves the pedestrian realm. In this case, buildings on the subject property face away from the street and towards the internal streets. There is no driveway onto Skaha Lake Road on either subject property. For these reasons this

lot line functions more as a rear yard. Typically fences along rear yards can be up to 1.8 in height, the same height as requested through this application.

2. The proposed increase in fence height is considered minor in nature, and consistent with the permitted fence height along other property lines.

No negative impacts are anticipated from the proposed height increase on neighbouring properties, which are primarily commercial in nature in this area. The proposed 0.6m increase in fence height is considered minor in nature. The proposed 1.8m fence height is matches the permitted heights allowed in the side and rear yards of these properties, and is not considered out of character with the surrounding area.

Staff consider the requested variance and proposed increased fence height is reasonable in this instance. As such, staff recommend that Council approve "Development Variance Permit PL2020-8784" and direct staff to issue the permit.

Alternate Recommendations

The applicant has presented an alternative option for Council to consider. While the preferred variance is for a fence height of 1.8m along the Skaha Lake Road frontage, the applicant has indicated that 1.5m (5 ft) height would also assist with achieving their desired solution to the trespassing problem (Attachment 'A'). Staff consider the request to allow a height of 1.8m is reasonable in this instance, however Council may prefer to approve a reduced fence height of 1.5m as an alternative option (Alternate Recommendation 1)

1. THAT Council approve an amended version of "Development Variance Permit PL2020-8784" to increase the maximum fence height from 1.2m to 1.5m.

Council may feel the requested variance is unreasonable and that the fence height should not be increased in this location. If this is the case, Council should deny the development variance permit (Alternate Recommendation 2). Staff are recommending against this option, as in staff's opinion the site-specific circumstance of this request provides reasonable justification for a 1.8m maximum fence height.

2. THAT Council deny "Development Variance Permit PL2020-8784".

Attachments

Attachment A – Letter of Intent

Attachment B – Draft Development Variance Permit PL2020-8784

Respectfully submitted,

Steven Collyer, MCIP, RPP
Planner 1

Concurrence

Director <i>BL</i>	Chief Administrative Officer DyD
----------------------------------	---

Attachment A – Letter of Intent

Dauphin Manufactured Home Park

May 21, 2020

Mayor and City Council of Penticton,

RE: Development Application for Variance Permit

Preamble regarding Dauphin Manufactured Home Park:

Dauphin Manufactured Home Park (hereto referred to as Dauphin Park), consists of 14.274 acres zoned RSM Mobile Home Park Housing designated as Urban Residential Future Land Use. The Park, purchased in 1976, has been owned by the same family for over 44 years. The park community consists of 101 homes owned by residents who are over 55 years of age. The address of Dauphin Park is 197 Dauphin Avenue and the majority of the Park front borders on Dauphin Avenue and Eraut Street, the main entrance being off Dauphin Avenue. A section of the Park's perimeter boundary follows along Skaha Lake Road for a distance of 428.19 feet or 131 meters. This boundary section consists of a construction block wall about 1.2 meters in height as per zoning bylaw. Due to increasing circumstances leading to illegal entry into the private property of the Park over this wall, we are submitting our application to increase the height of this section to 1.8 meters.

Staff and Council considerations:

Over the last few years the area around Dauphin Park has changed significantly. If you walk north down the east side of Skaha Lake Road starting at Green Avenue, you pass the low cost housing development by BC Housing that used to be the Handsel and Gretel Motel, now called Skaha Sunrise providing 45 suites with integrated support services for individuals at risk of homelessness, the Canadian Mental Health Association (CMHA) – South Okanagan Similkameen Branch providing on-site support services including a community kitchen program funded by the Province and Interior Health Authority. On the same lot we find the Canadian Mental Health Association now called Unity House, a drop in center for mentally challenged.

If we continue walking north along Skaha Lake Road we pass three older motels, the Mayfair, Sun Valley and Meadowlark, all now low cost housing renting on a monthly transient basis to the disadvantaged. After walking past the 131 meter ornamental brick wall bordering part of Dauphin Park, we come to what used to be the beautiful Bell Air Motel, converted in 2018 by BC Housing and renamed Fairhaven, for people with addictions and mental health issues. Because of the situation in Penticton, a large percentage of high-resource individuals end up in this facility. This has a very negative impact on the residents of Dauphin Park. You can view a video at <https://globalnews.ca/video/rd/1098661443614/?jwsourc=c> to see the effect of this change in our neighborhood. Increasingly, undesirable activities continue to occur to this date because

of the actions in and around Fairhaven House and activities in general now in this area of our city, especially along Skaha Lake Road.

Proposal:

The owners of Dauphin Park need to discourage entry over the Skaha wall. It is easily crossed over. People even jump/climb over to relieve themselves in our resident's back yards. This wall is not a frontage wall. It provides no access to Dauphin Park except for those individuals who want to illegally enter so as to "car shop" or commit thievery. Our Park presents easy pickings to thieves as our senior residents retire early and are not as sharp in preventing theft and are frightened by late night activities.

What we propose, if given a development permit to increase the height of our wall, is to mount a two foot "wall topper" of steel or aluminum pickets to match the fencing of our neighbour at Fairhaven, thus presenting continuity along that stretch of Skaha Road. This would bring the total height of our perimeter fencing along Skaha Road to 6 feet (1.8 meters), the same as Fairhaven. This addition would have no effect on pedestrians walking along the sidewalk and would be aesthetically pleasing to the eye. Please look at our plans for the wall height addition and consider the necessity for it.

Plan:

The 131 meter section of construction block wall is made up of 53 sections supported by solid 20.32 cm (8 inch) block posts all on a 40.64 cm (16 inch) wide foundation. We propose to add two additional 8 inch cement blocks to the vertical posts and mount the steel/aluminum fence panels between the posts on top of the existing wall. These sections will be custom made of welded steel or aluminum tubing and painted black.

Image of present Dauphin Park wall along Skaha Lake Road looking south



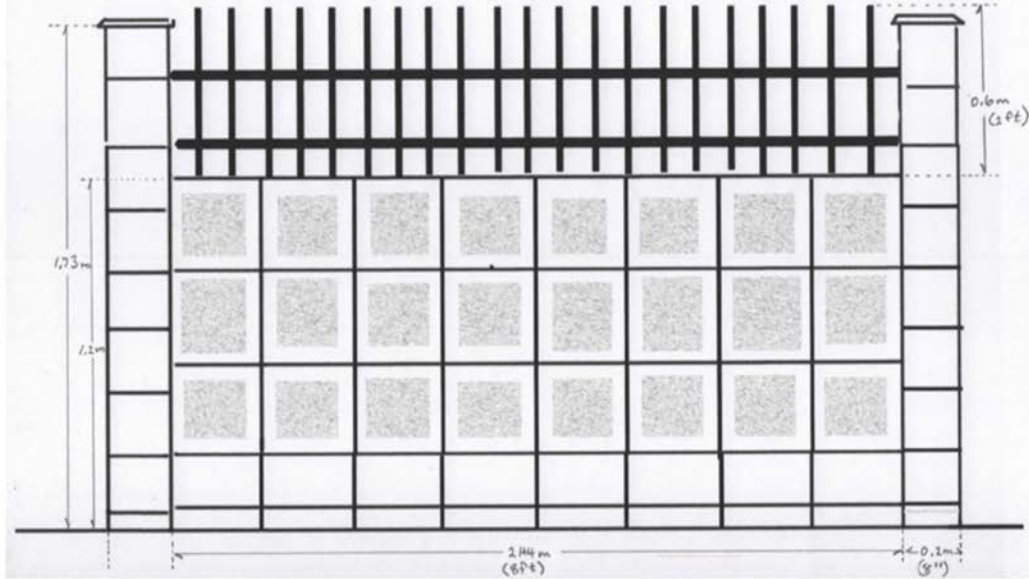
Image of Dauphin Park perimeter wall along Skaha Lake Road looking north showing Fairhaven 1.8 meter high steel fence next door.



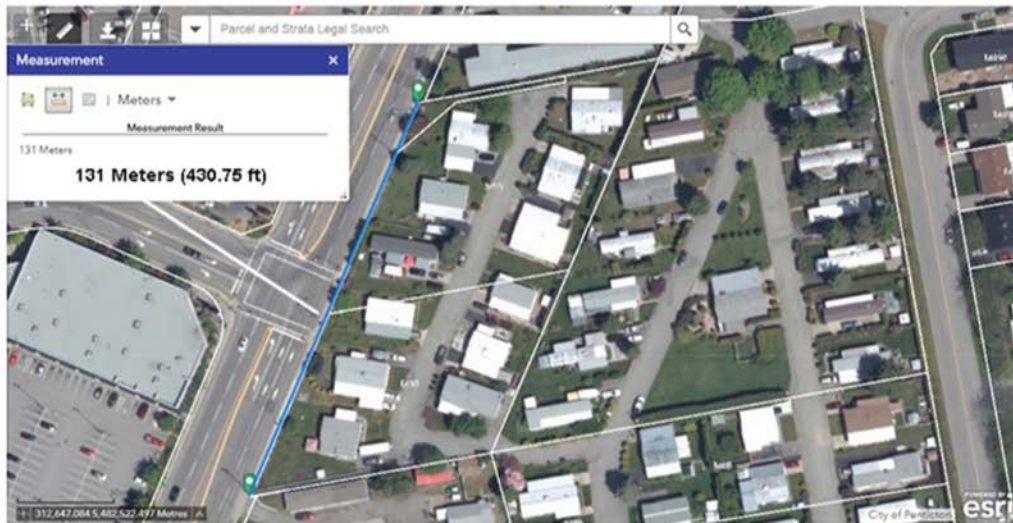
Image of Fairhaven steel fencing abutting Dauphin Park perimeter wall along Skaha Lake Road.



Dauphin Park wall height extension consisting of 53 sections of 8 foot long (2.44 m) steel wall toppers 2 feet (0.6m) high.



Perimeter Wall length along Skaha Lake Road using City of Penticton Parcel Viewer



Option presented to Dauphin Park and being considered



Dauphin Manufactured Home Park

June 9, 2020

ADDENDUM

Mayor and City Council of Penticton,

RE: Development Application for Variance Permit for Dauphin Manufactured Home Park.

Our original proposal, if given a development permit to increase the height of our wall, is to mount a two foot "wall topper" of steel or aluminum pickets to match the fencing of our neighbour at Fairhaven, thus presenting continuity along that stretch of Skaha Road. This would bring the total height of our perimeter fencing along Skaha Road to 6 feet (1.8 meters), the same as Fairhaven.

We would like to propose as an option, if the increase from 1.2 meters (4 feet) to a 1.8 meter fence height (6 foot) is disagreeable to council, that a 1.5 meter fence height (5 feet) would be agreeable to the Park as a suitable solution to people climbing/jumping over the existing wall.

PLAN OPTION: The 131 meter section of construction block wall is made up of 53 sections supported by solid 20.32 cm (8 inch) block posts all on a 40.64 cm (16 inch) wide foundation. We propose to add one additional 8 inch cement block to the vertical posts and mount 30.5 centimeter (one foot) high Galvalume Steel fence panels between the posts on top of the existing wall. These sections will be purchased through RONA of Penticton and constructed of welded steel tubing treated with zinc-aluminum and powder coated black. Please see images of sample wall proposed.

Dauphin Manufactured Home Park



Dauphin Manufactured Home Park



Development Variance Permit

Permit Number: DVP PL2020-8784

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lots 2 and 3 District Lot 116 Similkameen Division Yale District Plan 21541
 - Civic: 2696 and 2712 Skaha Lake Road
 - PID: 007-412-088; 007-412-100
3. This permit has been issued in accordance with Section 498 of the *Local Government Act*, to vary the following sections of Zoning Bylaw 2017-08 to allow for the construction of a fence, as shown in the plans attached in Schedule 'A':
 - a. Section 5.6.1.1.1: to increase the height of a fence in the front yard setback from 1.2m to 1.8m.

General Conditions

4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
6. **This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

Angela Collison
Corporate Officer



Location of Fence

DRAFT
Schedule A
PL 2020-8784

Dauphin Park wall height extension consisting of 53 sections of 8 foot long (2.44 m) steel wall toppers 2 feet (0.6m) high.



Bylaw No. 2020-14

A Bylaw to Amend Zoning Bylaw 2017-08

WHEREAS the Council of the City of Penticton has adopted a Zoning Bylaw pursuant the *Local Government Act*;

AND WHEREAS the Council of the City of Penticton wishes to amend Zoning Bylaw 2017-08;

NOW THEREFORE BE IT RESOLVED that the Municipal Council of the City of Penticton, in open meeting assembled, hereby ENACTS AS FOLLOWS:

1. **Title:**

This bylaw may be cited for all purposes as "Zoning Amendment Bylaw No. 2020-14".

2. **Amendment:**

2.1 Zoning Bylaw No. 2017-08 is hereby amended by adding the following to Chapter 14 – Comprehensive Development:

14.7 CD7 – Comprehensive Development (154 Brunswick Street)

14.7.1 PURPOSE

This **zone** provides for the comprehensive development of a residential site for *Lot 1, DL 4, SDYD (Formerly Yale Lytton), Plan KAP49946*, located at 154 Brunswick Street.

14.7.2 PERMITTED USES

The **permitted uses** in this **zone** are:

- .1 **accessory use, building or structure**
- .2 **apartment**
- .3 **minor home occupation** (subject to specific use regulation 7.3)
- .4 **office**
- .5 **vacation rental** (subject to specific use regulation 7.6)

14.7.3 SUBDIVISION AND DEVELOPMENT REGULATIONS

- .1 Minimum **lot width:** 31.0 m
- .2 Minimum **lot area:** 1,700 m²
- .3 Maximum **lot coverage:** 65%
- .4 Maximum **density:** 2.0 **FAR**
- .5 Maximum **height:**
 - i. **principal building** 23.0 m
 - ii. **accessory building or structure** 4.5 m
- .6 Minimum **front yard:** 3.0 m
- .7 Minimum **interior side yard:**
 - i. **principal building** 4.5 m
 - ii. **accessory building or structure** 1.5 m
- .8 Minimum **rear yard:**

- iii. *principal building* 4.5 m
- iv. *accessory building or structure* 1.5 m

14.7.4 AMENITY SPACE

- .1 *Amenity space* shall be provided at the rate of 20.0 m² for each *dwelling unit*.

14.7.5 OTHER REGULATIONS

- .1 A landscaping buffer to be provided along property lines abutting a residential zone and highway shall not apply.
- .2 An *office* shall not exceed a maximum *gross floor area* of 100 m².

14.7.6 ALLOWABLE PROJECTIONS

- .1 In addition to the projections permitted in Section 4.9.1 (Table 4.1), the following projections apply:

Feature	Maximum projection in to Require Yards
Roof features including roof projection, eaves, eave-troughs and gutters	1.7 m <i>interior side yard</i> 0.5 m <i>front yard</i>
Open stairways, landings, steps	1.2 m <i>interior side yard</i> , provided that 1.5 m is still maintained between the feature and the property line 1.5 m <i>front yard</i>
Covered or uncovered <i>balcony</i> , porch, and <i>deck</i>	1.6 m <i>interior side yard (northern)</i> 0.8 m <i>interior side yard (southern)</i>

14.7.7 PARKING REGULATIONS

- .1 Off-street vehicle parking shall comply with the standards and regulations established in Section 6 of this Bylaw.
- .2 Notwithstanding Section 14.7.7.1, up to 44% of the required off-street parking spaces may be designed as small car parking spaces, in accordance with Table 6.3 of this Bylaw. Such spaces shall be clearly marked with "small car".
- .3 Cash-in-lieu: in lieu of providing the required number of off-street vehicular parking spaces, the property owner may provide the City with a sum of money equal to the number of parking spaces not provided multiplied by the applicable cash-in-lieu amount as identified in Table 6.1 of this Bylaw. The sum of money will be deposited in the Off-Street Parking Reserve and Alternative Transportation Infrastructure Reserve at the rate of 75% to the Off-Street Parking Reserve and 25% to the Alternative Transportation Infrastructure Reserve.

2.2 Update Schedule 'A' Zoning Bylaw Text Table of Contents and Schedule 'B' Zoning Bylaw Map to include CD7 – Comprehensive Development (154 Brunswick Street).

2.3 Zoning Bylaw 2017-08 is hereby amended as follows:

Rezone Lot 1 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale Lytton) District Plan KAP 49946 (154 Brunswick Street), from RM3 (Medium Density Multiple Housing) to CD7 (Comprehensive Development Zone).

2.4 Schedule 'A' attached hereto forms part of this bylaw.

READ A FIRST time this	21	day of	April, 2020
READ A SECOND time this	5	day of	May, 2020
READ A THIRD time this	5	day of	May, 2020
ADOPTED this		day of	, 2020

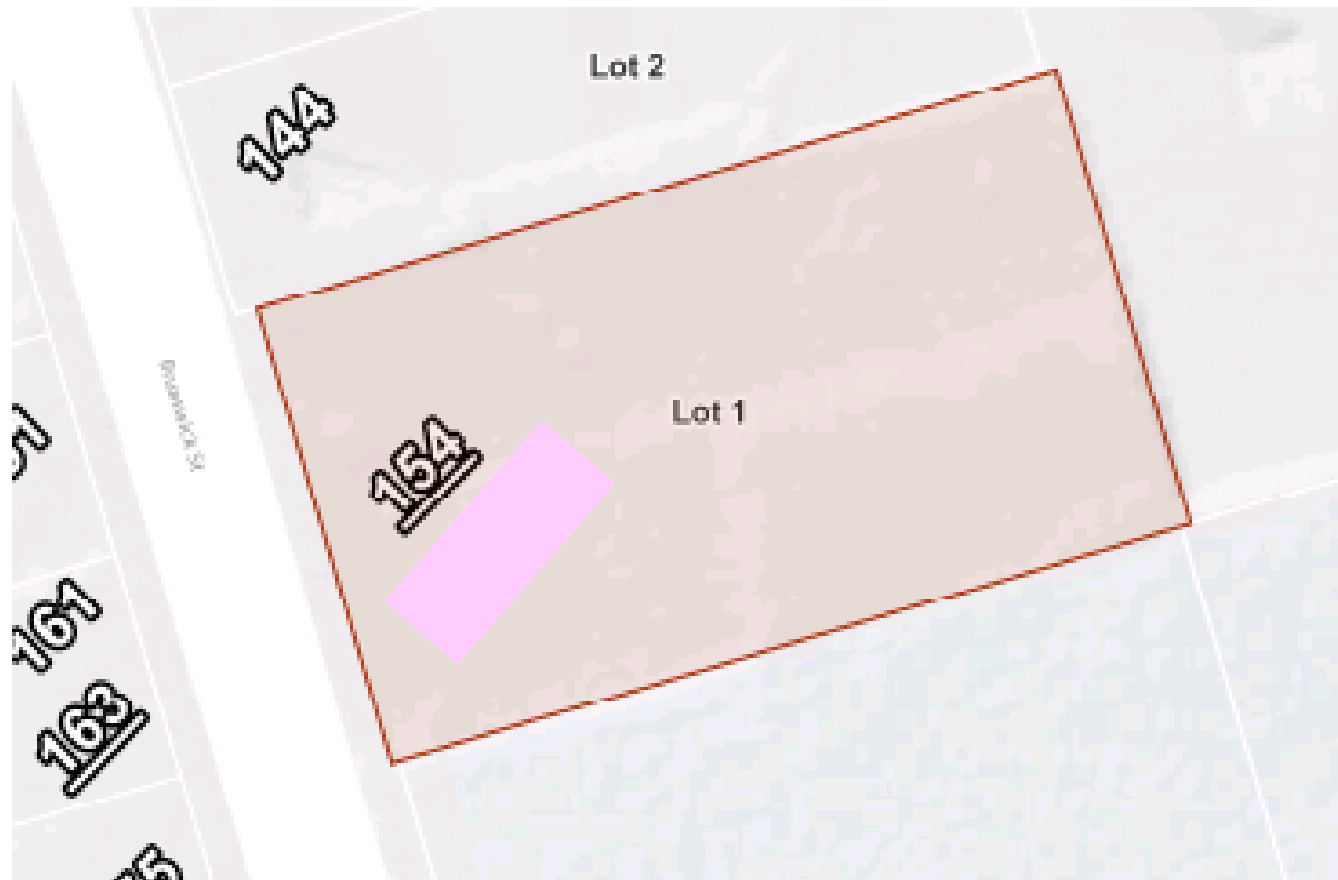
Council resolved to waive the public hearing on April 21, 2020 and notice of intention to waive public hearing for this bylaw was published on the 23 day of April, 2020 and the 28 day of April, 2020 in the Penticton Herald newspaper, pursuant to Section 467 of the *Local Government Act*.

John Vassilaki, Mayor

Angie Collison, Corporate Officer

Rezone
154 Brunswick Street

From RM3 (Medium
Density Multiple
Housing) to CD7-
Comprehensive
Development Zone
(154 Brunswick St)



City of Penticton – Schedule 'A'

Zoning Amendment Bylaw No. 2020-14

Date: _____

Corporate Officer: _____



City of Penticton
171 Main St. | Penticton B.C. | V2A 5A9
www.penticton.ca | ask@penticton.ca

Development Permit

Permit Number: DP PL2019-8680

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 1 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale Lytton)
District Plan KAP49946
 - Civic: 154 Brunswick Street
 - PID: 018-291-422
3. This permit has been issued in accordance with Section 489 of the *Local Government Act*, to permit the construction of a six-storey, 34-unit apartment building, as shown in the plans attached in Schedule 'A'.
4. In accordance with Section 502 of the *Local Government Act* a deposit or irrevocable letter of credit, in the amount of \$[] must be deposited prior to, or in conjunction with, an application for a building permit for the development authorized by this permit. The City may apply all or part of the above-noted security in accordance with Section 502 of the *Local Government Act*, to undertake works or other activities required to:
 - a. correct an unsafe condition that has resulted from a contravention of this permit,
 - b. satisfy the landscaping requirements of this permit as shown in Schedule 'A' or otherwise required by this permit, or
 - c. repair damage to the natural environment that has resulted from a contravention of this permit.
5. The holder of this permit shall be eligible for a refund of the security described under Condition 4 only if:
 - a. The permit has lapsed as described under Condition 8, or
 - b. A completion certificate has been issued by the Building Inspection Department and the Director of Development Services is satisfied that the conditions of this permit have been met.
6. Upon completion of the development authorized by this permit, an application for release of securities (Landscape Inspection & Refund Request) must be submitted to the Planning Department. Staff may carry out inspections of the development to ensure the conditions of this permit have been met. Inspection fees may be withheld from the security in accordance with the City of Penticton Fees

and Charges Bylaw (as amended from time to time).

General Conditions

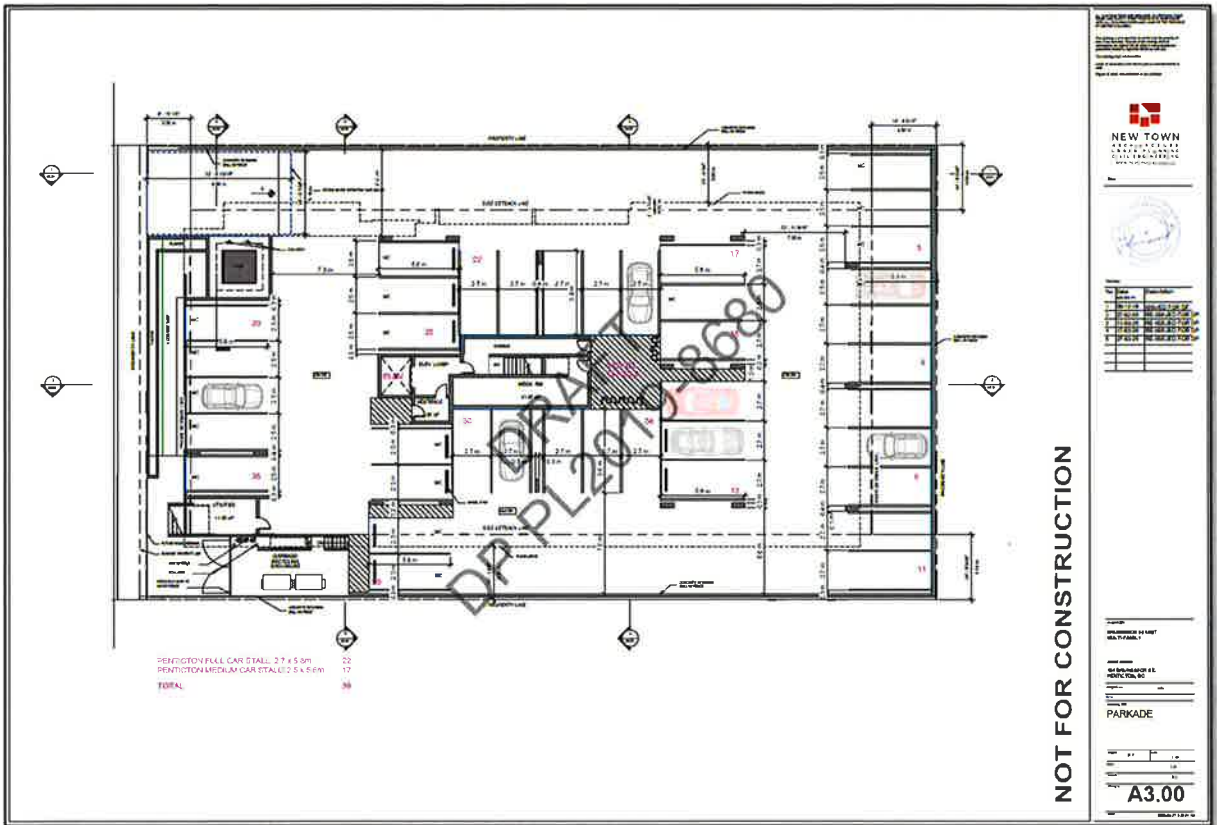
7. In accordance with Section 501(2) of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
8. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
9. **This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
10. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
11. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the _____ day of _____, 2020.

Issued this _____ day of _____, 2020.

Angela Collison
Corporate Officer

DP PL2019-0080



NOT FOR CONSTRUCTION

NEW TOWN
 ARCHITECTURAL
 CONSULTANTS

PROJECT NO. [REDACTED]
 SHEET NO. [REDACTED]

DATE: [REDACTED]

SCALE: 1:100

PROJECT: PARKADE

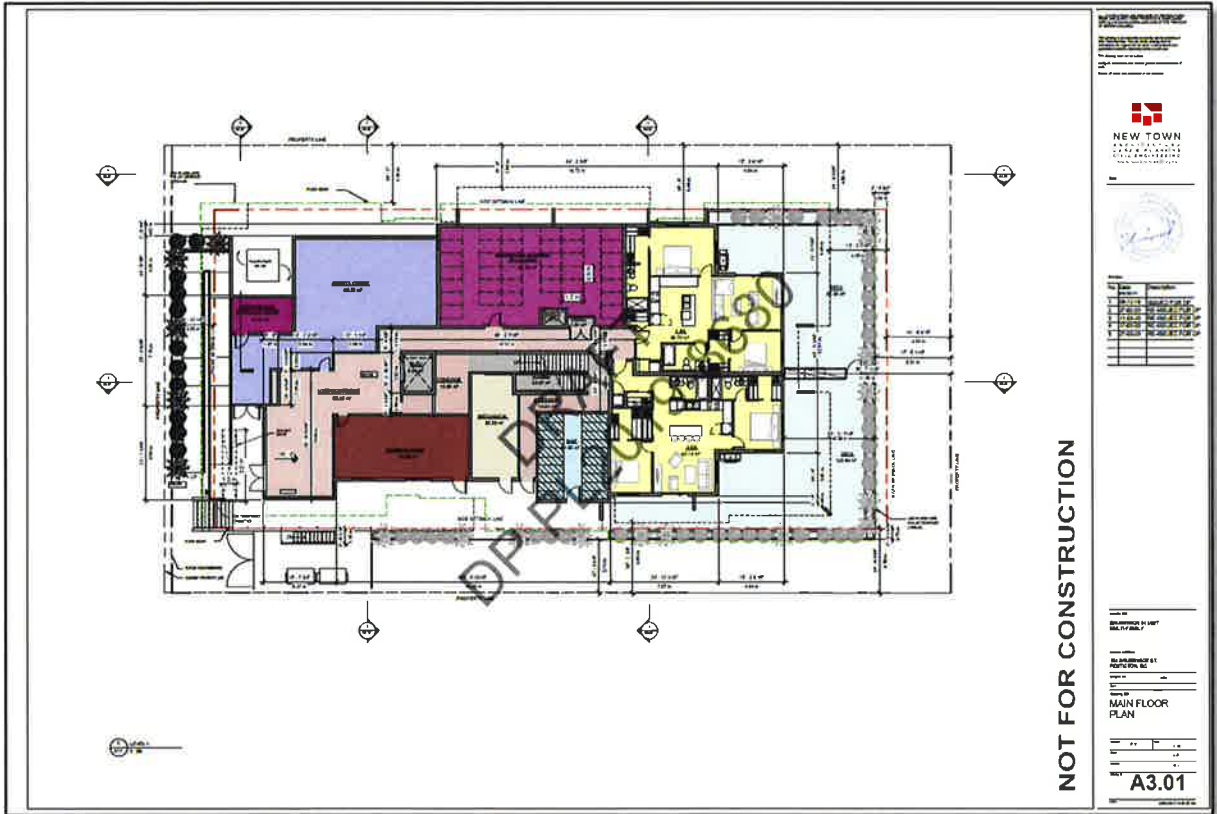
DATE: [REDACTED]

BY: [REDACTED]

CHECKED BY: [REDACTED]

APPROVED BY: [REDACTED]

A3.00



NOT FOR CONSTRUCTION

NEW TOWN
 ARCHITECTURAL
 CONSULTANTS

PROJECT NO. [REDACTED]
 SHEET NO. [REDACTED]

DATE: [REDACTED]

SCALE: 1:100

PROJECT: PARKADE

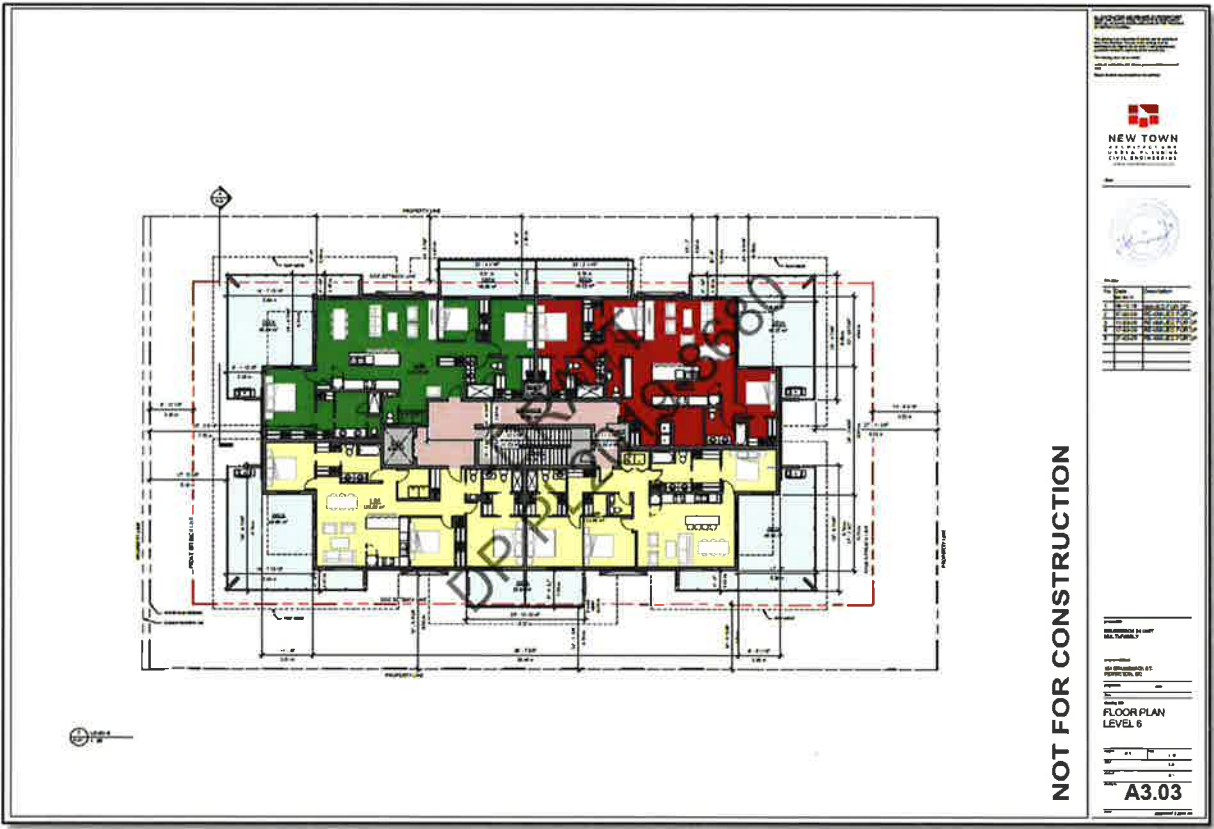
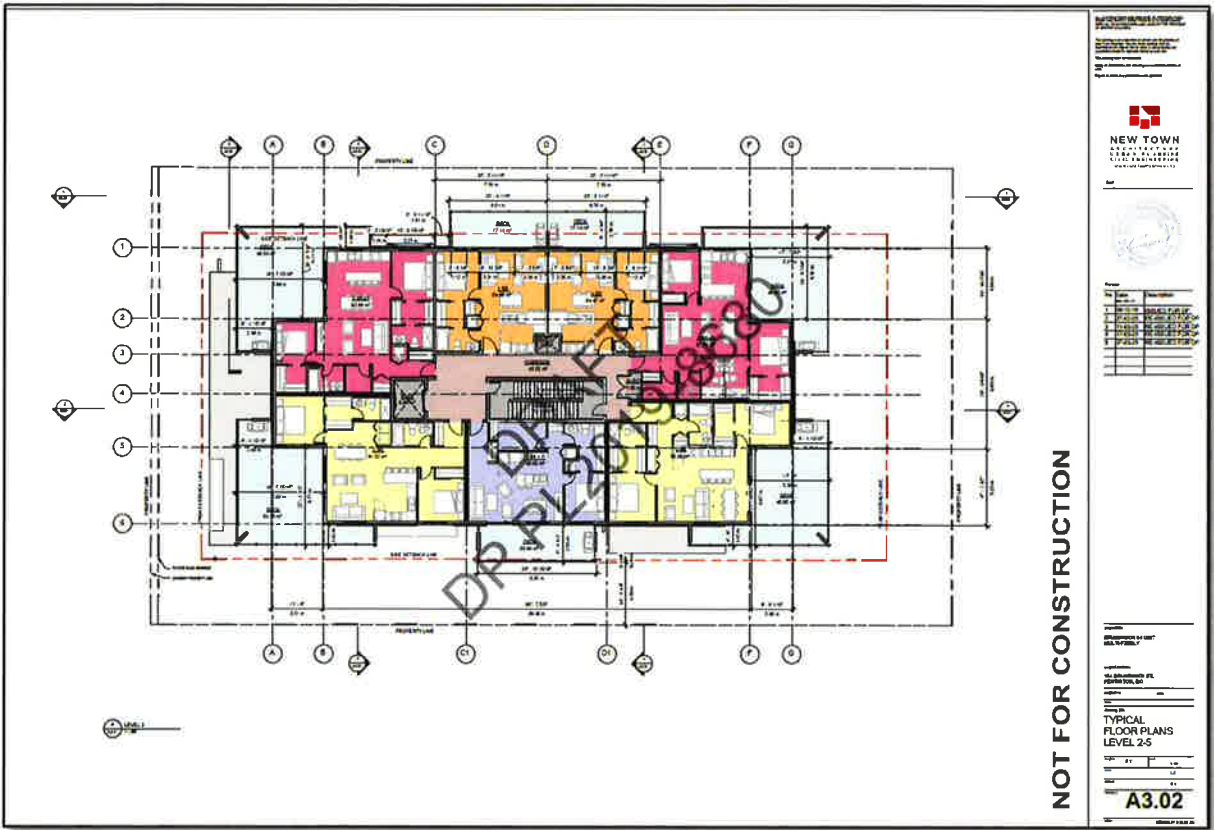
DATE: [REDACTED]

BY: [REDACTED]

CHECKED BY: [REDACTED]

APPROVED BY: [REDACTED]

A3.01



NOT FOR CONSTRUCTION

A3.04

NEW TOWN
 CIVIL ENGINEERING
 1000 WEST 10TH AVENUE, SUITE 100
 DENVER, CO 80202
 TEL: 303.733.8800
 WWW.NEWTOWNENGINEERING.COM

PROJECT INFORMATION

Project Name: [REDACTED]
 Project No: [REDACTED]
 Drawing No: [REDACTED]
 Drawing Title: ROOF PLAN

REVISIONS

No.	Description	Date
1	ISSUED FOR PERMIT	08/14/2019
2	ISSUED FOR PERMIT	08/14/2019
3	ISSUED FOR PERMIT	08/14/2019
4	ISSUED FOR PERMIT	08/14/2019
5	ISSUED FOR PERMIT	08/14/2019

Scale: 1/8" = 1'-0"

Author: [REDACTED]
 Checker: [REDACTED]
 Designer: [REDACTED]
 Engineer: [REDACTED]

NOT FOR CONSTRUCTION

A4.00

NEW TOWN
 CIVIL ENGINEERING
 1000 WEST 10TH AVENUE, SUITE 100
 DENVER, CO 80202
 TEL: 303.733.8800
 WWW.NEWTOWNENGINEERING.COM

PROJECT INFORMATION

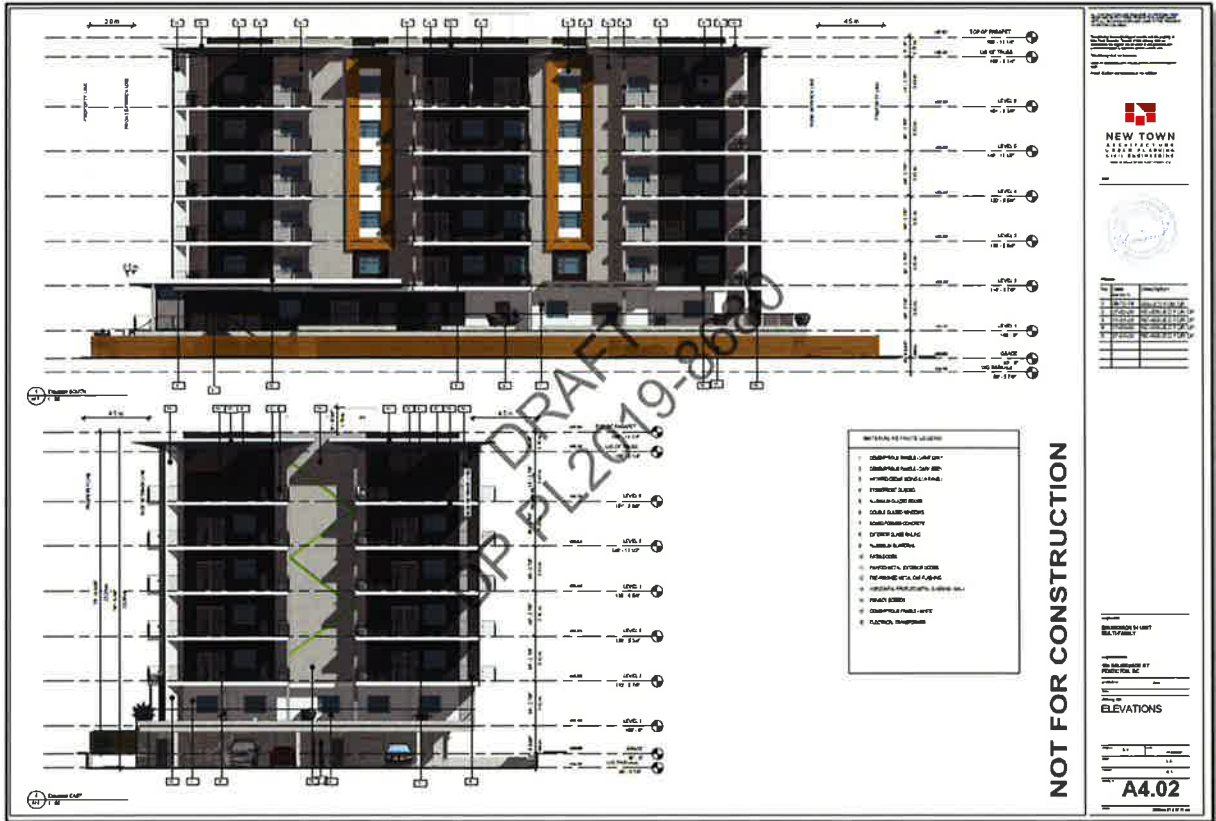
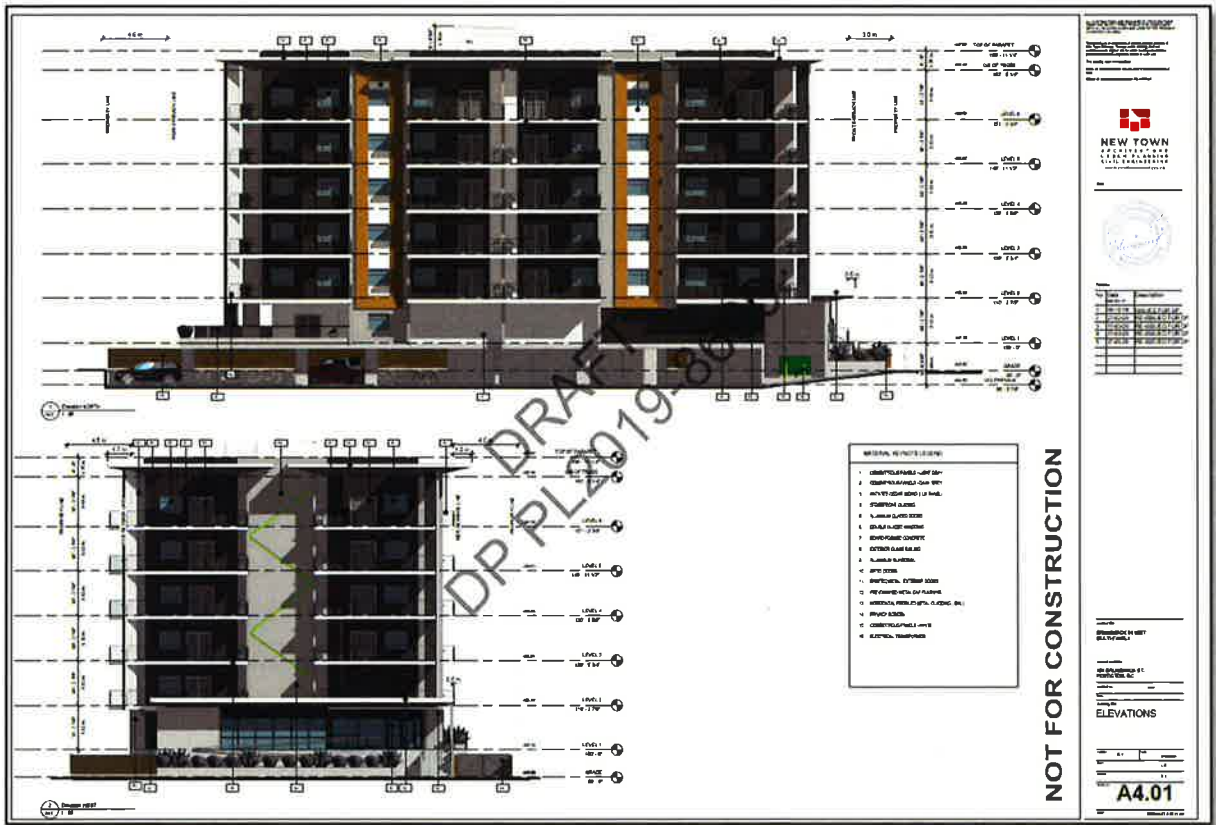
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 Project No: [REDACTED]
 Drawing No: [REDACTED]
 Drawing Title: MATERIALS

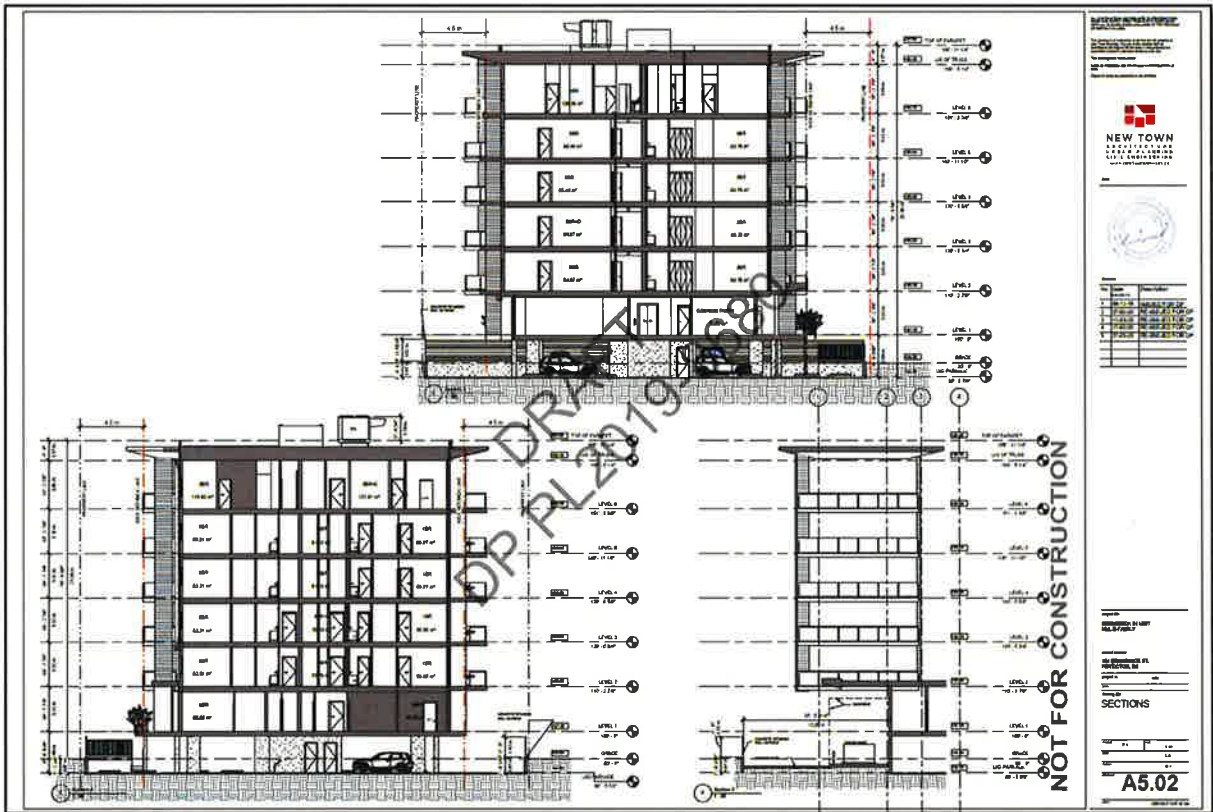
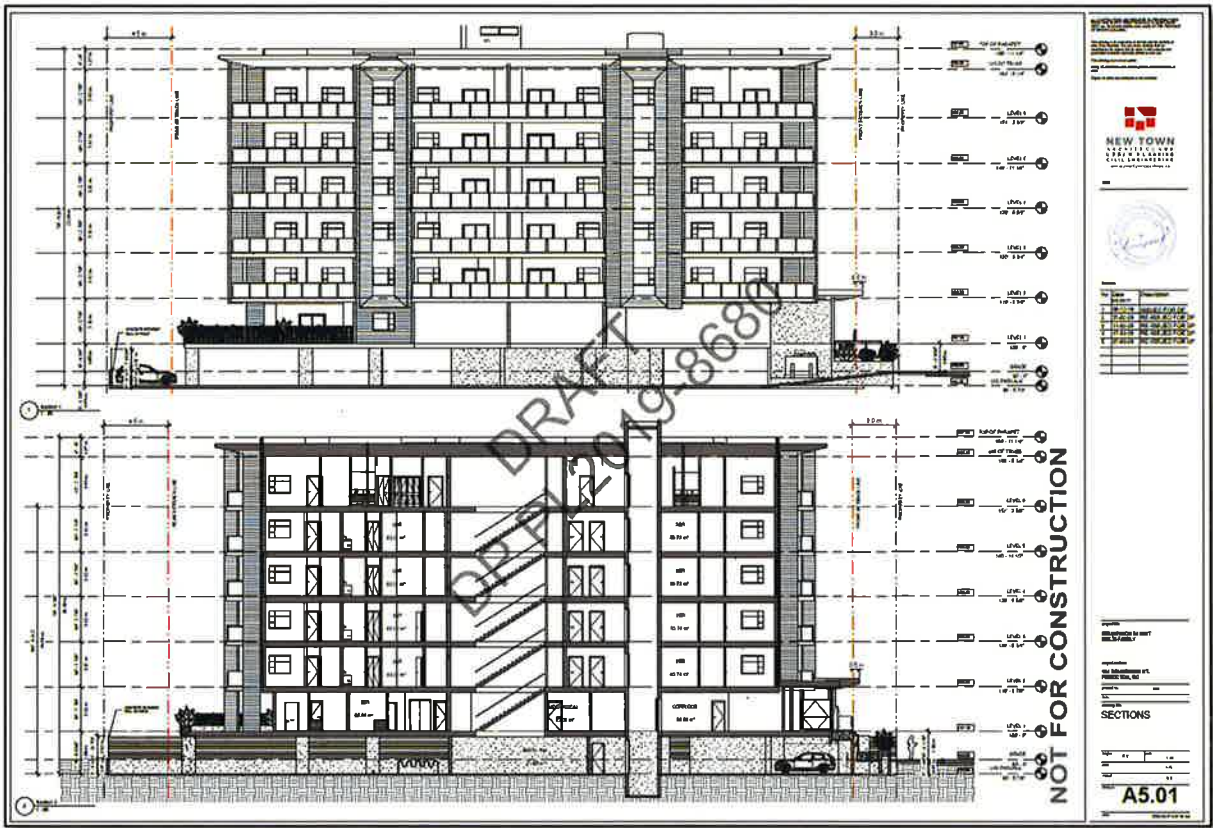
REVISIONS

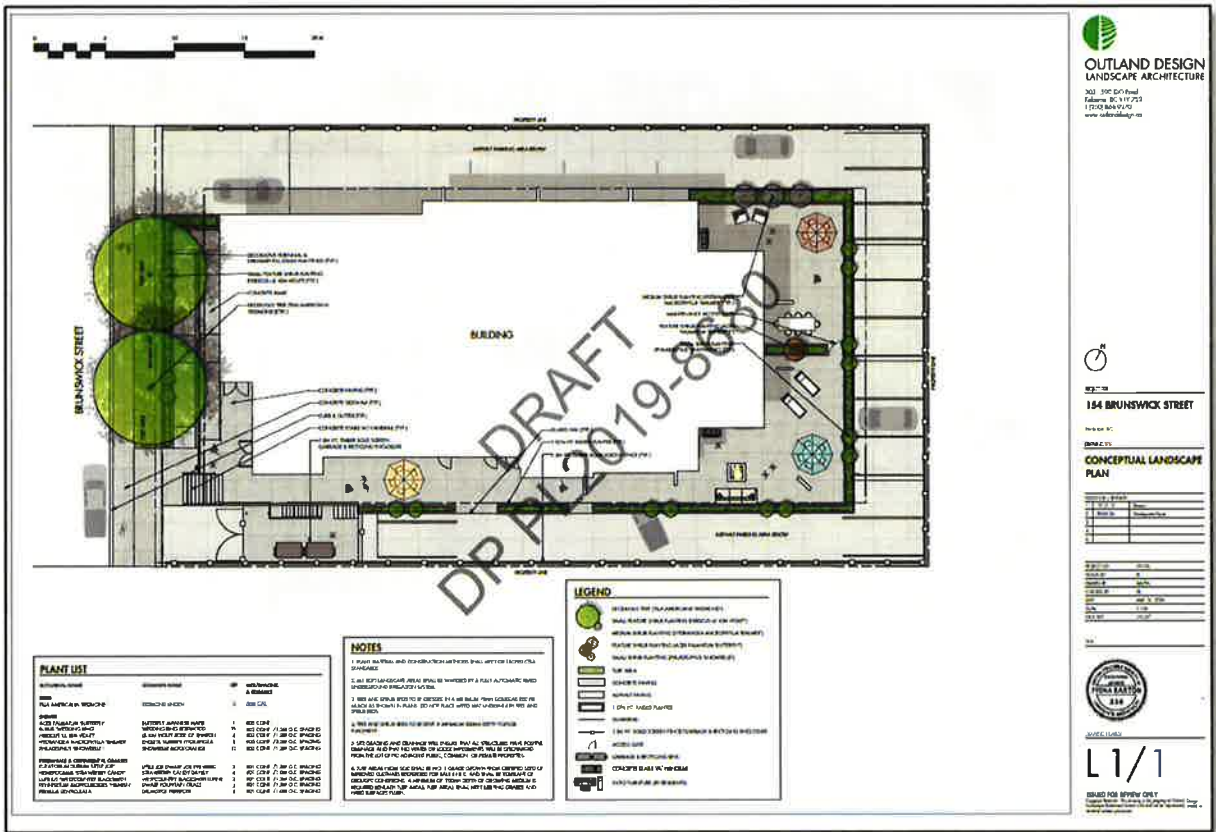
No.	Description	Date
1	ISSUED FOR PERMIT	08/14/2019
2	ISSUED FOR PERMIT	08/14/2019
3	ISSUED FOR PERMIT	08/14/2019
4	ISSUED FOR PERMIT	08/14/2019
5	ISSUED FOR PERMIT	08/14/2019

Scale: 1/8" = 1'-0"

Author: [REDACTED]
 Checker: [REDACTED]
 Designer: [REDACTED]
 Engineer: [REDACTED]







OUTLAND DESIGN
 LANDSCAPE ARCHITECTURE
 302 595 0711
 1700 BAYVIEW RD
 SCARBOROUGH, ONTARIO M1S 1V7
 www.outlanddesign.ca

154 BRUNSWICK STREET

CONCEPTUAL LANDSCAPE PLAN

DATE	NO.
15/05/2019	1
16/05/2019	2
17/05/2019	3
18/05/2019	4
19/05/2019	5
20/05/2019	6
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18/08/2019	96
19/08/2019	97
20/08/2019	98
21/08/2019	99
22/08/2019	100



L1/1

PLANT LIST

Plant Name	Quantity	Notes
...

NOTES

1. ALL PLANTING AND INSTALLATION NOTES SHALL APPLY TO THE ENTIRE SITE.
2. ALL PLANTING SHALL BE INSTALLED BY A QUALIFIED CONTRACTOR.
3. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
4. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
5. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
6. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
7. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
8. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
9. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.
10. ALL PLANTING SHALL BE INSTALLED BY THE END OF THE PROJECT.

LEGEND

...	...
-----	-----

ISSUED FOR REVIEW ONLY

Bylaw No. 2020-18

A Bylaw to Amend Zoning Bylaw 2017-08

WHEREAS the Council of the City of Penticton has adopted a Zoning Bylaw pursuant the *Local Government Act*;

AND WHEREAS the Council of the City of Penticton wishes to amend Zoning Bylaw 2017-08;

NOW THEREFORE BE IT RESOLVED that the Municipal Council of the City of Penticton, in open meeting assembled, hereby ENACTS AS FOLLOWS:

1. Title:

This bylaw may be cited for all purposes as "Zoning Amendment Bylaw No. 2020-18".

2. Amendment:

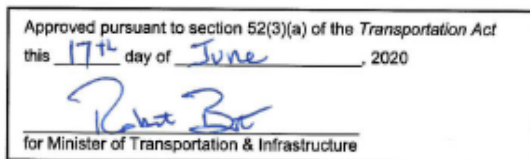
2.1 Zoning Bylaw No. 2017-08 is hereby amended as follows:

Rezone Lot 8 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale-Lytton) District Plan 368, located at 175 Brunswick Street, from RD2 (Duplex Housing: Lane) to RM2 (Low Density Multiple Housing).

2.2 Schedule 'A' attached hereto forms part of this bylaw.

READ A FIRST time this	2 day of	June, 2020
A PUBLIC HEARING was held this	16 day of	June, 2020
READ A SECOND time this	16 day of	June, 2020
READ A THIRD time this	16 day of	June, 2020
RECEIVED the approval of the	17 day of	June, 2020
Ministry of Transportation on the		
ADOPTED this	day of	, 2020

Notice of intention to proceed with this bylaw was published on the 4 day of June, 2020 and the 9 day of June, 2020 in the Penticton Herald newspaper, pursuant to Section 94 of the *Community Charter*.



John Vassilaki, Mayor

Angie Collison, Corporate Officer

175 Brunswick Street

Rezone from RD2 (Duplex Housing: Lane) to RM2 (Low Density Multiple Housing)



City of Penticton – Schedule 'A'

Zoning Amendment Bylaw No. 2020-18

Date: _____

Corporate Officer: _____

Development Variance Permit

Permit Number: DVP PL2020-8741

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 8 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale-Lytton)
District Plan 368
 - Civic: 175 Brunswick Street
 - PID: 012-496-227
3. This permit has been issued in accordance with Section 498 of the *Local Government Act*, to vary the following sections of Zoning Bylaw 2017-08 to allow for the construction of two side-by-side duplexes, as shown in the plans attached in Schedule 'A':
 - a. Section 10.8.2.7.i: to reduce the minimum interior side yard from 3.0m to 1.5m.

General Conditions

4. In accordance with Section 501 of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
5. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
- 6. This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
7. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
8. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

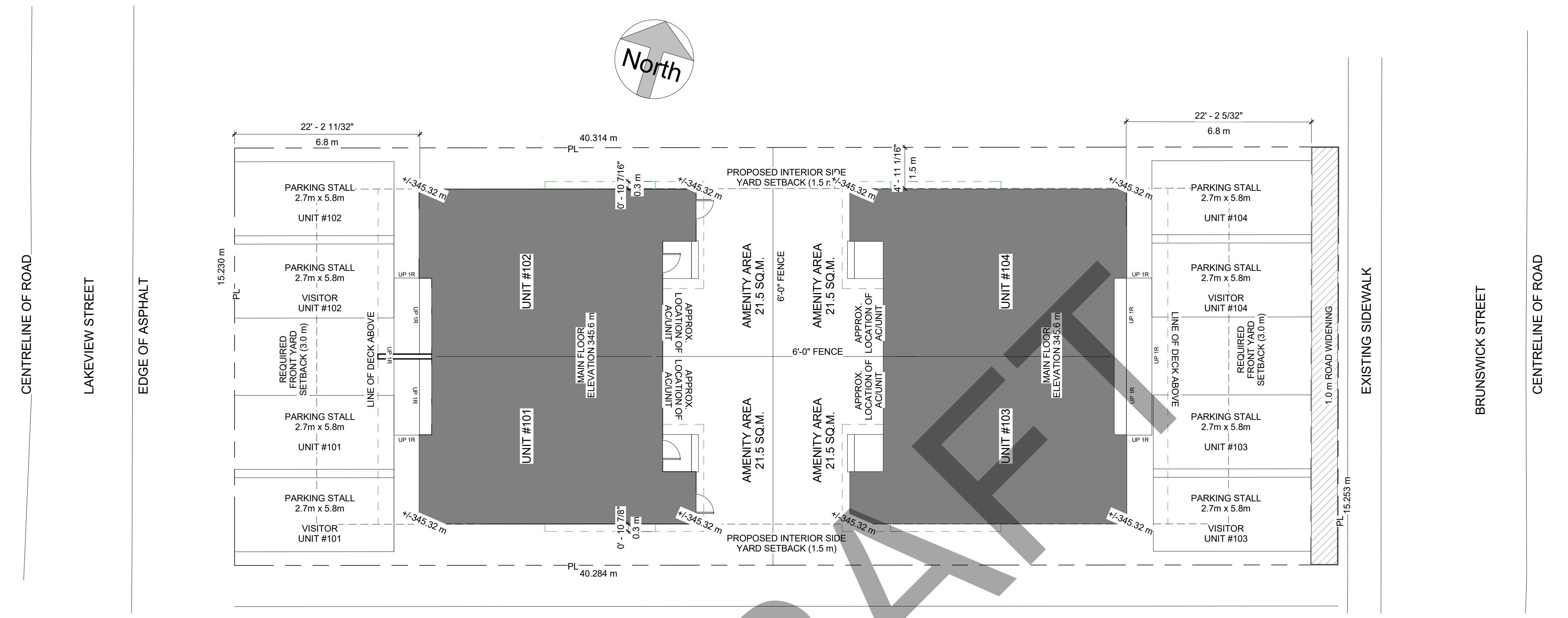
Authorized by City Council, the ____ day of _____, 2020.

Issued this ____ day of _____, 2020.

Angela Collison
Corporate Officer

DRAFT

**NOT FOR
CONSTRUCTION**



ZONING REVIEW
CURRENT PROPERTY ZONING - R2D
PROPOSED PROPERTY ZONING - RM2 LOW DENSITY MULTIPLE HOUSING

MAXIMUM LOT COVERAGE:	40 %
PROVIDED LOT COVERAGE:	37 %
MAXIMUM DENSITY	0.8
PROVIDED DENSITY	0.66 (TOTAL FOR PROPERTY)
MAXIMUM BUILDING HEIGHT:	12 m
PROPOSED BUILDING HEIGHT:	7.1 m
REQUIRED FRONT YARD SETBACK:	3.0 m
PROVIDED FRONT YARD SETBACK (EAST):	6.8 m
PROVIDED FRONT YARD SETBACK (WEST):	6.8 m
REQUIRED INTERIOR SIDE YARD SETBACK:	3.0 m
PROPOSED INTERIOR SIDE YARD SETBACK (NORTH):	1.5 m
PROPOSED INTERIOR SIDE YARD SETBACK (SOUTH):	1.5 m
REQUIRED AMENITY SPACE:	20 SQ.M./DWELLING UNIT
PROVIDED AMENITY SPACE:	21.5 SQ.M./DWELLING UNIT

NOTE:

- ALL ROOF DRAINAGE TO BE DIRECTED TO ON-SITE APPROVED HOLDING TANK.
 - ALL ON-SITE RUN-OFF AND SURFACE DRAINAGE TO BE CONTROLLED ON-SITE. APPROVED ABSORBENT LANDSCAPING MATERIAL.
 - STORM WATER CALCULATIONS TO BE COMPLETED BY ENGINEER AS REQUIRED.
 - ROCK PIT AND/OR HOLDING TANK SIZES TO BE PROVIDED BY ENGINEER AS REQUIRED.
 - PROVIDE DRAINAGE AWAY FROM THE BUILDING FOUNDATION.
 - MIN. SLOPE AWAY FROM BUILDING FOR AT LEAST 5'-0": 5% (APPROX. 3/4" PER 12")
- IF ROOF OVERHANG PROJECTS WITHIN 1.2 m OF PROPERTY LINE PROTECT SOFFIT (NON-VENTING SOFFIT) AS PER 9.10.15.5.(10) OF THE BCBC
- GRADE ELEVATIONS TO BE CONFIRMED ON SITE BY CONTRACTOR; ELEVATIONS HAVE NOT BEEN VERIFIED ON-SITE BY PEOPLE PLUS SPACE. FOUNDATION WALL HEIGHTS MAY REQUIRE ADJUSTMENT TO SUIT SITE CONDITIONS AND MANUFACTURER SPECIFICATIONS.

No.	Description	Date
1	ISSUED FOR REVIEW	2020-01-31
2	ISSUED FOR REVIEW	2020-02-06
3	ISSUED FOR DP	2020-02-06
4	ISSUED FOR DP	2020-02-20
5	REVISED EXTERIOR FINISHES	2020-03-13
6	REISSUED FOR DP	2020-04-30

**BRUNSWICK/LAKEVIEW
DEVELOPMENT**
Unit #101 & 102, 175 Brunswick Street, Penticton BC

SITE PLAN

Project number	19-013
Date	2019-11-26
Drawn by	H.S.

ID-101

Scale	1/8" = 1'-0"
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City of Penticton
171 Main St. | Penticton B.C. | V2A 5A9
www.penticton.ca | ask@penticton.ca

Development Permit

Permit Number: DP PL2020-8740

Owner Name
Owner Address

Conditions of Permit

1. This permit is issued subject to compliance with all of the bylaws of the City, except as specifically varied or supplemented by this Permit.
2. This permit applies to:
 - Legal: Lot 8 District Lot 4 Group 7 Similkameen Division Yale (Formerly Yale-Lytton)
District Plan 368
 - Civic: 175 Brunswick Street
 - PID: 012-496-227
3. This permit has been issued in accordance with Section 489 of the *Local Government Act*, to permit the construction of two side-by-side duplexes as shown in the plans attached in Schedule 'A'.
4. In accordance with Section 502 of the *Local Government Act* a deposit or irrevocable letter of credit, in the amount of \$_____] must be deposited prior to, or in conjunction with, an application for a building permit for the development authorized by this permit. The City may apply all or part of the above-noted security in accordance with Section 502 of the *Local Government Act*, to undertake works or other activities required to:
 - a. correct an unsafe condition that has resulted from a contravention of this permit,
 - b. satisfy the landscaping requirements of this permit as shown in Schedule 'A' or otherwise required by this permit, or
 - c. repair damage to the natural environment that has resulted from a contravention of this permit.
5. The holder of this permit shall be eligible for a refund of the security described under Condition 4 only if:
 - a. The permit has lapsed as described under Condition 8, or
 - b. A completion certificate has been issued by the Building Inspection Department and the Director of Development Services is satisfied that the conditions of this permit have been met.
6. Upon completion of the development authorized by this permit, an application for release of securities (Landscape Inspection & Refund Request) must be submitted to the Planning Department. Staff may carry out inspections of the development to ensure the conditions of this permit have been met. Inspection fees may be withheld from the security in accordance with the City of Penticton Fees and Charges Bylaw (as amended from time to time).

General Conditions

7. In accordance with Section 501(2) of the *Local Government Act*, the lands subject to this permit shall be developed in general accordance with this permit and the plans attached as Schedule 'A'.
8. In accordance with Section 504 of the *Local Government Act*, if the holder of this permit does not commence the development authorized by this permit within 2 years of the date of this permit, this permit shall lapse.
9. **This permit is not a building permit. In order to proceed with this development, the holder of this permit must hold a valid building permit issued by the Building Inspection Department.**
10. This permit does not constitute any other municipal, provincial or federal approval. The holder of this permit is responsible to obtain any additional municipal, federal, or provincial approvals prior to commencing the development authorized by this permit.
11. This permit does not include off-site infrastructure costs that may be required at the building permit stage, such as Development Cost Charges (DCC's), road improvements and electrical servicing. There may be substantial infrastructure and servicing costs payable at a later date. For more information on servicing and infrastructure requirements please contact the Development Engineering Department at (250) 490-2501. For more information on electrical servicing costs, please contact the Electric Utility at (250) 490-2535.

Authorized by City Council, the _____ day of _____, 2020.

Issued this _____ day of _____, 2020.

Angela Collison
Corporate Officer

SITE PLAN OF LOT 8, DL 4, Gp 7, SDYD, PLAN 368

CIVIC ADDRESS: 175 BRUNSWICK STREET, PENTICTON, B.C.
PID: 012-496-227

SCALE 1:200



LEGEND

SPOT ELEVATION

THIS PLAN IS MADE BY LAND TITLE SURVEYORS AUTHORITY (LEGISLATED AND A FIELD SURVEY) AND IS NOT TO BE USED FOR ANY OTHER PURPOSES.
THIS PLAN IS PREPARED SOLELY FOR A LIMITED CONTRACTUAL USE BETWEEN MANDEVILLE LAND SURVEYING AND OUR CLIENT. IT IS NOT TO BE USED FOR THE LOCATION OF PROPERTY LINES. WE ACCEPT NO RESPONSIBILITY FOR ANY UNAUTHORIZED USE.
FIELD SURVEY COMPLETED 14:45:25h DAY OF NOVEMBER, 2018.
ELEVATIONS ARE GEODETIC (ORTHOMETRIC HT=4) IS DERIVED FROM PENICTON MOUNTAIN #1430.
ALL DIMENSIONS ARE IN METRES AND DECIMALS THEREOF UNLESS OTHERWISE NOTED.



MANDEVILLE LAND SURVEYING INC
PROFESSIONAL B.C. AND CANADIAN LAND SURVEYORS
352 MARTIN STREET, PENTICTON, B.C.
PH: 250-496-5277, WWW.MANDEVILLE.COM
FILE: 18-012 QMS: 19-275



Planning and design

Project: Plan 368, Planning and Design
PID: 012-496-227
Surveyor: M. VAN LEE
250-496-5277
mvanlee@pds.com

NOT FOR CONSTRUCTION

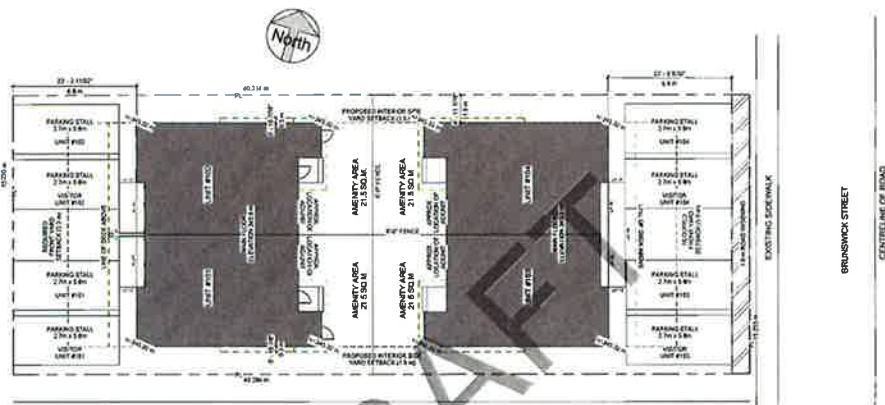
NO.	DESCRIPTION	DATE
1	PRELIMINARY PLAN	2018-11-26
2	FINAL PLAN	2018-11-26
3	REVISIONS	2018-11-26
4	REVISIONS	2018-11-26
5	REVISIONS	2018-11-26
6	REVISIONS	2018-11-26
7	REVISIONS	2018-11-26
8	REVISIONS	2018-11-26
9	REVISIONS	2018-11-26
10	REVISIONS	2018-11-26
11	REVISIONS	2018-11-26
12	REVISIONS	2018-11-26
13	REVISIONS	2018-11-26
14	REVISIONS	2018-11-26
15	REVISIONS	2018-11-26
16	REVISIONS	2018-11-26
17	REVISIONS	2018-11-26
18	REVISIONS	2018-11-26
19	REVISIONS	2018-11-26
20	REVISIONS	2018-11-26

BRUNSWICK/LAKEVIEW DEVELOPMENT
SITE SURVEY

Project number: 18-012
Date: 2018-11-26
Scale: 1:200

ID-100

Sheet: 3/37 x 1/2
Page 3 of 8



DRAFT

ZONING REVIEW
 CURRENTLY PROPERTY ZONING - R2D
 PROPOSED PROPERTY ZONING - RM2 LOW DENSITY MULTIPLE HOUSING

MAXIMUM LOT COVERAGE 40 %
PROVIDED LOT COVERAGE 37 %

MAXIMUM DENSITY 0.9
PROVIDED DENSITY 0.86 (TOTAL FOR PROPERTY)

MAXIMUM BUILDING HEIGHT 12 m
PROPOSED BUILDING HEIGHT 7.1 m

REQUIRED FRONT YARD SETBACK 3.0 m
PROVIDED FRONT YARD SETBACK (EAST) 6.8 m
PROVIDED FRONT YARD SETBACK (WEST) 6.8 m

REQUIRED INTERIOR SIDE YARD SETBACK 3.0 m
PROPOSED INTERIOR SIDE YARD SETBACK (NORTH) 1.5 m
PROPOSED INTERIOR SIDE YARD SETBACK (SOUTH) 1.5 m

REQUIRED AMENITY SPACE 20.80 M² DWELLING UNIT
PROVIDED AMENITY SPACE 21.5 00 M² DWELLING UNIT

NOTE

- 1 ALL ROOF DRAINAGE TO BE DIRECTED TO ON-SITE APPROVED HOLDING TANK
- 2 ALL ON-SITE RUN-OFF AND SURFACE DRAINAGE TO BE CONTROLLED ON-SITE APPROVED ABSORBENT LANDSCAPING MATERIAL
- 3 STORM WATER CALCULATIONS TO BE COMPLETED BY ENGINEER AS REQUIRED
- 4 ROCK PIT AND/OR HOLDING TANK SIZES TO BE PROVIDED BY ENGINEER AS REQUIRED
- 5 PROVIDE DRAINAGE AWAY FROM THE BUILDING FOUNDATION
- 6 MIN. SLOPE AWAY FROM BUILDING FOR AT LEAST 3'-0" (APPROX. 3/4" PER 12')

IF ROOF OVERHANG PROJECTS WITHIN 1.2 m OF PROPERTY LINE PROTECT SOFFIT (NON-VENTING SOFFIT) AS PER 6.10.15.5.(10) OF THE CBCS
 GRADE ELEVATIONS TO BE CONFIRMED ON SITE BY CONTRACTOR. ELEVATIONS HAVE NOT BEEN VERIFIED ON-SITE BY PEOPLE PLUS SPACE
 FOUNDATION WALL HEIGHTS MAY REQUIRE ADJUSTMENT TO SUIT SITE CONDITIONS AND MANUFACTURER SPECIFICATIONS

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 PLANNING
 AND DESIGN

People Plus Space Planning and Design
 PO Box 1120
 Richmond BC V6X 1S2
 604-273-1881
 www.peopleplus.ca

NOT FOR
 CONSTRUCTION

No.	Description	Date
1	PRELIMINARY DEVELOPMENT	2019-11-26
2	REVISED DEVELOPMENT	2019-11-26
3	REVISED DEVELOPMENT	2019-11-26
4	REVISED DEVELOPMENT	2019-11-26
5	REVISED DEVELOPMENT	2019-11-26
6	REVISED DEVELOPMENT	2019-11-26
7	REVISED DEVELOPMENT	2019-11-26
8	REVISED DEVELOPMENT	2019-11-26
9	REVISED DEVELOPMENT	2019-11-26
10	REVISED DEVELOPMENT	2019-11-26
11	REVISED DEVELOPMENT	2019-11-26
12	REVISED DEVELOPMENT	2019-11-26
13	REVISED DEVELOPMENT	2019-11-26
14	REVISED DEVELOPMENT	2019-11-26
15	REVISED DEVELOPMENT	2019-11-26
16	REVISED DEVELOPMENT	2019-11-26
17	REVISED DEVELOPMENT	2019-11-26
18	REVISED DEVELOPMENT	2019-11-26
19	REVISED DEVELOPMENT	2019-11-26
20	REVISED DEVELOPMENT	2019-11-26

**BRUNSWICK/LAKEVIEW
 DEVELOPMENT**
1000118 001 110 Brunswick Street, Vancouver BC

SITE PLAN

Project Number: 18-013
 Date: 2019-11-26
 Drawn By: H.B.
ID-101
 Scale: 1/8" = 1'-0"

p+s
PLANNING
AND DESIGN

PLANNING
AND DESIGN

Project File Name: Planning and Design
2018-11-08
Reviewed by: VLS 120
2018-11-08
Author: G. Quinn

NOT FOR
CONSTRUCTION

No.	Description	Qty
1	200mm x 100mm x 100mm	1000
2	200mm x 100mm x 100mm	1000
3	200mm x 100mm x 100mm	1000
4	200mm x 100mm x 100mm	1000
5	200mm x 100mm x 100mm	1000
6	200mm x 100mm x 100mm	1000
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8	200mm x 100mm x 100mm	1000
9	200mm x 100mm x 100mm	1000
10	200mm x 100mm x 100mm	1000

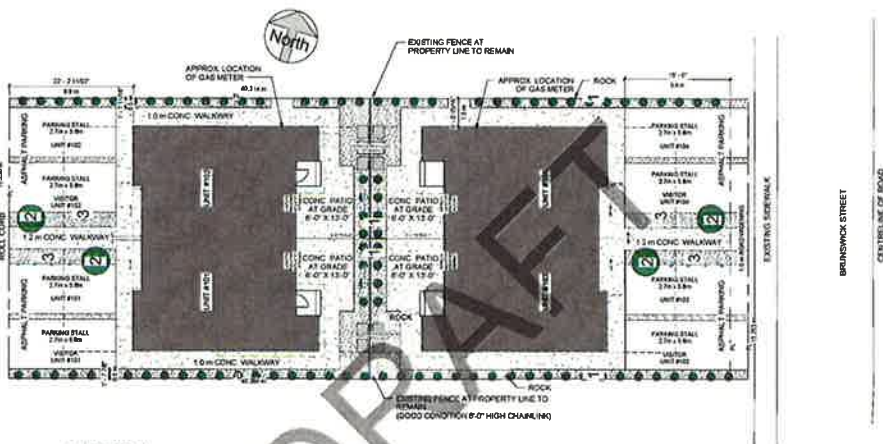
**BRUNSWICK/LAKEVIEW
DEVELOPMENT**

1401 17th & 18th Street, Fredericton, NB

LANDSCAPE PLAN

Project Number:	18-013
Date:	2018-11-08
Client:	11.6
Scale:	1/8" = 1'-0"

ID-102



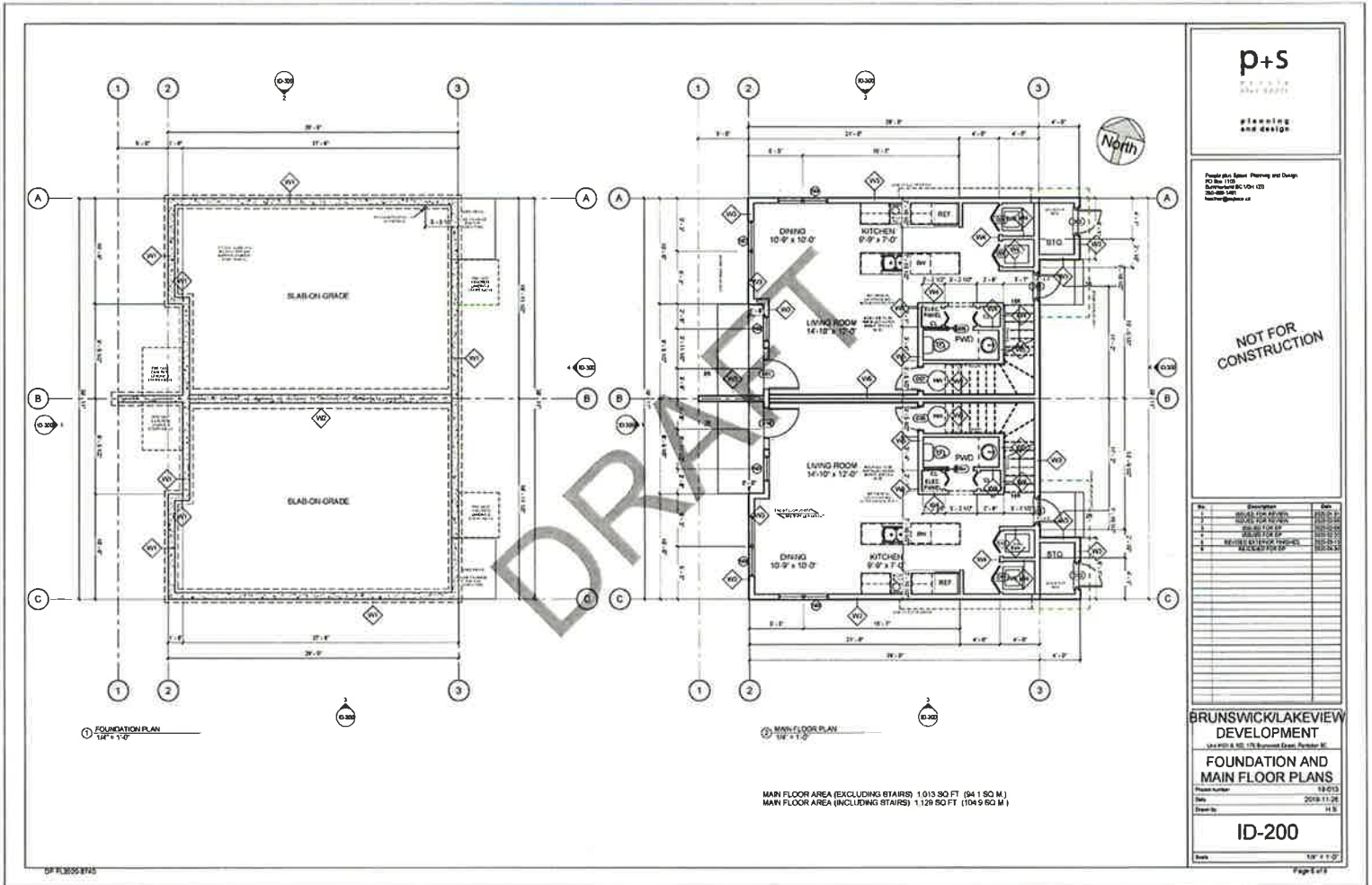
LANDSCAPE PLAN
1/8" = 1'-0"

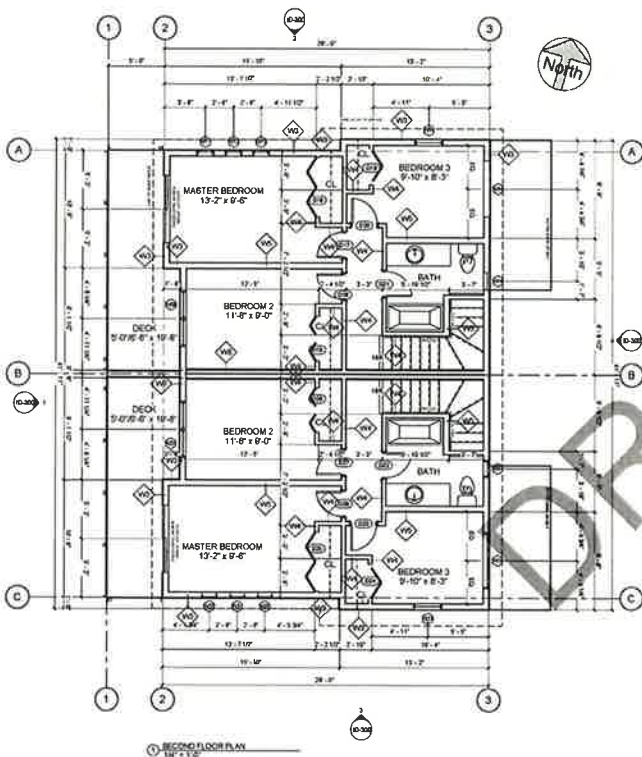
LANDSCAPE LEGEND

ITEM NO.	DESCRIPTION	QUANTITY
01	KARL FORESTER	76
02	TREE	4
03	GOLD JAPANESE FOREST GRASS	18

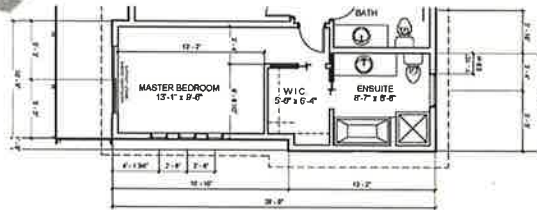
- LANDSCAPE NOTES**
- 1 ALL LANDSCAPED AREAS TO HAVE UNDERGROUND IRRIGATION QW WATER SENSORS AND TIMER
 - 2 COVER PLANTER BEDS WITH LANDSCAPE FABRIC AND MULCH
 - 3 LANDSCAPE FABRIC UNDER RIVER ROCK
 - 4 Trees in front shall be either a deciduous tree with a minimum caliper of 60mm and a clear stem height of 1.5m or a coniferous tree with a minimum height of 2.5m

- NOTE:**
- 1 ALL ROOF DRAINAGE TO BE DIRECTED TO ON-SITE APPROVED HOLDING TANK
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 - 3 STORM WATER CALCULATIONS TO BE COMPLETED BY ENGINEER AS REQUIRED
 - 4 ROCK PIT AND/OR HOLDING TANK SIZES TO BE PROVIDED BY ENGINEER AS REQUIRED
 - 5 PROVIDE DRAINAGE AWAY FROM THE BUILDING FOUNDATION
 - 6 MIN. SLOPE AWAY FROM BUILDING FOR AT LEAST 2'-0" (APPROX. 3/4" PER 12')
 - 7 ROOF OVERHANGS PROJECTS WITHIN 1.2 m OF PROPERTY LINE PROJECT SOUTH (SOUTH VENTING GOFFS) AS PER 9-10-15.5 (10) OF THE BCBC
 - 8 GRADE ELEVATIONS TO BE CONFIRMED ON SITE BY CONTRACTOR, ELEVATIONS HAVE NOT BEEN VERIFIED ON-SITE BY PEOPLE PLUS SPACE. FOUNDATION WALL HEIGHTS MAY REQUIRE ADJUSTMENT TO SUIT SITE CONDITIONS AND MANUFACTURER SPECIFICATIONS





1 SECOND FLOOR PLAN
1/8" = 1'-0"



2 SECOND FLOOR PLAN - DETAIL
1/8" = 1'-0"

SECOND FLOOR AREA (EXCLUDING STAIRS) 1,059 SQ FT (98.4 SQ M)
SECOND FLOOR AREA (INCLUDING STAIRS) 1,156 SQ FT (107.4 SQ M)

DP PL 2020 8742

p+s

PLANNING
and design

PLANNING
and design

James Hill, Assoc. Planning and Design
200 Main Street
Toronto, Ontario M5H 1K2
416-967-1997
info@p+s.ca

NOT FOR
CONSTRUCTION

No.	Description	Date
1	ISSUED FOR PERMIT	2019-11-28
2	ISSUED FOR PERMIT	2019-11-28
3	ISSUED FOR PERMIT	2019-11-28
4	ISSUED FOR PERMIT	2019-11-28
5	ISSUED FOR PERMIT	2019-11-28
6	ISSUED FOR PERMIT	2019-11-28
7	ISSUED FOR PERMIT	2019-11-28
8	ISSUED FOR PERMIT	2019-11-28
9	ISSUED FOR PERMIT	2019-11-28
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14	ISSUED FOR PERMIT	2019-11-28
15	ISSUED FOR PERMIT	2019-11-28
16	ISSUED FOR PERMIT	2019-11-28
17	ISSUED FOR PERMIT	2019-11-28
18	ISSUED FOR PERMIT	2019-11-28
19	ISSUED FOR PERMIT	2019-11-28
20	ISSUED FOR PERMIT	2019-11-28

BRUNSWICK/LAKEVIEW
DEVELOPMENT
3440 15th Street, Toronto, ON
SECOND FLOOR
PLANS

Project Number: 18-013
Date: 2019-11-28
Drawn by: J.S.

ID-201

Date: 1/8" = 1'-0"
Page 2 of 2

p+s
P L A N N I N G
A N D
D E S I G N

planning
and design

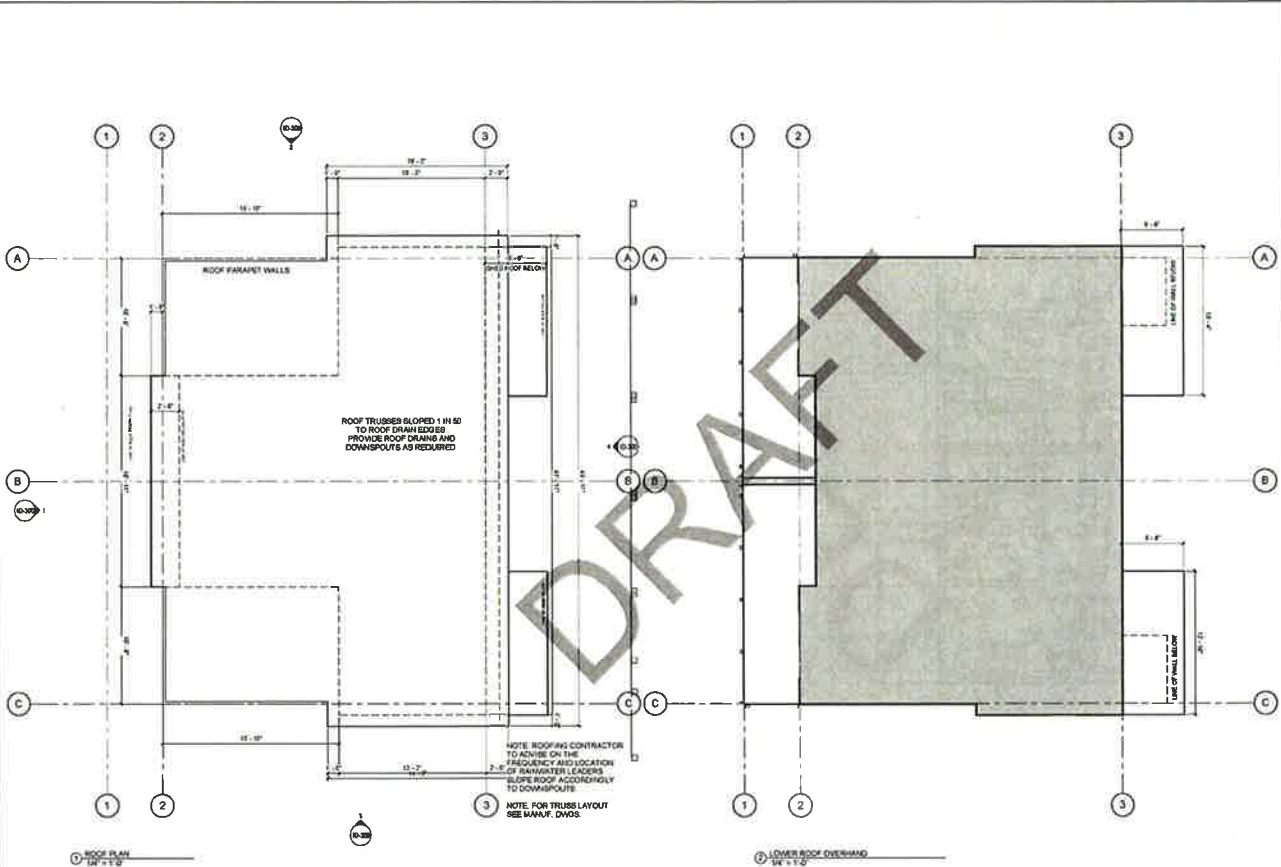
Project No. 02001 - Planning and Design
PO Box 1100
Brunswick, GA 31520
919.386.4477
brunswick@psd.com

**NOT FOR
CONSTRUCTION**

No.	Description	Date
1	2010-01-15-2010-01-15	2010-01-15
2	2010-01-15-2010-01-15	2010-01-15
3	2010-01-15-2010-01-15	2010-01-15
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14	2010-01-15-2010-01-15	2010-01-15
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18	2010-01-15-2010-01-15	2010-01-15
19	2010-01-15-2010-01-15	2010-01-15
20	2010-01-15-2010-01-15	2010-01-15

**BRUNSWICK/LAKEVIEW
DEVELOPMENT**
ROOF PLAN

Project Number: 10-013
Date: 2010-11-26
Drawn by: H.S.
ID-202
Date: 1/27/11
Page 8 of 8





p+s
PLANNING AND DESIGN

Project: Brunswick/Lakeview Development
 Drawing: EX-014 (01)
 Date: 2023-11-26
 Scale: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

No.	Description	Date
1	ISSUED FOR PERMITS	2023-11-26
2	REVISED FOR REVISION	2023-11-26
3	REVISED FOR REVISION	2023-11-26
4	REVISED FOR REVISION	2023-11-26
5	REVISED FOR REVISION	2023-11-26
6	REVISED FOR REVISION	2023-11-26

BRUNSWICK/LAKEVIEW DEVELOPMENT
 1000 WEST 8th AVE, 100 Brunswick Street, Toronto, ON
EXTERIOR BUILDING ELEVATIONS

Project Number: 18-013
 Date: 2023-11-26
 Drawn By: J.P.E.
ID-300
 Scale: 1/8" = 1'-0"

NOTE:
 1. IF ROOF OVERHANG PROJECTS WITHIN 1.2 m OF PROPERTY LINE, PROTECT ROFFIT (NON-VENTING SOFFIT) AS PER 9 TO 15.5.1(1) OF THE BCBC
 2. WHERE DOWNSPOUTS ARE PROVIDED AND NOT CONNECTED TO SEWER, EXTENSIONS ARE REQ'D TO CARRY RAINWATER AWAY FROM THE BUILDING